ULTIMHEAT

JPC

10

CERAMIC CONNECTION BLOCKS

and Special connectors

The professional solution: an extended, rational, and consistent range of products

Technical catalogue for R&D department

Edition 20/02/2013

JPC

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.

JPC sas- 2 voie Gallo-Romaine - ZAC de la Bonne Rencontre - 77860 Quincy Voisins - France
RCS Meaux 302 236 641 00049 – APE 2651B - FR10 302 236 641

Technical and historical introduction

Ceramic was the first insulating material used in the electrical connection terminals. Mechanically resistant, exceptionally fire resistant, excellent electrical insulator, it had all the qualifications. Produced from locally available raw materials, ceramic and porcelain glazed electro-technical parts were essential in the beginnings of electricity until the appearance of Bakelite in the 1930s, then of engineered thermoplastics to 1960.
Although using inexpensive raw materials, the production process makes it more expensive than plastic moldings.
However, even nowadays, no plastic material has its mechanical, electrical and thermal strengths.
Therefore, in all standards of components and electrical products, ceramic occupies a place apart, and is considered the safest insulating solution. In many applications it is still essential and unrivaled.
In recent years, the international electrical standards have significantly tightened requirements regarding resistance to fire and to tracking of plastics used in the connection terminals, making ceramics more attractive again.
Ultimheat produces its own ceramic parts and engineered plastic connection terminals. This technological knowledge of different production methods allows to choose the most appropriate solution in regards to physical constraints and current regulations of each application.
In ceramic connection blocks, the maximum admissible electrical rating is limited by IEC60998-1, which states that the self-heating of a terminal due to current flowing through it should not exceed 45°C above the ambient temperature.
The maximum permissible electrical terminal temperature, when current flows depends on its raw material (nickel plated brass or stainless steel).
It is therefore necessary, depending on the usual high ambient temperature on ceramic connection blocks, to moderate the maximum electrical rating given by the standard IEC60998-1.
To standardize the different existing standards defining sections of electrical conductors that have coexisted for decades, such as AWG,(also called Brown and Sharp), Birmingham, SWG (British Imperial Standard), Washburn & Moen..., the international IEC60228 standard has defined the following cable sections: 0 .5 mm2, 0.75 mm2, 1 mm2, 1.5 mm2, 2.5 mm2, 4 mm2, 6 mm2, 10 mm2, 16 mm2, etc. .., up to 1000mm ².
Terminal blocks in this catalog therefore refer to these values.

Comparative table of the types of cable termination accepted by the different types of screw terminals

Terminal style	Direct pressure screw	Indirect pressure screw	Plain cage terminals	Self locking cage teminal	Ribbed square washer*	Saddle*	Saddle with anti-shearing saddle*	Fork saddle*
Rigid plain wire								
Stranded wire								
Tin plated wire end								
Cable shoe								
Fork terminal								
Ring terminal								
Advantages	Cheap. Good tightening on rigid conductors	Cheap. Good tightening on rigid and stranded flexible conductors	Small width footprint, as there is no screw inside the wires cavity	Small width footprint, as there is no screw inside the wires cavity. Excellent resistance to vibration and thermal cycling	Allows the use of all cable termination ends. Good visualization of the insertion of the conductors. The ribs gives good resistance to tearing	Allows the use of all cable termination ends. Good visualization of the insertion of the conductors. Poor resistance to tearing	Allows the use of all cable termination ends. Good visualization of the insertion of the conductors. Poor resistance to tearing. Saddle tab avoid conductor shearing	Allows the introduction of conductors by three different sides. Allows the use of all cable termination ends. Good visualization of the insertion of the conductors. Good resistance to tearing
Disadvantages	Poor tightening on flexible conductors. Strands must be twisted to consolidate the end	Introduction of stranded conductors hampered by the pressure plate	Significant risk of poor clamping by wrong introduction of the conductors between the pressure plate and screw. Poor resistance to thermal cycling and vibration. Does not allow all types of cable termination	Significant risk of poor clamping by wrong introduction of the conductors between the pressure plate and screw. Does not allow all types of cable termination	Big width because of the central screw. Risk of wrong tightening of two conductors with big difference in diameter	Very big width because of the central screw and saddle edges. Risk of wrong tightening of two conductors with big difference in diameter Risk of conductor shearing by the edge of the saddle	Very big width because of the central screw and saddle edges. Risk of wrong tightening of two conductors with big difference in diameter	Very big width because of the central screw and saddle edges. Risk of wrong tightening of two conductors with big difference in diameter

* For all these applications, a better resistance to vibration and loosening due to thermal cycles is obtained by interposing a spring washer between the screw head and the saddle

AWG diameters and sections in mm²

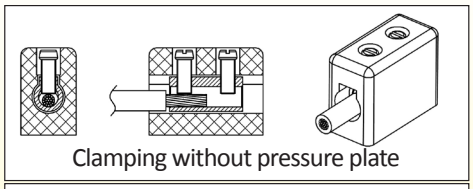
AWG	Diameter (mm)	Section (mm²)	AWG	Diameter (mm)	Section (mm²)	AWG	Diameter (mm)	Section (mm²)
24	0.510	0.205	**17**	1.15	1.04	**10**	2.59	5.26
23	0.575	0.259	**16**	1.29	1.31	**9**	2.9	6.63
22	0.643	0.324	**15**	1.45	1.65	**8**	3.25	8.37
21	0.724	0.411	**14**	1.63	2.08	**7**	3.65	10.55
20	0.813	0.519	**13**	1.83	2.63	**6**	4.1	13.30
19	0.912	0.653	**12**	2.05	3.31	**5**	4.65	16.77
18	1.02	0.823	**11**	2.3	4.17	**4**	5.2	21.15

