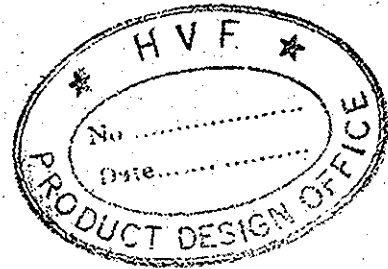


72  
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CONNECTORS OF TYPES 2PM, 2PMA

SPECIFICATIONS

Г EO.364.126 TY

(EXTRACT)

15

2

Translated by	Authenticated by	ARMORED VEHICLE PROJECT AVADI
INSDOC	BYKOVA	
Date	Checked by	SPECIFICATION NO: Г EO.364.126 TY
	<i>[Signature]</i>	
		Page No: 1 of 15
		Approved: <i>[Signature]</i>

These specifications are applicable to low-frequency, low-voltage cylindrical types of connectors 2PM and 2PM<sup>P</sup>Δ, with silver contacts intended for operation in DC or AC electrical circuits with frequency up to 3 MHz at current loads and voltages mentioned in the appendix.

1. Classification, Conventional designation

1.1. Conventional designations (code numbers) are ~~allocated~~<sup>assigned</sup> ~~to~~ for plugs and sockets of connectors, which consist of the following classification symbols: ~~features:~~

Key: 1. Type of connector ~~(plug-joint)~~<sup>Tropicalized</sup>, 2. Tropical resistance, 3. ~~Tentative~~<sup>Conventional</sup> diameter of body, 4. Type of body: ~~block~~<sup>device-mounted</sup> (instrument<sup>al</sup> ~~at~~) type-B, cable ~~type-K~~<sup>mounted</sup>, 5. Type of sleeve: straight-"I", angular-"y", 6. Type of sleeve nut: for shielded cable-">", unshielded-H, 7. Number of ~~contacts~~<sup>contacts</sup>, 8. Part of connector: plug-U, socket-Γ, 9. combination of ~~sets~~<sup>contacts</sup>, ~~tentative~~<sup>Conventional</sup> number: if all contacts ~~are~~<sup>have</sup>  $\phi 1$  then the number will be 1; if  $\phi 1$  and  $\phi 1.5$  then 2;  $\phi 2$  and  $\phi 3$  then 3; if  $\phi 1$  and  $\phi 3$  then 4; if  $\phi 1.5$  then 5; if  $\phi 1.5$  and  $\phi 3$  then 6; if  $\phi 1.5$ ,  $\phi 2$  and  $\phi 3$  then 7; if  $\phi 1.5$  and  $\phi 2$  then  $\phi 3$ ; if  $\phi 3$  then 9; 10. Type of coating: silver-B, 11. Heat resistance +100°C.

1.2. Connectors are ~~manufactured~~<sup>as</sup> ~~for~~ two climatic ~~systems~~<sup>variants</sup>: all-weather and for operation in regions with moderate and cold ~~weather~~<sup>climate</sup>.

1.3. The designation of plugs and sockets of connectors to be mentioned in the order and design documents should contain

ГЕО. 364.126 ТУ.

word "plug" or "socket" as well as the conventional designation of the <sup>standard</sup> ~~type of~~ design and the <sup>designation</sup> ~~description~~ of these specifications.

Example of designation:

plug 2PM 18 K ~~137~~ <sup>1</sup> BL TEO 364.126.TY

2. Basic technical <sup>requirements</sup> specifications and characteristics

2.1. Overall, installation and connection dimensions as well as the general <sup>appearance</sup> ~~view~~ of connectors (plugs, sockets) should be in conformity with Appendix 1.

2.2. Diagrams showing the arrangement of contacts in insulators, number of contacts and their diameters are given in Appendix 2.

2.3. <sup>Disconnecting</sup> ~~Disjointing~~ forces of connectors should not be more than the values mentioned in Appendix 2.

Thread and rubbing parts of jointing nut of connectors should be lubricated with grease.

