

Datasheet

ADA-1021

RS-232 to Current Loop converter



APPLICATION

Many devices such as PLCs, transducers, sensors, cash registers and electronic scales are equipped with as standard RS232 communication port. Standard of RS232 has restrictions on the length of the cable (the distance at which the transmission is working properly is 15m). The solution to this problem is to use for data transmission Current Loop interface. Current Loop Interface allows connecting with each other devices at up to several kilometres.

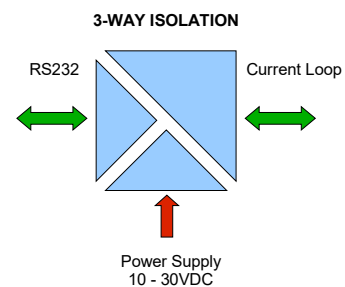
ADA-1021 converter is a device used to convert RS232 to Current Loop standard without interfering with data format. The converter does not require the power to his operation from the RS232 port, supports asynchronous RS232 data transmission at up to 38.4 kbps by two pairs of twisted-pair. ADA-1021 is equipped with a female DB-9F connector for RS232 interface connection and screw terminal blocks for twisted-pair connections of Current Loop and power supply. DB-9 connector is made as DCE which allows connecting the converter to the PC via the RS232 extension cable (a typical cable modem connection) without crossing Tx with Rx and RTS with CTS. For its operation uses the signals from the RX, TX and mass SG, entered by DB-9F connector to the converter. RTS signal is looped with CTS inside the converter and DTR with DSR and DCD. Others signals are not connected. If it is not needed looping the above signals, can be unsolder the RTS or DTR in the plug DB-9M (pins: RTS-7, DTR-4). To Current Loop line constructed on the ADA-1021 can be connected two converters operating in full duplex or half duplex point-to-point.

TECHNICAL DATA

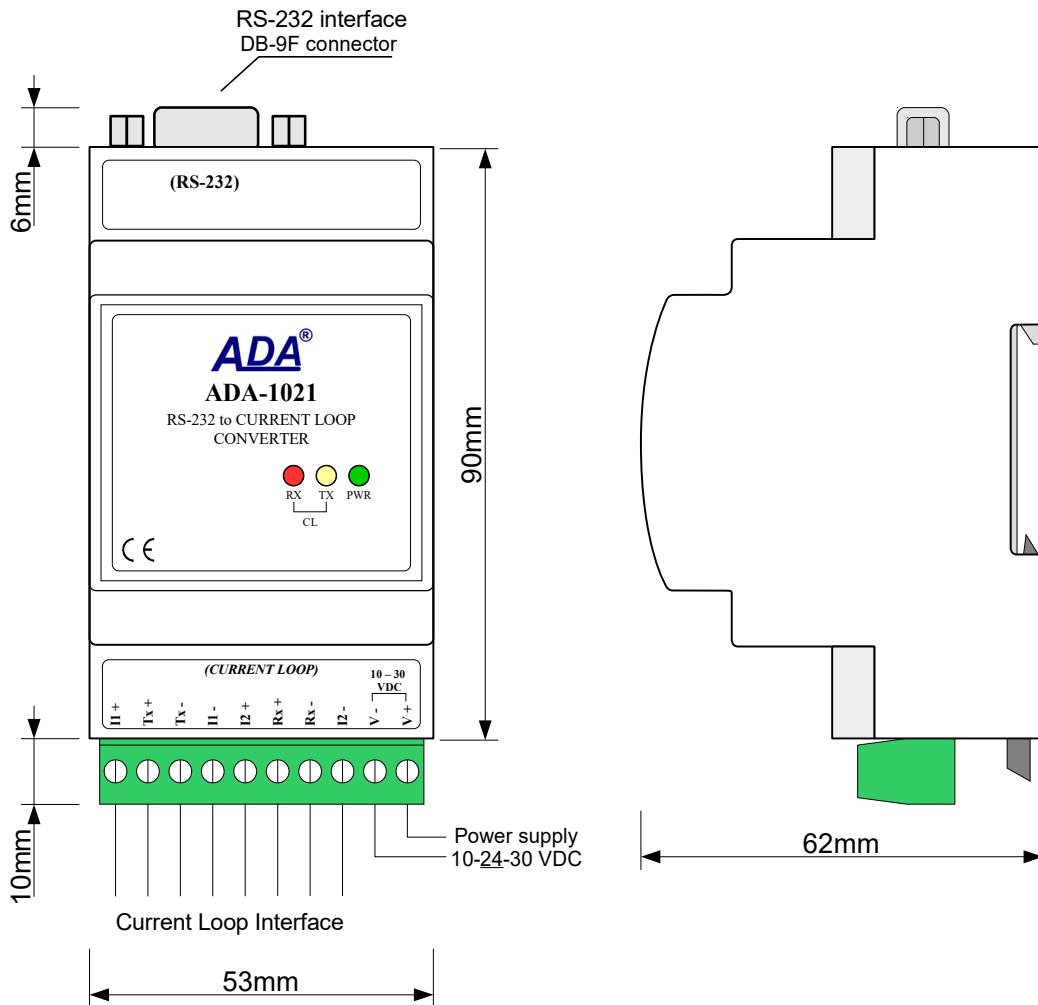
Transmission Parameters		
Interface	RS-232	Current Loop
Connector	DSUB-9 female	Screw terminal, wire max. \varnothing 2,5mm ² .
Max. Line length	15m	Depend on baud rate eg. For bus made by UTP cable Cat.5E 4x2x05 (24 AWG) and baud rate 19200 bit/s the line length up to 1000m.

Max. number of connected device	1	1
Max. baud rate	38,4 kbps (depend on length of Current Loop line)	
Transmission line	DB9F/DB9M multicore cable 9x0,34 shielded (up to 15m) or 9-pair twisted cable, UTP 9x2x0,5 (24AWG) shield inside large interferences STP 9x2x0,5 (24AWG).	2-pair twisted cable eg UTP Nx2x0,5 (24AWG), shield inside large interferences STP Nx2x0,5 (24AWG).
Standards	RS-232C /CCITT V.24	current signal, 0-20mA
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	10 - 24 - 30 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 RS-232 signal line) 1kV= or 3kV= (between power circuit and Current Loop signal line)	
Optoisolation	~3kV= (between signal lines Current Loop 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

ADA-1021 -		
Electronics version:		
Standard	1	
Current Loop Voltage:		
24VDC	1	
12VDC (standard)	2	
Current Loop Current:		
0 – 20 mA (standard)	1	
0 – 30 mA	2	
Galvanic isolation:		
1kV= 3-way		2
3kV= 3-way		3

Order example:

Product symbol: **ADA-1021-1-2-1-2**

- 1 – standard electronics version,
- 2 – current loop voltage 12VDC,
- 1 – current loop current 0-20mA,
- 2 – galvanic isolation 1kV=,