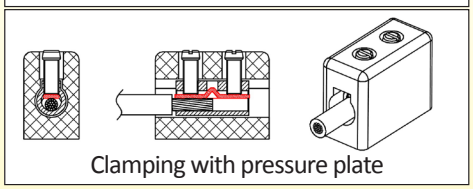
Glazed ceramic connection blocks. Nickel plated connectors

Main features
Ceramic: Ker 110 (feldspar ceramic Si02-Al2O3) glazed 5 sides.
- Bulk density : >2.3 g/cm3
- Water absorption : max 2% (on unglazed side)
- Flexural strength : 80 Mpa/cm²
- Coefficient of thermal expansion : <6 10-6 mm/°C (20-100°C)
- Volume resistivity : >1010 ohms.cm at 100°C
- Dielectric strength : 10 Kv/mm
- Terminal numbering: 1, 2, 3, 4

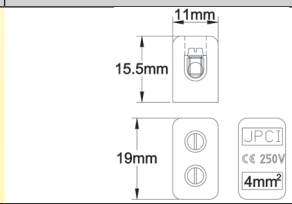
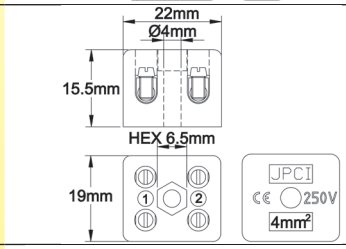
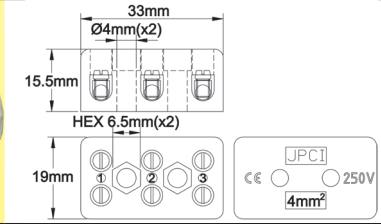
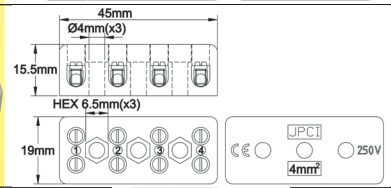
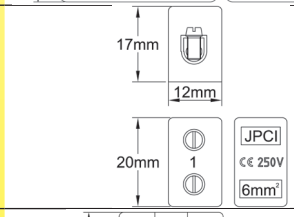
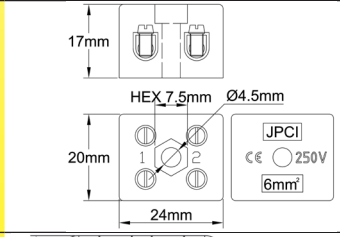
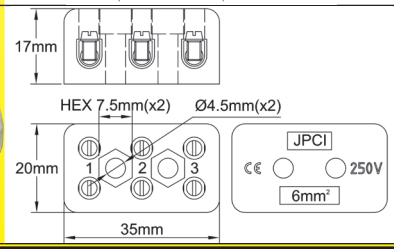
Screws: Nickel plated steel (Sae1045). Clamping with or without pressure plate upon types
Terminals: Nickel plated brass (63.5~68% Cu)
Maximum ambient temperature, as per EN60730-1(§14-1) :
- on ceramic: 425°C (800°F)
- on nickel plated brass connectors: 230°C (445°F)

Voltage: 250V to 400V upon types and sizes
Applicable standards: (IEC)EN 60998-1 and (IEC) EN60998-2-1 (August 1993)


Clamping without pressure plate


Clamping with pressure plate

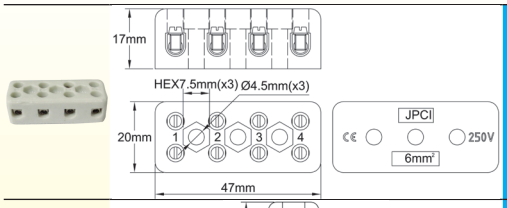
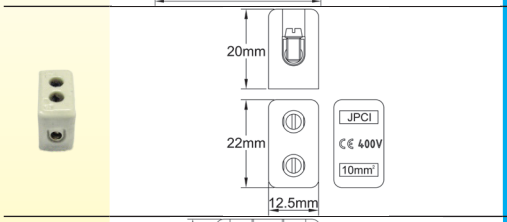
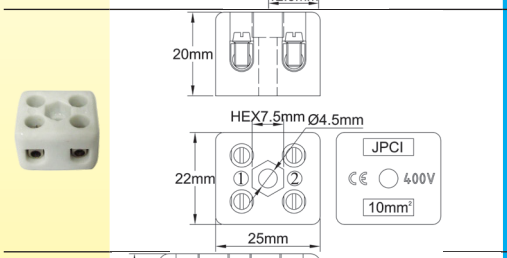
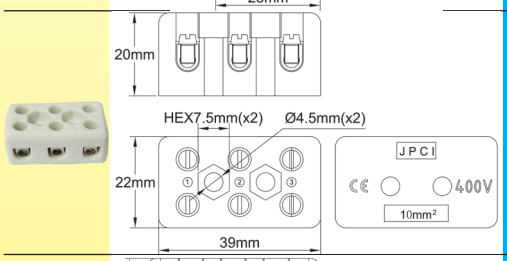
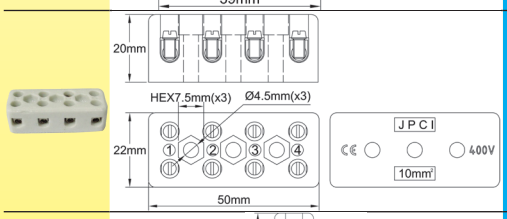
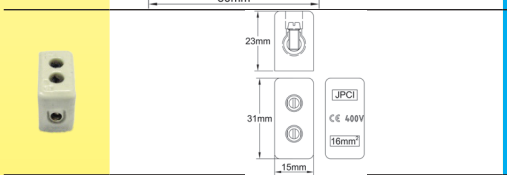
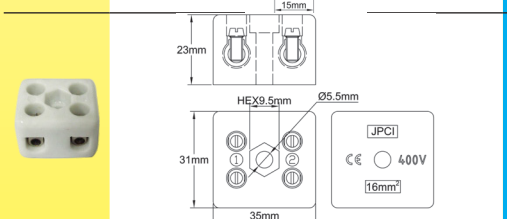
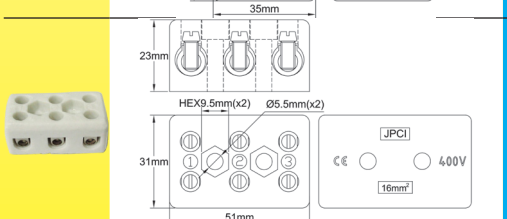
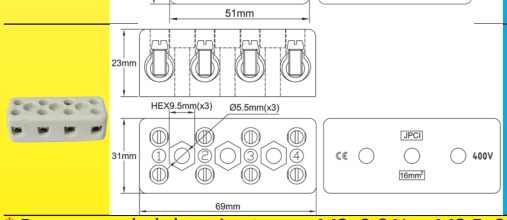
Main references

