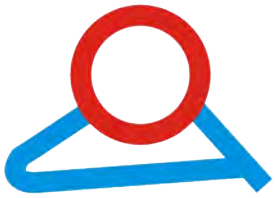
JPC



Catalogue of the Y6-Y7-Y8 range of thermostats, electronic controllers, thermostatic control boxes, sub-assemblies and accessories for temperature control in electro-thermal equipment

For:
Heat tracing
Immersion heaters
Air heaters
Flexible surface heating elements
HVAC

The professional solution: a full, rational, consistent, and universal range, simplifying and reducing inventory and installation time, which can be used in all electric heating applications

Technical catalogue for R & D Departments

Update 25/09/2012

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

General Terms of Sales

GENERAL: our sales are made under the here below terms of sales. Any contrary conditions provided by the buyer shall not be binding and shall not have any legal effect.
The execution and delivery of any purchase order is made in conformity with the present general terms of sales and it is noted that the buyer first has full knowledge of these terms.
In case of dispute on any of the herein below terms, we will consider ourselves as completely free from any contract related to the execution of any pending order.
If some specific conditions are stated by the buyer, these conditions will be considered by us as a formal acceptance only after our written consent.

ORDER: we will commit only on orders for which an order acknowledgement has been issued. The sale is regarded executed at the date of order acceptance by JPC.
Any cessation or cancellation of pending orders, for whatever reasons, cannot be accepted by JPC without a compensation equal to the ordered goods value.
Any manufactured product being subjected of a prototype or a pre-serie accepted by the customer will be regarded as in compliance with the customer's specifications.
No goods can be returned without JPC's written consent. In this case, a credit note valuable on a further purchase order will be issued only if the goods are returned in the original delivery conditions. All manufactured goods made upon a specific order cannot be either returned or be subjected to a credit note.

PRICES: our price offers are remitted under the existing conditions at the date of offer, for mentioned quantities. They can be revised after the call period has expired. Orders for lower quantities than quoted: our offers are subjected to price revisions.
Orders with prices related to our general price list can be revised at any time, in accordance to the existing terms at the delivery date. Our prices are VAT exclusive for unpacked materials according to the EXW Incoterm.
For orders less than € 75 Excl. tax exclusive of fees, administrative costs amounting to € 7.62 Excl. tax will be charged to customer.

DELIVERY TIME: our delivery times are estimated bona fide. They are purely informative and cannot be considered as commitments. Unless our prior express consent, no overrun will be regarded as a justification of order cancellation or set rights to any compensation or deduction.

DELIVERY: Whatever mean of transportation, all risk of loss or damage in transit shall be borne by the purchaser.
The buyer must ensure of the good conditions of the delivered goods and he must make, within the legal terms, all necessary reserves and legal actions in order to preserve his rights against the carrier.
Regarding the conformity and visible quality of delivered goods related to an order, the buyer must send his eventual written claim within an 8 days legal notice from the collection date. Claims will be taken into account only if the goods are kept in the consignment conditions.
For manufacturing reasons, we reserve the right of delivering plus or minus 10 percent of the ordered quantities.

PAYMENT TERMS: unless other arrangements expressly provided by special conditions at the bottom of our order acknowledgment, our invoice is resolvable by draft accepted at 30 days end of month .
The invoices less than € 150 Excl. tax, the first order and the files not accepted by our factoring company are resolvable cash on order.
No discount for pre-payment is accepted.
Whatever the mean of payment, we reserve the ability of cancelling or postponing any blanket or purchase order, invoicing any related charges and to ask for an immediate payment of all pending invoices and all implemented collection charges until total settlement has been completed.
In no way, payments due to JPC can be postponed or be subjected to either deduction nor compensation unless JPC's express written consent.
We reserve the right to require an agreed guarantee of the customer's execution of commitments, even during the execution of a blanket or purchase order.
Any refuse from the customer will open JPC's right to partial or total order cancellation.
Any payment to JPC will apply to due amounts whatever the cause, starting with the oldest due amounts.

RETENTION OF PROPERTY: our goods are sold with a retention of property.: according to the terms of the 1980/05/12 Law and the 1985/01/25 Law (amended 1994/06/10), the Seller shall keep the ownership of the Products until the full payment of the agreed price is made including any other payments outstanding, if any, from the Purchaser to the Seller. However, the Purchaser shall bear the risk of the loss, damages, harms, deterioration or destruction of the sold Products since such Products are at the disposal of the Purchaser and he must have subscribed any related insurance.
In the event of payment delayed by the Purchaser and 8 days after receipt of a registered reminder letter remained unfruitful, the contract shall be regarded as executed. In such an event, JPC will reserve the right to take back the goods and all related settlements by the Purchaser will not be refunded and regarded as damages, without any restitution or compensation claim from the Purchaser related to an eventual resell.
To prevail over the aforesaid clause and in the event of collective judicial proceedings, JPC will notify its such express will to the Purchaser or to its official representative, by registered letter, to have the goods returned.

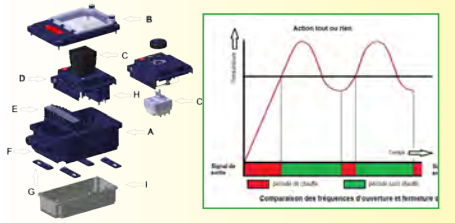
PROPERTY OF TOOLS: the tools that have been fully settled to JPC are the customer's property. They remain at his entire disposal at JPC's facility if the end product is made by JPC, or in the sub-contractor's French or Foreign facility if the product is sub-contracted or imported.
Unless otherwise written consent from the Purchaser, all tools unused for more than 2 years will be considered as abandoned and will be destroyed. Storage charges can be invoiced if the customer wishes to keep unused tools.
Tools for which a partial amount has been invoiced to the Purchaser remain the property of JPC. The tools are made to fit the manufacturing equipment, Norms or Standards in force at JPC's or at its sub-contractors. Unless otherwise specified, their lifetimes are equal to 3 years life according to the annual quantities provided by the Purchaser during original negotiation or on the original order. In the meantime, all maintenance and repairs charges shall be borne by JPC. For additional quantities than provided, all maintenance and repairs charges shall be borne by the Purchaser.

WARRANTY: goods manufactured by JPC are covered by a 1 year warranty coming into force at the delivery date.
For all imported good, our warranty period is limited to the manufacturer's warranty. We cannot be held as responsible for any manufacturing ascertained default on goods re-sold as are. We forward the claims on delivered goods and apply the eventual warranty clauses after agreement receipt from our constituents.
To benefit the warranty, The Purchaser must send a written claim to JPC, providing all ascertained defaults and give JPC all means to ascertain and bring corrective actions.
Packing, freight, return, carriage, un-assembly and re-assembly charges shall be borne by the Purchaser.

LIABILITY LIMITATIONS: the buyer must ensure that the use of the purchased products complies with Norms and Rules into force, whatever the advices or recommendations shown in the seller's documents. De facto, he resigns all claims against the Seller. No request for compensations for direct or indirect damages or loss is receivable.
JPC's liability is strictly limited to the aforesaid obligations.

APPROPRIATE COURT – APPLICABLE LAWS: all sales by JPC are subjected to French Laws including the 1980 Vienna Convention on International Sales. Any controversy, dispute or claim arising out of or related to this contract or breach thereof shall be settled by arbitration of The Tribunal de Commerce Court held in Meaux, 77, France.

Table of Contents



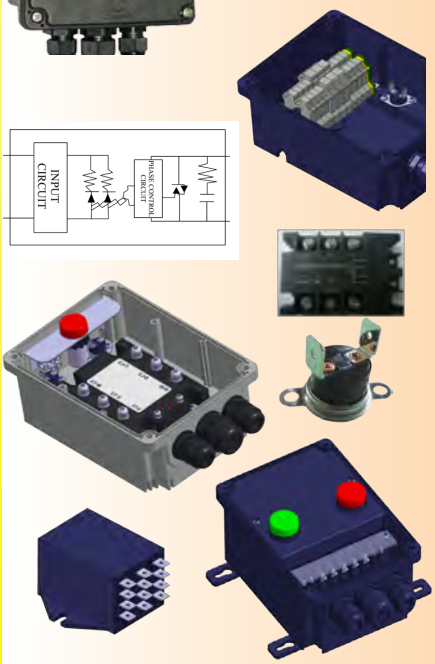
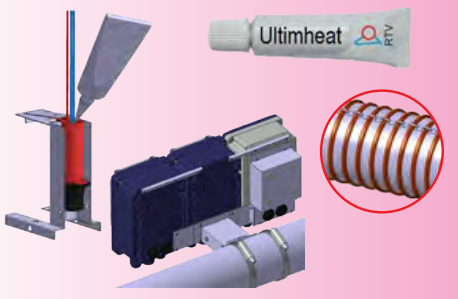
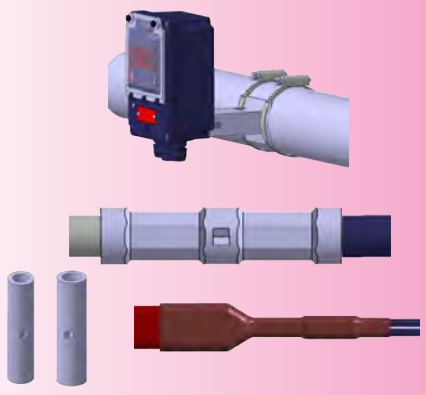
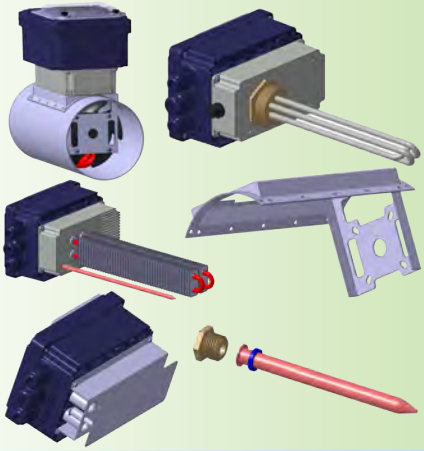


Table of Contents







JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Introduction

Our first thermostat housings were used to protect rod thermostats mounted in boilers.
This new 2012 range is the result of more than 60 years of technical and regulation evolution, and of communication with electro-thermal product users. While designing it, recognizing the growing importance in the cost of labor for assembly and installation, we gave priority to simplifying installation, reducing the customer stock, and to the maximum time reduction of mounting and installation. This new range has been designed to exactly meet demand applications, including single or small series, in electric heating, emphasizing ease of use, durability and compliance with safety rules, and ensuring mounting and installation minimized times. Common problems encountered during assembly and installation were identified and solved during the design. Despite the many possible versions, the stock of components required to meet all applications is kept to a minimum.

The same control box can be used in all applications, without the need for electrical modification or drilling. A simple screwdriver is necessary to assemble hundreds of possible versions.

Integrated manufacturing
All of these housings and cabinets is done in our factories, from carefully selected and controlled technical raw materials. Thermoplastic molding, elastomer and silicone thermosetting or molding, molding of metal parts, cutting, stamping, laser and TIG welding, a.s.o., everything is integrated...and controlled. IS09001-2008 and IS014001-2004 certified manufacturing.

Standards
Manufacturing standards applicable to these components were taken into account and our specifications often exceed the normative values.These components are intended to be incorporated into equipment and machineries. The final standards for such components mounted in these machineries and equipment are to be determined by the integrators. Under the European directive (2006/42/EC) applicable to Machinery, a machine can be put into service only if it has been brought into line with European Standards.
Main European Standards for Machinery are Standards EN61508, EN13849-1, EN62061.
In addition to Standards for Machinery, may be subjected to Standards for Household Appliances (EN60335-xx), according to their applications.
EMC (European Directive CEM89/336/CEE): components and devices of this catalog which may be affected by this Directive have been tested. However, the conformity of a component does not necessarily determine the compliance of all in which it is mounted.

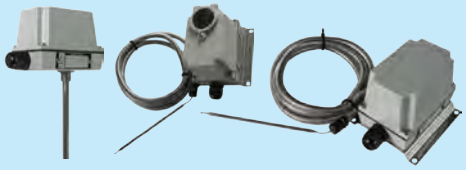
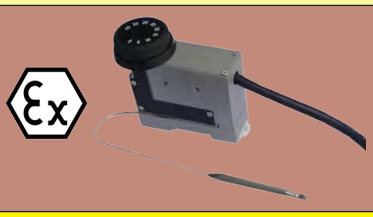
Electrical voltage: value and tolerances
Since 1983, to unify the voltages 220V and 240V which coexisted in different countries, the European Standard IEC 38 (sixth edition) has standardized the voltages in Europe as follows: 3x230V/400V, 50 Hz. It also defined a + / -10% tolerance over this voltage from 2003. Except in special cases, the below listed products are designed to operate within these ranges.
Cable glands
The cable glands used in this range comply with EN 50262 standard, applicable since March 2001, with metric threads.

Table of products listed by references (see pages 131 and 132 for the product alphabetical table)

Reference	Page
242BUTB	46
244CUUB	47
273BK1F2	45
273BN6F2	45
273BP0F2	45
273DJ2F2	45
2DNAP6F0	44
2DNAP6F0-4005000	100
2PE2N6	43
2PMR100 (L=100mm)	43
4903EJ01006CL6H0	92
4903EJ01006CL6MF	94
4903EJ01006CUSV0	92
4903EJ06010DL6VF	130
4903EJ07010DL6VF	130
4903EJ08010DL6VF	130
4903EJ09010DL6VF	130
4903EJ09010DL6VM	84
4903EK07010CL6VM	84
4903EK08010DL6VM	84
4911NP01006CL6H0	92
4911NP01006CL6MF	94
4911NP01006CUSV0	92
4993AJ00805SHCSV0	92
4993AZ00805SHL6H0	92
4993AZ00805SHL6MF	94
49JBAJ01006VFC8	94
49JBAP01006VFC8	94
49JBAZ00805HVFC8	94
49JBBJ01006VFC8	94
49JBBP01006VFC8	94
49JBBZ00805HVFC8	94
49JD1J0106CUSV0	95
49JD1P0106CUSV0	95
49JD1Z00805SHCV0	95
49JD2J0106CUSV0	95
49JD2P0106CUSV0	95
49JD2Z00805SHCV0	95
49JD3J0106CUSV0	95
49JD3P0106CUSV0	95
49JD3Z00805SHCV0	95
49JD7J0106CUSV0	95
49JD7P0106CUSV0	95
49JD7Z00805SHCV0	95
49JD8J0106CUSV0	95
49JD8P0106CUSV0	95
49JD8Z00805SHCV0	95
49JD9J0106CUSV0	95
49JD9P0106CUSV0	95
49JD9Z00805SHCV0	95
49JH1J0106CUSV0	95
49JH1P0106CUSV0	95
49JH1Z00805SHCV0	95
49JH2J0106CUSV0	95
49JH2P0106CUSV0	95
49JH2Z00805SHCV0	95
49JH3J0106CUSV0	95
49JH3P0106CUSV0	95
49JH3Z00805SHCV0	95
49JH7J0106CUSV0	95
49JH7P0106CUSV0	95
49JH7Z00805SHCV0	95
49JH8J0106CUSV0	95
49JH8P0106CUSV0	95
49JH8Z00805SHCV0	95
49JH9J0106CUSV0	95
49JH9P0106CUSV0	95
49JH9Z00805SHCV0	95
4R05EJ110RMDL6VF	130
4R05EJ115RMDL6VF	130
4R05EJ120RMDL6VF	130
5MA3SPF070F18500	130
5MA3SPF077F18500	130
5MA3SPF084F18500	130
5MA3SPF091F18500	130
5MA3SPF096F18500	130
5MA3SPF106F18500	130
5MA3SPF109F18500	130
5MA3SPF121F18500	130
5MA3SPF129F18500	130
5MA3SPF139F18500	130
5MA3SPF152F18500	130
5MA3SPF165F18500	130
5MA3SPF169F18500	130
5MA3SPF182F18500	130
5MA3SPF188F18500	130
5MA3SPF216F18500	130
5MA3SPF227F18500	130
5MA3SPF240F18500	130
66DC14P10008075N	129
66DC14P20008075N	129
66DC14P30008075N	129
66DC14P40008075N	129
66DI14P10008075B	129
66DI14P20008075B	129
66DI14P30008075B	129
66DI14P40008075B	129
66DL14P10010075N	129
66DL14P20010075N	129
66DL14P20010075N	129
66DL14P20010075N	129
66EN1	33,34,35,36,43
66EN2	33,34,35,36,43
66EN3	33,34,35,36,43
66FS150022000C12	117
66FS150022000C13	117
66FS150022000C22	117
66FS150022000C23	117
66FS150022000C32	117
66FS150022000C33	117
66FS150022000C42	117
66FS150022000C43	117
66FS15002208308200	95
66FS1500220830820P	95
66FS15002208308XXS	95
66FS15002210410200	95
66FS15002210410XXS	95
66FS15002210416200	95
66FS1500221041620P	95
66FS15002210416XXS	95
66MZ.....	33,34,35,36,43
66MZ0060000502FW	34
66MZ0060000703FW	34
66MZ0060040402FW	33-35-43
66MZ0060040402FX	33-35-43
66MZ0060101503FW	34
66MZ0060101503FX	34
66MZ0060104503FW	34
66MZ0060104503FX	34
66MZ0060200903FW	34
66MZ0060200903FX	34
66MZ0060300854FW	36
66MZ0060300854FX	36
66MZ0060300901FW	33-35-43
66MZ0060300901FX	33-35-43
66MZ0060301101FW	33-35-43
66MZ0060301101FX	33-35-43
66MZ0060502001FW	33-35-43
66MZ0060502001FX	33-35-43
66MZ0060503001FW	33-35-43
66MZ0060503001FX	33-35-43
66MZ0060503003FW	34
66MZ0060503003FX	34
66MZ0060605003FW	34
66MZ0060605003FX	34
66MZ006-100153FW	34
66MZ0061804003FW	34
66MZ0061804003FX	34
66MZ006-250252FW	34
66MZ0062807003FW	34
66MZ0062807003FX	34
66MZ006-350352FW	33-35-43
66MZ006-350352FX	33-35-43
66RA14PK010B	129
66RA14PK015B	129
66RA14PK030B	129
6Y4903RESET90	129
6YAMS0600	73
6YAMS0606	73
6YBOR01010048	74
6YBOR01010063	74
6YBOR52556048	74
6YBOR525560SY	74
6YBUR001	73
6YCSH210	74
6YCSH225	74
6YCSH310	74
6YCSH325	74
6YCSH360	74
6YCSI2010	74
6YCSI2060	74
6YCSI2110	74
6YCSI2160	74
6YCSI2210	74
6YCSI2260	74
6YCSI2310	74
6YCSI2360	74
6YEAVD125P	127
6YEAVD125V	127
6YEAVD160P	127
6YEAVD160V	127
6YEAVD200P	127
6YEAVD200V	127
6YEAVD250P	127
6YEAVD250V	127
6YEAVD315P	127
6YEAVD315V	127
6YEAVD400P	127
6YEAVD400V	127
6YEAVD450P	127
6YEAVD450V	127
6YEAVD500P	127
6YEAVD500V	127
6YEAVD630P	127
6YEAVF000P	127
6YEBI14BK	129
6YEBLG001	130
6YEBMG002	130
6YEBS10RM	129
6YECC175050U	128
6YECC17508610	128
6YECC17508650	128
6YECC1750R2	128
6YFAN9223000	84
6YFAN92230SS	84
6YFBCALF01	75
6YFBCPAB01	75
6YFBCPAB02	75
6YFBCPAB03	75
6YFBCPAB04	75
6YFBCPAB05	75
6YFBCPAB07	75
6YFBCPAB07B	75
6YFBCPAB08	75
6YFBCPAB09	75
6YFBCPAB10	75
6YFBCPAF02	75
6YFBCPAF03	75
6YFBCPAF04	75
6YFUR633003	75
6YFUR633010	75
6YFUR633016	75
6YL2023YF150R6	102
6YL2200000BR	80
6YL22230RC00	80
6YL22230RCBR	80
6YL22230RF00	80
6YL22230RFBR	80
6YL22230VC00	80
6YL22230VCBR	80
6YL22230VF00	80
6YL22230VFBR	80
6YMLI9430	73
6YMLIK90140	84
6YMLK140012F	112
6YMLK140012L	112
6YMLP6620	73
6YPFU1253	75
6YPIDSS2059	75
6YREL230130	85
6YREL230225	85
6YREL230340	85
6YREL230440325T	85
6YREL234400332T	85
6YREL400440325T	85
6YREL440044332T	85
6YRELC230116	85
6YRELC230216	85
6YRELC230316	85
6YRELC230416	85
6YRELC230516	85
6YRELC230616	85
6YREP046110L	86
6YREP076074U	86
6YROP0000	73
6YROPPU10	73
6YROPPU15	73
6YROPPU30	73
6YROPSS10	73
6YROPSS15	73
6YROPSS30	73
6YSCP15130R	75
6YTBT01250304	107
6YTBT01250430	107
6YTBTKIT4	107
6YTCORC019033016	114
6YTCORC023036016	114
6YTCORRC15F0300S	114
6YTCORRC15F1000S	114
6YTCORRC18F0300S	114
6YTCORRC18F1000S	114
6YTEPMB16DC10	111
6YTGAN00D0482000	116
6YTGAN00D1270050	116
6YTGAN00D1272000	116
6YTGAN00S0482000	116
6YTGAN00S1270050	116
6YTGAN00S1272000	116
6YTGANL0D0480030	116
6YTGANL0S0480030	116
6YTGANN0D0480030	116
6YTGANN0S0480030	116
6YTGAV00D0480030	116
6YTGAV00D0482000	116
6YTGAV00S0480030	116
6YTGAV00S0482000	116
6YTJOMN10040086	111
6YTJOMS10040086	111
6YTJOPS01140086	111
6YTMC2000ELH062A	104
6YTNA1M085055056	93
6YTNA2M095045056	93
6YTNA3M115040056	93
6YTNA4M115075056	93
6YTNA5M130050056	93
6YTNA6M115060056	93
6YTNB12120040150	104
6YTNC13085055056	103
6YTNC23095045056	103
6YTNC33115040056	103
6YTNC43115075056	103
6YTNC53130050056	103
6YTNC63115060056	103
6YTND12085055056	104
6YTND22095045056	104
6YTND32115040056	104
6YTND42115075056	104
6YTND52130050056	104
6YTND62115060056	104
6YTNE1M085055072	103
6YTNE2M095045072	103
6YTNE3M115040072	103
6YTNE4M115075072	103
6YTNE5M130050072	103
6YTNE6M115060072	103
6YTNG1M140000060	103
6YTNK4085055056	93
6YTNK5098055056	93
6YTNK61155055056	93
6YTNT3000000207A	117
6YTPEM20B	111
6YTPEM20C075140	111
6YTPEM20L12	111
6YTPEM20T12	111
6YTPEM24B	111
6YTPEM24C090160	111
6YTPEM25B	111
6YTPEM25C130180	111
6YTPF060030M20	108
6YTPF086050M201	109
6YTPF086050M202	109
6YTPF102099M20	108
6YTPF102099M20V	109
6YTPF102284M20H	109
6YTPF160032	107
6YTPG18011060090	110
6YTPG18021050100	110
6YTPG18031047118	110
6YTPG18041080120	110
6YTPG18051050135	110
6YTPG18061063115	110
6YTPG18072019000	110
6YTPG18083019000	110
6YTPG18093025060	110
6YTPG18103030050	110
6YTPG18111030000	110
6YTPG18122030000	110
6YTPG18133030000	110
6YTPG18141024000	110
6YTPG18152024000	110
6YTPG18163024000	110
6YTPG18171019000	110
6YTPG18181060000	110
6YTPG18191015000	110
6YTPG18205019000	110
6YTRAKITM20	111
6YTRAM20CLIP	111
6YTRAM20CONE	111
6YTRAM20PLAT	111
6YTTC20751001004	93
6YTTC20751501004	93
6YTTC20752001004	93
6YTTC31001001004	93
6YTTC310011501004	93
6YTTC3100152001004	93
6YTTD20751001004	93
6YTTD20751501004	93
6YTTD20752001004	93
6YTTD21001001004	93
6YTTD21001501004	93
6YTTD21002001004	93
6YTTL001	111
6YTTL002	104
6YTTL003	114
6YTTL04A1	118
6YTTL04A2	118
6YTTL04A3	118
6YTTL04AB1	118
6YTTL04B1	118
6YTTL04B2	118
6YTTL04B3	118
6YTTL04B4	118
6YTTL04B5	118
6YTTL04B6	118
81C085110AO60001	36
820060090AA61001	40
820060090AI161001	40
820070100AI161001	40
820080110AI161001	40
820090120AI161001	40
820110140AI161001	40
820130160AI161001	40
820150180AI161001	40
820170200AI161001	40
89T004040AB60606	98
89T0-35035AB60606	98
8CB004040AA60001	35
8CB004040AO60001	35
8CB030090AO60001	35
8CB030110AO60001	35
8CB050200AO60001	35
8CB050300AO30001	35
8CB-35035AA60001	35
8CB-35035AO60001	35
8GA004040AO600J	97
8GA-35035AO6000	97
8GB004040AA60001	33
8GB004040AO60001	33
8GB030090AO60001	33
8GB030110AO60001	33
8GB050200AO60001	33
8GB050300AO30001	33
8GB-35035AA60001	33
8GB-35035AO60001	33
8L0080105AA61001	37
8L0080105AO61001	37
8L0090115AO61001	37
8L0110135AO61001	37
8L0130155AO61001	37
8L0150175AO61001	37
8L0175200AO41001	37
8L0220245AO41001	37
8L0270295AO41001	37
8L0300325AO41001	37
8X0060090AA61001	39
8X0060090AI61001	39
8X0070100AI61001	39
8X0080110AI161001	39
8X0090120AI161001	39
8X0110140AI161001	39
8X0130160AI161001	39
8X0150180AI161001	39
8X0170200AI161001	39
91GJH10440	82
91GJH20440	82
91GJH30440	82
91GJW10240	82
91GJW20240	82
91GJW20240	82
9GBA080187W00000	86
9GBBK01187W00000	86
KRA0000502000	34
KRA000050200E	98
KRA000050200F	98
KRA0000701200	34
KRA0000705200	34
KRA0101501000	34
KRA0101505000	34
KRA0104507000	34
KRA0104509000	34
KRA0200901000	34
KRA0200905000	34
KRA0503000100	34
KRA0605007000	34
KRA0605009000	34
KRA0802000100	34
KRA-100152000	34
KRA-10015200E	98
KRA-10015200F	98
KRA1806007000	34
KRA1806009000	34
KRA-25025200E	98
KRA-25025200F	98
KRA-250252200	34
KRA2807008000	34
KUA0000502000	34
KUA000050200E	98
KUA000050200F	98
KUA0000701200	34
KUA0000705200	34
KUA0101501000	34
KUA0101505000	34
KUA0104507000	34
KUA0104509000	34
KUA0200901000	34
KUA0200905000	34
KUA0503000100	34
KUA0605007000	34
KUA0605009000	34
KUA0802000100	34
KUA-100152000	34
KUA-10015220E	98
KUA-10015220F	98
KUA1806007000	34
KUA1806009000	34
KUA-250252200	34
KUA-25025220E	98
KUA-25025220F	98
KUA2807008000	34
KXC0000502000	38
KXC0000701200	38
KXC0000705200	38
KXC0101501000	38
KXC0101505000	38
KXC0104507000	38
KXC0104509000	38
KXC0200901000	38
KXC0200905000	38
KXC0503000100	38
KXC0605007000	38
KXC0605009000	38
KXC0802000100	38
KXC-100152000	38
KXC1806007000	38
KXC1806009000	38
KXC-250252200	38
KXC2807008000	38
TMJBA265265A01501R6	52-102
TMR60030C20001F6	51
TNJBA265265A01501R6	52-102
TNJBA265266A01501R6	52-102
TNR60030C20001F6	51
TNR70025P01501F6	51
TNR70025P20001F6	51
TNRC0710770451CB	53
TNRC0710770451CB	53
TPJBA265265A01501R6	52
TPJBA265266A01501R6	52
TPR00060W02002F4	51
TPR00060W05002F4	51
TPR00060W10002F4	51
TPR00060W20002F4	51
TPR20200R20002E4	51
TPR20400I20002E4	51
TPR40030C20001F6	51
TPR60050I10002E4	51
TPR60050I20002E4	51
TSJBA265A0150BT6	52-102
TSJBA266A0150BT6	52-102
TSR50030I0070AK6	51
TSR50030I0070BK6	51
TSR50030I0150AK6	51
TSR50030I0150BK6	51
TSR50030I2000AK6	51
TSR50030I2000BK6	51-100
TSRC071077045ABP	53
TSRC071077045ABP	53
TSRC071077045ACB	53
TSRC071077045ACB	53
Y4	124
Y400000D	125
Y400000E	125
Y400000F	126
Y400000G	126
Y400000H	126
Y400000J	124
Y400000K	124
Y4B00000000020F1	83
Y4T00000000020F1	83
Y4T00000000F20F1	83
Y5EQ9AA0000NUDF2	100
Y5T1BA70000CUAF2	99
Y5T1CA70000CUAF2	99
Y5TM1AA0000CUCF2	99
Y5TM2AA0000CUCF2	99
Y5TM3AA0000CUCF2	99
Y6WFKR340A0WF1F1	59
Y6WHQR310000FAF1	63
Y6WHQR31000LFAF1	63
Y6WHQR311000FDF1	63
Y6WHQR31100LFDF1	63
Y6WHQR312000FLF1	63
Y6WHQR314000FHF1	63
Y6WHQR31400LFHF1	63
Y6WHQR317000FIF1	63
Y6WHQR31700LFIF1	63
Y6WHSR310000FAF1	63
Y6WHSR31000LFAF1	63
Y6WHSR311000FDF1	63
Y6WHSR31100LFDF1	63
Y6WHSR312000FLF1	63
Y6WHSR31200LFLF1	63
Y6WHSR314000FHF1	63
Y6WHSR317000FIF1	63
Y6WHSR31700LFIF1	63
Y6WHTR310000FBF1	63
Y6WHTR31000LFBF1	63
Y6WHTR311000FEF1	63
Y6WHTR31100LFEF1	63
Y6WHTR312000FMF1	63
Y6WHTR31200LFLF1	63
Y6WHTR314000FHF1	63
Y6WHTR317000FIF1	63
Y6WHTR31700LFIF1	63
Y6WIWR320000FTF1	67
Y6WIWR32000LFTF1	67
Y6WIWR321000FWF1	67
Y6WIWR32100LFWF1	67
Y6WIWR322000FWF1	67
Y6WIWR32200LFWF1	67
Y6WIWR323000FVF1	67
Y6WIWR324000FUF1	67
Y6WIWR32400LFUF1	67
Y6WIWR327000FXF1	67
Y6WJWC310000FAF1	65
Y6WJWC311000FDF1	65
Y6WJWC312000FLF1	65
Y6WJWC313000FKF1	65
Y6WJWC314000FHF1	65
Y6WJWC317000FIF1	65
Y6WJWR31000LFAF1	65
Y6WJWR31000XFAF1	65
Y6WJWR31100LFDF1	65
Y6WJWR31100XFDF1	65
Y6WJWR31200LFLF1	65
Y6WJWR31200XFLF1	65
Y6WJWR31400LFHF1	65
Y6WJWR31400XFHF1	65
Y6WJWR31700XFIF1	65
Y6WK6R320B0TF1F1	59
Y6WKCR320B00F1F1	57
Y6WKCR320B0PF1F1	57
Y6WKCR320B0UF1F1	57
Y6WKCR340B00F4F1	57
Y6WKCR340B0PF4F1	58
Y6WKDR320B00F1F1	57
Y6WKDR320B0LF1F1	57
Y6WKDR320B0TF1F1	57
Y6WKDR340B00F4F1	57
Y6WKDR340B0LF4F1	58
Y6WKER320B00F1F1	57
Y6WKER320B0LF1F1	57
Y6WKER320B0TF1F1	57
Y6WKER340B00F4F1	57
Y6WKER340B0LF4F1	58
Y6WKFR320B00F1F1	57
Y6WKFR320B0LF1F1	57
Y6WKFR320B0TF1F1	57
Y6WKFR340B00F4F1	57
Y6WKFR340B0LF4F1	58
Y6WKGR320B00F1F1	57
Y6WKGR320B0LF1F1	57
Y6WKGR340B00F4F1	57
Y6WKGR340B0LF4F1	58
Y6WKHR320B00F1F1	57
Y6WKHR320B0LF1F1	57
Y6WKHR340B00F4F1	57
Y6WKHR340B0LF4F1	58
Y6WM1R320B00F1F1	58
Y6WM1R320B0NF1F1	58
Y6WM1R320B0WF1F1	59
Y6WM2R320B00F1F1	58
Y6WM2R320B0NF1F1	58
Y6WM2R320B0WF1F1	59
Y6WM3R320B00F1F1	58
Y6WM3R320B0JF1F1	58
Y6WM3R320B0TF1F1	59
Y6WM4R320B00F1F1	58
Y6WM4R320B00F1F1	58
Y6WM4R320B0LF1F1	58
Y6WM4R320B0TF1F1	59
Y6WM5R320B00F1F1	58
Y6WM5R320B00F1F1	58
Y6WM5R320B0LF1F1	58
Y6WM5R320B0TF1F1	59
Y6WM6R320B00F1F1	58
Y6WM6R320B00F1F1	58
Y6WM6R320B0LF1F1	58
Y6WM7R320B00F1F1	58
Y6WM7R320B0LF1F1	58
Y6WM8R320B00F1F1	58
Y6WM8R320B0LF1F1	58
Y6WM9R320B00F1F1	58
Y6WM9R320B00F1F1	58
Y6WMAR320B00F1F1	58
Y6WMAR320B00F1F1	58
Y6WMBR320B00F1F1	58
Y6WMYR320B00F1F1	58
Y6WMYR320B00F1F1	58
Y6WQ1R320B00F1F1	59
Y6WQ2R320B00F1F1	59
Y6WQ3R320B00F1F1	59
Y6WQ4R320B00F1F1	59
Y6WQ4R320B00F1F1	59
Y6WQ5R320B00F1F1	59
Y6WQ5R320B00F1F1	59
Y6WQ6R320B00F1F1	59
Y6WQ6R320B00F1F1	59
Y6WQ7R320B00F1F1	59
Y6WQ8R320B00F1F1	59
Y6WQ9R320B00F1F1	59
Y6WQ9R320B00F1F1	59
Y6WQAR320B00F1F1	59
Y6WQAR320B00F1F1	59
Y6WQBR320B00F1F1	59
Y6WQYR320B00F1F1	59
Y6WQYR320B00F1F1	59
Y6WRCR320D00FAF1	61
Y6WRCR320D0LFAF1	61
Y6WRCR320D0XFAF1	61
Y6WRDR320D00FAF1	61
Y6WRDR320D0LFAF1	61
Y6WRDR320D0XFAF1	61
Y6WRER320D00FAF1	61
Y6WRER320D0LFAF1	61
Y6WRER320D0XFAF1	61
Y6WRFR320D00FAF1	61
Y6WRFR320D0LFAF1	61
Y6WRFR320D0XFAF1	61
Y6WRGR320D00FAF1	61
Y6WRGR320D0LFAF1	61
Y6WRGR320D0XFAF1	61
Y6WRHR320D00FAF1	61
Y6WRHR320D0LFAF1	61
Y6WRHR320D0XFAF1	61
Y7WFKH340A0WM1F1	59
Y7WHQH31000LMAF1	63
Y7WHQH31000MAF1	63
Y7WHQH311000MDF1	63
Y7WHQH31100LMDF1	63
Y7WHQH312000MLF1	63
Y7WHQH314000MHF1	63
Y7WHQH31400LMHF1	63
Y7WHQH317000MIF1	63
Y7WHQH31700LMIF1	63
Y7WHSH310000MAF1	63
Y7WHSH31000LMAF1	63
Y7WHSH311000MDF1	63
Y7WHSH31100LMDF1	63
Y7WHSH312000MLF1	63
Y7WHSH31200LMLF1	63
Y7WHSH314000MHF1	63
Y7WHSH317000MIF1	63
Y7WHSH31700LMIF1	63
Y7WHTH310000MBF1	63
Y7WHTH31000LMBF1	63
Y7WHTH311000MEF1	63
Y7WHTH31100LMEF1	63
Y7WHTH312000MMF1	63
Y7WHTH31200LMLF1	63
Y7WHTH314000MHF1	63
Y7WHTH317000MIF1	63
Y7WHTH31700LMIF1	63
Y7WJWC310000MAF1	65
Y7WJWC311000MDF1	65
Y7WJWC312000MLF1	65
Y7WJWC313000MKF1	65
Y7WJWC314000MHF1	65
Y7WJWC317000MIF1	65
Y7WJWH31000LMAF1	65
Y7WJWH31000XMAF1	65
Y7WJWH31100LMDF1	65
Y7WJWH31100XMDF1	65
Y7WJWH31200LMLF1	65
Y7WJWH31200XMLF1	65
Y7WJWH31400LMHF1	65
Y7WJWH31400XMHF1	65
Y7WJWH31700XMIF1	65
Y7WK5H320B0TM1F1	59
Y7WK6H320B0TM1F1	59
Y7WKCH320B00M1F1	57
Y7WKCH320B0PM1F1	57
Y7WKCH320B0UM1F1	57
Y7WKCH340B00M4F1	57
Y7WKCH340B0PM4F1	58
Y7WKDH320B00M1F1	57
Y7WKDH320B0LM1F1	57
Y7WKDH320B0TM1F1	57
Y7WKDH340B00M4F1	57
Y7WKDH340B0LM4F1	58
Y7WKEH320B00M1F1	57
Y7WKEH320B0LM1F1	57
Y7WKEH320B0TM1F1	57
Y7WKEH340B00M4F1	57
Y7WKEH340B0LM4F1	58
Y7WKFH320B00M1F1	57
Y7WKFH320B0LM1F1	57
Y7WKFH320B0TM1F1	57
Y7WKFH340B00M4F1	57
Y7WKFH340B0LM4F1	58
Y7WKGH320B00M1F1	57
Y7WKGH320B0LM1F1	57
Y7WKGH340B00M4F1	57
Y7WKGH340B0LM4F1	58
Y7WKHH320B00M1F1	57
Y7WKHH320B0LM1F1	57
Y7WKHH340B00M4F1	57
Y7WKHH340B0LM4F1	58
Y7WM1H320B00M1F1	58
Y7WM1H320B0WM1F1	59
Y7WM2H320B00M1F1	58
Y7WM2H320B0WM1F1	59
Y7WM3H320B00M1F1	58
Y7WM3H320B0TM1F1	59
Y7WM4H320B00M1F1	58
Y7WM4H320B00M1F1	58
Y7WM4H320B0TM1F1	59
Y7WM5H320B00M1F1	58
Y7WM5H320B00M1F1	58
Y7WM6H320B00M1F1	58
Y7WM6H320B00M1F1	58
Y7WM7H320B00M1F1	58
Y7WM8H320B00M1F1	58
Y7WM9H320B00M1F1	58
Y7WM9H320B00M1F1	58
Y7WMAH320B00M1F1	58
Y7WMAH320B00M1F1	58
Y7WMBH320B00M1F1	58
Y7WMYH320B00M1F1	58
Y7WMYH320B00M1F1	58
Y7WQ1H320B00M1F1	59
Y7WQ2H320B00M1F1	59
Y7WQ3H320B00M1F1	59
Y7WQ4H320B00M1F1	59
Y7WQ4H320B00M1F1	59
Y7WQ5H320B00M1F1	59
Y7WQ5H320B00M1F1	59
Y7WQ6H320B00M1F1	59
Y7WQ6H320B00M1F1	59
Y7WQ7H320B00M1F1	59
Y7WQ8H320B00M1F1	59
Y7WQ9H320B00M1F1	59
Y7WQ9H320B00M1F1	59
Y7WQAH320B00M1F1	59
Y7WQAH320B00M1F1	59
Y7WQBH320B00M1F1	59
Y7WQYH320B00M1F1	59
Y7WQYH320B00M1F1	59
Y7WRCH320D00MAF1	61
Y7WRCH320D0LMAF1	61
Y7WRCH320D0XMAF1	61
Y7WRDH320D00MAF1	61
Y7WRDH320D0LMAF1	61
Y7WRDH320D0XMAF1	61
Y7WREH320D00MAF1	61
Y7WREH320D0LMAF1	61
Y7WREH320D0XMAF1	61
Y7WRFH320D00MAF1	61
Y7WRFH320D0LMAF1	61
Y7WRFH320D0XMAF1	61
Y7WRGH320D00MAF1	61
Y7WRGH320D0LMAF1	61
Y7WRGH320D0XMAF1	61
Y7WRHH320D00MAF1	61
Y7WRHH320D0LMAF1	61
Y7WRHH320D0XMAF1	61
Y7WRWH320000MTF1	67
Y7WRWH32000LMTF1	67
Y7WRWH321000MWF1	67
Y7WRWH32100LMWF1	67
Y7WRWH322000MWF1	67
Y7WRWH32200LMWF1	67
Y7WRWH323000MVF1	67
Y7WRWH324000MUF1	67
Y7WRWH32400LMUF1	67
Y7WRWH327000MXF1	67
Y8B00000000000SB	75
Y8B00000000000SC	75
Y8B00000000000SD	75
Y8B00000000000SF	75
Y8B0000L100020J1	96
Y8B0000S100020J1	79
Y8B0000S110020J1	79
Y8B0000S120020J1	79
Y8B0000S130020J1	79
Y8B0000S140020J1	79
Y8B0000S150020J1	79
Y8B0000S160020J1	79
Y8B0001S000020J1	79
Y8B00E1SK00020J1	96
Y8T00000000000SB	75
Y8T00000000000SC	75
Y8T00000000000SD	75
Y8T00000000000SF	75
Y8T0001S000020J1	79
Y8TE303S00002TF1	79
Y8TE903SC0002PF1	80
Y8TE903SK0002UF1	96
Y8TE904SJ0002RF1	80
Y8TE9E3SM0002RF1	97
Y8W00000000000SB	75
Y8W00000000000SC	75
Y8W00000000000SD	75
Y8W00000000000SF	75
Y8W0001S000020J1	79
Y8WD000S200020F1	80
Y8WFKB340A0W11F6	59
Y8WFKE340A0W61F6	59
Y8WHQA3100001AF3	63
Y8WHQA3110001DF3	63
Y8WHQA3120001LF3	63
Y8WHQA3140001HF3	63
Y8WHQA3170001IF3	63
Y8WHQB31010L1AF6	63
Y8WHQB31110L1DF6	63
Y8WHQB31410L1HF6	63
Y8WHQB31710L1IF6	63
Y8WHQC3100006AF3	63
Y8WHQC3110006DF3	63
Y8WHQC3120006LF3	63
Y8WHQC3140006HF3	63
Y8WHQC3170006IF3	63
Y8WHQE31000L6AF6	63
Y8WHQE31100L6DF6	63
Y8WHQE31400L6LF6	63
Y8WHQE31700L6IF6	63
Y8WHSA3100001AF3	63
Y8WHSA3110001DF3	63
Y8WHSA3120001LF3	63
Y8WHSA3140001HF3	63
Y8WHSA3170001IF3	63
Y8WHSB31010L1AF6	63
Y8WHSB31110L1DF6	63
Y8WHSB31410L1HF6	63
Y8WHSB31710L1IF6	63
Y8WHSC3100006AF3	63
Y8WHSC3110006DF3	63
Y8WHSC3120006LF3	63
Y8WHSC3140006HF3	63
Y8WHSC3170006IF3	63
Y8WHSE31000L6AF6	63
Y8WHSE31100L6DF6	63
Y8WHSE31200L6LF6	63
Y8WHSE31700L6IF6	63
Y8WHTC3100006BF3	63
Y8WHTC3110006EF3	63
Y8WHTC3120006MF3	63
Y8WHTC3140006HF3	63
Y8WHTC3170006IF3	63
Y8WHTE31000L6BF6	63
Y8WHTE31100L6EF6	63
Y8WHTE31200L6LF6	63
Y8WHTE31700L6IF6	63
Y8WIWA3100001TF3	67
Y8WIWA3110001WF3	67
Y8WIWA3120001WF3	67
Y8WIWA3130001VF3	67
Y8WIWA3140001UF3	67
Y8WIWA3170001XF3	67
Y8WIWB31000L1TF6	67
Y8WIWB31100L1WF6	67
Y8WIWB31200L1WF6	67
Y8WIWB31400L1UF6	67
Y8WIWC3200004TF3	67
Y8WIWC3210004WF3	67
Y8WIWC3220004WF3	67
Y8WIWC3230004VF3	67
Y8WIWC3240004UF3	67
Y8WIWC3270004XF3	67
Y8WIWE32000L6TF6	67
Y8WIWE32100L6WF6	67
Y8WIWE32200L6WF6	67
Y8WIWE32400L6UF6	67
Y8WJWA3100001AF3	65
Y8WJWA31000X1AF6	65
Y8WJWA3110001DF3	65
Y8WJWA31100X1DF6	65
Y8WJWA3120001LF3	65
Y8WJWA31200X1LF6	65
Y8WJWA3130001KF3	65
Y8WJWA3140001HF3	65
Y8WJWA31400X1HF6	65
Y8WJWA3170001IF3	65
Y8WJWA31700X1IF6	65
Y8WJWB31000L1AF6	65
Y8WJWB31100L1DF6	65
Y8WJWB31200L1LF6	65
Y8WJWB31400L1HF6	65
Y8WJWC3100004AF3	65
Y8WJWC3110004DF3	65
Y8WJWC3120004LF3	65
Y8WJWC3130004KF3	65
Y8WJWC3140004HF3	65
Y8WJWC3170004IF3	65
Y8WJWE31000L6AF6	65
Y8WJWE31000X6AF6	65
Y8WJWE31100L6DF6	65
Y8WJWE31100X6DF6	65
Y8WJWE31200L6LF6	65
Y8WJWE31200X6LF6	65
Y8WJWE31400L6HF6	65
Y8WJWE31400X6HF6	65
Y8WJWE31700X6IF6	65
Y8WKCA320B0011F3	57
Y8WKCA340B0014F3	57
Y8WKCB320B0P11F6	57
Y8WKCB320B0U11F6	57
Y8WKCB340B0P14F6	58
Y8WKCC320B0031F3	57
Y8WKCC340B0034F3	57
Y8WKCE320B0P31F6	57
Y8WKCE320B0U31F6	57
Y8WKCE340B0P34F6	58
Y8WKDA320B0011F3	57
Y8WKDA340B0014F3	57
Y8WKDB320B0L11F6	57
Y8WKDB320B0T11F6	57
Y8WKDB340B0L14F6	58
Y8WKDC320B0031F3	57
Y8WKDC340B0034F3	57
Y8WKDE320B0L31F6	57
Y8WKDE320B0T31F6	57
Y8WKDE340B0L34F6	58
Y8WKEC320B0031F3	57
Y8WKEC340B0034F3	57
Y8WKEE320B0L31F6	57
Y8WKEE320B0T31F6	57
Y8WKEE340B0L34F6	58
Y8WKFC320B0031F3	57
Y8WKFC340B0034F3	57
Y8WKFE320B0L31F6	57
Y8WKFE320B0T31F6	57
Y8WKFE340B0L34F6	58
Y8WKGC320B0031F3	57
Y8WKGC340B0034F3	57
Y8WKGE320B0L31F6	57
Y8WKGE340B0L34F6	58
Y8WKHC320B0031F3	57
Y8WKHC340B0034F3	57
Y8WKHE320B0L31F6	57
Y8WKHE340B0L34F6	58
Y8WM1A320B0011F3	58
Y8WM1B320B0N11F6	58
Y8WM1B320B0W11F6	59
Y8WM1C320B0031F3	58
Y8WM1E320B0N61F6	58
Y8WM1E320B0W61F6	59
Y8WM1H320B0NM1F1	58
Y8WM2A320B0011F3	58
Y8WM2B320B0N11F6	58
Y8WM2B320B0W11F6	59
Y8WM2C320B0031F3	58
Y8WM2E320B0N61F6	58
Y8WM2E320B0W61F6	59
Y8WM2H320B0NM1F1	58
Y8WM3A320B0011F3	58
Y8WM3B320B0J11F6	58
Y8WM3B320B0T11F6	59
Y8WM3C320B0031F3	58
Y8WM3E320B0J61F6	58
Y8WM3E320B0T61F6	59
Y8WM3H320B0JM1F1	58
Y8WM4B320B0L11F6	58
Y8WM4B320B0T11F6	59
Y8WM4C320B0031F3	58
Y8WM4C320B0051F3	58
Y8WM4E320B0L61F6	58
Y8WM4E320B0T61F6	59
Y8WM4H320B0LM1F1	58
Y8WM5B320B0T11F6	59
Y8WM5C320B0031F3	58
Y8WM5C320B0051F3	58
Y8WM5E320B0L61F6	58
Y8WM5E320B0T61F6	59
Y8WM5H320B0LM1F1	58
Y8WM6C320B0031F3	58
Y8WM6C320B0051F3	58
Y8WM6E320B0L61F6	58
Y8WM6E320B0T61F6	59
Y8WM6H320B0LM1F1	58
Y8WM7C320B0031F3	58
Y8WM7E320B0L61F6	58
Y8WM7H320B0LM1F1	58
Y8WM8C320B0031F3	58
Y8WM8E320B0L61F6	58
Y8WM8H320B0LM1F1	58
Y8WM9C320B0031F3	58
Y8WM9C320B0051F3	58
Y8WMAC320B0031F3	58
Y8WMAC320B0051F3	58
Y8WMBC320B0031F3	58
Y8WMYC320B0031F3	58
Y8WMYC320B0051F3	58
Y8WQ1A320B0011F3	59
Y8WQ1C320B0031F3	59
Y8WQ2A320B0011F3	59
Y8WQ2C320B0031F3	59
Y8WQ3A320B0011F3	59
Y8WQ3C320B0031F3	59
Y8WQ4A320B0011F3	59
Y8WQ4A320B0011F3	59
Y8WQ4C320B0031F3	59
Y8WQ4C320B0051F3	59
Y8WQ5C320B0031F3	59
Y8WQ5C320B0051F3	59
Y8WQ6C320B0031F3	59
Y8WQ6C320B0051F3	59
Y8WQ7C320B0031F3	59
Y8WQ8C320B0031F3	59
Y8WQ9C320B0031F3	59
Y8WQ9C320B0051F3	59
Y8WQAC320B0031F3	59
Y8WQAC320B0051F3	59
Y8WQBC320B0031F3	59
Y8WQYC320B0031F3	59
Y8WQYC320B0051F3	59
Y8WRCA320D001AF3	61
Y8WRCA320D0X1AF3	61
Y8WRCB320D0L1AF6	61
Y8WRCC320D004AF3	61
Y8WRCC320D0X4AF3	61
Y8WRCE320D0L6AF6	61
Y8WRDA320D001AF3	61
Y8WRDA320D0X1AF3	61
Y8WRDB320D0L1AF6	61
Y8WRDC320D004AF3	61
Y8WRDC320D0X4AF3	61
Y8WRDE320D0L6AF6	61
Y8WREC320D004AF3	61
Y8WREC320D0X4AF3	61
Y8WREE320D0L6AF6	61
Y8WRFC320D004AF3	61
Y8WRFC320D0X4AF3	61
Y8WRFE320D0L6AF6	61
Y8WRGC320D004AF3	61
Y8WRGC320D0X4AF3	61
Y8WRGE320D0L6AF6	61
Y8WRHC320D004AF3	61
Y8WRHC320D0X4AF3	61
Y8WRHE320D0L6AF6	61

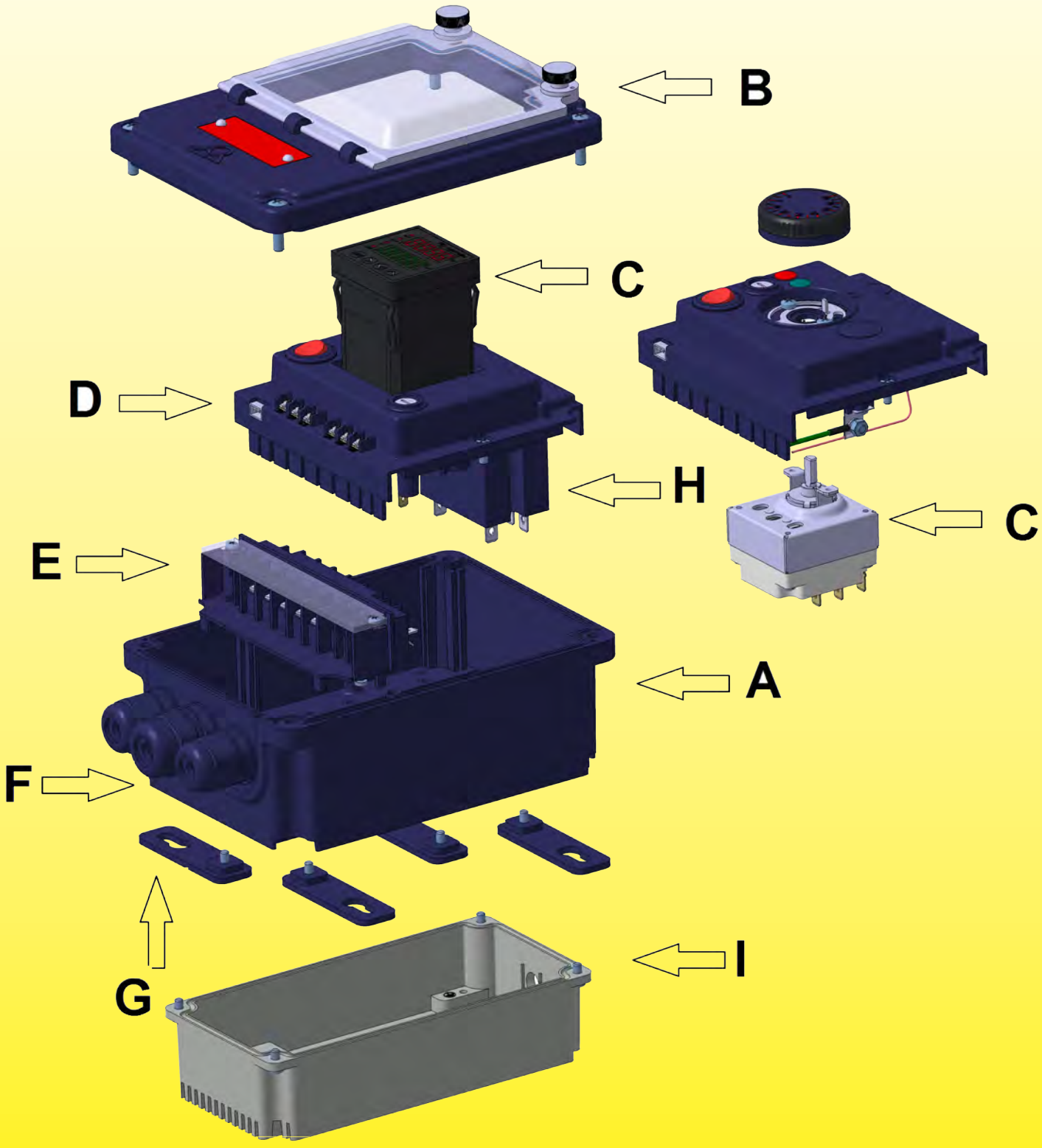
JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

The Y range overview

Catalogue Y012345	Y0		Temperature control of ambient, surface, air, liquids, pipes, by means of bulb and capillary, ambiance or rod probes. Ingress protection by simple plastic housing 77 x 54 x 42mm, IP30
	Y1		Temperature control of ambient, surface, air, liquids, pipes, by means of bulb and capillary, ambiance or rod probes. Ingress protection by aluminum housing 104 x 70 x 77 mm, IP65
	Y2		Temperature control of ambient, surface, air, liquids, pipes, by means of bulb and capillary, ambiance or rod probes. Ingress protection by 100 x 50 x 55 mm, plastic housing, IP54
	Y3		Temperature control of immersion heaters. Ingress protection IP30 to IP65, designed to fit heating elements
	Y4		Waterproof aluminum and plastic housings for SSR, GFCI, relays, connection blocks , for electro-thermal applications
	Y5		Hand hold and wall mounting electromechanical and electronic temperature controls, for ambient, surface, pipes, liquids and air, sensing by incorporated sensor, bulb and capillary, or electronic sensor Ingress protection by plastic housing, 120 x 70 x 40 mm, IP54
Catalogue Y678	Y6		Electromechanical or electronic temperature control, rear rod temperature sensing probe. Ingress protection by aluminum housing, 180 x 130 x 135 mm, IP65
	Y7		Electromechanical or electronic temperature control, designed for immersion heaters rear mounting up to 2" or M77. Ingress protection by aluminum housing, 180 x 130 x 135 mm, IP65
	Y8		Electromechanical or electronic temperature control, for wall, pipes, heat tracing, liquids, air, temperature sensing by incorporated ambient sensor, bulb and capillary or remote electronic sensor. Ingress protection by a housing, PA66, 180 x 130 x 95 mm, IP65
Catalogue Y9	Y9		Full range of Explosion proof thermostats and high limit thermostats and accessories, for incorporation or with aluminum or plastic enclosures. Ambient, distance, heat tracing, immersion heaters applications.

Y0, Y1, Y2, Y3, Y5, Y7, Y9 series and Y8 series with manual reset, as well as room and EXDIIBT6 versions will be added in the next edition of the catalogue

A unique and simple modular design



JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

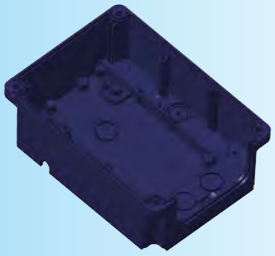
A technical concept that makes the difference

A
2 Housing bases

Y6-Y7

Powder painted aluminum housing base designed for rear mounting applications. Can receive threads from 3/8" up to M77 or 2" for thermostat rods or for immersion heaters. Allows to cover the whole range of these applications

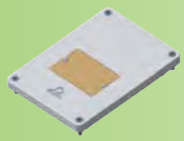
Y8



Fiberglass reinforced black PA66 housing base, designed for wall mounting or stand mounting, with outlets for capillaries or probes, used for general applications, ambiance or distance measurement, with electronic controls or thermostats, can receive many rear mounting accessories, including heat tracing legs. Can also be used as basis for small immersion heaters or surface temperature controls. It has also applications as a junction box base.

B
4 Covers

Black flat in polycarbonate: for connection and junction boxes. The best resistance to UV.

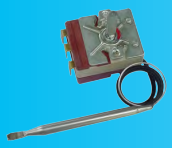


Black flat in powder painted aluminum: for connection and junction boxes. The best mechanical resistance

Transparent flat in polycarbonate: for SSR boxes, for fixed setting thermostat control boxes with internal pilot lights

Opaque with transparent window: for applications requiring frequent access or setting, without any electrical hazard: the terminal block is inaccessible

C
15 Embeddable and compatible temperature control and safety devices
(See catalogue Y9 for explosion proof versions)



Single pole bulb and capillary thermostat, temperature ranges up to 320°C

3 pole bulb and capillary thermostat, temperature ranges up to 320°C

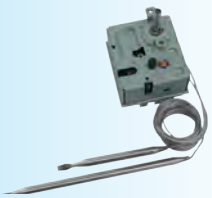
Single pole heavy duty bulb and capillary thermostat, temperature ranges up to 750°C

Single pole heavy duty bulb and capillary manual reset high limit thermostat, temperature ranges up to 750°C

Single pole manual reset high limit manual reset thermostat, fail safe, fixed setting, temperature range up to 320°C

Double pole manual reset high limit manual reset thermostat, fail safe, fixed setting, temperature range up to 170°C

3 pole manual reset high limit manual reset thermostat, fail safe, fixed setting, temperature range up to 170°C



3 pole combination control, with manual reset, temperature ranges up to 320°C

Blind electronic thermostat, temperature ranges up to 300°C. Alos available with manual reset

77 x 35 mm single display electronic controller, ON-OFF

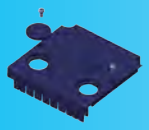
48 x 25 mm single display electronic controller, ON-OFF and PID auto-tune, multi sensors, relay and SSR outputs

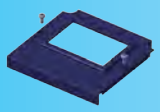
48 x 48 mm double display electronic controller, ON-OFF and PID auto-tune, multi sensors, relay and SSR outputs

A technical concept that makes the difference

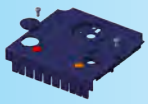
D
14 Mounting boards for thermostats and electronic controllers, without or with high limit cut out

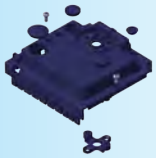

Flat mounting board, Aluminum sheet for customer adaptation

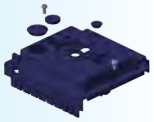

Flat mounting board, PA66, two holes diameter 22mm for lights

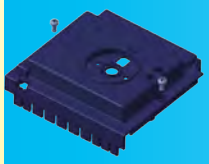

Flat mounting board, PA66, for 4 modules circuit breaker and DIN rail temperature control


Extended mounting board, PA66, with fuse holder hole, for customer adaptation


Flat mounting board, PA66, for single pole bulb and capillary thermostat, with two 230V lights


Extended mounting board, PA66, for single pole K series bulb and capillary thermostat, with two 230V lights


Extended mounting board, PA66, for single or three pole bulb and capillary thermostat, with two 230V lights

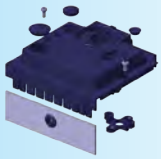

Extended mounting board, for combined three pole bulb and capillary thermostats with manual reset

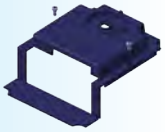

Extended mounting board, PA66, with 45 x 22 mm rectangular hole for 1/32 Din controller


Extended mounting board, PA66, with 71 x 29 mm rectangular hole for 78 x 35 mm controller

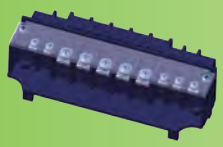

Extended mounting board, PA66, with 45 x 45 mm square hole for 1/16 Din controller


Extended mounting board, PA66, with 45 x 45 mm square hole for 1/16 Din controller with thick front panel


Extended mounting board, PA66, for KW type thermostats with 5A explosion proof switch


Extended mounting board, PA66, for explosion proof thermostats with built in “e” connection box

E
3 Integrated terminal blocks


Main terminal block 5 x 6mm²+5 x 2.5mm², (or 10 x 10 mm²)


Auxiliary terminal block 6 x 1.5 mm², for connection of temperature sensors (on electronic front panels)


Terminal block with miniature plug, for infrared remote control or enclosure heater connection

F
7 Cable gland mounting plates

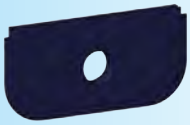

One 1"BSPP tapped hole for tracing stand or gland


Two M25x1.5 tapped holes for large gauge cables


Two M20x1.5 tapped holes and one M24x1.5


One M20x1.5 tapped hole and three cable gland bodies for flat cables


Two M25x1.5 tapped holes and one M16x1.5


One M16 tapped hole for ATEX EXDIIBT6 versions


Blank board

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

A technical concept that makes the difference

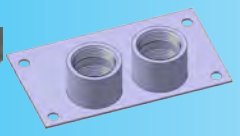
G
M 20 x 1.5 tapped outlet locations and main uses

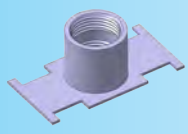
This thread has been standardized on most accessories allowing these boxes a very large range of applications, simplifying assembly and connections to the accessories and other enclosures.
We have developed a very large range of silicone gaskets for this M20 x1.5 thread, for round and flat cables, and multiple wires.

