Datasheet

ADA-M140

M-1 to RS-485/RS-422 converter (SHORT-HAUL MODEM)

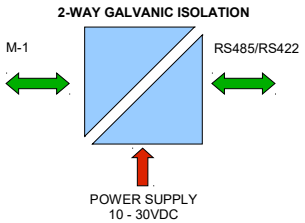
APPLICATION

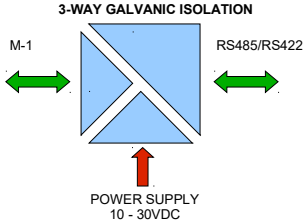
ADA-M140 converter (SHORT-HAUL MODEM) is use for conversion of RS485/RS422 to M-1 standard, without interfering with format of transmitted data. The converter transmits data with baud rate up to 115,2 kbps via two-pairs of twisted-pair, connected to terminals: Tx+, Tx-, Rx+, Rx- of M-1 interface and two or one twisted-pair, connected to terminals: Tx+/A, Tx-/B, Rx+, Rx- of RS485/RS422 interface's converter.
ADA-M140 converters are used for separation and extension of RS485/422 bus, for next segments of length up to 12km (baud rate 9600bps).
The distances will be reduced in case of transmitting data with large baud rate (over 9600bps). The converter can be use for communication with other, remote from each other devices equipped with RS485 / RS422 interface eg. controllers.
To RS485/RS422 bus, created on the base ADA-M140, can be connected up to 32 devices, operates in half duplex or full duplex modes. To M-1 bus, created on the base ADA-M140, can be connected 2 devices, operates in half duplex or full duplex modes.
Galvanic isolation 1kVDC and optoisolaction ~3kVDC in signal channel, separate RS485/RS422 interface from M-1 interface of converter. Protect devices connected to RS485/RS422 port from overvoltage generated on the bus connected to M-1 interface and in power circuit. Overvoltage protection was made on base safety diodes and fuses on each M-1and RS485/422 lines.
ADA-M140 should be powered from stabilised power pack with minimum power output 3W and voltage from the scope 10 – 30VDC.

TECHNICAL DATA

Transmission Parameters		
Interface	**RS485/RS422**	**M-1**
Connector	Screw terminal block - max. Ø 2,5mm^2	
Max. Line length	1200m / 115200bps	21000m / 600bps 15000m / 2400bps 12000m / 9600bps 4000m / 38400bps 2000m / 57600bps
Max. number of connected device	32	2
Transmission line	1-pair or 2-pair twisted cable, UTP Nx2x0,5 (24AWG), shield inside large interferences STP Nx2x0,5 (24AWG)	
Standards	EIA-485, CCITT V.11	M-1
Baud rate	0-115,2 kbps	0-115,2 kbps
Transmission type	Asynchronism half duplex or full duplex,	
Optical Signalization	• PWD – green LED, power supply, • RX - red LED, data receiving on RS485/RS422 • TX - yellow LED, data transmission via RS485/RS422 interface	
Electrical Parameters		
Power requirements	10 - 24 – 30 V DC	
Power Cable	Recommended length of power cable – up to 3m	
Power	3W	
Protection from reverse power polarization	YES	
Galvanic Isolation	1kV DC 2-way - between power circuit and M1 signal line, 1kV DC 3-way - between power circuit and RS485/422 and M1 signal lines,	
Optoisolation	~3kV - between signal line RS485/RS422 and M1	
Electromagnetic compatibility	Resistance to disruptions PN-EN 55024. Emission of disruptions PN-EN 55022.	
Safety requiring	According to the PN-EN60950 norm.	
Environment	Commercial and light industrial.	
Environmental Parameters		
Operating temperature	-30 ÷ 60°C	
Humidity	5 ÷ 95% - non-condensing	
Storage temperature	-40 ÷ 70°C	
Casing		
Dimensions (W x D x H)	88mm x 90mm x 62 mm	
Material	PC/ABS	
Degree of casing protection	IP40	
Degree of terminal protection	IP20	
Weight	0,10 kg	
According to standards	DIN EN50022, DIN EN43880	
Location during work	Free	
Mounting method	On the rail compliant with DIN35 / TS35 standard.	