Picture	Drawing	Ways	Dimensions +/-1mm (mm)	Mounting hole (mm)	Clamping screw*	Connector hole dia. (mm)	Electrical Rating**	Nominal gauge (mm²)	Wires gauge, rigid or flexible (mm²)	Weight	References ***
		1	11x19x15.5	0	M3	3	32	4	1.5; 2.5; 4	7	BV1V1
		2	22x19x15.5	1 x 4.1	M3	3	32	4	1.5; 2.5; 4	13	BV2V2
		3	35x19x15.5	2 x 4.1, distance 11mm	M3	3	32	4	1.5; 2.5; 4	20	BV3V3
		4	45x19x15.5	3 x 4.1, distance 11mm	M3	3	32	4	1.5; 2.5; 4	26	BV4V4
		1	12x20x17	0	M3	3.5	41	6	2.5; 4 (6mm² rigid only)	9	BN1N1
		2	23x20x17	1 x 4.1	M3	3.5	41	6	2.5; 4 (6mm² rigid only)	15	BN2N2
		3	35x20x17	2 x 4.1, distance 12mm	M3	3.5	41	6	2.5; 4 (6mm² rigid only)	25	BN3N3

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

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

Glazed ceramic connection blocks. Nickel plated connectors

	4	47x20x17	3 x 4.1, distance 12 mm	M3	3.5	41	6	2.5; 4 (6mm² rigid only)	33	BN4N4
	1	12x23x20	0	M3.5	4.3	57	10	4 ; 6; (10 mm² rigid only)	13	BP1P1
	2	25x23x20	1 x 4.5	M3.5	4.3	57	10	4 ; 6; (10 mm² rigid only)	26	BP2P2
	3	39x23x20	2 x4.5 distance 13 mm	M3.5	4.3	57	10	4 ; 6; (10 mm² rigid only)	42	BP3P3
	4	52x23x20	3 x4.5 distance 13 mm	M3.5	4.3	57	10	4 ; 6; (10 mm² rigid only)	51	BP4P4
	1	16x31x23	0	M4	5.5	76	16	6 ; 10, (16 mm² rigid only)	27	BQ1Q1
	2	35x31x23	1 x5.5	M4	5.5	76	16	6 ;10 ;16	58	BQ2Q2
	3	51x31x23	2 x 5.5 distance 18 mm	M4	5.5	76	16	6 ;10 ;16	81	BQ3Q3
	4	69x31x23	3x5.5 distance 18 mm	M4	5.5	76	16	6 ; 10 ; 16	103	BQ4Q4

* Recommended clamping torque M3: 0.6 Nm, M3.5: 0.8Nm, M4 : 1.2Nm
** Test current upon IEC60998-1.
*** These ceramic blocs also exist with stainless steel pressure plate, Add « P » behind the reference

High Temperature (500°C) Ceramic Terminal Blocks, with Stainless Steel terminals and screws

These high quality electrical connection blocks allow efficient and easy wiring connections of ovens, infrared heaters, quartz tube heaters in furnaces, kilns, catering equipment.

