

Datasheet

ADA-4028L

RS-485 to Current Loop 2-wire CLO Converter



APPLICATION

Converter ADA-4028L is produced with active or passive Current Loop transmitter.

ADA-4028L with active transmitter allows connecting to RS485 Bus devices with passive interface of Current Loop (CLO) eg. energy meter LZQM type, without interfering with the data format.

Connecting two ADA-4028L converters together (via Current Loop interfaces), one with passive transmitter and second with active transmitters, allows extension of RS485 bus by the use of 2-wire Current Loop.

ADA-4028L transmits data at baud rate up to 19,2 kbps, through one or two twisted-pair on the side of RS485 interface and one twisted-pair on the Current Loop side. The converter is equipped with screw terminal block for connection of RS485, CLO and power supply. Uses only the following signals:

- a) RX+,RX-,TX+/A,TX-/B – for RS485 interface,
- b) CLO+, CLO-, Rd - for active Current Loop interface,
- c) CLO+, CLOR+ (connecting of CLO+ thought resistor R=1000W, Fig.10), CLO-, Rd - for passive Current Loop interface.

Over-voltage protection on each RS485 line and Current Loop, was made on the base 600W over-voltage LED's and the fuses.

To RS485 bus created by the use ADA-4028L, it is possible to connect 32 devices, operating in half duplex mode (query /response) on 2 or 4 wires multipoint bus. To Current Loop bus it is possible to connect up to 4 devices with passive CLO interface, operating in half duplex mode.

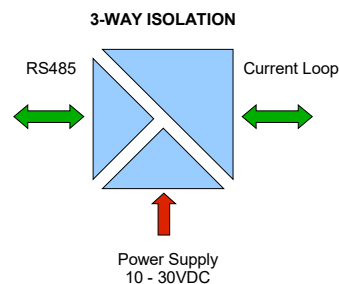
The converter has an internal low-energy surge protection for each line of Current Loop interface. However, for the lightning protection should be used external lightning arresters such as the typical phone line protection.

