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RS-422/485 Converter MD-44

Application

The MD-44 and MD-44DC units are designed to convert RS-232 signals to RS-485/422. The transmitter circuit is activated in response to the incoming data on the RS-232 port, no RTS control is required. These devices can be used on a point to point or multidrop network in either a 4 wire or 2 wire bus system. All devices provide total galvanic isolation and transient suppression to ensure maximum reliability and protection in adverse conditions. Up to 32 devices can be connected on a maximum of 1200m of cable. The RD-/RA-48 or LD-02 can be used to extend or isolate the cable.



- DIN-rail mounted, 35 mm
- RS-232 to RS-485/422
- No control signals required
- Galvanic Isolation
- Transient protection
- 2 or 4 wire operation
- Fail safe termination circuit
- Range of supply voltages
- AC or DC operation

Technical data

Transmission	Asynchronous, full/half duplex or simplex
Interface 1	EIA RS-232-C/CCITT V.24/V.28, 9-pin D-sub female or screw block
Interface 2	EIA RS-422/RS-485/V.11, detachable 5-pin screw block
Transmission speed	300-38 400 bit/s
Isolation voltage	1500 VAC, 500 VDC*
Surge protection	Mains: breakdown voltage 430 V at 230 VAC, Interface 2: breakdown voltage transmitter and receiver 7 V, discharge 0.6 kW for 1 ms
Isolation	Galvanic isolation with optocoupler (data transmission) and transformer (power supply)
Power supply	230 VAC +15% -10%, 115 VAC ±10%, 48-62 Hz or 12-36 VDC*
Power consumption	4 VA (AC), 3 W (DC)*
Temp/humidity range	Temp: 5-50°C, ambient temperature/Humidity: 0-95% RH, without condensation
Dimensions, mm	55x100x128
Weight, kg	0.4
Transformer	Internal
LEDs	Power, TD, RD, RTS, CTS, DCD
RTS control	Yes

*MD-44DC

Terminal connections

	9-pin D-sub	CCITT V.24 Code	Signal name
O	1	109	DCD/Data Carrier Detect
O	2	104	RD/Received Data
I	3	103	TD/Transmitted data
O	4	108/2	DTR/Data Terminal Ready
	5	102	SG/Signal Ground
O	6	107	DSR/Data Set Ready
I	7	105	RTS/Request To Send
O	8	106	CTS/Clear To Send
Not connected	9		

I=Input into modem O=Output from modem

Transmission distance

According to the standard EIA RS-422/RS-485

Cable 0.3mm² 42pF/m

Metres	Bit/s
1200	100 000
1200	38 400
1200	19 200

The modems transmit data over two twisted pair cables at full/half duplex and over one pair at half duplex (RTS control or via data stream)/simplex. The transmission distance depends on the resistance and capacitance of the cable. We recommend the use of cables with at least a 0.2 mm² cross-section and with a capacitance of between 40-60 pF/m in industrial environments. In office environments, we recommend at least 0.14 mm² and a capacitance of between 40-70 pF/m. Use shielded cable in exposed industrial environments and unshielded cable in less exposed industrial environments and office environments. A shielded cable often results in a higher capacitance and, thereby, a lower maximum transmission speed.



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