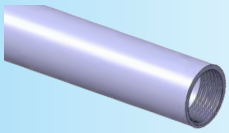
6 Locations


at the rear of plastic housings


at the rear of aluminum housings for solid state relays

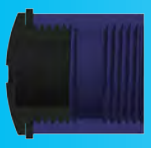

on passing through insulations and mounting stands

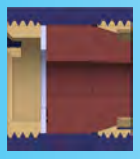

on surface mounting plates for sensors


on miniature tubular junction boxes


On mounting board for heat tracing cables

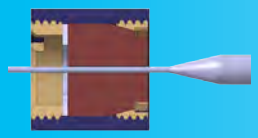
16 usages

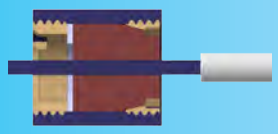

sealed with PGM20 plug


with two M20 nuts and accessories for round cable


with two M20 nuts and accessories for flat cable


with two M20 nuts and accessories for two or three conductors

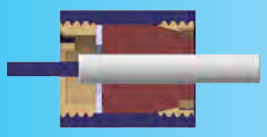

with two M20 nuts and accessories for thermostat capillary outlet


with two M20 nuts and accessories for temperature sensor cable entry

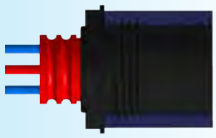

with usual M20 cable gland


with accessories for round or flat cable, 2/3 conductors and flexible sheath (straight outlet)

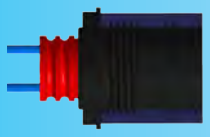

with accessories for round or flat cable, 2/3 conductors and flexible sheath (90°outlet)

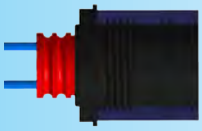

with two M20 nuts and accessories for dia 5 or 6mm sensor (ambient temperature or slightly distant surface temperature measure)

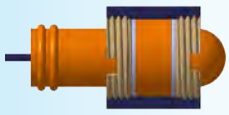

with Pt100 sensor or M20 NTC, external ambient temperature measure


with Pt100 sensor or M20 NTC, surface temperature measure (heating blankets or other heating surfaces)


with M20 temperature sensor, temperature measure


with external M20 disc thermostat, temperature measure (antifreeze)

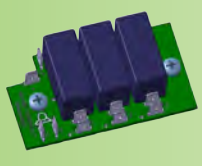

with M20 disc thermostat, surface temperature safety (heating blankets or other heating surfaces)

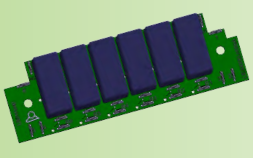

with external light

H
6 power relay devices


2 x 25A relay


1 x 30A relay


3 x 16A relay board

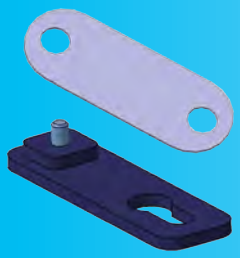

6 x 16A relay board


Power contactor (Compatibility limited to some Y6 and Y7 versions))

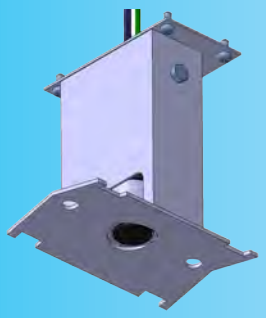

10A SSR

A technical concept that makes the difference

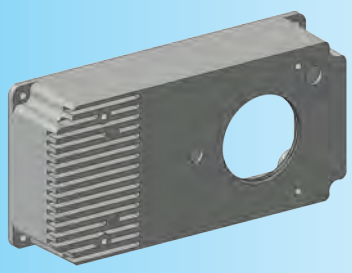
I
Tens of rear mounting accessories



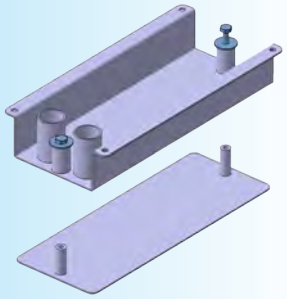
Wall mounting and coupling legs



Heat tracing mounting legs



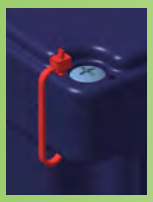
Rear mounting aluminum base for small immersion heaters or finned heaters



Flexible heating element brackets

And more:
7 details of the box that make also the difference

304 stainless steel screws. Lid and window screws are captive. The lid closing nuts are captive.

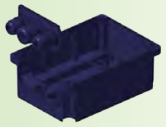


8 sealing holes, various and independent for lid and window. The access can be limited to the adjustment only or to the adjustment and connections.

8 sealing holes, various and independent for lid and window 90° step adjustable mounting brackets with oblong holes. The bracket mounting holes may also be used for an invisible mounting at the rear (Y8 series only)

Stamped, unalterable, non-removable identification plate, stainless steel 304. Customization on request

Silicone foam gaskets: the best resistance to temperature, stretching and compression.



Removable cable gland mounting plate, granting a wide access to the terminal block.

Silicone caps on the protection sheath ends of capillaries and sensor cables

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

A technical concept that makes the difference

A technical choice: Raw materials

The classic housings, with only 5 sides and a lid, require a long and costly layout, most of the time ignoring the application needs: security, fire resistance, water penetration, shocks, UV, temperature, etc.
With rare exceptions these universal boxes are made of cheap materials, with low wall thicknesses and they are mostly designed according to the sale price rather than to the customer's technical application.
Our Y6, Y7 and Y8 boxes have resolutely turned their backs on this concept: they provide the maximum possibilities, the minimum installation time, and unmatched specifications.

A technical choice: an exceptional environmental and electrical resistance of the housing

Ingress resistance: > IP65 (IEC 60529). Withstands immersion for 24 hours under 150 mm of water, which corresponds to an IP67class. The IP65 limitation is solely due to cable glands and their correct tightening by the users.
Impact resistance: IK10 (IEC, EN50102). Highest class of the standard.
Vibration resistance: equipped with Ultimheat terminals and a temperature control, the enclosures withstand a 48 hours repetitive vibratory sequence with 10 minutes sinusoidal vibration variable sequence cycles covering the range from 1.7 Hz to 5 Hz with variable accelerations of 0.3 to 2.6 G without any damage or loosening.
Salt spray resistance: EN 60832-2-11 test Ka (4 weeks with a 5% salt content).
Resistance to chlorine corrosion: ASTM G48, tests A: 96 h accelerated corrosion at 70°C, in 5.25% solution of sodium hypochlorite. Test B: 1000 hours at 60°C in a 200 mg/l diluted sodium hypochlorite solution.
UV resistance: (ISO4892-1), wavelength 315 ~ 400nm, black body temperature 55°C, 1000 hours: no noticeable fading on the housings and a slight yellowing on the polycarbonate lids, loss of notched impact resistance below 15% . Meets UL 746C for UV resistance, exposure to rain and immersion.
Fire resistance: the case body is UL94VO and / or UL94 5VA according to thickness.
Temperature: Temperature of deflection under load (RTI) is above 125°C.
Rohs: the materials used in the boxes comply with the European Directive 20220/95/CE.
Reach: the materials used in the boxes comply with the REACH European Directive.
- **Window and cover seals:** silicone foam, high temperature resistance, flexibility, elasticity, no degradation over time.
- **Threaded Inserts:** the locking of lids and windows uses metal inserts, not plastic threads. Allowing multiple openings without damaging the threads.

A technical choice: the boxes raw material materials

Unlike most manufacturers of cabinets and enclosures, the material used was not chosen because of its price or ease of molding, but to meet the technical requirements of its use in electro-thermal applications

Comparison chart of common materials used by the plastic housing molders.

Material	Temperature of deformation under load (ISO 75, method A)	Resistance to impact on a 3mm thick plate @ 25°C (EN50102)	Resistance loss after UV test 1000h (ISO4892-1)*	Fire resistance (UL94)	Mechanical breakage resistance ISO 527 / ASTMD638	GWFI Glow-wire test (IEC 60695-2-12)	Other features	Use in Y housings
ABS (UV résistant)	92°C	9,4 (IK08)	Bad: A 80% loss of mechanical strength after 1000H	UL94-HB	50 Mpa	650°C	The cheapest one, good surface finish	Used on the entry-level housings (Y0) without any particular constraint
PS (High impact, UV resistant, flame retardant)	75°C	9.8 (IK08)	Medium: A 25% loss of mechanical strength after 1000H	UL94-HB to UL94-HB	23 to 32 Mpa	750 to 960°C	Good surface finish, cheap	The lowest mechanical resistance and the lowest temperature resistance. Not used for the Y range
PC (Transparent)	135°C	21,2 (IK10)	Medium: A 11% loss of mechanical strength after 1000H	UL94-5V	70 Mpa	850	Bad resistance to oils. Do not withstand self-tapping screws	Transparent lids, offering a good impact resistance covering its whole temperature range and the best light transmission (85 to 90%)
PC-ABS	80°C	11,6 (IK09)	Good: A 18% loss of mechanical strength after 1000H	UL94-VO	60 MPA	960	The best surface finish	Good mechanical resistance, good finish, used for the domestic room thermostatsY1 series
PC-ABS+20%FG	120°C	9,1 (IK08)	Good: A 15% loss of mechanical strength after 1000H	UL94-VO	77 MPA	960	Few molding deformation	The best surface finish, with a very good mechanical resistance: Room thermostat housing for domestic use
PA66	100°C	2.9 (IK06)	Medium: A 22% loss of mechanical strength after 1000H	U94-VO	80-85 Mpa	650 to 750	Insufficient mechanical resistance and distortions after molding	Not used for the Y series, except for some knobs
PA66, 20% FG box and terminal block housings	250°C (continuous use at 120°C)	IK10 (maximum class)	Excellent: A 7% loss of mechanical strength after 1000H	UL94 –VO and UL94-5V (the most serious range)	150 Mpa	850	The second most expensive material in this chart	The best compromise, impact resistance, temperature resistance and flame class. Used on housings of Y7, 8, 9 boxes and terminal blocks

Note on IK Classes: to be IK rated, a material must withstand a shock greater than or equal to the following values: 1 joule = IK06, IK07 = 2 Joules, IK08 = 5 Joules, 10 Joules = IK09, IK10 = 20 Joules. Therefore, an IK10 box is on average 2 times stronger than IK09, 4 times more than IK08, 10 times more than IK07 and 20 times more than IK06.
* UV resistance is improved by the addition of black pigment (carbon black), and it is the main reason for the black coloration of the Y-line boxes intended for outdoor use.

A technical choice: the gasket raw materials

The material was not chosen in regards of its price or ease of molding like gaskets made of PU foam injected through the process "Formed in place foam gasket or FIPFG ", or even of the possibility of die-cutting, but to meet the technical requirements of electrical heating applications: heat resistance, fire resistance, mechanical resistance to successive openings and closings, UV resistance.

Comparison chart of the common materials used for housing gaskets (Compared with equivalent density of 2.4 g/cm3 and equivalent hardness of 12 to 18 Shore A)

Material	Minimum using temperature (weakening) (ASTM D 746)	Maximum permanent using temperature (SAE J-2236)	Residual distortion after compression (ASTM D1056)	Breakage mechanical resistance	Fire resistance (UL94)	UV resistance (SAE J1960= Automotive Industry) UL508 : boxes	Required force for a 25% compression (ASTM D1056)
Polyurethan foam	-20°C	+90°C	< 5%	455KPa (ASTM D3574, test E)	HBF (the lowest class)	Medium deterioration	76 kPa
Silicone foam	-55°C	+200°C	< 5%	246Kpa (ASTM) D412)	V0 and HF1 (the highest class)	No deterioration	27 kPa: the smallest constraint to close a lid or a window

Average values for general comparison only as characteristics may vary from a supplier to another.

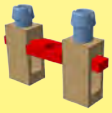
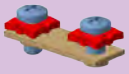
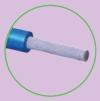
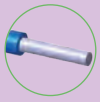
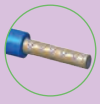
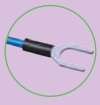
A technical choice: the main connection block

Main terminal block features (6mm²+2.5mm² version)
The plastic material of this terminal block is different from that of the box base and has been selected to meet its use specific constraints.
The most important constraint submitted to a terminal block is an overheating due to a lead bad tightening. The class of plastic having a GWFI (glow wire flammability index) above 850 ° C provides the highest resistance to overheating. This class is mandatory for applications involving unsupervised applications, as specified in the EN60335-1 § 30-2-3-1Standard. The material used for connectors has a GWFI of 960 °, which is much higher.
The other constraints of the application are:
Resistance to current tracking: CTI> 600 (Class 1, the highest).
Clearances and creepage distances: > 9 mm. 30% and 40% higher than the 6.3 and 5 mm @ 500V values requested under the highest pollution 3 environmental conditions. Distances measured in the worst case, with the largest possible cable gauge.
Protection against accidental electrical contacts : a screwed protection plate, exceeding the related specifications of the Standard 60-335-1

A technical choice: main connection block screws

Use of screws with captive notched square washers, allows to connect two slightly different size conductors on each terminal without compromising the clamping quality. This solution provides a universal wiring capability, independent of the wire end termination: bare conductors, tinned conductors, spade or eyelet terminals and conductors with cable shoes can be used.
As the conductor end is not hidden by the connection block, the user can clearly see if the wire is correctly inserted in the terminal, which is a common problem of the cage type terminal blocks in which the wire is often wrongly inserted under the cage and not tightened.

Comparative table of connection types accepted by the different terminal styles

Terminal type	Column header			
	Direct screw	Screw with plate	Cage terminal	Screw with notched square washer
				
Bare wire (solid or finely stranded)				
Bare tinned wire				
Cable shoe				
Spade terminal				
Eyelet terminal				

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Technical information related to the temperature control in electro-thermal applications

Technical information N°1 : Terminology and vocabulary

Standards EN60730 and EN 60335 define, sometimes with differences, the vocabulary to use. However, it is often different from what is used in practice.

Usual vocabulary:
Set point: The value set on the temperature control device, corresponding to the temperature to reach
Differential: the temperature difference between the opening and closing of the contact
Snap action: contacts open and close instantly
Manual reset: action to turn on by manual intervention, to heating position contacts opened by a temperature rise that does not automatically return to closed position when the temperature drops
Automatic reset: Contact that automatically closes when the temperature drops
Sensing control: automatic control in which initiation is done by an element sensitive to the activating temperature

Definitions of the different thermostatic systems according to EN60335-1
§3.7.1 Thermostat: temperature sensing system of which the operating temperature may be fixed or adjustable and which, during normal operation, maintains the temperature of the controlled part within certain limits by automatic opening and closing of a circuit
§3.7.2 temperature limiter: temperature-sensing device, the operating temperature of which may be either fixed or adjustable and which during normal operation operates by opening or closing a circuit when the temperature of the controlled part reaches a predetermined value
NOTE A temperature limiter does not make the reverse operation during the normal duty cycle of the appliance. It may or may not require manual resetting.
temperature limiter: temperature sensing control which is intended to keep a temperature below or above one particular value during normal operating conditions and which may have provision for setting by the user
A temperature limiter may be of the automatic or of the manual reset type. It does not make the reverse operation during the normal duty cycle of the appliance.
§3.7.3 Thermal cut-out : device which during abnormal operation limits the temperature of the controlled part by automatically opening the circuit,... and is constructed so that its setting cannot be altered by the user.
thermal cut-out: temperature sensing control intended to keep a temperature below or above one particular value during abnormal operating conditions and which has no provision for setting by the user
A thermal cut-out may be of the automatic, manual reset or non-resettable type.
§3.7.4 self-resetting thermal cut-out: thermal cut-out that automatically restores the current after the relevant part of the appliance has cooled down sufficiently
§3.7.5 non-self-resetting thermal cut-out: thermal cut-out that requires a manual operation for resetting, or replacement of a part, in order to restore the current
NOTE Manual operation includes disconnection of the appliance from the supply mains.
§3.7.6 Protective device: device, the operation of which prevents a hazardous situation under abnormal operation conditions
§3.7.7 Thermal link: thermal cut-out which operates only once and requires partial or complete replacement

Fail safe temperature limiter: the fail safe in a thermostat is defined by the EN60730-2-9 Standard § 6.4.3.101, as a temperature control device wherein a leakage of the filling fluid does not increase the temperature set point. More generally a system is said to be failsafe, when a loss of fluid (including electricity) leads the equipment to a stable safety state. The safety state must be maintained over time.

Thermostats recommended applications:
IEC (EN) 60730-1 Standards « Automatic electrical controls
for household and similar use» and especially IEC (EN)
60730-2-9-(2008) : « Particular requirements for temperature sensing controls» are the standards that define the functional characteristics of thermostats. Appendix EE of the latest version of the standard describes all recommended applications for these devices.

Technical information N°2 : Important extracts of standards related to control or safety circuits

Electrical cut out: (IEC 60335-1)
§3.8.1 All-pole cut out: Cutting in two conductors in a single operation, or for three phase units, the cut of the three conductors in a single step ... Note: for three-phase, the neutral lead is not considered as a power conductor.
§22.2: Phase cut out: single pole protection systems cutting heating elements in single pole circuits of Class 01 devices and continuously connected Class 01 devices, must be connected to the phase conductor.
Electrical conductors colors: (IEC 60446)
§3.1 ... For the identification of leads the following colors are allowed: black, brown, red, orange, yellow, green, blue, purple, gray, white, pink, turquoise.
§3.2.2 Neutral conductor or center conductor : when a circuit includes a neutral conductor or neutral conductor identified by color, the color used for this purpose should be blue ...
Note 2 – In the United States of America, Canada and Japan, identifying with white or natural gray colors for the neutral conductor or center conductor is used as a replacement for the identification by the light blue color.
§3.2.3 AC phase conductors: black and brown colors are the favorite colors for the phase conductors of AC systems.
§3.3.2 Conductor protection: The two-tone green-and-yellow combination must be used for identification of the protective conductor to the exclusion of any other use. The green-and-yellow is the only recognized color scheme for the identification of the protective conductor
Note 2 – In the United States of America, Canada and Japan, identifying with green color for the protection conductor is used as a replacement for the identification by the two-tone green-and-yellow combination.

Fail safe, functional safety, safety levels:
It is required by the European Directive 97/23 dealing with heat generators, pressure equipment and boilers as follows : «the procedures for conformity assessment and the essential safety requirements of the Directive apply to the complete safety chain. The requirements for the sensor itself can be different according to the safety design principles, for instance: redundancy or fail-safe ». Many "product" standards of the IEC (EN) 60335-xxx series require this type of safety.
Definitions related to the functional safety: this concept was introduced by the CEI 61508:1998 Standard. « Functional Safety for electrical /electronic and programmable electronic (E/E/PES) systems.» This standard defines the requirements and provisions for the design of electronic and programmable complex systems and subsystems. This is a general standard that can be used in all industrial sectors. The categories of protection of industrial heating equipment have been classified into three levels by the old EN 954-1 Standard.
Level 1 includes mainly the process control instrumentation: temperature sensors, thermostats, controllers, programmers. This level provides a control either permanently or in a sequence by programmed commands initiated by the operator (for example: control disc, bimetal, bulb and capillary thermostats, electronic temperature controls).
Level 2 consists essentially of an instrumentation composition close to that of level one, but functionally completely independent of this level.
This level 2 protects the process by a discontinuous unsystematic function, that is to say not initialized by the operator, from threshold violation information on critical parameters of the process.
(For example, disc thermostat + disk limiter, bulb and capillary temperature limiters + bulb and capillary thermostat, double electronic controllers)
Level 3 is the ultimate protection of the process. It does not include identical instrumentation to those of Level 1 and 2, but devices working without auxiliary energy (for example: fixed temperature limiters with manual or automatic reset on circuits controlled by electronic controllers, thermal fuses for systems controlled by disc or bulb and capillary thermostats, or by electronic controllers).

The design of Y6, Y7 and Y8 enclosure series allows the making of products that comply with Level 1, Level 1+2 and Level 1 +2 +3, and optionally including failsafe systems.

Technical information N°3 : cable glands selection

To fulfill its function, especially tear strength and ingress protection, cable gland must be adapted to the diameter of the cable.
This diameter is a function of several parameters: the number of conductors, electrical power, voltage insulation, cable length and type of mechanical protection depending its application
The selection must be done in 3 steps

Step 1: selection of cable Gauge, upon power and maximum length of cables, single phase and three phase.

Gauge, mm²	Single phase 230V, power factor =1			3 phase, power factor = 0.8		
	Power (kw)	Electrical rating, (A)	Maximum cable length, with voltage drop less than 3% (m)	Power (kw)	Electrical rating, (A)	Maximum cable length, with voltage drop less than 5% (m)
1.5	1	4.6	50			
	1.5	6.8	33			
	2	9	25			
	2.5	11.5	20	2.5	5	190
	3	13.5	17	3	6	160
	3.5	16	14	3.5	7	135
				4	8	120
				4.5	9	105
				5	10	96
				6	12	79
				7	14	68
				8	16	60
				9	18	51
2.5	1	4.6	84			
	1.5	6.8	57			
	2	9	43			
	2.5	11.5	34	2.5	5	325
	3	13.5	29	3	6	270
	3.5	16	24	3.5	7	230
	4	18	21	4	8	200
	4.5	20	19	4.5	9	180
				5	10	165
				6	12	135
				7	14	115
				8	16	105
				9	18	92
				10	19	84
				12	23	69
4	1	4.6	135			
	1.5	6.8	90			
	2	9	88			
	2.5	11.5	54	2.5	5	510
	3	13.5	45	3	6	420
	3.5	16	39	3.5	7	365
	4	18	34	4	8	320
	4.5	20	30	4.5	9	285
	5	23	27	5	10	255
	6	27	23	6	12	210
				7	14	180
				8	16	160
				9	18	145
				10	19	130
				12	23	110
				14	27	94
				16	31	81

Step 2, depending of application, select insulation and mechanical protection, and find cable outside diameter (Most usual flexible cables)

Gauge, mm²	H05-VVF 500V, PVC insulation	Cable gland size	H05-RRF 500V, rubber insulation	Cable gland size	H07-RNF, 450/750 V. Can be used in fixed installations with nominal voltages up to 1000V: see NF G 15-100, 512.1.1. Excellent resistance to weathering, oils and fats, resistance to mechanical and thermal stresses, outdoor use, hazardous areas, agricultural areas, connecting mobile devices	Cable gland size
3 x 1	6.8	M16	8.5	M16	11.5	M20, M24
3 x 1.5	7.2	M16	10.4	M20	12.5	M20, M24
3 x 2.5	8	M16, M20	12.4	M20, M24	14.5	M24, M25
3 x 4	10	M16, M20	14.5	M24, M25	16	M24, M25
5 x 1	9.8	M16, M20	10.3	M20	13.5	M24, M25
5 x 1.5	11.6	M20, M24	12.7	M20, M24	15	M24, M25
5 x 2.5	13.9	M24, M25	15.3	M24, M25	17	M25
5 x 4	16	M24-M25				

Step 3: select cable gland size upon its internal diameter ranges (standard models used in this catalogue)

Models	M16	M20	M24	M25
Min and max dia.	6-10	8-13	11-16	13-18

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Technical information N°4 : The different normalized thermostat electrical life classes

In the specifications for an electromechanical thermostat, the expected life is described in terms of mechanical and electrical lifetimes.

Electrical life :

This is specified as a minimum number of cycles (action of opening and closing) will make, carry, and break the specified load without contact sticking or welding, and without exceeding the electrical specifications of the device.

Mechanical life :

This is the number of operations which a thermostat can be expected to perform while maintaining mechanical integrity. Mechanical life is normally tested with no load or voltage applied to the power contacts, and is not part of this document.

Switch performance is influenced by a variety of factors, including: frequency of operation, type of load, temperature, humidity, altitude. Electrical ratings have been tentatively standardized in UL 1054, CSA22.55 or IEC61058-1 (Switches for appliances). IEC60730-x standards have specified testing methods and preferred electrical life classes for electrical control and safety switches. These life classes are (cycles):

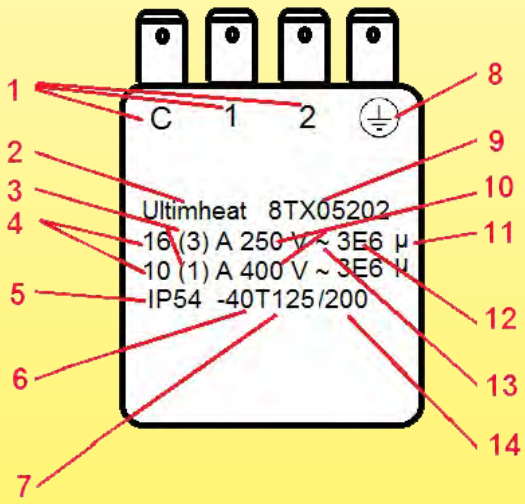
300 000, 200 000, 100 000, 30 000, 20 000, 10 000, 6 000, 3 000 (1), 1000(1), 300 (2), 30(2)(4), 1(3) .

1) Not applicable to thermostats or to other fast cycling actions.
2) Applicable only to manual reset.
3) Applicable only to actions which require the replacement of a part after each operation.
4) Can only be reset during manufacturer servicing.

The rating tables should be considered as working maximum for most applications. Hereunder are given some limitations that apply when they are used in other loads and voltages.

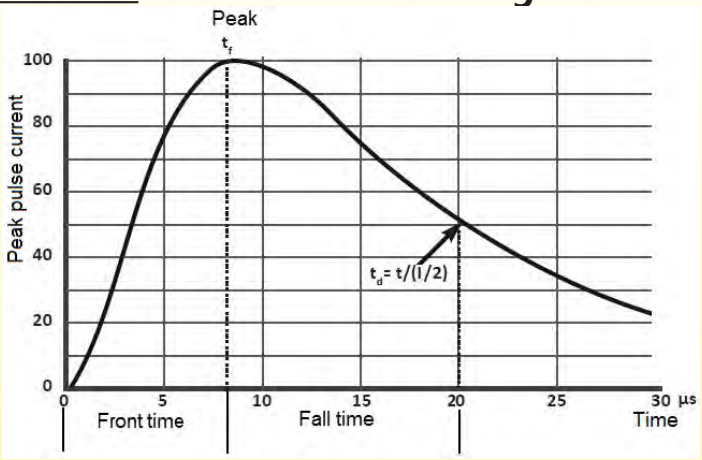
The current rating of thermostat switches is given in their technical data sheets for a resistive load in 250 or (and) 400V AC and a specified number of operations. When there is enough room, these values are printed on the product. In most cases, only the minimum mandatory information is printed. The cycle number is exceptionally printed, but this is one of the most critical parameter to estimate the expected life of the thermostat.

Technical information N°5 : Explanation of printed values made on a thermostat upon IEC60-730-1 § 7-2



1: Identification of terminals that are suitable for the connection of external conductors, and if they are suitable for line or neutral conductors, or both.
L= must be used for line in The United Kingdom, other countries no restriction. N must be used if the terminals must be used for neutral (All countries).
2: Manufacturer's name or trade mark.
3: Inductive load rating with power factor = 0.6 (When inductive load value is not printed, these contacts may be used for an inductive load, provided that the power factor is not less than 0,8, and the inductive load does not exceed 60 % of the current rating provided for the resistive load.)
4: Resistive load rating with power factor = 0.95+/-0.05
5: Degree of protection provided by enclosure, does not apply to controls or parts thereof classified as IP00, IP10, IP20, IP30 and IP40.
6: High temperature limits of the switch head (Tmax), if other than 55 °C.
7: Low temperature limits of the switch head, if lower than 0 °C.
8: Ground terminal identification (if existing).
9: Unique type reference.
10:Rated voltage or rated voltage range in volts (V) (Frequency printing is mandatory if other than for range 50 Hz to 60 Hz inclusive).
11: Micro-disconnection (reduced contact gap) Printing is not mandatory.
12: Number of cycles of actuation for each manual action (For manual reset thermostat).
Number of automatic cycles for each automatic action (for control thermostat). Printing is not mandatory.
13: For use on alternative circuit, 50 to 60Hz inclusive.
14: Temperature limits of mounting surfaces (Ts) if more than 20 K above Tmax.

Technical information N°6 : Electrical contact rating reduction on inductive loads



Impulse voltage :
The quantity of electrical current which flows through the contact directly influences the contact's life. Impulse voltage is the critical value which the switch must withstand when the voltage surges momentarily due to switching an inductive load. They generate a current surge wave, which form has generally a pulse width of 20 to 50 µs. Surge pulse rating is specified by its intensity and its width. Pulse width is time measured from pulse start to decrease to 50% of its maximum current value.
Figure shows a 8/20µs rated curve.

Switching voltage: AC and DC
When a switch breaks an inductive load, a fairly high counter electromotive force (counter emf) is generated in the switch's contact circuit. The higher the counter emf, the greater the damage to the contacts. This effect has a huge importance when switches are used in DC circuits, and will result in a significant decrease in the switching power. This is because the switch does not have a zero cross point. Once arc has been generated, it does not easily diminish, prolonging the arc time. Moreover, the unidirectional flow of the current in a DC circuit may cause metal deposition to occur between contacts and the contacts to wear rapidly.

Motors loads impulse voltage :
During start-up, a motor can pull 600% or more of its running current. Thus, a 3 amp motor may actually pull 18 amps or more during start-up. Additionally, when disconnected, a motor acts as a voltage generator as it slows to a stop. Depending on the motor, it can feed back into the circuit voltage well in excess of rated line voltage. These voltages appearing across the separating contacts can cause a destructive arc to exist between the contacts, which can lead to early failure of the contact.

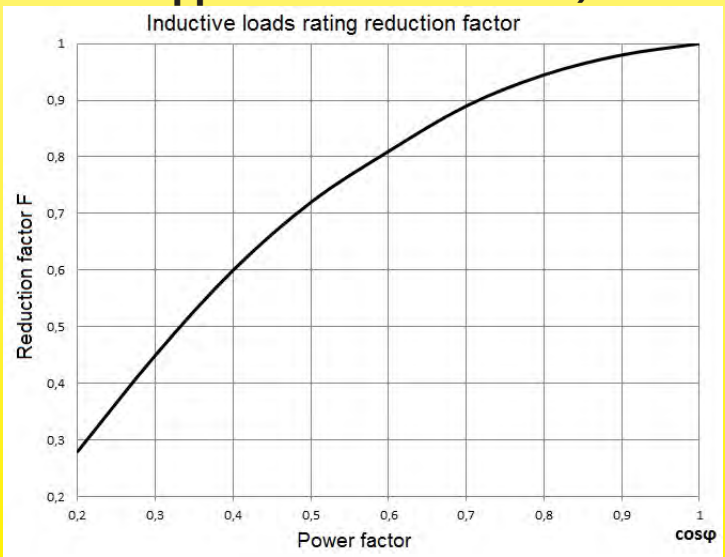
Lamp loads impulse voltage :
A tungsten filament lamp, when filament is cold, has an initial inrush current of 10 to 15 times the nominal current.

Transformers inductive loads :
When power is removed from a transformer, its core may contain remanent magnetism. If power is reapplied when voltage is of the same polarity as that of the remanent magnetism, the core may go into saturation during the first half-cycle of reapplied power. As a result, inductance will be minimal and an inrush current of perhaps 1,000% may exist for a few cycles until the core comes out of saturation. Also, as with motor loads, when power is removed from a transformer, the transformer will develop a counter voltage which can cause a destructive arc to exist between separating contacts.

Distributed line capacitance loads :
This occurs when a switch is located at a considerable distance from the load to be switched. The instant the contacts close, distributed line capacitance charges before load current flows. This capacitance can appear as an initial short circuit to the contacts, and can pull a current well in excess of load current.

Arc suppression :
In these high inductive loads application it is desirable to suppress the arc. Techniques for arc suppression are described on our specific technical data sheets).

Technical information N°7 : Average inductive loads correction factor (if no arc suppression device is used)

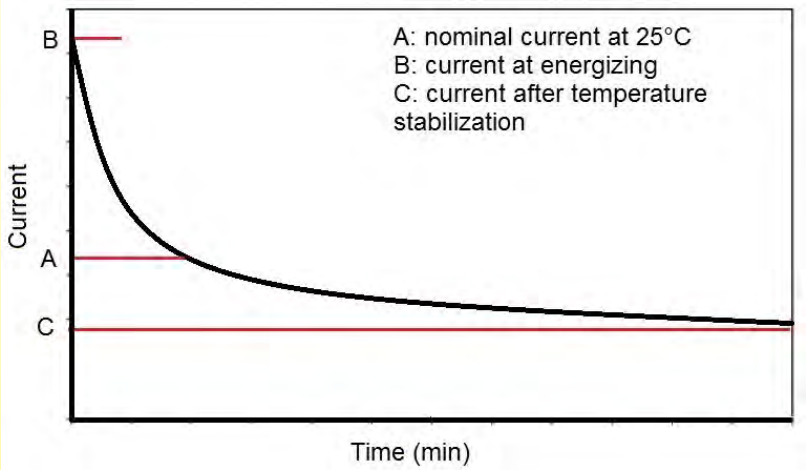


JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Technical information N°8 : Self-regulating cables inrush current surge

This is a completely different effect than short transient currents due to the contact switching interaction with the load.
This current surge is due to the PTC design of self-regulating cable and takes several minutes to dissipate.
Often the heating cable will be at a relatively low temperature (and hence low resistance) when initially energized. The low resistance will thus draw a high start-up current, inversely proportional to the ambient temperature. It can reach 2 times the nominal value given at 25°C by the manufacturer
Refer to records of cable manufacturers to check the inrush current value.

Self-regulating heating cable inrush current trend

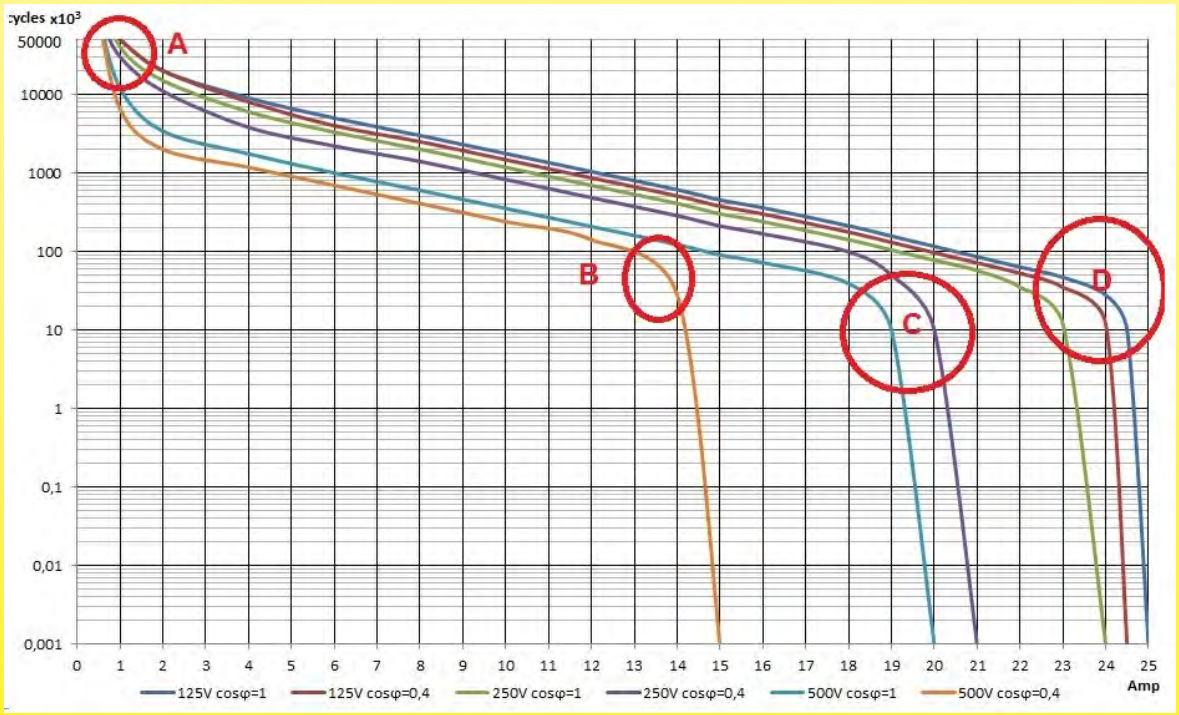


Technical information N°9 : Indicative average current rating reduction coefficients

Resistive load	Filament lamp**	Electromagnetic coil	Transformer	Single phase motor	Three phase motor	Self-regulating heating cables*
1	0.8	0.5	0.5	0.12/0.24	0.18/0.33	0.6

* Average value, depending on cable ambient temperature at startup, see the manufacturers manuals and Standard CEI60898
** with hot filament

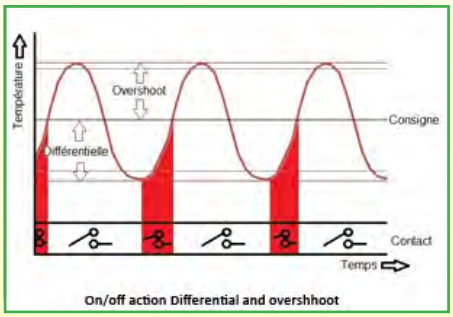
Technical information N°10 : Average electrical life of a thermostat switch rated 15A250V, 300.000 cycles



Average approximate values for a snap action mechanism with silver contacts.
Characteristic points :
A: Zone of mechanical break of the contact blade by metal fatigue
B: Contacts fast melting zone due to combination of inductive current, high voltage and high intensity
C: Zone of contacts rapid deterioration due to huge arcs
D: Zone of contact damage due to heating of the contact blade by the Joule effect and the loss of its elastic characteristics, combined with the electrical arcs

Technical information N°11 : the temperature control modes

While thermostats typically operate only in the on/off mode, the electronic controllers can regulate in two main modes: on/off with adjustable differential or PID.



On/off action Differential and overshhoot

On/Off action

In the On/Off action, the heater is off when the set point is reached, and restarted when the temperature drops below the set point value minus the differential. This is the conventional mechanical thermostats operating mode. The successful operation of this mode mainly depends on the temperature sensor correct positioning near the heat source and the compatibility between the heating power and the need of the environment to be heated. The On/Off action does not usually prevent temperature peaks (over-shoot) after switching off the heating, due to the system thermal inertia.

Adjustable differential: A low differential is often associated with control accuracy. However, a too low differential will cause heating short cycles and premature contact wear if a power relay is used, or a quick degradation of the compressor if the system is used to control a refrigerator. The electronic controllers in this catalog have an adjustable differential to optimize this operation.

The PID action (Acronym for proportional, integral and derivative).

The PID action is a control mode that involves the concept of Feedback. Simply speaking, this means that the regulator will analyze what temperature rise will be produced by a quantity of energy supplied to the heating device and how long this rise in temperature will take. This action involves three different settings.

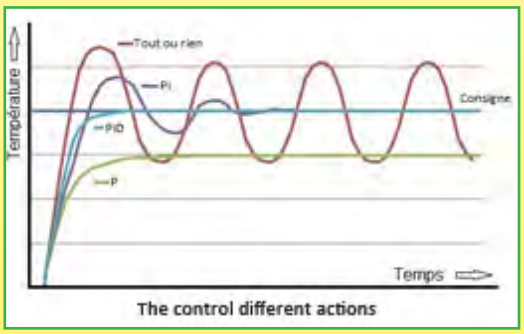
Proportional band: : this band is an area before the set point, in which the electronic controller will gradually decrease the power it provides to the heating device. At the furthest end from the set point, the power will be 100%, to reach 0% when the set point is reached. The purpose of the proportional band is to avoid the over-shoot phenomenon. This variation of power is obtained by gradually reducing the warm-up time as the temperature approaches the set point. The larger the band is, the longer it takes to reach the set point. A proportional action only is generally not sufficient to reach the set point as the temperature stabilization is made below the set point, due to heat losses and exchanges.

This lack of proportional action is corrected by the *integral action*. This integral action will continue to provide a heating control signal as long as the heating temperature of the heating device is not equal to the set point. In this purpose it also integrates the time for the system to heat up.

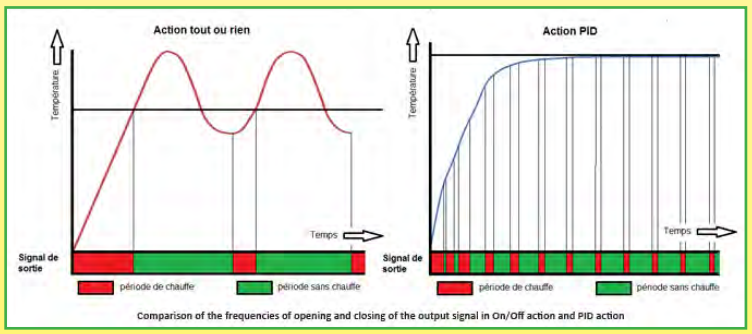
This action is equal to the integral of the deviation from the set point divided by a time constant. This time constant corresponding to the setting I. When the integral time is set to 0, a simple proportional action is obtained. The proportional-integral action allows the set point value to be reached after a few oscillations when starting the process.

We can limit these oscillations by introducing another correction: the *derivative action,* which allows to anticipate overshoots.

The derivative action adjusts the output power from the temperature variation curve. It involves predicting temperature variations based on previous actions of the output signal. By predicting temperature variations based on previous actions of the output signal, it compensates the response times due to the thermal inertia, accelerates the response of the system and enhances the stability of the loop, while allowing a quick damping of the oscillations due to the occurrence of a disturbance or a sudden variation of the set point.



The control different actions



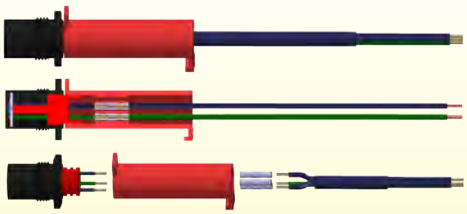
Comparison of the frequencies of opening and closing of the output signal in On/Off action and PID action

If the PID action can improve the control in a number of configurations, the drawback is that the output signal will cycle very quickly, which reduces the power relay life very extensively and requires in most cases to use solid state relays.

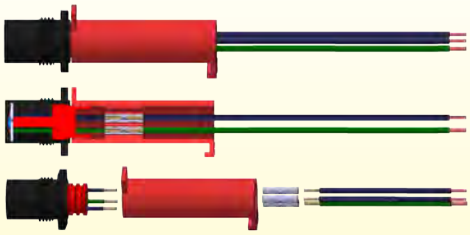
The Auto-tune function (self adjustable): determining the P, I, D, parameters, which is possible by calculation or by successive approximations, is a tedious and complex operation. The new generation of auto-tune regulators will analyze how the thermal system will react during two functioning On/Off cycles, then automatically compute the optimum PID parameters.

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

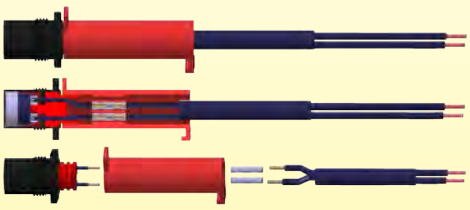
Mounting examples of heating ribbons on thermostats, lights, wires and extension cables



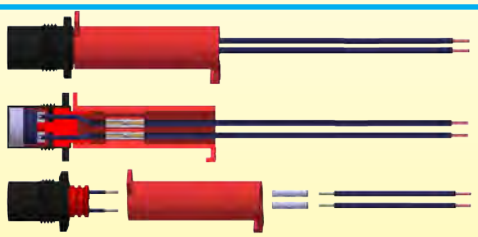
Pt100 or NTC on extension cable



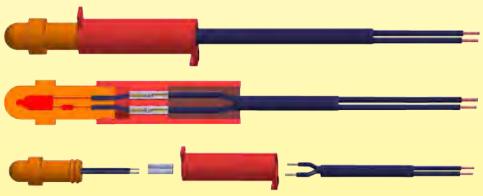
Pt100 or NTC on extension wires



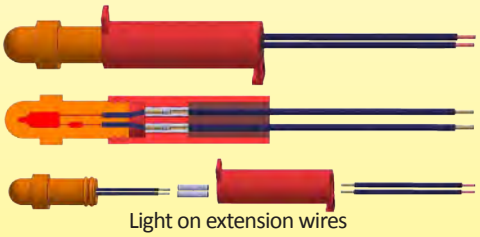
M20 thermostat on extension cable



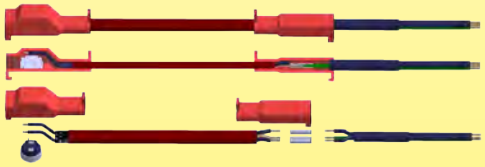
M20 thermostat on extension wires



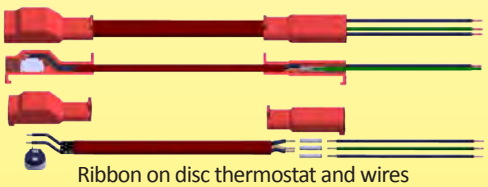
Light on extension cable



Light on extension wires



Ribbon on disc thermostat and cable



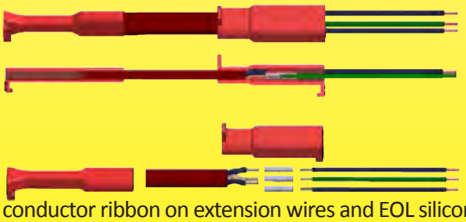
Ribbon on disc thermostat and wires

2 or 3 conductor ribbon on extension cable (heat shrink) and heat shrink EOL silicone tip

2 or 3 conductor ribbon on extension wires (heat shrink) and heat shrink EOL silicone tip

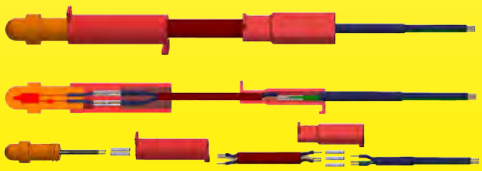
2 or 3 conductor ribbon on extension cable (heat shrink) and EOL silicone tip

2 or 3 conductor ribbon on extension cable and EOL silicone tip

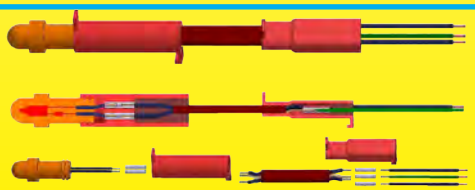


2 or 3 conductor ribbon on extension wires and EOL silicone tip

Ribbon in screw terminal with extension cable and EOL silicone tip



2 or 3 conductor ribbon on light and extension cable



3 conductor ribbon on light and extension wires

Because of permanent improvement of our products, drawings, descriptions, features used on these data sheets are for guidance only and can be modified without prior advice

Synoptic table of control boxes and

Plastic lids

Sealing clips
p.75

Lid with transparent window
p.75

Backlit knob option
p.71

Lighted on/off switch option
p.71

Customizable ID plate
p.75

Control plates

Bulb and capillary thermostat : -35+35°C; 0-40°C; 30-90°C; 10-110°C; 5 50-200°C; 50-300°C; 10-450°C ranges
p.56&75

On:Off controller : -45.0+120°C(NTC) ; -50+550°C(PT100); 0-999°C(K)
p.62&75

PID controller with double display, multisensor, multi-range, multi-output, Auto-tune
p.64&75

Two PID controllers single display, multisensor, multi-range, multi-output, Auto-tune
p.66&75

Additional internal equipment

2 x 25A power relay
p.85

3 x 25A power relay
p.85

Solid state relay 10A
p.82

Housing heater
p.72

Manual reset cut-out
p.37-40

Infrared remote controls
p.71

Plastic housing with terminal block and bottom cable glands

Housing rear equipment

Rear mounting brackets
p.73

Coupling brackets
p.73

Rear remote outlet set for capillary, temperature sensor
p.73

Rear ambient temperature probe set (bulb or sensor)
p.52

M20 ambient sensors Pt100, NTC, Thermocouple
p.52

Rear M20 outlet set for flat cables, brackets or additional housing
p.111

PG M20 cable gland rear p.111

Mounting and coupling exam

Ambient temperature sensor

Probe or distant capillary outlet

Cylandrical probe mounting on pipe surface

Stand with M20 antifreeze thermostat and EOL light

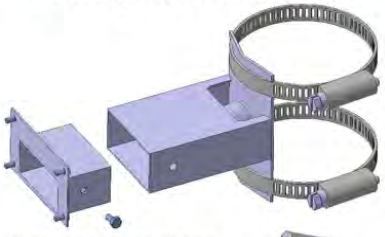
M20 surface temperature sensor on bracket

M20 surface temperature sensor and two M20 cable glands

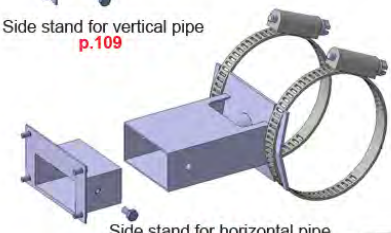
Rear stand mounting on vertical pipe

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

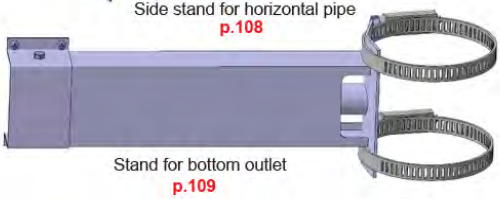
Mounting sets for heat tracing



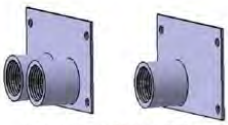
Side stand for vertical pipe
p.109



Side stand for horizontal pipe
p.108



Stand for bottom outlet
p.109



Heat insulation outlets
p.109

Gasket for heat insulation outlets
p.111

Pipe mounting plate for temperature sensor or M20 thermostat
p.107

Pipe mounting for dia 5 or 6 mm probe or bulb
p.107

Additional accessories for heat tracing

M20 EOL line p.102

M20 Pt100, NTC and thermocouple p.102

M20 antifreeze and surface thermostats
p.94

Sealing silicone boot for M20 accessories
p.103

Lead wire kits for cold outlets p.114

Sealing boots for cold outlets
p.104

Endino boots for flat cable ends
p.103

Pipe mounting for dia 5 or 6 mm probe or bulb p.95

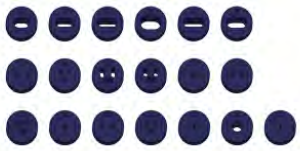
Miscellaneous accessories for heat and specific tooling

Stainless steel mounting strip p.107

Driver for M20 accessories p.111

Heat tracing labels p.104

RTV filling silicone p.104



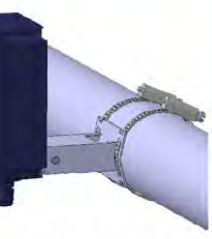
PG accessories for flat cables and sensor
p.110

Crimbing pliers for tubular connectors
p.114

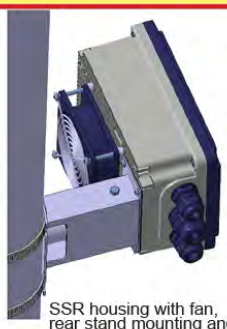
Stripper for flat cables
p.118

Silicoe filling rack p.104

ples with additional housings

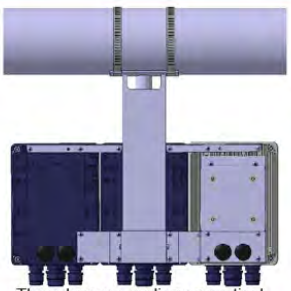


ear stand mounting on
onzontal pipe



SSR housing with fan, rear stand mounting and horizontal pipe

Three boxes coupling with rear stand mounting and horizontal pipe



Three boxes coupling on vertical stand, bottom outlet

Three boxes coupling with rear stand on vertical pipe

Synoptic table of control boxes and

Plastic lids

Sealing clips
p.75

Customizable ID plate
p.75

Lid with transparent window
p.75

Backlit knob option
p.71

Lighted on/off switch option
p.71

Control plates

Bulb and capillary thermostat
: -35+35°C; 0-40°C; 30-90°C; 10-110°C; 5 50-200°C; 50-300°C; 10-450°C ranges
p.56&75

On:Off controller
: -45.0+120°C(NTC)
; -50+550°C(PT100); 0-999°C(K)
p.62&75

PID controller with double display, multisensor, multi-range, multi-output, Auto-tune
p.64&75

Two PID controllers single display, multisensor, multi-range, multi-output, Auto-tune
p.66&75

Additional internal equipment

2 x 25A power relay
p.85

3 x 25A power relay
p.85

Solid state relay 10A
p.82

Housing heater
p.72

Manual reset cut-out
p.37-40

Infrared remote controls
p.71

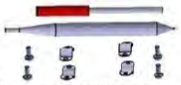
Plastic housing with terminal block and bottom cable glands

Housing rear equipment

Rear mounting brackets
p.73

Coupling brackets
p.73

Rear remote outlet set for capillary, temperature sensor
p.73



Rear ambient temperature probe set (bulb or sensor)
p.73

M20 ambient sensors Pt100, NTC, Thermocouple
p.52

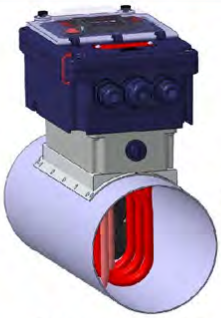
Rear M20 outlet set for flat cables, brackets or additional housing
p.111

PG M20 cable gland rear p.111

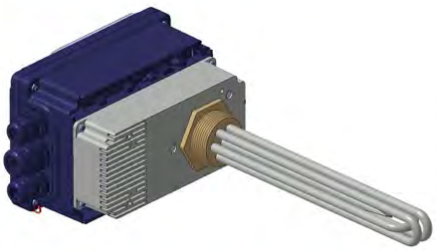
Assembly and app

Mounting on insulated heating blanket

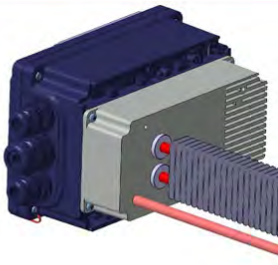
Vented heater



Air heater in ventilation shaft



Controlled immersion heater



Controlled finned h

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Rear accessories for flat heating cables

Low temperature base
p.128

High temperature base bended elements
p.128

High temperature base flat elements
p.128

Rear addition housing for immersion heaters

Unpierced, machining by customer
p.124

For immersion heaters with adjustable thread
p.124

For immersion heaters with fixed screw thead
p.124

Rear addition housing for air heaters and ventilation

For a U shaped finned heater 25x50
p.125

For two U shaped finned heater 25x50
p.125

For three-phase shielded heaters 50mm spacing
p.126

Base for ventilation (various diameters)
p.127

Base for ventilation motor bracket
p.127

Rear addition housing accessories

Disc thermostats, control or manual reset
p.94

Push button for side mounting manual reset
p.129

Manual reset fail safe cut-out
p.37

Multi-pole manual reset cut-out
p.38-40

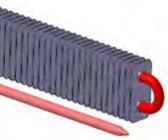
Cable gland for sensor or capilary outlet
p.129

Copper or stainless steel pockets for sensors or probes
p.129

Pre-wired thermal cut-offs
p.130

Base for ventilation motor bracket
p.82

plication examples



heater

Immersion heaters with controls and Ground Fault Circuit Interrupter (GFCI)

Immersion heaters with controls and Ground Fault Circuit Interrupter (5GFCI) and ventilated three phase solid state relay

Controls for hot air curtain with remote control

Main additional housings and their accessories

Housing for solid state relays (might be coupled to the main housing, use the same mounting brackets)

Plastic lids

Sealing clips
p.75

Transparent lid
p.75

Customizable ID plate
p.75

Opaque lid
p.75

Internal equipment

Safety thermostat
p.84

Alarm flashing light p.80

1 three-phase solid state relay
p.82

1 to 3 single phase solid state relays
p.82

M20 Pt100, NTC and thermocouple
p.52

M20 safety thermostat
p.94

Aluminim housing with bottom cable glands

p.83

External rear equipment

Wall mounting brackets
p.73

Coupling brackets
p.73

Fan
p.84

Fan cover
p.84

M20 rear outlet set for flat cables, stand or additional housing
p.111

PG M20 rear outlet set
p.111

Assembly examples

Distribution housing with DIN terminals and anti-freeze thermostat

Distribution housing with Ultimheat connection block and anti-freeze thermostat

Aluminium housing with 3 solid state relays, temperature alarms and alarm flashing light

Aluminium housing with three-phase solid state relays, temperature alarms and light

Housing with anti-freeze the

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Coupling housing (might be coupled to the main housing, use the same mounting brackets)

Plastic lids

Sealing clips
p.75

Customizable ID plate
p.75

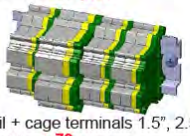
Transparent lid
p.75

Opaque lid p.75

Lid with transparent window p.75

Internal equipment

Front plate and DIN rail for circuit breaker (compatible with window equiped lid only) p.80



DIN rail + cage terminals 1.5", 2.5", 4", 6", 10" p.79

Ultimheat terminal block 5x6" + 5x2.5" or 10x10" p.74

Power relays 2x25A, 1x30A, 2x25A, 3x25A, 6x16A p.85

Pre-wired distribution box with LED pilot lights
p.96-97

Plastic housing with bottom cable glands

Without anti-freeze thermostat
p.75

With 16A integrated anti-freeze thermostat
p.96

External rear equipment

Wall mounting brackets p.73

Coupling brackets p.73

M20 anti-freeze thermostat
p.94

M20 rear outlet set for flat cables, stand or additional housing
p.111

PG M20 rear outlet set
p.111

M20
ermostat

Fully wired distribution box with power and heating lights

SSR connection box with forced air cooling

SSR connection box with forced air cooling and fan protector for outdoors.

Box with ground fault circuit interrupter

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Description of temperature controls

Description of temperature controls

Electromechanical devices

Disc thermostats
Used as control thermostats or as a safety thermostat with manual reset, these thermostats have a disc made of two different metals laminated together for temperature sensing element. These two metals have different expansion coefficients. Therefore a bulging disc will gradually change shapes with increasing temperature until it suddenly goes from concave to convex. It takes the same way to its original form when temperature drops. This sudden change activates a contact blade. These thermostats exist with single two or three pole contacts. Technology to obtain accurate temperatures and low differentials is complex and few manufacturers offer accurate values and low differentials. JPC is one of the very few manufacturers offering three poles models.

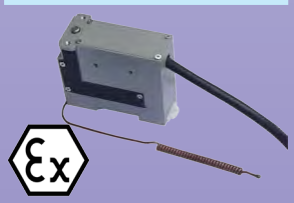
Bulb and capillary control thermostats
The bulb and capillary thermostats are composed of a closed chamber with a bulb, a capillary and a metal bellows. The liquid (or sometimes gas) located inside this enclosure, expands depending on the temperature and deforms the bellows. This deformation is transmitted to a snap-action switch mechanism. The displacement of the bellows by a threaded shaft allows temperature adjustments. A capillary breakage causes the loss of filling fluid, and in general in this case, the contact remains closed. The most common ranges go from -35 to +320°C. Higher set points up to 750°C are possible but they require capillary liquids that withstand these temperature without boiling. JPC is one of the very few companies manufacturing these models. These high temperature versions (ranges above 400 ° C) use a liquid metal as filling liquid, usually a Sodium Potassium eutectic. In case of breakage of the bulb or the capillary, this product is flammable on contact with water or atmospheric moisture. It is therefore necessary to take this point into account in their applications.
The capillary thermostats are subject to parasite drift due to temperature variations on the capillary and the bellows. The bulb and capillary thermostat differential is usually not adjustable, and is about 2.5% of the temperature range. They are available in single pole or three pole versions.

Bulb and capillary thermostats with explosion proof electrical contacts
Built on the same mechanical basis than the standard thermostats, and achievable within the same temperature ranges, these thermostats use an explosion-proof micro switch which is a unique design concept developed by JPC. The advantage of this system is to avoid heavy and expensive IIB or IIC metal boxes, and to allow temperature set point adjustment without the need to switch off the electrical power supply. The thermostat can be fitted in Y8 series standard waterproof enclosures, but its output cable connection must necessarily take place in an ''increased safety'' enclosure or outside the hazardous areas. The most recent versions include a built in increased safety enclosure. Depending of models, electrical rating can go from 5A 250V SPDT to 15A400V SPDT. 2 poles versions are also available.

Liquid expansion bulb and capillary cut-outs with fixed temperature setting
These devices operate on a principle similar to the liquid expansion bulb and capillary thermostats and are not adjustable. They include a reset button to close the electrical contact when it has opened after a temperature rise.
There is one variant of these cut out, with a fail-safe mechanism. It automatically opens the contacts if the capillary or bulb are leaking or cut.
The Diastat membrane is artificially inflated. Leakage causes the bursting of the membrane below its nominal thickness at room temperature, and a special mechanism will detects the abnormal displacement, which is similar to a very low ambient temperature sensing. The disadvantage of this system is that these fail-safe limiters also switch off when the ambient temperature drops below a certain value, generally between -10 and -20 ° C.
The artificial inflation of the membrane also greatly increased the volume of liquid it contains, thus makes them highly sensitive to temperature, with temperature drifts up to 0.3 ° K / ° K.
They can be used as a high limit safety device in addition to a mechanical thermostat or an electronic controller. They are available in single pole, two, three or four poles versions. They usually only have open on rise contacts.

Liquid expansion bulb and capillary cut-outs with adjustable set point
These devices operate on the same principle as the control thermostats, but feature a reset button to close the electrical contact when it opened after a temperature rise. They can be used as an overheating safety system behind a mechanical thermostat or an electronic controller. JPC is one of the few manufacturers offering this kind of thermostats with the same adjustment ranges than the control thermostats, and a change-over contact (which enables to signal a defect without relaying), and with ranges up to 750 ° C.

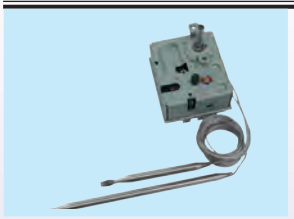
Limiters bulb and capillary fixed temperature, vapor pressure (also called boiling)
These devices operate on a different principle than liquid expansion thermostat. They use a simple mechanism, invented 50 years ago by the Wilcolator company, combining the snap action of a bumped disc actuated by the huge pressure increase due to the boiling of liquid in a closed chamber. This design concept provides very simple mechanisms. Technology lies in the selection of liquids with different boiling points. Operating temperatures ranges are linked to the liquid used and its boiling temperature. Capillary length is also limited due to pressure losses induced during boiling, hindering its operation.
It is necessary that a relatively large volume of liquid is boiled to cause the membrane tripping. This is the reason why the capillary end measuring temperature is spiraled. If the capillaries are not spiraled, at least 30cm of it must be immersed in the controlled liquid. They are never adjustable and have a reset button to switch one the electrical contact when it is open as a result of an increase in temperature. As the filling is carried out under vacuum, a leak in the train thermostat triggers the mechanism. Unlike liquid filled systems sensitive to changes in temperature, they do not trigger when the temperature drops below a limit. However, they are slightly sensitive to changes in atmospheric pressure, which limits their use in altitude.
They can be used as a safety system of a mechanical thermostat behind overheating or an electronic controller. They are available with single pole, 2, 3 and 4 poles contacts. They usually have open on temperature rise contacts. Some models developed by JPC have SPDT and DPDT contacts.



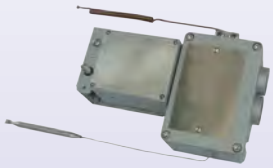
Failsafe bulb and capillary cut out with explosion proof switch
Built on the same mechanical base than failsafe boiling cut-outs, and achievable within the same temperature ranges, these thermostats use an explosion proof switch. The advantage of this system is to avoid heavy and expensive IIB or IIC explosion proof housings. The thermostat output cable connection must necessarily take place in an "increased safety'' enclosure or outside the hazardous areas. The most recent versions include a built in increased safety "e" enclosure. Depending on models, electrical rating can go from 5A 250V SPDT to 15A 400V SPDT. 2 poles versions are also available.

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Description of temperature controls



Combined bulb and capillary thermostat / cut-out with adjustable set points
These devices operate on the same principle as the control thermostats, but feature a double bulb, one used for the control, the other for the manual reset. They have an adjustment shaft for the control, and a manual reset button allows switch on again the safety electrical contact, when it opened after a temperature rise. The safety set point is factory fixed. The contacts are open on temperature rise only. They are mainly used in three-phase applications, although there are SPNO and DPNO versions.
There are versions of these devices with failsafe manual reset contact, but they have a strong drift when the ambient temperature of the head varies, up to 0.3 °C / °C. For example if there is a variation in ambient temperature of 10 ° C on the thermostat head, the set point drift can be as 3 ° C.

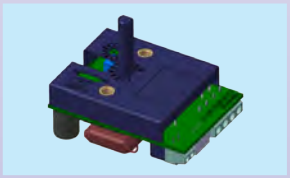


Combination controls with liquid expansion control thermostat and fail safe "boiling" manual reset cut out
These devices work by expansion of liquid for the temperature control, and use the boiling fail safe mechanism for the manual reset cut out. In this way they meet the more stringent security requirements, as both mechanisms are operating on different principles, and the ambient temperature drift on the manual reset cut out is eliminated. JPC uses this solution for its combined thermostats for explosion proof applications.

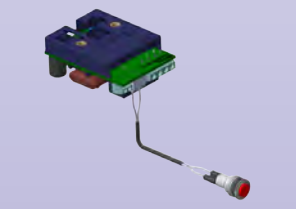
Thermal fuses (also called TCO, for Thermal Cut Off)
The Thermal cut-offs are composed of a mechanism opening an electrical contact at a given temperature and irreversibly, generally by melting a metal or plastic pellet. Their trigger point should be selected according to the normal operating temperature and sufficiently distant from the latter to avoid false triggering. Their installation is hard to perform. JPC has developed a range of 16A 250V cut-offs which are wired and silicone insulated. They allow easy mountings in pockets.