2.4 End tails of contacts may be jointed with wires of cross sections, the values of which are mentioned in table:

Diameter of contacts in mm.	<sup>1.0</sup> <del>1.0</del>	1.5	2.0	3.0
Maximum cross-section of wires for connectors 2PM in $mm^2$	0.5	1.0	1.5	6
Maximum cross-section of wires for connectors 2PM <sub>1</sub> in $mm^2$	-	1.0	2.5	10

2.5. Jointing of wires to end tails of contacts is done by soldering.

TEO.364.126TY

2.6. The design of connectors has one ~~directional~~ <sup>spline</sup> key.

2.6.1. The parameters of connectors should conform to the following ~~standards~~:

~~Disjointing~~ <sup>disconnection</sup> forces of ~~plug-in~~ sockets should not be less than the values mentioned in the table:

Diameter of contacts in mm.	1	1.5	2	3
<del>Disjointing</del> <sup>Disconnection</sup> force of sockets	0.5	0.7	1.0	1.47
in <del>N</del> <sup>M</sup> (kgf)	(0.05)	(0.07)	(1.0)	(0.15)

~~Disjointing~~ <sup>Disconnection</sup> forces of connectors should not be more than 110% of standard values mentioned in Appendix 2.

2.7. During the period of ~~preservation~~ <sup>storage</sup> it is ~~permissible~~ <sup>the appearance</sup> ~~in these contacts to develop~~ <sup>of</sup> dark spots and ~~patches~~ <sup>points and on the contacts</sup> as also

<sup>also</sup> change ~~in the~~ <sup>of</sup> colour of coating and paint on the components which do not result in the deterioration of efficiency of the connectors <sup>are allowed.</sup>

2.8. Electrical parameters.

2.8.1. Resistance ~~of contacts~~ should not be more than the values mentioned in table:

Diameter of contacts in mm	Resistance of contacts in Mohm	
	A I. B I	II
1.0	5	5
1.5	2.5	3.5
<del>2.0</del>	1.6	2.5
3	0.8	1.5

ГЕО. 364.126TY

4

2.8.2. Capacitance - not<sup>1</sup> more than 6 pF.

2.8.3. Insulation resistance between any pairs of contacts as well as between the metallic body and any pair of contacts, under <sup>normal</sup> standard climatic conditions, should not be less than:

1000 M-ohm-for operational<sup>ng</sup> voltages up to 100V

5000 M-ohm-for operational<sup>ng</sup> voltages from 100 to <sup>1</sup>1000V

10000 M-ohm-for operational<sup>ng</sup> voltages above 1000V.

2.8.4. The minimum current is  $1 \times 10^{-4}$  mA and the minimum voltage is 1 mV.

2.8.5. The maximum total current load on <sup>DAC</sup> ~~the~~ connector should not be more than the values mentioned in Appendix 2.

In this case, the overheating temperature of contacts should not exceed 50°C.

2.8.6. The maximum operational<sup>a single</sup> current on ~~singular~~ contact should not be more than the values mentioned in Appendix 2.

2.9. Resistance under mechanical effects will be:  
~~for:~~

- vibrations in the frequency range from <sup>1</sup>/<sub>2</sub> to 5000 Hz with acceleration of not more than 490 m/sec<sup>2</sup> (50 g);

- <sup>multiple</sup> ~~repeated~~ impacts with acceleration of not more than 981 m/sec<sup>2</sup> (100 g);

- <sup>single</sup> ~~singular~~ impacts with acceleration of not more than 4905 m/sec<sup>2</sup> (500 g);

- linear (centrifugal) loads with acceleration of not more than 1962 m/sec<sup>2</sup> (200 g);

- acoustic noises of level <sup>not</sup> exceeding 170 decibels.

PEO. 364. 126 TY.

2.10. Resistance to weather effects:

- ambient temperature from -60 to +100°C;
- relative humidity up to 98% at temperature 25°C for 2PM, 2PMA connectors;
- atmospheric pressure from 107200 to  $133.32 \times 10^{12}$  Pa (from 800 to  $10^{-12}$  mm<sub>mm</sub> mercury column);
- excess pressure up to 506616 Pa (50 kgf/cm<sup>2</sup>);
- temperature variation from -60<sup>to</sup>+180°C for connectors with silver contacts (overheating temperature of contacts is taken into account).

2.11. The minimum operating <sup>time</sup> period of connectors is 1000 hours.

During the above mentioned period the connectors should withstand 500 connections-disconnections.

2.12. <sup>Storage time</sup> ~~Preservation period~~ is 12 years.

3. Storage

3.11. The <sup>storage</sup> ~~preservation~~ period of connectors in supplier's package: 9 years <sup>when</sup> ~~on~~ storing in unheated stores, 3 years under a shed.

