PYR:TS11
2/98

PLUG AND SOCKET CONNECTORS OF 2 RMDT TYPE

Technical Specification

Cylindrical plug and socket connectors of 2RMDT type are designed for use in electric circuits of AC or DC current and frequency up to 3 MHertz.

A type of 2RMDT connects that come in metal casings made of AL-22 alloy are designed for connecting and disconnecting long electric circuits in electrical, radio and electronic devices. They are designed for AC and DC electric circuits with frequency up to 2000 Hertz, maximum voltage from 200 to 500 Volts and maximum current from 5 to 60 ampere under conditions of tropical climate.

A connector consists of two elements - a plug and a socket.

The plug - is an element of the connector with a contact pin. The socket - is an element of the connector with a contact housing. The plug/socket can be either an unitized part of the connector with a flange, or a cable part with a union nut. Fitting diameter of the casing of the plug or socket can be 18, 24, 27, 30 or 33 mm.

Main Technical Parameters:

Operation voltage (amplitude value)	560; 700 V
Maximum current loading per single contact	4-36 ampere
Contact resistance, not more than	5×10^{-3} Ohm
Minimum operation time for 500 joints-disjoints	1000 hours
Temperature range of use (for connectors with insulators made of AG-4 moulding material)	from -60 °C to +100°C
Humidity at +40 °C	up to 98 %
Atmospheric pressure	from 5 atm down to vacuum
Aggressive environment:	Connectors withstand exposure to solar radiation, sea fog, dust, water spray and fungus-forming environment
Vibration	Acceleration up to 30 g in the frequency range from 5 to 2500 Hertz

Shock Resistance	Acceleration up to 35 g
Linear Loading	Acceleration up to 200 g
Shelf Life	15 years

Other Technical Characteristics

1. Nominal current loading per contact and nominal voltage versus atmospheric pressure

Number of diagram	Group of contacts	Allowed current per contact, A	Voltage (V) at atmospheric pressure (mm Hg)					
			from 38 10^2 to 600	from 600 to 350	41	15	5	<5
1	1-4	15	400	350	300	250	200	200

Voltage values refer to the frequency of 2000 Hertz and temperature + 100 °C.

Should connectors be used at other temperatures the above values should be multiplied by a temperature coefficient $\alpha = 0.8$, except for voltages 200 and 250 volts at atmospheric pressure 15, 5 and less than 5 mm Hg that remain the same in all cases.

2. Transient resistance of the contact pair (pin-housing) under normal climatic conditions and after exposure to humidity of 98 % and temperature of +40 °C is:

for 1.5 mm diameter of the contact	not more than 0.0025 Ohm

3. Transient resistance of each joint in the assembled connector — not more than 0.002 Ohm

4. Resistance of the insulation between any adjacent contact pairs and between the casing of the assembled connector and any adjacent contact pair:

under normal climatic conditions	not less than 1000 MOhm
at maximum positive temperature	not less than 20 MOhm
under humidity of 98 % and temperature + 40 °C	not less than 20 MOhm

5. Experimental voltage (AC current, frequency 50 Hertz)

Number of diagram	Group of contacts	Voltage (V) at atmospheric pressure (mm Hg)				
		760 at temperature, °C +100/+200	350	41	15	5 and less
1	1-4	1050/1300	800	475	375	250

Voltage at 98 % humidity and + 40 °C is 1050 volts.

Above values of voltage should be applied when checking integrity and strength of the insulation between adjacent contacts of the same group, as well as between contacts of the group and casing of the connector.

Electrical strength of the insulation between adjacent contacts of the different groups of contacts is examined with a maximum voltage as stated above.

6. Overheating of the contacts not more than 50 °C

7. Joining and disjoining force for a contact pair

Diameter of the contact, mm	Force, kgf
1.5	0.15-0.4
2.0	0.20-0.6
3.0	0.30-0.8

Notes:

a) Joint and disjoint force is determined as a total force of all contacts based on a permitted force per each contact pair.
b) 3-fold increase is allowed for a practical total joint and disjoint force as compared with an estimated value.
c) Strength of the insulators shall be not less than 4-fold total joint and disjoint force based on the estimated force per each contact pair for each connector.
d) Joint force for each housing when measured with a pin-calibre shall be not less than minimum value listed above.