Electronic devices

Temperature sensors
The temperature sensors provide a signal which is a function proportional to the temperature. This signal may be a change in resistance (thermistors, Pt100) or a millivolt signal (thermocouple). The selection of a sensor depends on the required accuracy, the temperature range and dimensional and economic constraints.
JPC has designed a simple and cheap range for integrators



Blind electronic thermostats
These products, developed by JPCI, provide a bridge between the electronic controls with digital display and the electromechanical thermostats of which they keep the setting ranges, mounting, current rating, on/off action, and with which they are generally interchangeable.
They are inexpensive, and allow measurements at larger distances than the bulb and capillary thermostats. They provide a greater accuracy and the ability to adjust the contact differential. Power supply 90-250VAC, output power relay 16A 250V.



Electronic limiter with manual reset
These products, developed by JPCI offer a simple solution when a safety system must be installed in addition to an electronic temperature control. These devices keep the setting ranges, fixing, electrical rating of the electromechanical thermostats with which they are generally interchangeable.
They are inexpensive, and allow measurements at distances larger than the bulb and capillary thermostats. Power supply 90-250V, 16A 250V output relay.

Electronic controls with digital display, Din rail mounting.
These controllers, developed by JPCI offer the same performance than blind electronic thermostats, but have a digital display of temperature, and are extremely simple to use. Power supply 90-250V, and 16A 250V output relay.

Electronic controls with measured temperature digital display, panel mounting, size 77 x 35mm.
Simple and intuitive to set and use, within the reach of non-professional users. 230V supply, relay output 10 or 16A, ON-OFF action.

Electronic controls with measured temperature digital display, panel mounting, size 48 x 25mm.
The smallest new generation of electronic temperature controls, multi-voltage, multi-sensors, PID and ON-OFF action and auto-tune. 3A relay and SSR control outputs. One alarm.

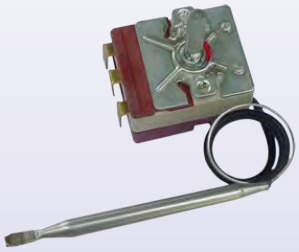
Electronic controls with measured value and set point temperature digital display, panel mounting, size 48 x 48mm.
The most efficient new generation electronic temperature controls, multi-voltage, multi-sensors, ON-OFF and PID action with auto-tune. 3A relay and SSR control outputs. One or two alarms.

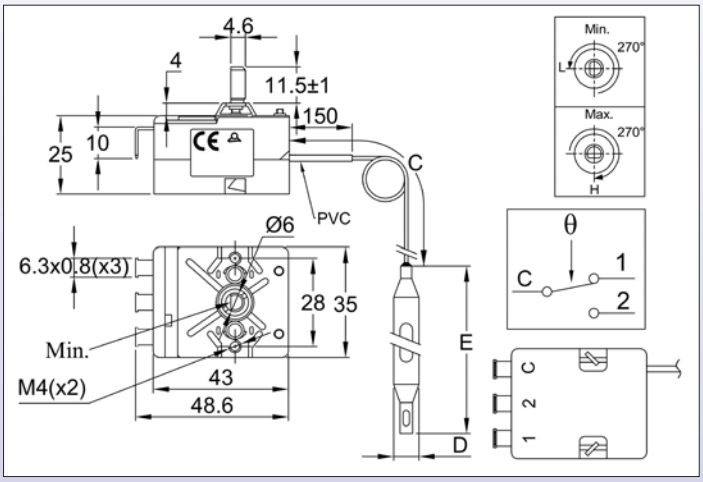
JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Thermostats and high limits

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Type 8G
Single pole control thermostat (Appliances type)





Housing dimensions: 43 x 35 x 29 mm (without terminals)
Bulb and capillary: stainless steel,150 mm long pvc sleeve on capillary .Capillary minimum bending radius 5 mm.
Temperature sensing element: liquid filled bulb and capillary.
Terminals: 6.35 x 0.8 quick connect terminals. M4 screws also available on request.
Adjustment: Dia. 6 mm shaft with 4.6 mm flat, length 11.5 mm. Other lengths, screw driver adjustment or fixed setting available on request.
Mounting: Front bracket with 2 xM4 threads, 28 mm distance
Rating: 16A(4) 250/VAC
Contacts: SPDT (snap action contact),

Main references

Reference	Temperature range (°C)	Capillary length (mm)	Bulb diameter (mm)	Bulb length (mm)	Differential (°C)	Max temperature on bulb (°C)
8GB-35035AO60001	-35+35°C	1500	6	98	3+/-2	55
8GB-35035AA60001	-35+35°C	250	6	98	3+/-2	55
8GB004040AO60001	4-40°C	1500	6	140	3+/-2	60
8GB004040AA60001	4-40°C	250	6	140	3+/-2	60
8GB030090AO60001	30-90°C	1500	6	87	4+/-3	120
8GB030110AO60001	30-110°C	1500	6	93	5+/-3	150
8GB050200AO60001	50-200°C	1500	6	59	8+/-5	250
8GB050300AO30001	50-300°C	1500	3	165	10+/-5	350

Other temperature ranges available on request.

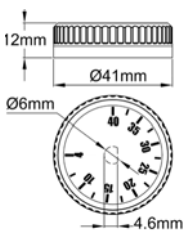
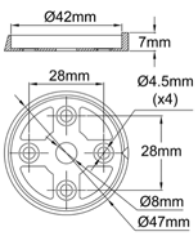
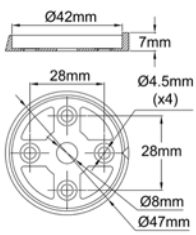
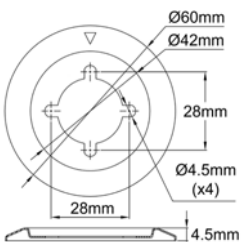
°C Printing

-35+35°C	4-40°C	30-90°C	30-110°C	50-200°C	50-300°C
					
66MZ006-350352FW	66MZ0060040402FW	66MZ0060300901FW	66MZ0060301101FW	66MZ0060502001FW	66MZ0060503001FW

°F Printing

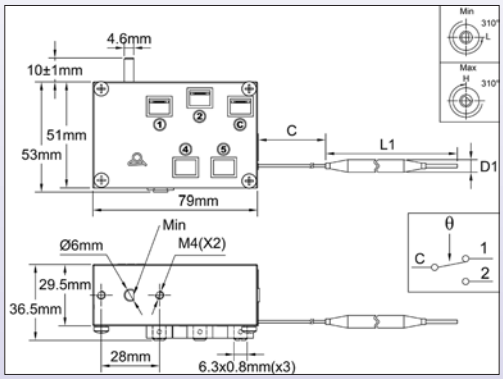
					
66MZ006-350352FX	66MZ0060040402FX	66MZ0060300901FX	66MZ0060301101FX	66MZ0060502001FX	66MZ0060503001FX

Soft grip knob and bezels dimensions

Dimensions				
References	66MZ.....	66EN1	66EN3	66EN2
Material	PC +Santoprene	Black ABS	Chrome plated ABS	Stainless steel

Many other knobs are available, see the knobs catalogue.

Types KR and KU
Single pole control thermostat, standard differential and reduced differential (Commercial type)



Housing dimensions: 79 x 53 x 36 mm (without terminals)
Bulb and capillary: copper for temperature ranges up to 50°C, stainless steel over, capillary length 1500 mm or 3000 mm. Capillary minimum bending radius 5mm.
Temperature sensing element: liquid filled bulb and capillary.
Terminals: 6.35 x 0.8 quick connect terminals (M4 screws also available on request),
Adjustment: Dia. 6 mm shaft with 4.6 mm flat, (other lengths or fixed setting available on request).
Mounting: Front bracket with 2 xM4 threads, 28 mm distance
Rating: 15A (1/4 HP) 250VAC, 15A 400V res. KU type cannot be used on 400V
Contacts: SPDT (snap action contact)
Electrical life: >500.000 cycles at nominal rating

Main references

References with standard differential	References with reduced differential	Temperature range (°C)	Capillary length (mm)	Bulb diameter (mm)	Bulb length (mm)	KR: Standard Differential (°C)	KU: Reduced Differential(°C)	Max temperature on bulb (°C)
KRA-250252200	KUA-250252200	-25+25	1500	6.4	152	3+/-2	2+/-1	50
KRA-1001552000	KUA-1001552000	-10+15	1500	6.4	152	3+/-2	2+/-1	50
KRA0000502000	KUA0000502000	0-50	1500	6.4	152	3+/-2	2+/-1	60
KRA0000705200	KUA0000705200	0-70	1500	4.8	120	5+/-3	3+/-2	160
KRA0000701200	KUA0000701200	0-70	3000	4.8	120	5+/-3	3+/-2	160
KRA0200905000	KUA0200905000	20-90	1500	4.8	120	5+/-3	3+/-2	160
KRA0200901000	KUA0200901000	20-90	3000	4.8	120	5+/-3	3+/-2	160
KRA0101505000	KUA0101505000	10-150	1500	4.8	120	5+/-3	3+/-2	160
KRA0101501000	KUA0101501000	10-150	3000	4.8	120	5+/-3	3+/-2	160
KRA0802000100	KUA0802000100	80-200	1500	4	100	10+/-4	7+/-3	320
KRA0503000100	KUA0503000100	50-300	1500	4	100	10+/-4	7+/-3	320
KRA0104507000	KUA0104507000	10-450	1500	4.8	120	20+/-6	12+/-4	760
KRA0104509000	KUA0104509000	10-450	3000	4.8	120	20+/-6	12+/-4	760
KRA0605007000	KUA0605007000	60-500	1500	4.8	120	20+/-6	12+/-4	760
KRA0605009000	KUA0605009000	60-500	3000	4.8	120	20+/-6	12+/-4	760
KRA1806007000	KUA1806007000	180-600	1500	4.8	120	20+/-6	12+/-4	760
KRA1806009000	KUA1806009000	180-600	3000	4.8	120	20+/-6	12+/-4	760
KRA2807008000	KUA2807008000	280-700	1500	3	300	20+/-6	12+/-4	760

These thermostats are also available with screw driver adjustment, 20 and 30 mm shaft length
Caution: Bulbs and capillaries of ranges higher than 300°C are filled with sodium potassium eutectic. If they leak or are broken this liquid is flammable if in contact with water

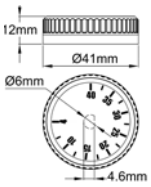
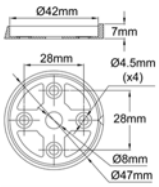
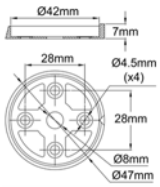
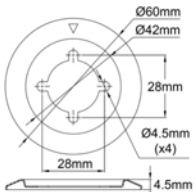
°C Printing

-25+25°C	-10+15°C	0-50°C	0-70°C	30-90°C	10-150°C	50-300°C	10-450°C	180-400°C	60-500°C	280-700°C
										
66MZ006-250252FW	66MZ006-100153FW	66MZ0060000502FW	66MZ0060000703FW	66MZ0060200903FW	66MZ0060101503FW	66MZ0060503003FW	66MZ006014503FW	66MZ0061804003FW	66MZ0060605003FW	66MZ0062807003FW

°F Printing

										
66MZ006-250252FX	66MZ006-100153FX	66MZ0060000502FX	66MZ0060000703FX	66MZ0060200903FX	66MZ0060101503FX	66MZ0060503003FX	66MZ006014503FX	66MZ0061804003FX	66MZ0060605003FX	66MZ0062807003FX

Soft grip knob and bezels dimensions

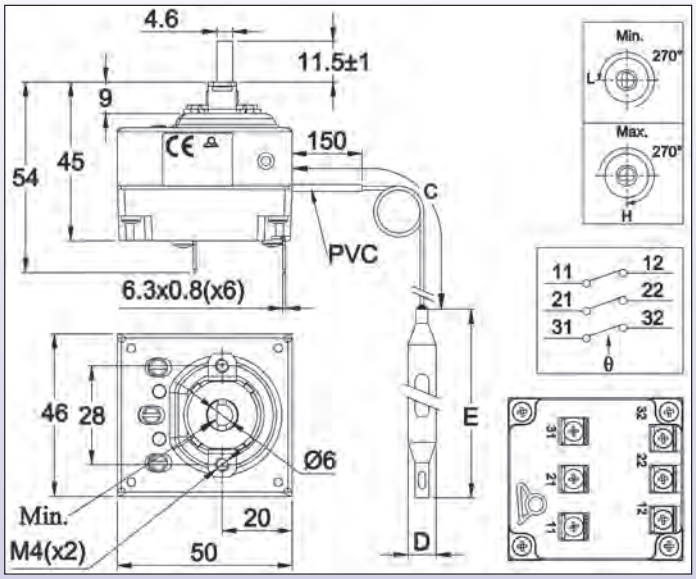
Dimensions				
References	66MZ.....	66EN1	66EN3	66EN2
Material	PC +Santoprene	Black ABS	Chrome plated ABS	Stainless steel

Many other knobs are available, see the knobs catalogue.

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Main bulb and capillary thermostats used in the Y housings

Type 8C
3 pole control thermostat



Housing dimensions: 46 x 50 x 45 mm (without terminals)
Bulb and capillary: stainless steel, capillary length 250mm or 1500 mm, 150 mm long PVC sleeve on capillary .Capillary minimum bending radius 5 mm.
Temperature sensing element: liquid filled bulb and capillary.
Terminals: 6.35 x 0.8 quick connect terminals .M4 screws also available on request.
Adjustment: Dia. 6 mm shaft with 4.6 mm flat, (other lengths or fixed setting available on request).
Mounting: Front bracket with 2 xM4 threads, 28 mm distance
Rating: 3 x 16A(4) 250VAC, 10A 400VAC
Contacts: 3 x ST with snap action contact, 3PDT available on request

Main references

Reference	Temperature range (°C)	Capillary length (mm)	Bulb diameter (mm)	Bulb length (mm)	Differential (°C)	Max temperature on bulb (°C)
8CB-35035AO60001	-35+35	1500	6	95	4+/-2	50
8CB-35035AA60001	-35+35	250	6	95	4+/-2	50
8CB004040AO60001	4-40°C	1500	6	160	4+/-2	50
8CB004040AA60001	4-40°C	250	6	160	4+/-2	50
8CB030090AO60001	30-90°C	1500	6	86	6+/-3	110
8CB030110AO60001	30-110°C	1500	6	70	6+/-3	130
8CB050200AO60001	50-200°C	1500	6	57	13+/-4	220
8CB050300AO30001	50-300°C	1500	3	165	15+/-5	320

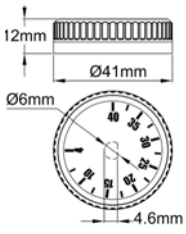
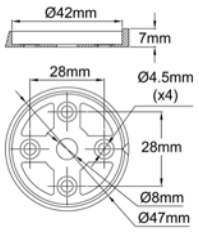
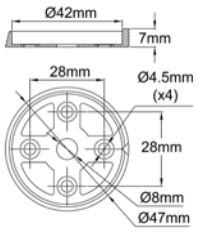
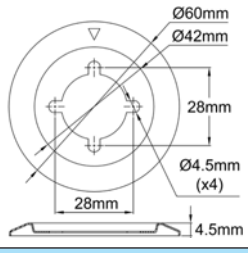
°C Printing

-35+35°C	4-40°C	30-90°C	30-110°C	50-200°C	50-300°C
					
66MZ006-350352FW	66MZ0060040402FW	66MZ0060300901FW	66MZ0060301101FW	66MZ0060502001FW	66MZ0060503001FW

°F Printing

					
66MZ006-350352FX	66MZ0060040402FX	66MZ0060300901FX	66MZ0060301101FX	66MZ0060502001FX	66MZ0060503001FX

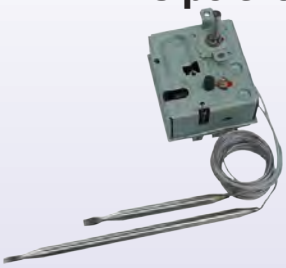
Soft grip knob and bezels dimensions

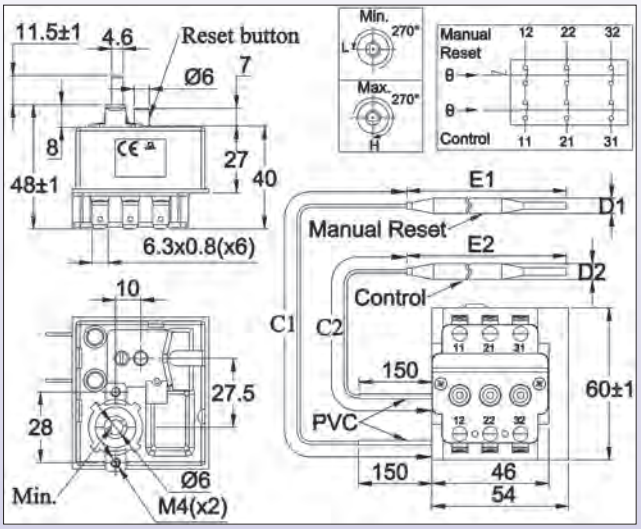
Dimensions				
References	66MZ.....	66EN1	66EN3	66EN2
Material	PC +Santoprene	Black ABS	Chrome plated ABS	Stainless steel

Many other knobs are available, see the knobs catalogue.

Main bulb and capillary thermostats used in the Y housings

Type 8I
3 pole combination control thermostat





Housing dimensions: 60 x 54 x 48 mm (without terminals)
Bulb and capillary: stainless steel, capillary length 250mm or 1500 mm, 150 mm long pvc sleeve on capillary .Capillary minimum bending radius 5 mm.
Temperature sensing element: liquid filled bulb and capillary.
Terminals: 6.35 x 0.8 quick connect terminals (M4 screws also available on request),
Adjustment: Dia. 6 mm shaft with 4.6 mm flat, (other lengths or fixed setting available on request).
Mounting: Front bracket with 2 xM4 threads, 28 mm distance
Rating: 3 x16A 250VAC, 10A 400VAC (res.)
Contacts: : 3 poles ST (snap action contact)

Main references

Reference	Temperature range (°C)	Capillary length (mm)	Bulb diameter (mm)	Bulb length (mm)	Differential (°C)	Max temperature on bulb (°C)	Manual reset temperature
8IC085110AO60001	30-85°C	1500	6	94 (E1) 129 (E2)	12 +/-6	170°C (E1) 140° (E2)	110°C+0/-9°C

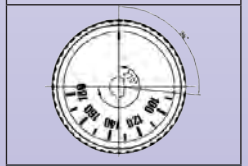
°C Printing

30-85°C

66MZ0060300854FW

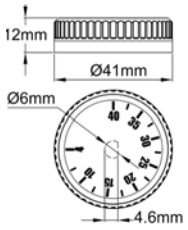
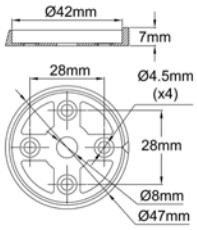
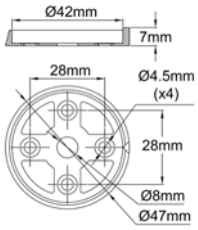
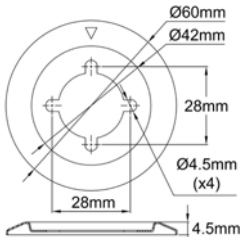
°F Printing

85-185°F



66MZ0060300854FX

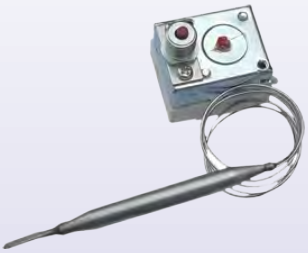
Soft grip knob and bezels dimensions

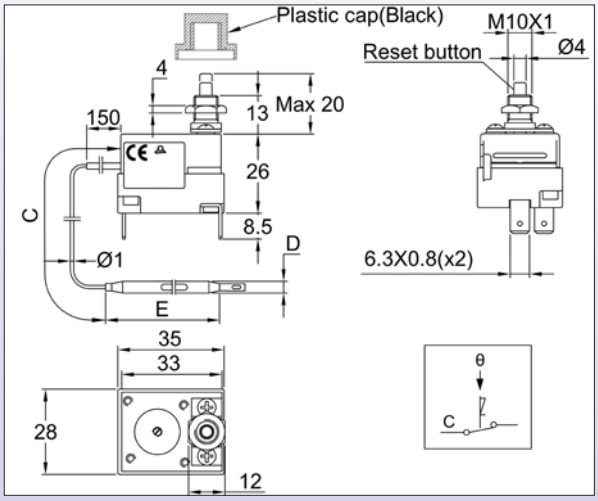
Dimensions				
References	66MZ.....	66EN1	66EN3	66EN2
Material	PC +Santoprene	Black ABS	Chrome plated ABS	Stainless steel

Many other knobs are available, see the knobs catalogue.

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Type 8L
SPNC manual reset high limit, fail safe





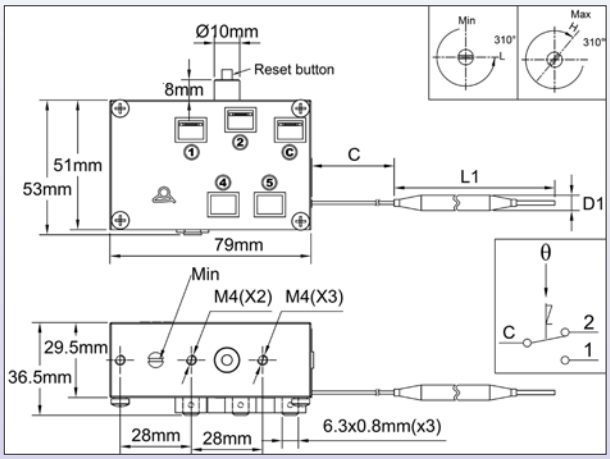
Housing dimensions: 43 x 35 x 29 mm (without terminals)
Bulb and capillary: stainless steel, capillary length 250mm or 1500 mm, 150 mm long PVC sleeve on capillary. Capillary minimum bending radius 5 mm.
Temperature sensing element: liquid filled bulb and capillary.
Terminals: 6.35 x 0.8 quick connect terminals (M4 screws also available on request),
Adjustment: fixed setting, sealed
Manual reset: fail safe, fixed setting, front access reset button
Fail safe contact action by low temperature: Temperatures under -10°C will trigger the manual reset.
Mounting: Front bushing , M10 x1 thread
Rating: 16A 250/400VAC
Contacts: SPST (snap action contact)
Max ambient temperature on body: 150°C

Main references

Reference	Calibration Temperature (°C)	Minimum resettable temperature (°C)	Capillary length (mm)	Bulb diameter (mm)	Bulb length (mm)	Max temperature on bulb (°C)
8L0080105AO61001	80+/-8	52	1500	6	77	105
8L0080105AA61001	80+/-8	52	250	6	77	105
8L0090115AO61001	90+/-8	60	1500	6	77	115
8L0110135AO61001	110+/-8	75	1500	6	77	135
8L0130155AO61001	130+/-8	80	1500	6	74	155
8L0150175AO61001	150+/-8	95	1500	6	74	175
8L0175200AO41001	175+/-8	115	1500	4	95	200
8L0220245AO41001	220+/-11	140	1500	4	90	245
8L0270295AO41001	270+/-13	160	1500	4	85	295
8L0300325AO41001	300+/-15	160	1500	4	82	325

Other temperatures and capillary lengths on request.

Type KX
SPDT manual reset high limit, adjustable, commercial type



Housing dimensions: 79 x 53 x 36 mm (without terminals)
Bulb and capillary: copper for temperature ranges up to 50°C, stainless steel over, capillary length 1500 mm or 3000 mm. Capillary minimum bending radius 5mm.
Temperature sensing element: liquid filled bulb and capillary.
Terminals: 6.35 x 0.8 quick connect terminals (M4 screws also available on request),
Adjustment: Dia. 6 mm shaft with 4.6 mm flat, (other lengths or fixed setting available on request).
Mounting: Front bracket with 2 xM4 threads, 28 mm distance
Rating: 15A (1/4 HP) 250VAC, 15A 400V res.
Contacts: SPDT (snap action contact)
Electrical life: >100.000 cycles at nominal rating

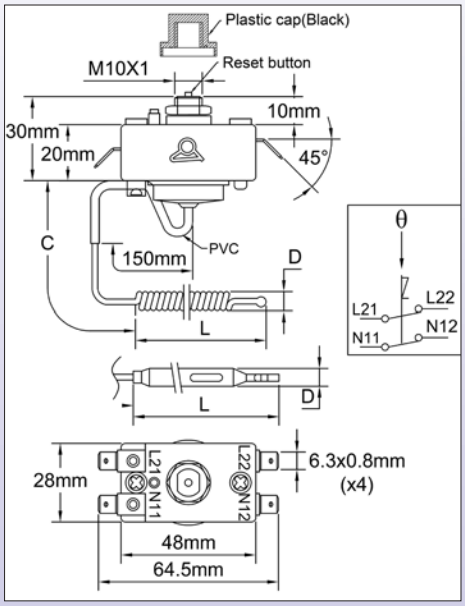
Main references

Reference	Temperature range (°C)	Capillary length (mm)	Bulb diameter (mm)	Bulb length (mm)	Reset Differential (°C)	Max temperature on bulb (°C)
KXC-250252200	-25+25	1500	6.4	152	6+/-2	50
KXC-1001552000	-10+15	1500	6.4	152	6+/-2	50
KXC0000502000	0-50	1500	6.4	152	6+/-2	60
KXC0000705200	0-70	1500	4.8	120	10+/-3	160
KXC0000701200	0-70	3000	4.8	120	10+/-3	160
KXC0200905000	20-90	1500	4.8	120	10+/-3	160
KXC0200901000	20-90	3000	4.8	120	10+/-3	160
KXC0101505000	10-150	1500	4.8	120	10+/-3	160
KXC0101501000	10-150	3000	4.8	120	10+/-3	160
KXC0802000100	80-200	1500	4	100	20+/-4	320
KXC0503000100	50-300	1500	4	100	20+/-4	320
KXC0104507000	10-450	1500	4.8	120	40+/-6	760
KXC0104509000	10-450	3000	4.8	120	40+/-6	760
KXC0605007000	60-500	1500	4.8	120	40+/-6	760
KXC0605009000	60-500	3000	4.8	120	40+/-6	760
KXC1806007000	180-600	1500	4.8	120	40+/-6	760
KXC1806009000	180-600	3000	4.8	120	40+/-6	760
KXC2807008000	280-700	1500	3	300	40+/-6	760

Caution : Bulbs and capillaries of ranges higher than 300°C are filled with sodium potassium eutectic. If they leak or are broken this liquid is flammable if in contact with water

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Type 8X
DPNC manual reset high limit, fail safe



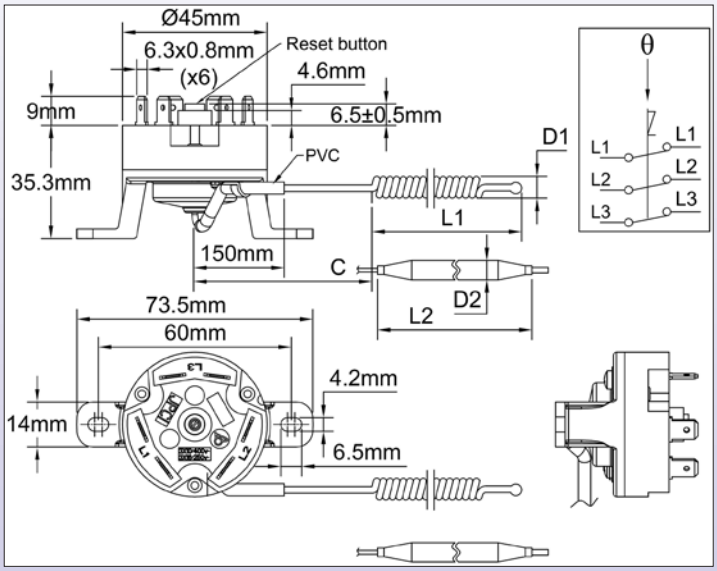
Housing dimensions: 43 x 35 x 29 mm (without terminals and diaphragm)
Capillary: copper, capillary length 250mm or 900 mm, 150 mm long PVC sleeve on capillary. Capillary minimum bending radius 5 mm.
For technical reasons, we do not recommend to use capillary length longer than 900 mm.
Bulb: copper, corkscrew type for temperatures from 60 to 130°C, tubular dia 6 mm from 130°C to 170°C
Temperature sensing element: Liquid-filled thermostatic assembly whose boiling causes tripping of the contact. Therefore, unlike liquid filled systems, these thermostats are sensitive to atmospheric pressure, and their reaction time is slower.
Terminals: 6.35 x 0.8 quick connect terminals Adjustment: fixed setting
Mounting: Front bushing, with M10x1
Manual reset: fail safe action, front access button
Rating: 20A 250VAC
Contacts: DPST (snap action contact)
Max ambient temperature on head: 125°C

Main references

Reference	Calibration Temperature (°C)	Minimum resettable temperature (°C)	Capillary length (mm)	Bulb diameter (mm)	Bulb length (mm)	Max temperature on bulb (°C)
8X0060090AI61001	60+/-5	20	900	6	50	90
8X0060090AA61001	60+/-5	20	250	6	50	90
8X0070100AI61001	70+/-5	30	900	6	50	100
8X0080110AI61001	80+/-5	40	900	6	50	110
8X0090120AI61001	90+/-5	50	900	6	50	120
8X0110140AI61001	110+/-5	70	900	6	50	140
8X0130160AI61001	130+/-6	90	900	6	60*	160
8X0150180AI61001	150+/-7	110	900	6	60*	180
8X0170200AI61001	170+/-7	130	900	6	60*	200

* Cylinder bulb

Type 82
3 pole manual reset high limit, fail safe



Housing dimensions: dia 45 x 44.3 mm
Capillary: copper, capillary length 250mm or 900 mm, 150 mm long PVC sleeve on capillary. Capillary minimum bending radius 5 mm.
For technical reasons, we do not recommend to use capillary length longer than 900 mm.
Bulb: copper, corkscrew type for temperatures from 60 to 130°C, tubular dia 6 mm from 130°C to 170°C
Temperature sensing element: Liquid-filled thermostatic assembly whose boiling causes tripping of the contact. Therefore, unlike liquid filled systems, these thermostats are sensitive to atmospheric pressure, and their reaction time is slower.
Terminals: 6.35 x 0.8 quick connect terminals Adjustment: fixed setting
Mounting: Backside legs, 2 M4 screws, holes distance 60 mm
Manual reset: fail safe action, center button
Rating: 3 x16A 250VAC, 3 x10A 400VAC
Contacts: ST, open on temperature rise (snap action contact)
Max ambient temperature on head: 150°C

Main references

Reference	Calibration temperature (°C)	Minimum resettable temperature (°C)	Capillary length (mm)	Bulb diameter (mm)	Bulb length (mm)	Max temperature on bulb (°C)
820060090AI61001	60+/-5	20	900	6	50	90
820060090AA61001	60+/-5	20	250	6	50	90
820070100AI61001	70+/-5	30	900	6	50	100
820080110AI61001	80+/-5	40	900	6	50	110
820090120AI61001	90+/-5	50	900	6	50	120
820110140AI61001	110+/-5	70	900	6	50	140
820130160AI61001	130+/-6	90	900	6	60*	160
820150180AI61001	150+/-7	110	900	6	60*	180
820170200AI61001	170+/-7	130	900	6	60*	200

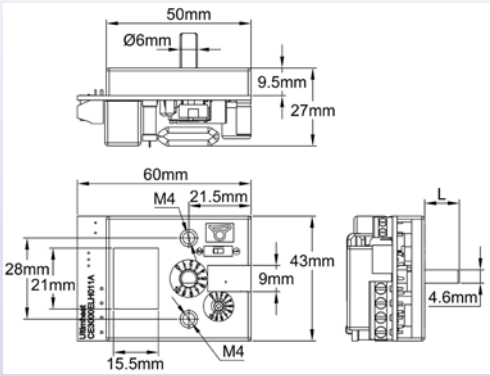
* Cylinder bulb

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Electronic controllers and control boxes

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Electronic thermostat, multi range, control and manual reset action, for incorporation, Type: 2PE2N6



Main features

This electronic thermostat for incorporation has been designed to replace electromechanical thermostats. It is mounted with two screws M4 at the same distance 28 mm, uses a 6mm dia. shaft with 4.6mm flat with the same length, and its rotation angle is 270 °. The temperature ranges are the same as the bulb and capillary thermostats, of which it can use the graduated knobs. Its electrical rating (16A) is identical.
It additionally features adjustable temperature differential, and heating or cooling relay output setting, and control or manual reset action can be set.
Action: On-OFF
Temperature sensors:
• NTC thermistor, 10Kohms @25°C, B(25-50)= 3380, for temperatures ranges from -30°F (-35°C) to 250°F (120°C) . Temperature sensors are described page 26
• NTC thermistor, 500K@25°C, B(25-50)= 4260, for temperature ranges 120-390°F (50-200°C) and 120-570°F (50-300°C). Temperature sensors are described on page 26
Temperature differential: Adjustable from 0,2 to 5% of the adjustment scale, by potentiometer
Accuracy: +/-1% of scale (NTC sensor tolerances not included)
Size: 60 x 43 x 23 mm
Temperature adjustment ranges: -30+95°F (-35+35°C), 32-50°F (0-10°C), 40-105°F(4-40°C), 85-190°F(30-90°C), 85-230°F (30-110°C), 120-390°F (50-200°C), 120-570°F (50-300°C). Temperature range selection is made by dip switch on the printed circuit.
Linear set point display on 270° angulation.
The manual reset action or temperature control action can be selected with a miniature dip switch on the circuit.
Power supply: 90 to 240V, 50Hz or 60Hz
Relay output: SPNO, 16A250V res., 100000 cycles.
Relay action: Heating or cooling, open or close on temperature rise output relay action can be selected by a dip switch on circuit.
Ambiant: -20+50°C, 10-85% RH
Power: <2W
Electrical connections:
• Power supply and power relay: 2.5 mm² screw terminal.
• Temperature sensor: 1.5 mm² screw terminal.
• Manual reset: with miniature JST connector.
Adjustment shaft: the thermostat is shipped with a dia. 6mm with 4.6 mm flat shaft, length 11 mm, assembled. Included spare parts: a 28 mm shaft and a screw driver adjustment shaft. Replacement can be easily made by removing a small spindle.
Standards: Comply with EMC (CE), ROHS and Reach

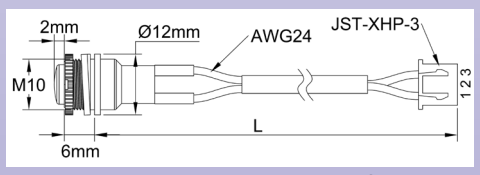
Reference	2PE2N6

Accessories

• Must be ordered separately, not included in the electronic thermostat.
Wired switch for manual reset. Needs a 10 mm dia. hole in the mounting board.

Reference	2PMR100 (L=100 mm)

Other length on request



Soft grip printed knobs references dia 41 mm

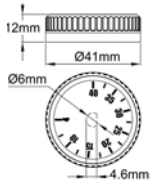
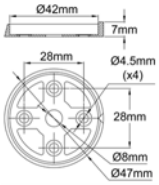
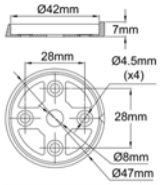
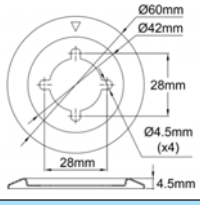
°C Printing

-35+35°C	0-10°C	4-40°C	30-90°C	30-110°C	50-200°C	50-300°C
						
66MZ006-350352FW	66MZ0060000102FW	66MZ0060040402FW	66MZ0060300901FW	6MZ0060301101FW	6MZ0060502001FW	6MZ0060503001FW

°F Printing

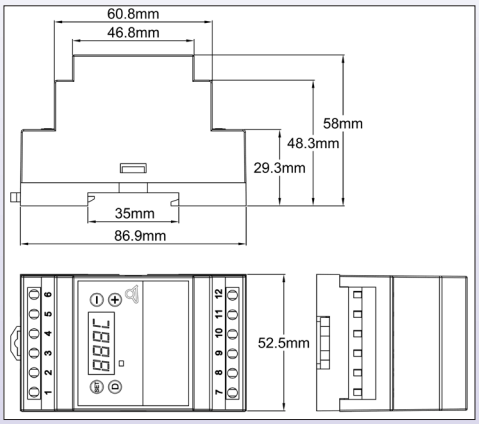
						
66MZ006-350352FX	66MZ0060000102FX	66MZ0060040402FX	66MZ0060300901FX	6MZ0060301101FX	6MZ0060502001FX	6MZ0060503001FX

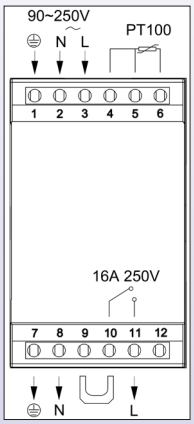
Knob and bezels dimensions

Dimensions				
References	66MZ.....	66EN1	66EN3	66EN2
Material	PC +Santoprene	Black ABS	Chrome plated ABS	Stainless steel

Many other knobs are available, see the knobs catalogue.

Digital display electronic controller, Din Rail mounting, ON-OFF, Type: 2DNAP6F0



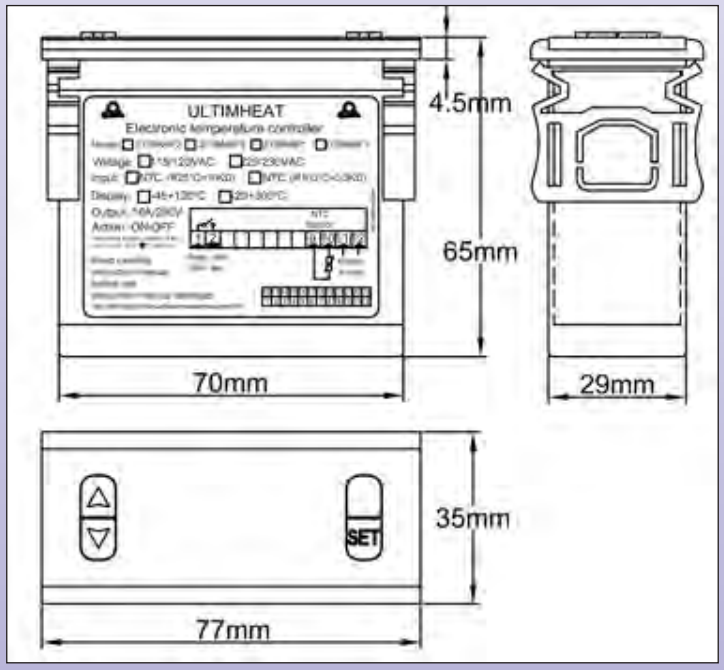


This electronic temperature controller with the simplest and instinctive end user setting, was designed for simple incorporation inside cabinets with DIN rail mounting, and to be used by not highly trained operators.
It provides °C or °F display, On Off action with adjustable temperature differential, and heating or cooling relay output setting.
Dimensions: 86.9 x 58 x 52.5 mm
Display: 3+1 digit LED. The fourth digit is used to display °C or °F, upon setting made.
Set point setting: In normal use, the display shows the measured temperature. Push "Set" key will display the set point value, at that time it can be adjusted with " +" and "-" keys. Push "set" again or no action during 5 seconds will register the new set point value and bring back display to the measured value.
Temperature differential setting: In normal use, the display shows the measured value. Push "D" key will display the differential value, at that time it can be adjusted with" +" and "-" keys. Push "D" again or no action during 5 seconds will register the new differential value and bring back display to the measured value.
Action: On-OFF
Temperature sensor: Pt100 2 or 3 wires
Accuracy: +/-1% of scale
Temperature adjustment ranges:
-30, 0 to +40, 0°C (-20,0 + 99.9°F), with 1/10° display
-30+400°C (-20+750°F), with 1° display
Temperature range can be selected by a dip switch on circuit (Needs to open the housing)
Other temperature range available: -30+400°C, see data sheet on page xx
Power supply: 90 to 240V, 50Hz or 60Hz
Relay output: SPNO, 16A250V res., 100000 cycles.
Relay action: Heating or cooling, open or close on temperature rise output relay action can be selected by a dip switch on circuit (Needs to open the housing)
°C or °F display: can be selected by a dip switch on circuit (Needs to open the housing by the installator)
Ambiant: -20+50°C, 10-85% RH
Power: <2W
Fail safe safety:
• If no power supply, relay output contact will open
• If Pt100 sensor is broken or not connected properly, relay output contact will open and display will show "EEE"
• If measured temperature is higher than 40,0°C or 99,9°F, display will show HHH
• If measured temperature is lower than -30,0°C or -20,0°F, display will show LLL
Electrical connections:
• Power input: Neutral, phase, ground, with 2.5 mm² terminals
• Power output: Neutral, phase, ground, with 2.5 mm² terminals for direct connection to the load.
• Temperature sensor: three 2.5 mm² screw terminal
One removable jumper provides a potential free relay output for applications needing a separate circuit for relay, external timer or other.
Standards: Complies with EMC (CE), ROHS and Reach

Reference	2DNAP6F0

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

77 x 35mm intelligent temperature controller, On/Off action
Type: 273



Mini-sized and integrated intelligent controller, with very simple end-user interface: Change of set point is made without password, with up and down keys.

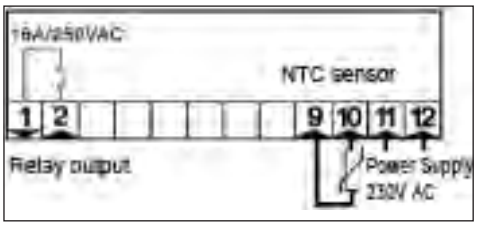
Input:
Input NTC : value R@25°C:10KO (±1%), B@25/50°C: 3380KQ (±1%)
PtlOO and thermocouple K Inputs: standard curves
Outputs: Relay with 16A or 10A resistive contact depending on models.
Alarm: 5A alarm relay on thermocouple K models
Display: Single display °C (°C or °F for the –45 +120° model)
Power supply: AC 220-230V 50-60Hz
Accuracy: ±1°C (±2°F) or 0.3%FE± one digit
Selt testing: Over-scale, under-scale, and open circuit sensor display.
Dimensions: 77 x 35 X 60mm. Panel cut-out 71x29mm
Ambient temperature: -10 to 60°C, 20 to 85% relative humidity, non condensing.
Temperature display range: - 45 to +120°C (41 to 248°F)
Resolution: 1° (0.1° within the -19.9° à 99.9° range for the model -45+120°C)

References (230V types)	Temperature range	Sensor	Main relay output
273BN6F2	-45+120°C	NTC	16A
273BP0F2	-150+550°C	Pt100	10A
273BK1F2	0-999°C	K	10A
273DJ2F2*	-45+120°C and 0-100% relative humidity	NTC and Capacitive sensor	10A

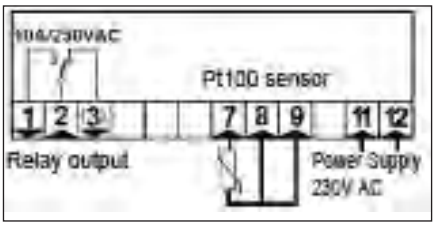
*For more choices within the humidity controls, please see the specialized catalogue "Humidity controls".

Connection :

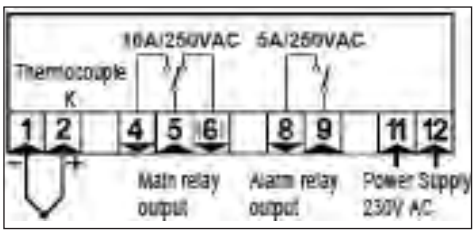
NTC sensor



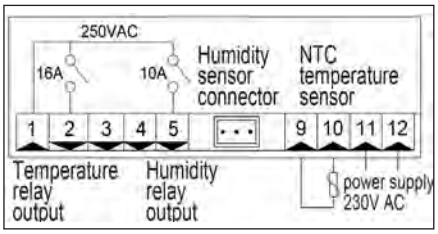
Ptl00 sensor



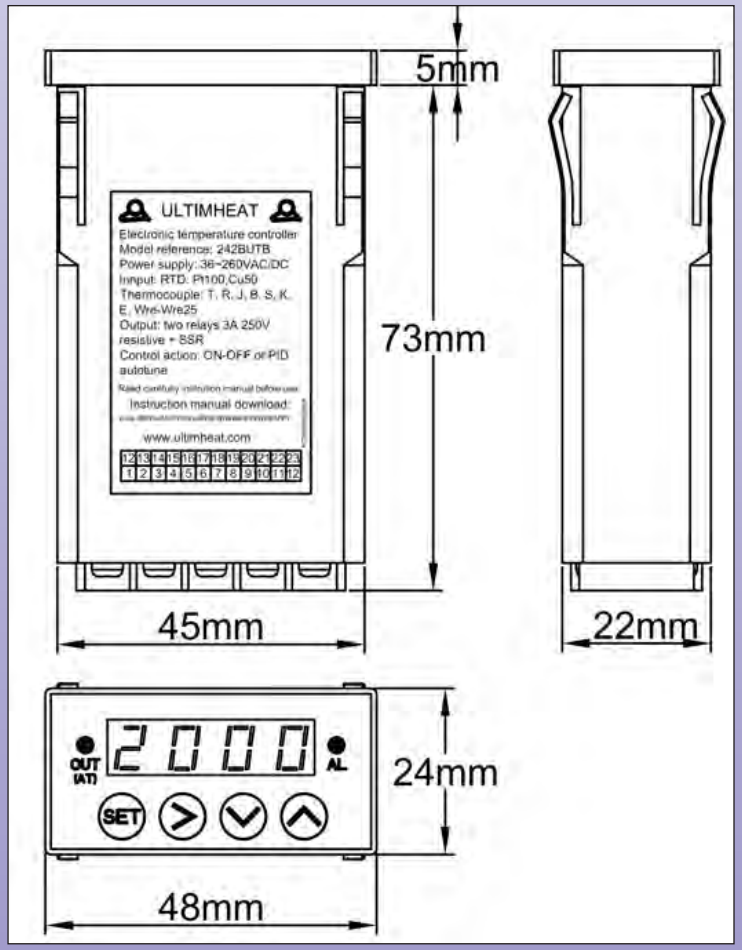
Thermocouple K



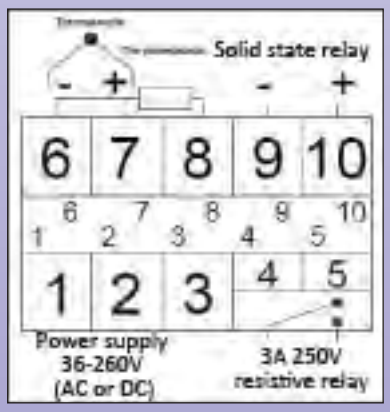
NTC temperature sensor and humidity capacitive sensor



Programmable temperature controller, PID auto-tune 25 x 48, multi sensor, relay and SSR (solid state relay) outputs
Type: 242



Reduced size: very small foot print allows it to replace any electromechanical thermostat.
Simple End-user interface: Easy to read 4-digit LED display. Change of set point is made without password, with "up" and "down" keys.
Simple installation interface: auto-tune PID control, relay output and SSR output are standard.
Simple storage and maintenance: one model covers all applications.
Electronics: Microprocessor, using Fuzzy Logic technology. It enables a process to reach a predetermined set point in the shortest time, with the minimum of overshoot during power-up or external load disturbance.
Input: RTD: Ptl00, Cu50 , Thermocouple: T, R, J, B, S, K, E, Wre-3 Wre25.
Output: relay contact output and voltage pulse output.
Alarm: the relay output can be used as alarm when control action uses SSR output.
Operation: auto-tune function sets the PID parameters to the system characteristics.
Display: single display. Temperature Unit: °C or °F.
Power supply voltage: AC 36~260V 50-60Hz (DC 36~260V. If connected to DC power supply, terminal 1 is positive, terminal 2 is negative).
Power: < 3W.
Relay contact rating: AC220V/3A resistive, 30VDC/3A resistive (NO or NC), 1×105 cycles.
Voltage pulse output: 8V (open-circuit voltage) 30mA (short-circuit current).
Temperature precision: 0.2%FE.
Over-scale, under-scale, and open circuit sensor display:EEEE.
Dimensions: 48 x 25 x 75mm.
Panel cut-out: 45 x 22 mm
Ambient Temperature: 0 to 50 °C, 0 to 85% Relative Humidity
Connection:



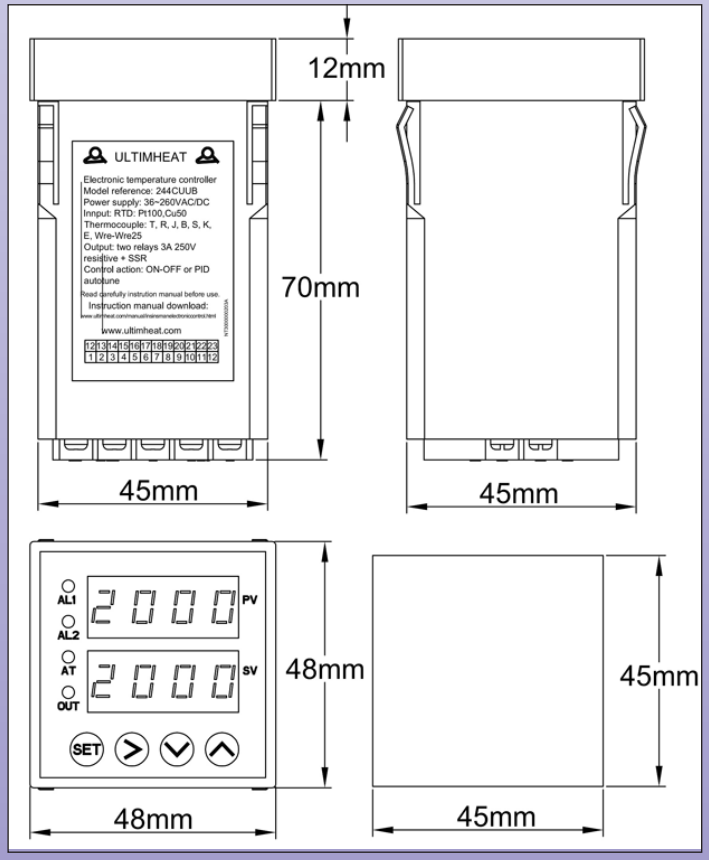
Reference	242BUTB

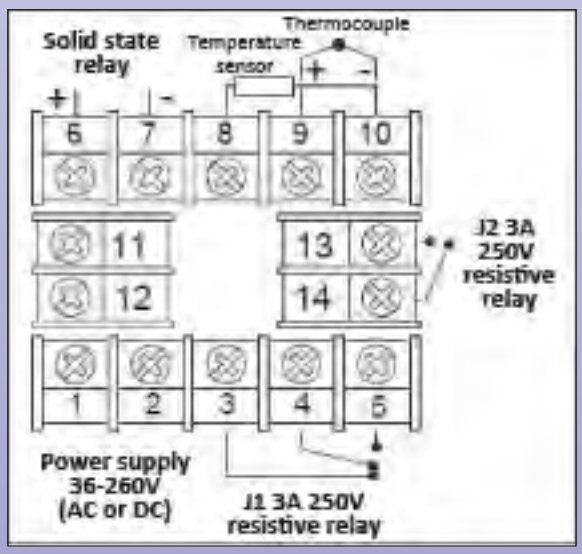
JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

48 x 48, Intelligent PID Temperature Controller, double display, multisensor, power relay and SSR (solid state relay) outputs

Type: 244

Reduced size: very small foot print allows it to replace any electromechanical thermostat.
Simple installation interface: auto-tune PID control, relay output and SSR output are standardized.
Simple storage and maintenance: one model covers all applications.
Electronics: Microprocessor, using fuzzy Logic technology. It enables a process to reach a predetermined set point in the shortest time, with the minimum of overshoot during power-up or external load disturbance.
Input: RTD: Pt l00, Cu50 , Thermocouple: T, R, J, B, S, K, E, Wre-Wre25.
Output: relay output or voltage pulse.
Alarm: the relay output can be used for an alarm when the device uses the SSR output.
ROperation: auto-tune function set the PID parameters to the system characteristics.
Power supply voltage: AC 36~260V 50-60Hz (DC 36~260V. If connected to DC power supply, terminal 1 is positive, terminal 2 is negative).
Power: < 3W.
Relay contact rating: AC220V/3A resistive, 30VDC/3A resistive (NO or NC), 1×105 cycles.
Voltage pulse output: 8V (open-circuit voltage) 30mA (short-circuit current).
Temperature precision: 0.2%FS.
Over-scale, under-scale, and open circuit sensor display: EEEE.
Dimensions: 48 x 48 x 82mm.
Panel cut-out: 45 x 45 mm.
Ambient Temperature: 0 to 50°C, 0 to 85% RH
Connection:





Reference	244CUUB

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

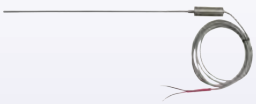
Usual temperature sensors

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Usual temperature sensors for applications with electronic temperature controls and control boxes

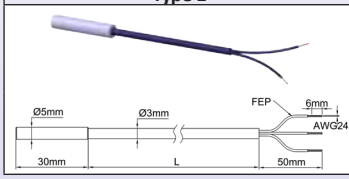
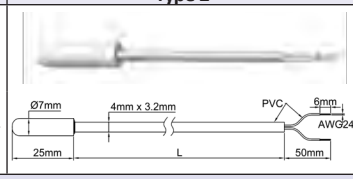
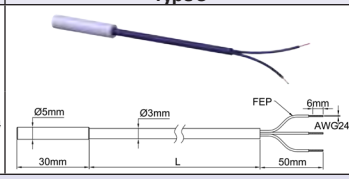
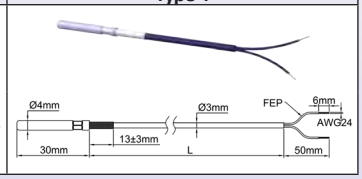
(Installation in thermo-wells, ambient or pipe surface mounting)



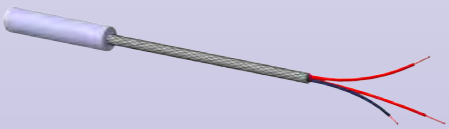
NTC Thermistor

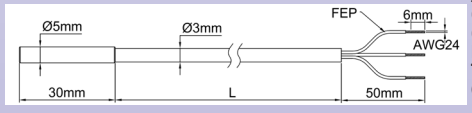
NTC thermistors (whose resistance decreases with temperature) are cheap and interchangeable. Their high resistance makes them insensitive to the resistance of the measuring line and thus a two-wires connection is allowed. Wiring is not polarized

Type 1	Type 2	Type 3	Type 4
			

References	Temperature ranges	R	B	Protection pocket	Cable, (L)	applications	Model
TNR60030C20001F6	-20+120°C	R25°C: 10KΩ +/- 1%	B25/50°C: 3380 +/-1%	Ni plated copper 6 x 30 mm	FEP L=2m	Common applications, ambient and up to 120°C, for controllers 273 and 2PE2N6 series	1
TNR70025P01501F6	-30+50°C	R25°C: 10KΩ +/- 1%	B25/50°C: 3380 +/-1%	PVC, sealed, 7 x 25mm	PVC 80°C, L=150 mm	Cold rooms and ambient, for controllers 273 and 2PE2N6 series	2
TNR70025P20001F6	-30+50°C	R25°C: 10KΩ +/- 1%	B25/50°C: 3380 +/-1%	PVC, sealed, 7 x 25mm	PVC 80°C L=2m	Cold rooms and ambient, for controllers 273 and 2PE2N6 series	2
TMR60030C20001F6	50-300°C	R100°C: 3.3K +/-2.5%	80/100°C : 3970 +/-2%	Stainless Steel, 6 x 30mm	FEP L=2m	200 and 300°C ranges, for controllers 273 series	3
TPR40030C20001F6	50-300°C	R25°C: 500K +/-2.5%	B25/50°C : 4260 +/-2%	Stainless Steel, 4 x 30mm	FEP L=2m	200 and 300°C ranges, for controllers 2PE2N6 series	4

PT100



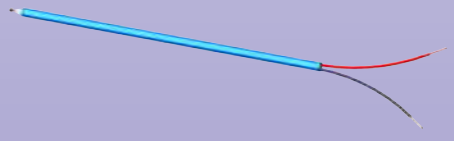


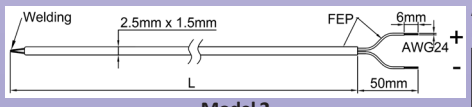
The resistivity of platinum has excellent repeatability and high accuracy over a wide temperature range. Its variation curve with temperature is much more linear than the thermocouple or thermistor curves. The low resistance of the probe requires the use of a three wire connection to measure and compensate for the resistance of the measuring line. The Pt100 sensor provides the highest accuracy in measuring low and medium temperatures.
Temperature range: -50 to 550°C (-60 to 1020°F) on the ceramic substrate, but temperature in use limited to 200 ° C due to the FEP connecting cable
Temperature curve: EN 60751 (100 ohms @ 0°C, 138.5 Ohms @ 100°C)
Accuracy and tolerances: (according to EN 60751)
Class A, ±0.15°C @ 0°C; (±0.06 Ω @ 0°C)
Class B, ±0.3°C @ 0°C. (±0.12 Ω @ 0°C).
Protection pocket: Stainless Steel 304, dia. 5mm x 30 mm
Temperature range: -50°C, +200°C
Connection cable:
• 3 wires, 0.35 mm², FEP insulation + silver-plated copper braid + FEP, temperature resistance 200°C, external diameter 2.7 mm (0.127").
• Ends: stripped
Polarity: The two red wires are connected together at their welded junction to one of the chips ceramic substrate terminal and the white wire is connected to the other terminal.

References	Class	Cable length	Applications
TSR50030I2000AK6	A	2000 mm	Remote sensing
TSR50030I2000BK6	B	2000 mm	Remote sensing
TSR50030I0070AK6	A	70 mm	Room temperature sensing
TSR50030I0070BK6	B	70 mm	Room temperature sensing
TSR50030I0150AK6	A	150 mm	Room temperature sensing
TSR50030I0150BK6	B	150 mm	Room temperature sensing

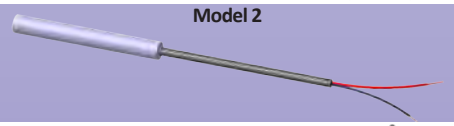
K Thermocouple

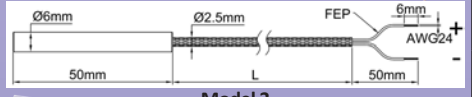
Model 1



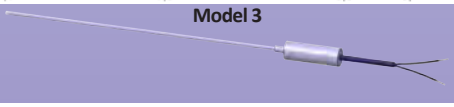


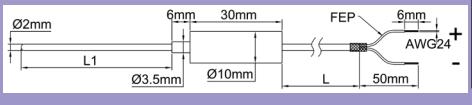
Model 2





Model 3



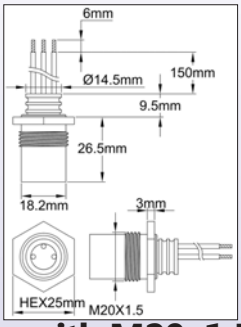


A thermocouple is made of two different metal leads welded at their ends. When heated, the solder generates a potential difference proportional to the temperature. Thermocouples need special connection cables and a temperature compensation system.
Protection pocket: Stainless Steel 304, dia. 6mm x 50 mm
Temperature range: 50°C, +200°C
Temperature curve: according to EN 60584-1 and IEC 584-1
Accuracy and tolerances: Class 2 according to EN 60584-1 and 2, ±2.5°C within -40 °C and 333 °C
Polarity (according to DIN 43714) : red = positive, blue= negative

References	Protection pocket	Sensor temperature range	Connection cable	Model
TPR00060W02002F4	Bare solder	-50+200°C	2 leads 0.35mm², FEP insulation 200°C L=200mm	1
TPR00060W05002F4	Bare solder	-50+200°C	2 leads 0.35mm², FEP insulation 200°C L=500mm	1
TPR00060W10002F4	Bare solder	-50+200°C	2 leads 0.35mm², FEP insulation 200°C L=1m	1
TPR00060W20002F4	Bare solder	-50+200°C	2 leads 0.35mm², FEP insulation 200°C L=2m	1
TPR60050I10002E4	Stainless Steel dia 6mm x 50 mm	-50C, +200°C	2 leads 0.35mm², external sleeve dia 2.7mm, Nickel plated metal braid, L=1m	2
TPR60050I20002E4	Stainless Steel dia 6mm x 50 mm	-50C, +200°C	2 leads 0.35mm², external sleeve dia 2.7mm, Nickel plated metal braid, L=2m	2
TPR20200R20002E4	Sleeve sensor in refractory Stainless Steel, dia 2, L1=200mm	-40+800°C	2 leads 0.35mm², external sleeve dia 2.7mm, Nickel plated metal braid, L2=1m	3
TPR20400I20002E4	Sleeve sensor in refractory Stainless Steel, dia 2, L1=400mm	-40+800°C	2 leads 0.35mm², external sleeve dia 2.7mm, Nickel plated metal braid, L2=2m	3

Usual temperature sensors for applications with electronic temperature controls and control boxes

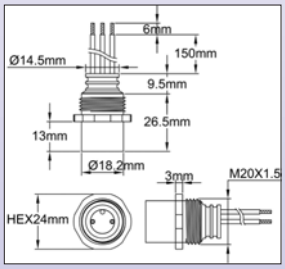
Pt100 sensor with M20x1.5 front fitting



3 wires Pt100 sensor in an anodized aluminum bolt.
For temperature control of a pipe surface: to be screwed on the mounting stand. The length of the conductor outputs allows direct connection into the control box via the M20 rear outlets, if this component is mounted on the same stand;
For ambient temperature control: to be screwed from the inside on a M20x1.5 rear outlet.
Connection: AWG18 wires, FEP, 300V, 150 mm length.
2 white AWG18 wires correspond to one pole of the Pt100, the blue wire to the other pole.
It is equipped with a tip (diameter 14 mm) to connect with the waterproof filling kit type G, if it is used at a greater distance from the box.
See assembling method on page 105.

Reference	TSJBA265A0150BT6

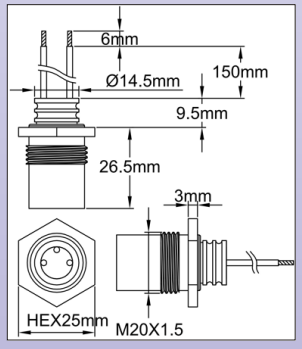
Pt100 sensor with M20x1.5 back fitting



3 wires Pt100 sensor in an anodized aluminum bolt.
To measure the temperature outside of cabinet: can be screwed directly to the rear outputs M20 thread or to the cable gland outlet board.
Can also be mounted on the insulation output plates, or directly through the sheet into a dia. 20 mm hole, tightened with a cable gland nut
Connection: AWG18 wires, FEP, 300V, 150 mm length.
2 white AWG18 wires correspond to one pole of the Pt100, the blue wire to the other pole.
It is equipped with a tip (diameter 14 mm) to connect with the waterproof filling kit type G, if it is used at a greater distance from the box.
See assembling method on page 105.

Reference	TSJBA266A0150BT6

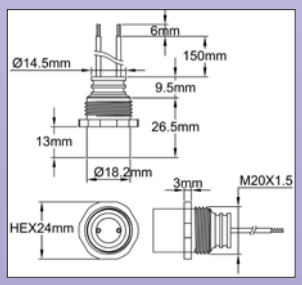
NTC thermistor with M20x1.5 front fitting



2 wires NTC in an anodized aluminum bolt
For temperature control of a pipe surface: to be screwed on the mounting stand. The length of the conductor outputs allows direct connection into the control box via the M20 rear outlets, if this component is mounted on the same stand;
For ambient temperature control: to be screwed from the inside on a M20x1.5 rear outlet.
Connection: AWG18 white wires, FEP, 300V, 150 mm length.
Each lead wire corresponds to a pole of the NTC.
It is equipped with a tip (diameter 14 mm) to connect with the waterproof filling kit type G, if it is used at a greater distance from the box. See assembling method on page 105.