It is prohibited to store <sup>out of doors</sup> ~~on open platform~~

4. Guarantee

4.1. The supplier guarantees the conformity of each connector with all requirements of specifications during the <sup>storage</sup> ~~preservation~~ period (p.2.12) <sup>or minimum operating time (p.2.11)</sup> ~~within the limited of~~ <sup>provided</sup> ~~variation period~~ while the user ~~should~~ follow the operating <sup>no</sup> ~~parameters and specifications.~~ <sup>conditions.</sup>

ГЕО. 364.126TY.

Appendix 1

device-mounted  
Plug, ~~instrumental (block) part~~

2PM 18 5 7 W1

Key: 1. Fig. 1, 2. 4 Holes dia. 3.4, 3. Weight 12.5 g,  
sleeve number-8 (see figure 2).

Straight sleeves with shielded nuts (П)

Key: 1. Fig. 2, 2. Sleeve No., 3. Dimensions, 4. Weight  
of sleeve in grams, not more than.

Angular sleeves with shielded nuts (У)

Key: 1. Fig. 3, 2. Sleeve No., 3. Dimensions in mm, 4. Weight  
of sleeve in grams, not more than.

Plugs and sockets, cable type-mounted

Key: 1. Fig. 4, 2. D left, 3. Design variant, 4. Dimensions in  
mm, 5. Sleeve No. according to Fig. 2 and 3, 6. Weight  
in grams, not more than.

Appendix 2

Conventional

Key: 1. ~~Tentative~~ size of body, 2. Diagrams showing the arrangement of contacts in insulators\*, 3. conventional designation of contacts, 4. Diameter of contacts in mm, 5. Number of contacts in pieces, 6. Combination number of contacts, 7. Number of contacts for the measurement of overheating temperature, 8. Maximum current load in Amp., 9. on ~~singular~~ <sup>single</sup> contact, 10. total load on the connector, 11. Maximum DC voltage of ~~amplitude~~ <sup>peak</sup> value of AC voltage in Volts, 12. operational <sup>ag</sup> ~~value~~ <sup>voltage</sup>, 13. ~~final~~ <sup>test</sup> ~~value~~ <sup>voltage</sup>, 14. in ~~standard~~ <sup>normal</sup> climatic conditions, 15. at the pressure of 399.96 Pa

ГЕО.364.126TY.

(3 mm. mercury column), 16. <sup>Disconnection</sup> ~~Disjoining~~ force of connectors  
in N (Kgf), not more than <sup>\*</sup>17. Note: conventional  
numbering of contacts is given from the side of plug  
mounting part.

ГЕО. 364. 126 ТУ.

8



# 1. CLASSIFICATION, CONVENTIONAL DESIGNATION.

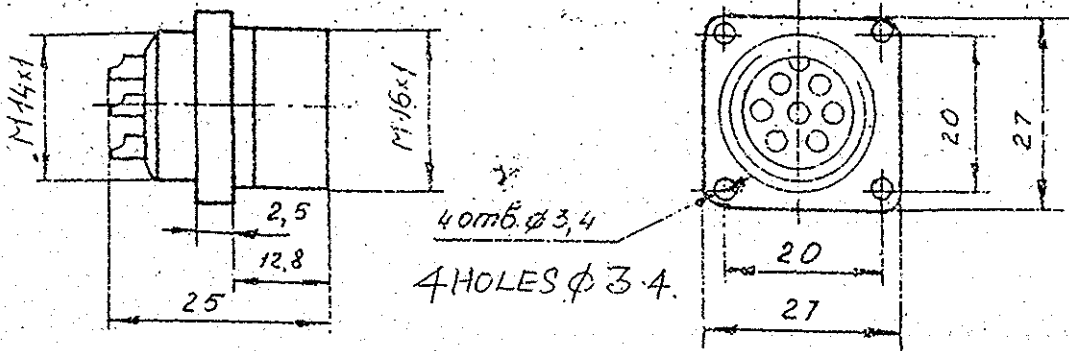
1. CONVENTIONAL DESIGNATIONS (CODE NUMBERS) ARE ASSIGNED TO PLUGS AND SOCKETS OF CONNECTORS, WHICH CONSIST OF THE FOLLOWING CLASSIFICATION FEATURES:

2PM 4 22 K П H 10 Г I A I

TYPE OF CONNECTOR										
TROPICALIZED										
CONVENTIONAL DIAMETER OF BODY										
TYPE OF BODY: DEVICE MOUNTED INSTRUMENTAL TYPE - B. CABLE MOUNTED TYPE - K										
TYPE OF SLEEVE: STRAIGHT - П. PLUG - H. ANGULAR - Y										
TYPE OF SLEEVE NUT: FOR SHIELDED CABLE - Э. UNSHIELDED - H										
NUMBER OF CONTACTS										
PART OF CONNECTOR: PLUG - П. SOCKET - Г										
COMBINATION OF CONTACTS CONVENTIONAL NUMBER: IF ALL CONTACTS HAVE $\phi 1$ THEN THE NUMBER WILL BE 1. IF $\phi 1$ AND $\phi 1.5$ THEN 2; 02 AND $\phi 3$ THEN 3; IF $\phi 1$ AND $\phi 3$ THEN 4; IF $\phi 1.5$ THEN 5. IF $\phi 1.5$ AND $\phi 3$ THEN 6; IF $\phi 1.5$ , $\phi 2$ AND $\phi 6$ THEN 7; IF $\phi 1.5$ AND $\phi 2$ THEN 3. IF $\phi 3$ THEN 9;										
TYPE OF COATING: SILVER - B										
HEAT RESISTANCE +100°C										

PLUG, DEVICE-MOUNTED 2PM18Б7Ц1

Вилка приборная (блочная)  
2PM18Б7Ц1



WEIGHT 12.5G, SLEEVE NUMBER - 8 (SEE FIGURE-2)  
Масса - 12,5 г, номер патрубков - 8 (смотри рис 2)

Рис. 1

FIG: 1.

Патрубки прямые с экранированными  
гойками (ПЭ).

STRAIGHT SLEEVES WITH SHIELDED NUTS (PE)

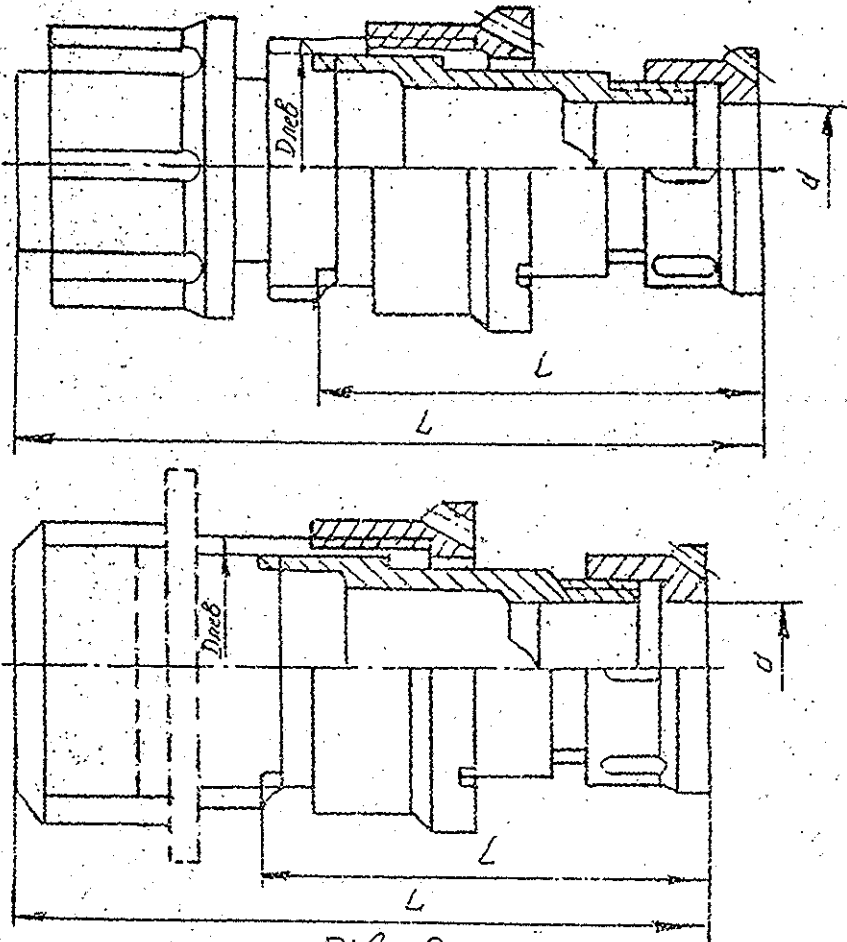


FIG. 2  
Рис. 2

WEIGHT OF SLEEVES IN  
GRAMS, NOT MORE THAN

SLEEVE NO.