Main features :

- Designed for increased resistance to permanent high temperature, they can withstand long term temperatures of 900°F (500°C) and 1292°F (700°C) during short time periods.
- The BD type has 4 legs to avoid thermal conduction with the mounting board and a cable bending protection blade on saddles
- Terminal screws are provided with a stainless steel elastic washer to avoid loosening by thermal cycles
- Rating: 32A per terminal

Ceramic: Ker 600 ceramic (high alumina content)

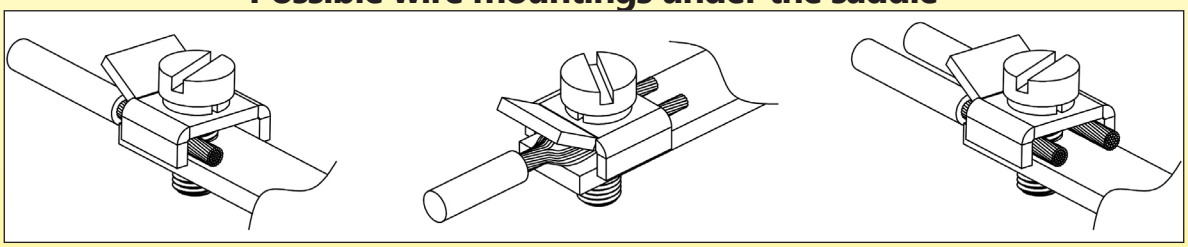
- Bulk density : >3 g/cm3
- Water absorption : 0 %
- Flexural strength : >200 Mpa/cm²
- Coefficient of thermal expansion : <8 10-6 mm/°C(20-100°C)
- Volume resistivity : >1013 ohms.cm at 100°C
- Dielectric strength : 15 Kv/mm
- Terminal numbering: 1, 2, 3

Screws: M4 x8, AISI 304 stainless steel. Maximum torque allowed: 1.2Nm
Saddles and washers: Stainless steel Aisi 304
Terminals: 8 x 2mm Aisi 304 Stainless steel
Max wires gauge (per terminal, wires inserted between saddle and connector plate):

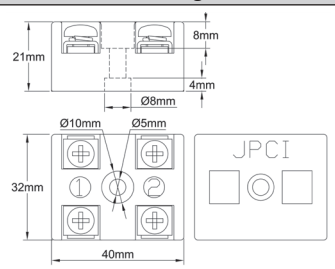
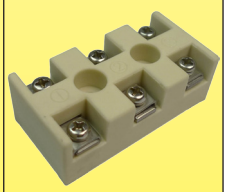
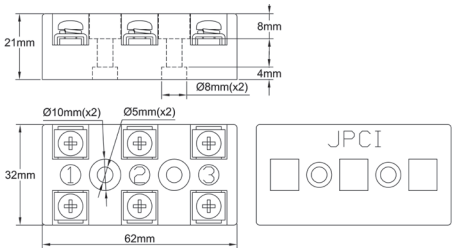
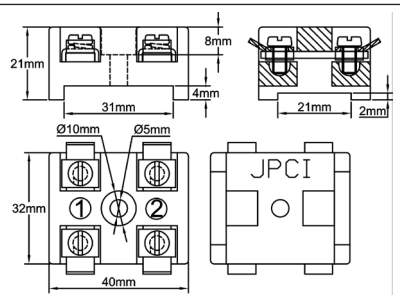
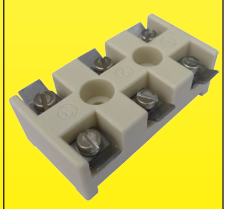
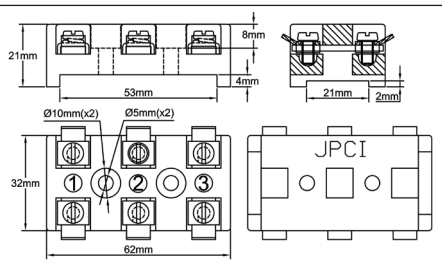
- accepts 1 stranded wire 5.1 mm dia. (max 10mm² or AWG 8) or 2 stranded wires dia 2.9 mm (6mm², AWG 10)
- accepts 2 plain wires, diameter up to 2.2 mm dia (2 x 4mm² or 2 x AWG 12)

Maximum ambient temperature:
long term: 500°C (900°F)
short time: 700°C (1292°F)
Voltage: 750V max (insulation distance >10mm between fixing face and live parts, and >10 mm between phases)
Applicable standards: (IEC)EN 60998-1 and (IEC) EN60998-2-1 (August 1993)
Particular care must be taken while selecting central fixing screw dimensions to avoid reducing insulation distances under values requested by applicable standards.

Possible wire mountings under the saddle

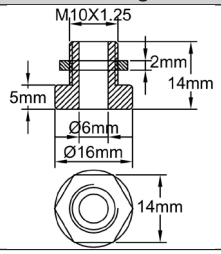
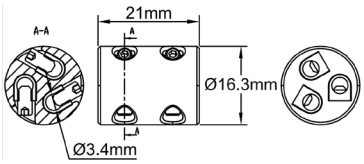
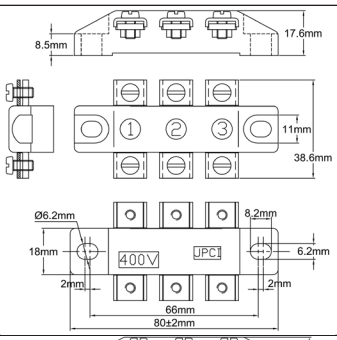
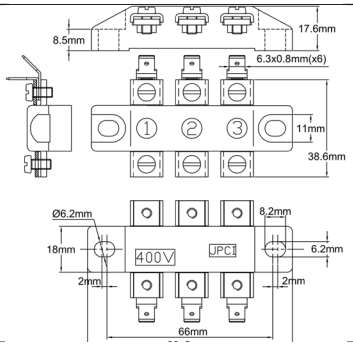
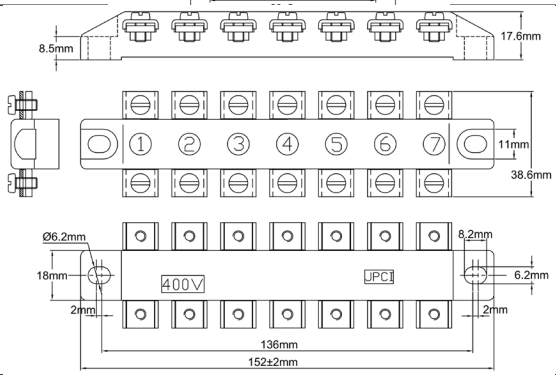
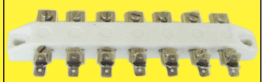
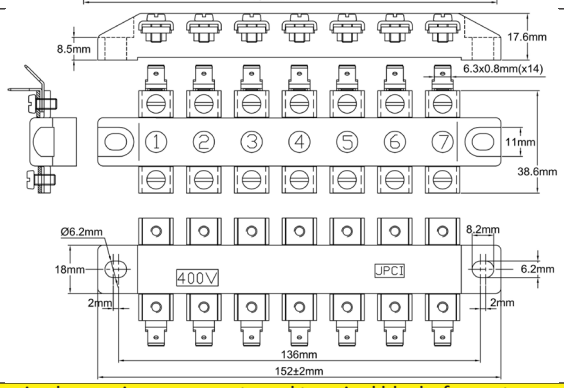