Reference	Value A	Value B
TNJBA265265A01501R6	10 Kohms @25°C	3380
TMJBA265265A01501R6	3.3 Kohms @100°C	3970
TPJBA265265A01501R6	500 Kohms @25°C	4260

NTC thermistor with M20x1.5 back fitting



2 wires NTC in an anodized aluminum bolt
To measure the temperature outside of cabinet: can be screwed directly to the rear outputs M20 thread or to the cable gland outlet board.
Can also be mounted on the insulation output plates, or directly through the sheet into a dia. 20 mm hole, tightened with a cable gland nut
Connection: AWG18 white wires, FEP, 300V, 150 mm length.
Each lead wire corresponds to a pole of the NTC.
It is equipped with a tip (diameter 14 mm) to connect with the waterproof filling kit type G, if it is used at a greater distance from the box. See assembling method on page 105.

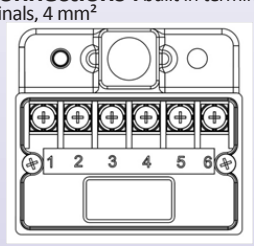
Reference	Value A	Value B
TNJBA266265A01501R6	10 Kohms @25°C	3380
TMJBA266265A01501R6	3.3 Kohms @100°C	3970
TPJBA266265A01501R6	500 Kohms @25°C	4260

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Usual temperature sensors for applications with electronic temperature controls and control boxes

(Installation in thermo-wells, ambient or pipe surface mounting)

Internal connections : built in terminal block , 2 to 6 screw terminals, 4 mm²



Room temperature sensors with housing

The correct measurement of ambient temperature requires to install the sensor at a location representative of the average temperature of the room where it is located. We have developed a series of boxes incorporating temperature sensors, and allowing an effective measure of this temperature.
Inside these boxes, the sensor is thermally insulated from the wall on which it is installed, and mechanically protected by a black painted copper or nickel plated probe in order to eliminate measurement errors due to thermal conduction, while ensuring good durability. The housing is provided with retractable lateral mounting legs.

Variants:

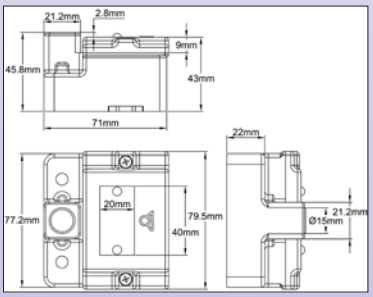
2 types of housing
1: Black PC-ABS, IP65, side output by two M20 cable glands for industrial applications or outdoor installation.
2: Cream-colored PC-ABS rear output, IP20, for domestic applications or indoor installation.

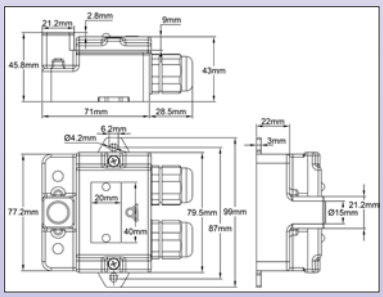
3 temperature measuring systems
1: Measurement of the temperature of the ambient air flowing around the sensor and transmitted by conduction through the probe wall to the temperature sensor (This heat component called “convection”)
2: Measurement of the temperature radiated mainly in the infrared, and transmitted to the temperature sensor by means of a “black body” that absorbs these radiations (This heat component called “radiation”)
3 Measurement of both conduction and radiation.

2 temperature measurement sensing elements
1: NTC (R25 10Kohms, B25/50 = 3380)
2: Pt100
Other sensing elements such as Pt1000, Thermocouple J or E, Cu50 RTD, can be installed. Contact us.

« Convection » sensor

(Sensing element protected by nickel plated bracket)

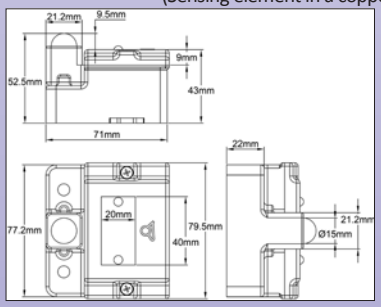


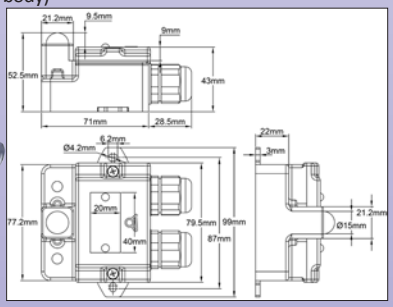


References	Temperature sensor	Connection	Color
TSRC071077045ACB	Pt100	Backside	Cream, RAL1010
TSRC071077045ABP	Pt100	2 M20 cable glands	Black
TNRC0710770451CB	NTC	Backside	Cream, RAL1010
TNRC0710770451BP	NTC	2 M20 cable glands	Black

« Radiation » sensor

(Sensing element in a copper sphere with special paint black body)

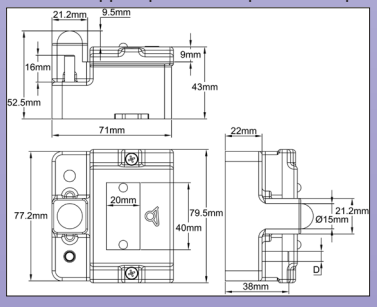


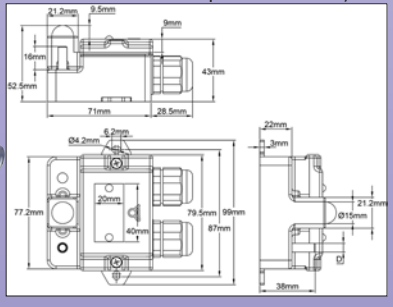


References	Temperature sensor	Connection	Color
TSRR071077045ACB	Pt100	Backside	Cream, RAL1010
TSRR071077045ABP	Pt100	2 M20 cable glands	Black
TNRR0710770451CB	NTC	Backside	Cream, RAL1010
TNRR0710770451BP	NTC	2 M20 cable glands	Black

Sensor « Convection + radiation »

(One sensing element in a copper sphere with special black paint black body, and one sensing element in a stainless steel pocket dia.6 mm)





References	Temperature sensor	Connection	Color
TSRM071077045ACB	2 x Pt100	Backside	Cream, RAL1010
TSRM071077045ABP	2 x Pt100	2 M20 cable glands	Black
TNRM0710770451CB	2 x NTC	Backside	Cream, RAL1010
TNRM0710770451BP	2 x NTC	2 M20 cable glands	Black

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

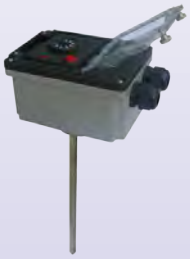
Y6, Y7, Y8 TEMPERATURE CONTROL BOXES

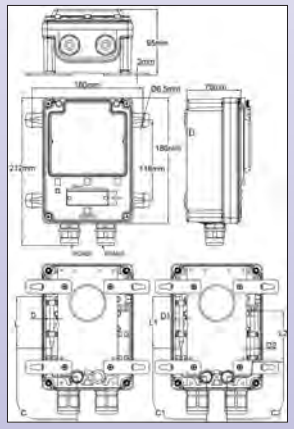
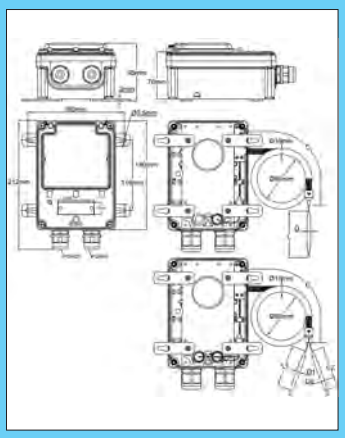
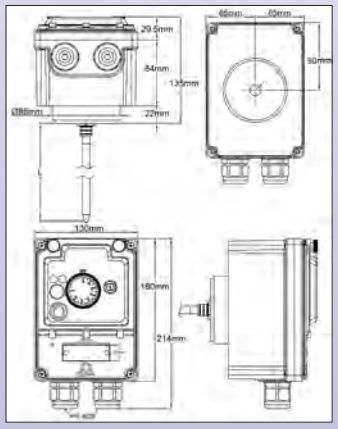
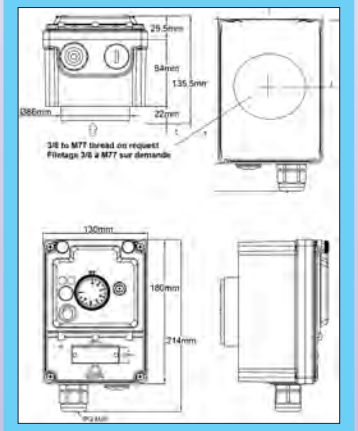
Main features

These products come in 4 different dimensional configurations, in control (One bulb) or control + high limit safety (2 bulbs)

Y8 Ambient temperature measurement	**Y8** Bulb and capillary remote measurement	**Y6** Rear rod measurement	**Y7** Measurement on rear mounted immersion heater (We do not supply the immersion heater)





Main advantages :
- The simplest and most economical control systems of the Y6, 7, 8 electromechanical temperature controls range.
- Heavy duty housing for outside use, IP65 and IK10. PA66 for Y8 and aluminum for Y6 and Y7
- Instinctive understanding of the setting by the end customer.
- It has proven reliability, and a good immunity to power supply problems.

Standard equipment :
- Knob with adjustable stop for positioning a mechanical limit at high or low setting.
- Red and green lights, indicating 230V in and out voltage.
- Fuse for internal relay circuit protection (When present).
- Illuminated on-off switch is standard on types with relays or relay board. It is an option on other models.
- Knob printed in ° C
- 4 wall mounting removable legs
- Connection block with 5 terminals for 6 mm² wires and 5 terminals for 2.5 mm² wires (10 x 10 mm ² for 30A and higher models).

Internal wiring provides connection between thermostat capillary and ground terminal.
The connection block is equipped with a jumper between terminals 1 and 2, it allows connecting a safety device, a timer, or an external wired remote control. On versions using power relay(s) this jumper is on the power relay coil circuit. This external connection is not available on 3 poles models without relay.

Contact action (Types with manual reset thermostat option) :
Versions with manual reset thermostat are multiple, because of the many possible configurations. The manual reset thermostat can be SPST, DPST, 3PST or even 4PST, failsafe or standard. Single pole thermostats can be coupled to a SPST or DPST or 3 pole ST power relay, or to a 3 poles relay board. Some configurations also allow the coupling with an external thermal fuse ("TCO"). The choice of different configurations depends on the final application, and the requirements to use single poles or multiple pole switching systems, independent or not.
Minimum calibration temperature for manual reset thermostats is 40 ° C. (60°C for fail safe versions). In standard, these manual reset thermostats are calibrated at 20°C more than the maximum control thermostat setting. Other values on request. With rare exceptions, their contact action is open on temperature rise, without change over.

Cables output :
- Cable gland output board is equipped in standard with one or two M25cable glands (Other cable gland boards: 2 x M20+1xM24, 1 x 1 "or 4 x M20 for flat heat tracing cables, see page 72).
- The two back side M20 X 1.5 outputs are equipped with cable glands with silicone gasket to seal the temperature sensors outlet.
- When the Y8 type is used with backside accessories, the version to use is the distant measurement one, and capillary protection tube must be removed.

Standard Accessories :
10 PA66 red plastic seals, English-French installation manual.

Options :
- Infrared remote control
- 2 poles shaft switch with 3 mm contact distance (Not available on 3 phase models or models with K thermostat)
- Enclosure heater
- Soft grip backlit knob
- ° F knob
- Illuminated on-off switch (This option reduces the electrical rating to 12A in no relay versions, and is not available on models with 3 poles without relay and models with shaft switch)
- 115-120V power supply.

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Y6, Y7, Y8 types temperature control boxes
Bulb and capillary types

The 10 basic internal configurations and their multiple options

1
8G Single pole control thermostat

Available temperature ranges
-35+35°C, 4-40°C, 30-90°C, 30-110°C, 50-200°C, 50-300°C
Standard capillary range for capillary output version : 1.5m.

Power output options

A — SPDT 16A 250V
B — SPDT 16A 250V + 1 x 30A 250V relay
C — SPDT 16A 250V + 2 x 25A 250V relay
D — SPDT 16A 250V + 3 x16A 250V board
E — SPDT 16A 250V + 6 x16A 250V board
F — SPDT 16A 250V + 3 x 25A 250V/440V power contactor (only on Y6 and Y7, not available on Y8)

Front board options

G — No options
H — 12A 250V Illuminated on-off switch
I — Backlit knob
J — 12A 250V Illuminated on-off switch + Backlit knob
K — 2 x 16A 250V shaft switch option Not available on versions with 3 x 25A 250/440V contactor
L — 2 x 16A 250V shaft switch + Backlit knob Not available on versions with 3 x 25A 250/440V contactor

Main references

Temperature ranges	Options*	Ambient bulb version	Distant bulb version	300 mm long Back rod version**	Immersion heater version***
-35+35	A-G	Y8WKCA320B0011F3	Y8WKCC320B0031F3	Y6WKCR320B00F1F1	Y7WKCH320B00M1F1
4-40	A-G	Y8WKDA320B0011F3	Y8WKDC320B0031F3	Y6WKDR320B00F1F1	Y7WKDH320B00M1F1
30-90	A-G		Y8WKEC320B0031F3	Y6WKER320B00F1F1	Y7WKEH320B00M1F1
30-110	A-G		Y8WKFC320B0031F3	Y6WKFR320B00F1F1	Y7WKFH320B00M1F1
50-200	A-G		Y8WKGC320B0031F3	Y6WKGR320B00F1F1	Y7WKGH320B00M1F1
50-300	A-G		Y8WKHC320B0031F3	Y6WKHR320B00F1F1	Y7WKHH320B00M1F1

2
8G Single pole thermostat + top side 8L manual reset high limit thermostat

Available temperature ranges
-35+35°C, 4-40°C, 30-90°C, 30-110°C, 50-200°C, 50-300°C
Standard capillary range for capillary output version: 1.5m.

A — SPDT 16A 250V + SPNC 16A 250V manual reset
B — SPDT 16A 250V + SPNC 16A 250V manual reset + 2 x25A 250V relay
C — SPDT 16A 250V + SPNC 16A 250V manual reset+ 3 relays 16A 250V board
D — SPDT 16A 250V + 3 x 25A 250V/440V power contactor (only on Y6 and Y7, not available on Y8)

G — No options
H — 12A 250V Illuminated on-off switch
I — Backlit knob
J — 12A 250V Illuminated on-off switch + Backlit knob option

Main references

Temperature ranges (°C)	High limit calibration (°C)	Options*	Ambient bulb version	Distant bulb version	300 mm long Back rod version**	Immersion heater version***
-35+35	60	A-G	Y8WKCB320B0P11F7	Y8WKCE320B0P31F7	Y6WKCR320B0PF1F1	Y7WKCH320B0PM1F1
4-40	60	A-G	Y8WKDB320B0L11F7	Y8WKDE320B0L31F7	Y6WKDR320B0LF1F1	Y7WKDH320B0LM1F1
30-90	110	A-G		Y8WKEE320B0L31F7	Y6WKER320B0LF1F1	Y7WKEH320B0LM1F1
30-110	130	A-G		Y8WKFE320B0L31F7	Y6WKFR320B0LF1F1	Y7WKFH320B0LM1F1
50-200	220	A-G		Y8WKGE320B0L31F7	Y6WKGR320B0LF1F1	Y7WKGH320B0LM1F1
50-300	320	A-G		Y8WKHE320B0L31F7	Y6WKHR320B0LF1F1	Y7WKHH320B0LM1F1

3
8G Single pole thermostat + side manual reset 2 or 3 pole, high limit thermostat type 8X

Available temperature ranges
-35+35°C, 4-40°C, 30-90°C, 30-110°C
Standard capillary range for capillary output version : 1.5m for control, 900mm for manual reset

A — SPDT 15A 250V + DPNC 20A 250V manual reset
B — SPDT 15A 250V + DPNC 20A 250V manual reset + 2 x 25A 250V relay
C — SPDT 15A 250V + 3PNC 20A 250V manual reset + 3 x 16A 250V relay board

G — No options
H — 12A 250V Illuminated on-off switch
I — Backlit knob
J — 12A 250V Illuminated on-off switch + Backlit knob option

Main references

Temperature ranges (°C)	High limit calibration (°C)	Options*	Ambient bulb version	Distant bulb version	300 mm long Back rod version**	Immersion heater version***
-35+35	60	A-G	Y8WKCB320B0U11F7	Y8WKCE320B0U31F7	Y6WKCR320B0UF1F1	Y7WKCH320B0UM1F1
4-40	60	A-G	Y8WKDB320B0T11F7	Y8WKDE320B0T31F7	Y6WKDR320B0TF1F1	Y7WKDH320B0TM1F1
30-90	110	A-G		Y8WKEE320B0T31F7	Y6WKER320B0TF1F1	Y7WKEH320B0TM1F1
30-110	130	A-G		Y8WKFE320B0T31F7	Y6WKFR320B0TF1F1	Y7WKFH320B0TM1F1

4
3 pole control thermostat

Available temperature ranges
-35+35°C, 4-40°C, 30-90°C, 30-110°C, 50-200°C, 50-300°C
Standard capillary range for capillary output version : 1.5m

A — 3PNC, 16A 250V

G — No options
H — 12A 250V Illuminated on-off switch
I — Backlit knob
J — 12A 250V Illuminated on-off switch + Backlit knob option

Main references

Temperature ranges (°C)	Options*	Ambient bulb version	Distant bulb version	300 mm long Back rod version**	Immersion heater version***
-35+35	A-G	Y8WKCB340B0014F3	Y8WKCC340B0034F3	Y6WKCR340B00F4F1	Y7WKCH340B00M4F1
4-40	A-G	Y8WKDB340B0014F3	Y8WKDC340B0034F3	Y6WKDR340B00F4F1	Y7WKDH340B00M4F1
30-90	A-G		Y8WKEC340B0034F3	Y6WKER340B00F4F1	Y7WKEH340B00M4F1
30-110	A-G		Y8WKFC340B0034F3	Y6WKFR340B00F4F1	Y7WKFH340B00M4F1
50-200	A-G		Y8WKGC340B0034F3	Y6WKGR340B00F4F1	Y7WKGH340B00M4F1
50-300	A-G		Y8WKHC340B0034F3	Y6WKHR340B00F4F1	Y7WKHH340B00M4F1

Y6, Y7, Y8 types temperature control boxes
Bulb and capillary types

5
3 pole control thermostat+ manual reset high limit thermostat

Available temperature ranges
-35+35°C, 4-40°C, 30-90°C, 30-110°C, 50-200°C, 50-300°C
Standard capillary range for capillary output version : 1.5m

A
3PNC 16A 250V + SPNC 16A 250V manual reset

B
3PNC 16A 250V + SPNC 16A 250V manual reset + 3 relays 16A 250V board

G
No options

H
12A 250V Illuminated on-off switch

I
Backlit knob

J
12A 250V Illuminated on-off switch + Backlit knob option

Main references

Temperature ranges (°C)	High limit calibration (°C)	Options*	Ambient bulb version	Distant bulb version	300 mm long Back rod version**	Immersion heater version***
-35+35	60	A-G	Y8WKCA340B0P14F7	Y8WKCE340B0P34F7	Y6WKCR340B0PF4F1	Y7WKCH340B0PM4F1
4-40	60	A-G	Y8WKDA340B0L14F7	Y8WKDE340B0L34F7	Y6WKDR340B0LF4F1	Y7WKDH340B0LM4F1
30-90	110	A-G		Y8WKEE340B0L34F7	Y6WKER340B0LF4F1	Y7WKEH340B0LM4F1
30-110	130	A-G		Y8WKFE340B0L34F7	Y6WKFR340B0LF4F1	Y7WKFH340B0LM4F1
50-200	220	A-G		Y8WKGE340B0L34F7	Y6WKGR340B0LF4F1	Y7WKGH340B0LM4F1
50-300	320	A-G		Y8WKHE340B0L34F7	Y6WKHR340B0LF4F1	Y7WKHH340B0LM4F1

6
Single pole heavy duty type K thermostats

Plages de température réalisables

T° (°C)	Capillary length	T° (°C)	Capillary length
-25+25	1500	80-200	1500
-10+15	1500	50-300	1500
0-50	1500	10-450	1500
0-70	1500	10-450	3000
0-70	3000	60-500	1500
20-90	1500	60-500	3000
20-90	3000	180-600	1500
10-150	1500	180-600	3000
10-150	3000	280-700	1500

A
SPDT 15A 250V

B
SPDT 15A 250V + 1 x 30A 250V relay

C
SPDT 15A 250V + 2 x 25A 250V relay

D
SPDT 15A 250V + 3 x16A 250V board

G
No options

H
12A 250V Illuminated on-off switch

I
Backlit knob

J
12A 250V Illuminated on-off switch + Backlit knob option

Main references

Temperature ranges (°C)	Capillary length (Not for ambient types)	Options*	Ambient bulb version	Distant bulb version	300 mm long Back rod version**	Immersion heater version***
-25+25	1500	A-G	Y8WM1A320B0011F3	Y8WM1A320B0031F3	Y6WM1R320B00F1F1	Y7WM1H320B00M1F1
-10+15	1500	A-G	Y8WM2A320B0011F3	Y8WM2A320B0031F3	Y6WM2R320B00F1F1	Y7WM2H320B00M1F1
0-50	1500	A-G	Y8WM3A320B0011F3	Y8WM3A320B0031F3	Y6WM3R320B00F1F1	Y7WM3H320B00M1F1
0-70	1500	A-G	Y8WM1A320B0011F3	Y8WM4A320B0031F3	Y6WM4R320B00F1F1	Y7WM4H320B00M1F1
0-70	3000	A-G		Y8WM4A320B0051F3	Y6WM4R320B00F1F1	Y7WM4H320B00M1F1
20-90	1500	A-G		Y8WM5A320B0031F3	Y6WM5R320B00F1F1	Y7WM5H320B00M1F1
20-90	3000	A-G		Y8WM5A320B0051F3	Y6WM5R320B00F1F1	Y7WM5H320B00M1F1
10-150	1500	A-G		Y8WM6A320B0031F3	Y6WM6R320B00F1F1	Y7WM6H320B00M1F1
10-150	3000	A-G		Y8WM6A320B0051F3	Y6WM6R320B00F1F1	Y7WM6H320B00M1F1
80-200	1500	A-G		Y8WM7A320B0031F3	Y6WM7R320B00F1F1	Y7WM7H320B00M1F1
50-300	1500	A-G		Y8WM8A320B0031F3	Y6WM8R320B00F1F1	Y7WM8H320B00M1F1
10-450	1500	A-G		Y8WM9A320B0031F3	Y6WM9R320B00F1F1	Y7WM9H320B00M1F1
10-450	3000	A-G		Y8WM9A320B0051F3	Y6WM9R320B00F1F1	Y7WM9H320B00M1F1
60-500	1500	A-G		Y8WMAA320B0031F3	Y6WMAR320B00F1F1	Y7WMAH320B00M1F1
60-500	3000	A-G		Y8WMAA320B0051F3	Y6WMAR320B00F1F1	Y7WMAH320B00M1F1
180-600	1500	A-G		Y8WMYA320B0031F3	Y6WMYR320B00F1F1	Y7WMYH320B00M1F1
180-600	3000	A-G		Y8WMYA320B0051F3	Y6WMYR320B00F1F1	Y7WMYH320B00M1F1
280-700	1500	A-G		Y8WMBA320B0031F3	Y6WMBR320B00F1F1	Y7WMBH320B00M1F1

7
Single pole K thermostat and topside 8L single pole manual reset

Available temperature ranges

T° (°C)	Capillary length	T° (°C)	Capillary length
-25+25	1500	20-90	1500
-10+15	1500	10-150	1500
0-50	1500	80-200	1500
0-70	1500	50-300	1500

A
SPDT 15A 250V + SPNC 16A 250V manual reset

B
SPDT 15A 250V + SPNC 16A 250V manual reset + 1 x 30A 250V relay

C
SPDT 15A 250V + SPNC 16A 250V manual reset+ 2 x 25A 250V relay

D
SPDT 15A 250V + SPNC 16A 250V manual reset + 3 x16A 250V board

G
No options

H
12A 250V Illuminated on-off switch

I
Backlit knob

J
12A 250V Illuminated on-off switch + Backlit knob option

Main references

Temperature ranges (°C)	High limit calibration	Options*	Ambient bulb version	Distant bulb version	300 mm long Back rod version**	Immersion heater version***
-25+25	60	A-G	Y8WM17320B0N11F7	Y8WM17320B0N61F7	Y6WM1R320B0NF1F1	Y8WM1H320B0NM1F1
-10+15	60	A-G	Y8WM27320B0N11F7	Y8WM27320B0N61F7	Y6WM2R320B0NF1F1	Y8WM2H320B0NM1F1
0-50	60	A-G	Y8WM37320B0J11F7	Y8WM37320B0J61F7	Y6WM3R320B0JF1F1	Y8WM3H320B0JM1F1
0-70	90	A-G	Y8WM47320B0L11F7	Y8WM47320B0L61F7	Y6WM4R320B0LF1F1	Y8WM4H320B0LM1F1
20-90	110	A-G		Y8WM57320B0L61F7	Y6WM5R320B0LF1F1	Y8WM5H320B0LM1F1
10-150	170	A-G		Y8WM67320B0L61F7	Y6WM6R320B0LF1F1	Y8WM6H320B0LM1F1
80-200	220	A-G		Y8WM77320B0L61F7	Y6WM7R320B0LF1F1	Y8WM7H320B0LM1F1
50-300	320	A-G		Y8WM87320B0L61F7	Y6WM8R320B0LF1F1	Y8WM8H320B0LM1F1

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Y6, Y7, Y8 types temperature control boxes
Bulb and capillary types

8
Single pole K thermostat and side mounted double pole manual reset type 8X

Available temperature ranges

T° (°C)	Capillary length	T° (°C)	Capillary length
-25+25	1500	0-70	1500
-10+15	1500	20-90	1500
0-50	1500	10-150	1500

A
SPDT 15A 250V + DPNC 20A 250V manual reset

G
No options

H
12A 250V Illuminated on-off switch

I
Backlit knob

J
12A 250V Illuminated on-off switch + Backlit knob option

Main references

Temperature ranges (°C)	High limit calibration (°C)	Options*	Ambient bulb version	Distant bulb version	300 mm long Back rod version**	Immersion heater version***
-25+25	60	A-G	Y8WM1B320B0W11F7	Y8WM17320B0W61F7	Y6WM1R320B0WF1F1	Y7WM1H320B0WM1F1
-10+15	60	A-G	Y8WM2B320B0W11F7	Y8WM27320B0W61F7	Y6WM2R320B0WF1F1	Y7WM2H320B0WM1F1
0-50	70	A-G	Y8WM3B320B0T11F7	Y8WM37320B0T61F7	Y6WM3R320B0TF1F1	Y7WM3H320B0TM1F1
0-70	90	A-G	Y8WM4B320B0T11F7	Y8WM47320B0T61F7	Y6WM4R320B0TF1F1	Y7WM4H320B0TM1F1
20-90	110	A-G	Y8WK5232000T1100	Y8WM57320B0T61F7	Y6WM5R320B0TF1F1	Y7WK5H320B0TM1F1
10-150	170	A-G	N/A	Y8WM67320B0T61F7	Y6WK6R320B0TF1F1	Y7WK6H320B0TM1F1

9
Combination 3 pole control and 3 pole manual reset direct switching

Temperature range: 10-85°C Manual reset at 120°C, other on request with MOQ

A
Combination 3PNC control + 3PNC manual reset, 20A 250V/16A 400V

G
No options

Main references

Temperature ranges (°C)	High limit calibration (°C)	Options*	Ambient bulb version	Distant bulb version	300 mm long Back rod version**	Immersion heater version***
10-85	120	A-G	Y8WFKB340A0W11F5	Y8WFKF340A0W61F5	Y6WFKR340A0WF1F1	Y7WFKH340A0WM1F1

10
Knob adjustment, SPDT manual reset thermostats type KX

Temperature ranges

T° (°C)	Capillary length	T° (°C)	Capillary length
-25+25	1500	80-200	1500
-10+15	1500	50-300	1500
0-50	1500	10-450	1500
0-70	1500	10-450	3000
0-70	3000	60-500	1500
20-90	1500	60-500	3000
20-90	3000	180-600	1500
10-150	1500	180-600	3000
10-150	3000	280-700	1500

A
SPDT 15A 250V

B
SPDT 15A 250V + 1 x 30A 250V relay

C
SPDT 15A 250V + 2 x 25A 250V relay

D
SPDT 15A 250V + 3 x16A 250V board

G
No options

H
12A 250V Illuminated on-off switch

I
Backlit knob

J
12A 250V Illuminated on-off switch + Backlit knob option

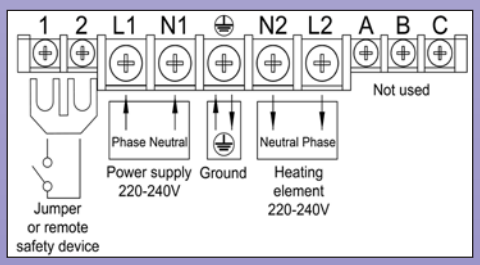
Main references

Temperature ranges (°C)	Capillary length (Not for ambient types)	Options*	Ambient bulb version	Distant bulb version	300 mm long Back rod version**	Immersion heater version***
-25+25	1500	A-G	Y8WQ1A320B0011F3	Y8WQ10320B0031F3	Y6WQ1R320B00F1F1	Y7WQ1H320B00M1F1
-10+15	1500	A-G	Y8WQ2A320B0011F3	Y8WQ20320B0031F3	Y6WQ2R320B00F1F1	Y7WQ2H320B00M1F1
0-50	1500	A-G	Y8WQ3A320B0011F3	Y8WQ30320B0031F3	Y6WQ3R320B00F1F1	Y7WQ3H320B00M1F1
0-70	1500	A-G	Y8WQ4A320B0011F3	Y8WQ40320B0031F3	Y6WQ4R320B00F1F1	Y7WQ4H320B00M1F1
0-70	3000	A-G	N/A	Y8WQ40320B0051F3	Y6WQ4R320B00F1F1	Y7WQ4H320B00M1F1
20-90	1500	A-G	N/A	Y8WQ50320B0031F3	Y6WQ5R320B00F1F1	Y7WQ5H320B00M1F1
20-90	3000	A-G	N/A	Y8WQ50320B0051F3	Y6WQ5R320B00F1F1	Y7WQ5H320B00M1F1
10-150	1500	A-G	N/A	Y8WQ60320B0031F3	Y6WQ6R320B00F1F1	Y7WQ6H320B00M1F1
10-150	3000	A-G	N/A	Y8WQ60320B0051F3	Y6WQ6R320B00F1F1	Y7WQ6H320B00M1F1
80-200	1500	A-G	N/A	Y8WQ70320B0031F3	Y6WQ7R320B00F1F1	Y7WQ7H320B00M1F1
50-300	1500	A-G	N/A	Y8WQ80320B0031F3	Y6WQ8R320B00F1F1	Y7WQ8H320B00M1F1
10-450	1500	A-G	N/A	Y8WQ90320B0031F3	Y6WQ9R320B00F1F1	Y7WQ9H320B00M1F1
10-450	3000	A-G	N/A	Y8WQ90320B0051F3	Y6WQ9R320B00F1F1	Y7WQ9H320B00M1F1
60-500	1500	A-G	N/A	Y8WQA0320B0031F3	Y6WQAR320B00F1F1	Y7WQAH320B00M1F1
60-500	3000	A-G	N/A	Y8WQA0320B0051F3	Y6WQAR320B00F1F1	Y7WQAH320B00M1F1
180-600	1500	A-G	N/A	Y8WQY0320B0031F3	Y6WQYR320B00F1F1	Y7WQYH320B00M1F1
180-600	3000	A-G	N/A	Y8WQY0320B0051F3	Y6WQYR320B00F1F1	Y7WQYH320B00M1F1
280-700	1500	A-G	N/A	Y8WQB0320B0031F3	Y6WQBR320B00F1F1	Y7WQBH320B00M1F1

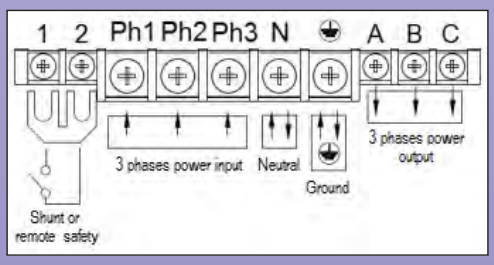
* Consult factory for full references with different options described in these tables
** Other standard rod length: 230, 450, 600 mm
*** : Without center hole, nor thread. Specify hole diameter and pitch on order
Other options not described in these tables: cable glands, remote control, cabinet heater. Consult our commercial department for full references.
Knob printing: see thermostats technical data sheets in this catalogue

Wiring diagrams

Single pole thermostat or single pole thermostat with relay, or with single pole and double pole high limit



3 pole thermostat and single pole thermostat with 3 pole relay

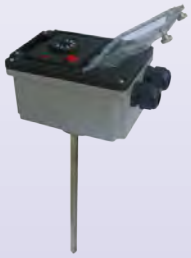


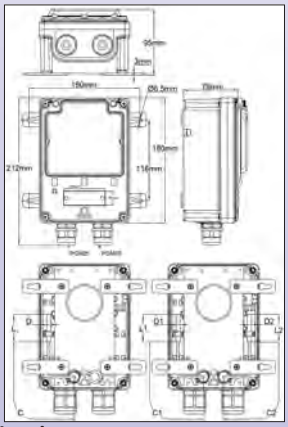
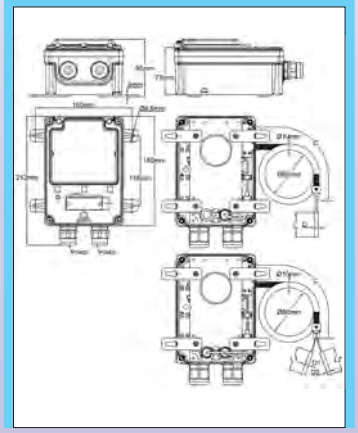
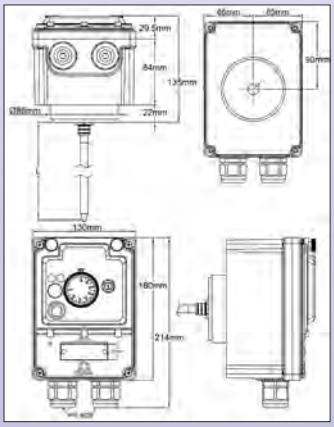
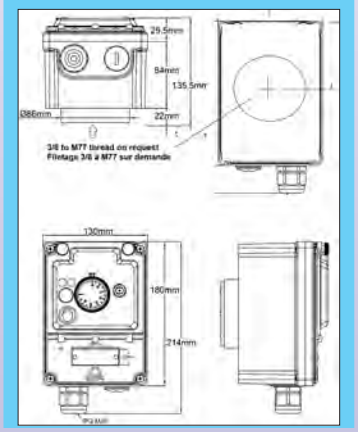
Main features

These products come in 4 different dimensional configurations, in control (One sensor) or control + high limit safety (2 sensors or one sensor + one bulb)

Y8 Ambient temperature measurement	**Y8** Remote measurement	**Y6** Rear rod measurement	**Y7** Measurement on rear mounted immersion heater (We do not supply the immersion heater)





Main advantages :
- The simplest and most economical control systems of the Y8 electronic room temperature controls range.
- Heavy duty housing for outside use, IP65 and IK10.
- Instinctive understanding of the setting by the end customer.
- Adjustable temperature differential and heating or cooling action switch.

If open circuit or missing temperature sensor and if no power supply, output relay will open (Fail safe action)

Standard equipment :
- Knob with adjustable stop for positioning a mechanical limit at high or low setting.
- Red and green lights, indicating 230V in and out voltage.
- Fuse for internal circuit protection
- Illuminated on-off switch
- Soft grip backlit knob printed in °C
- 4 wall mounting removable legs (Y8 versions only)
- Connection block with 5 terminals for 6 mm² wires and 5 terminals for 2.5 mm² wires (10 x 10 mm ² for 30A and higher models).

The connection block is equipped with a jumper between terminals 1 and 2, it allows connecting a safety device, a timer, or an external wired remote control. On versions using power relay(s) this jumper is on the power relay coil circuit.

Controller contact action :
- A switch located under the knob can be used to reverse the contact action (open on temperature rise or close on temperature rise).
- In models with manual reset high limit thermostats, close on rise contact action is not available on manual reset thermostats.
- In models with electronic manual reset controller, it is possible to set an open on temperature rise (high temperature safety) or open on temperature decrease action
- Control action: ON-OFF

Contact action (Types with manual reset option) :

Versions with manual reset thermostats are multiple, because of the many possible configurations. The electromechanical manual reset thermostat can be failsafe or standard, and the electronic manual reset controller is failsafe. Thermostats can be coupled to a SPST or DPST power relay, or a 3 poles relay board. The choice of different configurations depends on the final application, and the requirements to use single pole or multiple pole switching systems, independent or not.

Minimum calibration temperature for manual reset thermostats is 40 ° C -60°C for fail safe models) , with open on temperature rise contact action. Electronic manual reset can be adjusted inside the whole temperature range.

Cable outputs :
- Cables gland output board is equipped in standard with one or two M25 cable glands (Other cable gland boards: 2 x M20+1xM24, 1 x 1 "or 4 x M20 for flat heat tracing cables, see page 72).
- The two back side M20 X 1.5 outputs are equipped with cable glands with silicone gasket to seal the temperature sensors outlet.
- When the Y8 type is used with backside accessories, the version to use is the distance measurement one, and the capillary protection tube must be removed.

Standard Accessories :
- 10 PA66 red plastic seals, English-French installation manual.
- Temperature sensor is included in the control box (see standard NTC models page 51 of this catalogue)
- For temperature ranges -35+35°C, 4-40°C, 0-10°C , probe is protected by waterproof plastic pocket
- For higher temperature range, probe is protected by stainless steel pocket.

Options :
- Infrared remote control
- 2 poles shaft switch with 3 mm contact distance (Not available on 3 phases models)
- Enclosure heater
- ° F printed knob
- 115-120V power supply.

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Y6, Y7, Y8 types temperature control boxes
Electronic thermostat types

The 3 internal basic configurations and their option

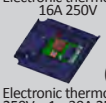
1
2PE2N6 Single pole electronic controller

Available temperature ranges
-35+35°C, 4-40°C,0-10°C, 30-90°C, 30-110°C, 50-200°C, 50-300°C
Standard sensor cable length for remote sensor version : 2m

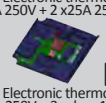
Power output options

A
Electronic thermostat 16A 250V

B
Electronic thermostat 16A 250V + 2 x25A 250V relay



C
Electronic thermostat 16A 250V + 1 x 30A 250V relay



D
Electronic thermostat 16A 250V + 3 relays 16A 250V board

E
Electronic thermostat 16A 250V + 6 relays 16A 250V board

F
Electronic thermostat 16A 250V + 3 x 25A 250V/440V power contactor (only on Y6 and Y7, not available on Y8)

Front board options

G
No options

H
12A 250V Illuminated on-off switch

I
Backlit knob

J
Standard: 12A 250V Illuminated on-off switch + Backlit knob

K
2 x 16A 250V shaft switch option

L
2 x 16A 250V shaft switch + Backlit knob

Main references

Temperature ranges (°C)	Options*	Ambient sensor version	Distant sensor version	300 mm long Back rod version**	Immersion heater version***
-35+35	A-J	Y8WRCA120D001AF1	Y8WRCC120D004AF1	Y6WRCR120D00FAF1	Y7WRCH120D00MAF1
4-40	A-J	Y8WRDA120D001AF1	Y8WRDC120D004AF1	Y6WRDR120D00FAF1	Y7WRDH120D00MAF1
30-90	A-J		Y8WREC120D004AF1	Y6WRER120D00FAF1	Y7WREH120D00MAF1
30-110	A-J		Y8WRFC120D004AF1	Y6WRFR120D00FAF1	Y7WRFH120D00MAF1
50-200	A-J		Y8WRGC120D004AF1	Y6WRGR120D00FAF1	Y7WRGH120D00MAF1
50-300	A-J		Y8WRHC120D004AF1	Y6WRHR120D00FAF1	Y7WRHH120D00MAF1

2
2PE2N6 Electronic thermostat + top side 8L manual reset high limit thermostat

Available temperature ranges
-35+35°C, 4-40°C,0-10°C, 30-90°C, 30-110°C, 50-200°C, 50-300°C
Standard sensor cable length for remote sensor version : 2m and manual reset capillary length: 1.5m

A
Electronic thermostat 16A 250V + SPNC 16A 250V manual reset

B
Electronic thermostat 16A 250V + SPNC 16A 250V manual reset+ 2 x25A 250V relay

C
Electronic thermostat 16A 250V + SPNC 16A 250V manual reset + 1 x 30A 250V relay

D
Electronic thermostat 16A 250V + SPNC 16A 250V manual reset + 3 relays 16A 250V board

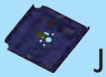
E
SPDT 16A 250V + 3 x 25A 250V/440V power contactor + SPNC 16A 250V manual reset (only on Y6 and Y7, not available on Y8)

F
Electronic thermostat 16A 250V + SPNC 16A 250V manual reset + 6 relays 16A 250V board
Att: manual reset in side position

G
No options

H
12A 250V Illuminated on-off switch

I
Backlit knob



J
Standard: 12A 250V Illuminated on-off switch + Backlit knob

Main references

Temperature ranges (°C)	High limit calibration (°C)	Options*	Ambient sensor version	Distant sensor version	300 mm long Back rod version**	Immersion heater version***
-35+35	60	A-J	Y8WRCB120D0L1AF1	Y8WRCE120D0L6AF1	Y6WRCR120D0LFAF1	Y7WRCH120D0LMAF1
4-40	60	A-J	Y8WRDB120D0L1AF1	Y8WRDE120D0L6AF1	Y6WRDR120D0LFAF1	Y7WRDH120D0LMAF1
30-90	110	A-J		Y8WREE120D0L6AF1	Y6WRER120D0LFAF1	Y7WREH120D0LMAF1
30-110	130	A-J		Y8WRFE120D0L6AF1	Y6WRFR120D0LFAF1	Y7WRFH120D0LMAF1
50-200	220	A-J		Y8WRGE120D0L6AF1	Y6WRGR120D0LFAF1	Y7WRGH120D0LMAF1
50-300	320	A-J		Y8WRHE120D0L6AF1	Y6WRHR120D0LFAF1	Y7WRHH120D0LMAF1

3
2PE2N6 Electronic thermostat + top side 2PE2N6 Electronic manual reset high limit thermostat

Available temperature ranges
-35+35°C, 4-40°C,0-10°C, 30-90°C, 30-110°C, 50-200°C, 50-300°C
Standard sensors cable length for remote sensor version : 2m

A
Electronic thermostat 16A 250V + Electronic 16A 250V manual reset

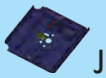
B
Electronic thermostat 16A 250V + Electronic 16A 250V manual reset + 3 relays 16A 250V board.

C
Electronic thermostat 16A 250V + Electronic 16A 250V manual reset + 6 relays 16A 250V board.

G
No options

H
12A 250V Illuminated on-off switch

I
Backlit knob



J
Standard: 12A 250V Illuminated on-off switch + Backlit knob

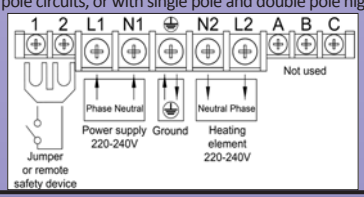
Main references

Temperature ranges (°C)	High limit calibration (°C)	Options*	Ambient sensor version	Distant sensor version	300 mm long Back rod version**	Immersion heater version***
-35+35	60	A-J	Y8WRCA120D0X1AF1	Y8WRCC120D0X4AF1	Y6WRCR120D0XFAF1	Y7WRCH120D0XMAF1
4-40	60	A-J	Y8WRDA120D0X1AF1	Y8WRDC120D0X4AF1	Y6WRDR120D0XFAF1	Y7WRDH120D0XMAF1
30-90	110	A-J		Y8WREC120D0X4AF1	Y6WRER120D0XFAF1	Y7WREH120D0XMAF1
30-110	130	A-J		Y8WRFC120D0X4AF1	Y6WRFR120D0XFAF1	Y7WRFH120D0XMAF1
50-200	220	A-J		Y8WRGC120D0X4AF1	Y6WRGR120D0XFAF1	Y7WRGH120D0XMAF1
50-300	320	A-J		Y8WRHC120D0X4AF1	Y6WRHR120D0XFAF1	Y7WRHH120D0XMAF1

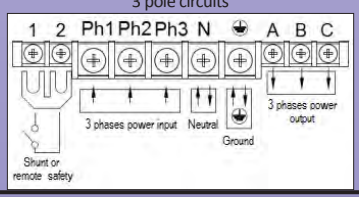
* Consult factory for full references with different options described in these tables
** Other standard rod length: 230, 450, 600 mm
*** : Without center hole, nor thread. Specify hole diameter and pitch on order
Other options not described in these tables: cable glands, remote control, cabinet heater. Consult our commercial department for full references.
Knob printing: see thermostats technical data sheet in this catalogue

Wiring diagrams

Single pole circuits, or with single pole and double pole high limit



3 pole circuits



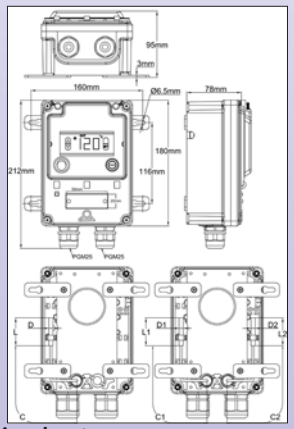
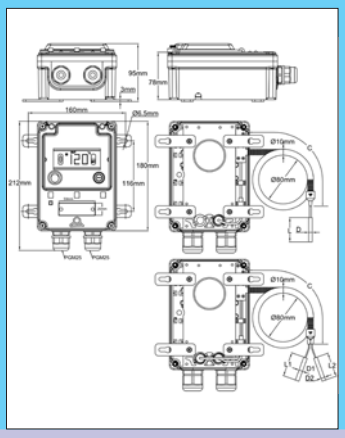
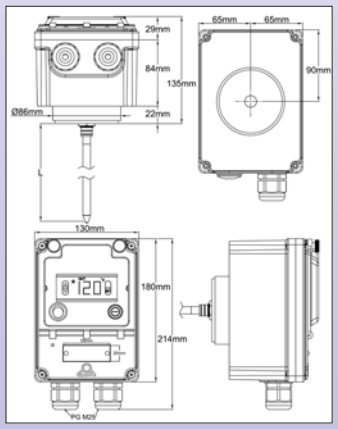
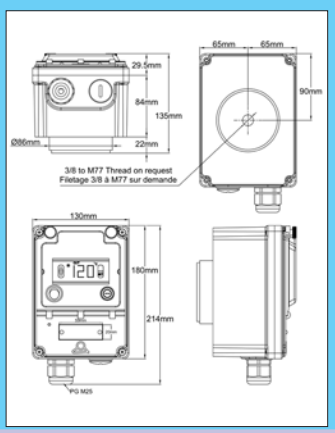
Y6, Y7, Y8 types temperature control boxes
77 x 35 mm, On OFF Electronic controllers types

Main features

These products come in 4 different dimensional configurations, in control (One sensor) or control + high limit safety (2 sensors or one sensor + one bulb)

Y8 Ambient temperature measurement	**Y8** Remote measurement	**Y6** Rear rod measurement	**Y7** Measurement on rear mounted immersion heater (We do not supply the immersion heater)



Main advantages :

- The simplest and most economical electronic controller with digital display of the Y8 electronic temperature controls range.
- Heavy duty housing for outside use, IP65 and IK10.
- Simple configuration by user (for more information see catalogue page 45 about 273 models
- . • Adjustable temperature differential and heating or cooling action
- If open circuit or missing temperature sensor and if no power supply, output relay will open (Fail safe action)

Standard equipment :

- Fuse for internal circuit protection
- Illuminated on-off switch
- 4 wall mounting removable legs (Y8 versions only)
- Connection block with 5 terminal for 6 mm² wires and 5 terminals for 2.5 mm² wires (10 x 10 mm ² for 30A and higher models).

The connection block is equipped with a jumper between terminals 1 and 2, it allows connecting a safety device, a timer, or an external wired remote control. On versions using power relay(s) this jumper is on the power relays coil circuit.

Controller contact action :

- In models with manual reset high limit thermostats, close on rise contact action is not available on manual reset thermostat.
- Control action: ON-OFF

Contact action (Types with manual reset option) :

Manual reset thermostat calibration must be specified at order. The electromechanical manual reset thermostat can be failsafe or standard. The choice of different configurations depends on the final application, and the requirements to use single poles or multiple pole switching systems, independent or not. Minimum calibration temperature for manual reset thermostats is 40 ° C (60°C for fail safe models), with open on temperature rise contact action.

Cables output :

- Cables gland output board is equipped in standard with one or two M25cable glands (Other cable gland boards: 2 x M20+1xM24, 1 x 1 “or 4 x M20 for flat heat tracing cables, see page 72).
- The two back side M20 X 1.5 outputs are equipped with cable glands with silicone gasket to seal the temperature sensors outlet.
- When the Y8 type is used with backside accessories, the version to use is the distance measurement, and sensor protection tube must be removed.

Standard Accessories :

- 10 PA66 red plastic seals, English-French installation manual.
- Temperature sensor is included in the control box (see standard models page XX of this catalogue)
- For temperature ranges -35+35°C, 4-40°C, 0-10°C , probe is protected by waterproof plastic pocket
- For higher temperature range, probe is protected by stainless steel pocket.

Options :

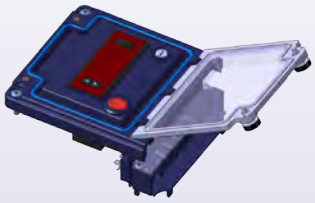
- Infrared remote control
- Enclosure heater
- 115-120V power supply.

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Y6, Y7, Y8 types temperature control boxes
77 x 35 mm, On OFF Electronic controllers types

The 2 internal basic configurations and their options

1
273 type on-off electronic controller



Standard sensor cable length for remote sensor version : 2m

Power output options

A
Electronic controller 10 or 16A 250V

B
Electronic controller 10 or 16A 250V + 2 x25A 250V relay

C
Electronic controller 10 or 16A 250V + 1 x 30A 250V relay

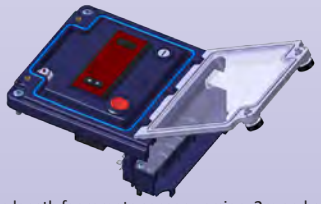
D
Electronic controller 10 or 16A 250V + 3 relays 16A 250V board

E
Electronic controller 10 or 16A 250V + 6 relays 16A 250V board

Main references

Temperature ranges (°C)	Options*	Ambiant sensor version	Distant sensor version	300 mm long Back rod version**	Immersion heater version***
-40+120, NTC sensor	A	Y8WHQA3100001AF3	Y8WHQC3100006AF3	Y6WHQR310000FAF1	Y7WHQH31000MAF1
-40+120, NTC sensor	B	Y8WHQA3120001LF3	Y8WHQC3120006LF3	Y6WHQR312000FLF1	Y7WHQH312000MLF1
-40+120, NTC sensor	C	Y8WHQA3110001DF3	Y8WHQC3110006DF3	Y6WHQR311000FDF1	Y7WHQH311000MDF1
-40+120, NTC sensor	D	Y8WHQA3140001HF3	Y8WHQC3140006HF3	Y6WHQR314000FHF1	Y7WHQH314000MHF1
-40+120, NTC sensor	E	Y8WHQA3170001IF3	Y8WHQC3170006IF3	Y6WHQR317000FIF1	Y7WHQH317000MIF1
-50-550, Pt100 sensor	A	Y8WHSA3100001AF3	Y8WHSC3100006AF3	Y6WHSR310000FAF1	Y7WHSH310000MAF1
-50-550, Pt100 sensor	B	Y8WHSA3120001LF3	Y8WHSC1120006LF3	Y6WHSR312000FLF1	Y7WHSH312000MLF1
-50-550, Pt100 sensor	C	Y8WHSA3110001DF3	Y8WHSC3110006DF3	Y6WHSR311000FDF1	Y7WHSH311000MDF1
-50-550, Pt100 sensor	D	Y8WHSA3140001HF3	Y8WHSC3140006HF3	Y6WHSR314000FHF1	Y7WHSH314000MHF1
-50-550, Pt100 sensor	E	Y8WHSA3170001IF3	Y8WHSC3170006IF3	Y6WHSR317000FIF1	Y7WHSH317000MIF1
0-999, K thermocouple sensor	A		Y8WHTC3100006BF3	Y6WHTR310000FBF1	Y7WHTH310000MBF1
0-999, K thermocouple sensor	B		Y8WHTC3120006MF3	Y6WHTR312000FMF1	Y7WHTH312000MMF1
0-999, K thermocouple sensor	C		Y8WHTC3110006EF3	Y6WHTR311000FEF1	Y7WHTH311000MEF1
0-999, K thermocouple sensor	D		Y8WHTC3140006HF3	Y6WHTR314000FHF1	Y7WHTH314000MHF1
0-999, K thermocouple sensor	E		Y8WHTC3170006IF3	Y6WHTR317000FIF1	Y7WHTH317000MIF1

2
273 type on-off electronic controller + top side 8L manual reset high limit thermostat



Standard sensor cable length for remote sensor version: 2m and manual reset capillary length: 1.5m

A
Electronic controller 10 or 16A 250V + SPNC 16A 250V manual reset

B
Electronic controller 10 or 16A 250V + SPNC 16A 250V manual reset + 2 x25A 250V relay

C
Electronic controller 10 or 16A 250V + SPNC 16A 250V manual reset + 1 x 30A 250V relay

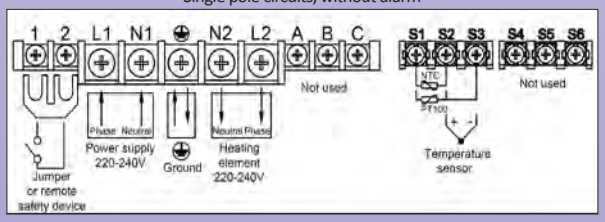
D
Electronic controller 10 or 16A 250V + SPNC 16A 250V manual reset + 3 x 16A 250V relay board

Main references

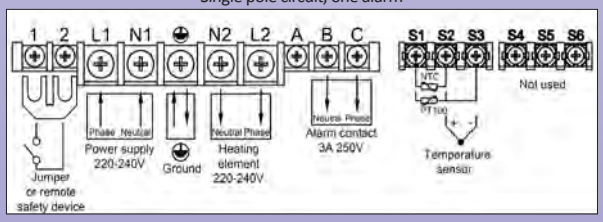
Temperature ranges (°C)	Manual reset calibration temperature (°C)	Options*	Ambiant sensor version	Distant sensor version	300 mm long Back rod version**	Immersion heater version***
-40+120, NTC sensor	Must be specified with order	A	Y8WHQB31010L1AF7	Y8WHQE31000L6AF7	Y8WHTE31000L6BF7	Y7WHQH31000LMAF1
-40+120, NTC sensor		B	Y8WHQB31410L1HF7	Y8WHQE31400L6LF7	Y8WHTE31200L6LF7	Y7WHQH31400LMHF1
-40+120, NTC sensor		C	Y8WHQB31110L1DF7	Y8WHQE31100L6DF7	Y8WHTE11100L6EF7	Y7WHQH31100LMDF1
-40+120, NTC sensor		D	Y8WHQB31710L1IF7	Y8WHQE31700L6IF7	Y8WHTE31700L6IF7	Y7WHQH31700LMIF1
-50-550, Pt100 sensor		A	Y8WHSB31010L1AF7	Y8WHSE31000L6AF7	Y6WHSR31000LFAF1	Y7WHSH31000LMAF1
-50-550, Pt100 sensor		B	Y8WHSB31410L1HF7	Y8WHSE31200L6LF7	Y6WHSR31200LFLF1	Y7WHSH31200LMLF1
-50-550, Pt100 sensor		C	Y8WHSB31110L1DF7	Y8WHSE31100L6DF7	Y6WHSR31100LFDF1	Y7WHSH31100LMDF1
-50-550, Pt100 sensor		D	Y8WHSB31710L1IF7	Y8WHSE31700L6IF7	Y6WHSR31700LFIF1	Y7WHSH31700LMIF1
0-999, K thermocouple sensor		A		Y8WHTE31000L6BF7	Y6WHTR31000LFBF1	Y7WHTH31000LMBF1
0-999, K thermocouple sensor		B		Y8WHTE31200L6LF7	Y6WHTR31200LFLF1	Y7WHTH31200LMLF1
0-999, K thermocouple sensor		C		Y8WHTE31100L6EF7	Y6WHTR31100LFEF1	Y7WHTH31100LMEF1
0-999, K thermocouple sensor		D		Y8WHTE31700L6IF7	Y6WHTR31700LFIF1	Y7WHTH31700LMIF1

Wiring diagrams

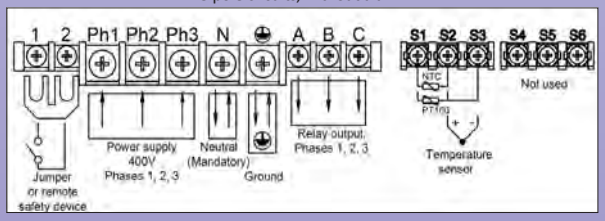
Single pole circuits, without alarm



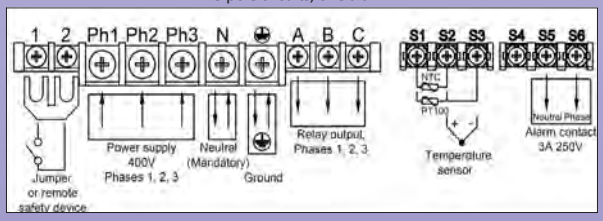
Single pole circuit, one alarm



3 pole circuits, without alarm



3 pole circuits, one alarm



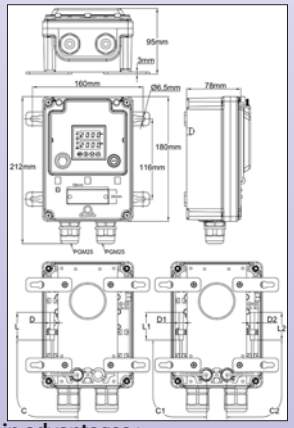
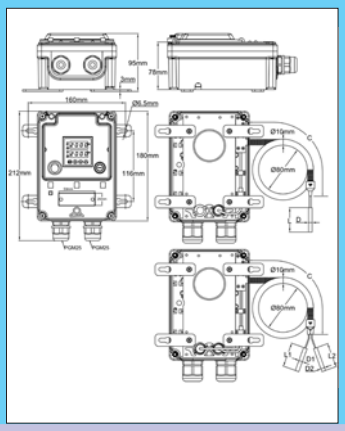
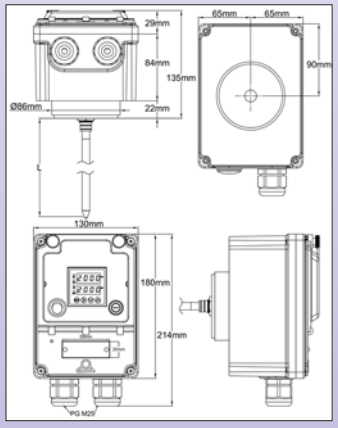
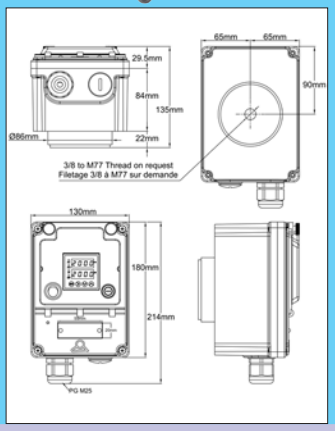
Y6, Y7, Y8 types temperature control boxes
48 x 48 mm, Double display PID Electronic controllers types

Main features

These products come in 4 different dimensional configurations, in control (One sensor) or control + high limit safety (2 sensors or one sensor + one bulb)

Y8 Ambient temperature measurement	**Y8** Remote measurement	**Y6** Rear rod measurement	**Y7** Measurement on rear mounted immersion heater (We do not supply the immersion heater)



Main advantages :

- The most efficient electronic controller with double digital display of the Y8 electronic temperature controls range.
- Heavy duty housing for outside use, IP65 and IK10.
- Fully configurable: multi sensor, multi output (For more information see catalogue page 46 of the 244CUUB models) If open circuit or missing temperature sensor and if no power supply, output relay will open (Fail safe action)

Standard equipment :

- Fuse for internal circuit protection
- Illuminated on-off switch
- Soft grip backlit knob printed in °C
- 4 wall mounting removable legs (Y8 versions only)
- Connection block with 5 terminal for 6 mm² wires and 5 terminals for 2.5 mm² wires (10 x 10 mm ² for 30A and higher models).

The connection block is equipped with a jumper between terminals 1 and 2, it allows connecting a safety device, a timer, or an external wired remote control. On versions using power relay(s) this jumper is on the power relays coil circuit.

Controller contact action :

- In models with manual reset high limit thermostats, close on rise contact action is not available on manual reset thermostat.
- Control action: ON-OFF

Contact action (Types with manual reset option) :

Manual reset thermostat calibration must be specified at order. The electromechanical manual reset thermostat can be failsafe or standard.The choice of different configurations depends on the final application, and the requirements to use single poles or multiple pole switching systems, independent or not. Minimum calibration temperature for manual reset thermostats is 40 ° C (60°C for fail safe models), with open on temperature rise contact action.

Cables output :

- Cables gland output board is equipped in standard with one or two M25cable glands (Other cable gland boards: 2 x M20+1xM24, 1 x 1 "or 4 x M20 for flat heat tracing cables, see page XX).
- The two back side M20 X 1.5 outputs are equipped with cable glands with silicone gasket to seal the temperature sensors outlet.
- When the Y8 type is used with backside accessories, the version to use is the distance measurement, and capillary protection tube must be removed.

Standard Accessories :

- 10 PA66 red plastic seals, English-French installation manual.
- One temperature sensor, Pt100 class B, 5 x 30 mm stainless steel probe, is included in the control box
- For remote measurement versions, sensor cable length is2m, protected by flexible corrugated plastic tube.
- Other sensors on request, must be specified when ordering (see standard models page XX of this catalogue)

Options :

- Infrared remote control
- Enclosure heater
- 115-120V power supply.

