

Datasheet

ADA-1040

RS232 to RS-485 / RS-422 Converter



APPLICATION

Many devices such as PLCs, measuring transducer, sensors, cash registers and electronic scales are equipped with RS232 communication port. However, the standard 232 has limitations on cable length (the distance at which transmission functioning properly is 15m). Solution to this problem is to use the RS485/422 data transmission standard. It lets connect together distant devices at 1200m.

ADA-1040 converts RS232 standard to RS485/RS422 without interfering with format of transmitted data. Converter does not require power supply from RS232 port and support the asynchronous transmission data with baud rate 230,4 kbps.

ADA-1040 has DB-9F connector (DCE type) to connecting RS232 interface in use of RS232 extension cable (a typical modem cable) without interleaving of Tx with Rx, RTS with CTS and DTR with DSR. Converter has also screw terminal block for connection of RS485/422 network and power supply. This device use Rx, Tx and GND signals for operating and additionally DTR, DSR in extended version. Galvanic isolation and optoisolation (in signal channel) separates RS232 interface from RS485/422 interface and protect a device connected to RS232 port from overvoltage on RS485/422 network and power supply. Overvoltage protection was made on base safety diodes and fuses on each RS485/RS422 lines.

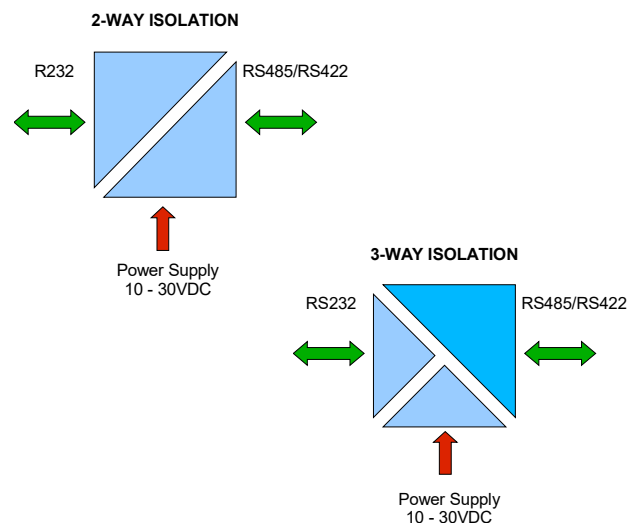
ADA-1040 should be powered from stabilised power pack with minimum power output 2W and voltage from the scope 10 – 30VDC.