8. Durability (with no electrical loading) 500 joints

9. Total service life under condition of compliance with storage, installation and operation recommendations is 11 years including 3 years in the filed.

Note: Number of joints and disjoints of the plug and socket during this period shall not exceed 500.

PYROGEN ELECTRIC IGNITION DEVICE/ CIRCUIT TERMINALS

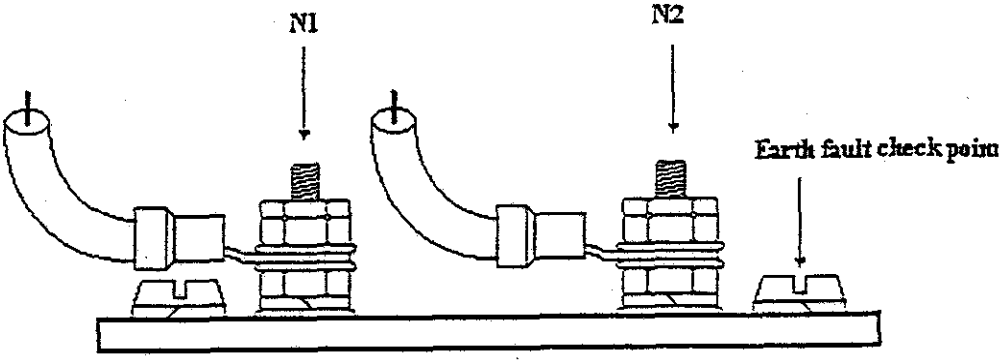


Figure 1. Open Terminals Connector: Side View

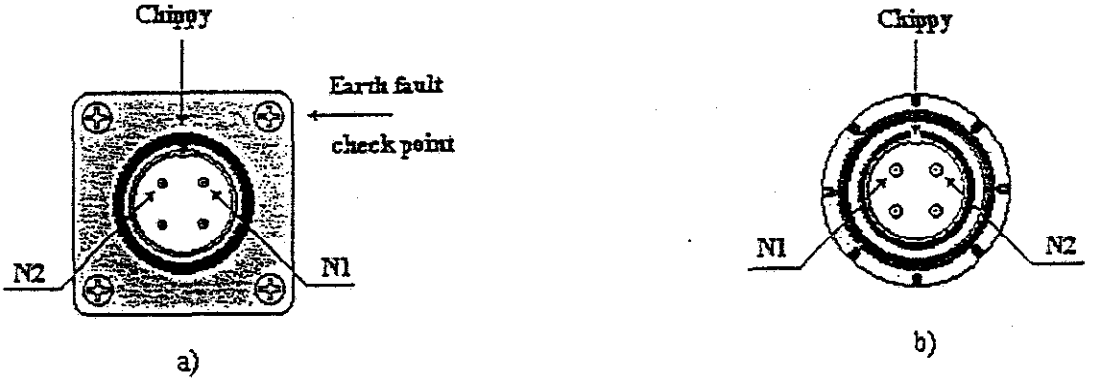


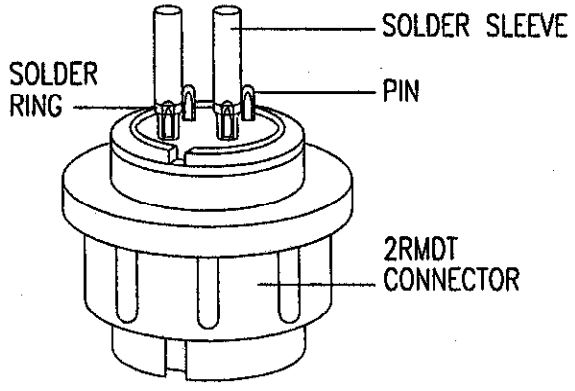
Figure 2. 2RMDT Connector: Front View

a) Socket b) Plug

(Technical Specification attached)