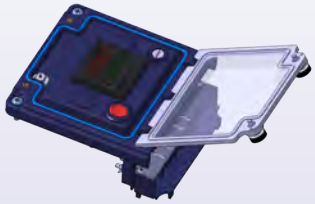
JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Y6, Y7, Y8 types temperature control boxes
48 x 48 mm, Double display PID Electronic controllers types

The 3 internal basic configurations and their options

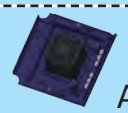
1

244CUUB double display electronic controller

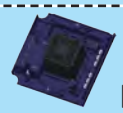


Standard sensor cable length for remote sensor version : 2m

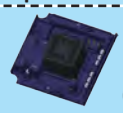
Power output options



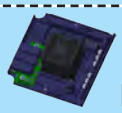
A — Electronic controller 3A 250V



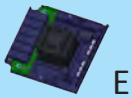
B — Electronic controller 3A 250V + 2 x25A 250V relay



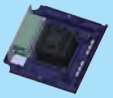
C — Electronic controller 3A 250V + 1 x 30A 250V relay



D — Electronic controller 3A 250V + 3 relays 16A 250V board



E — Electronic controller 3A 250V + 6 relays 16A 250V board



F — Electronic controller 3A 250V + 10A SSR relay

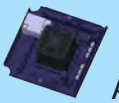
Main references

Temperature ranges (°C)	Options*	Ambiant sensor version	Distant sensor version	300 mm long Back rod version**	Immersion heater version***
Fully configurable	A	Y8WJWA3100001AF3	Y8WJWC3100004AF3	Y6WJWC310000FAF1	Y7WJWC310000MAF1
Fully configurable	B	Y8WJWA3120001LF3	Y8WJWC3120004LF3	Y6WJWC312000FLF1	Y7WJWC312000MLF1
Fully configurable	C	Y8WJWA3110001DF3	Y8WJWC3110004DF3	Y6WJWC311000FDF1	Y7WJWC311000MDF1
Fully configurable	D	Y8WJWA3140001HF3	Y8WJWC3140004HF3	Y6WJWC314000FHF1	Y7WJWC314000MHF1
Fully configurable	E	Y8WJWA3170001IF3	Y8WJWC3170004IF3	Y6WJWC317000FIF1	Y7WJWC317000MIF1
Fully configurable	F	Y8WJWA1130001KF3	Y8WJWC3130004KF3	Y6WJWC313000FKF1	Y7WJWC313000MKF1

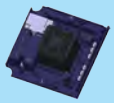
2

244CUUB double display electronic controller + 8L manual reset high limit thermostat

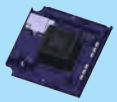
Standard sensor cable length for remote sensor version: 2m and manual reset capillary length: 1.5m



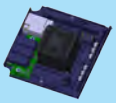
A — Electronic controller 3A 250V + SPNC 16A 250V manual reset



B — Electronic controller 3A 250V + SPNC 16A 250V manual reset + 3 relays 16A 250V board



C — Electronic controller 3A 250V + SPNC 16A 250V manual reset + 2 x 25A 250V relay



D — Electronic controller 3A 250V + SPNC 16A 250V manual reset + 1 x 30A 250V relay

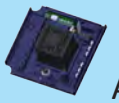
Main references

Temperature ranges (°C)	Manual reset calibration temperature (°C)	Options*	Ambiant sensor version	Distant sensor version	300 mm long Back rod version**	Immersion heater version***
Fully configurable	Must be specified with order	A	Y8WJWB31000L1AF7	Y8WJWE31000L6AF7	Y6WJWR31000LFAF1	Y7WJWH31000LMAF1
Fully configurable		B	Y8WJWB31400L1HF7	Y8WJWE31400L6HF7	Y6WJWR31400LFHF1	Y7WJWH31400LMHF1
Fully configurable		C	Y8WJWB31200L1LF7	Y8WJWE31200L6LF7	Y6WJWR31200LFLF1	Y7WJWH31200LMLF1
Fully configurable		D	Y8WJWB31100L1DF7	Y8WJWE31100L6DF7	Y6WJWR31100LFDF1	Y7WJWH31100LMDF1

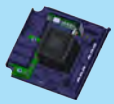
3

244CUUB double display electronic controller + 2PE2N6 manual reset electronic thermostat

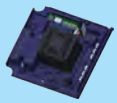
Standard sensor cable length for remote sensor version: 2m and manual reset capillary length: 1.5m



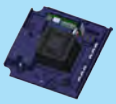
A — Electronic controller 3A 250V + SPNC 16A 250V electronic manual reset



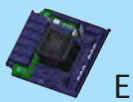
B — Electronic controller 3A 250V + SPNC 16A 250V electronic manual reset



C — Electronic controller 3A 250V + SPNC 16A 250V electronic manual reset + 2 x 25A 250V relay



D — Electronic controller 3A 250V + SPNC 16A 250V electronic manual reset + 1 x 30A 250V relay



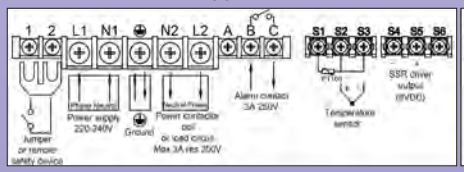
E — Electronic controller 3A 250V + SPNC 16A 250V electronic manual reset + 6 relays 16A 250V board

Main references

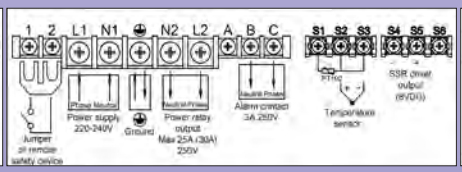
Temperature ranges (°C)	Manual reset calibration temperature (°C)	Options*	Ambiant sensor version	Distant sensor version	300 mm long Back rod version**	Immersion heater version***
Fully configurable	Must be specified with order	A	Y8WJWA31000X1AF7	Y8WJWE31000X6AF7	Y6WJWR31000XFAF1	Y7WJWH31000XMAF1
Fully configurable		B	Y8WJWA31400X1HF7	Y8WJWE31400X6HF7	Y6WJWR31400XFHF1	Y7WJWH31400XMHF1
Fully configurable		C	Y8WJWA31200X1LF7	Y8WJWE31200X6LF7	Y6WJWR31200XFLF1	Y7WJWH31200XMLF1
Fully configurable		D	Y8WJWA31100X1DF7	Y8WJWE31100X6DF7	Y6WJWR31100XFDF1	Y7WJWH31100XMDF1
Fully configurable		E	Y8WJWA31700X1IF7	Y8WJWE31700X6IF7	Y6WJWR31700XFIF1	Y7WJWH31700XMIF1

Wiring diagrams

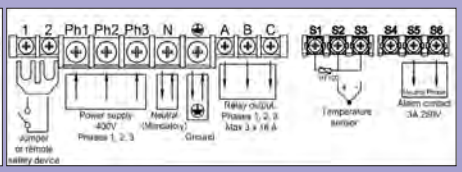
Single pole circuits, 3Amp relay output, SSR output, one 3Amp alarm



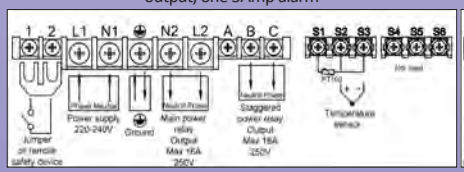
Single pole circuits, 2 staggered relay outputs 16A 250V



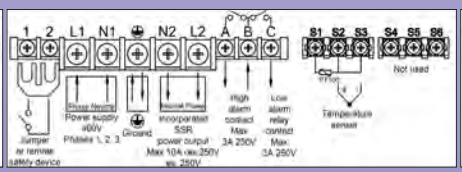
3 pole circuits, 2 staggered relay outputs 3x16A 250V



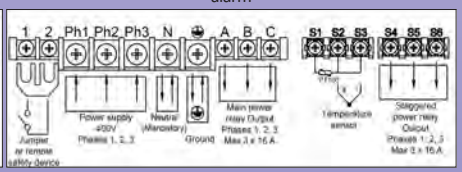
Single pole circuits, one 25Amp or 30A relay output, SSR output, one 3Amp alarm



3 pole circuits,3 x 16Amp relay output, one 3Amp alarm



Single pole circuit, 10A incorporated SSR output, one 3Amp alarm



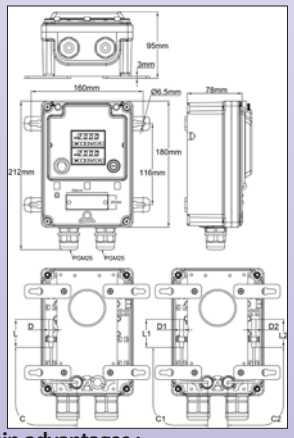
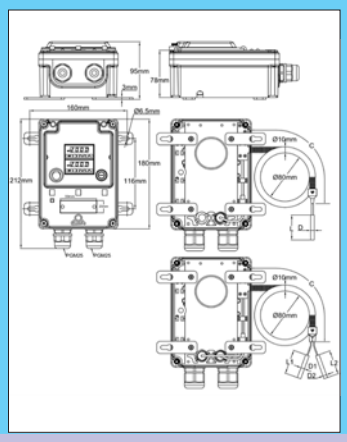
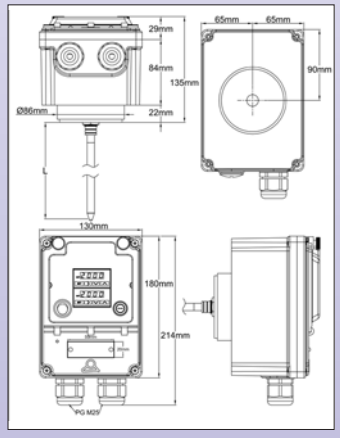
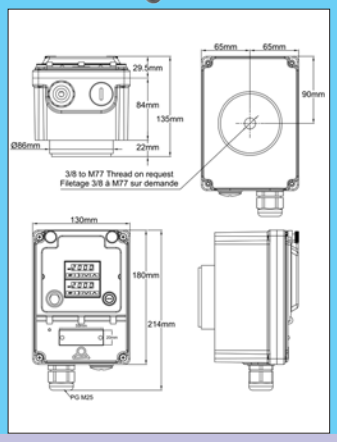
Y6, Y7, Y8 types temperature control boxes
Twin 48 x 25 mm, single display PID Electronic controllers types

Main features

These products come in 4 different dimensional configurations, in control (One sensor) or control + high limit safety (2 sensors or one sensor + one bulb)

Y8 Ambient temperature measurement	**Y8** Remote measurement	**Y6** Rear rod measurement	**Y7** Measurement on rear mounted immersion heater (We do not supply the immersion heater)



Main advantages :
- The most specialized electronic controller of the Y7, Y8, Y9 range with twin electronic temperature controls with digital display.

This combination can control independently two different zone, or have two different actions at two different temperatures
- Heavy duty housing for outside use, IP65 and IK10.
- Fully configurable: multi sensor, multi output (For more information see catalogue page 47 of the 244CUUB models)

If open circuit or missing temperature sensor and if no power supply, output relay will open (Fail safe action)

Standard equipment :
- Fuse for internal circuit protection
- Illuminated on-off switch
- Soft grip backlit knob printed in °C
- 4 wall mounting removable legs (Y8 versions only)
- Connection block with 5 terminal for 6 mm² wires and 5 terminals for 2.5 mm² wires (10 x 10 mm ² for 30A and higher models).

The connection block is equipped with a jumper between terminals 1 and 2, it allows connecting a safety device, a timer, or an external wired remote control. On versions using power relay(s) this jumper is on the power relays coil circuit.

Controller contact action :
- In models with manual reset high limit thermostats, close on rise contact action is not available on manual reset thermostat.
- Control action: ON-OFF

Contact action (T ypes with manual reset option) :

Manual reset thermostat calibration must be specified at order. The electromechanical manual reset thermostat can be failsafe or standard.The choice of different configurations depends on the final application, and the requirements to use single poles or multiple pole switching systems, independent or not. Minimum calibration temperature for manual reset thermostats is 40 ° C (60°C for fail safe models), with open on temperature rise contact action.

Cables output :
- Cables gland output board is equipped in standard with one or two M25cable glands (Other cable gland boards: 2 x M20+1xM24, 1 x 1 “or 4 x M20 for flat heat tracing cables, see page 72).
- The two back side M20 X 1.5 outputs are equipped with cable glands with silicone gasket to seal the temperature sensors outlet.
- When the Y8 type is used with backside accessories, the version to use is the distance measurement, and capillary protection tube must be removed.

Standard Accessories :
- 10 PA66 red plastic seals, English-French installation manual.
- One temperature sensor, Pt100 class B, 5 x 30 mm stainless steel probe, is included in the control box
- Other sensors on request, must be specified when ordering (see standard models page 51 of this catalogue)
- For remote measurement versions, sensor cable length is2m, protected by flexible corrugated plastic tube .

Options :
- Infrared remote control
- Enclosure heater
- 115-120V power supply.

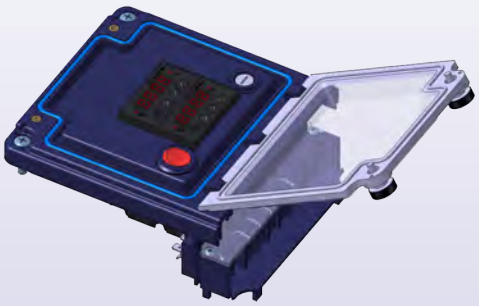
JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Y6, Y7, Y8 types temperature control boxes
Twin 48 x 25 mm, single display PID Electronic controllers types

The 2 internal basic configurations and their options

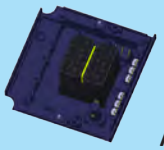
1

Two 242BUTB single display electronic controllers

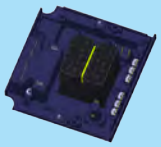


Standard sensor cable length for remote sensor version : 2m

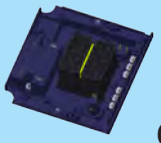
Power output options



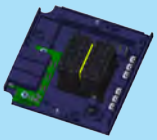
A
2 x Electronic controllers 3A 250V



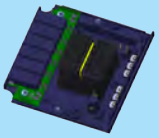
B
2 x Electronic controllers 3A 250V + 2 x25A 250V relay



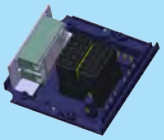
C
2 x Electronic controllers 3A 250V + 1 x 30A 250V relay



D
2 x Electronic controllers 3A 250V + 3 relays 16A 250V board



E
2 x Electronic controllers 3A 250V + 6 relays 16A 250V board



F
2 x Electronic controllers 3A 250V + 10A 250V SSR

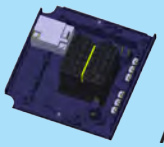
Main references

Temperature ranges (°C)	Options*	Ambiant sensor version	Distant sensor version	300 mm long Back rod version**	Immersion heater version***
Fully configurable	A	Y8WIWA3100001TF3	Y8WIWC3200004TF3	Y6WIWR320000FTF1	Y7WRWH320000MTF1
Fully configurable	B	Y8WIWA3120001WF3	Y8WIWC3220004WF3	Y6WIWR322000FWF1	Y7WRWH322000MWF1
Fully configurable	C	Y8WIWA3110001WF3	Y8WIWC3210004WF3	Y6WIWR321000FWF1	Y7WRWH321000MWF1
Fully configurable	D	Y8WIWA3140001UF3	Y8WIWC3240004UF3	Y6WIWR324000FUF1	Y7WRWH324000MUF1
Fully configurable	E	Y8WIWA3170001XF3	Y8WIWC3270004XF3	Y6WIWR327000FXF1	Y7WRWH327000MXF1
Fully configurable	F	Y8WIWA3130001VF3	Y8WIWC3230004VF3	Y6WIWR323000FVF1	Y7WRWH323000MVF1

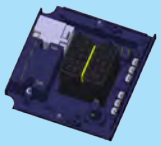
2

Two 242BUTB single display electronic controllers
+ 8L manual reset high limit thermostat

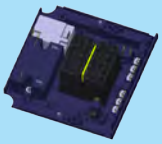
Standard sensor cable length for remote sensor version: 2m and manual reset capillary length: 1.5m



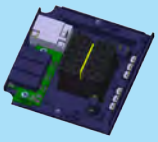
A
2 x Electronic controllers 3A 250V + SPNC 16A 250V manual reset



B
2 x Electronic controllers 3A 250V + SPNC 16A 250V manual reset + 3 relays 16A 250V board



C
2 x Electronic controllers 3A 250V + SPNC 16A 250V manual reset + 2 x 25A 250V relay



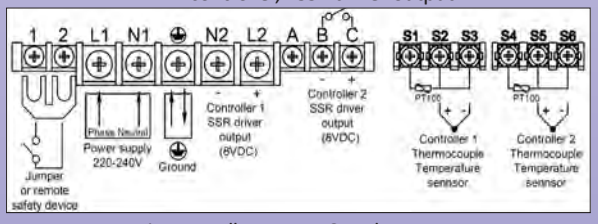
D
2 x Electronic controllers 3A 250V + SPNC 16A 250V manual reset+ 1 x 30A 250V relay

Main references

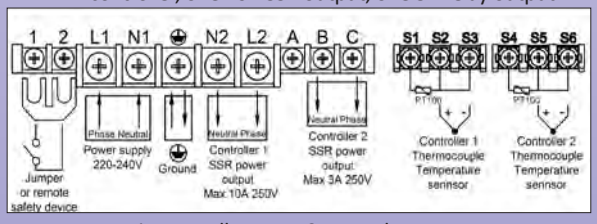
Temperature ranges (°C)	Manual reset calibration temperature (°C)	Options*	Ambiant sensor version	Distant sensor version	300 mm long Back rod version**	Immersion heater version***
Fully configurable	Must be specified with order	A	Y8WIWB31000L1TF7	Y8WIWE32000L6TF7	Y6WIWR32000LFTF1	Y7WRWH32000LMTF1
Fully configurable		B	Y8WIWB31400L1UF7	Y8WIWE32400L6UF7	Y6WIWR32400LFUF1	Y7WRWH32400LMUF1
Fully configurable		C	Y8WIWB31200L1WF7	Y8WIWE32200L6WF7	Y6WIWR32200LFWF1	Y7WRWH32200LMWF1
Fully configurable		D	Y8WIWB31100L1WF7	Y8WIWE32100L6WF7	Y6WIWR32100LFWF1	Y7WRWH32100LMWF1

Wiring diagrams

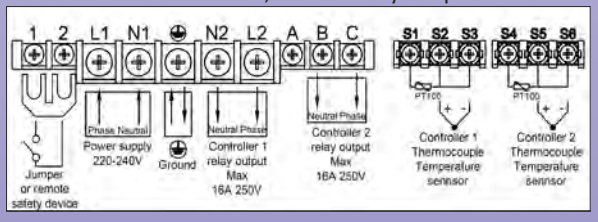
Twin controller, 2SSR driver output



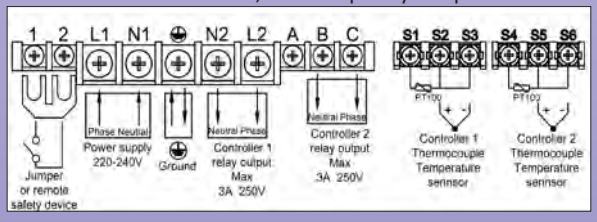
Twin controller, one 10A SSR output, one 3A relay output



Twin controllers, two 16A relays output



Twin controllers, two 3Amp relays output



JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

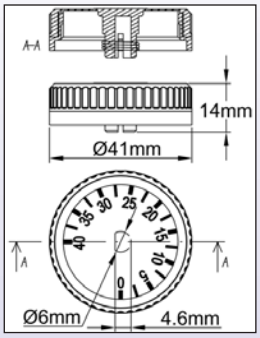
Boxes main accessories

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

General options of control boxes

The options are factory assembled and are not available separately

Backlit knob

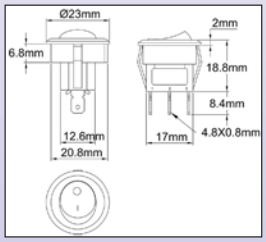


Intended for versions with room or capillary thermostats, this controller is equipped with internal lighting allowing by transparency a night viewing thermostat setting.

Reference with mounted option	To add this option on thermostatic control boxes page 56 to 61, replace the 10th character No. 1f of the reference control box with “R”

Consult us for 120V versions

Illuminated On/Off switch



This illuminated switch is standard for electronic temperature control models. It is an option only for room or capillary thermostats versions as it reduces the electrical rating to 12A. It is not suitable with the three-phase bulb and capillary thermostats versions.

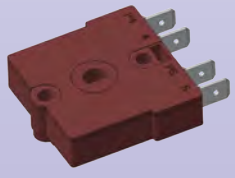
Product reference with this option assembled	To add this option on thermostatic control boxes on page 56 to 61, replace the 10 character of the reference control box with “T”

Consult us for 120V version

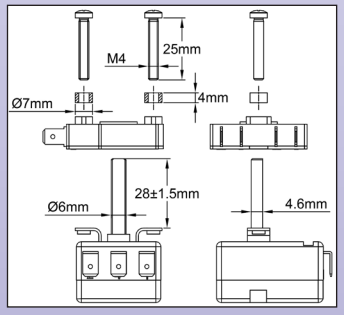
Combination of illuminated On/Off switch + Backlit knob:

To add this option on thermostatic control boxes on page 56 to 61, replace the 12th character of the reference control box with “S”

2 poles On/Off shaft switch for bulb and capillary thermostat



Assembly example

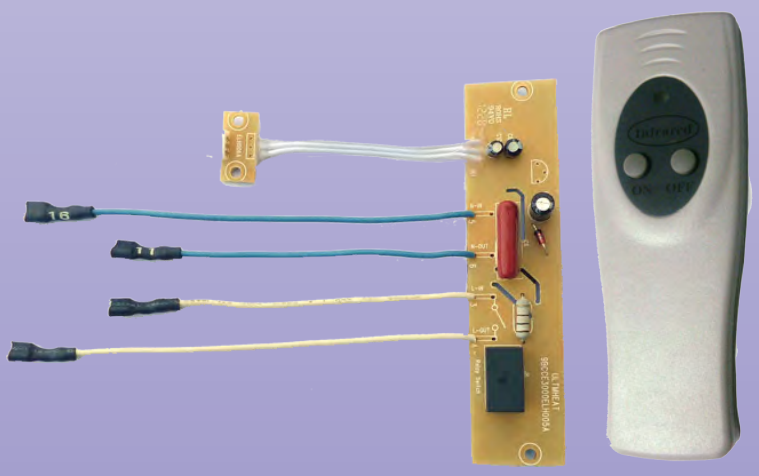


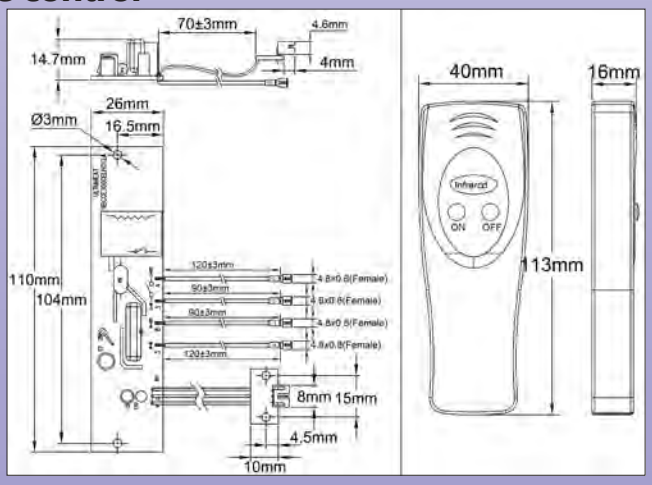
Only for adjustable bulb and capillary thermostats. This switch enables an off/off two poles action 16A 250V, activated when the knob is turned back to its minimum angle position. For foot print reasons, this option cannot be mounted with ranges above 320 ° C, nor on the three pole thermostats.

Reference with assembled option	To add this option on thermostatic control boxes on page 56 to 61, replace the 10th character of the control box reference with “P” (simple shaft switch) or with “Q” (shaft switch + backlit knob)

* Required by the EN60335-1§24-3 Standard

Infrared remote control





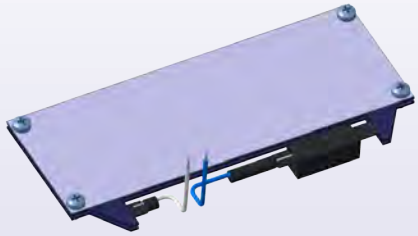
Used when the control boxes are located high or difficult to access. Allows remote start of control boxes, from up to 8 meters. Infrared control do not cause radio interference. Mounts on all control box models with window and terminal block (not possible junction boxes and Ground Fault Circuit Interrupter boxes). Current rating: 12A 250VAC.
Can be mounted in approved workshop, respecting the installation instructions on not originally equipped boxes.

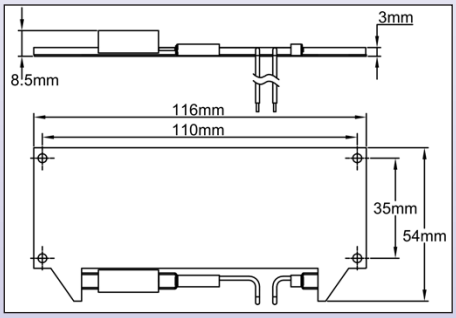
References with mounted option	To add this option on electronic control boxes on pages 56 to 77, replace the 12th character of the reference control box with “R”

Consult us for 120V version

General options of control boxes

The options are factory assembled and are not available separately





Box heater

Immediately below the level of the transparent window, the warm air flow it generates prevents from condensation on the window and keeps an optimum ambient temperature for the control devices in the housing. It has a wide aluminum heat exchanger to reduce its surface temperature and a miniature snap-action thermostat limits the temperature inside the cabinet.

Mounting with 4 screws under the lid, connection in parallel on the power supply, directly on the terminal block.

Its operation can be permanent, as soon as the cabinet is powered up, or controlled by the cabinet power lighted switch. It can be coupled to a room thermostat built into the case, triggering its start when the outside ambient temperature drops below 4 ° C + / 3 ° C and cut back when above 10 ° C + / -3.

- **13 Watts power:** for use in cold rooms, up to-20 ° C *, or heat tracing in cold regions.
- **26 Watts power:** for use in very cold atmosphere, up to-50 ° C*.

* Values given for air velocities less than 1m / s, and for plastic boxes only.Please consult us for SSR aluminum boxes.

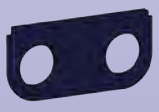
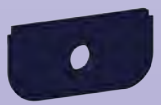
Consult us for 110-120V possible versions

References (220-240V) To add this option on electronic control boxes on pages 30 to 33, replace the 11th character of the reference control box with the following letters	Power	Electric activation	Thermal activation
H	13W	Cabinet turned on	Continuous operation
J	26W	Cabinet turned on	Continuous operation
K	13W	On/Off switch	Continuous operation
L	26W	On/Off switch	Continuous operation
M	13W	Cabinet turned on	With room thermostat 4°C+/-3°
N	26W	Cabinet turned on	With room thermostat 4°C+/-3°
P	13W	On/Off switch	With room thermostat4°C+/-3°
Q	26W	On/Off switch	With room thermostat 4°C+/-3°

110-120 Volts versions available, please contact us

Cable gland mounting boards (available on Y8 types only)

The gland mounting board, fitted in standard, can be replaced by the following versions in factory assembled products (assembled reference), or replaced on site by the end user (spare part reference). See the cable glands on page 111.

	 One 1"BSPP tapped hole for tracing stand or gland	 Two M25x1.5 tapped holes for large gauge cables	 Two M20x1.5 tapped holes and one M24x1.5	 One M20x1.5 tapped hole and three cable gland bodies for flat cables	 Two M25x1.5 tapped holes and one M16x1.5	 One M16 tapped hole for ATEX EXDIIBT6 with KW séries thermostat, tightening on H05VVF2x0.5 cable and on 10mm stainless steel corrugated tube	 Blank board
Assembled reference*	E	D	C	F	H	G	B
Spare part reference	6YPPEV101	6YPPEV22	6YPPEV220124	6YPPEX420	6YPPEV225116	6YPPEATEX116	6YPPE0

***References assembled on boxes**

To add this option on electronic control boxes, replace the last character of the control box reference on pages 56 to 77 with the following letters

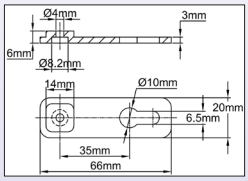
JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

General kits and accessories

Sets and accessories can be ordered separately for assembly by user

The Y8 housings are equipped on their back with 4 holes for mounting brackets and many other accessories. The standard wall brackets, made of PA66, are adjustable for side, top and bottom mounting. By replacing these brackets by coupling brackets, two or three boxes can be secured and mounted side by side. The wall mounting is then made by the four external legs only.
The Y8 control boxes are designed to allow the mounting of room temperature sensors (bulb, sensor) on their backs, in a mechanically protected area, but allowing a free flow of ambient air. The assembly of remote probes is also provided, thanks to a system allowing to lock a diameter 10mm flexible protective sheath on the housing. Connecting these probes is simply done without any drilling, using one of the M20 rear outlets.

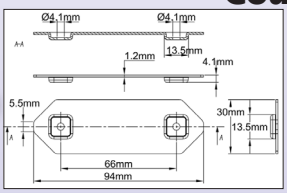
Standard brackets for wall mounting



Mounting: they are screwed into M4 tapped holes on the boxes backs. These legs are provided with all aluminum or plastic boxes of the Y8 types. They are adjustable and allow side, top and bottom mountings.
Material: PA66
Kit component list: 4 brackets, 4 screws

Reference	6YMLP6620

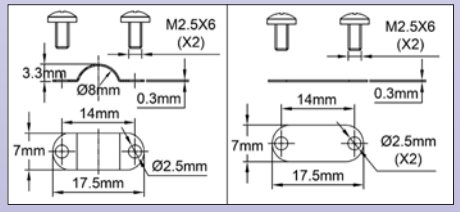
Coupling brackets for wall mounting



Mounting: Ethey are screwed into M4 tapped holes on the boxes backs. They allow a two or several boxes side by side mounting, for instance: a control box near a GFCI box. The wall mounting is then made with the standard wall mounting brackets.
Material: Stainless Steel 304
See also the coupling brackets in the accessories for heat tracing pages
Kit component list: 2 brackets, 4 screws

Reference	6YMLI9430

Outlet kit for room sensor

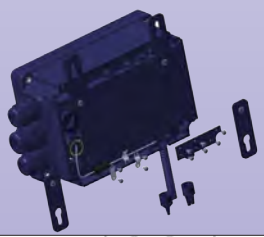


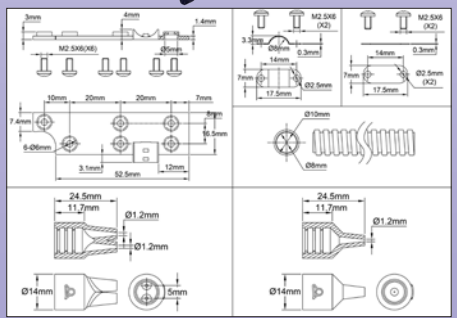
Mounting: on the back of the box, in a ventilated and mechanically protected area.
The cable or capillary output is done by one or two M20 x 1.5 rear gland. The temperature sensors are connected to the main terminal block of the control box. Sensors clamping range: 4 to 6 mm
Mounting the housing must be done necessarily with the wall mounting brackets.
- Allows the mounting of one or two temperature sensors
- Allows the mounting of one or two humidity sensors
- Allows the mounting of one a temperature sensor and a humidity sensor
- Allows the mounting of one or two thermostat bulbs

Kit component list:
One probe: 6 screws and 2 mounting saddles for bulb or probe, and one flat saddle for capillary or cable clamping
Two probes: 8 screws and 4 mounting saddles for bulb or probe, and two flat saddles for capillary or cable clamping.
The outlet cable gland and its gasket must be ordered separately according tothe connection diameter, see page 110 and 111

References	Description
6YAMS0600	Ambience measuring kit for one dia 6 mm probe
6YAMS0606	Ambience measuring kit for two dia 6 mm probes

Outlet kit for remote sensor





Mounting: on the back of the box, in a ventilated area and protected mechanically.
The cable or capillary output is done by one of the M20 x 1.5 glands. The temperature sensors are connected to the main terminal block of the control box. Mounting the housing must be done necessarily with the wall mounting brackets.
- Allows a temperature sensor mounting
- Allows a humidity sensor mounting
- Allows a thermostat bulb and a capillary outlet

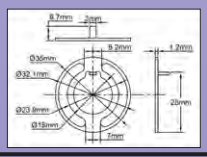
The cable or capillary outlet is on the side of the box, protected by a dia.10mm corrugated tube, plastic or stainless steel.
Kit component list: Plastic plate side exit and corrugated tube clamping bracket and six screws, dia. 10 mm flexible corrugated tube
Silicone tips must be ordered separately
NB : it is possible to combine the ambience outlet with the remote outlet. It is also possible to use the room temperature M20x1.5 sensor or an M20x1.5 thermostat through one of the rear outlets with room or remote sensor.

Reference	Description
6YROP0000	Remote sensor kit without tube
6YROPPU10	Remote sensor kit with 1 meter plastic corrugated tube
6YROPPU15	Remote sensor kit with 1.5 meter plastic corrugated tube
6YROPPU30	Remote sensor kit with 3 meter plastic corrugated tube
6YROPSS10	Remote sensor kit with 1 meter stainless steel corrugated tube
6YROPSS15	Remote sensor kit with 1.5 meter stainless steel corrugated tube
6YROPSS30	Remote sensor kit with 3m stainless steel corrugated tube
6YGPU10200	20 meters roll dia 10mm plastic corrugated tube
6YGSS10200	20 meters roll dia 10mm Stainless steel corrugated tube
GYGS10*	Single sensor silicone tip for corrugated protection tube dia 10 mm
6YGS102*	Two sensors silicone tip for corrugated protection tube dia 10 mm

* 10 pieces packaging

Adjustable stops for models with knobs

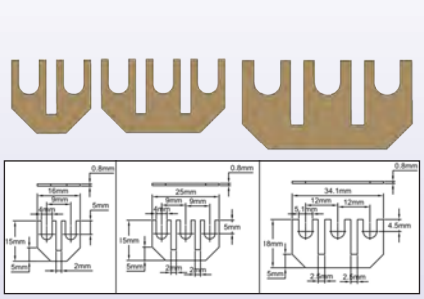
Assembly example



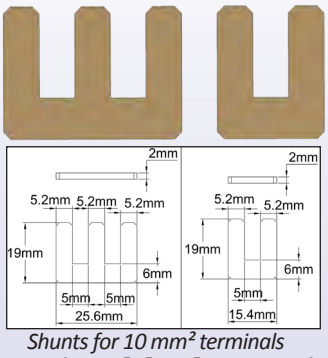
The knobs of standard control boxes Y7, Y8 and Y9 are equipped as standard with an adjustable stop when using a usual knob. This stop is optional with the backlit knob version and on Y1 and Y2 boxes. It mounts after removing the knob, with two M4 mounting screws. It can be used on all mechanical thermostats or electronic thermostats with adjustment shaft.

References	6YBUR001

Terminal block shunts (Jumpers)



Shunts for 2.5 et 6 mm² terminals

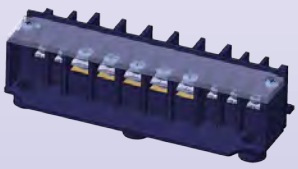


Shunts for 10 mm² terminals

These shunts are used to connect two or three terminals of standard power terminal blocks. They do not prevent from connecting other conductors to the terminals. They are accessible by the end user or installer.
They are used to shunt auxiliary outlets, to provide switchable power thresholds, or to make a single phase / three phase switching.
Material: brass
10 pieces bag packaging

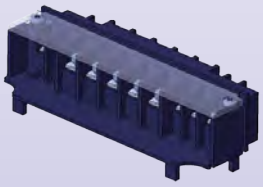
Reference	Description
6YCSH225	Shunt, two 2.5mm² terminals
6YCSH325	Shunt, three 2.5mm² terminals
6YCSH360	Shunt, three 6mm² terminals
6YCSH210	Shunt, two 10mm² terminals
6YCSH310	Shunt, three 10mm² terminals

Power connection blocks. Designed to snap in the boxes



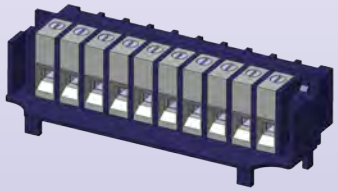
Terminal block 5 x 2.5+ 5 x 6mm² standard terminal block, internal and external screw terminals, symmetric square screws and washers, for by-pass boxes

Reference	6YBOR525560SY



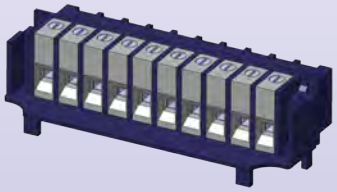
Terminal block 5 x 2.5+ 5 x 6mm² standard terminal block, internal and external screw terminals, square screws and washers, internal 4.8 x 0.8 inverted terminals, for control box connection

Reference	6YBOR52556048



Terminal block 10 x 10mm² terminal block, external cage terminals, four ways internal 4.8 x 0.8 inverted terminals, for high power box connection

Reference	6YBOR01010048

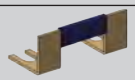
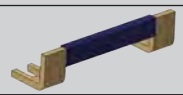


Terminal block 10 x 10mm², external cage terminals, double internal reversed terminals 6.3 x 0.8, for high power box connection

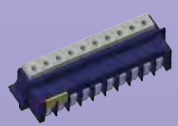
Reference	6YBOR01010063

Internal power terminal shunts

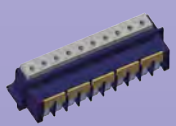
They are mounted while internal wiring. Not accessible to the end user. These shunts help to simplify the internal wiring. Made of brass. two shunts mounted in different terminals can be superimposed.

Drawing	Description	Reference
	Mounts on 5 x 2.5 + 5 x 6mm² terminal block reference 6YBOR52556048, connects two contiguous 6 mm² terminals (not insulated). 5 mm² gauge.	6YCSI2060
	Mounts on 5 x 2.5 + 5 x 6mm² terminal block reference 6YBOR52556048, connects two 6 mm² terminals separated by another terminal (insulated). 5 mm² gauge.	6YCSI2160
	Mounts on 5 x 2.5 + 5 x 6mm² terminal block reference 6YBOR52556048, connects two 6 mm² terminals separated by two terminals (insulated). 5 mm² gauge.	6YCSI2260
	Mounts on 5 x 2.5 + 5 x 6mm² terminal block reference 6YBOR52556048, connects two 6 mm² terminals separated by three terminals (insulated). 5 mm² gauge.	6YCSI2360
	Mounts on 10 x 10mm² terminal block reference 6YBOR010100**, connects two contiguous terminals (not insulated). 10 mm² gauge.	6YCSI2010
	Mounts on 10 x 10mm² terminal block reference 6YBOR010100**, connects two terminals separated by another terminal (insulated). 10 mm² gauge.	6YCSI2110
	Mounts on 10 x 10mm² terminal block reference 6YBOR010100**, connects two terminals separated by two terminals (insulated). 10 mm² gauge.	6YCSI2210
	Mounts on 10 x 10mm² terminal block reference 6YBOR010100**, connects two terminals separated by three terminals (insulated). 10 mm² gauge.	6YCSI2310

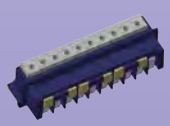
Terminal blocks 10 x 10 mm²



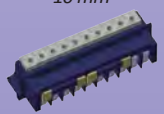
2 contiguous terminals 10 mm²



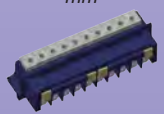
5 x 2 contiguous terminals 10 mm²



3 x 2 terminals 10 mm² one step separated by one pitch



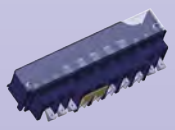
2 x 2 terminals 10 mm² two steps separated by two pitches



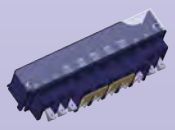
2 x 2 terminals 10 mm² three steps separated by 3 pitches

Overlapped multiple combinations

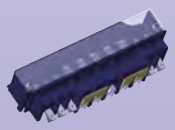
Examples of feasible internal configurations:
Terminal blocks 5 x 2.5 + 5 x 6mm²



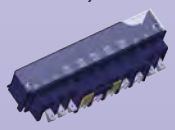
2 contiguous terminals 6 mm²



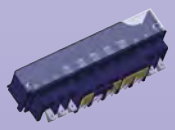
2 x 2 contiguous terminals 6 mm², side by side



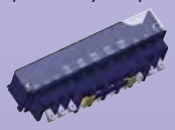
2 x 2 contiguous terminals 6 mm², distant



2 terminals 6 mm² one step separated by one pitch



2 terminals 6 mm² one step separated by one pitch and 2 contiguous terminals 6mm²



2 terminals 6 mm² two steps separated by two pitch

2 contiguous terminals 6 mm² + overlap of two terminals 6 mm² separated by two pitches

2 terminals 6 mm² separated by 3 pitches

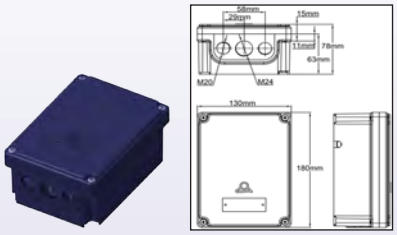
2 contiguous terminals 6 mm² + overlap of two terminals 6 mm² separated by 3 pitches

2 contiguous terminals 6 mm² separated by one pitch + superposition of two terminals 6 mm² separated by 3 pitches

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

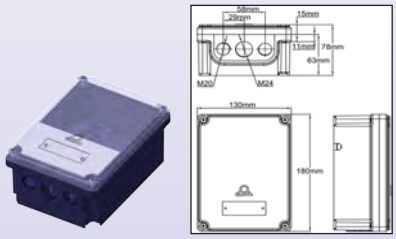
General kits and accessories for boxes

Empty boxes



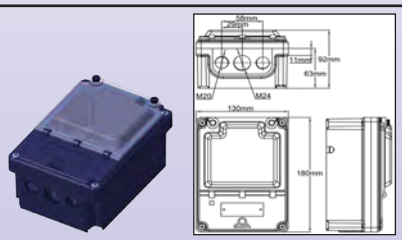
Control box, black PA66 housing* with an opaque front, equipped with a cable gland threaded plate, ISO M20 rear outlets sealed with two ISO M20 caps and gaskets. No terminal block, no mounting plate, no wall mounting brackets, no ID plate.
References

Undrilled gland plate	Threaded plate 1 x M24+2x M20	Threaded plate2 x M25	Threaded plate 1 x M20 + 3 heating cable outputs
Y8B000000000000SB	Y8B000000000000SC	Y8B000000000000SD	Y8B000000000000SF



Control box, black PA66 housing*, with a transparent front, including a threaded gland plate, rear ISO M20 outlets sealed with two ISO M20 caps and gaskets. No terminal block, no mounting plate, no wall mounting brackets, no ID plate.
Reference

Undrilled gland plate	Threaded plate 1 x M24+2x M20	Threaded plate2 x M25	Threaded plate 1 x M20 + 3 heating cable outputs
Y8T000000000000SB	Y8T000000000000SC	Y8T000000000000SD	Y8T000000000000SF

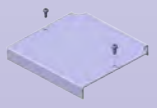


Control box, black PA66 housing*, with front having an opening transparent window, including a threaded gland plate, rear ISO M20 outlets sealed with two ISO M20 caps and gaskets. No terminal block, no mounting plate, no wall mounting brackets, no ID plate.
Références

Undrilled gland plate	Threaded plate 1 x M24+2x M20	Threaded plate2 x M25	Threaded plate 1 x M20 + 3 heating cable outputs
Y8W000000000000SB	Y8W000000000000SC	Y8W000000000000SD	Y8W000000000000SF

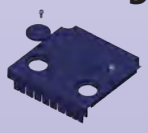
* When used solely as junction boxes and under not very restrictive conditions of use, an economical version of these models, including a body in black PC-ABS can be made.
Minimum order quantity to be observed. References: Y8 replaced by YR.
Note : versions with terminal, fitted cable gland plate and mounting front can be supplied for integrators who want to install their own control system. References to be provided after definition of the desired components.
Cable glands: see page XX
Illuminated on-off switches: see page XX

Mounting boards for thermostats and electronic controllers



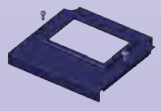
Flat mounting board, Aluminum sheet for customer adaptation

Reference	6YFBCALF01



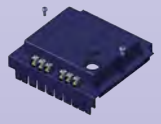
Flat mounting board, PA66, two holes diameter 22mm for lights

Reference	6YFBCPAF02



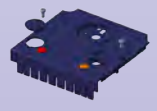
Flat mounting board, PA66, for 4 modules circuit breaker and DIN rail temperature control

Reference	6YFBCPAF03



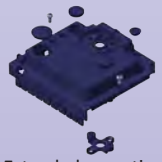
Extended mounting board, PA66, with fuse holder hole, for customer adaptation

Reference	6YFBCPAB01



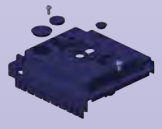
Flat mounting board, PA66, for single pole bulb and capillary thermostat, with two 230V lights

Reference	6YFBCPAF04



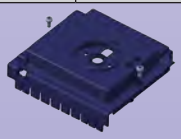
Extended mounting board, PA66, for single pole K series bulb and capillary thermostat, with two 230V lights

Reference	6YFBCPAB07



Extended mounting board, PA66, for single or three pole bulb and capillary thermostat, with two 230V lights

Reference	6YFBCPAB08



Extended mounting board, for combined three pole bulb and capillary thermostats with manual reset

Reference	6YFBCPAB09

Extended mounting board, PA66, with 45 x 22 mm rectangular hole for 1/32 Din controller

Reference	6YFBCPAB02

Extended mounting board, PA66, with 71 x 29 mm rectangular hole for 78 x 35 mm controller

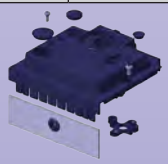
Reference	6YFBCPAB03

Extended mounting board, PA66, with 45 x 45 mm square hole for 1/16 Din controller

Reference	6YFBCPAB04

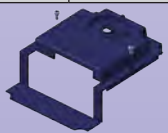
Extended mounting board, PA66, with 45 x 45 mm square hole for 1/16 Din controller with thick front panel

Reference	6YFBCPAB05



Extended mounting board, PA66, for KW type thermostats with 5A explosion proof switch

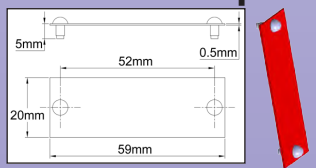
Reference	6YFBCPAB07B



Extended mounting board, PA66, for explosion proof thermostats with built in "e" connection box

Reference	6YFBCPAB10

Identification plates



Identification plate, stainless steel 304 , 59 x 20 mm, two holes. With Sim rivets for unremovable riveting.

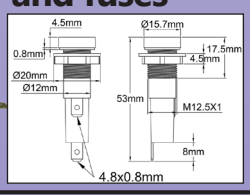
Reference	6YPIDSS2059

Red plastic seals

1.5 x 0.9 mm cross section, 130 mm length, compatible with the 2 mm holes in housings and lids. 100 pieces bag.

Reference	6YSCP15130R

Fuse holder and fuses



Fuse holder, for 6.3 x 30 mm fuses, with nut and gasket. Connection on 4.8 x 0.5mm tabs or tin soldering

Reference	6YPFU1253

Fuses : Type F, 20 pieces. Packing by 20 pieces

Nominal intensity	References
3A	6YFUR633003
10A	6YFUR633010
16A	6YFUR633016

These fuses are designed to protect against overload and short circuits type G according to IEC 60269; rapid fuses type F are defined in the IEC 60127 standard, which provides four types of fuses (FF, F, T, TT) each type is defined according to the time required to cut ten times the rated current: FF (very fast), less than 1 ms, F (Fast), 1 to 10 ms, T (Slow blow), 10 to 100 ms; TT (Very slow acting), greater than 100 ms
The rated current is the current that can pass through a fuse indefinitely without cause or merger, or overheating. The intensity of overload causing fusion in less than an hour is generally between x1.5 and x 2 the rated current.
As thermostats, fuses are mounted on the stage and not on the neutral

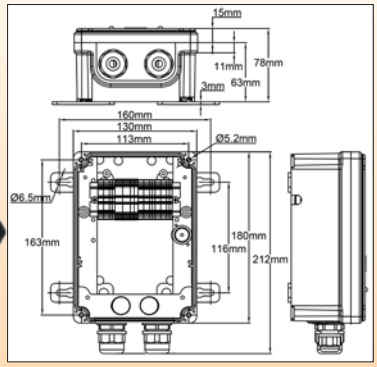
JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Complementary Boxes

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Junction or distribution box with cage terminal block.

Din rail mounting

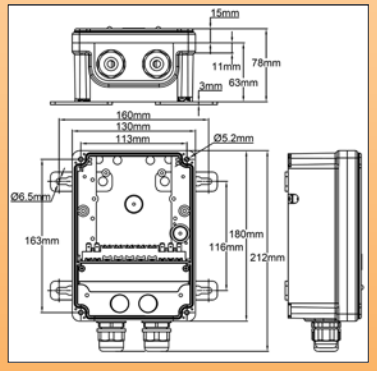


Black opaque lid. The rail, with a clear width of 80mm (100mm for terminal blocks located less than 50mm above the rail), allows the mounting of:
- 18 x 1.5 mm² cage junction blocks (4.2mm width without separation, 5.7mm with separation)
- 18 x 2.5 or 4.0 mm² cage junction blocks (6.2mm width without separation, 7.7mm with separation)
- 9 x 6.0 mm² cage junction blocks (8.0mm width without separation, 9.5mm with separation)
- 7 x 2.5 or 10 mm² cage junction blocks (10.2mm width without separation, 11.7mm with separation)
- 2 x PGM25
- Din rail omega
- 2 M20 x 1.5 rear outlets sealed with M20 x 1.5 caps and gaskets
- 4 wall mounting movable brackets
- 10 red plastic seals

References	Equipment
Y8B0000S100020J1	Din rail Omega only, clear width 80 mm
Y8B0000S110020J1	3 blocks 10mm² +
9 blocks 2.5mm²	18 blocs 1,5 mm² (16 phases+2 terres)
Y8B0000S120020J1	18 blocks 1,5 mm² (16 phases + 2 grounds)
Y8B0000S130020J1	12 blocks 2,5 mm² (10 phases+ 2 grounds)
Y8B0000S140020J1	12 blocks 4mm² (10 phases+ 2 grounds)
Y8B0000S150020J1	9 blocks 6 mm² (7 phases + grounds)
Y8B0000S160020J1	7 blocks 10 mm² (5 phases + 2 grounds)

Box with Ultimheat terminal block

Can be used as a junction or distribution box or for customer control system integration.

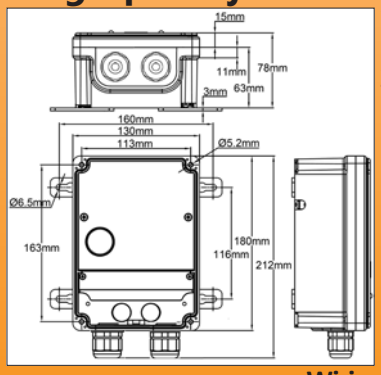


- Ultimheat terminal block 5 x 6mm² and 5 x 2,5mm² symmetric
- 2 x PGM25
- 2 M20 x 1.5 rear outlets sealed with M20 x 1.5 caps and gaskets
- 4 wall mounting movable brackets
- 10 red plastic seals

Fully wired model: see page 80

References	Equipment
Y8B0001S000020J1	Black lid
Y8T0001S000020J1	Polycarbonate transparent lid
Y8W0001S000020J1	Black lid with transparent polycarbonate window

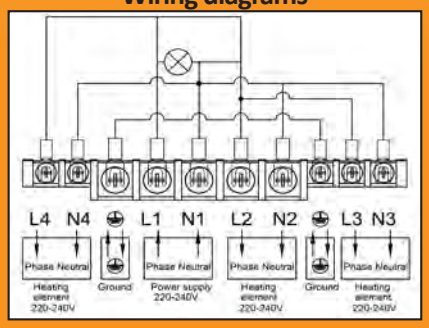
Single phase junction box, 3 pre-wired outputs



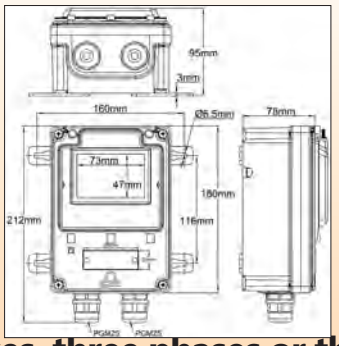
Wiring: power supply Neutral + Phase + Ground on a 6 mm² terminal block, and outlets to 3 heating circuit outlets1.5 or 2.5 mm².
Indicator lights: A power supply red light , with high brightness LED is visible under the transparent lid
The whole wiring is protected against accidental contacts
- 2 x PGM25
- 2 M20 x 1.5 rear outlets sealed with M20 x 1.5 caps and gaskets
- 4 wall mounting movable brackets
- 10 red plastic seals

Reference	Y8TE303S00002TF1

Wiring diagrams



Box for Ground Fault Circuit Interrupter or Din rail mounting electronic control



Allows mounting of a circuit breaker type Merlin Gerin Multi 9 (UL, CSA, IEC) and equivalent European ranges Vigi C60 or C60 (72mm maximum width = four 18 mm modules), or electronic controllers described in this catalogue

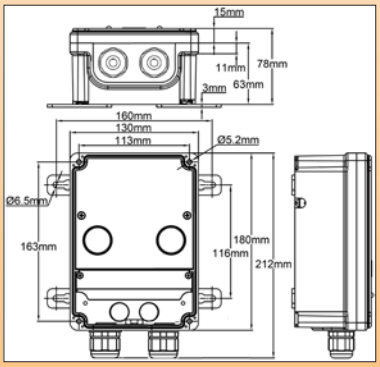
Box basic equipment:

-2 x PGM25
- Din rail
- Ground Fault Circuit Interrupter front plate
- 2 M20 x 1.5 rear outlets sealed with M20 x 1.5 caps and gaskets
- Ground block with 4 terminals dia. 5 mm
- 4 wall mounting movable brackets
- 10 red plastic seals

Supplied without GFCI or electronic controller

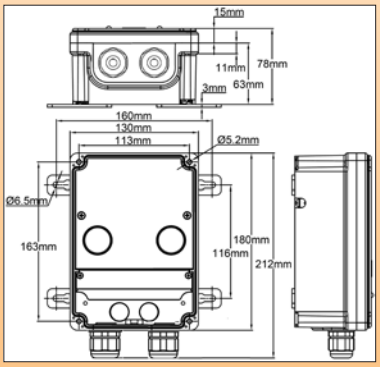
Reference	Y8WD000S200020F1

Power junction boxes, three phases or three heating elements, with electromagnetic relay, fully wired



3 x 16A (AC1), 250V, Ultimheat terminal block with 5 terminals 2.5 mm² screws and 5 screw terminals 6 mm². Red indicator light for power supply and output green light (250V), transparent lid. Shunts: see page 74

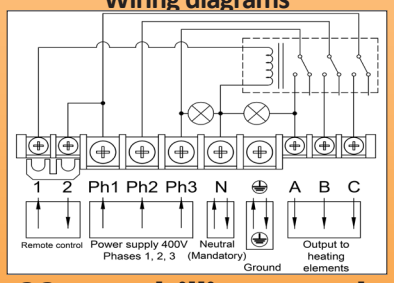
Reference	Y8TE903SC0002PF1



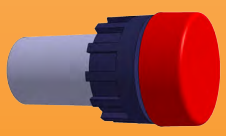
3 x 40A (AC1), 250V, Ultimheat terminal block with 10 cage terminals 10 mm² screws and 5 screw terminals 6 mm². Red indicator light for power supply and output green light (250V), transparent lid. Shunts: see page 74 .

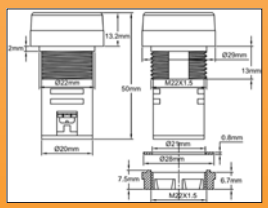
Reference	Y8TE904SJ0002RF1

Wiring diagrams



LED indicator light, 22 mm drilling, steady or flashing modes.



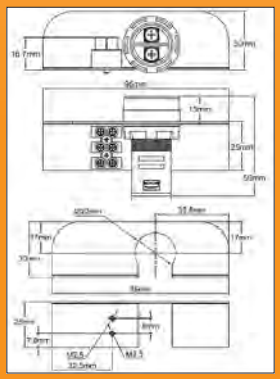


For pre-wired connection boxes

Reference	Description
6YL22230RF00	230V red
6YL22230VF00	230V green
6YL22230RC00	230V red flashing
6YL22230VC00	230V green flashing

Contact us for 120V models

Alarm indicator light with mounting bracket for aluminum or plastic boxes



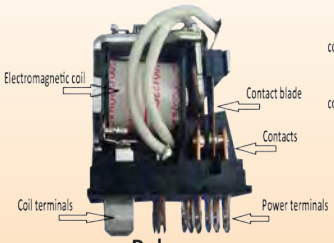
Snaps into a rib within the housings. For example: allows to indicate overheating of SSRs in aluminum boxes equipped with alarm thermostats closing on temperature rise..
The bracket includes a 3 x 1.5 mm ² terminal block.

Reference	Voltage
6YL2200000BR	Bracket without light and terminal block
6YL22230RCBR	230V, red flashing light
6YL22230VCBR	230V, green flashing light
6YL22230RFBR	230V, red steady light
6YL22230VFBR	230V, green steady light

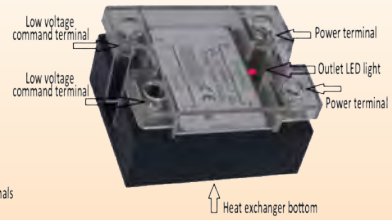
JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Introduction to the use of solid state relays (SSR)

The solid state relay, also called solid state contactor or SSR (English acronym for Solid State Relay) is the electronic equivalent of the electromechanical power contactor.



Relay



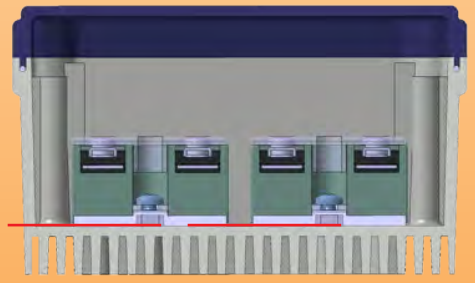
Solid state relay

The relay or electromechanical contactor: The coil is made of a very large number of turns of a very thin copper wire. When a sufficient current goes through the coil, it produces a magnetic field that attracts the movable part and moves the reeds with electrical contacts. When the current no longer flows in the coil, the contacts return to their initial position thanks to a restoring spring.

The solid state relay: the input circuit, equivalent to the contactor coil is electrically isolated from the power circuit with an optocoupler (also known as photocoupler), composed of a LED and a phototransistor. This miniature electronic component can separate two electronic or electrical circuits whose grounds are not at the same voltage. The input circuit command is usually done by of low DC voltage pulses consuming a few milliamps. This input circuit controls a power circuit usually consisting of thyristors or triacs. Accurate controls, particularly those with PID action, may require very high heating opening and closing frequencies, with durations sometimes less than one second. These frequencies cause the electromechanical contactors quick wear but do not affect the static switches. It is the same for On/Off controlled applications with low differential (hysteresis) of systems submitted to sudden changes in temperature. Over the past two decades, the dimensions and characteristics of solid state relays connection were gradually standardized, and most models are now interchangeable.

General comparison between solid state and electromechanical relays

	Radio interferences	Wear	Noise	Dimensions	Overheating	Insulation	Cost
Solid stare relay	99% removed by the cut to zero technique and filters	No	No	Small except if a heat-sink is required	Significant, often requires a heatsink	Open position: Residual leakage current	Medium, dropping
Electromechanical relay	Few interferences	The electrical contacts wear at each cycle	Click	Large for power contactors	Low	Open position: no current flows	Low


Installation example of solid state relays in an aluminum Ultimheat housing (thermal compound in red).

Heat dissipation: approximately 0.3% of the average power (about 1W per Ampere rms) passing through is dissipated by Joule effect in the solid state, and must be evacuated. For instance: a solid state 20A 240V relay, operating at 100% power, dissipates around 15 watts, which is sufficient in the case of a control box, to raise its internal temperature of 30-40 ° C. SSRs have a lower surface of aluminum which is used to remove that power. The temperature of this wall can not exceed 115 ° C. Heat sinks should be provided to properly exhaust the heat generated. For this, it is necessary that this surface has an excellent thermal contact with the wall it is mounted on. A contact grease is necessary to improve the exchange. For Ultimheat boxes provided for solid state relays, the heat dissipation is achieved by aluminum fins incorporated into the rear of the case itself. This does not lead to any size or cost increase, unlike other concepts using separate heatsinks.

Residual current: an important parameter to consider when installing solid state relays is that there always remains a few milliamperes residual current when turned "OFF" (Unlike most electromechanical contactors where no current flows when the contacts are open).
Transcient overvoltages: the sensitivity of solid state relays to transcient overvoltages, which were an early weaknesses of these products, is now greatly reduced by using protective circuits generally based on MOV varistors.
Current rating: in the same way as electromagnetic relays, the current rating of solid state relays is given for a resistive load. Because of the extra currents of inductive opening and breaking loads , as well as extra power-currents of self-regulating heating elements, it is necessary to apply a reduction coefficient of the nominal current ratings in these applications.

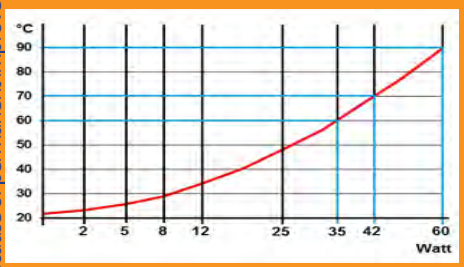
Table of current rating reduction coefficients

Resistive load	Filament lamp	Electromagnetic coil	Transformer	Single phase motor	Three phase motor	Self-regulating heating cables*
1	0.8	0.5	0.5	0.12/0.24	0.18/0.33	0.6

*Average value, depending on cable ambient temperature at startup, see the manufacturers manuals and Standard CEI60898

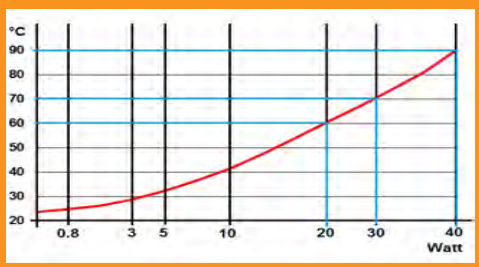
Temperature of the SSR rear side according to the dissipated power (Ambient temperature = 25°C, Blue lines = safety thermostat set points, see page 45)

Aluminum main housing
(180x130x63mm) without fan



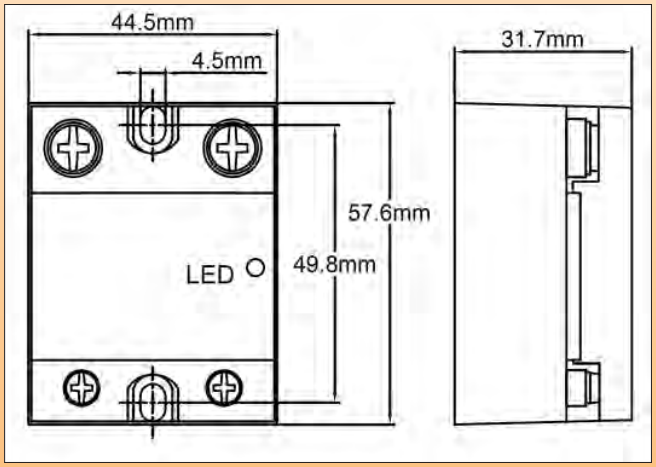
Aluminum main housing
(180x130x63mm) with fan

Aluminum additional housing
(175x86x40 mm)

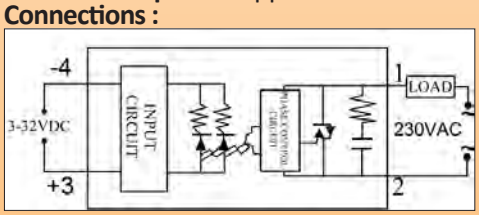


Solid state relay, 3-32VDC input, cut to zero. Compatible with the relay (SSR) output of electronic controllers.

Single phase



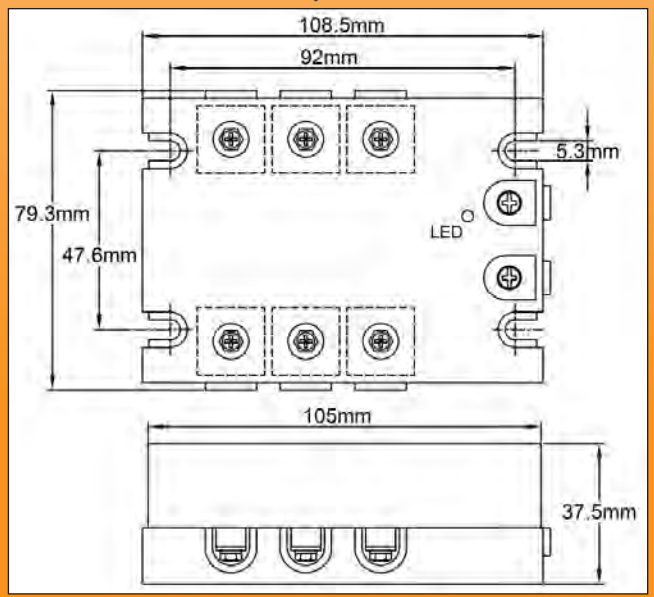
Dimensions: 58 x 45.5 x 30.5 mm
Mounting: two holes dia 4.5 holes, 47.5 to 50 mm spacing
Operating voltage range: 28-285 V AC, 47 to 63 Hz
Input signal: 3-32V DC, 3 to 35 mA current
Voltage drop in open position (current flowing): <1.5VAC
Closed position leakage current (current not flowing): <2mA
Opening and closing maximum times: less than 10 ms
Dielectric insulation: 2500VAC
Non repetitive over-current (Itsm) :
10A modele: 100A
20A modele: 200A
30A modele: 300 A
Insulation resistance: > 100 Mohms /500VAC
Output indication On: with LED
Operating temperature: -30 +75 ° C
Thermal dissipation: approx. 0.3% of the average power
Connections :



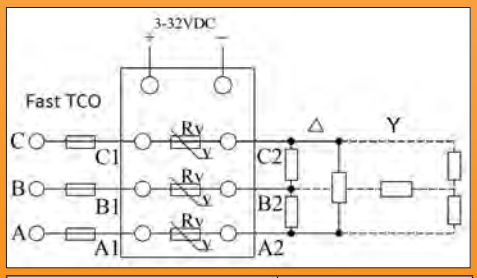
Reference	Current
91GJW10240	10A
91GJW20240	20A
91GJW30240	30A

Electromagnetic contactors and relays: see page 85

Three phase



Dimensions: 108.5 x 76.3 x 37.5 mm
Mounting: 4 holes M4, 48 x 92 mm spacing
Operating voltage range: 24-440 V AC, 47 to 63 Hz
Input signal: 3-32V DC, 12 to 25 mA current
Voltage drop in open position (current flowing): <1.5VAC
Closed position leakage current (current not flowing): <10mA
Opening maximum times: < 10 ms
Non repetitive over-current (Itsm) :
10A modele: 100A
20A modele: 200A
30A modele: 300 A
Dielectric insulation: 2500 VAC
Insulation resistance: > 100 Mohms /500VAC
Output indication On: with LED
Operating temperature: -30 +75 ° C
Connections :



Reference	Current
91GJH10440	10A
91GJH20440	20A
91GJH30440	30A

Electromagnetic contactors and relays: see page 85

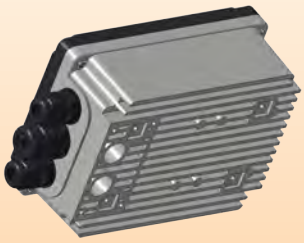
The solid state relays in this range are cut-to-zero equipped. They are compatible with the electronic controllers SSR outputs. The insulation between the control circuit and the power circuit is carried out by photo-electric coupling. They include an RC protection against power surges.