TECHNICAL DATA

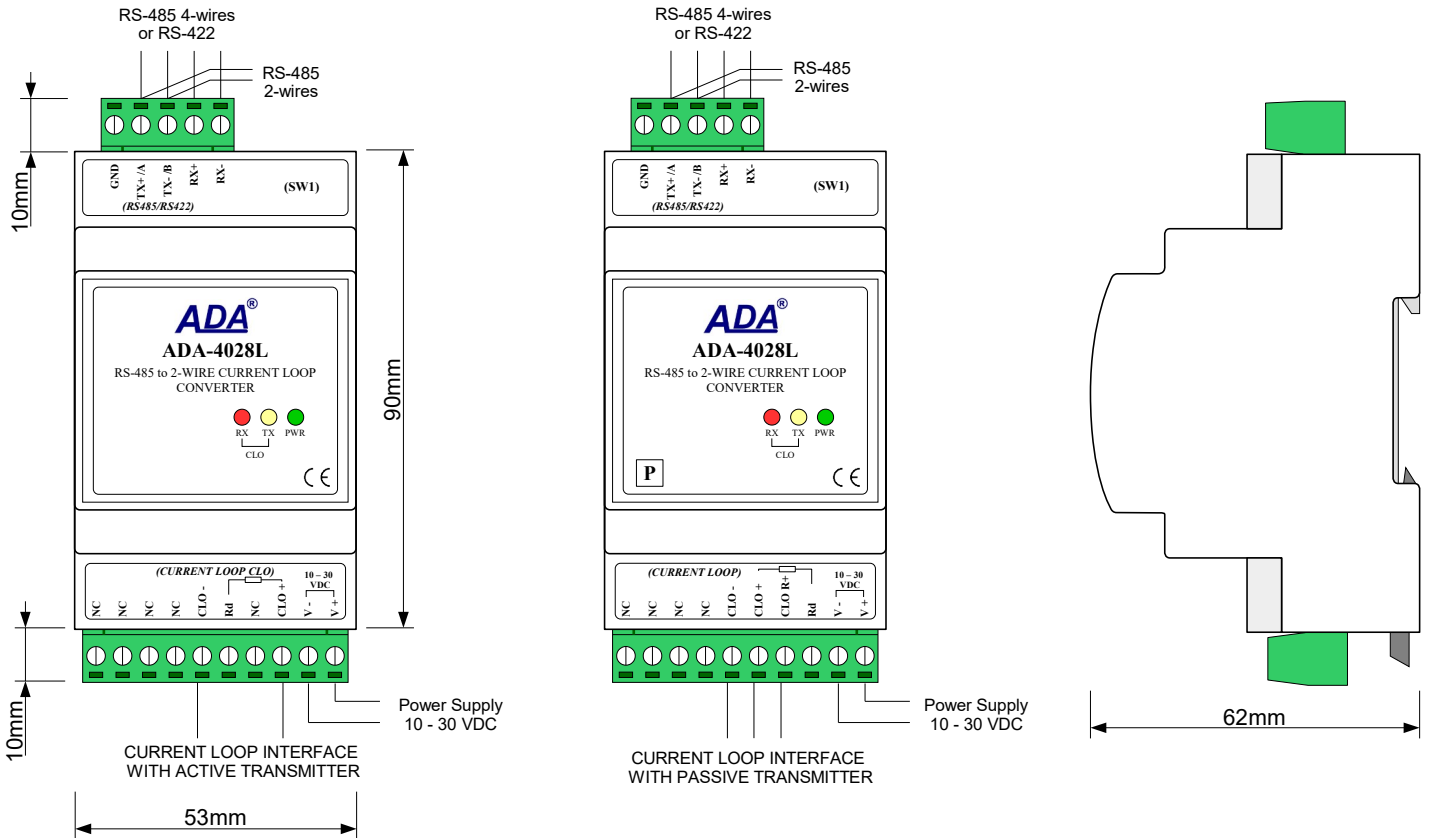
Transmission Parameters		
Interface	RS-485	Current Loop
Connector	Screw terminal, wire max. Ø 2,5mm ²	Screw terminal, wire max. Ø 2,5mm ²

Max. Line length	up to 1200 m	Depend on baud rate, several kilometres
Max. number of connected device	up to 32	Up to 4
Max. baud rate	19,2 kbps (depend on length of Current Loop CLO line)	
Transmission line	1-pair twisted cable, UTP Nx2x0,5 (24AWG), shield inside large interferences (STP Nx2x0,5(24AWG)).	1-pair twisted cable, UTP Nx2x0,5 (24AWG), shield inside large interferences (STP Nx2x0,5(24AWG)).
Standards	EIA-485, CCITT V.11	0-20mA or 0-30mA
Transmission type	Asynchronous half duplex	
Optical Signalization	<ul style="list-style-type: none"> • PWR – green LED power supply, • RX - red LED data receiving through Current Loop CLO, • TX - yellow LED data transmission through Current Loop CLO. 	
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	1kV= or 3kV= between power circuit and RS485/422 signal line 1kV= or 3kV= between power circuit and Current Loop signal line	
Optoisolation	Min. 2,5kV - between Current Loop signal line and RS-485/422	
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



DIMENSIONS AND CONNECTION



VERSIONS

ADA-4028L -					
Electronic versions:					
Standard	1				
Current Loop Voltage:					
24VDC		1			
12VDC		2			
Current Loop Current:					
0 – 20 mA (standard)			1		
0 – 30 mA			2		
Current Loop Type:					
Active				A	
Passive				P	
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:

Prod. symbol : **ADA-4028L-1-1-1-A-2-3**

- 1 – standard electronic version,
- 1 – current loop voltage 24VDC,
- 1 – current loop current: 0-20mA,
- A – current loop type: Active,
- 2 – 1kV= galvanic isolation,
- 3 – cover without inlets, plug-in screw terminal block.