

D E S C R I P T I O NPRODUCT COVERED:

USR Component - Connectors Types HA, HB, HE, HX, HSB, HE 35, HE6/12PVSuF, HE6/12PVBuF, HE16/32PVSuF, HE16/32PVBuF, HE24/48PVSuF and HE24/48PVBuF. See illustrations for specific catalog numbers.

USR, CNR Component - Connectors **Types HMX, HE-Q 5**. See illustrations for specific catalog numbers.

GENERAL:Type HA Series Connector

These connectors consist of interchangeable molded plastic inserts fitted with male or female screw pressure wire clamp terminations. The inserts may be fitted into either a die cast aluminum hood (removable) or housing (fixed). The HA Series is produced in three pole (HA3), four pole (HA4), ten pole (HA10), 16 pole (HA16), 32 pole (HA32), 48 pole (HA48) and 64 pole (HA64). They are suitable for a wire size range of No. 22 - No. 14 AWG. Types HA3 and HA16 may be provided with a spring clamp type termination for a wire size of No. 14 AWG.

Type HB Series Connector

These connectors are similar to Type HA but have larger screws. Type HB Series is produced in six pole (HB6), ten pole (HB10), 16 pole (HB16), 24 pole (HB24), 32 pole (HB32) and 48 pole (HB48). They are suitable for a wire size range of No. 22 - No. 12 AWG.

Type HE Series Connector

These connectors are identical dimensionally to Type HB Series, but have wire protection devices on the screws of the pressure wire connectors. They are also provided with crimp type termination for a wire size range of Nos. 20-12 AWG. They are also provided with a spring clamp type termination, max poles 24, for a wire size of 14 AWG.

Type HSB Series Connector

These connectors are similar in design to Type HE Series but the conductive parts have larger spacings. The pressure wire connectors are suitable for a wire size range of No. 10 AWG. Type HSB Series is produced in six pole (HSB6) and 12 pole (HSB12) versions.

Type HX Series Connector

Same as Type HE except deletes "U" shaped clip between wire binding screw and conductor.

Type HE 35 Connector:

Type HE 35 connector is similar to Type HE connector except for new design of male and female crimp contacts.

Type HMX Connector:

The HMX connectors have 4 power poles and 0 - 2 signal poles (Type HMX.4/0 and HMX.4/2) equipped with screw pressure wire clamp terminations.

Type HE-Q 5 Connector Series:

The HE-Q 5 connector series have 5 power poles and 1 grounding terminal, equipped with male and female crimp contacts.

ENGINEERING CONSIDERATIONS (NOT FOR UL REPRESENTATIVE USE):

Use - For use only in products where the acceptability of the combination is determined by Underwriters Laboratories Inc.

Conditions of Acceptability - In order to be judged acceptable as a component of electrical equipment, the following conditions should be met.

1. These devices should be used only where they will not interrupt the current.
2. The suitability of the mounting means shall be determined in the end use.
3. The acceptability of the grounding connection shall be determined by the end-product use engineer.
4. The electrical and mechanical suitability of the wiring terminals shall be determined in the end use.
5. The placement of these devices within the equipment enclosure should be such that spacings between the live parts and the enclosure are suitable for the particular application.
6. The suitability of the insulating materials used in the molded bodies shall be judged in the end-use equipment.
- *7. The insulating materials used for these devices and their related maximum temperature indices are tabulated on Page 4 of this Report. The operating temperature of these devices should not exceed the temperature ratings of the insulating materials.

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The HE-Q 5 Series devices employ insulating materials with properties as tabulated below at the minimum thickness employed in the connector housing, the suitability of the insulating materials based on the documented values shall be determined in the end-use application. Please note the values specified in the table when multiple materials are indicated represent the minimum values for the group of materials.

Series	Insulating Material (#)	Measured Minimum Thickness	Flame Class	HWI	HAI	RTI Elec	Max Operating Temp, °C
<u>HE-Q 5</u> (Cover)	A	0.75	V0	3	1	140	140
<u>HE-Q 5</u> (Terminal Insert)	B	0.75	V0	3	0	130	130

(#) - Code for Insulating Body Material.

- A. Tyco RM No. 703254
 1. Dielectric strength (kV/mm): 28
 2. CTI: 3
- B. Tyco RM No. 1573756
 1. Dielectric strength (kV/mm): 27
 2. CTI: 3
8. Series HA, HB, and HX, have been investigated for a current rating of 12 A.
9. Series HSB have been investigated for a current of 35 A, and Series HE has been investigated for a current rating of 20 A.
10. The adjacent poles spaced 1/8 in. minimum may be used at potentials not exceeding 600 V, adjacent poles spaced 3/64 in. minimum may be used at potentials not exceeding 250 V, based on the spacing requirements of Paragraph 11.1 of UL 1977. Dielectric testing has not been performed for all except for HE-Q 5 Series.
11. The suitability of the grounding terminal employed in the HE-Q 5 Series devices shall be an end product consideration.
12. Type HE35 has been investigated for a current rating of 14 A, 600 V.
13. Types HE6/12PVSuF, HE6/12PVBuF, HE16/32PVSuF, HE16/32PVBuF, HE24/48PVSuF and HE24/48PVBuF has been investigated for a current rating of 14 A, 600 V.
14. Types HE.24.Sti.SC.B 1-24 and HE.24.Bu.SC.B 1-24 have been investigated for a current rating of 20 A, 600 V.
15. Types HA.16.Sti.SC.B 1-24 and HA.16.Bu.SC.B 1-16 (represents Type HA.16.Bu.S B 1-16) have been investigated for a current rating of 16 A, 600 V.

16. Type HMX.4/2 has been investigated for various wire size combinations at the indicated current ratings to represent Type HMX.4/0 with the results as tabulated below.

	Wire Size AWG Power/Signal	Current Power (A)	Current Signal (A)	Max Temp C Power/Signal	Max Temp Rise C Power/Signal
USR	6 / 14	80	20	79.1 / 94.1	
CNR		70	10		29.4 / 27.3
USR	6 / 20	80	10	129.5 / 98.5	
CNR		70	7		29.6 / 29.1
USR	16 / 14	16	20	51.8 / 66.2	
CNR		16	20		16.8 / 12.5
USR	16 / 10	16	10	49.1 / 41.7	
CNR		16	10		24.1 / 16.0

17. Type HMX connectors have been investigated for a voltage rating of 600 Vdc. A Dielectric Voltage Withstand Test has been performed at 3110Vac (2200 x 1.414) based on a DC voltage rating.
18. The HE-Q 5 Series devices have been subjected to the Temperature test with the rated currents and maximum temperature rise values tabulated below.

Cat Nos.		Wire Size AWG - Cu str	Current, A		Maximum Temperature Rise, °C	
Male Connector	Female Connector		Male Connector	Female Connector	Male Connector	Female Connector
1102195-1	1102194-1	20 (rep. 12 - 18 AWG)	12	12	28.1	27.5

19. The HE-Q 5 Series devices have only been assessed for use with specific Types of connectors within their product family. They have not been assessed to operate with any other similar devices from any other manufacturer.