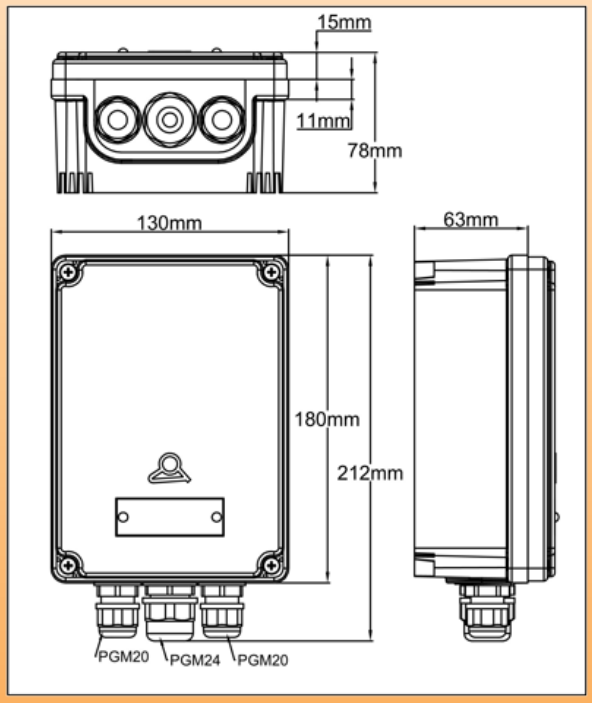
JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Solid state relay heat exchanger boxes

The proper functioning of SSRs is related to their cooling and evacuation to the outside of the calories they produce

Weatherproof enclosure with integrated heat exchanger, for solid state relay power control (SSR).





These sealed aluminum boxes are RAL 7015 epoxy painted. They have the same dimensions than the plastic control boxes, and use the same lids. They have the same external fixing pins than the other boxes, but they allow the mounting of single or three phase solid state relays of which the cooling is carried by the fins on the rear face.

They include the following standard equipment:

- D2 M20 x 1.5 rear outlets sealed for M20 x 1.5 glands or other M20x1.5 accessories (sealed with an M20x1.5 cap and gasket)
- Tapped holes for mounting up to 4 single phase solid state relays (limited to 3 relays if the plate with internal light is used) or a three-phase solid state relay.
- Two internal locations with M3 tapped holes for fixed setting thermostat with flat bracket (it is also possible to add M20x1.5 thermostats in the rear outlets).
- An inner slide allows the mounting of a dia. 22 mm light holder and an auxiliary 1.5 mm ² terminal block.

External accessories :

- M4 tapped holes for assembling wall mounting brackets, heat tracing stands, a dia. 92mm forced cooling fan and the fan protection cover.
- 2 ISO M25 polyamide glands
- 4 wall mounting brackets

Version with transparent lid, used to display static relay LEDs and temperature alarm light.

Note : this aluminum case may also receive some of the control systems designed for the plastic housing (bulb and capillary thermostats and electronic controllers, please contact us)

Note: It is possible to control the heat exchange by monitoring of the SSR boxes with a 2 zones control electronic control box: simply mount a M20x1.5 Pt100 temperature sensor in one of the two rear exits of the aluminum housing (with the sensitive part turned inside). Alarm management and ventilation switching can then be performed by the electronic control box.

Reference	Lid	Red flashing alarm light
Y4B00000000020F1	Black PA66 plastic	No
Y4T00000000020F1	Flat transparent polycarbonate	No
Y4T00000000F20F1	Flat transparent polycarbonate	Internal, 240V

Wiring harness services: if you wish to get fully equipped and wired SSR power boxes of supplies to the SSR with solid state relays, safety thermostats, external fan, please specify desired combinations, our Wiring Harness Division (UL approved) is available.

Made-to-order assembly examples

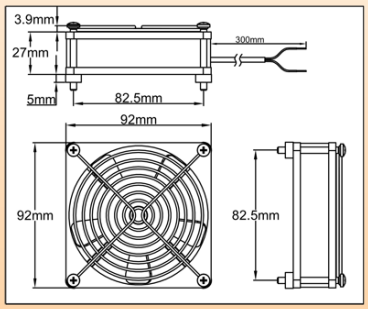
2 single phase SSR

3 single phase SSR with alarm thermostat

3 single phase SSR with alarm thermostat, safety thermostat and alarm flashing light

1 three phase SSR with alarm thermostat, safety thermostat and alarm flashing light

92 x 92 mm x 25 fan for SSR forced cooling

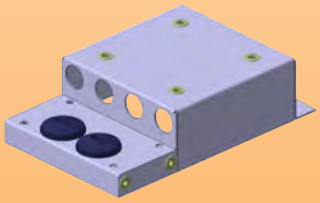


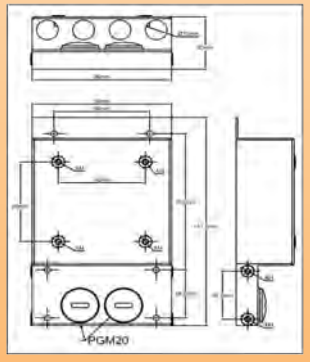
Power supply: 220/230VAC
Power: 13W
Frequency: 50 à 60Hz
Speed: 2600 rd/min
Noise level: 20-26 dbA
Connection: 300 mm lead wires
Flow rate: 33-65 m3/h
Température maxi: -10+70°C
Body: aluminum
Rear mounting with four M4 screws
Includes a protective guard.
Use of this fan without guard does not allow wall mounting, but does not prevent from a side by side coupling with other boxes.

Reference	Description
6YFAN9223000	230/240V fan+ guard + 4 screws

Contact us for 120V models

Protection cover, 40 mm thickness, protects the fan against weather in outdoor use

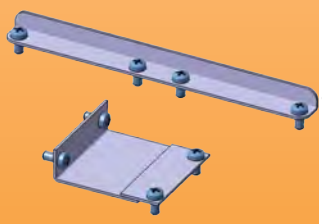


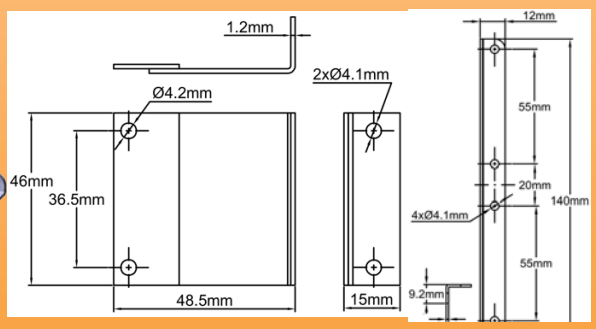


- For side by side mounting on other boxes, using the below coupling brackets.
- For wall mounting with standard wall mounting bracket kits (see page 36).
- For pipe mounting with standard pipe mounting stands (see page 55-56) but it generates a 15mm offset.

Reference	6YFAN92230SS

Coupling brackets for boxes with weather protected

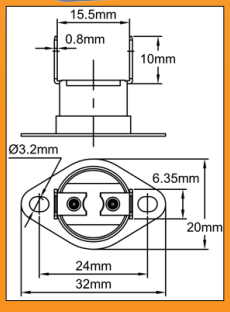




FFor side by side mounting of box equipped with a weather protected fan on an other box of the same dimensions

Reference	6YMLIK90140

Safety thermostats for solid state relays (SSR)



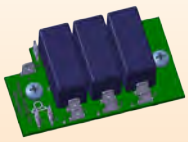
Rating: 250VAC 16A
Connections: 6.35 x 0.8 vertical terminals
Mounting: loose bracket, two holes 23.8 mm spacing, for surface mount with 2 M3 screws
Depending on the application of the thermostat, the contacts can open on temperature rise or close on temperature rise
Application examples :
1/ Opens on rise at 90°C: cutoff of the control circuit of solid state relays if the heat exchange is insufficient. Automatic restart when the temperature drops to 80 ° C
2/ Closes on temperature rise at 80°C: high alarm safety, Contact re-opens when the temperature drops to 70°C. Designed to control an external alarm and/or an alarm indicator light on the box.
3/ Closes on temperature rise at 70°C: switches on the ventilation or an alarm if the temperature goes over 70°C. The ventilation is switched off when the temperature drops below 60°C

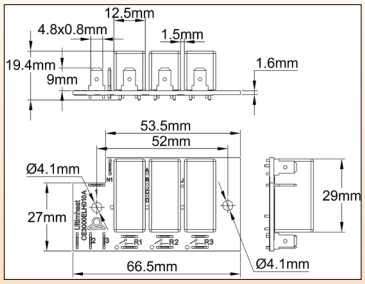
References	Opens	Closes	Notes
4903EJ09010DL6VM	90+/-4°C	80+/-5°C	Opens on temperature rise
4903EK08010DL6VM	70+/-5°C	80+/-4°C	Closes on temperature rise
4903EK07010CL6VM	60+/-4°C	70+/-3°C	Closes on temperature rise

Many other available set points, contact us

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

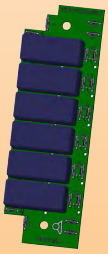
Relay boards and electromagnetic relays

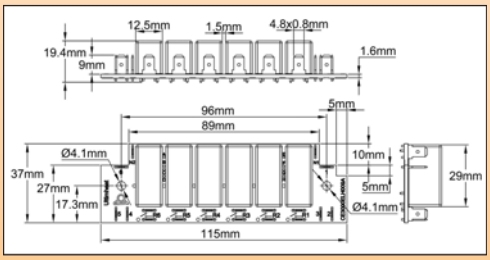




Electronic relay circuit board, 3 relays 16A 250V. Designed for boxes containing a single pole thermostat control or an electronic controller with or without manual reset option. They are available in 1 to 3 relays, NO contacts. Relay coils are individually powered, 220-240V. 4.8 x 0.8 terminals.
They can be installed directly on all plastic extended thermostat mounting boards, on electronic controllers boards, and on the flat plastic distribution boxes boards . Jumpers enable the interconnection of relay coils for simultaneous operation

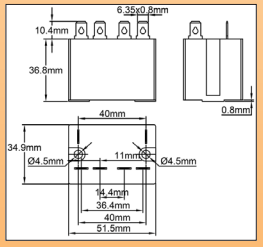
References	Description
6YRELD230116	1 relay board
6YRELD230216	2 relays board
6YRELD230316	3 relays board





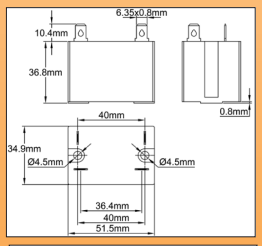
Electronic relay card 6 relays 16A 250V. They are available in 4 to 6 relays, NO contacts. Relay coils are individually powered, 220-240V. 4.8 x 0.8 terminals.
They can be installed directly on all plastic extended thermostat mounting boards, on electronic controllers boards, and on the flat plastic distribution boxes boards . Jumpers enable the interconnection of relay coils for simultaneous operation

References	Description
6YRELC230416	4 relays board
6YRELC230516	5 relays board
6YRELC230616	6 relays board



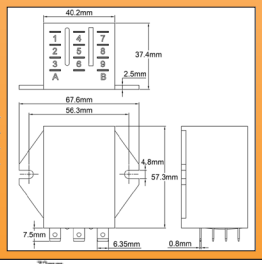
2 x 25A 250V resistive (AC1) (CE and UL) NO contact, sealed housing, 6.35 x 0.8 terminals. This relay can be mounted without mounting plate directly on all plastic triggered front provided for bulb and capillary thermostats and electronic controllers, and on the flat fronts of the distribution boxes in this catalog
Coil 200-240VAC

Reference	6YREL230225



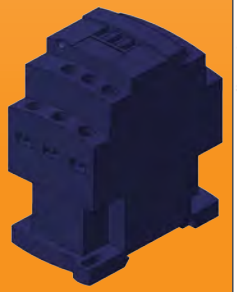
1 x 30A 250V resistive (AC1) (CE and UL) NO contact, sealed housing, 6.35 x 0.8 terminals. This relay can be mounted without mounting plate directly on all plastic triggered front provided for bulb and capillary thermostats and electronic controllers, and on the flat fronts of the distribution boxes in this catalog
Coil 200-240VAC

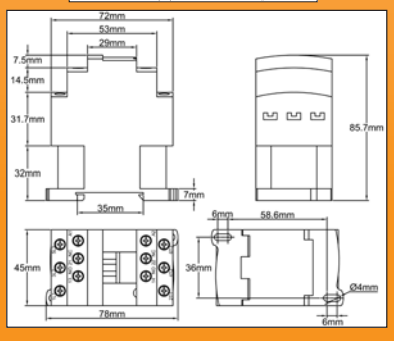
Reference	6YREL230130



3 x 25A 250V resistive (AC1), sealed housing, 6.35 terminals, SPDT contacts, coil 240VAC alternative. This relay has a 3 x 40A rating, however it is limited to 25A within control box applications.

Reference	6YREL230340

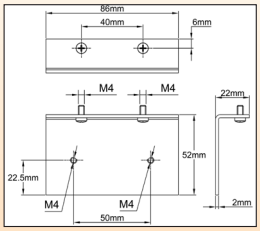




3 x 25A or 3 x 32A 250/400VAC res. (AC1), screw terminals, 240VAC or 400VAC coil.
Comply with IEC947-1 (EN60947-1) standard, but its large footprint limits its applications inside control boxes. It does not fit theY8 types, but can be used in Y6 and Y7 with single pole thermostat.

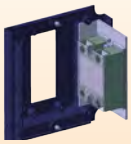
References	Heating elements applications rating (AC1)	Coil voltage
6YREL230440325T	3 x 25A	230V
6YREL400440325T	3 x 25A	400V
6YREL230440332T	3 x 32A	230V
6YREL400440332T	3 x 32A	400V

Electromagnetic and solid state relay assembling plates

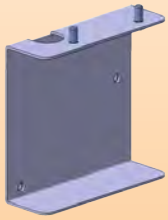


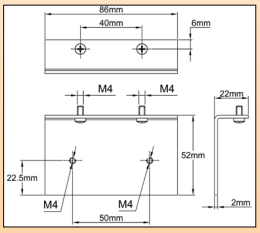
SSR mounting plate on electronic front board . Fits all electronic controllers with SSR output.in this catalog
Material: aluminum.
The kit includes the mounting screws.

Reference	6YREP046110L



Example of a 10A SSR assembly on an electronic control front board



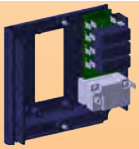


Mounting board for standardized size contactors on thermostat front board. Fits only single pole thermostats versions
Material: aluminum.
The kit includes the mounting screws.

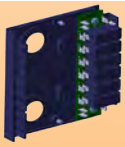
Reference	6YREP076074U

Example of assembly on a single pole thermostat mounting board

Assembly examples of relays and relay cards on control boxes

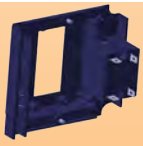


Card 1 to 3 relays 16A 250V on electronic front (all models) with manual reset option

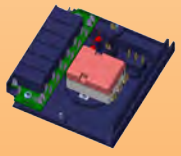


Board with 1 to 6 relays 16A 250V on electronic front board (all models)

1 relay 2 x 25A on electronic front board (all models)

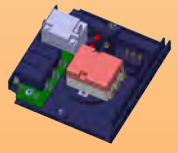


1 relay 1 x 30A on electronic front board (all models)

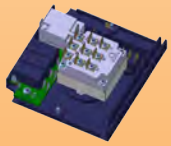


3 to 6 relays 16A 250V on thermostat extended front board , with single pole thermostat

Relay 1 x 30A on thermostat extended front board, with single pole thermostat

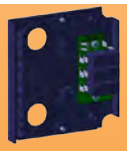


Board with 4 to 3 relays 16A 250V on thermostat extended front board, with single pole thermostat and manual reset limit

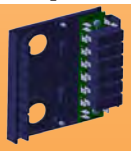


Board with 1 to 3 relays 16A 250V on thermostat extended front board with three poles thermostat and manual reset limit

Assembly examples of relays and relay Boards on distribution boxes



Card 1 to 3 relays 16A 250V on flat front



Card 1 to 6 relays 16A 250V on flat front

Card 1 to 2 relays 2 x 25A 250V on flat front

Card 1 to 2 relays 1 x 30A 250V on flat front

1 relay 3 x 25A (40A) on flat front

Thermal compound

Reference	Packaging
9GBBK01187W00000	1 kg jar
9GBA080187W00000	*30 ml, 80 grs syringe

Recommended for mounting solid state relays, temperature sensors, thermostats and limiters bulbs.
Improves the thermal conduction between pockets and probes, between the surfaces and disc thermostats, temperature sensors and solid state relays.
It is composed of a silicone-based binder and highly conductive pure metal oxide nano -powders, thereby the heat transfer coefficient is exceptionally high. It retains its electrical insulation and thermal conductivity characteristics at high temperatures with almost no separation or evaporation of the silicone binder.
Store away from light
1 year storage at 25°C

Specifications	Value
Appearance	White paste
Density (25°C)	2.7
Viscosity (needle penetration) (1/10mm, 25°C)	250
Weight loss through evaporation (200°C,24h)	≤0.2%
Loss of bond after 24h @ 200°C,	≤0.2%
Volume resistivity (Ω CM)	2×1014
Dielectric value y(60Hz)	3.8
Dielectric dissipation factor (60Hz)	0.005
Thermal conductivity (W/mk)	≥1.25
Operational temperature range (°C)	-50~300
Maximum critical temperature (°C)	340±10

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Heat tracing applications

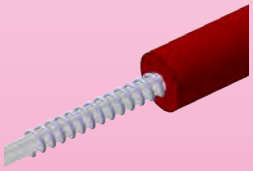
JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Introduction to different soft heating cable technologies

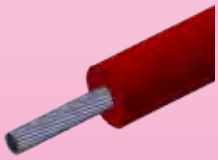
To reflect the maximum temperatures allowed by the insulating polymers, the powers of flexible heating cables are generally between 5 and 30W/meter, exceptionally 40W/m and 60W/m for self-regulating cables. These cables are coiled or laid longitudinally and in contact with the walls to heat. They are held in place by adhesives or metal strips. Classification for fire resistance is governed by EN 60332 Standard.
Main recommendations for the use of flexible heating cables
Connections : the heating cable ends must necessarily be connected to a non-heating section before entering the electrical control box.
Electrical protection :
All heating cables and ribbons must be installed with power protection complying with local regulations. For self regulating cables, the French Standard NFC 15-100 requires a circuit breaker or a GFCI with 30mA magnetic gauge to ensure the protection of persons.
Specific issues related to current peaks of self-adjusting cables :
These cables cause a significant current surge when they power up when cold. Refer to records of cable manufacturers to check the value.
Therefore, it is important to:
1. To adjust the breaker rating based on that surge (values indicated by the standard CEI60898).
2. Take into account this fact when selecting solid state relays. These surcharges are repetitive when the self-regulating cables are controlled by an external control system, we recommend over sizing SSRs, since repetition of these current peaks limits the lifetime of solid state relays (See above § for solid state relays).

Series technology

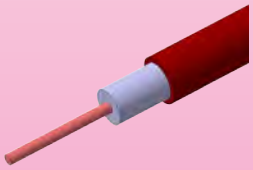
Bare series cable coiled on a fiberglass core



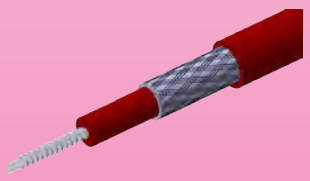
Bare series cable coiled on a fiberglass core with PVC, silicone or FEP (PTFE) insulation



Multi-strand series cable with PVC, silicone or FEP (PTFE) insulation

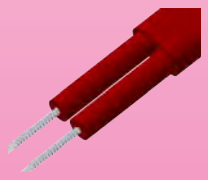


Series cable in metal tubing with magnesia insulation



Series cable with metal protection braiding

Series cable with non-heating return conductor



Series cable with two heating conductors

The heating cables are composed of a multi-strand single conductor, the strands can be straight or wound on a fiberglass core. The electrical insulation is typically PVC, Silicone, or FEP. The cables have a circular cross section and can accommodate a metal braid as a mechanical protection that can itself be coated with a flexible insulator. Each cable end is connected to the power supply. They are also available with two parallel conductors, one heating and one not-heating for return connection back, and also with two parallel heating conductors. They are defined by their metric resistance (Ohms / m) to be calculated according to the power and voltage, as well as technical limitations (composition of the strands, the maximum temperature withstood by insulation). Their length cannot be on-site adjusted. Models without protective braid are generally used in the refrigeration industry for defrosting cold room doors, defrost and evaporator flow, freeze protection of pipes, valves, water meters, etc. Models with protective braid are used for heat-tracing of great length pipes in petro chemistry for example.
Cable ends :
The cable ends must be fitted with a non-heating portion, cable or wires, which may be crimped or soldered, then coated with an insulator (silicone sleeve, heat shrink sleeve or molding: see pages 62-63)
Use heat shrink sleeves with caution for wire terminations if they are PVC, Polyolefin or flexible polymer-type TPR coated.
Temperature control :
This technology requires a temperature control system. A fixed setting thermostat, mostly a disc thermostat, can be molded at one end of the cable in the two parallel conductor versions (see pages 60-61)

Constant wattage parallel technology

Constant wattage cable with protective braid

These flat ribbon-shaped cables are composed of two non-heating copper conductors delivering the 230V supply over the entire length of the ribbon.
The thermal effect is provided by the flow of current from one conductor to the other through a parallel mesh composed of resistive nickel-chromium wires alternately welded to one and the other of the two conductors. The electrical insulation is typically PVC, polyolefin, silicone, or FEP. The cables are flat section and may receive a mechanical protection by a metal braid which can itself be coated with a flexible insulator. These cords are connected to the power supply at one end, the other end to receive electrical insulation covering the cut.
They are defined by a watts per meter value. This technology allows the cutting of the heating cable to length, with an output directly proportional to the length.
It is adapted to maintain a medium heat, because its resistance does not vary as a function of temperature like for the self-regulating cables, and it is not restricted in temperature by the characteristics of the semiconductor resistive compound in self-regulating cables.
Cable ends :
The cable ends must be fitted with a non-heating portion, cable or wires, which may be crimped or soldered, then coated with an insulation (silicone sleeve, heat shrink sleeve or molding: see pages 103-104)
Use heat shrink sleeves with caution for wire terminations if they are PVC, Polyolefin or flexible polymer-type TPR coated.
Temperature control :
This technology requires a temperature control system. A fixed setting thermostat, mostly a disc thermostat, can be molded at one end of the cable in the two parallel conductor versions (see pages 93)

Parallel technology, self-regulating type

Self regulating cable with protective metal braid

Limiting power cable with spacer between conductors

These flat ribbon-shaped cables are composed of two non-heating copper conductors (sometimes 3), delivering the power supply over the entire length.
The thermal effect is ensured by an extruded plastic polymer conductor, connecting the two copper conductors.
This polymer main thermal characteristic is the variation in its resistivity and thus its power per linear meter, depending on its temperature. This temperature is the result of its self-heating by Joule effect and its heat exchange outwardly by the wall on which it is placed, as well as the external temperature. The power reduction is in the region of 65% between 0 and 140 ° C (maximum temperature withstood by the polymer semiconductor).
This helps delivering the required power depending on environmental conditions.
This cable is also self-limiting and its power is greatly reduced when approaching the polymer temperature limit, thus avoiding destruction by overheating in the event of improper installation (overlapping or crossing wires, crossing insulation, etc). However, one must ensure that, in any case, the temperature of the fluid flowing in the pipe does not exceed the polymer critical temperature or it would cause its destruction.
The counterpart of this resistivity increase as a function of temperature is a resistivity decrease when the temperature drops. The starting power will be a function of ambient temperature. In the case of very cold environments, this causes large surges until the cable reaches its operating temperature. The startup power will be a function of ambient temperature. In the case of very cold environments, it causes large surges until the cable reaches its operating temperature.
A variant of this technology called power-limiting uses a coiled composite wire around two parallel conductors separated by a spacer of constant width. The characteristics of this wire allow a power limitation as its (.../...) power raises quite strongly with temperature.

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

The power reduction is in the region of 45% between 0 and 200 ° C. (Maximum operating temperature of the insulation).
This technology allows the cutting of the heating cable to length, with a maximum output directly proportional to the length. The electrical insulation is usually Polyolefin, Silicone, FEP or PFA. The cables have a flat cross-section and may receive a mechanical protection with metal braid that can itself be covered with a flexible insulation. These cords are connected to the power supply at one end, the other end of the cord to receive electrical insulation covering the cut. They are defined by a watts per meter value.

Cable ends :

• *Solution 1:* the cable ends can be made non-heating by cutting the semi conductive black plastic area between both conductors, over the whole connection length, which is usually long and tedious. After cutting, the wire non-heating part and plastic semiconductor cut is irregular and difficult to seal, even with soft silicone caps. Because of this irregular cross-section, the seal at the stuffing box packings cannot be guaranteed.

• *Solution 2 (recommended by us):* the cable ends must be fitted with a non-heating portion, cable or wires, which may be crimped or soldered, then coated with an insulation (silicone sleeve, heat shrink sleeve or molding: see pages 103-104).

Important note:

The semi conductive compound (carbon filled HDPP) used in these heating cables does not have a high temperature resistance. The use of heat-shrink sleeves on the ends and connections must be made with caution and avoid exceeding the compound destruction temperature.

Temperature control:

This technology does not systematically require a temperature control. However we recommend that these devices are equipped with temperature controls in order to control the temperature values requested by the processes.

Connection issues with heating cables

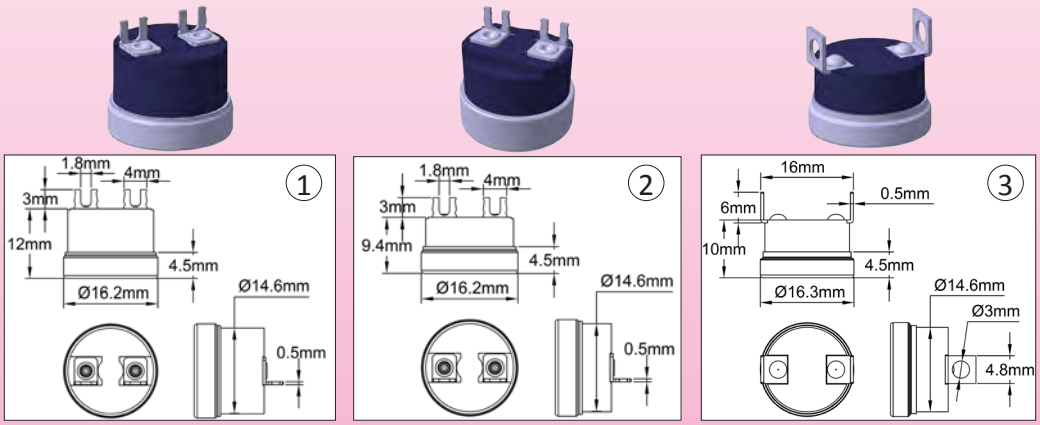
Overheating: their presence increases the room temperature. For example a box of volume 1500/2000cm 3 (current size of housing) will increase the ambient temperature of 20 ° C with just 5 watts of power dissipated inside.
This corresponds to 20 cm of 25 watts per meter heating cable, that to say a possible length needed to connect 3 heating wires in a distribution box. It is therefore important to avoid this type of assembly, especially when the box has an anti-freeze thermostat which measuring element is located in the housing itself and is therefore sensitive to its internal temperature.
The boxes in this catalog having antifreeze thermostats have been designed so that the temperature sensing element is outside the case. However, we recommend to connect the cables on a non-heating section prior to introduction into a control box to avoid internal overheating. We therefore propose a range of solutions for connecting to cope with all situations.
Power grid: in most cases, the on-site connection is made with no available grid. We have developed connection systems via screw terminals or crimp, which do not require power.
Cut-outs: they are often mounted on thermally insulated pipes and covered with a cover plate: we have focused on square and rectangular cutouts for the mountin stands. They are easier to achieve without power tools.
Connections are generally made outdoors: we developed watertight connection systems, achievable without electricity, with flexible caps and filling with liquid silicone which is room temperature vulcanizing. These caps have been designed to be easy to fill and use a simple system that allows them to maintain this position during the filling time and polymerization.
For economic mounting, when a heating system is available, we offer two types of retractable sheaths with intensive shrinkage, single wall for mounting where sealing is not necessary, and double wall, with in-wall fuse,for mounting where sealing is requested.
Removing the sheath and stripping are time-consuming: long and risky operations on oblong cables and in particular on these self-regulating cables. We therefore developed a complete range of wire strippers for these cables.

30 Antifreeze solutions

In the range of products we make, there are more than 30 different technical solutions and more than 150 product references to detect the freezing conditions. Those presented here are the most common ones for domestic and semi-industrial applications. For more technical solutions for industrial applications, see the Y8 range of control boxes on pages 55 and following. For explosion proof applications, see the Atex thermostats catalogue and their installation inside Y8 and Y9 series cabinets. For specific applications please do not hesitate to contact us

Electromechanical antifreeze protection devices , fixed setting types

Anti-freeze thermostat, for mounting on heating cable end, in silicone cap type A or K

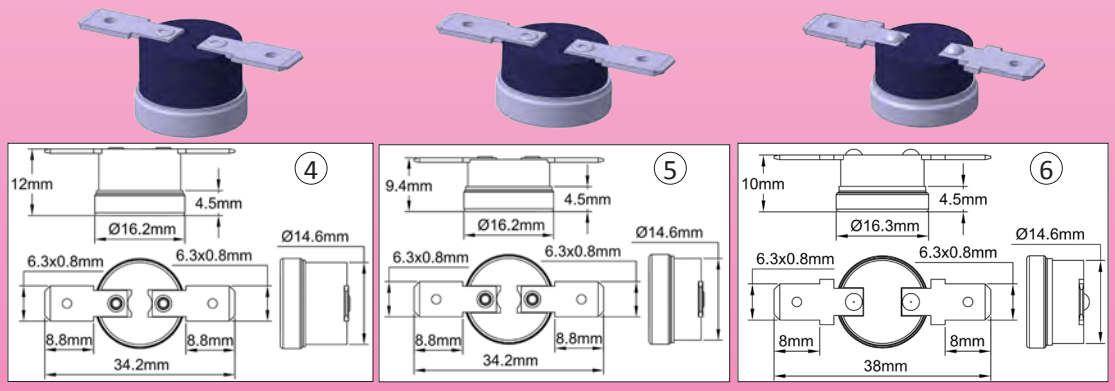


This disc thermostat is adapted to cable end mounting, with small size solder terminals and aluminum cup. It withstands silicone or epoxy filling. See page 93 for assembly method.
Thermostat opens on temperature rise

Reference	Open (°C)	Close (°C)	Rating (250VAC)	Type
4903EJ01006CUSV0	10+/-3	4+/-3	16A	1
4911NP01006CUSV0	10+/-3	4+/-3	10A	2
4993AJ00805HCSV0	8+/-3	3+/-2.5	8 A	3

Other set points, terminals or brackets: contact us

Thermostat for end cable connection with shrinkable sleeves



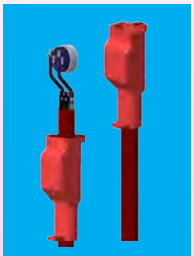
Anti-freeze thermostat, for mounting on heating cable end under double wall shrinkable sleeve, with 6.3 x 0.8 horizontal tab terminals, for faston connectors or soldering. Aluminum temperature sensing cup. Contact opens on temperature rise.

Reference	Open (°C)	Close (°C)	Rating (250VAC)	Type
4903EJ01006CL6H0	10+/-3	4+/-3	16A	4
4911NP01006CL6H0	10+/-3	4+/-3	10A	5
4993AJ00805HL6H0	8+/-3	3+/-2.5	8 A	6

Other set points, terminals or brackets: contact us

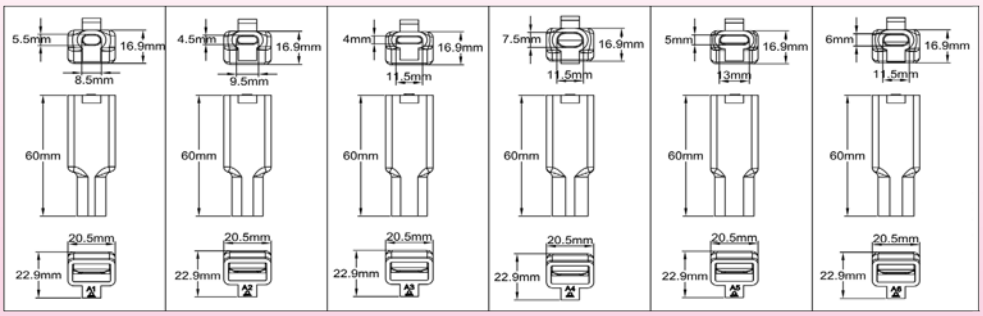
JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Silicone connection sleeve type A for in-line integration of a disc thermostat on a constant power parallel cable, on a self–regulating cable, or on a two conductor series cable, with or without metal braid



End of line mounting on a two conductors series cable.

Mounting on the beginning of line of a self-regulating or constant power parallel cable.



They allow the connection of heating cables on disc thermostats. Specifically intended for domestic anti-freeze tracing. When the assembly and filling are performed according to installation instructions, they provide an IP65 seal. They advantageously replace the heat-shrinkable sleeves commonly used for this application which do not always provide a perfect seal.
Average volume of silicone needed for filling: 4.8 ml
Compatible anti-freeze thermostat: see page 92
End of line mounting on a two conductors series cable
Mounting on the beginning of line of a self-regulating or constant power parallel cable

Reference	N°	Hole	Cable gauge
6YTNA1M085055056	A1	8.5 x 5.5	9 x 6 to 9.5 x 6.5
6YTNA2M095045056	A2	9.5 x 4.5	10 x 5 to 10.5 x 5.5
6YTNA3M115040056	A3	11.5 x 4	12 x 4.5 to 12.5 x 5
6YTNA4M115075056	A4	11.5 x 7.5	12 x 8 to 12.5 x 8.5
6YTNAM130050056	A5	13 x 5	13.5 x 5.5 to 14 x 6
6YTNA6M115060056	A6	11.5 x 6	12 x 6 to 12.5 x 7

Packaging: 10 pieces bag

Cord Type K with silicone encapsulated anti-freeze thermostat, for connecting on the beginning of line of a self-regulating or constant power parallel heating cable, with or without metal braid.

This encapsulated cord H03VVF 0.75 mm² or H05VVF 1 mm², incorporates an anti-freeze thermostat. It is intended for use on self-regulating or constant power heating cables (the thermostat is in series with the power supply).
Particularly intended for domestic antifreeze tracing, they consist of three parts: the encapsulated cord 2 or 3 wires of 0,75mm² or 1mm² integrating the thermostat described on page 92, a silicone sleeve for protecting the heating cable welds on the cap terminals, intended to be silicone filled, and an insulation system avoiding leads to touch each other while filling.
They are available with or without grounding. Average volume of silicon needed for filling: 1 ml
Packaging:10 pieces box

Sub-assembly thermostat + cord

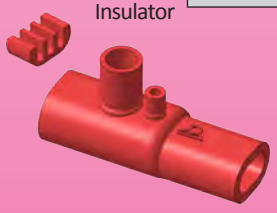
Cord with thermostat

Reference	Type of cord
6YTTD20751001004	2 x 0.75mm², length 1 m, Euro plug 6A with 2 pins
6YTTD20751501004	2 x 0.75mm², length 1.5 m, Euro plug 6A with 2 pins
6YTTD20752001004	2 x 0.75mm², length 2 m, Euro plug 6A with 2 pins
6YTTC30751001004	3 x 0.75mm², length1m, Euro plug 10A with ground
6YTTC30751501004	3 x 0.75mm², length 1.5 m, Euro plug 10A with ground
6YTTC30752001004	3 x 0.75mm², length 2 m, Euro plug 10A with ground

Reference	Type of cord
6YTTD21001001004	2 x 1mm², length 1 m, Euro plug 6A with 2 pins
6YTTD21001501004	2 x 1mm², length 1.5 m, Euro plug 6A with 2 pins
6YTTD21002001004	2 x 1mm², length 2 m, Euro plug 6A with 2 pins
6YTTC31001001004	3 x 1mm², length1m, Euro plug 10A with ground
6YTTC31001501004	3 x 1mm², length 1.5 m, Euro plug 10A with ground
6YTTC31002001004	3 x 1mm², length 2 m, Euro plug 10A with ground

Sleeve and insulator sub-assembly for heating cable

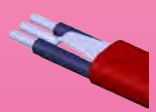
Insulator



Connection sleeve

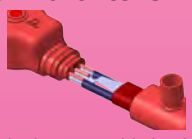
Reference	Marking	Hole	Description
6YTNK4085055056	K4	8.5 x 5.5	Sleeve for silicone filling, mounts on heating cable 9 x 5 mm to 11 x 7 mm
6YTNK5098055056	K5	9.8 x 5.5	Sleeve for silicone filling, mounts on heating cable 10 x 5 mm to 12 x 7 mm
6YTNK6115055056	K6	11,5 x 7,5	Sleeve for silicone filling, mounts on heating cable 12 x 8 mm to 14 x 9 mm

Procedure (connection via tin solder with silicone filling)



Unsheathe of 20mm, splice and tin the protective braid if there is one and, if the cable is a self regulating one, cut the semiconductor area on 10 mm. Strip the leads of 6mm, then tin them.

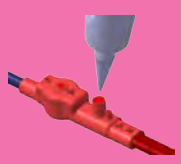
Slide the sleeve on the heating cable.



Solder the heating cable leads to the outputs of the thermostat equipped cord.
Thermostat middle output is the earth, weld the protective braid on this one

Position the silicone insulator between the leads.

Slide the sleeve A8 to the end of the cord until it snaps in.



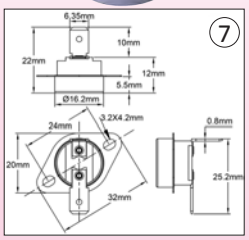
Fill with silicone in the larger hole, the little hole is used for degassing.

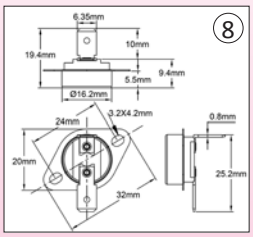
After vulcanization, cut the two vents used for filling.

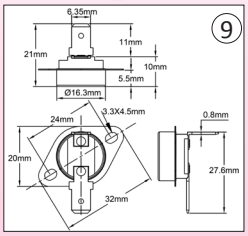
Warning : Some silicone are electrical conductive before vulcanization. Please wait full vulcanization before connecting to power supply

Antifreeze thermostat, throw wall mounting

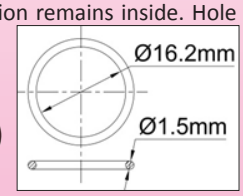








Anti-freeze thermostat, for trough wall mounting on junction or connection boxes, 6.3 x 0.8 tab terminals. Aluminum temperature sensing extended cup. Contact opens on temperature rise.
The temperature sensing part of the thermostat is located outside the box, and the electrical connection remains inside. Hole drill: dia 16.4 mm

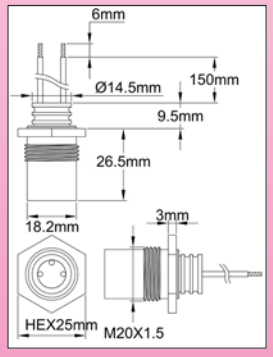


Reference	Open (°C)	Close (°C)	Rating (250VAC)	Type
4903EJ01006CL6MF	10+/-3	4+/-3	16A	7
4911NP01006CL6MF	10+/-3	4+/-3	10A	8
4993AZ01006CL6MF	8+/-3	3+/-2.5	8 A	9

Other set points, terminals or brackets: contact us
Accessories: Kit including an NBR O-ring and two M3 screws for trough wall mounting on plastic and aluminum housings

Reference	6YGA162015N

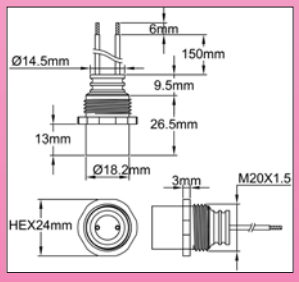
Thermostats front thread mounting M20 bolt



Anti-freeze thermostat with M20x1.5 front fitting
The thread of this thermostat allows to screw it inside a M20 x 1.5 fitting of heat tracing leg, or in any place designed for a M20x1.5 cable gland. It is equipped with a tip (diameter 14 mm, length 8 mm) to connect with the waterproof filling kit type G, if it is used at a greater distance from the box. (see assembling method on page 52)
Ingress protection : IP65
Mounting : M20 X 1.5 fitting
Connection: two AWG15 wires (1.5 mm²) , blue color, FEP300V insulation, 2.6 mm dia., 150 mm length
Compatibility :
• with M20x1.5 fittings of the rear outlets on control boxes, connection boxes and SSR boxes
• with M20x1.5 fittings of through-insulation kits

References	Open (°C)	Close (°C)	Rating (A)
49JBAJ01006JVFC8	10+/-3	4+/-3	16A
49JBAP01006JVFC8	10+/-3	4+/-3	10A
49JBAZ00805HVFC8	8+/-3	3+/-2.5	8 A

Waterproof thermostats back thread mounting M20 bolt

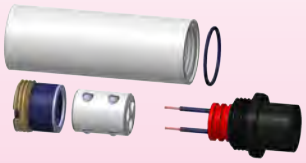


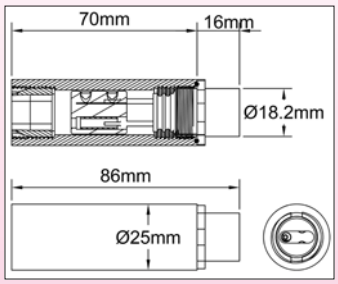
Anti-freeze thermostat with M20x1.5 back fitting (Protruding sensing element)
The thread of this thermostat allows to screw it inside a M20 x 1.5 fitting of heat tracing leg, or and any place designed for a M20x1.5 cable gland, with an outside protruding sensing element. It can also be used inside M20 tubular connection box. It is equipped with a tip (diameter 14 mm, length 8 mm) to connect with the waterproof filling kit type G, if it is used at a greater distance from the box. (see assembling method on page 52)
Protection : IP65
Mounting : M20 X 1.5 fitting
Connection: twoAWG15 wires (1.5 mm²) , blue color, FEP300V insulation, 2.6 mm dia., 150 mm length
Compatibility :
• with M20x1.5 fittings of the rear outlets on control boxes, connection boxes and SSR boxes
• with M20x1.5 fittings of through-insulation kits
• with M20 tubular connection boxes

References	Open (°C)	Close (°C)	Rating (A)
49JBBJ01006JVFC8	10+/-3	4+/-3	16A
49JBBP01006JVFC8	10+/-3	4+/-3	10A
49JBBZ00805HVFC8	8+/-3	3+/-2.5	8 A

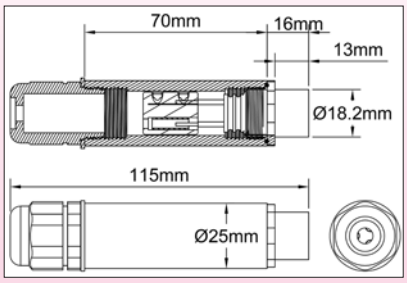
JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Miniature tubular connection box with ceramic connection block, for anti-freeze thermostat and heating cables





Flat cable output



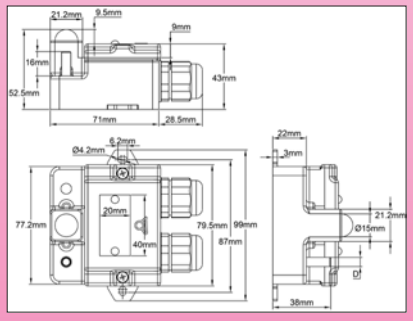
Standard cable gland output

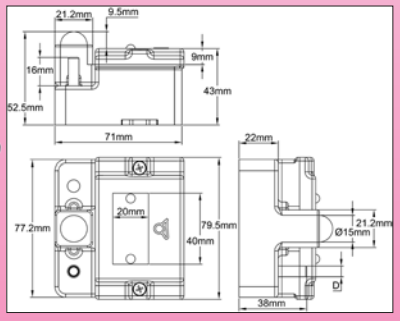
One antifreeze thermostat with M20 thread is screwed at one side, and cable output is made at the other side. It can also be used to connect two cables or for connecting a flat heating cable to a conventional non heating round cable.
Tubular housing material: POM (Delrin) tube, OD. 25 mm x 70 mm
End threads: 2 x M20x1,5. This allows to mount a M20 waterproof antifreeze thermostat, a standard cable gland M20x1.5 or a M20x1.5 gaskets for flat cables
Internal connection: on 3 x 2.5 mm² round ceramic connection block, Stripping length: 6+1/-0mm.
Maximum lead diameter: 2 mm.
Ceramic connection block screws recommended torque: 0.6 Nm +/-25%

References	Side A	Side B
66FS15002210416200	Thermostat 10/4°C, 16A	M20 x 1.5 thread, no cable gland
66FS1500221041620P	Thermostat 10/4°C, 16A	ISO M20 nylon cable gland
66FS15002210416XXS*	Thermostat 10/4°C, 16A	Flat cable silicone gasket*
66FS15002210410200	Thermostat 10/4°C, 10A	M20 x 1.5 thread, no cable gland
66FS1500221041020P	Thermostat 10/4°C, 10A	ISO M20 nylon cable gland
66FS15002210410XXS*	Thermostat 10/4°C, 10A	Flat cable silicone gasket*
66FS15002208308200	Thermostat 8/3°C, 8A	M20 x 1.5 thread, no cable gland
66FS1500220830820P	Thermostat 8/3°C, 8A	ISO M20 nylon cable gland
66FS15002208308XXS*	Thermostat 8/3°C, 8A	Flat cable silicone gasket*

* XX= silicone cable gland number, see number and sizes P57

Wall mounting antifreeze thermostats





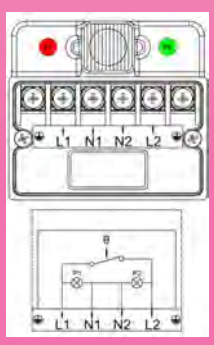
Antifreeze thermostats with junction box

In these boxes, the thermostat is over-molde, and is thermally insulated from the wall on which it is mounted. Its temperature sensing cup is mechanically protected by a grid. It is located in front of the enclosure to be in an area of natural circulation of air.
To allow its wall mounting, the box has two outer side lugs, which can be removed when assembly is made with internal screws.
These junction boxes, made in ABS-PC, come in two configurations :
• IP65, electrical output with two M20 cable glands,
• IP40, rear exit cable for wall mounting, without visible cable.
They also come in two colors:
• Black, for outdoor applications with good UV resistance ,
• Cream for indoor or domestic applications.
Variants with one or two lamps 230V (P1, P2), if necessary, can indicate the presence of power supply and load heating.
The cover has a receptacle for identification by riveted stainless steel plates or adhesive label.
It is also possible to produce these boxes with dia. 20 mm output holes and no cable glands. Contact us

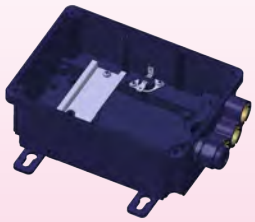
References

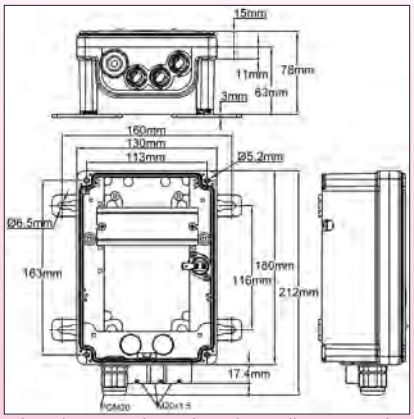
8A 250V thermostat (8°C/3°C)	10A 250V thermostat (10°C/4°C)	16A 250V thermostat (10°C/4°C)	1 pilot light	2 pilot lights	Backside output	2 Cable gland outputs	Color
49JD1Z00805HCSV0	49JD1P01006CUSV0	49JD1J01006CUSV0			x		black
49JD7Z00805HCSV0	49JD7P01006CUSV0	49JD7J01006CUSV0				x	black
49JD2Z00805HCSV0	49JD2P01006CUSV0	49JD2J01006CUSV0	x		x		black
49JD8Z00805HCSV0	49JD8P01006CUSV0	49JD8J01006CUSV0	x			x	black
49JD3Z00805HCSV0	49JD3P01006CUSV0	49JD3J01006CUSV0		x	x		black
49JD9Z00805HCSV0	49JD9P01006CUSV0	49JD9J01006CUSV0		x		x	black
49JH1Z00805HCSV0	49JH1P01006CUSV0	49JH1J01006CUSV0			x		cream
49JH7Z00805HCSV0	49JH7P01006CUSV0	49JH7J01006CUSV0				x	cream
49JH2Z00805HCSV0	49JH2P01006CUSV0	49JH2J01006CUSV0	x		x		cream
49JH8Z00805HCSV0	49JH8P01006CUSV0	49JH8J01006CUSV0	x			x	cream
49JH3Z00805HCSV0	49JH3P01006CUSV0	49JH3J01006CUSV0		x	x		cream
49JH9Z00805HCSV0	49JH9P01006CUSV0	49JH9J01006CUSV0		x		x	cream

Internal connections: built in terminal block , 6 screw terminals, 4 mm²



Antifreeze junction box with DIN rail

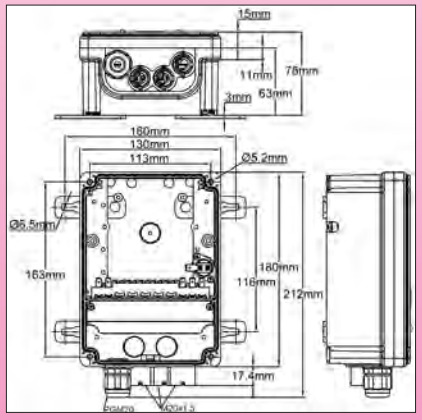




Housing: IP65, Black PA66 glass fiber reinforced (Standard housing of Y8 series)
Dimensions: 180 x 120 x 78 mm
Cover: Black Polycarbonate
DIN Rail: length 80 mm, allows the mounting of*:
• 18 Cage terminal blocks 1.5 mm ²
• 12 Cage terminal blocks 2.5 mm ² or 4mm ²
• 9 Cage terminal blocks 6 mm ²
• 7 Cage terminal blocks for 10 mm ²
* Estimation: quantity may vary upon terminal block type and manufacturer
Antifreeze thermostat: Trough wall mounted, the temperature sensitive portion is located in a ventilated channel located on the rear side, and mechanically protected. It is not influenced by the housing internal temperature.
Open: 10 ° C + / -4, close: 4 ° C + / -3. Rating 250V 16A, 6.35 QC terminals connection.
Cable glands: An entry for M20 standard cable gland and three M20x1.5 threaded outputs for flat cables M20 cable gland (see gaskets P110) and 2 rear outputs M20 X 1.5 closed by M20 X 1.5 cap with gasket
Accessories:
• 4 wall mounting removable rear mounting tabs
• 10 red plastic seals

Reference	Y8B0000L100020J1

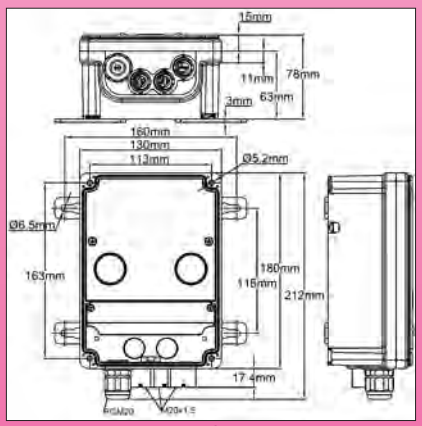
Antifreeze junction box with incorporated connection block



Housing: IP65, Black PA66 glass fiber reinforced (Standard housing of Y8 series)
Dimensions: 180 x 120 x 78 mm
Cover: Black polycarbonate
Connection block: standard Y housings connection block, 5 x 6mm² and 5 x 2.5mm², no internal wiring
Antifreeze thermostat: Through wall mounted, the temperature sensitive portion is located in a ventilated channel located on the rear side, and mechanically protected. It is not influenced by the housing internal temperature.
Open: 10 ° C + / -4, close: 4 ° C + / -3. Rating 250V 16A, 6.35 QC terminals connection.
Cable glands: An entry for M20 standard cable gland and three M20x1.5 threaded outputs for flat cables M20 cable gland (see gaskets P110) and 2 rear outputs M20 X 1.5 closed by M20 X 1.5 cap with gasket
Accessories:
• 4 wall mounting removable rear mounting tabs
• 10 red plastic seals

Reference	Y8B00E1SK00020J1

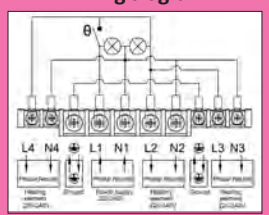
Fully wired antifreeze junction box, 16A 250V, 3 outputs



Housing: IP65, Black PA66 glass fiber reinforced (Standard housing of Y8 series)
Dimensions: 180 x 120 x 78 mm
Cover: Clear polycarbonate
Connection block: standard Y housings connection block, 5 x 6mm² and 5 x 2.5mm².
Antifreeze thermostat: Through wall mounted, the temperature sensitive portion is located in a ventilated channel located on the rear side, and mechanically protected. It is not influenced by the housing internal temperature.
Open: 10 ° C + / -4, close: 4 ° C + / -3. Rating 250V 16A, 6.35 QC terminals connection.
Wiring: protected against accidental hand contact by an internal cover. Includes power supply line with Phase, Neutral and ground on 6mm² terminals, and outputs for 3 heating circuits.
Pilot lights: 230V High luminosity LED, located under the clear cover. Green indicates power supply and red indicates power output.
Cable glands: An entry for M20 standard cable gland and three M20x1.5 threaded outputs for flat cables M20 cable gland (see gaskets P110) and 2 rear outputs M20 X 1.5 closed by M20 X 1.5 cap with gasket
Accessories:
• 4 wall mounting removable rear mounting tabs
• 10 red plastic seals

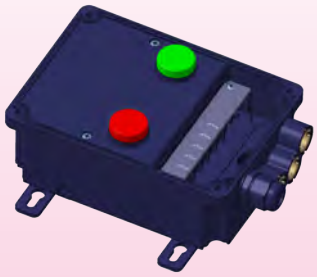
Reference	Y8TE903SK0002UF1

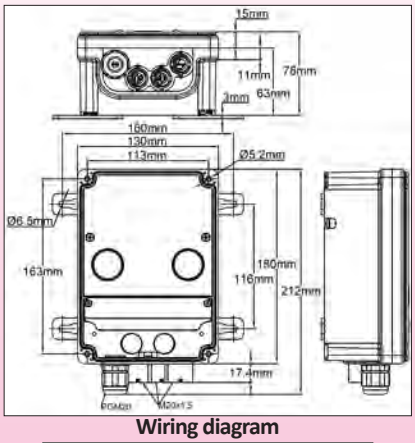
Wiring diagram



JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Fully wired antifreeze junction box, 3 x 16A 400V with neutral, 3 outputs, remote control connection

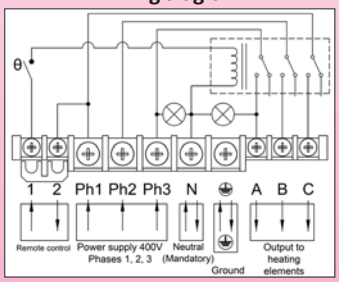




Housing: IP65, Black PA66 glass fiber reinforced (Standard housing of Y8 series)
Dimensions: 180 x 120 x 78 mm
Cover: Clear polycarbonate
Connection block: standard Y housings connection block, 5 x 6mm² and 5 x 2.5mm².
Antifreeze thermostat: Through wall mounted, the temperature sensitive portion is located in a ventilated channel located on the rear side, and mechanically protected. It is not influenced by the housing internal temperature.
Open: 10 ° C + / -4, close: 4 ° C + / -3. Rating 250V 16A, 6.35 QC terminals connection.
Wiring: protected against accidental hand contact by an internal cover. Includes power supply line with 3 Phase, Neutral and Ground on 6mm² terminals, and 3 Phase, Neutral and Ground output. Includes a power relay board 3 x 16A. Relay and pilot lights are 230V. So, neutral is mandatory.
Pilot lights: 230V High luminosity LED, located under the clear cover. Green indicates power supply and red indicates power output.
Cable glands: An entry for M20 standard cable gland and three M20x1.5 threaded outputs for flat cables M20 cable gland (see gaskets P110) and 2 rear outputs M20 X 1.5 closed by M20 X 1.5 cap with gasket
Accessories:
• 4 wall mounting removable rear mounting tabs
• 10 red plastic seals

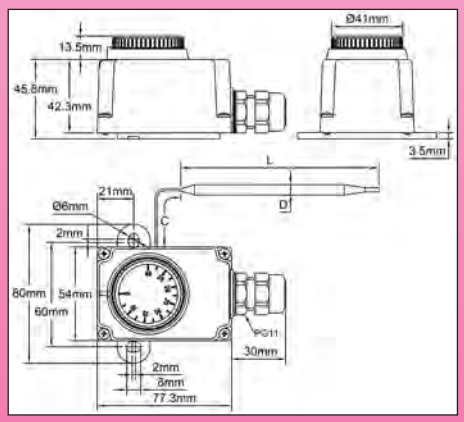
Reference	Y8TE9E3SM0002RF1

Wiring diagram



Electromechanical antifreeze protection devices, adjustable setting types

IP30 housing adjustable electromechanical thermostat, capillary output

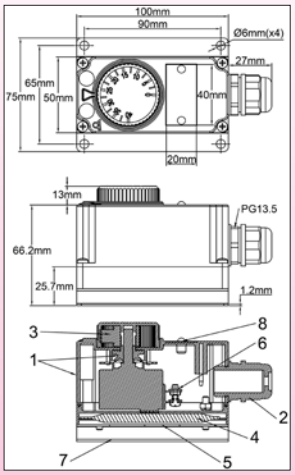


Housing: IP30, 77 x 54 x 46 mm, (Knob and cable gland not included), black PC-ABS, UL94V0. High impact and UV resistance. Stainless steel wall mounting plate, with 2 plastic lugs.
Electrical input: PG11 cable gland. Temperature Adjustment: With °C printed knob. °F printed knobs available in option
Sensing element: Liquid filled bulb, distance measurement with capillary.
Adjustment ranges:-35+35°C , 4-40°C*
Capillary length: 1.5 m
Electrical connections: screw terminals
Differential:
-35+35: 3°C±2
4-40°C: 3°C ±2
Mounting: Wall mounting, by two side lugs with holes for dia 4 to 6 mm screws, 60 mm distance.
Rating: 16A res. 230VAC, SPDT.

References	Temperature ranges*
8GA-35035AO6000J	-35+35°C
8GA004040AO6000J	4-40°C

* Other existing temperature ranges: 30-90°C, 30-110°C, 50-200°C, 50-300°C
For more information about this product, ask for Y1-Y5 range catalogue

IP65 plastic housing adjustable electro-mechanical thermostat

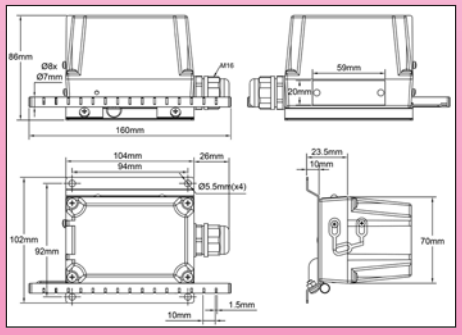


Housing: IP65, 100 x50 x 69 mm, PA66 30%FG, UL94V0. High impact and UV resistance, with waterproof gasket on thermostat shaft (1). Mounted on a SUS304 stainless steel wall mounting plate which keeps temperature sensing element away from the wall.
Electric input: PG13.5 cable gland. (2)
Temperature adjustment: By temperature printed knob, this knob has an adjustable rotation limit system located inside the knob that allows to reduce the adjustment range (3).
°F printed knobs available in option
Sensing element: Liquid filled bulb (4). Temperature measurement is made backside (5).
Adjustment ranges:-35+35°C , 4-40°C,
Electrical connections: Inside, on screw terminals (6)
Differential:
-35+35: 3°C±2
4-40°C: 3°C ±2
Mounting: Wall mounting, by 4 holes for screws dia 4 to 6 mm, 90 x 65 mm distance (7)
Identification: Location for 20 x 40 mm identification label, adhesive or riveted (8)
Rating: 16A res. 230VAC, SPDT.