Main references

Picture	Drawing	Ways	Dimensions (+/-1mm)	Fixing	Unit net weight	Reference
		2	40 x 32 x 21 mm	1 x 5 mm for 4mm dia. screws	56 grs (+/-5 grs)	BC2C2
		3	62 x 32 x 21 mm	2 x 5 mm for 4mm dia. screws, distance 22 mm	75 grs (+/-5 grs)	BC3C3
		2	40 x 32 x 21 mm	1 x 5 mm for 4mm dia. screws, 4 legs	56 grs (+/-5 grs)	BD2D2
		3	62 x 32 x 21 mm	2 x 5 mm for 4mm dia. screws, distance 22 mm, 4 legs	75 grs (+/-5 grs)	BD3D3

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

Other parts in ceramic

Picture	Drawing	Description	Weight	Reference
		High temperature ceramic cable grommet for kilns,. Metal nut. Maximum temperature 300°C	5	BEM1021
		3 way ceramic block Ni plated brass M3 screw terminal, without pressure plate, for leads up to 3mm diameter Maximum temperature 230°C	13	BY3Y3
		Ceramic block, 2 x 3 M4 screw terminals Ni plated Brass screws and saddles, for 1.5 to 6 mm² leads Maximum temperature 230°C	80	BR3R3
		Ceramic block, 3 x M4 screw terminals and 2x3 6.35x0.8 tabs, Ni plated Brass screws, tabs and saddles, for 1.5 to 6 mm² leads, maximum temperature 300°C	85	BR3L3
		Ceramic block, 2 x 7 M4 screw terminals, Ni plated Brass and saddles, for 1.5 to 6mm² leads, maximum temperature 300°C	165	BR7R7
		Ceramic block, 7 x M4 screw terminals and 7x2 6.35x0.8 tabs, Ni plated Brass screws, tabs and saddles, for 1.5 to 6 mm² leads, maximum temperature 300°C	170	BR7L7

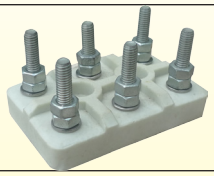
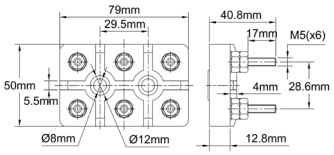
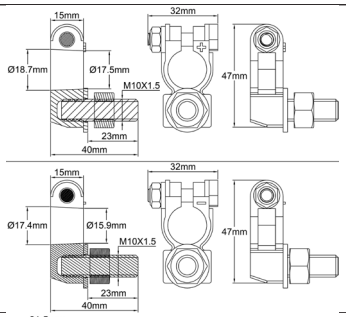
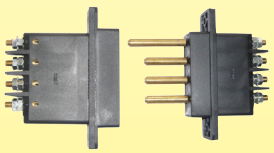
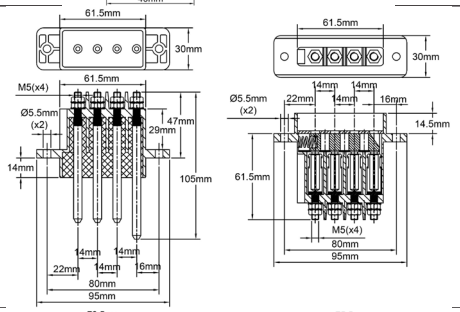
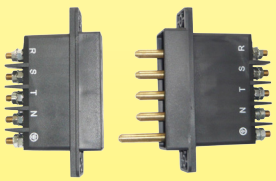
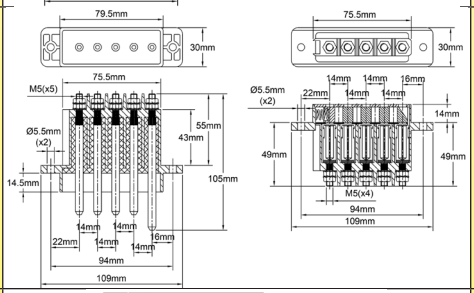
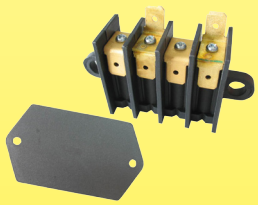
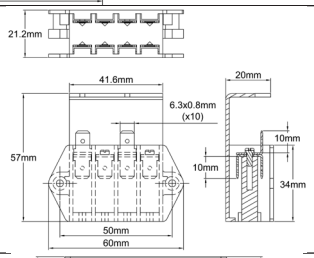
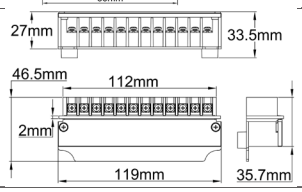
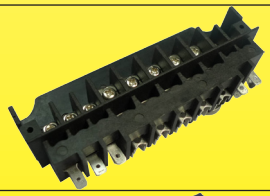
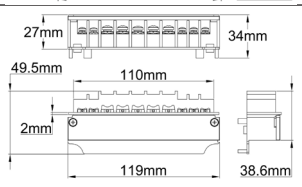
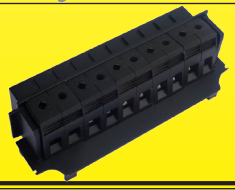
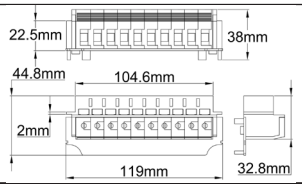
We regularly develop customized ceramic components and terminal blocks for customer electro thermal applications. Contact us if you have a specific