GALVANIC ISOLATION





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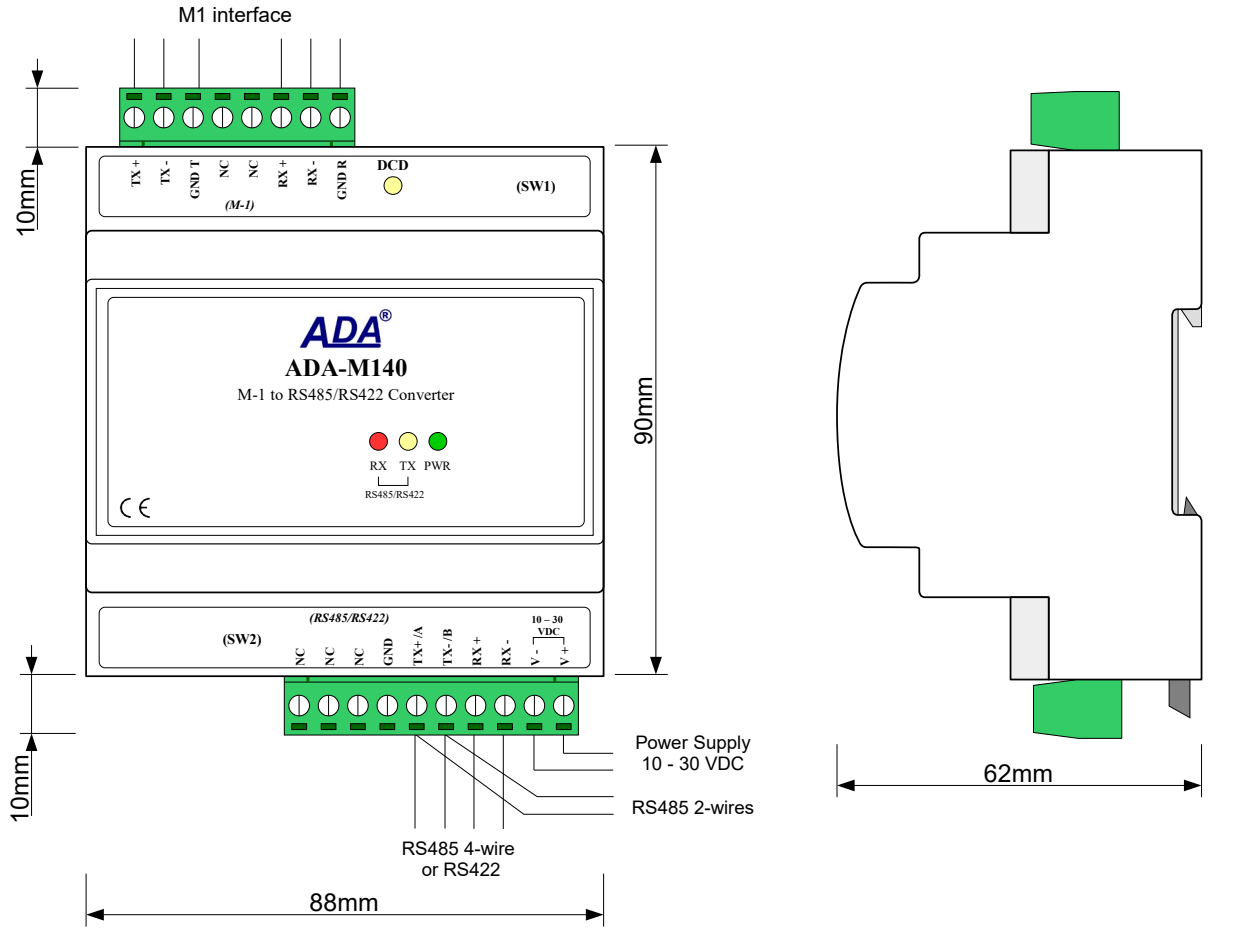
DIMENSIONS AND CONNECTION



VERSIONS

ADA-M140 - [ ] - [ ] - [ ]

Electronics version:	
Basic	**1**
Special	**2**
Galvanic isolation:	
1kV=, 2-way	**2**
1kV=, 3-way	**23**
Terminals & Terminals Cover:	
Cover without inlets, screw terminal block	**1**
Cover with inlets, screw terminal block	**2**
Cover without inlets, plug-in screw terminal block	**3**

Order example:

Product Symbol: **ADA-M140-1-2-3**

1 – basic electronics version,
2 – 1kV=, 2-way galvanic isolation,
3 – cover without inlets, plug-in screw terminal block.

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