

## Datasheet

### ADA-4021

#### RS-485 / RS-422 to Current Loop Converter



### APPLICATION

ADA-4021 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 block 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. It is possible to connect up to 32 devices operate in half duplex mode (inquiry / response) on 2 or 4 wires, multipoint bus or full duplex mode on 4 wires bus, built on the base of ADA-4021 converters. To Current Loop interface can be connected one device in point-to-point topology, operates in half duplex or full duplex mode. Current Loop connected device can has passive or active transmitter and receiver.

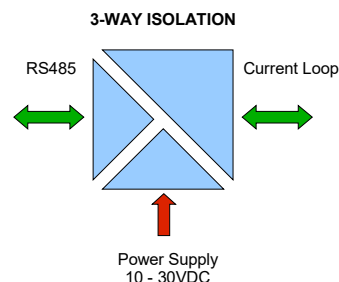
This converter has internal, low energy surge protection for each Current Loop lines however it is recommended to use the external lightning arresters (typical protection of telephone line) for the lightning protection of lines.

### TECHNICAL DATA

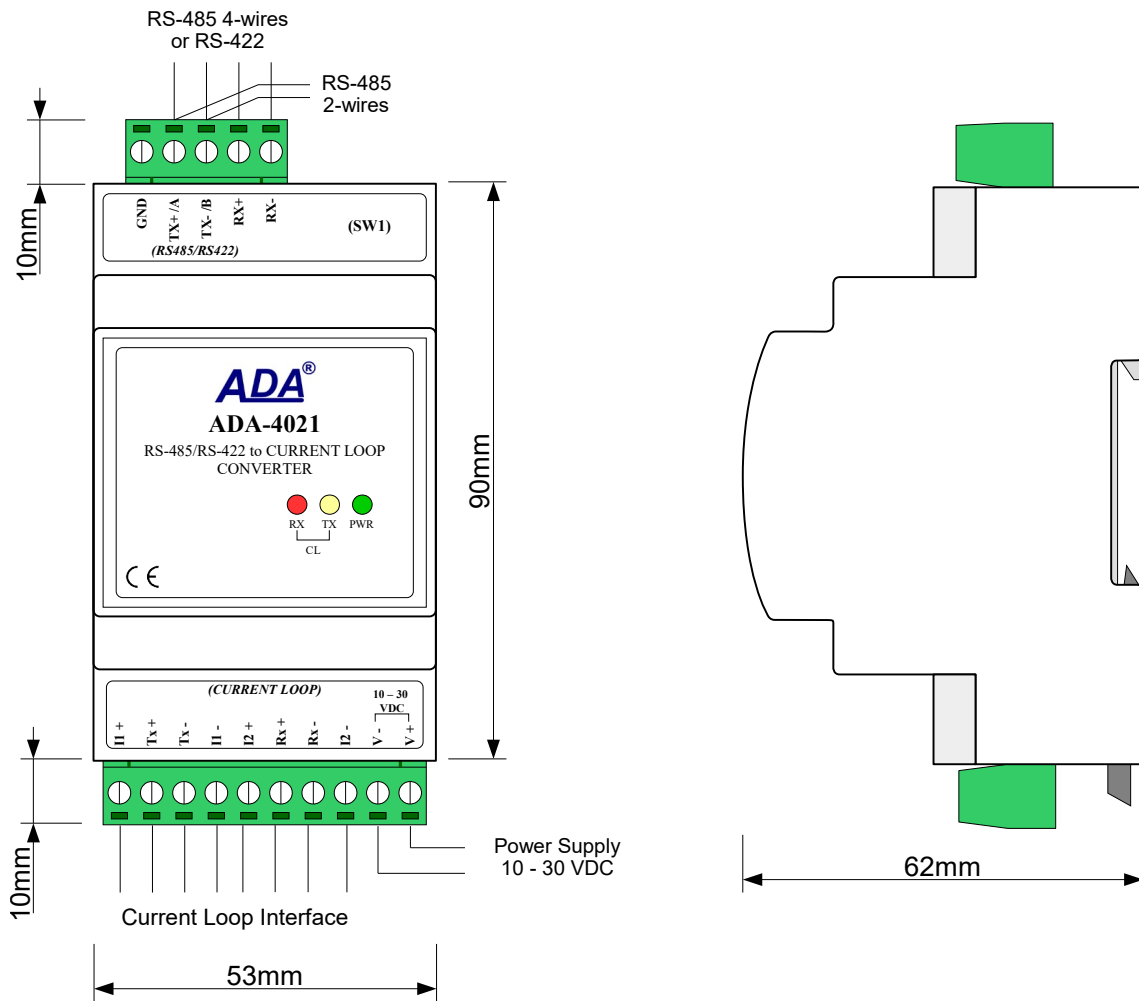
Transmission Parameters		
Interface	RS-485/RS-422	Current Loop
Connector	Screw terminal, wire max. Ø 2,5mm².	Screw terminal, wire max. Ø 2,5mm².
Max. Line length	up to 1200 m	Depend on baud rate, several kilometres
Max. number of connected device	up to 32	1

Max. baud rate	38,4 kbps (depend on line length Current Loop)	
Transmission line	1-pair, 2-pair twisted cable eg UTP Nx2x0,5(24AWG), shield inside large interferences eg STP Nx2x0,5(24AWG)	2-pair twisted cable eg UTP Nx2x0,5 (24AWG), shield inside large interferences eg STP Nx2x0,5 (24AWG).
Standards	EIA-485, CCITT V.11	0-20mA
Transmission type	Asynchronous half duplex or full duplex	
Optical Signalization	<ul style="list-style-type: none"> <li>PWR – green LED power supply,</li> <li>RX - red LED data receiving from Current Loop side,</li> <li>TX - yellow LED data transmission through Current Loop interface</li> </ul>	
<b>Electrical Parameters</b>		
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 Current Loop signal line and RS485/422	
Optoisolation	~3kVDC 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.	
<b>Environmental Parameters</b>		
Operating temperature	-30 ÷ 60°C	
Humidity	5 ÷ 95% - non-condensing	
Storage temperature	-40 ÷ 70°C	
<b>Casing</b>		
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-4021 -				
<b>Electronics version:</b>				
Standard			1	
<b>Current Loop Voltage:</b>				
24VDC				1
12VDC (standard)				2
<b>Current Loop Current:</b>				
0 – 20 mA (standard)				1
0 – 30 mA				2
<b>Galvanic isolation:</b>				
1kV= 3-way				2
3kV= 3-way				3

Order example:  
 Product symbol: **ADA-4021-1-2-1-2**  
 1 – standard electronics version,  
 2 – current loop voltage 12VDC,  
 1 – current loop current 0-20mA,  
 2 – galvanic isolation 1kV=,