Various plastic connection blocks and connectors

requirement

Although we do not propose standard plastic terminal blocks, we regularly develop some for specific applications. Our vertical integration and our production facilities enable us to optimize the molding, stamping and assembly of any connection device, including applications matching commercial, industrial or military standards and requirements.

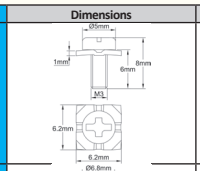
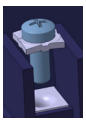
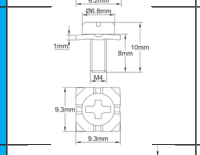
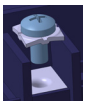
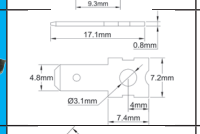
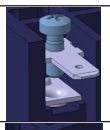
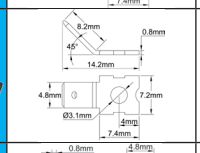
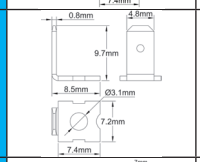
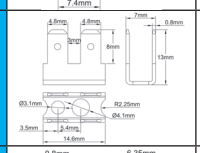
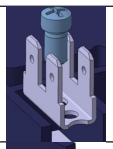
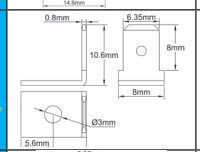
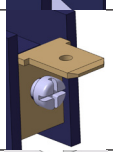
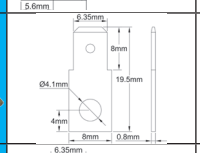
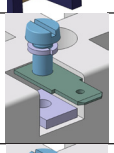
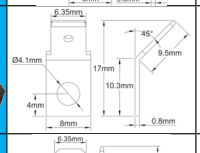
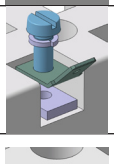
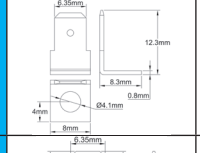
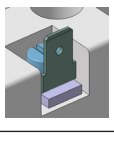
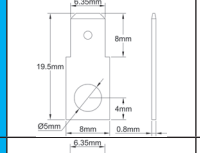
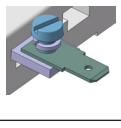
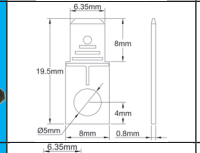
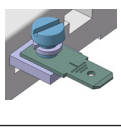
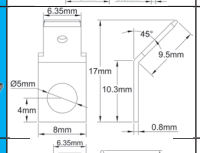
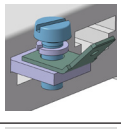
Here are some examples.

		Power terminal for heating elements
		Battery terminals for military vehicles
		4 pole connectors for commercial deep fryer heating elements
		5 pole connectors for commercial deep fryer heating elements
		3 pole connection block for oil convection heater
		12 x 4mm² connection block for temperature control housings
		5x6mm²+5x2.5 mm² connection block for temperature control housing
		10 x 10mm² cage type terminal connection block for temperature control housing

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

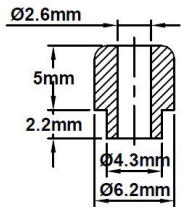
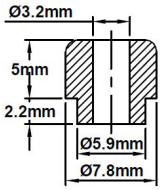
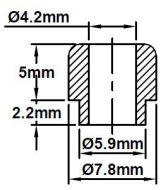
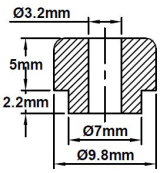
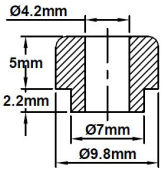
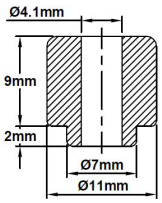
Terminals and saddles used in connection blocks

These parts can be specified in most of connection blocks of this catalogue or be ordered as spare parts