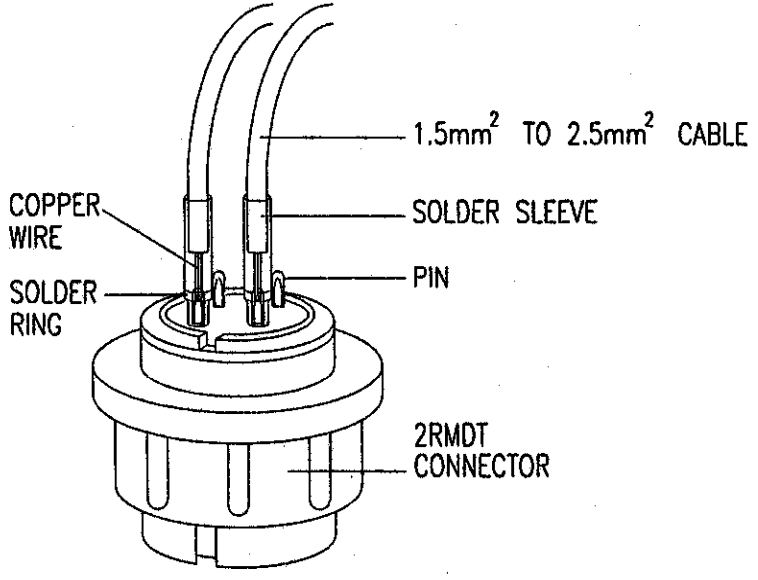
PROCEDURE FOR CABLE CONNECTION INTO 2 RMDT CONNECTOR USING SOLDER SLEEVE HEAT SHRINK TUBING.

①



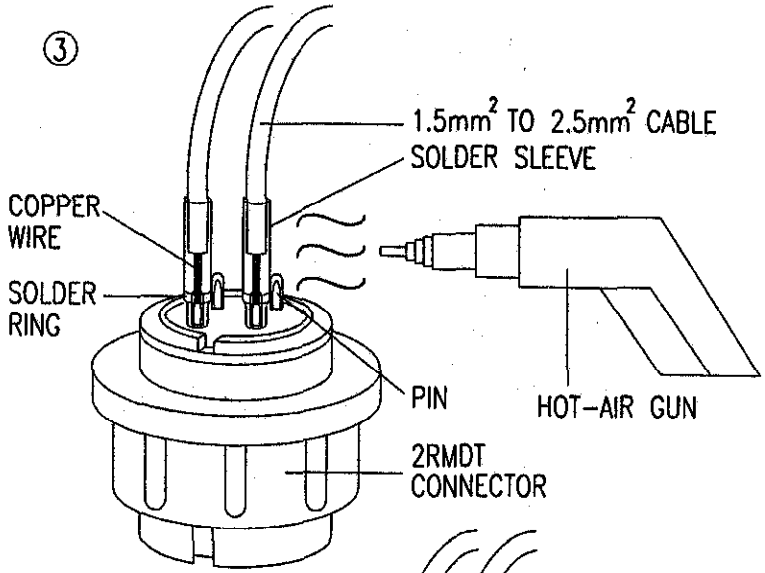
1. SIMPLY PLACE THE SOLDER SLEEVES RIGHT INTO THE PINS.

