

Datasheet

ADA-1020

RS-232 to Current Loop converter



APPLICATION

ADA-1020 converter is a device used to convert the RS232 to current loop standard without interfering with the format of transmitted data and does not require the power supplying from the RS232 port. The converter supports RS232 asynchronous data transmission at baud rate up to 38.4 kbps via two pairs of twisted-pair cable.

ADA-1020 is equipped with one female DB-9F connection to connect RS232 interface and screw terminal block for connection of Current Loop bus and power supply. Connector DB-9F RS232 interface is made like DCE, it let connect converter to computer in use the typical extension cable RS232 (cable for modem connection) without crossing Tx with Rx and RTS with CTS.

Converter uses signals Rx, Tx and GND for operating, which are entered via DB-9F connector. RTS signal is looped with CTS and DTR with DSR and DCD inside the converter. Other signals are not connected.

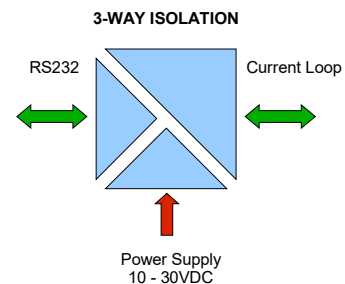
To Current Loop line can be connected two ADA-1020 converters operates in full duplex or half duplex mode in point-to-point topology.

TECHNICAL DATA

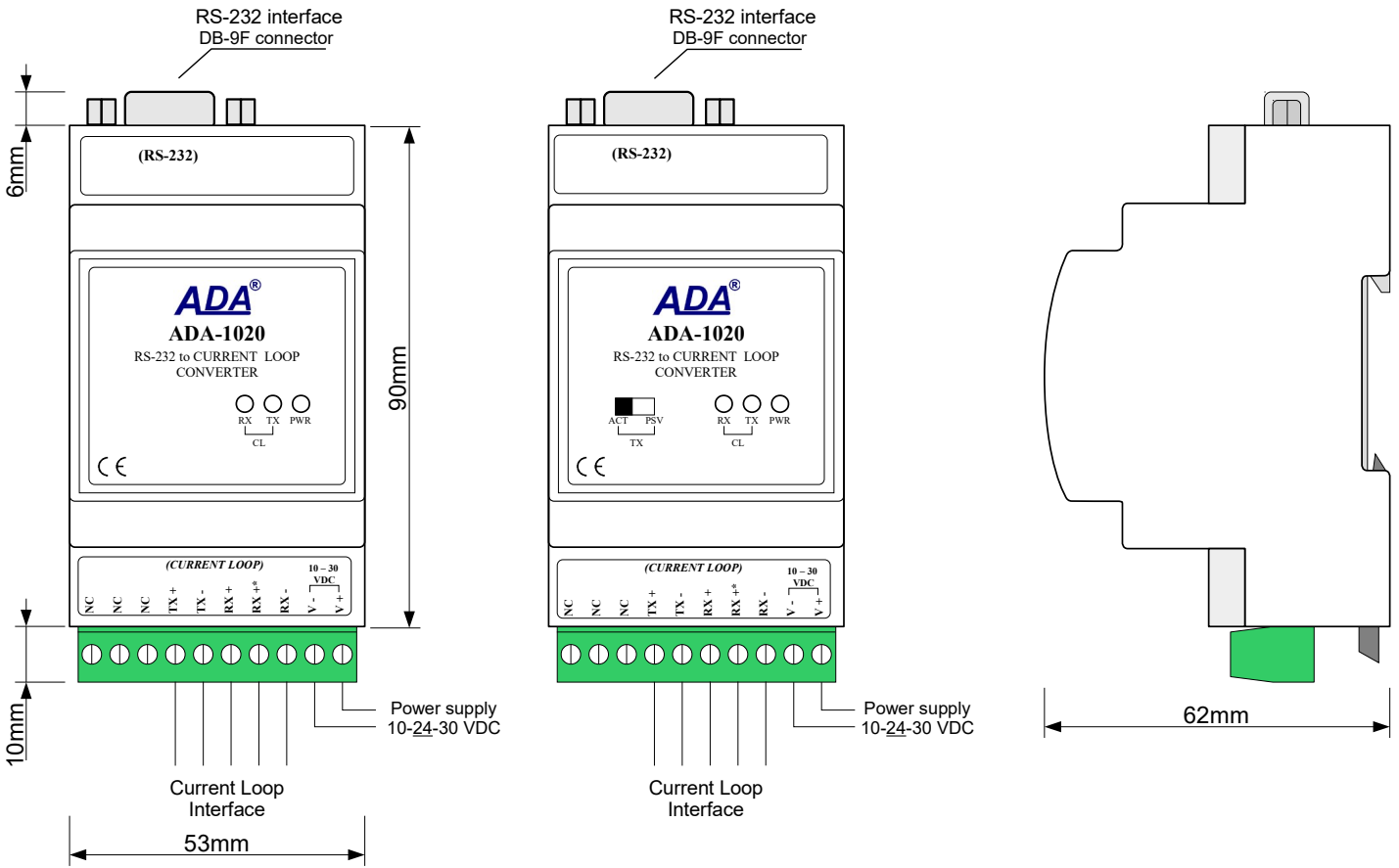
Interface	Transmission Parameters	
	RS-232	Current Loop
Connector	DSUB-9 female	Screw terminal, wire max. Ø 2,5mm².
Max. Line length	15 m	Depend on baud rate eg. for BUS made by UTP cable Cat.5E 4x2x05 (24 AWG) and baud rate 300 bits/s can be 15 km.
Max. number of connected device	1	1
Max. baud rate	38,4 kbps (depend on line length Current Loop) /19,2kbps (for Current Loop network)	

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).	2-pair twisted cable eg UTP 4x2x0,5 (24AWG), shield inside large interferences eg STP 4x2x0,5 (24AWG)
Standards	RS-232C /CCITTV.24	Current Loop 0-20mA +/- 20mA
Transmission type	Current Loop asynchronous half duplex or full duplex	
Optical Signalization	<ul style="list-style-type: none"> • 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	Standard : 10 - 24 – 30 V DC Option : 10 - 24 – 48 V DC	
Power Cable	Recommended length of power cable < 3m	
Power	<3W	
Protection from reverse power polarization	YES	
Galvanic Isolation	1kV= or 3kV= (between power circuit and RS232 signal lines RS-232) 1kV= or 3kV= (between power circuit and Current Loop signal lines)	
Optoisolation	~3kV= (between Current Loop signal line 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



Version with active transmitter +/- 20mA

Version with active / passive transmitter 0 / 20mA

VERSIONS

	ADA-1020 -	-	-	-	-	-
Current Loop Voltage:						
24VDC		1				
12VDC		2				
Current Loop Type:						
± 20mA (active transmitter, passive receiver)			1			
0 – 20mA (active/ passive transmitter, passive receiver)			2			
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	
Power supply :						
From 10 to 30VDC stable						
From 10 to 48VDC stable						48

Order example:

Product Symbol: **ADA-1020-1-1-2-3**

- 1 – Current Loop Voltage 24VDC
 - 1 – Current Loop Type ± 20mA
 - 2 – 1kV= galvanic isolation
 - 3 – cover without inlets, plug-in screw terminal block.
- Power supply 10 – 30VDC

Product Symbol: **ADA-1020-1-1-2-3-48**

- 1 – Current Loop Voltage 24VDC
- 1 – Current Loop Type ± 20mA
- 2 – 1kV= galvanic isolation
- 3 – cover without inlets, plug-in screw terminal block .
- 48 - power supply 10 - 48VDC