TECHNICAL DATA

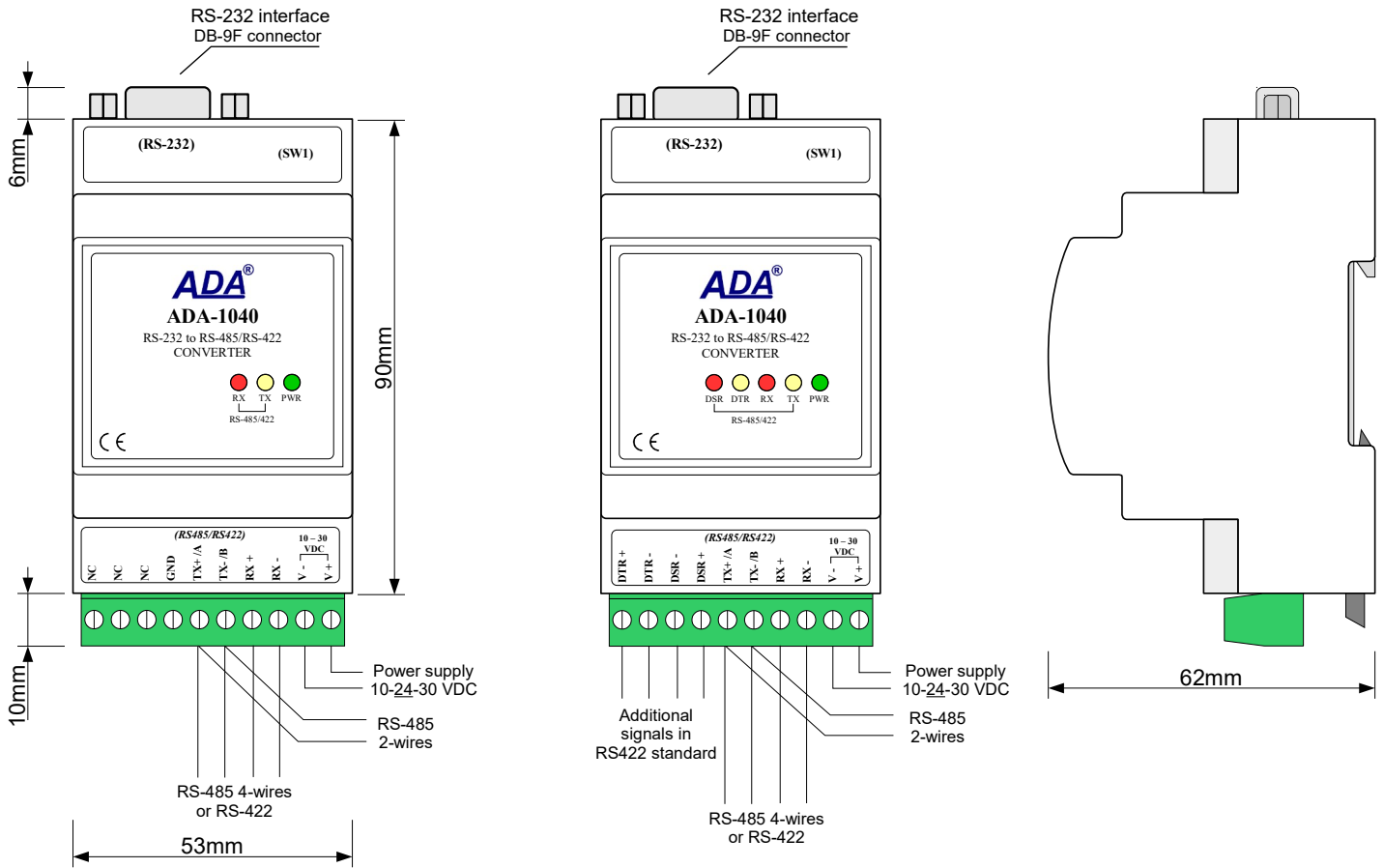
Transmission Parameters		
Interface	RS-232	RS-485/RS-422
Connector	DSUB-9 Female	Screw terminal block - max. Ø 2,5mm ²
Max. Line length	15 m	1200 m
Max. number of connected device	1	32 / 2

Transmission line	DB9F/DB9M multicore cable 9x0,34 shielded or 9-pair twisted cable, UTP 9x2x0,5 (24AWG) shield inside large interferences STP 9x2x0,5 (24AWG).	1-pair or 2-pair twisted cable, UTP Nx2x0,5 (24AWG), shield inside large interferences STP Nx2x0,5 (24AWG)
Standards	EIA-232, CCITT V.24	EIA-485, CCITT V.11
Max. baud rate	230,4 kbps	
Transmission type	Asynchronous full duplex, half duplex.	
Optical Signalization	<ul style="list-style-type: none"> • PWD – green LED power supply, • RX - red LED data receiving on RS485/RS422, • TX - yellow LED data transmission via RS485/RS422. 	
Electrical Parameters		
Power requirements	10 - 24 – 30 V DC	
Power Cable	Recommended length of power cable – up to 3m	
Power	<2W	
Protection from reverse power polarization	YES	
Galvanic Isolation	1kVDC or 3kVDC - between power circuit and RS-232 signal line	
Optoisolation	5kV - between signals lines RS-485/422 and RS-232	
Electromagnetic compatibility	Resistance to disruptions according to the standard PN-EN 55024. Emission of disruptions according to the standard 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)	53mm 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



DIMENSIONS AND CONNECTION



VERSIONS

Electronic versions:				
Basic,	1			
Special,	2			
Signals:				
TX, RX			1	
TX, RX . +5VDC on 9 pin of RS232 DB-9F connector			19	
TX, RX, DTR, DSR – only in version 2-way isolation			2	
TX, RX, DTR, DSR +5VDC on 9 pin of RS232 DB-9F connector – only in version 2-way isolation			29	
Galvanic isolation:				
1kV= 2-way				2
1kV= 3-way				23
3kV= 2-way				3
3kV= 3-way				33
Terminal & Terminal 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-1040-1-1-23-3**
 1 – basic version of electronic,
 1 – TX, RX signals
 23 - galvanic isolation 1kV=, 3-way
 3 - cover without inlets, plug-in screw terminal block,