②

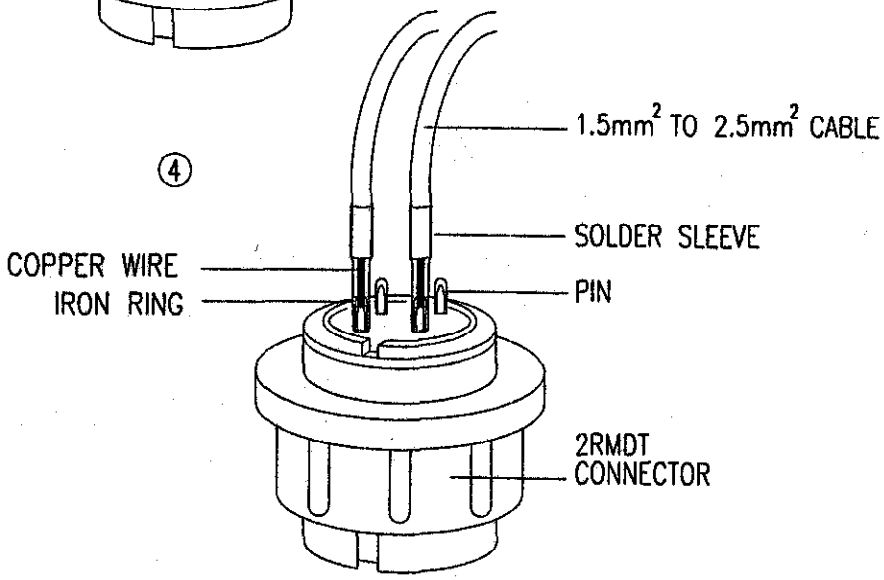


2. INSERT THE COPPER WIRES INTO THE SLEEVES AND ENSURE THAT THE SOLDER RING IS PLACED AROUND THE COPPER WIRES AND THE PINS AS SHOWN IN THE DIAGRAM.

PROCEDURE FOR CABLE CONNECTION INTO 2 RMDT CONNECTOR USING SOLDER SLEEVE HEAT SHRINK TUBING.



3. USE THE HOT-AIR GUN TO HEAT THE SOLDER SLEEVES TO ABOUT 500°C. THE SOLDER RINGS SHOULD MELT SLOWLY AND FLOW INTO THE JOINT.
   THE SLEEVES CAN BE SEEN TO SHRINK AROUND THE NEWLY JOINED CONNECTION.



4. IT IS IMPORTANT TO ENSURE THAT THE ASSEMBLY IS NOT MOVED ABOUT TOO MUCH UNTIL THE SOLDER SETS AND THE SLEEVING COOLS DOWN.
   THE END RESULT SHOULD BE A PERFECTLY JOINED CONNECTION THAT IS INSULATED AND STRAIN RELIEVED.

PYR:II12
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INSTALLATION INSTRUCTION
for
PYROGEN THERMAL IGNITION DEVICE

(Applications where automatic thermal operation is required)

PyroGen's thermal ignition device - fire conducting cord - is attached to the generator via a connection joint. A schematic of the connection joint is shown in Figure 3.

The connection joint consists of four main elements:

1 - a socket;
2 - an end cap;
3 - a cone-shaped holder;
4 - a cone-shaped stopper.

The socket (1) is a nondetachable construction mounted on the generator's nozzle. It provides an access to the aerosol element contained inside the generator, the access being via a combustible membrane and a small cylindrical tube made of the aerosol-forming composition.

The end cap (2) is a sealing detachable device. When thermal operation of PyroGen generators is not required, the end cap is screwed into the socket (1) as shown in Figure 3a.

The cone-shaped holder (3) is a holding device for the fire conducting cord. When thermal operation of PyroGen generator is required, the cord is pulled through the holder and knotted at the holder's threaded end. The holder is then screwed into the socket (1) in place of the end cap (2).

The cone-shaped stopper (4) has a flexible catch ring and is designed to fix the cord inside the holder (3). The knot of the cord is positioned between the stoper (4) and the socket (1) as shown in Figure 3b.

Installation procedure for the connection joint is as follows:

a) Pull approximately 50 - 70 mm of the braided fire conducting cord through a hole in the cone-shaped holder (3) and knot the cord at the end.

b) Insert the pulled through piece of the cord into a groove of the cone-shaped stopper (4) so that the groove of the catch ring is in line with a groove of the stopper, and the knot is in between the stopper (4) and the threaded end of the holder.

c) Pull the cord with the stopper carefully in until it rests inside the holder. The knot secures a firm position of the stopper.

d) Screw the holder (3) into the socket (1).