Номер патрубка	DIMENSIONS, MM. РАЗМЕРЫ, ММ				Масса патрубка, г, не более
	D	d	L <sub>max</sub>	L <sub>max</sub>	
1	M14x1	6,5	28,7	48	8,0
2	M18x1	10,5			10,5
3	M22x1	14			13,5
4	M24x1	16	34,7	54	16,0
5	M27x1	18			19,0
6	M30x1	19			25,5
7	M33x1	23			26,0
8	M36x1				28,5
9	M39x1	24	39,7	59	33,5
10	M42x1	29			37,0
11	M45x1				37,0

ГЕО. 364. 126 ТУ

Патрубки целовые с экранированными <sup>Продолжение приложения 1.</sup>

гоукому (УЭ)

ANGULAR SLEEVES WITH SHIELDED NUTS (УЭ)

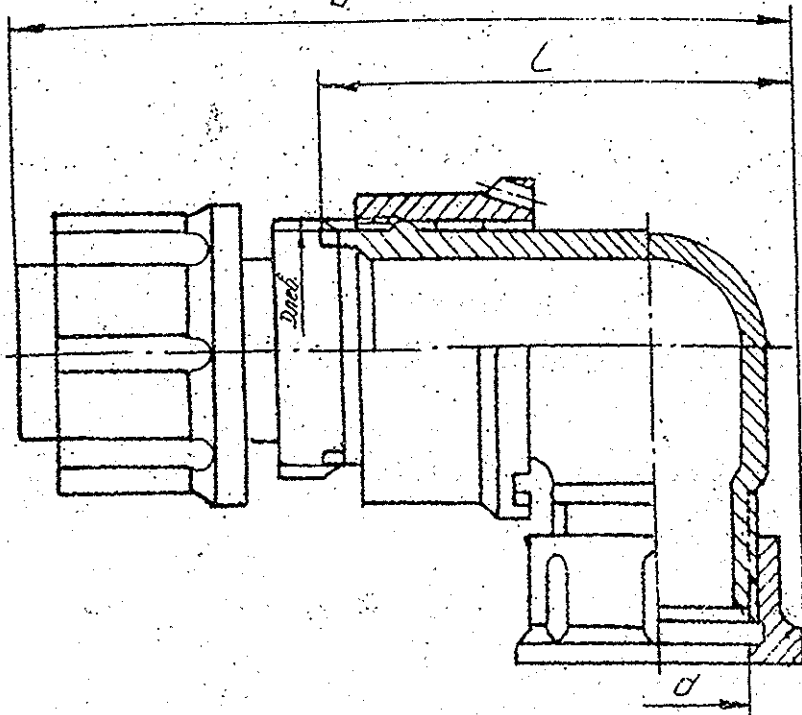


Рис. 3  
FIG. 3.

WEIGHT OF SLEEVE IN  
GRAMS, NOT MORE THAN.

SLEEVE NO.

Номер патрубка	DIMENSIONS, MM Размеры, мм				Масса патрубка, г, не более
	D	d	L <sub>max</sub>	L <sub>max</sub>	
23	M14x1	6,5	31	48,5	9,5
24	M18x1	10,5	34	51	13,0
25	M22x1	14	41	55,3	18,5
26	M24x1	16	43	57,6	21,0
27	M27x1	18	46	59,6	26,0
28	M30x1	19	48	61,6	27,0
29	M33x1	23	53	64,6	35,5
30	M36x1		50	64,6	36,0
31	M39x1	24	53	67,6	37,0
32	M42x1	29	58	74,6	53,5

ГЕО. 364. 126ТУ

12

Вилки и розетки кабельные  
PLUGS AND SOCKETS, CABLE MOUNTED

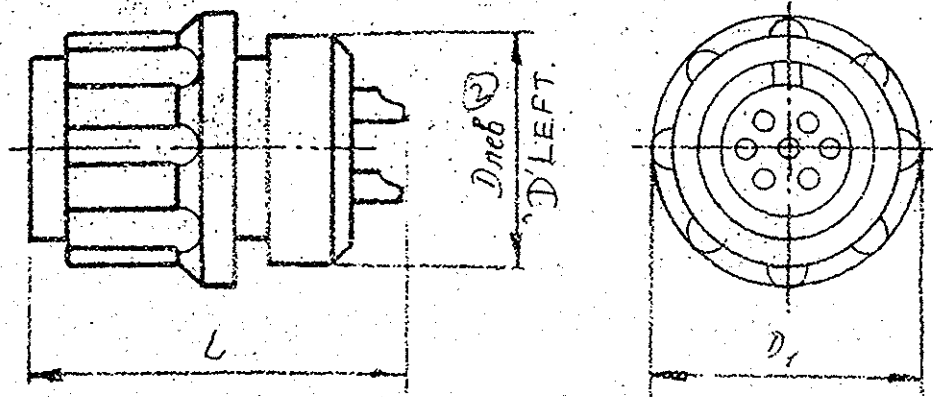


Рис. 4.  
Fig: 4.