Picture	Dimensions	Assembly	Description	Material	References
			Used on M3 thread	Nickel plated steel	98BVI2E00000106B
			Used on M4 thread	Nickel plated steel	98BVI2E00000105B
			Change M3 screw terminal into 4.8 x 0.8mm tab	Nickel plated brass	98BCO1E00000141B
			Change M3 screw terminal into 4.8 x 0.8mm tab	Nickel plated brass	98BCO1E00000152C
			Change M3 screw terminal into 4.8 x 0.8mm tab	Nickel plated brass	98BCO1E00000152C
			Change M3 or M4 screw terminal into four 4.8 x 0.8mm tabs	Nickel plated steel	98BCO1E00000142D
			Change M3 screw terminal into 6.3 x 0.8mm tab	Brass	98BCO1000ET0001C
			Change M4 screw terminal into 6.3 x 0.8mm tab	Nickel plated steel	98BCO1E00112006B
			Change M4 screw terminal into 6.3 x 0.8mm tab	Nickel plated steel	98BCO1E00112006C
			Change M4 screw terminal into 6.3 x 0.8mm tab	Nickel plated steel	98BCO1E00112006D
			Change M5 screw terminal into 6.3 x 0.8mm tab	Nickel plated steel	98BCO1E00112032B
			Change M5 screw terminal into 6.3 x 0.8mm tab	Nickel plated steel	98BCO1E00112023E
			Change M5 screw terminal into 6.3 x 0.8mm tab	Nickel plated steel	98BCO1E00112033B
			Change M5 screw terminal into 6.3 x 0.8mm tab	Nickel plated steel	98BCO1E00112034B

Picture	Dimensions	Assembly	Description	Material	References
			Change M3 screw terminal into two 6.3 x 0.8mm tab	Brass	98BCO1000ET0002C
			Change M4 screw terminal into two 6.3 x 0.8mm tabs	Nickel plated steel	98BCO1E00000154C
			Change 6.3 x 0.8mm tab into M4 saddle terminal (may need to drill the tab)	Nickel plated brass	98BCO1E00004009D
			Change 6.3 x 0.8mm tab into cage terminal (no need to drill the tab)	Nickel plated brass	98BCO1E00005104B
			M3 screw terminal for riveting on PCB or other board	Tin plated brass	CO1T00SPH002D
			M3 screw terminal with flanges for riveting on PCB or other board	Tin plated brass	98BCO1T00SPH001D
			Saddle for M3.5 screws and 7 width terminal	Tin plated brass	98BCO1T00000136C
			Saddle for M4 screws and 8 width terminal	Stainless steel	98BCO1000112014B
			Saddle for M4 screws and 8 width terminal	Stainless steel	98BCO1000112024B
			Saddle for M4 screws and 10 width terminal	304 Stainless steel	98BCO1000112011B
			6.3 female terminal with hole for M4 screw saddle terminal or printed circuit rivet	Tin plated brass	98BCO1T00SPH003D
			6.3 female terminal with hole for M4 screw saddle terminal or printed circuit rivet	Tin plated brass	98BCO1T00SPH003C
			6.3 female terminal with M4 screw saddle terminal	Tin plated brass	98BSI1TCOSPH003D
			6.3 female terminal with M4 screw saddle terminal	Tin plated brass	98BSI1TCOSPH003C

Ceramic parts used in heating elements

Picture	Dimensions	References
		9BBST3000ELH001A
		9BBST3000ELH002A
		9BBST3000ELH003A
		9BBST3000ELH004A
		9BBST3000ELH005A
		9BBST3000ELH016A

Alphabetical and reference tables

Reference table

Reference	Page	Reference	Page	Reference	Page	Reference	Page	Reference	Page
9BBCO1000112011B	7	9BBCO1E00112006B	7	9BBSI1TCOSPH003D	7	BD3D3	4	BQ3Q3	3
9BBCO1000112014B	7	9BBCO1E00112006C	7	9BBST3000ELH001A	8	BEM1021	5	BQ4Q4	3
9BBCO1000112024B	7	9BBCO1E00112006D	7	9BBST3000ELH002A	8	BN1N1	2	BR3L3	5
9BBCO1000ET0001C	7	9BBCO1E00112023E	7	9BBST3000ELH003A	8	BN2N2	2	BR3R3	5
9BBCO1000ET0002C	7	9BBCO1E00112032B	7	9BBST3000ELH004A	8	BN3N3	2	BR7L7	5
9BBCO1E00000141B	7	9BBCO1E00112033B	7	9BBST3000ELH005A	8	BN4N4	3	BR7R7	5
9BBCO1E00000142D	7	9BBCO1E00112034B	7	9BBST3000ELH016A	8	BP1P1	3	BV1V1	2
9BBCO1E00000152C	7	9BBCO1T00000136C	7	9BBVI2E00000105B	7	BP2P2	3	BV2V2	2
9BBCO1E00000152C	7	9BBCO1T00SPH001D	7	9BBVI2E00000106B	7	BP3P3	3	BV3V3	2
9BBCO1E00000154C	7	9BBCO1T00SPH003C	7	BC2C2	4	BP4P4	3	BV4V4	2
9BBCO1E00004009D	7	9BBCO1T00SPH003D	7	BC3C3	4	BQ1Q1	3	BY3Y3	5
9BBCO1E00005104B	7	9BBSI1TCOSPH003C	7	BD2D2	4	BQ2Q2	3	CO1T00SPH002D	7