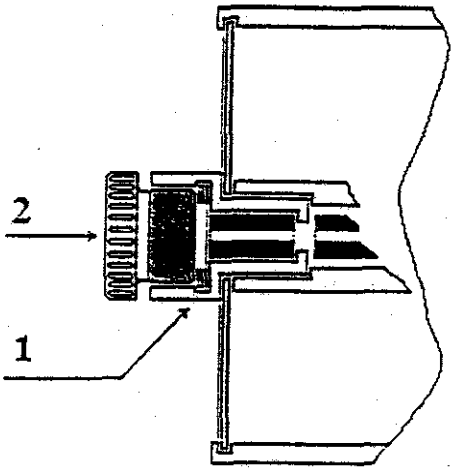
Installation recommendations for the fire conducting cord are as follows:

a) Mount the fire conducting cord to a surface with a help of plastic ties used in electrical wiring: Ensure cord is not squeezed by the tie (to prevent deformation) or left too loose (to prevent rubbing).

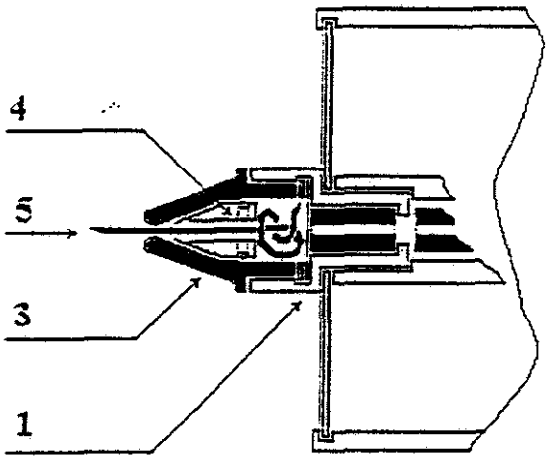
b) During installation of the cord avoid extreme tightening as cord may slightly shrink if used under low temperature conditions. However, sagging should also be avoided to prevent accidental damage of the cord during regular service or maintenance.

c) Upon completion of the installation, attach several labels "Avoid Naked Flame. Braided Fire Conducting Cord" in close proximity to the cord. Ensure locations of the labels are visible.

PYROGEN THERMAL IGNITION DEVICE



a)



b)

Figure 3. Thermal ignition device

a) Thermal operation is not required

b) Thermal operation is required

1 - a socket;
2- an end cap;
3- a cone-shaped holder;
4- a cone-shaped stopper;
5- a fire conducting cord.

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L. Gordeev

FIRECONDUCTING THERMOSENSITIVE PYROTECHNICAL CORD KR – 100. KR – 200

Passport and manual instruction

Coordinated

Head of the department of VNIIPO

V. Nickolayev

Director of the "Krocus – 2"

A. Kozlov

Professor M. Kozhuch

Associated professor D. Ruslin

1. GENERAL

Fireconducting thermosensitive pyrotechnical cord, further referred to as "cord", is manufactured in accordance with technical requirements TU 40 – Russia – 001-91 and comes in two types: KR – 100 and KR – 200. It has been designed for independent detection of fire and initiation of fire extinguishing means.

Cord is able to inflame at any spot of the length when brought in contact with naked flame or surfaces heated above 170 C. It is able to transfer thermal impulse with a velocity from 30 to 240 mm/s.

2. CHARACTERISITICS OF THE CORD

Marking, trade mark, gross and nett mass, length, technical requirements cord has been manufactured in accordance with, packer, acceptance data, and date of manufacture – are shown on the label put on the case.

Table 1.

Main technical parameters

Parameter	according to TU	Trade mark KR100 Actual
1. Dimensions, mm		
External diameter	2..3	2.1 + 0.1
Diameter of the channel	0.7...2.0	0.95 + 0.05
Linear rate of the thermal impulse transfer, mm/s		100 + 20
2. Tensile strength at 20 C and 0.3 mm/s, Mpa, not less than	6	6.2
3. Tensile deformation, % not less than	40	43
4. Temperature limit of exploitation at air humidity up to 90%, C	+50	+50
5. Permissible temperature of exploitation, C	80	
6. Guarantee period		5 years