Datasheet

ADA-4020

RS-485 / RS-422 to Current Loop Converter

APPLICATION

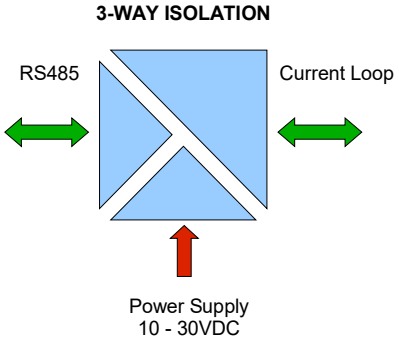
ADA-4020 converts RS485/RS422 standard to Current Loop without interfering with format of transmitted data with maximum baud rate of 38,4kbps via 2-pair of twisted pair.
The converter has screw terminal blocks for connection of RS485/422, Current Loop networks and power supply. This device use RX+, RX-, TX+, TX- signals for operating.
Over-voltage protection was made on base safety diodes and fuses on each RS485/RS422 and Current Loop lines.
To RS485/RS422 bus, created on the base ADA-4020, can be connected: 32 devices operate in half duplex (query / response) mode on 2-wires or 4-wires bus or full duplex on 4-wires bus.
To Current Loop bus, created on the base ADA-4020, can be connected
- 2 devices operating in half duplex or full duplex mode in point-to-point topology,
- 15 devices operating in half duplex mode in multipoint topology 'current loop network'.
The converter has an internal low-energy surge protection for each line of Current Loop interface. However, for the lightning protection should be used external lightning arresters such as the typical phone line protection.

TECHNICAL DATA

Transmission Parameters		
Interface	**RS-485/RS-422**	**Current Loop**
Connector	Screw terminal, wire max. Ø 2,5mm².	Screw terminal, wire max. Ø 2,5mm².
Max. Line length	up to 1200 m	Depend on baud rate, several kilometres
Max. number of connected device	up to 32	1 / up to 15 (connection in Current Loop network)
Max. baud rate	38,4 kbps (depend on line length Current Loop) /19,2kbps (for Current Loop network)	

Transmission line	1-pair, 2-pair twisted cable eg UTP 4x2x0,5(24AWG), shield inside large interferences eg STP 4x2x0,5(24AWG)	2-pair twisted cable eg UTP 4x2x0,5 (24AWG), shield inside large interferences eg STP 4x2x0,5 (24AWG)
Standards	EIA-485, CCITT V.11	0-20mA +/-20mA
Transmission type	Asynchronic half duplex or full duplex	
Optical Signalization	• PWR – green LED power supply, • RX - red LED data receiving from Current Loop side, • TX - yellow LED data transmission through Current Loop interface	
Electrical Parameters		
Power requirements	10 - 24 – 30 V DC	
Power Cable	Recommended length of power cable – do 3m	
Power	<2W	
Protection from reverse power polarization	YES	
Galvanic Isolation	1kVDC or 3kVDC between power circuit and signal lines RS485/422 and Current Loop	
Optoisolation	~3kV between Current Loop signal line and RS485/422	
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



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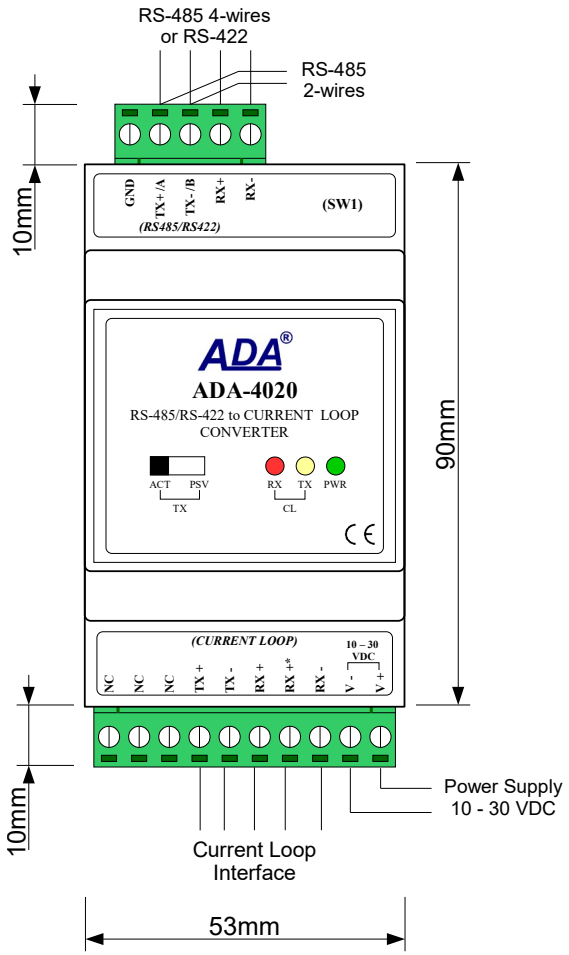
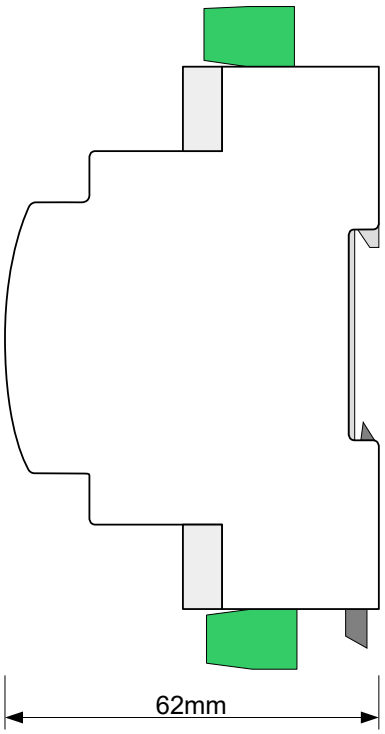
DIMENSIONS AND CONNECTION





VERSIONS

ADA-4020 - □ - □ - □ - □ - □

Electronic versions:	
Basic,	**1**
Special,	**2**
Current Loop Voltage:	
24VDC	**1**
12VDC	**2**
Current Loop Type:	
± 20mA (active transmitter, passive receiver)	**1**
0 – 20mA (active/passive transmitter, passive receiver)	**2**
0 – 20mA Network/Slave (not produced anymore)	**11**
± 20mA Network/Master (not produced anymore)	**12**
Galvanic isolation:	
1kV=, 3-way	**2**
3kV=, 3-way	**3**
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-4020-1-1-1-2-3**

1 – basic version of electronic,
1 – Current Loop Voltage 24VDC,
1 – Current Loop Type ± 20mA,
2 – 1kV= galvanic isolation,
3 – cover without inlets, plug-in screw terminal block .

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