DESIGN VARIANT Конструктивная разновидность	DIMENSIONS IN MM. (D) размеры, мм			SLEEVE END ACCORDING TO FIGURE 3 (S) диаметр патрубка согласно рис. 2 и 3	WEIGHT IN GRAMS, NOT MORE THAN (G) масса, г не более
	D	D <sub>1</sub>	L <sub>max</sub>		
PM18K7Г1 А1, В1, П1	M18x1	25	25	3,21	16,5
PM18K4Г5 В1					
M27K24Г1 В1	M27x1	35	25	5,27	36,0
PM27K19Г5 В1					
PM36K20Г6 В1	M36x1	45	27	8,30	57,0
PM42K45Г5 В1	M42x1	51	25	10	84,0

APPENDIX - 2

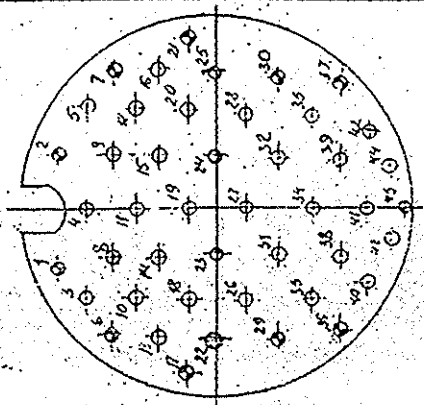
AT THE PRESSURE ⊕  
OF 399.96 Pa  
(3 mm mercury column)

CONVENTIONAL SIZE OF BODY.	DIAGRAMS SHOWING THE ARRANGEMENT OF CONTACTS IN INSULATORS	CONVENTIONAL DESIGNATION OF CONTACTS.	DIAMETER OF CONTACTS IN-MM.	NUMBER OF CONTACTS IN PIECES.	COMBINATION NUMBER OF CONTACTS.	NUMBER OF CONTACTS FOR THE MEASUREMENT OF OVERHEATING.	MAXIMUM CURRENT LOAD IN A.M.P.		OPERATING VOLTAGE	MAXIMUM DC VOLTAGE OR PEAK VALUE OF A.C. VOLTAGE IN VOLTS.		DISCONNECTION FORCE OF CONNECTORS IN N (kgf) NOT MORE THAN.
							ON SINGLE CONTACT	TOTAL LOAD ON THE CONNECTOR		VOLTAGE IN NORMAL CLIMATIC CONDITIONS ⊕	TEST VOLTAGE ⊕	
18		⊕	1.0	7	1	4	7	40	560	1850	350	88.3 (15) 58.9 (16)
21		⊕	1.0	24	1	12 (13)	5	100	560	1850	350	196.2 (20) 177.5 (18)
21		⊕	1.5	19	5	10	7	110	560	1850	350	196.2 (20)

FEO. 364.126TY

14

DISCONNECTOR FORCE OF CONTACTORS IN MORE THAN AT THE PRESSURE OF 399.99. D2

CONVENTIONAL SIZE OF BODY	DIAGRAMS SHOWING THE ARRANGEMENT OF CONTACTS IN INSULATORS	CONVENTIONAL DESIGNATION OF CONTACTS	DIAMETER OF CONTACTS IN MM	NUMBER OF CONTACTS IN PIECES	COMBINATION OF CONTACTS	NUMBER OF CONTACTS FOR THE MEASUREMENT OF OVERHEATING	MAXIMUM CURRENT LOAD IN AMP		OPERATING VOLTAGE	MAXIMUM DC VOLTAGE OR PEAK VALUE OF AC VOLTAGE IN VOLTS	
							ON SINGLE CONTACT CONNECTOR	TOTAL LOAD ON THE CONNECTOR		IN NORMAL CLIMATIC CONDITIONS	TEST VOLTAGE
42		Φ	1,5	35	5	191	5	187	560	1850	350
		Φ	1,5	10		231			700	2300	450

343,3  
(35)

\*Примечание: условная нумерация контактов дана со стороны монтажной части блока.

NOTE: CONVENTIONAL NUMBERING OF CONTACTS IS GIVEN FROM THE SIDE OF PLUG MOUNTING PART