References*	Temperature adjustment range
89T-35035AB60606	-35+35°C
89T004040AB60606	4-40°C

* This product is also produced with capillary output and temperature ranges: -35+35°C, 4-40°C, 30-90°C, 30-110°C, 50-200°C, 50-300°C
For more information about this product, ask for Y1-Y5 range catalogue

IP65 aluminum housing adjustable electromechanical thermostat, internal adjustment

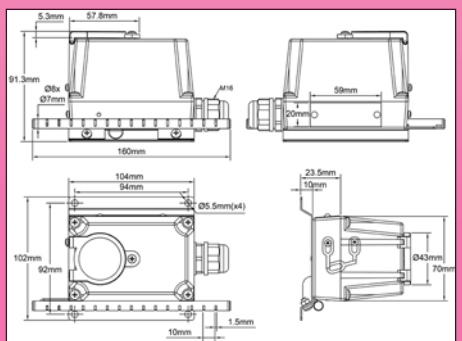


Housing: aluminum, IP65, IK10, , 102 x120 x 85 mm. Mounted on a SUS304 stainless steel wall mounting plate which keeps temperature sensing element away from the wall.
Electrical input: M16 cable gland, PA66
Temperature adjustment: By internal knob
Sensing element: Liquid filled bulb. Temperature measurement is made by bulb located on the side of the mounting bracket
Adjustment ranges:-25+55°C ,-10+15°C, 0-50°C,
Electrical connections: Inside, on screw terminals
Differential:
Standard: 3
Reduced: 2
Mounting: Wall mounting, by 4 holes for screws dia. 4 to 5 mm, 94 x 92 mm distance
Identification: Location for 20 x 60 mm identification label, riveted.
Rating: 15A res. 230/400VAC, SPDT, electrical life >500.000 cycles. Reduced differential model cannot be used in 400VAC
Storage temperature limits :-50+ 70°C
Working temperature limits :-20+60°C

References with standard differential*	References with reduced differential*	Temperature adjustment range
KRA-25025220E	KUA-25025220E	-25+25°C
KRA-10015200E	KUA-10015200E	-10+15°C
KRA000050200E	KUA000050200E	0-50°C

* This product is also produced with capillary output and temperature ranges up to 760°C, and also in explosion proof version.
For more information about this product, ask for Y1-Y5 range catalogue or for Atex thermostats catalogue

IP65 aluminum housing adjustable electromechanical thermostat, external adjustment



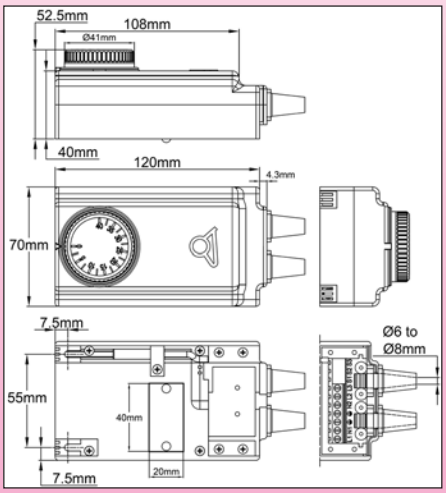
Housing: aluminum, IP65, IK10, 102 x120 x 85 mm. Mounted on a SUS304 stainless steel wall mounting plate which keeps temperature sensing element away from the wall.
Electrical input: M16 cable gland, PA66
Temperature adjustment: By internal knob
Sensing element: Liquid filled bulb. Temperature measurement is made by bulb located on the side of the mounting bracket
Adjustment ranges:-25+55°C ,-10+15°C, 0-50°C,
Electrical connections: Inside, on screw terminals
Differential:
Standard: 3
Reduced: 2
Mounting: Wall mounting, by 4 holes for screws dia. 4 to 5 mm, 94 x 92 mm distance
Identification: Location for 20 x 60 mm identification label, riveted.
Rating: 15A res. 230/400VAC, SPDT, electrical life >500.000 cycles. Reduced differential model cannot be used in 400VAC
Storage temperature limits :-50+ 70°C
Working temperature limits :-20+60°C

References with standard differential*	References with reduced differential*	Temperature adjustment range
KRA-25025220F	KUA-25025220F	-25+25°C
KRA-10015200F	KUA-10015200F	-10+15°C
KRA000050200F	KUA000050200F	0-50°C

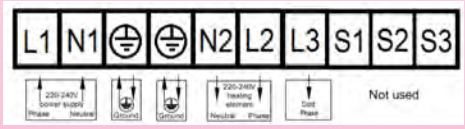
* This product is also produced with capillary output and temperature ranges up to 760°C, and also in explosion proof version.
For more information about this product, ask for Y1-Y5 range catalogue or for Atex thermostats catalogue

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Antifreeze adjustable electromechanical thermostat, protected sensing element, IP54 housing



Enclosure : Light cream color PC-ABS (RAL1010), small footprint , can be hand held of wall mounted
Ingress protection rating: IP54 (IEC 60529)
Mechanical impact resistance: IK05 (EN 62262)
Flammability: UL94-V0
Electrical connection: on a closed screw terminals connection block cavity located backside, for wires gauge up to 2.5 mm². Cables are secured by a saddle retainer, and grommets. If needed, ground, neutral and phase can be connected in input and output.
Power inlet and outlet: throw grommets for cables dia 6 to 8 mm. Over-molded cables on request (MOQ applies)
Adjustment: by °C printed knob, with min or max position adjustment. °F printed knobs on request.
Temperature sensing bulb: The temperature sensing bulb is located backside, in a vented and protected cavity
Adjustment ranges:-35+35°C , 4-40°C,
Differential:
-35+35: 3°C±2
4-40°C: 3°C ±2
Mounting: Wall mounting, for screws dia 4 to 6 mm, 55 mm distance
Identification: Location backside for 20 x 40 mm identification label, adhesive or riveted
Electrical contact: SPDT 16A 250V
Wiring diagram :



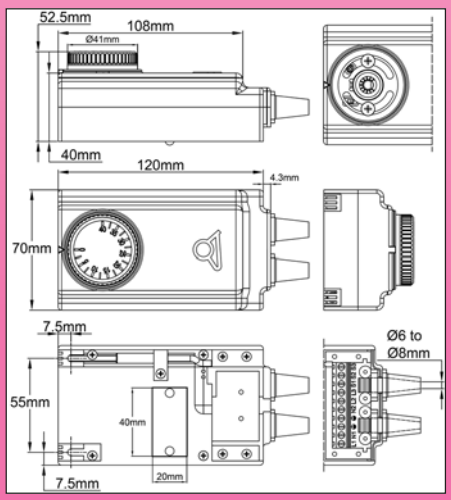
Main references without cords

Temperature range	References *
-35+35°C	Y5T1BA70000CUAF2
4-40°C	Y5T1CA70000CUAF2

* This product is also produced with capillary output and temperature ranges: -35+35°C, 4-40°C, 30-90°C, 30-110°C, 50-200°C, 50-300°C
For more information about this product, ask for Y1-Y5 range catalogue

Electronic antifreeze protection devices, adjustable setting types

Antifreeze adjustable electronic thermostat, protected sensing element, adjustable differential, IP54 housing

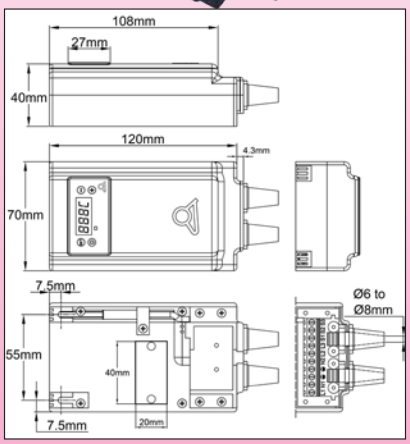


Enclosure : Light cream color PC-ABS (RAL1010), small footprint , can be hand held of wall mounted
Ingress protection rating: IP54 (IEC 60529)
Mechanical impact resistance: IK05 (EN 62262)
Flammability: UL94-V0
Electrical connection: on a closed screw terminals connection block cavity located backside, for wires gauge up to 2.5 mm². Cables are secured by a saddle retainer, and grommets. Ground, neutral and phase can be connected in input and output.
Electrical inlet and outlet: throw grommets for cables dia 6 to 8 mm. Over-molded cables available on request (MOQ applies)
Adjustment: by °C printed knob, with min or max position adjustment. °F printed knobs on request.
Power supply: 90-250VAC, 50 or 60Hz
Temperature sensor: NTC sensor, located backside, in a vented and protected cavity
Adjustment ranges:-35+35°C , 0-10°C, 4-40°C,
Differential: adjustable by potentiometer located under the knob
Mounting: Wall mounting, for screws dia 4 to 6 mm, 55 mm distance
Identification: Location backside for 20 x 40 mm identification label, adhesive or riveted
Electrical contact: SPST 16A 250V - Electronic thermostat: SPST+ ground terminal. Open on rise or close on rise action can be set by switch located under the knob.
Wiring diagram :

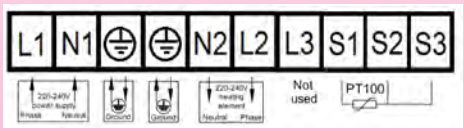
Temperature range	References*
-35+35°C	Y5TM1AA0000CUCF2
0-10°C	Y5TM2AA0000CUCF2
4-40°C	Y5TM3AA0000CUCF2

* This product is also produced with remote sensor and temperature ranges: -35+35°C, 4-40°C, 0-10°C, 30-90°C, 30-110°C, 50-200°C, 50-300°C
For more information about this product, ask for Y1-Y5 range catalogue

Antifreeze adjustable electronic temperature controller, digital display, protected sensing element, IP54 housing



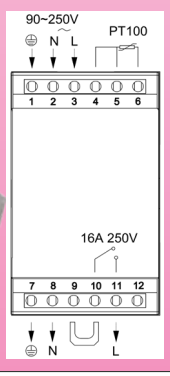
Enclosure: Light cream color PC-ABS (RAL1010), small footprint , can be hand held or wall mounted
Ingress protection rating: IP54 (IEC 60529)
Mechanical impact resistance: IK05 (EN 62262) with display protected by plastic window
Flammability: UL94-V0
Electrical connection: on a closed screw terminals connection block cavity located backside, for wires gauge up to 2.5 mm². Cables are secured by a saddle retainer, and grommets. Ground, neutral and phase can be connected in input and output.
Electrical inlet and outlet: throw grommets for cables dia 6 to 8 mm. Over-molded cables available on request (MOQ applies)
Adjustment: by up, down and set keys
Display: selectable in °C or °F (3 digits)
Power supply: 90-250VAC, 50 or 60Hz
Temperature sensor: Pt100 RTD, located backside, in a vented and protected cavity
Temperature control action: ON-OFF or PID with auto-tune function
Differential: adjustable when ON-OFF action is selected
Mounting: Wall mounting, for screws dia 4 to 6 mm, 55 mm distance
Identification: Location backside for 20 x 40 mm identification label, adhesive or riveted
Electrical contact: SPST, 16A 250V. Open on rise or close on rise action can be selected
Wiring diagram :

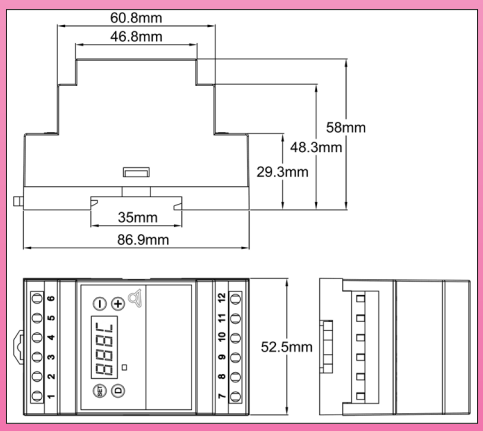


Temperature range	Reference *
-29,9+49,9°C	Y5EQ9AA0000NUDF2

* This product is also produced with remote sensor and temperature ranges up to 999°C, Pt100 or thermocouple input
For more information about this product, ask for Y1-Y5 range catalogue

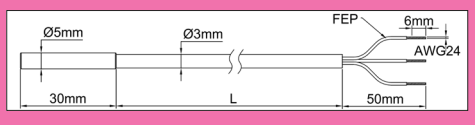
Digital display electronic controller for freezing control, Din Rail mounting, ON-OFF.





This electronic temperature controller with the simplest and instinctive end user setting, was designed for simple incorporation inside cabinets with DIN rail mounting, and to be used by not highly trained operators.
It provides °C or °F display, On Off action with adjustable temperature differential, and heating or cooling relay output setting.
Dimensions: 86.9 x 58 x 52.5 mm
Display: 3+1 digit LED. The fourth digit is used to display °C or °F, upon setting made.
Set point setting: In normal use, the display shows measured temperature. Push "Set" key will display the set point value, at that time it can be adjusted with " +" and "-" keys. Push "set" again or no action during 5 seconds will register the new set point value and bring back display to measured value.
Temperature differential setting: In normal use, the display shows measured temperature. Push "D" key will display the differential value, at that time it can be adjusted with" +" and "-" keys. Push "D" again or no action during 5 seconds will register the new differential value and bring back display to measured value.
Action: On-OFF
Temperature sensor: Pt100 2 or 3 wires
Accuracy: +/-1% of scale
Temperature adjustment range: -30, 0 to +40, 0°C (-20,0 + 99.9°F)
Other temperature range available: -30+400°C
Power supply: 90 to 240V, 50Hz or 60Hz
Relay output: SPNO, 16A250V res., 100000 cycles.
Relay action: Heating or cooling, open or close on temperature rise output relay action can be selected by a dip switch on circuit (Needs to open the housing)
°C or °F display: can be selected by a dip switch on circuit (Needs to open the housing by the installator)
Ambiant: -20+50°C, 10-85% RH
Power: <2W
Fail safe safety:
• If no power supply, relay output contact will open
• If Pt100 sensor is broken or not connected properly, relay output contact will open and display will show "EEE"
• If measured temperature is higher than 40,0°C or 99,9°F, display will show HHH
• If measured temperature is lower than -30,0°C or -20,0°F, display will show LLL
Electrical connections:
• Power input: Neutral, phase, ground, with 2.5 mm² terminals
• Power output: Neutral, phase, ground, with 2.5 mm² terminals for direct connection to the load.
• Temperature sensor: three 2.5 mm² screw terminals
One removable jumper provides a potential free relay output for applications needing a separate circuit for relay, external timer or other.
Standards: Complies with EMC (CE), ROHS and Reach

Temperature controller reference	2DNAP6F0-4005000



Pt100 Temperature sensor

Must be ordered separately, not included in the temperature controller

Reference with L= 2M and stainless steel probe	TSR50030I2000BK6

Other Pt100 are available, see page 51

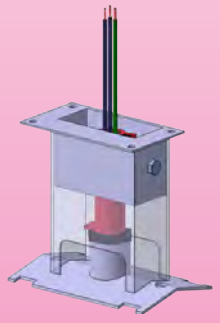
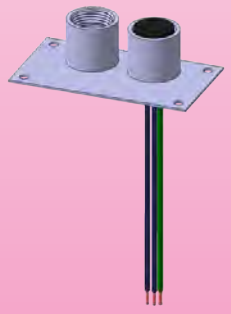
JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Types of the Y8 range with antifreeze versions*

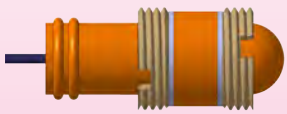
* see other pages of this catalogue for full description

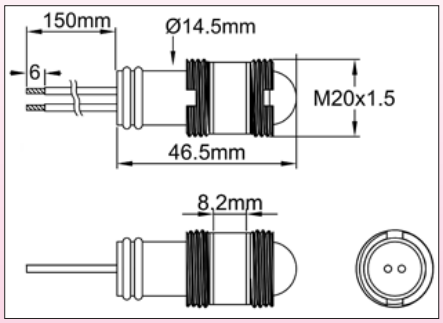
					
Y8 with single pole bulb and capillary Page: 56 to 59	Y8 with 3 pole bulb and capillary Page: 56 to 59	Y8 with explosion proof bulb and capillary Page: 56 to 59	Y8 with 77 x 35mm electronic control, On-OFF, single display Page: 62 to 63	Y8 with 48 x 48 mm electronic control, ON OFF and PID, double display Page: 64 to 65	Y8 with twin 48 x 25 mm electronic control, ON OFF and PID, single display Page: 66 to 67

Assembly examples of temperature sensors and thermostats with M20x1.5 fitting

					
On a mounting stand, for pipe temperature control	On a mounting plate, for pipe temperature control	Through insulation mount, for ambient temperature control	For ambient temperature control, outside a plastic box	For surface temperature control on flat heating element	For internal temperature control in a SS R box

Heating line end pilot light



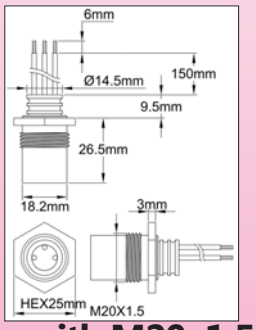


This pilot light shows the presence of 230V at the end of a parallel heating cable. It is screwed on the insulation plate, or on any other outlet with M20x1.5 thread. The set includes an indicator light, two stainless steel washers and two M20x1.5 nuts
Bulb type: Neon
Ingress protection: IP65, molded translucent orange silicone
Connection: AWG18, FEP300V insulation, dia 1.9mm, 150 mm length
It has a diameter 14 mm tip to connect with the filling kit type G (see assembly method on page 105)

Ref. 230V	6YL2023YF150R6

120V models : contact us
Other indicator lights : see page 80
Mounting on through insulation plate: see page 107
Assemblies on cables and wires: see page 105

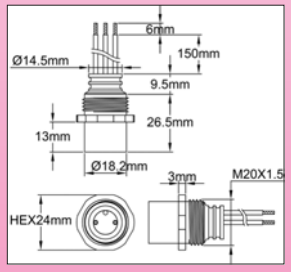
Pt100 sensor with M20x1.5 front fitting



3 wires Pt100 sensor in an anodized aluminum bolt.
For temperature control of a pipe surface: to be screwed on the mounting stand. The length of the conductor outputs allows direct connection into the control box via the M20 rear outlets, if this component is mounted on the same stand;
For ambient temperature control: to be screwed from the inside on a M20x1.5 rear outlet.
Connection: AWG18 wires, FEP, 300V, 150 mm length.
2 white AWG18 wires correspond to one pole of the Pt100, the blue wire to the other pole.
It is equipped with a tip (diameter 14 mm) to connect with the waterproof filling kit type G, if it is used at a greater distance from the box.
See assembling method on page 105

Reference	TSJBA265A0150BT6

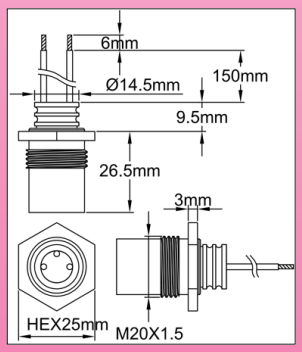
Pt100 sensor with M20x1.5 back fitting



3 wires Pt100 sensor in an anodized aluminum bolt.
To measure the temperature outside of cabinet: can be screwed directly to the rear outputs M20 thread or to the cable gland outlet board.
Can also be mounted on the insulation output plates or directly through the sheet into a dia. 20 mm hole, tightened with a cable gland nut
Connection: AWG18 wires, FEP, 300V, 150 mm length.
2 white AWG18 wires correspond to one pole of the Pt100, the blue wire to the other pole.
It is equipped with a tip (diameter 14 mm) to connect with the waterproof filling kit type G, if it is used at a greater distance from the box.
See assembling method on page 105

Reference	TSJBA266A0150BT6

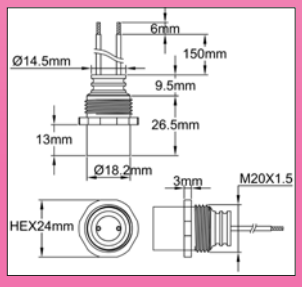
NTC thermistor with M20x1.5 front fitting



2 wires NTC in an anodized aluminum bolt
For temperature control of a pipe surface: to be screwed on the mounting stand. The length of the conductor outputs allows direct connection into the control box via the M20 rear outlets, if this component is mounted on the same stand;
For ambient temperature control: to be screwed from the inside on a M20x1.5 rear outlet.
Connection: AWG18 white wires, FEP, 300V, 150 mm length.
Each lead wire corresponds to a pole of the NTC.
It is equipped with a tip (diameter 14 mm) to connect with the waterproof filling kit type G, if it is used at a greater distance from the box. See assembling method on page 105

Reference	Value A	Value B
TNJBA265265A01501R6	10 Kohms @25°C	3380
TMJBA265265A01501R6	3.3 Kohms @100°C	3970
TPJBA265265A01501R6	500 Kohms @25°C	4260

NTC thermistor with M20x1.5 back fitting



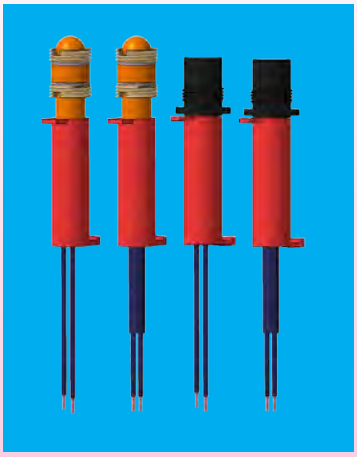
2 wires NTC in an anodized aluminum bolt
To measure the temperature outside of cabinet: can be screwed directly to the rear outputs M20 thread or to the cable gland outlet board.
Can also be mounted on the insulation output plates or directly through the sheet into a dia. 20 mm hole, tightened with a cable gland nut
Connection: AWG18 white wires, FEP, 300V, 150 mm length.
Each lead wire corresponds to a pole of the NTC.
It is equipped with a tip (diameter 14 mm) to connect with the waterproof filling kit type G, if it is used at a greater distance from the box. See assembling method on page 105

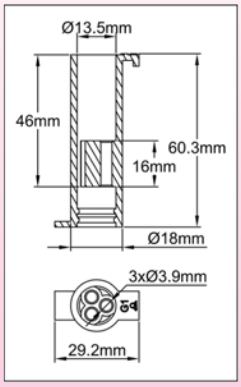
Reference	Value A	Value B
TNJBA266265A01501R6	10 Kohms @25°C	3380
TMJBA266265A01501R6	3.3 Kohms @100°C	3970
TPJBA266265A01501R6	500 Kohms @25°C	4260

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Connection systems for heating cables with silicone filling

Silicone connection sleeve, type G, for accessories with dia 14 mm tip.





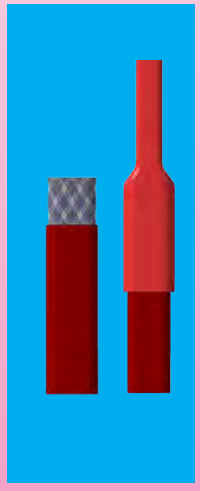
Used to connect two or three conductors or a cable on :
- Anti-freeze thermostat
- Surface mount thermostat
- End Of Line indicator light
- Pt100 sensor
- NTC sensor

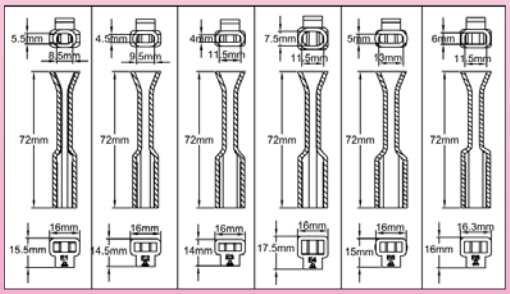
When the filling is done according to installation instructions, it provides an IP65 sealing.
After crimping the conductors, fits with a light grip on the 14 mm diameter cylindrical parts of the accessories.
It has a holding tab for filling and a pulling tab to drag it in and internal guidelines that maintain a constant distance between connections when filling.
Average volume of silicon needed for filling: 5 ml (5 cm3).

Reference	6YTNG1M140000060

Packaging: 10 pieces bag

Silicone sleeves type E, for self regulating heating cable end or constant power cable, or two conductors series cable.

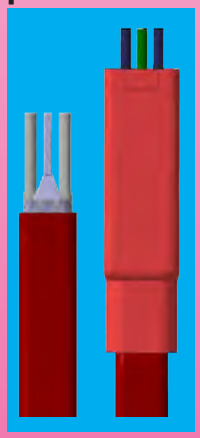


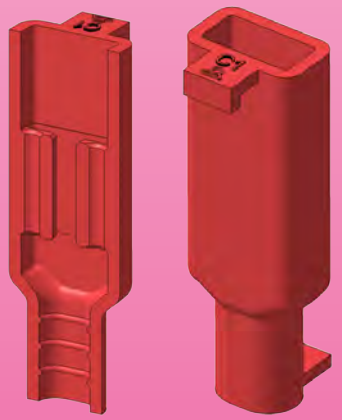


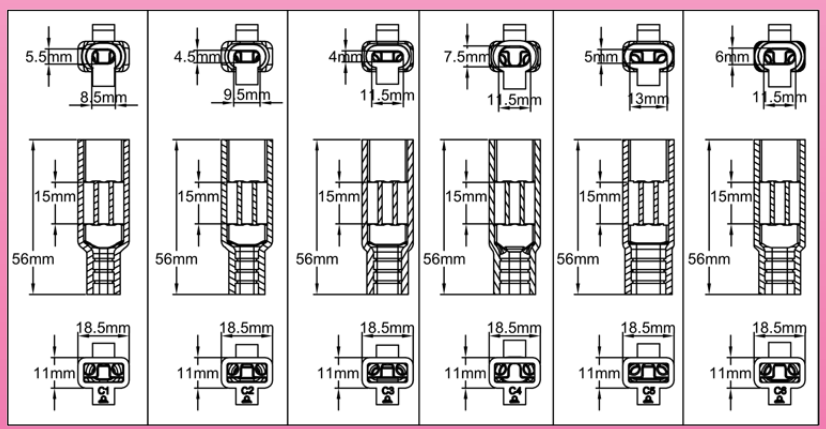
Reference	N°	Hole	Cable gauge
6YTNE1M085055072	E1	8.5 x 5.5	9 x 6 to 9.5 x 6.5
6YTNE2M095045072	E2	9.5 x 4.5	10 x 5 to10.5 x 5.5
6YTNE3M115040072	E3	11.5 x 4	12 x 4.5 to 12.5 x 5
6YTNE4M115075072	E4	11.5 x 7.5	12 x 8 to 12.5 x 8.5
6YTNE5M130050072	E5	13 x 5	13.5 x 5.5 to 14 x 6
6YTNE6M115060072	E6	11.5 x 6	12 x 6 to 12.5 x 7

Slip by pressing lightly on the unconnected ends of heating cables. When the filling is done according to installation instructions, they provide an IP65 sealing.Include a funnel for easy RTV filling and a holding tab for filling. The square section allows pipe mounting with a wireclamp or clamp. These sleeves can possibly be cut in the middle after polymerization. Average volume of silicone needed for filling: 1.4 ml
Packaging: 10 pieces bag

Silicone connection sleeve type C for constant power heating cable parallel or self-regulating with protective and grounding metal braid.





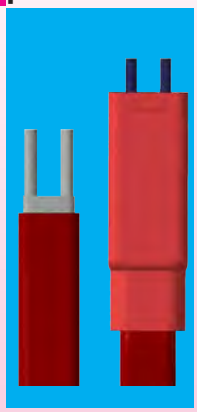


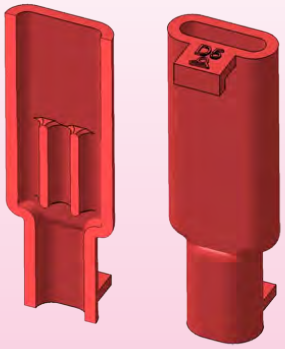
They allow the connection of heating cables on non-heating conventional conductors. When the assembly and filling are performed according to installation instructions, they provide an IP65 seal.
Composed of a silicone sleeve adapted to heating cables, 3 x AWG15 wires (1.5 mm ²) FEP insulated 300V, 300mm length (diameter 2.4 mm), equipped with a cable shoe and a tubular crimp terminal. The connection to the control boxes is made with the M20x1.5 accessories with 2.4mm holes.
Average volume of silicone needed for filling: 1.6 ml
Packaging: 10 pieces bag

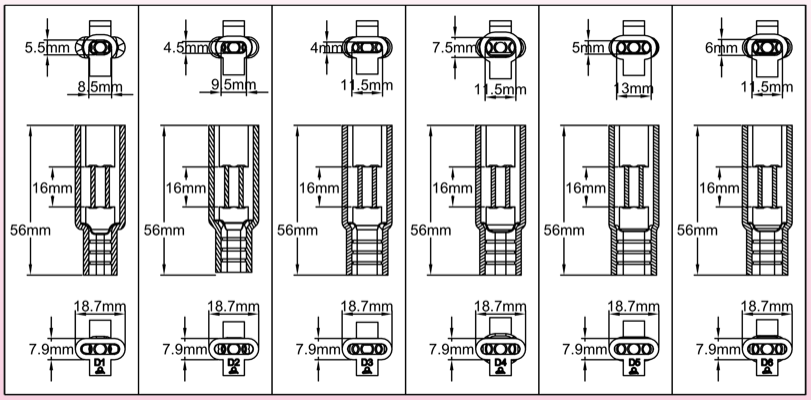
Reference	N°	Hole	Cable gauge
6YTNC13085055056	C1	8.5 x 5.5	9 x 6 to 9.5 x 6.5
6YTNC23095045056	C2	9.5 x 4.5	10 x 5 to 10.5 x 5.5
6YTNC33115040056	C3	11.5 x 4	12 x 4.5 to 12.5 x 5
6YTNC43115075056	C4	11.5 x 7.5	12 x 8 to 12.5 x 8.5
6YTNC53130050056	C5	13 x 5	13.5 x 5.5 to 14 x 6
6YTNC63115060056	C6	11.5 x 6	12 x 6 to 12.5 x 7

Connection systems for heating cables with silicone filling

Silicone connection sleeve type D for constant power heating cable parallel or self-regulating without protective and grounding metal braid.





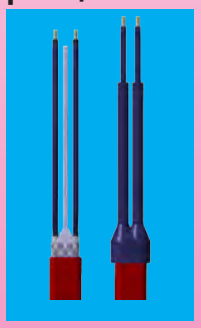


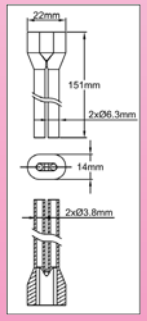
They allow the connection of heating cables on non-heating conventional conductors. When the assembly and filling are performed according to installation instructions, they provide an IP65 seal. Used with AWG15 wires (1.5 mm ²) FEP insulated 300V, 300mm length (diameter 2.4 mm), equipped with a cable shoe and a tubular crimp terminal. After crimping non-heating wires, the connection to the control box is made with the M20x1.5 accessories with 2.4mm holes.
Average volume of silicone needed for filling: 1 ml

Reference	N°	Hole	Cable gauge
6YTND12085055056	D1	8.5 x 5.5	9 x 6 to 9.5 x 6.5
6YTND22095045056	D2	9.5 x 4.5	10 x 5 to 10.5 x 5.5
6YTND32115040056	D3	11.5 x 4	12 x 4.5 to 12.5 x 5
6YTND42115075056	D4	11.5 x 7.5	12 x 8 to 12.5 x 8.5
6YTND52130050056	D5	13 x 5	13.5 x 5.5 to 14 x 6
6YTND62115060056	D6	11.5 x 6	12 x 6 to 12.5 x 7

Packaging: 10 pieces bag

Silicone connection sleeve type B for constant power or self-regulating heating cable, without non-heating patch, of which heating part between both conductors has been cut off.





Mounted on conductors of self-regulating cables which sleeve has been removed.
Wire crossing diameter: 4.3 mm
Oblong crossing gauge: 12 x 4 mm
Total length: 150 mm
Mounting: It is recommended to fill the sleeve with liquid silicone before putting it on the conductors. The possible metal braid must be twisted and is not inserted into the sleeve. Requires the use of cable gland packings with two or three slots. Sealing not guaranteed.
Average volume of silicone needed for filling: 1.4 ml

Reference	6YTNB12120040150

Packaging: 10 pieces bag

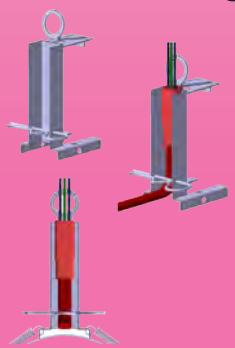
Specific accessories for silicone filling

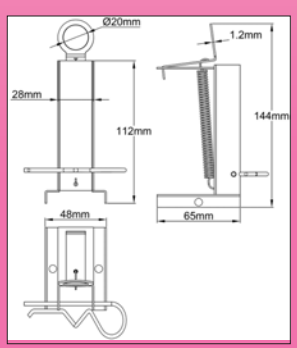
The filling silicone

Silicone Vulcanizing at room temperature. Very smooth, fills the caps well and without bubbles. Comes with a special nozzle that directs the liquid silicone in the desired location without spilling.
Color: red
Packaging: 45 ml tube.
Temperature resistance: 280°C.
Vulcanization time at room temperature: 12 to 24 hours depending on thickness
Vulcanized hardness: 35 Shore A
Volume resistivity: 4*1015 ohms/cm.
Displacement: 150%.
Breakdown voltage: 16KV/mm.
To be used on clean surfaces

Reference	6YTMC2000ELH062A

Silicone filling stand





Intended for use with sealed connection sleeves types A, C, D, E, F, G. This stand keeps the pieces vertically while filling the liquid silicone on-site.
Mounts directly during assembly on the pipe, with a plastic clamp or a spring, or is placed on a flat surface. It prevents the reversal of parts during filling. The sleeves and cable ends cling by their taps. Contact us for multiple mounting stand for wiring workshop

Reference	6YTTL002

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Cables and accessories connection methods with silicone filling

Sensors and accessories to be mounted in ISO M20x1.5 threads (type G sleeves)

Cut the lead wires of the accessory to 13mm, strip the conductors of 6 to 8mm, twist them and insert the stripped portion into each tubular connector.

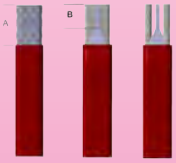
Crimp the tubular connectors with the hexagonal crimping pliers. The center of each crimp must be at around 4mm from the edge.

Insert the wires into the silicone sleeve. Make sure that the conductors are in their dedicated holes. Slip the sleeve on the wires to the stop after the locking grooves by using the bottom flap. The conductors are then entirely set in their places.

Position the assembly on the filling support and lock it with the upper flap of the sleeve, which has a flange for this purpose.
Fill with liquid silicone. It is possible to cut the insertion and filling flaps after polymerization.

Heating cables on non heating ends (Sleeves C and D)

Cut the ribbon to the requested length.



• Remove the outer protective jacket of 18mm (if any)
• If the cable has a metal braid, unbraid it (without cutting any wire) with the tip of a pen or a small metal rod with a rounded end, then group it and twist it in a continuous beam
• Remove the second protection jacket of 10 mm. minimum

Strip the two conductors of 6 to 8 mm, twist them and insert the exposed portion in each tubular connector. In the case of cable with metallic braid, insert the twist which is cut to the same length than the drivers in a tubular connector.

Crimp the tubular connectors with the hexagonal crimp pliers. The center of each crimp should be around 4 mm from the edge. Crimp one side of the heating cable and the other side on the non-heating conductors. If the cable has a metal braid, this braid is the ground conductor.

Insert the wires into the smallest part of the silicone sleeve. Ensure that the conductors are inserted in their dedicated holes. The central hole is for the ground conductor.

Slide the sleeve over the wires to the stop, using the flat flap located on the heating element side. The tubular conductors are then fully inserted in their places.

Position the assembly on the filling support and lock it with the flap which has a flange.

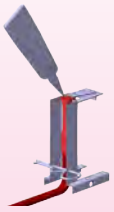
Fill with liquid silicone in the largest neck (connection wires outlet). It is possible to cut the insertion and filling flaps after polymerization.

Cables and accessories connection methods with silicone filling

Heating cable end (type E sleeves)

Cut the ribbon to the requested length. Remove 10 to 12 mm of the metal protective braid (if any) in order to ensure a good grip to the silicone. Make sure that none of the wires of this braid exceeds the cut length, which could cause short circuits.

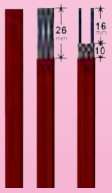
Insert the silicone sleeve on the ribbon end to the stop by pulling the bottom flap.



Position the assembly on the filling support and lock it with the upper flap of the sleeve, which has a flange for this purpose.
Fill with liquid silicone in the upper shell-hole.

It is possible to cut the insertion and filling flaps after polymerization if necessary.

Disc thermostat assembly (anti-freeze ofr other set points) on the end of line (type A sleeves)



Cut the ribbon to the requested length. Remove the first protective jacket. Remove 15 to 16mm of the second protective jacket and the metal braid to (if any).

Position the silicone sleeve on the heating ribbon . Strip 4mm on both conductors.

Solder both wires on the disc thermostat terminals. Then slide the sleeve until the thermostat goes to three stop in its place.

Position the assembly on the filling support and lock it with the upper flap of the sleeve, which has a flange for this purpose.
Fill with liquid silicone in the upper shell-hole. It is possible to cut the insertion and filling flaps after polymerization if necessary.

Connection methods for cables accessories with heat shrinkable sleeve

Strip the conductors of 6 to 8 mm, twist them and insert the stripped portion into each tubular connector. If both parts to connect are multi conductor cables, removing the protective jacket must be done on the appropriate length in order to properly slide a heat shrinkable sleeve. If the cable has a metal braid, unbraid it (without cutting any wire) with the tip of a pen or a small metal rod with a rounded end, then group it and twist it in a continuous beam. The conductors and the twisted braid must be the same lengths.

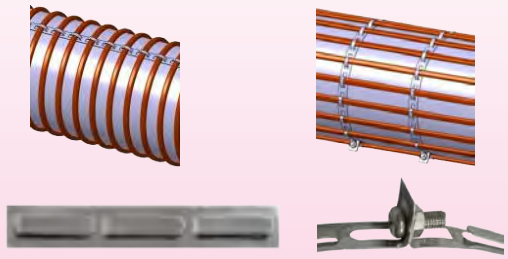
Crimp the tubular connectors with the hexagonal crimp pliers. If the cable has a metal braid, crimp a braid end in a tubular connector. The center of each crimp should be around 4 mm from the edge. Then slide a insulation sleeve on each conductor having a crimped tubular connector. Insert the other element conductors into the second end of the tubular connectors. Crimp. The center of each crimp should be around 4 mm from the edge.

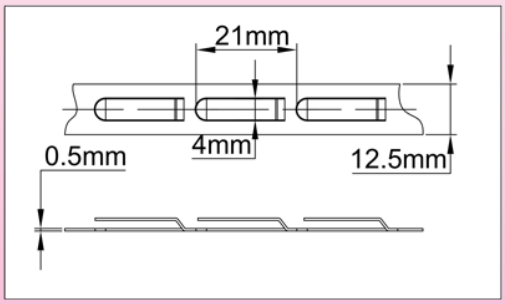
Slide the shrinkable sleeves to a center position on the tubular connectors. Shrink the sleeves one after another with heat gun or a heat source. Do not exceed the shrinking temperature, as this may destroy the sheath or cause cracks.

After checking the integrity of the shrink sleeves, put a heat shrinkable sheath around the cable, on the sleeves, and shrink the same way. Similarly, it is possible to seal the opposite end as follows:
If the ribbon has a protective metal braid, remove a few millimeters of its outer jacket to improve the shrinkable sleeve grip. Ensure that no wire of this braid could be in contact with the conductors.

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Stainless Steel tape 12.5 mm width





Although more expensive than the traditional aluminum tapes, this solution is perfectly temperature-resistant, and allows fast and durable assembly, and the ability to reposition or replace cables. It can also cost effectively replace the hose serrage. Tape having evenly spaced tabs. These foldable tabs allow to set the heating cables at a constant distance.

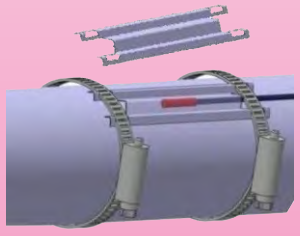
Mounting:

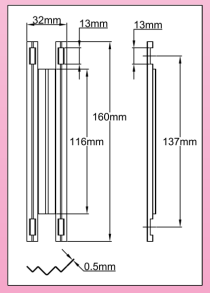
- Longitudinally spot welded on the walls of tanks or pipes.
- On the pipe circumference, by cutting the circumference and tightening in 2 holes with a M4 screw and a nut through the holes of the two bent ends.

Allows the clamping on any pipe diameter.

Reference	Description
6YTBT01250304	Stainless steel 304 tape 304, 50 m reel
6YTBT01250430	Stainless steel 430 tape 304, 50 m reel
6YTBTKIT4	Box of 50 truss head screws 25mm length + M4 nuts, for clamping on the diameter

Mounting plate for temperature sensor dia 5 or 6 mm



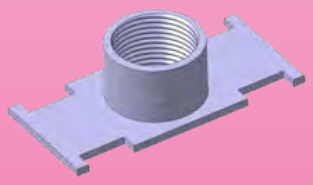


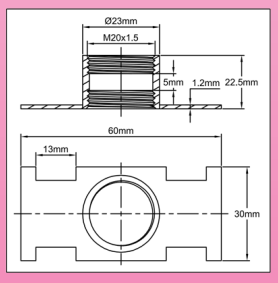
Made of flexible Stainless Steel 304, 0.5mm thickness. Allows the mounting and protection of temperature sensors and thermostat bulbs.

- Its flexibility allows mounting on most pipe diameters.
- Compatible with the Pt100 and NTC sensors shown on page 51

Reference	6YTPF160032

Pipe mounting plate for M20x1.5 temperature sensor



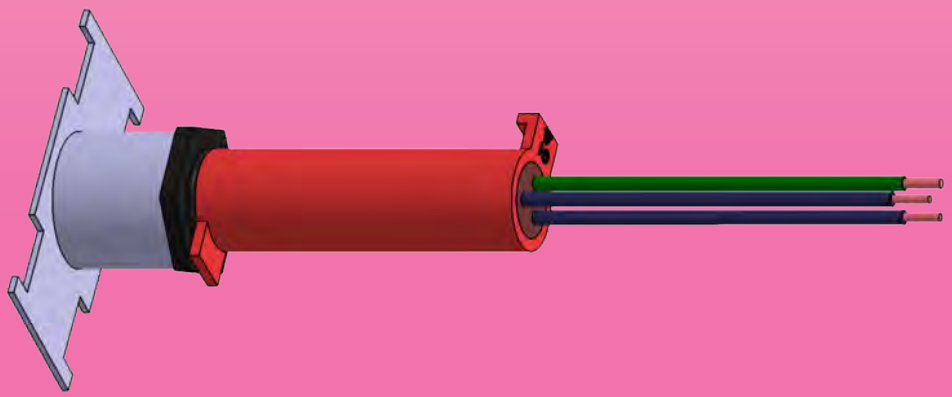


Made of Stainless Steel 304.

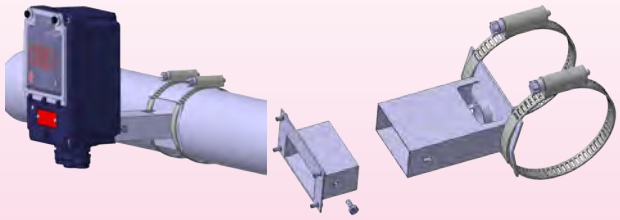
- Compatible with the Pt100 and NTC sensors shown on page 102
- Compatible with fixed setting thermostats with M20x1.5 thread shown on page 94

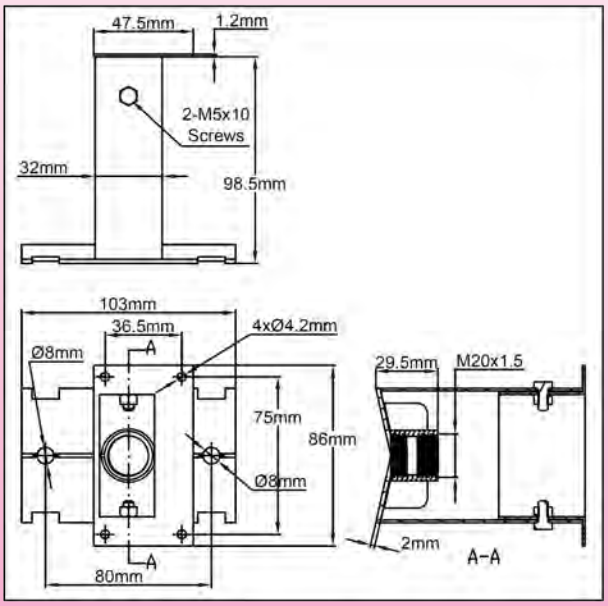
Reference	6YTPF060030M20

Mounting example of M20 threaded sensor or thermostat



Side mounting bracket for horizontal pipe, with 100mm offset.





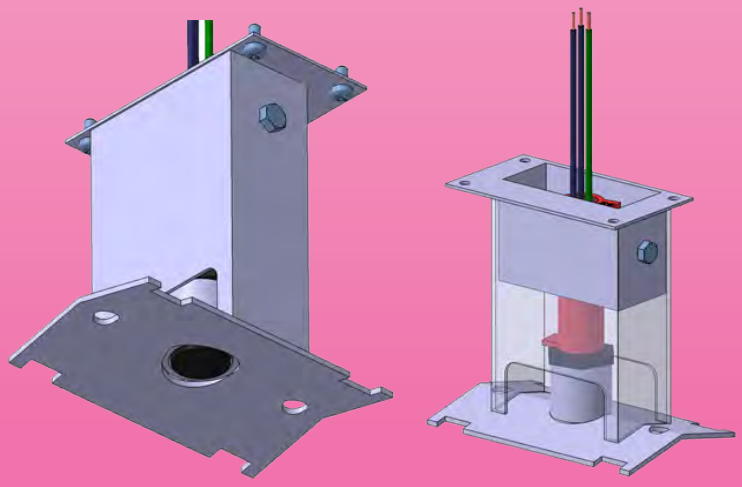
Can also be used for flat surface or a wall mounting, using the two dia. 8mm holes 80 mm spacing.
• The mounting bracket on the side of the box is removable, allowing to slide the tab into a rectangular hole of the same size and to mount it on hold on the piping, then assembling the box and make the connections after closing, insulating and installing the protection metal sheet. When the sealing of the crossing is required, use silicone sealant at the interface between the stand and the insulation sheet or use a mounting stand with bottom outlet.
• Mounting done without any play between the supporting bracket and the hole in the insulation sheet . The cables are protected by the rectangular stainless steel tube. The cable outlet at the bottom can be done on both sides (top and bottom).
Rectangular hole in the insulation sheet: 32 mm x 64 mm (gaskets: see page 111).
• **The bottom:** in contact with the pipe and has an internal M20x1.5 thread which allows to mount a temperature sensor or surface thermostat (see pages 94 and 102). It includes guide slots for hose clamps and two dia. 8 mm holes for wall screw-mounting.
• **The top accepts:**
- All control box models with mechanical or electronic thermostat (with two rear outlets through M20 x 1.5 glands).
- The circuit breaker boxes, with rear or bottom outlet.
- The junction boxes, with rear or bottom outlet.
- The heat exchanger boxes for solid state relays, with rear or bottom outlet.
- Through-insulation plates with one or two outlets.

Important: when using aluminum boxes with forced ventilation (power static relays), one should check that the thickness of the rear cabinet is compatible with the stem length and the insulation thickness (especially for vertical pipe mountings and sole aluminum case, or mounted centrally if several boxes are on the same stand).
Kit includes: Stainless Steel bottom mounting bracket, top mounting bracket, screws for mounting on the box.

Reference	6YTPF102099M20

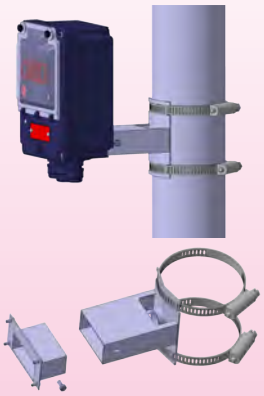
On order: stand with different length.
Gaskets : see page 111

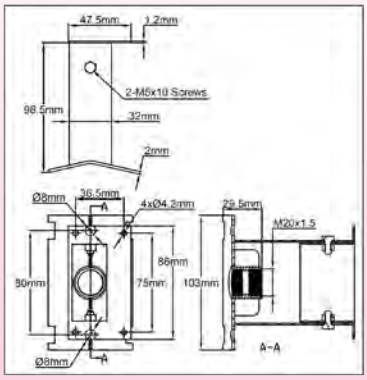
Mounting example of surface temperature sensor integrated in the stand



JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Side mounting bracket for vertical pipe, with 100mm offset.



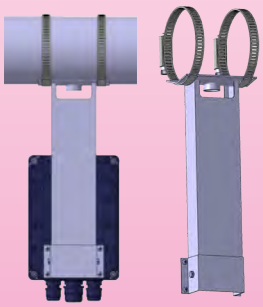


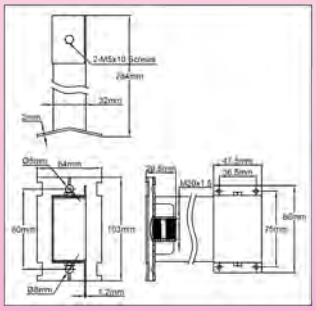
Can also be used for attachment to flat surface or a wall.
Other features similar to the side bracket for horizontal tube on page 108.
Kit includes: Stainless Steel bottom mounting bracket, top mounting bracket, screws for mounting on the box.

Reference	6YTPF102099M20V

On order: stand with different length.
Gaskets: see page 111

Bottom vertical outlet bracket, with 100mm offset, 180mm overall length



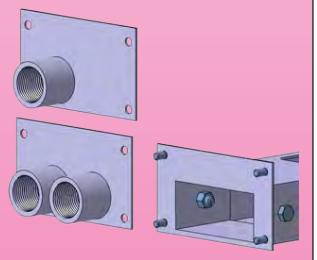


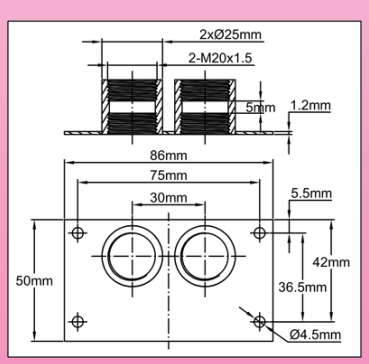
Allows the outlet from the insulation in the bottom part of the pipe, at the junction of the protection metal sheet.
32 x 64 mm drilling
Can be used for a top outlet, in this case pipe-box distance: 225 mm.
Kit includes: Stainless Steel bottom mounting bracket, top mounting bracket, screws for mounting on the box.

Reference	6YTPF102284M20H

Gaskets: see page 111

Through-insulation plates





Outlet (s) through M20x1.5 threaded sleeve(s)
• All stainless steel construction
• 4 holes diameter 4.5 mm
These plates are mounted with 4 screws + nuts on the pipe mounting stands, or 4 rivets or Parker screws on outer metal sheet of the insulation.
If necessary to provide a seal between the plate and the insulation sheet: use the 10 mm thick silicone foam gasket (see page 111) or some silicone sealant (not supplied).
These plates accept :
• *One outlet model:*
• M20x1.5 standard cable gland (page 111)
• M20x1.5 standard cable gland with protection jacket support (page 111)
• End Of Line light (page 102)

Reference	Description
6YTPF086050M201	One outlet PGM20
6YTPF086050M202	Two outlets PGM20

• Antifreeze thermostats threaded M20x1.5 (page 94)
• Temperature sensors Pt100 and NTC M20x1.5 (page 102)
Stuffing for standard cable glands and round or flat wires (pages 110)
• Polyamide plugs (page 111)
• Models with two outlets may receive all possible combinations of two of these accessories

Mounting examples on a through-insulation plate

Pt100 sensor for ambient temperature control

ISO M20 gland and indicator light

Stuffing sets for cable glands on M20x1.5 threaded outlets

Assembly example

Reference (Box of 10 identical sets)	N°	Hole dimensions	Stainless steel washer diameters
6YTPG18011060090	1	1 x (6 x 9)	14
6YTPG18021050100	2	1 x (5 x 10)	14
6YTPG18031047118	3	1 x (4.7 x 11.8)	14
6YTPG18041080120	4	1 x (8 x 12)	14
6YTPG18051050135	5	1 x (5 x13.5)	14
6YTPG18061063115	6	1 x (6.3 x 11.5)	14
6YTPG18072019000	7	2 x 1.9	10
6YTPG18083019000	8	3 x 1.9	10
6YTPG18093025060	9	3 x (2.5 x 6)	14
6YTPG18103030050	10	3 x (3 x 5)	14
6YTPG18111030000	11	1 x 3	4
6YTPG18122030000	12	2 x 3	10
6YTPG18133030000	13	3 x 3	10
6YTPG18141024000	14	1 x 2.4	4
6YTPG18152024000	15	2 x 2.4	10
6YTPG18163024000	16	3 x 2.4	10
6YTPG18171019000	17	1 x 1.9	4
6YTPG18181060000	18	1 x 6	10
6YTPG18191015000*	19	1 x 1.5	10
6YTPG18205019000	20	5 x 1.9	10

* This model is designed for capillary 1 and 1.5 mm thermostats, and is slotted to permit the insertion of bulbs thereof.

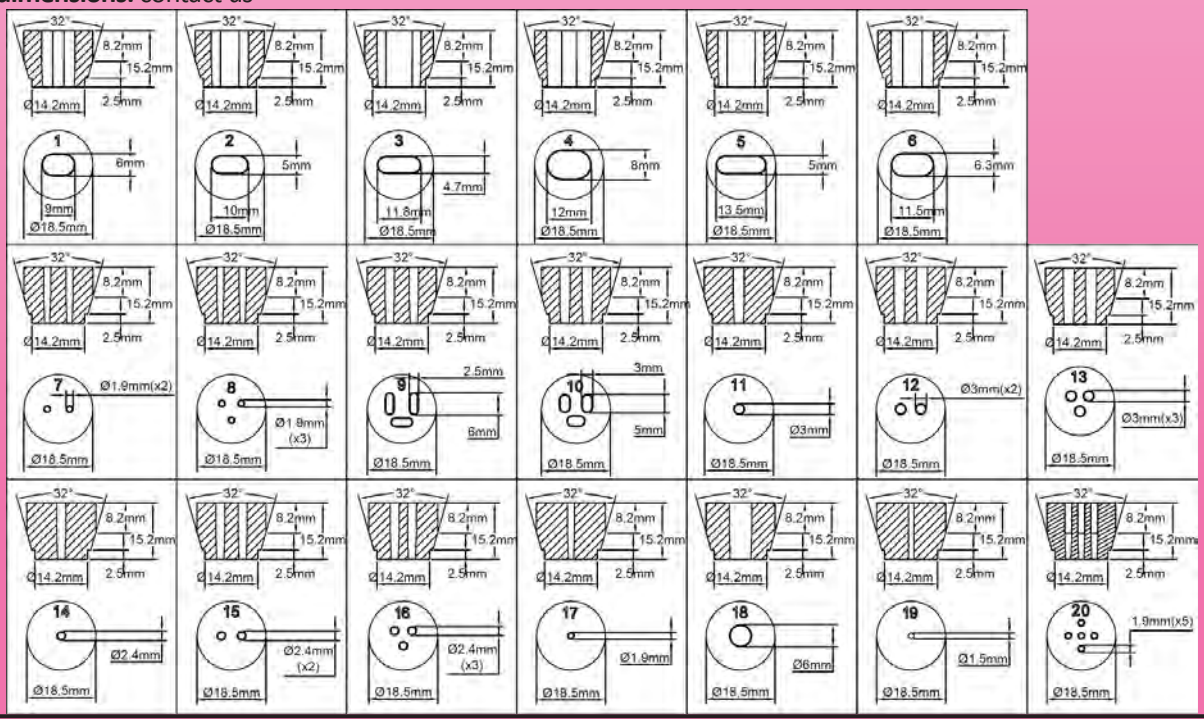
Available for flat or round cables, wires and capillaries. Their rear parts have an elastic conical tip tightening on the conductor. They are compressed by the M20 brass nuts (page 111).
Supplied with a stainless steel washer of appropriate diameter. Such stuffings may allow conductor dimensions slightly less than the diameter of 0.2mm (or height or width).

Material: 50 shore black silicone

Compatibility :

Hole dia.	Wire or cable types
1.9	• AWG18, FEP insulated, 300V (0.75 mm²)
2.4	• AWG15, FEP insulated, 300V (1.5 mm²) • 0.75 mm² and 1 mm², silicone insulated. • H05VK 0.75 or 1mm²
3	• H07VK 1.5 mm² • Silicone 1.5 mm² • 2 x AWG22 (0.34 mm²) FEP insulated • 3 x AWG22 (0.34 mm²) FEP insulated
6	• 2 x 0.5 mm² silicone insulated • 3 x 0.5 mm² silicone insulated • 3 x 0.75 H03VVF

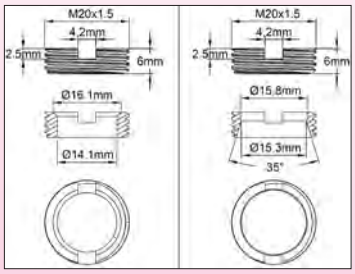
Special dimensions: contact us



JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

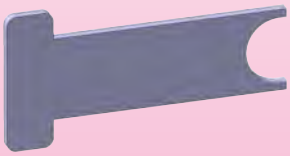
M20 Brass nuts for cable rear outlets and other supports with M20x1.5 thread

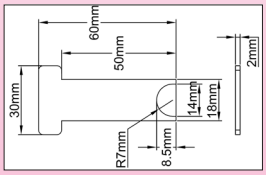
The gland stuffing boxes are compressed between two nuts, one with flat seat located inside the box or of the plate, the other with a tapered seat, and which mounts outside.
The outer nut goes first, then its rotation is blocked by the plastic clip which pins fit into the dedicated slots in the boxes. The silicone gasket, washer and second nut are then mounted from the inside and tightened with the above mentioned screwdriver. Silicone seals and washers must be ordered separately (see page 110)



Reference	Description
6YTRAKITM20	Kit comprising a nut with a tapered seat nut and a locking clip (for glands on page 110)
6YTRAM20PLAT	Flat seat nut, alone (20p box)
6YTRAM20CONE	Tapered seat nut, alone (20p box)
6YTRAM20CLIP	Plastic securing clip (20p box)

Screwdriver for M20x1.5 split nut

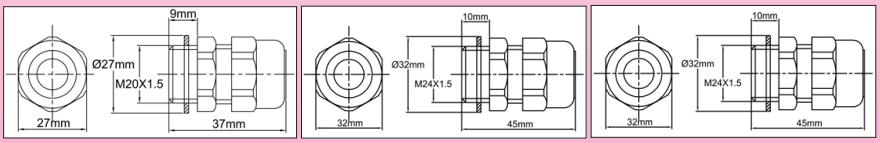




Used for tightening the nuts of M20x1.5 glands
Stainless Steel 304 thickness 3mm.

Reference	6YTTL001

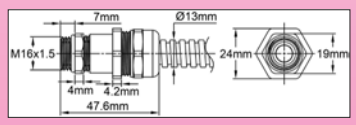
Polyamide cable gland ISO M20x1.5, M24 x1.5, M25x1.5



Polyamide UL 94-V2 halogen free
Operating temperature : - 40 °C + 100 °C
Designed for clamping round cables
Packaging: 10 pieces bag

Reference	Cable dia.	Pitch
6YTPEM20C075140	7,5 to 14	M20x1.5
6YTPEM24C090160	9 to 16	M24x1.5
6YTPEM25C130180	13 to 18	M25x1.5

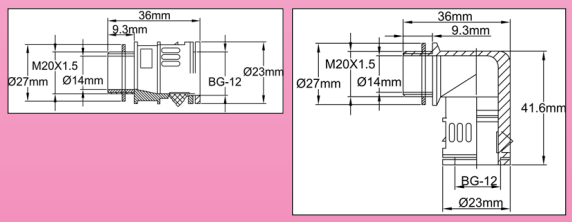
Double clamping M16 cable gland



This ISO M16 nickel plated brass cable gland has a double clamping , this allows to clamp on the capillary or on the cable, and also on the flexible corrugated tube dia. 10 mm, plastic or stainless steel

Référence	6YTEPMB16DC10

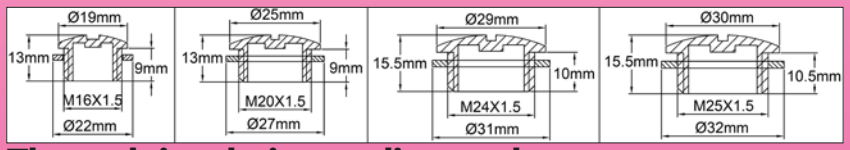
Polyamide gland M20 x 1.5 for corrugated pipe



Polyamide UL 94-V2 halogen free
Allows connection to a protective corrugated tube on a M20x1.5 threaded outlet. Does not provide sealing or conductor fastening

Reference	Outlet	Corrugated pipe dia.
6YTPEM20T12	straight	12
6YTPEM20L12	90°	12

Polyamide plug for ISO cable glands threads

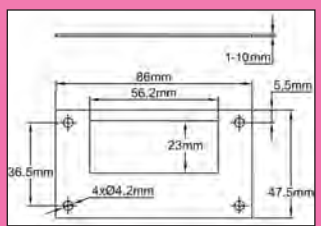


Polyamide UL 94-V2 halogen free
Used to closes a hole for ISO cable glands. Supplied with gasket.

Reference	Pitch
6YTPEM16B	M16 x 1.5
6YTPEM20B	M20 x 1.5
6YTPEM24B	M24 x 1.5
6YTPEM25B	M25 x 1.5

Packaging: 10 pieces bag

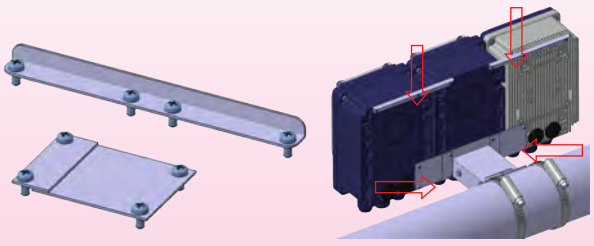
Through insulation sealing gaskets

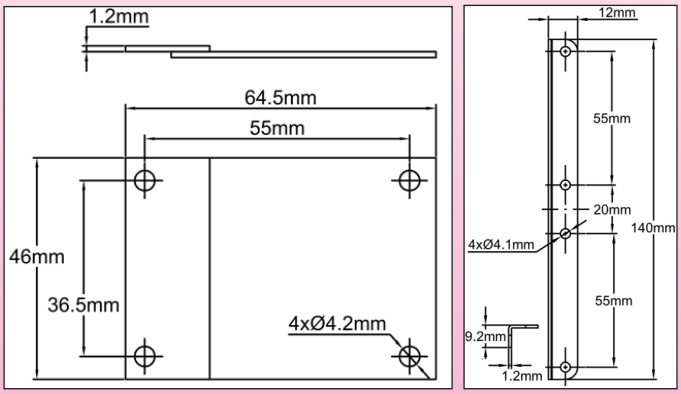


For stands and through insulation kits on pages 108 and 109.
Silicone made, they mount sandwiched between the through-insulation plate and the metal sheet. The foam gasket allows mounting on protective plates of small diameter, with the foam hugging the bending angle.
Temperature resistance 180 ° C

Reference	Description
6YTJOMS10040086	Silicone foam gasket 10mm thickness
6YTJOMN10040086	PVC-NBR foam gasket 10mm thickness
6YTJOPS01140086	Silicone foam gasket 1mm thickness

Coupling brackets





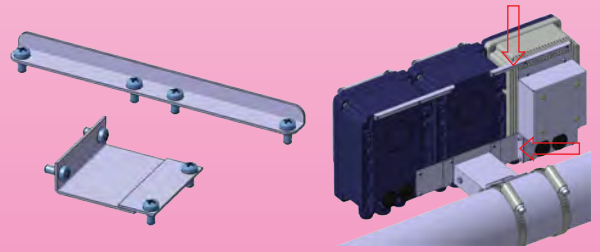
Coupling brackets for side-by-side boxes on the same heat-tracing stand
This all stainless steel accessory allows the mounting of two or three boxes side by side on the same stand, including SSR boxes with or without a fan.
Application examples :
2 boxes :
- Control + SSR power control
- Control + distribution box
- Control + breaker box

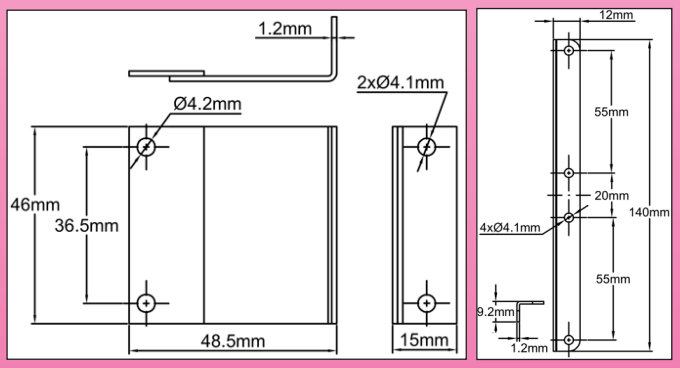
3 boxes :
- Control + SSR power control + breaker box
- Control + SSR power control + distribution box
- Control + breaker box + distribution box

Not suitable for mounting next to a SSR box with fan and fan guard.
Kit composition: one bottom bracket, one top bracket + 8 screws
Two sets are required if 3 units are mounted side by side

Reference	6YMLK140012F

Coupling bracket set for coupling a SSR box with fan and fan guard and another box





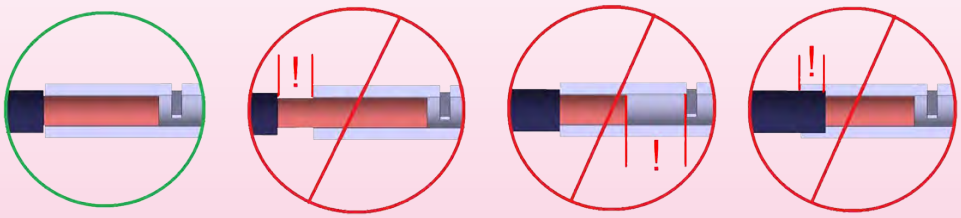
Allows the coupling of a box with forced ventilation and a standard box.
Kit composition: one bottom bracket, one top bracket + 8 screws

Reference	6YMLK140012L

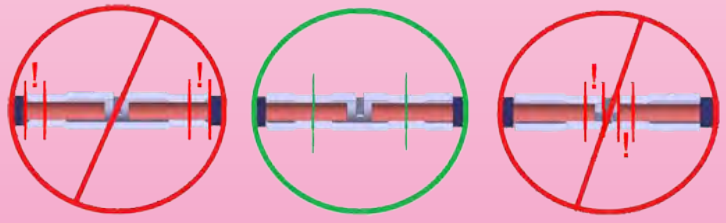
JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Introduction to hexagonal crimping

The hexagonal crimping is the fastest way to connect two wires together, especially if this connection should be subjected to repeated thermal shocks. It is also the less bulky connection. Crimping this way is commonly used for cables of gauges higher than 10mm². By proper selection of components to use, good selection of crimping tools, and subject to compliance with certain simple rules, this type of connection is also safer for conductors of smaller gauges, as it makes an evenly distribution of the clamping force on the terminal perimeter.