Alphabetical table

Description	Page
3 pole connection block for oil convection heater	4
3 way cylindrical ceramic block	4
AWG diameters and sections in mm²	1
AWG,	1
Bakelite	1
Battery terminals for military vehicles	4
Birmingham,	1
Brown and Sharp,	1
Bulk density	2, 3
Cable shoe	1
Catering equipment	3
Ceramic Ker 110	2
Ceramic block, 2 x 3 M4 screw terminals	4
Ceramic parts used in heating elements	8
Ceramic power terminal for heating elements	4
Clamping with pressure plate	2
Clamping without pressure plate	2
Coefficient of thermal expansion	2, 3
Comparative table of the types of cable termination accepted by the different types of screw terminals	1
Connection block for temperature control housings	4
Connector for commercial deep fryers heating elements	4
Dielectric strength	2, 3
Direct pressure screw	1
EN 60730-1(§14-1)	2
EN 60998-1 ; EN60998-2-1	2, 3
Flexural strength	2, 3
Fork saddle	1
Fork terminal	1
Heating elements	3
High Temperature (500°C) Ceramic Terminal Blocks	3
High temperature ceramic cable grommet	4
IEC60228	1
IEC60998-1	1
Iinfrared heaters	3
Indirect pressure screw	1
Insulation distance	2, 3
Ker 600 ceramic	3
Kiln	3
Maximum ambient temperature	2, 3
Ovens	3
Plain cage terminals	1
quartz tube heaters	3
Recommended clamping torque	2
Ribbed square washer	1
Rigid plain wire	1
Ring terminal	1
S.W.G.(British Imperial Standard),	1
Saddle	1
Saddle with anti-shearing saddle	1
Self locking cage terminal	1
Stainless Steel terminals and screws	3
Stranded wire	1
Technical and historical introduction	1
Terminal self heating	1
Terminal style	1
Terminals material	1
Terminals numbering	2, 3
Test current	2
Thermal insulation legs	3
Tin plated wire end	1
Voltage	2, 3
Volume resistivity	2, 3
Washburn & Moen	1
Water absorption	2, 3
Wires mounting under the saddle	3

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

If you are using ceramic terminals on your devices, many components made by Ultimheat for electro-thermal applications, may also be used.

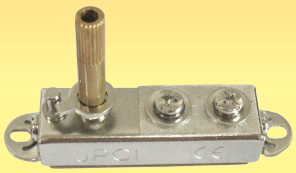
High temperature bulb and capillary thermostat up to 760°C (Catalogue N°1)

Energy regulators (Catalogue N°1)

Immersion heater fittings (Catalogue N°2)

High temperature thermally conductive silicone molded parts (Catalogue N°2)

Heating elements high temperature silicone caps (Catalogue N°2)



High temperature surface mounting thermostat (Catalogue N°1)

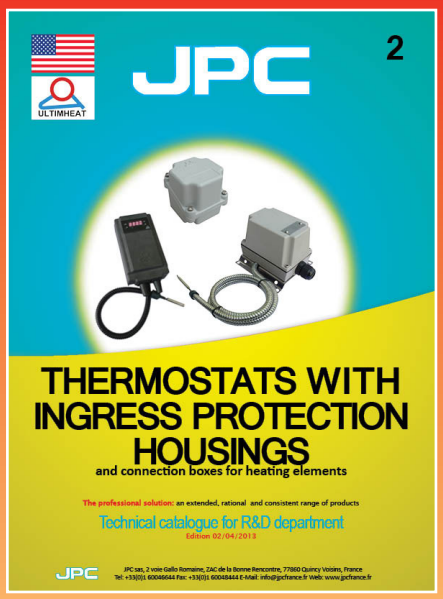
Aluminum die cast heating elements connection boxes (Catalogue N°2)

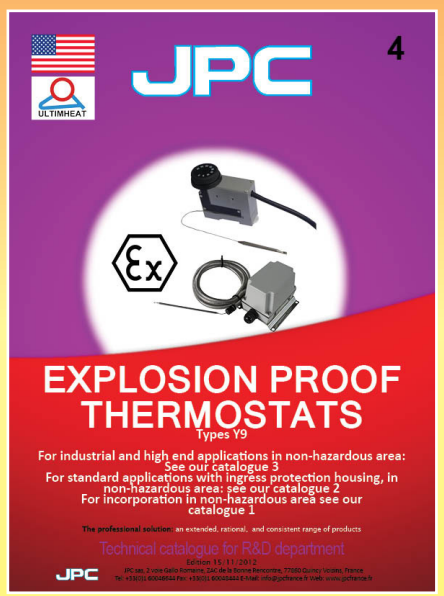
3 poles fail safe manual reset thermostat (Catalogue N°1)

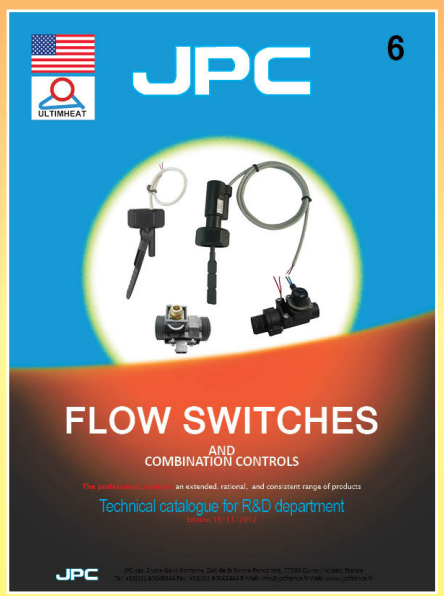
Electronic temperature control boxes (Catalogue N°3)

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

Other catalogues







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

NT3ENTSG10J2A MAJ20130220