Wire stripping: use a wire stripper uppermost, following the instructions not to cut wires or damage the insulation. Respect the specified strip lengths.
Conductor insertion: A terminal should contain only one single cable at each end.
Insert the wire until the insulation comes into contact with the outside of the connector. The distance between the insulation and the shell of the connector must be less than 1mm. Ensure that all strands are within the barrel of the terminal. Twist them if necessary;
In the case of heating cables with a heating wire wound around a glass silk core, it may be necessary to strip to a greater length, cut the glass silk core strip to the recommended length, then wrap the excess heating wire on the fiberglass core waste. Ensure that in this case, the heating wire does not fill at the entrance when inserted into the connector, because the crimping would be made on the glass silk core only.
Crimping: first crimp one side, to the specified hexagon dimension according to the diameter or wire gauge. The center of crimping must be in the middle of the stripped section of the lead. Crimp until the ratchet automatically releases the opening of the pliers. When the first side is crimped, insert the second lead and crimp.



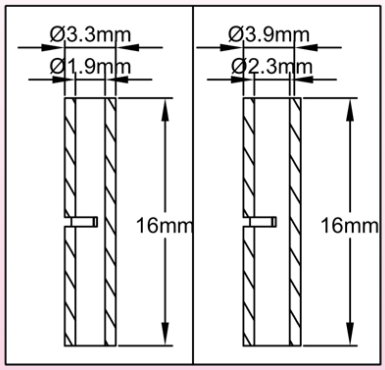
Once the crimping is correctly carried out, the contact resistance value of is less than 5 milliohms. The total length of the tubular connector increases from 4% to 6% as a result of crimping.

Comparative tests of breakout strengths (daN, single hexagonal crimping)

Terminal type	Heating wire dia. 0.3mm on fiberglass core 0.8mm	0.75 mm² lead	0.8 mm² lead (AWG18)	1.5 mm² lead	1.65 mm² lead (AWG15)	2,5 mm² lead
Internal dia. 1.9	10	120	130	340	375	N/A
Internal dia. 2.3	N/A	N/A	N/A	190	200	>500

Note: average values measured with the adjustment of the closed position of the pliers in middle position

Tubular terminals for connection with hexagonal crimping on gauges up to 2.5mm²



Allows in-line connection of leads with different gauges, including spiral heating wires on fiberglass cores. The pods must be protected by a heat shrink sleeve if a sealing connection plug with silicone filling is not used.
Stripping length of the leads: 6+1/-0 mm.
Crimping center position: 4 mm +/-1 from the edge.
Length: 16 mm
Material: tin plated copper

Reference (100 pieces box)	Lead gauge (mm²)	Internal dia.	External dia.
6YTCORC019033016	0.5 to 1.5	1.9	3.3
6YTCORC023036016	1.5 to 2.5	2.3	3.9

Selection of the crimping insert according to the lead gauge and the terminal type

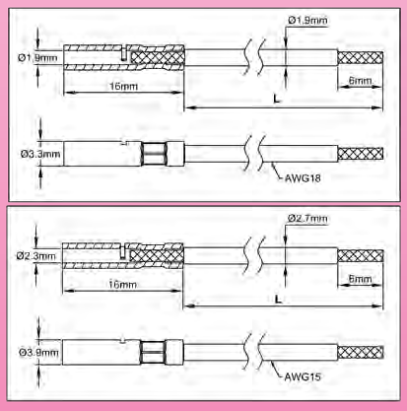
1.9 x 3.3 terminal

Spiral on glass silk core dia 0.8 mm	0.75 mm²	AWG18	1.5 mm²	AWG15	2.5 mm²
N°1	N°1	N°1	N°2	N°2	No

2.3 x 3.9 terminal

Spiral on glass silk core dia 0.8 mm	0.75 mm²	AWG18 (0.8 mm²)	1.5 mm²	AWG15 (1.65mm²)	2.5 mm²
No	No	No	N°2	N°2	N°3

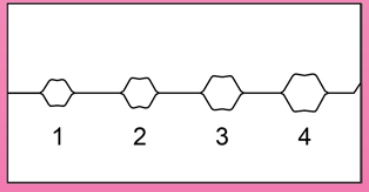
Pre-crimped non heating ends



3 conductors set, 300V FEP insulation, for non heating output. Equipped with cable shoes at one end and a tubular connector crimped at the other end, they save time on site by limiting cutting, stripping and crimping operations.
Each set includes a black wire for the phase, a blue wire for the neutral and a green and yellow wire for the earth.
Temperature resistance: 180°C

Reference	Gauge	Lead external dia.	Length
6YTCORRC18F0300S	AWG 18 (0.75 mm²)	1.9	300
6YTCORRC18F1000S	AWG 18 (0.75 mm²)	1.9	1000
6YTCORRC15F0300S	AWG 15 (1.5 mm²)	2.4	300
6YTCORRC15F1000S	AWG 15 (1.5 mm²)	2.4	1000

Hexagonal crimping pliers for tubular terminals



Can also be used to crimp temperature sensor tubes on round cables.
Insert width: 3 mm.
For crimping wire end ferrules in accordance with DIN 46 267 Part 1
High crimping quality due to the unlockable ratchet
The force is amplified by the knee lever reduction
Easy cable output with its opening system
Low weight (500 grams).
Dimension across flats of hexagonal inserts:
n°1: 2.2; n°2: 2.5; n°3: 2.7, n°4: 3.1

Reference	6YTTL003

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Introduction to heat shrinkable sleeves

Heat shrinkable sleeves were invented in 1960 by the company Raychem. The tubes are made by extrusion, and subjected to molecular modification by radiation of an electron gun. Their expansion can still be obtained or increased by mechanical stress (swelling hot). Then, when heated above a certain temperature, the molecular structure changes and the tubes return to their original shape. The double-walled sheaths are generally co-extruded with an inner wall fusing at a lower temperature than the outer wall. This inner fusible wall can be EVA, polypropylene, polyamide or FEP according to the material of the outer wall and applications.

The choice of a heat-shrinkable sleeve for insulating heating cables is the result of a multi-parameter equation. Firstly the sheath must withstand the temperature of the heating cable. It is the parameter *"Temperature resistance after heating"*. Secondly, it must be able to shrink on the cable, leads and connectors that will be connected and stay properly on without slipping, it is the parameter *"Shrink ratio"*. It must also be able to shrink without any damage on the heating cable due the requested shrinking temperature. It is the parameter *"Shrink temperature"*. It must be electrically insulating at the operating voltage value and not too thick for this insulation value: it is the parameter *"Insulation Voltage"*, which will determine the minimum sheath thickness.

It should not be a factor of flame spread. This is the parameter *"Flame Class rate"*. It must in some cases not only provide an electrical insulation, but also provide a sufficient protection level against liquid penetration. This parameter is the *"Double wall"*. And when all these major parameters are known and selected, the cheaper solution remains to be found.

Other minor criteria such as flexibility, color, UV resistance (important if the ducts are used outdoors), the corrosive action of the sheath on copper leads, Rohs and Reach Directives, are still to be taken into account.

The shrink temperature is an important criterion, and the ways to reach it are essential to the quality of the result. One must not exceed the temperature of destruction of the sheath or of the product on which it is put on. Do not burn it: the use of gas guns with direct flame may cause early carbonization. Ensure a proper distribution of heat over the entire surface and all around the sheath, for the duration of a proper shrinkage and, in the case of double-walled sheaths, for the required time to shrink the outer wall and merge the inner wall.

Comparative chart of the main characteristics of the heat shrinkable sleeves on the market place
Price levels are calculated with PVC as basis 1
Only self-extinguishing or UL94VO versions were selected

	PVC	Cross-link polyolefin	Double wall cross-link polyolefin	Neoprene	Poly Vinylidene Fluoride PVDF ***	FEP **	Silicone rubber	Fluor Elastomer Viton	PTFE	Double wall, PTFE+FEP
Temperature resistance after shrinkage (°C)	-30+105	-55+135	-55+125	-75+120	-55+175	-60+200	-60+250	-75+150	-60+260 (400: short time peaks)	-60+230 (400: short time peaks)
Shrink ratio	2 :1	3 :1 to 4 :1	2 :1 to 4 :1	2 :1	2 :1	1.3:1 to 2:1	1.4:1 to 1.9:1	2 :1	2 :1 to 4 :1	3 :1
Shrink temperature, °C*	70-100	80-125	80-125	135	175	190 (175 - 210 depending on quality)	150	150	325-340	320-360° depending on quality, 5 to 10 minutes
Insulation voltage Kv/mm	30 to 60	20 to 25	20 to 25	13	10 to 30	20 to 24	18 to 20	7,9	25	25
Miscellaneous	Numerous colors	Low UV resistance except black color	Low UV resistance except black color	The greatest flexibility	Low flexibility Very good resistance to chemicals and perforation	Good resistance to UV and radiations	Thick-walled, flexible	Very flexible	Difficult to shrink. Excellent chemical resistance	Very difficult to shrink. Excellent chemical resistance
Prix	1	3	8	15	22	30	50	60	75	100

* The lowest temperatures can shrink to 65 ° C with some crosslinked elastomers.
** EFF variants such as ETFE and PFA have similar characteristics.
*** Available in flexible version, with 150 ° maximum temperature. The low flexibility variant (175 ° C) is also known as Kynar.

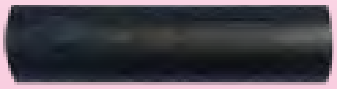
Heat shrink sleeves and sheaths

The retractable sheaths below were selected as the best compromise for applications in common heating cables.

Single wall crosslink polyolefin heat shrink sleeve

The single-wall sleeves provide electrical insulation, but no protection against liquid penetration. When shrinking, it is important not to exceed the temperature of destruction of the sheath or of the insulation of the heating wire (refer to the values provided by the manufacturers). See page 115 for implementation.

Dia 4.8 mm



Dia 12.7 mm

Insulation voltage: 600V
Flame Class UL: VW1
Shrink ratio: 3:1
Minimum temperature to reach the shrink ratio 3: 100°C
Temperature resistance: 125°C continuous
Composition: Rohs and Reach compliant

Reference	Dimensions before shrinkage	Marking
6YTGANL0S0480030	4.8 mm x 30 mm**	Black sleeve L marking
6YTGANN0S0480030	4.8 mm x 30 mm**	Black sleeve L marking
6YTGAN00S0482000	4.8mm, 20m roll	Black, no marking
6YTGAV00S0480030	4.8 mm x 30 mm**	Green sleeve
6YTGAV00S0482000	4.8mm, 20m roll	Green, no marking
6YTGAN00S1270050	12, 7 mm x 50 mm*	Black, no marking
6YTGAN00S1272000	12,7 mm, 20m roll	Black, no marking

* Allows to bring together two or three crimped conductors in a same protection sleeve.
** 100 pieces bag
Note: using heat shrink sleeves does not provide any sealing.

Double wall crosslink polyolefin heat shrink sleeve.

The double-walled sleeves provide electrical insulation and some protection against the liquid penetration, depending greatly on the conditions of implementation. When shrinking, it is important not to exceed the temperature of destruction of the sheath or of the insulation of the heating wire (refer to the values provided by the manufacturers). Upon heating of the sleeve, the inner part will liquefy while the outer part shrinks and press the liquefied part against the cable and accessories. See page 115 for implementation.

Dia 4.8 mm

Dia 12.7 mm

Insulation voltage: UL 600V,
Flame Class UL: VW1
Shrink ratio: 3:1
Minimum temperature to reach the shrink ratio 3: 110°C
Temperature resistance: 125°C continuous
Composition: Rohs and Reach compliant
Dimensions before shrinkage: dia 4,8 length 30 mm or dia 12,7 length 50 mm.

Reference	Dimensions before shrinkage	Marking
6YTGANL0D0480030	4.8 mm x 30 mm**	Black sleeve L-F marking
6YTGANN0D0480030	4.8 mm x 30 mm**	Black sleeve N-F marking
6YTGAN00D0482000	4.8mm, 20m roll	Black, no marking
6YTGAV00D0480030	4.8 mm x 30 mm **	Green sleeve, F marking
6YTGAV00D0482000	4.8mm, 20m roll	Green, no marking
6YTGAN00D1270050	12.7 mm x 50 mm*, **	Black, F marking
6YTGAN00D1272000	12.7 mm, 20m roll	Black, No marking

* Allows to bring together two or three crimped conductors in a same protection sleeve.
** 100 pieces bag
Note: using heat shrink sleeves provides a better sealing against water penetration and a better mechanical support though a perfect sealing is not guaranteed, especially if they are used on an unsleeved metal braid or when the shrinkage is poorly done.

Example of heat shrink sleeve protection

Lead insulation

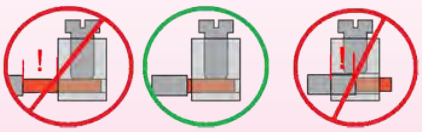
Several conductors reworked

Insulation of heating cable end
(the sleeve is pinched hot then cut)

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

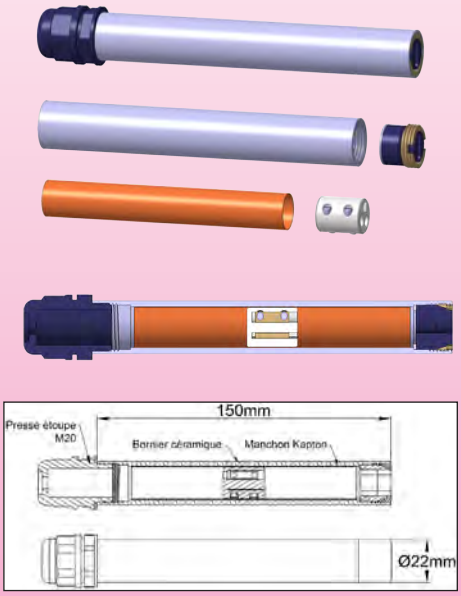
Connection on a screw terminal block

Screw terminal block use



For proper use of these screw terminals, it is first necessary to strip the leads on the specified length. A too long stripping reduces insulation distances and may lead to a short circuit when the cables are twisted or bent. A too short stripping makes the insulation penetrate the terminal, with the risk of tightening on the insulation.
As this terminal block will generally be located in a hot zone, with alternative cycles of heating and cooling, screws should be tightened with the recommended torque to prevent loosening of terminals due to thermal cycling.

Tubular connection box with screw terminal block for heating cables



It is used to connect two cables end to end or for connecting a flat heating cable on a non-heating round cable without heating and without silicone filling.
It also enables mechanical protection around two cables connected together by crimping and insulated with shrink sleeves.
Protection: black anodized aluminum tube, dia 22 mm x 150 mm
End fittings: M20x1,5. To mount at each end either a standard cable gland M20x1.5 or pads for flat cables M20x1.5
Internal connection: a 3 poles round ceramic block with screw terminals, gauge 2.5 mm ².
Stripping length: 6+1/-0mm.
Maximum lead diameter: 3.2 mm.
Torque: 0.6 Nm +/-25%
Electrical insulation of the tube: internal Kapton sleeve

References	Ceramic screw terminal block	End A	End B
66FS150022000C12	yes	Gland ISO M20 polyamide	Gland ISO M20 polyamide
66FS150022000C22	yes	No gland, no accessories	No gland, no accessories
66FS150022000C32	yes	Brass nut M20*	Brass nut M20*
66FS150022000C42	yes	Brass nut M20*	Gland ISO M20 polyamide
66FS150022000C13	no	Gland ISO M20 polyamide	Gland ISO M20 polyamide
66FS150022000C23	no	No gland, no accessories	No gland, no accessories
66FS150022000C33	no	Brass nut M20*	Brass nut M20*
66FS150022000C43	no	Brass nut M20*	Gland ISO M20 polyamide

* : gland accessories to be ordered separately, see references on page 57

Note: these tubular housings are in aluminum so the heat from the heating cables can quickly evacuate to the outside, without internal overheating. Plastic versions of the same size are available on request, but not recommended although more economic.

Example of connection in a tubular box

Regulatory labels

Plastic adhesive. Resistant to cold, UV, and weathering. To be put every 5m all over the insulation cover sheet.
Bag of 20 labels 180 x 60 mm French /English. Other languages on request.

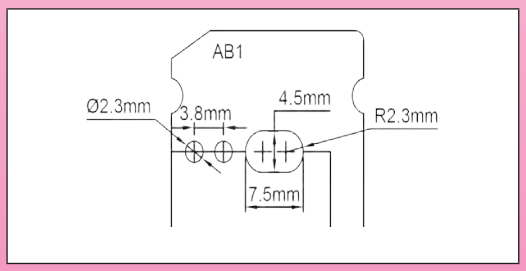
References	6YTNT3000000207A

Wire strippers for 2 conductors flat heating cable

Unsheathing and stripping these flat special shape leads is a long and tough work, causing a lot of waste.
We have developed these tools specifically for stripping and unsheathing to reduce these times, and significantly reduce installation times. Each pliers comes with a set of jaws.

Common diameters of copper leads (mm)

Gauge	Diameter (solid core, multistrand)
0.5 mm²	0.8-0.92
0.75 mm²	0.98-1.14
1 mm²	1.13-1.29
1.5 mm²	1.38-1.59
2.5 mm²	1.78-2.01
AWG22	0.65-0.8
AWG20	0.81-0.95
AWG18	1-1.2
AWG16	1.3-1.5
AWG15	1.45- 1.6
AWG14	1.65-1.9



Parallel lead stripping

Reference	Sapcing between leads	Lead diameter	N°
6YTTL04A1	3,5; 4,8; 5,7	1 to 1.5 mm (multistrand AWG 18 to AWG16 and 0.75 to 1 mm²)	A1
6YTTL04A2	3,5; 4,8; 5,7	1.5 to 1.9 mm (multistrand AWG15 to 14, and 1.5 to 2 mm²)	A2
6YTTL04A3	3,5; 4,8; 5,7	2 to 2.3 mm (multistrand AWG 12 to 2.5 mm²)	A3

Tip: Stripping the self-regulating cable is easier after the semi conductive plastic part has been warmed with a heat gun.

Oblong cables stripping

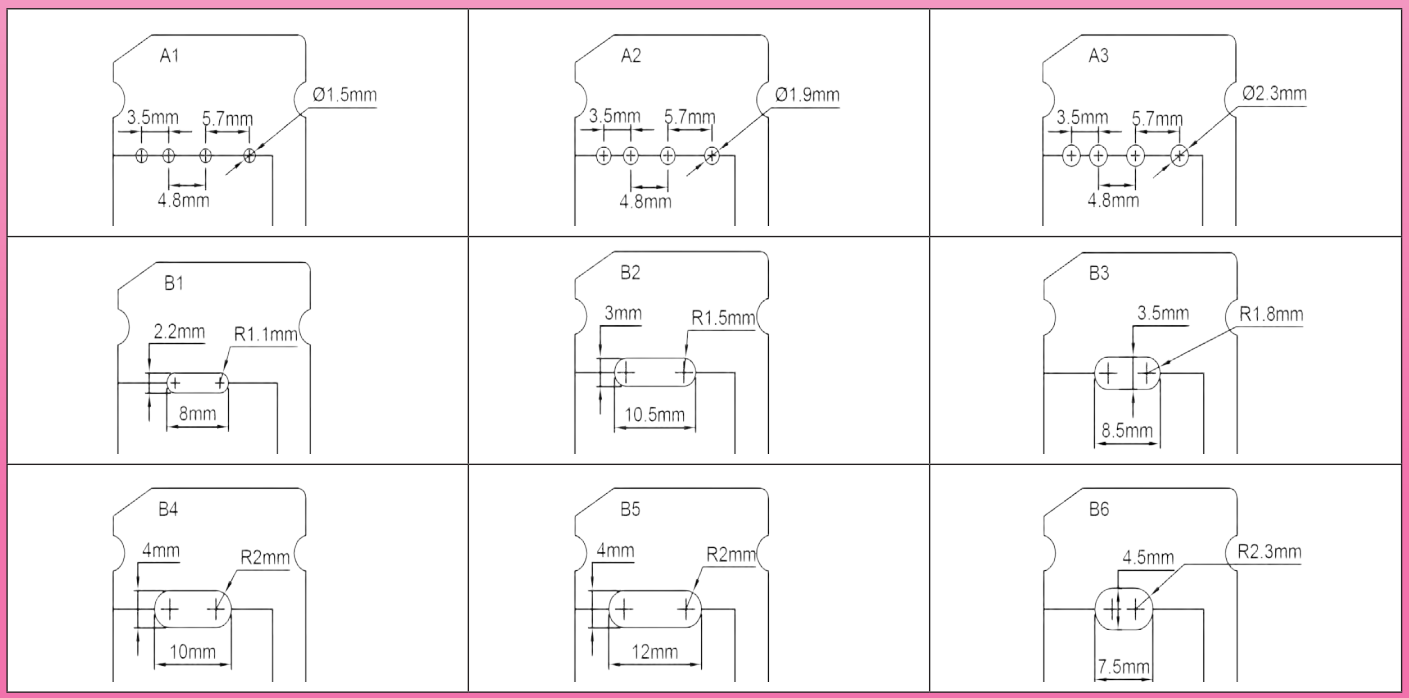
Reference	Dimension	N°
6YTTL04B1	2,2 x 8 mm	B1
6YTTL04B2	3 x 10.5 mm	B2
6YTTL04B3	3,5 x 8,5 mm	B3
6YTTL04B4	4 x 10 mm	B4
6YTTL04B5	4 x 12 mm	B5
6YTTL04B6	4,5 x 7,5mm	B6

Select the pliers sizes according to the dimensions of the part which should not be unsheathed

Combined pliers for flat cable unsheathing and stripping

Reference	Dimension	N°
6YTTL04AB1	2 x dia 2.3 , 3.8 spacing and 7.5 x 4 mm oblong	AB1

Realization of special pliers: Available on request, send us samples of your cables.



JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Accessories for general electrical heating applications

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

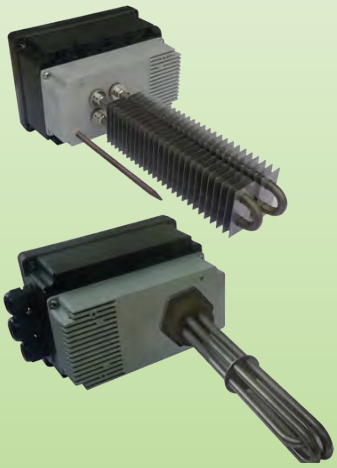
General electrical heating applications

The concept of boxes and accessories designed for general electrical heating applications

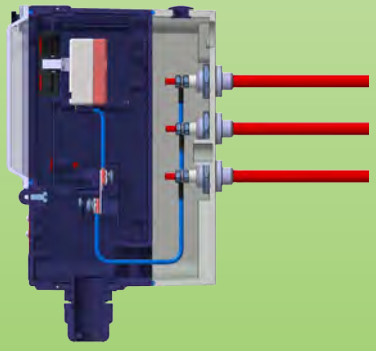
A large number of electrical heating applications can be implemented by using a standard Y8 range control box, mounted on a wall or a stand, and then connected with cables to the measuring probes and heaters located at distance. In this application, heating elements have their own connection box, made of plastic or metal.
These junction boxes are simple and compact, and usually there is no temperature control inside, or sometimes a simple thermostat.
These small footprint boxes are described in our catalogue of the Y3 range.

The Y7 series, using aluminum housing and also described in this catalogue, has been developed for industrial-type heaters and immersion heaters up to M77.

The accessories range of this section has been developed to use the huge list of the Y8 models in a mid-range application.
The mounting of the heating elements on the control boxes have been simplified by the addition of a complementary aluminum rear mounted housing.
For uses in explosive atmospheres zones, see our Y9 range catalogue

Types Y3 (We do not supply heating elements)	**Type Y8 + general electrical heating accessories** (We do not supply heating elements)	**Type Y7** (We do not supply heating elements)
		

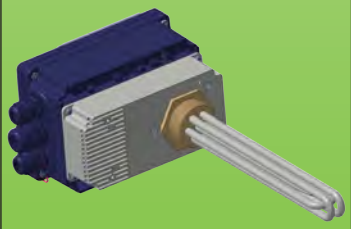
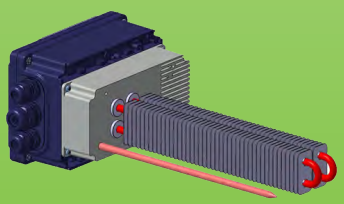
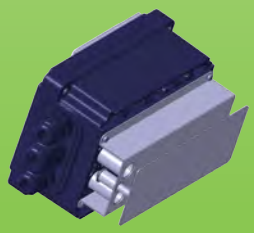
Mounting and connection of the complementary rear housing



Assembly and wiring principle of the complementary aluminum housing located at the rear of the main control housing

The difficulty of connecting boxes to shielded heating elements is largely due to the length of the cold parts of these tubes entering the boxes.
Their locations make the cabling difficult to achieve, require deep boxes, and the heat they generate, propagates in the case and sometimes increases its temperature significantly, which is harmful to the quality of regulation, or even to the running of an electronic control in the casing.
The housings of the Y8 series were designed to receive a complementary aluminum housing on their backs allowing easy connection of these heating elements. The electrical connection is then made on the internal terminal block in the control box.
This casing is mounted with 4 screws at the rear of the control box and has a sealing gasket. It communicates with the terminal block in the control box through its two rear M20x1.5 outlets. It can be 180° rotated, which enables the manual reset thermostats reset button to be located on the upper or on the lower side.
It also enables to rotate the front of the control box from the mounting bracket.
In addition to many possible drillings for immersion heaters, finned elements and other heating element assemblies, the secondary housing is furthermore designed to accept wall mounting brackets, adapters for fixing on flat surfaces, ventilation ducts, etc.

Assembly examples

			
Assembly with 1 »1/2 immersion heater	Assembly with 2 finned heaters and a pocket	Assembly with ventilation duct plate	Assembly with extended mounting board for industrial jacket heter

Safety devices

Most of the heating elements have a power optimized according to the specific parameters of environment (Gas, liquid) to be heated, and especially to its specific heat exchange coefficient and the speed of fluid circulation. When the heat exchange conditions change: for instance, water flow stop while heating liquids, airflow stop in the air heaters, flat heating elements separated of their exchangers, overheating occurs that might lead to fire hazards, property damages or risk to humans being. These security systems have many designs. This is why the complementary housings have been designed to receive capillary security systems with sealed capillary bushings, pockets for thermostat bulbs, temperature sensors or thermal fuses, disc thermostats with manual or automatic reset.
The pockets and bushings are equipped with the same gasket system and use the same tapped holes.

Standard options for security devices mounting

2 available slots for disc thermostats. They have extended cup brackets, for throw wall mounting to limit the thermal inertia in air heating systems devices. Safety or control applications. Disc thermostats: see page 130

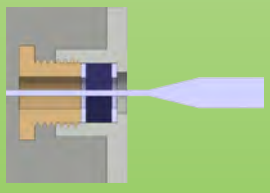
1 available slot for extended cup bracket disc thermostat with manual reset. Allows manual reset from the outside of the box. Side push button kit: see page129. Thermostat: see page 130.

1 available slot for a bulb and capillary cut-out. Allows manual reset from the outside of the box. The thermostat bulb can be in a pocket or external, with a stuffing box. See page 129

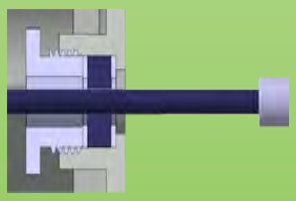
1/4" BSPP holes with gasket seat for pocket and capillary stuffing boxes. See page 129

Standard outlet options for safety devices

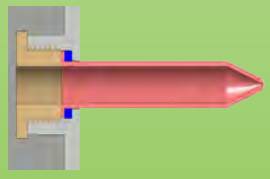
1/4" BSPP thread with cap.
See page 129



1/4" BSPP thread with capillary stuffing box.
See page 129



1/4" BSPP thread with stuffing box for sensor cable.
See page 129

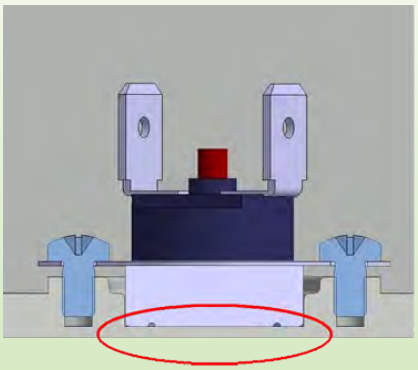


1/4" BSPP thread with pocket outlet, for dia. 6mm sensor
See page 129

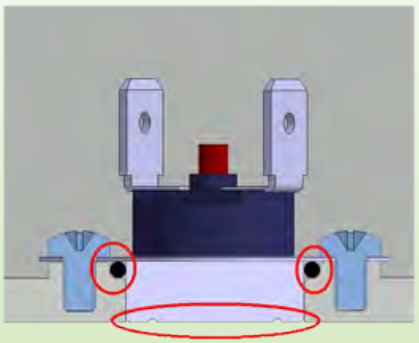
1/4" BSPP thread with pocket outlet for dia. 8mm thermal fuse or temperature sensor.
See page 129 and 130

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

The two possible disc thermostat mountings

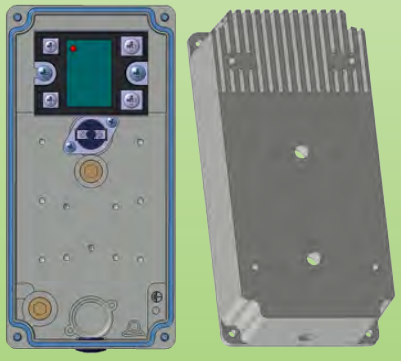


Without cross-wall. Allows use of the thermostat disc in most common applications. The low residual wall thickness greatly reduces the thermal inertia.



With cross-wall and O-ring.
This solution provides the lowest thermal inertia, but requires a dia.16.3 mm drilling of the existing surface at the bottom of the cup. The 16 mm dia. O-ring is required in waterproof applications

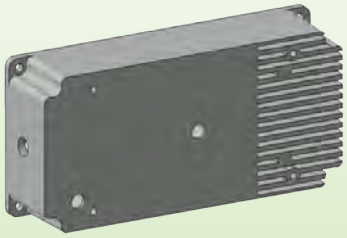
Solid state relay mounting options

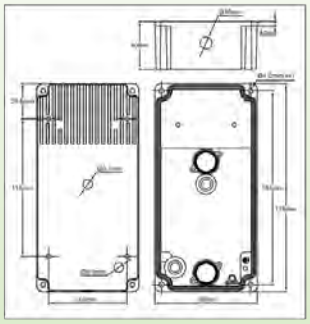


Part of the housing is provided for mounting a single-phase SSR, up to 25A rating, whose heat exchange is provided by cooling fins at the rear side. In this application, it is also possible to use the disc thermostat slot to install an overheating safety thermostat for the SSR

Complementary boxes for immersion heaters

Immersion heater kit for general purpose, undrilled, for customer product adaptation

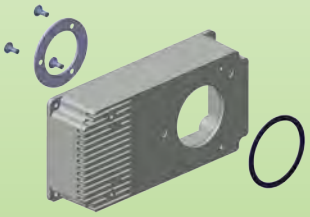


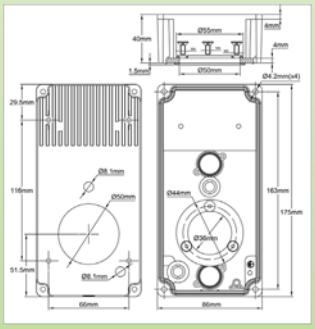


- No drilling for heating elements
- Has 4 holes tapped M4 for rear mounting brackets or flange (see page 73)
- Has two ¼ BSPP threads for pockets mounting or stuffing boxes with silicon gasket for temperature sensor or capillary exit (dia 1, 1.5, 3mm). These holes are usually closed by a screw cap. (see page129)
- An aperture for manual reset (closed with a silicone cap)

Reference	Y4

Kit for rotatable fitting immersion heater





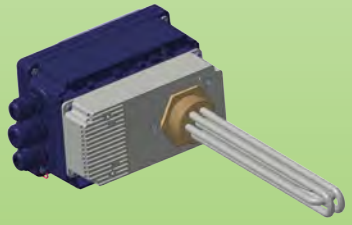
It includes aluminum housing, 4 screws, a mobile washer with 3 holes on diameter 44mm and an adapted seal, and the housing gasket.
- Designed to use with heaters fittings with 3 rear side holes M4 on 44 mm diameter.
- Allows mounting of immersion heaters with 1”1/4 and 1”1/2 fittings
- Allows 360° housing rotation
- Includes a dia 10 mm side hole sealed by a soft silicone cap for the mounting of a temperature cut-out (bulb and capillary or capillary model) with manual reset
- Both pocket fittings are closed by a metal plug
- Allows mounting of a single phase 10 or 20A solid state relay,

Contact us for the supply of compatible immersion heaters brass fittings

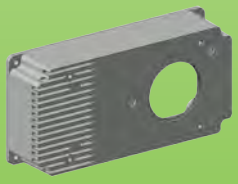
Reference	Y400000J

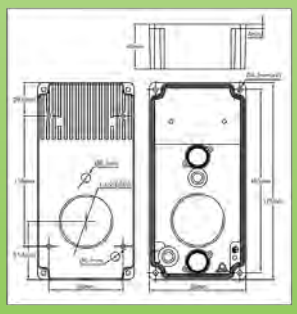
Immersion heater not included

Mounting example with immersion heater and control box



Immersion heater kit for screwed fitting





It includes aluminum housing, 4 screws, and the housing gasket.
- Designed to be used with immersion heater with rear side 1”1/2 BSPP fitting
- Includes a dia 10 mm side hole sealed by a soft silicone cap for the mounting of a temperature cut-out (bulb and capillary or capillary model) with manual reset
- Both pocket fittings are closed by a metal plug
- Allows mounting of a single phase 10 or 20A solid state relay,

Contact us for the supply of compatible immersion heaters brass fittings

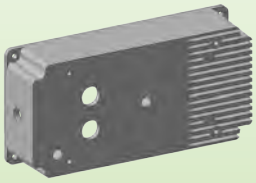
Reference	Y400000K

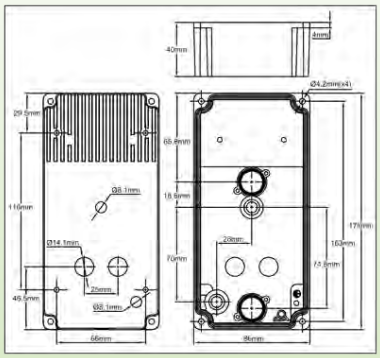
Immersion heater not included

Mounting example with immersion heater and control box

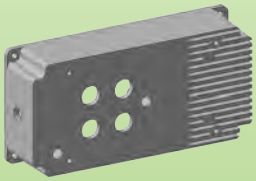
JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

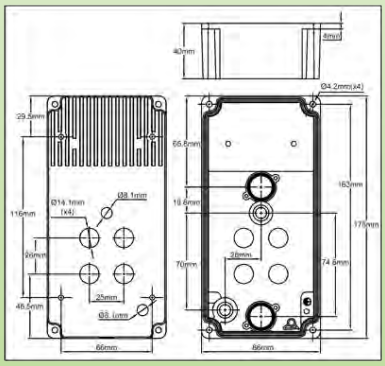
Kit for one or two finned heaters, with 25mm pitch





One heating element model





Two heating elements model

Mounting :

• Has 4 tapped holes on the rear support face for mounting either side brackets (see standard plastic or stainless steel brackets), or M4 screws, which allows to put it on a wall or a frame, with the finned heating elements through the wall.

Control and safety :

• Includes a 10 mm dia. hole plugged with a silicone cap for mounting a temperature limiter with manual reset with M10 bushing.

• Slots for one or two internal disc thermostats (1mm wall) with two M3 holes, 24 mm distance, for use as high limit safety thermostat (see page 130).

Side reset possible if using a manual reset disc thermostat and the manual reset side kit (see page129).

• Has two ¼ BSPP threads for pockets mounting or stuffing boxes with silicon gasket for temperature sensor or capillary exit (dia 1, 1.5, 3mm) or for dia. 8x10 pockets for thermal fuses.

These holes are usually closed by a screw cap. A thread is located under finned heater fitting for a room temperature sensing device and another one is located above for an high limit thermostat or covering safety thermostat

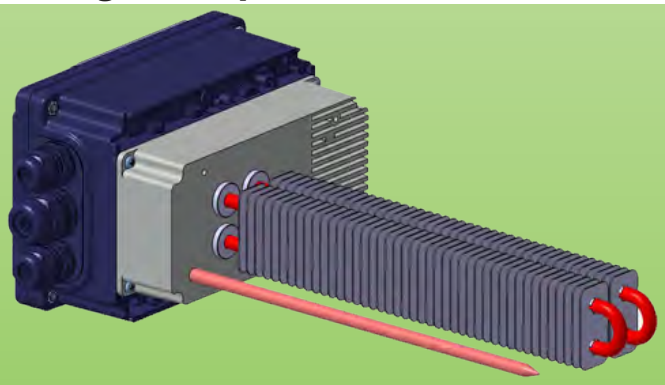
Power control :

• Includes two internal threaded holes for mounting a 10 to 25A single phase solid state relay

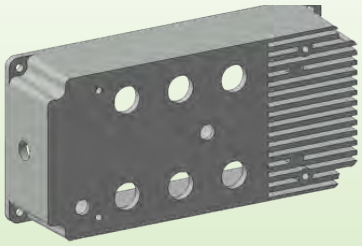
References	Qty of heating elements
Y400000D	1
Y400000E	2

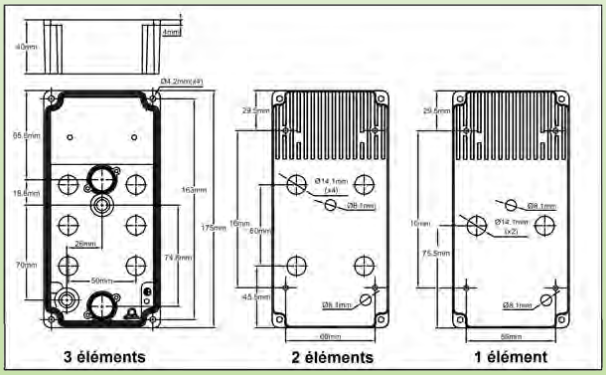
Heating elements not included

Example of mounting with a pocket and two finned heating elements



Aluminum additional box for air duct heater, for mounting on circular, rectangular or square pipes





Easy implementation :
The mounting design allows installation on circular pipes or flat surfaces with simple adapters which are mounted on the threaded holes in the aluminum case (see hereunder).
Enables to preheat the air blown inside ventilation ducts.
Used in heating and ventilation of industrial or commercial premises. Can be used as an accessory for duct fan, or on air duct heater on plenum air distribution terminals.

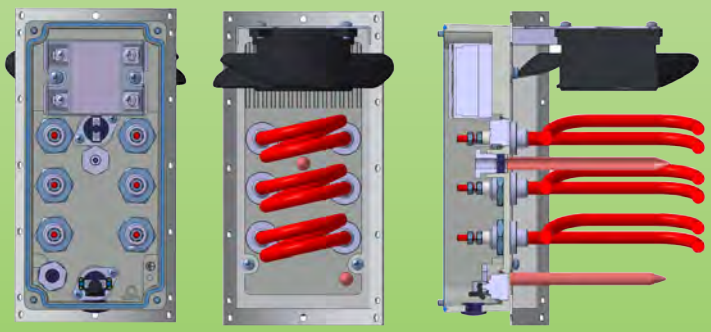
Controls and safety :
• Two pre-drilled blind holes for disc thermostats with extended flange brackets mounting, for temperature control and high limit manual reset (see page 129 and 130).
• Two ¼ BSPP threads for temperature sensors or capillaries. These holes are usually sealed with screw cap.
Example: the 6 holes drilling allows the use of 3 double pin or M shaped heating elements inside a dia. 125 mm pipe, or inside a 125 x 125 mm square pipe.

Reference	Description
Y400000F	2 holes dia. 14mm , 50mm pitch
Y400000G	4 holes dia. 14mm , 50mm pitch
Y400000H	6 holes dia. 14mm , 50mm pitch

Heating elements not included

Mounting example on duct with ferrule adapter

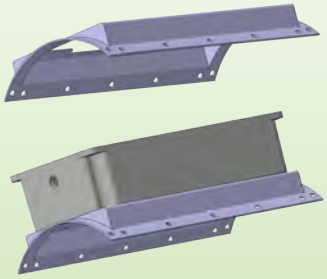
Mounting example on air duct with adapter

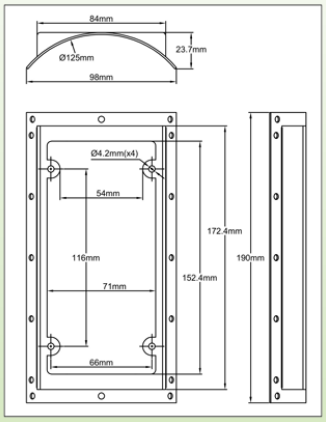


JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Additional boxes for air heaters and ventilation

Air ducts adapters





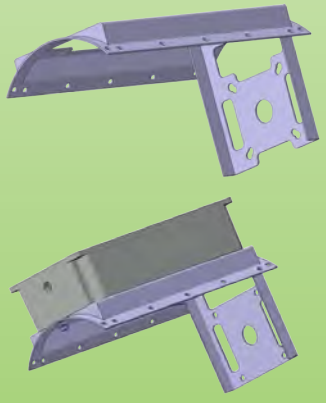
Mounting on complementary aluminum box backside

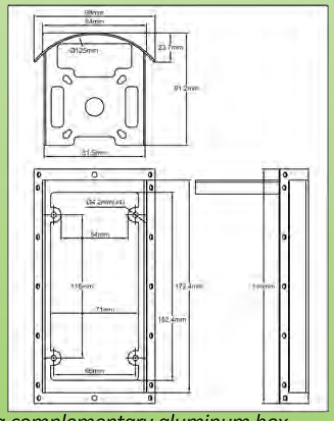
Model for diameter 125mm air duct

These adapters enable to mount heating elements in air ducts
They are mounted on the backside of the aluminum complementary box with 4 M4 screws.
The kit does not include the air duct and the heating elements.
Assembly: easy to make on standard ducts by drilling a 82 x 174 mm hole on the ferrule (projective plane).

Reference	Description
6YEAVF000P	Flat surface mount
6YEAVD125P	Dia 125 pipe mount
6YEAVD160P	Dia 160 pipe mount
6YEAVD200P	Dia 200 pipe mount
6YEAVD250P	Dia 250 pipe mount
6YEAVD315P	Dia 315 pipe mount
6YEAVD400P	Dia 400 pipe mount
6YEAVD450P	Dia 450 pipe mount
6YEAVD500P	Dia 500 pipe mount
6YEAVD630P	Dia 630 pipe mount

Adapters for air ducts, with fan mounting bracket

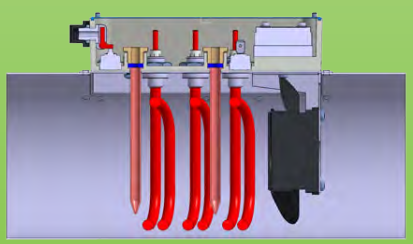




Mounting on the rear side of a complementary aluminum box

These adapters allow mounting of heating elements and a fan in an air duct.
They are mounted on the rear side of the aluminum housing by four M4 screws.
Fan, air duct and heating elements are not included in the kit.
Assembly: easy to make on standard ducts by drilling a 82 x 174 mm hole on the ferrule (projective plane).
- **Dia. 125 pipes :** bracket for fractional asynchronous motors with external rotor, mounting with four M4 screws on diameter 58mm, 40 to 80W.
- **Dia. 160 and 200 pipes :** bracket for fractional induction motors in compliance with EN 50347, IEC 56 Standard, 4 holes for M5 screws on diameter 65 mm (Power: 0.09 to 0.12 HP @ 3000rmp) motor dia. 116 mm (three phase), 118 mm (single phase)
- **Dia. 250 and 315 pipes :** bracket for fractional induction motors in compliance with EN 50347, IEC 63 Standard, 4 holes for M6 screws on dia. 75 mm (Power: 0.18 to 0.25 HP @ 3000rmp) motor dia. 118 mm (three phase and single phase)
- **Dia. 400, 450 and 500 pipes :** bracket for fractional induction motors in compliance with EN 50347, IEC 85 Standard, 4 holes for M6 screws on dia. 85 mm (Power: 0.37 to 0.55 HP @ 3000rmp), motor dia. 139 mm (three phase and single phase)

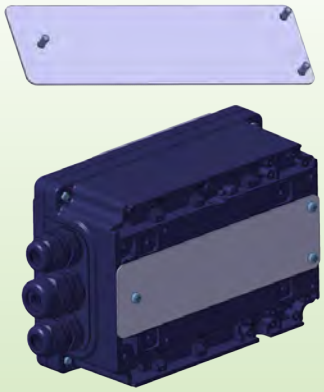
Mounting example



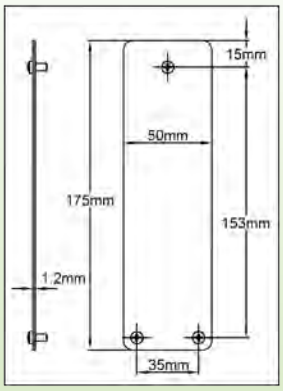
Reference	Pipe diameter
6YEAVD125V	125
6YEAVD160V	160
6YEAVD200V	200
6YEAVD250V	250
6YEAVD315V	315
6YEAVD400V	400
6YEAVD450V	450
6YEAVD500V	500

Other special brackets for customers applications are feasible on demand
Heating elements and fan not included

Mounting kit for flat heating element (flexible or rigid) low temperature



Rear assembly

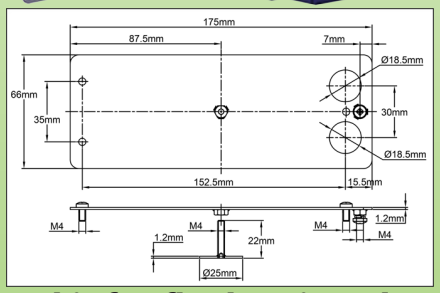


It uses a 180x50mm stainless steel back plate which is mounted at the rear of the Y8 box with 3 screws with the soft surface in sandwich between the back plate and the back of the box.
The 50mm small width enables the flat heating element to keep its flexibility. The wide 180x50mm surface allows a strong fastening on the Y8 backside. It enables an easy access to the rear M20x1.5 inlets of the box for connecting the electric circuit and the temperature sensor.
It is also possible to mount a surface temperature sensor directly on one of the two M20x1.5 inlets (see pages 94 and 102).
The additional thickness of the back surface of the heating element is limited to 1.2mm + thickness of the screw heads used.

Reference	6YECC175050U

Not suitable for surface temperatures above 60°C

Mounting kit for flexible heating element, low temperature, with 25mm thermal insulation

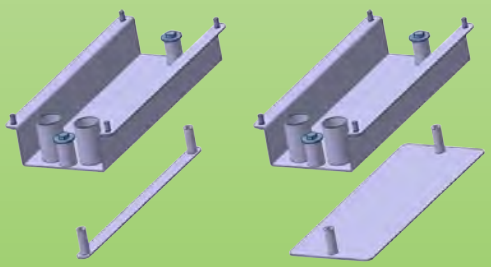


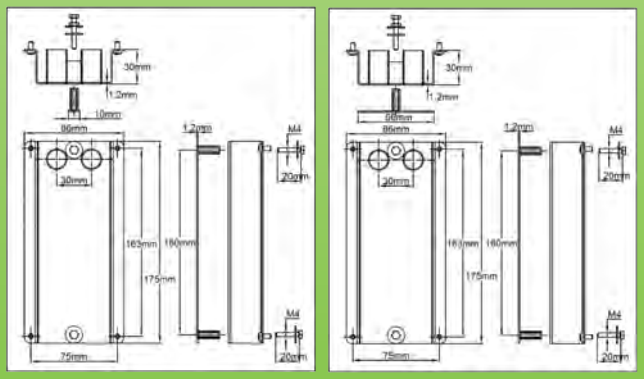
Designed for industrial heating blankets with thermal insulation. It consists of a 180x50mm stainless steel plate mounted at the rear of the Y8 box with the flexible heating surface in sandwich between the back plate and screw with a wide dia. 20mm head maintains the grounding continuity to the wall on which the soft heating element is mounted, while pressing the insulation.
It enables an easy access to the rear M20x1.5 inlets of the box for connecting the electric circuit and the temperature sensor.
It is possible to mount a surface temperature sensor directly on one of the two M20x1.5 inlets (see pages 94 and 102).

Reference	6YECC17505R2

Not suitable for surface temperatures above 60°C.

Mounting kit for flat heating element (flexible or rigid) medium temperature

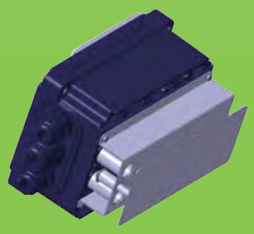




It consists of a stainless steel rear bracket mounted on the back of theY8 box , keeping the heating element 30mm aside from the heating surface, and a 180x50mm stainless steel back plate. The small width of the back plate enables the support to keep its flexibility. The wide 180 mm length allows a strong fastening on the box.
It enables an easy access to the rear M20x1.5 inlets of the box for connecting the electric circuit and the temperature sensor, with through wall lead protection.
Smooth surface with no protruding screw head. Requires only two dia. 8 mm drillings in the heating surface.
Can be mounted on flat heating elements in micanite, silicone, polyester, PVC, NBR, etc, with 1 to 20mm thickness.

Reference	Description
6YECC17508650	50mm width back plate (common applications)
6YECC17508610	10mm width back plate (mounting on small radius bended surfaces)

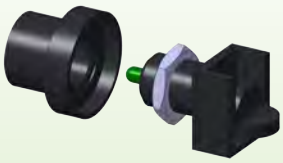
Not suitable for hot surface temperatures above 180°C.

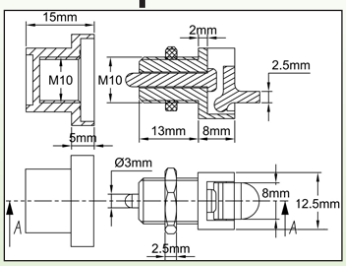


Rear mounting

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Manual reset kit with side push button

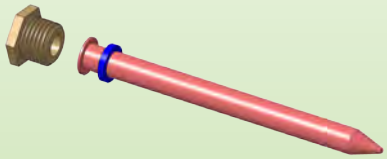


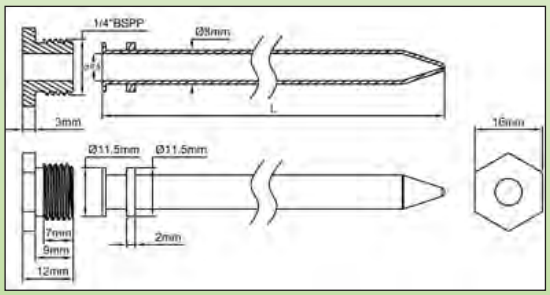


Enables the mounting of a manual reset thermostat on a face, with access to the reset push button by the orthogonal side. Sealed with the protection cap mounted. Access with a tool (EN60335-1 §22-10, §30.1).
Requires a single 10mm drilling in the wall.

Reference	6Y4903RESET90

Seamless pockets

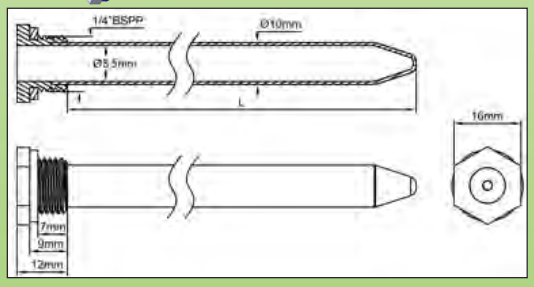




External diameter 8 mm, internal 6.5 mm, with flat seal bearing. Mounting with 1/4'' BSPP brass nut and a flat internal fiber gasket (included).
These cheap pockets (no solder nor brazing between the joint and the tube) are designed for dia. 6mm bulb or sensor insertion.
They are not suitable for the pre-wired thermal cut-offs (see page 130). Putting some thermal compound on the sensors improves the response time. The kit includes: nut, pocket, fiber gasket.

Reference	Length (mm)	Material
66DC14P10008075N	100	Nickel plated copper
66DC14P20008075N	200	Nickel plated copper
66DC14P30008075N	300	Nickel plated copper
66DC14P40008075N	400	Nickel plated copper
66DI14P10008075B	100	Stainless steel 304
66DI14P20008075B	200	Stainless steel 304
66DI14P30008075B	300	Stainless steel 304
66DI14P40008075B	400	Stainless steel 304

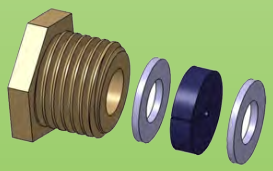
Brazed pockets for dia. 8 mm sensors and probes

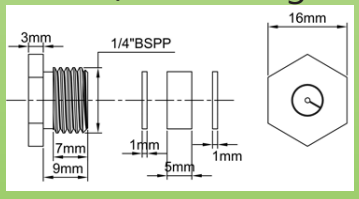


External diameter 10 mm, internal 8.5 mm, with 1/4''BSPP brazed joint and a flat internal fiber gasket (included). Flat seal bearing under the joint hexagon. These pockets are designed for dia. 8 mm bulb, sensor and thermal cutoff insertion. Putting some thermal compound on the sensors improves the response time. The kit includes: pocket, fiber gasket. Stainless steel versions on custom manufacturing only.
Using these pockets requires a 10mm re-drilling of the 8mm holes of the 1/4''BSPP taps in the boxes.

Reference	Length (mm)	Material
66DL14P10010075N	100	Nickel plated copper
66DL14P20010075N	200	Nickel plated copper
66DL14P20010075N	300	Nickel plated copper
66DL14P20010075N	400	Nickel plated copper

Stuffing box 1/4'' BSPP (kit including nut, silicone gasket and washers).

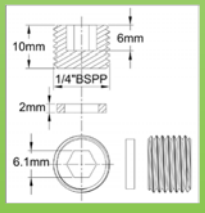




Enables a through-wall mounting of probe cables and capillaries while keeping the sealing.

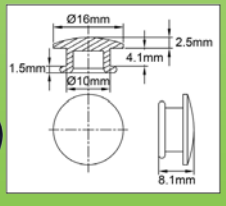
Reference	Gasket and packing diameters
66RA14PK010B	Dia. 1 mm capillary
66RA14PK015B	Dia. 1.5 mm capillary
66RA14PK030B	Dia. 3 mm temperature sensor cable

Caps



This kit includes a cap and a flat fiber gasket. Used to seal the 1/4''BSPP that are not used. Stainless steel 304.

Reference	6YEBI14BK

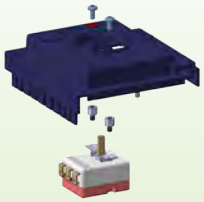


Silicone cap for dia. 10 mm holes. Used to seal the holes dedicated to manual reset thermostats.

Reference	6YEBS10RM

Accessories for electro thermal complementary boxes

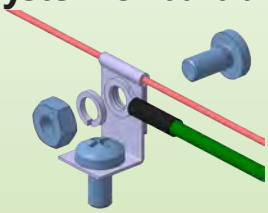
Height adjustment system of bulb and capillary thermostats



Composed of two M4 metal spacers, it allows using thermostats whose shaft is too long without need to shorten it.

Reference	6YEBMG001

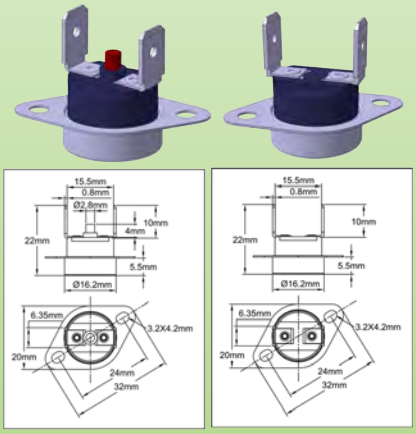
Grounding system of bulb and capillary thermostats



This device allows to connect a ground terminal to a capillary. Insulation sleeve of the capillary must be removed on 10mm. The hole on the side is provided for assembly on a bushing of the mounting boards

Reference	6YEBMG002

Temperature limiters with flange bracket for air heaters and air heating applications



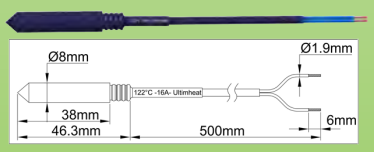
Thermostats with contacts opening on temperature rise, 16A 250VAC rating. The extended flange bracket enables to measure the temperature through the mounting wall and reduce the response time.

Reference	Opening	Closing
4903EJ06010DL6VF	60°C	50°C
4903EJ07010CL6VF	70°C	60°C
4903EJ08010DL6VF	80°C	70°C
4903EJ09010DL6VF	90°C	80°C
4R05EJ110RMDL6VF	110°C	Manual reset
4R05EJ115RMDL6VF	115°C	Manual reset
4R05EJ120RMDL6VF	120 °C	Manual reset

The Ultimheat production range also features 3 poles disc cut-outs with manual reset. The number of involved applications is however restricted when mounted in the boxes, due to their larger dimensions. Contact our Sales Department for more information.
O-ring and screw kit: See page 94

Manual reset cut-outs with fail safe: see page 3

Pre wired thermal fuses, for insertion into pockets with 8.5 mm internal diameter.



Applications: protection against overheating of equipments and heating elements.
Fusible pellet: organic compound.
Mechanism: movable pellet actuated of a spring released by the fusion of the pellet.
Protection: insulating silicone cap, dia. 8mm.

Nominal current rating: 16A 250V
The nominal current rating is the maximum current the fuse can carry without opening or deteriorate when subjected to a temperature known as the "holding temperature" (Tc) for a limited time
Holding temperature (Tc): the fuse must not open or be destroyed when subjected to a temperature equal to Tc-6 °C for a period of 168 hours under nominal voltage and current
Rated functioning temperature (Tf): It is the opening temperature of the fuse in a calibration oven, when subjected to a current less than 10 mA, when temperature rises at a speed of 0.5 to 1 ° C / min. The opening temperature must not be lower than Tm-10 ° C or above Tf under these conditions. This is the operating temperature Tf which is printed on the fuse and the protective sheath external of the leads.
Maximum temperature (Tm): it is the maximum temperature withstood by the fuse after opening without losing its insulating and mechanical properties.
Insulation voltage between open contacts: ≥ 500V
Insulation resistance between open contacts: ≥ 0.2 MΩ @ 500V
Lead lengths: 500 mm.
Leads: FEP 300V primary insulation, 1 mm² gauge (AWG18), in a polyolefin sheath.

In red: standard available temperatures

Reference	Rated functioning temperature °C (Tf)	Holding temperature °C (Th)	Maximum temperature °C (Tm)	Reference	Rated functioning temperature °C (Tf)	Holding temperature °C (Th)	Maximum temperature °C (Tm)
5MA3SPF070F18500	73	45	115	5MA3SPF139F18500	142	114	185
5MA3SPF077F18500	79	52	125	5MA3SPF152F18500	157	127	195
5MA3SPF084F18500	85	57	125	5MA3SPF165F18500	167	130	205
5MA3SPF091F18500	94	66	140	5MA3SPF169F18500	172	145	215
5MA3SPF096F18500	99	71	140	5MA3SPF182F18500	184	156	225
5MA3SPF106F18500	108	77	145	5MA3SPF188F18500	192	164	245
5MA3SPF109F18500	113	84	150	5MA3SPF216F18500	216	189	280
5MA3SPF121F18500	122	94	175	5MA3SPF227F18500	227	190	245
5MA3SPF129F18500	133	101	175	5MA3SPF240F18500	240	190	305

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

Alphabetical list of products by description

Alphabetical list of products by description

Plastic housings and boxes for temperature controls and heating elements

Standard material of the connection boxes: black PA66 fiberglass RAL9005 (14th character = G) or die cast aluminum (14th character = A) epoxy paint RAL7015
Standard material for the room thermostat boxes: PC/ABS fiberglass RAL1010 (14th character = L). References without glands.

30 x 30 x29 mm
66FS030030029G1A

30 x 30 x30 (Octogone)
66FS030030030G1A

48 x 48 x 59 mm
66FS0480480590G1A

Dia 55, H 66 mm
66FSRND055066G1A

Dia 55, H 66mm
66FSRND055066G2A

Dia 55, H 86 mm
66FSRND055086G1A

100 x 50 x 55 mm
66FS10050055G1A

77 x 54 x 42 mm
66FS077054042P7A

77 x 54 x 42 mm
66FS077054042P4A

Dia100, H 100 mm
66FSRND100100G1A

180 x 130 x 78 mm
66FS180130078G2A

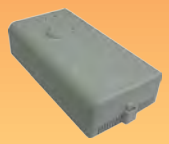
180 x 130 x 78 mm
66FS180130078G3A

180 x 130 x 92 mm
66FS180130092G1A

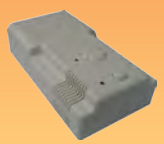
130 x 130 x 150 mm
66FS130130150G1A

200 x 77 x 58 mm
66FS200077058L1C

200 x 77 x 58 mm
66FS200077058L2C

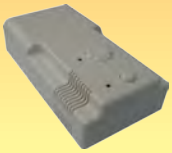


150 x 80 x 37 mm
66FS150080038L1C



150 x 80 x 37 mm
66FS150080038L2C

150 x 80 x 37 mm
66FS150080038L3C



150 x 80 x 37 mm
66FS150080038L4C

115 x 70 x 38 mm
66FS115070038L1C

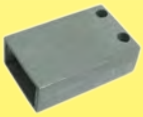
572 x 96 x 64 mm
66FS572096064L1C

573 x 79 x 67 mm
66FS573079067L1C

165 x 85 x 85 mm
66FS160085085G1A

Metal housings

Standard finish of aluminum and alloy housings: epoxy paint RAL7015 (last character of the reference = H). Contact us for other colors or sand finish (1).
Sheet metal housing: epoxy RAL9005 (A)? Contact us for other colors. Stainless steel BA (0)



31 x 19 x 10 mm
66FS031019010Z1H

114 x 30 x 40 mm
66FS114030040V10

Dia 90, H 36mm
66FSRND090036V10

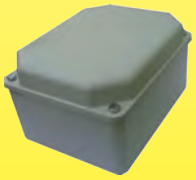
78 x 66 x 50 mm
66FS07806650A1H

100 x 54 x 53 mm
66FS100053054A1H

104 x 70 x 77 mm
66FS104070077A1H

104 x 70 x 82 mm
66FS104077082A1H

78 x78 x74 mm
66FS07607067A1H



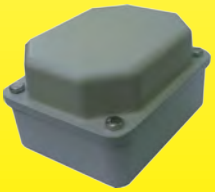
104 x 84 x mm
66FS104084060A1H

115 x 75 x 75 mm
66FS115075075Z1H

105 x 105 x 96 mm
66FS105105096A1H

114 x 89 x 66 mm
66FS114089060A1H

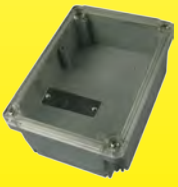
160 x 105 x 90 mm
66FS160105090A1H



159 x 124 x 92 mm
66FS159124092A1H

175 x 86 x 40 mm
66FS175086040A1H

180 x 130 x 78 mm
66FS180130078A1H



180 x 130 x 78 mm
66FS180130078A2H

180 x 130 x 95 mm
66FS180130095A1H

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel: +33(0)1 60046644 Fax: +33(0)1 60048444 E-Mail: info@jpcfrance.fr Web: www.jpcfrance.fr

JPC sas: a complete range for Electrothermics

One, two, three poles bulb and capillary thermostats

One and two poles disc thermostats

Adjustable bimetal thermostats

Rod thermostats

Energy regulators

Ceramic terminal and terminal blocks

Cabling components for heat tracing

Connection boxes for heating elements

Control boxes

Silicone caps for sheathed heating elements

Thermostatic and electronic control boxes

Distribution boxes

JPC sas, 2 voie Gallo Romaine, ZAC de la Bonne Rencontre, 77860 Quincy Voisins, France
Tel : +33(0)1 60046644 Fax : +33(0)1 60048444 E-Mail : info@jpcfrance.fr
Web: www.jpcfrance.fr

NT3ENTSPHJ01A MAJ20120925