

Datasheet

ADA-401WP

1-WIRE to MODBUS-RTU Measuring Module



APPLICATION

The use of 1 wire digital sensors eliminates the influence of cable length on the measurement process that usual affects analog methods of temperature, humidity or pressure measurement and signal processing. Digital sensors transmit the measure value by data transfer protocol and this simplifies connection wiring of a large number of sensors and improves the detection of faulty components. Traditionally, it has been difficult to operate 1-WIRE data bus sensors in industrial environments. The solution to this problem is ADA-401WP addressable measurement module with MODBUS-RTU protocol. ADA-401WP is robust and modular in design to operate 1-WIRE sensors in a industrial controller environment. Using ADA-401WP as a addressable node of 1-WIRE bus lets extend the distance up to 1200m between 1-WIRE devices and PC with monitoring software e.g. SCADA or other MASTER type device (PLC controller). ADA-401WP is equipped with a screw terminal blocks for twisted pair connections 1-Wire bus and RS-485, as well as for power. Overvoltage protection on each RS-485 line is made on the basis of 600W protectors diodes and fuses. To RS485 bus can be connected 32 devices ADA-401WP. Additional converter like ADA-I1040 (RS232 to RS485) or ADA-I9140 (USB to RS485) enables monitoring of the modules via RS232 or USB interface of PC with software as AdaUtil or SCADA.

Using:

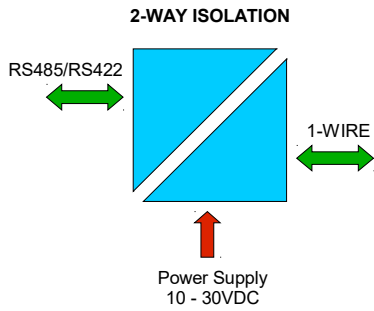
- ADA-4040 repeater to connect another 32 modules and extend RS485 bus up to 1200m,- the ADA-4044H HUB RS485, to connect up to 128 modules, change RS485 bus topology from linear to star - Each arm of the star can have length 1200 meters
- ETHERNET to RS485 converter (ADA-13040) or Wi-Fi to RS485/422 converter (ADA-14040) you can connect ADA-401WP modules of any location to monitoring or controlling systems.

ADA-401WP offers a low power wide input voltage range from an external source of greater than 10V to a maximum of 30V and can be delivered from power pack (e.g. DR-15-12). The module has built in reverse polarity protection to protection against opposite polarization of power supply.

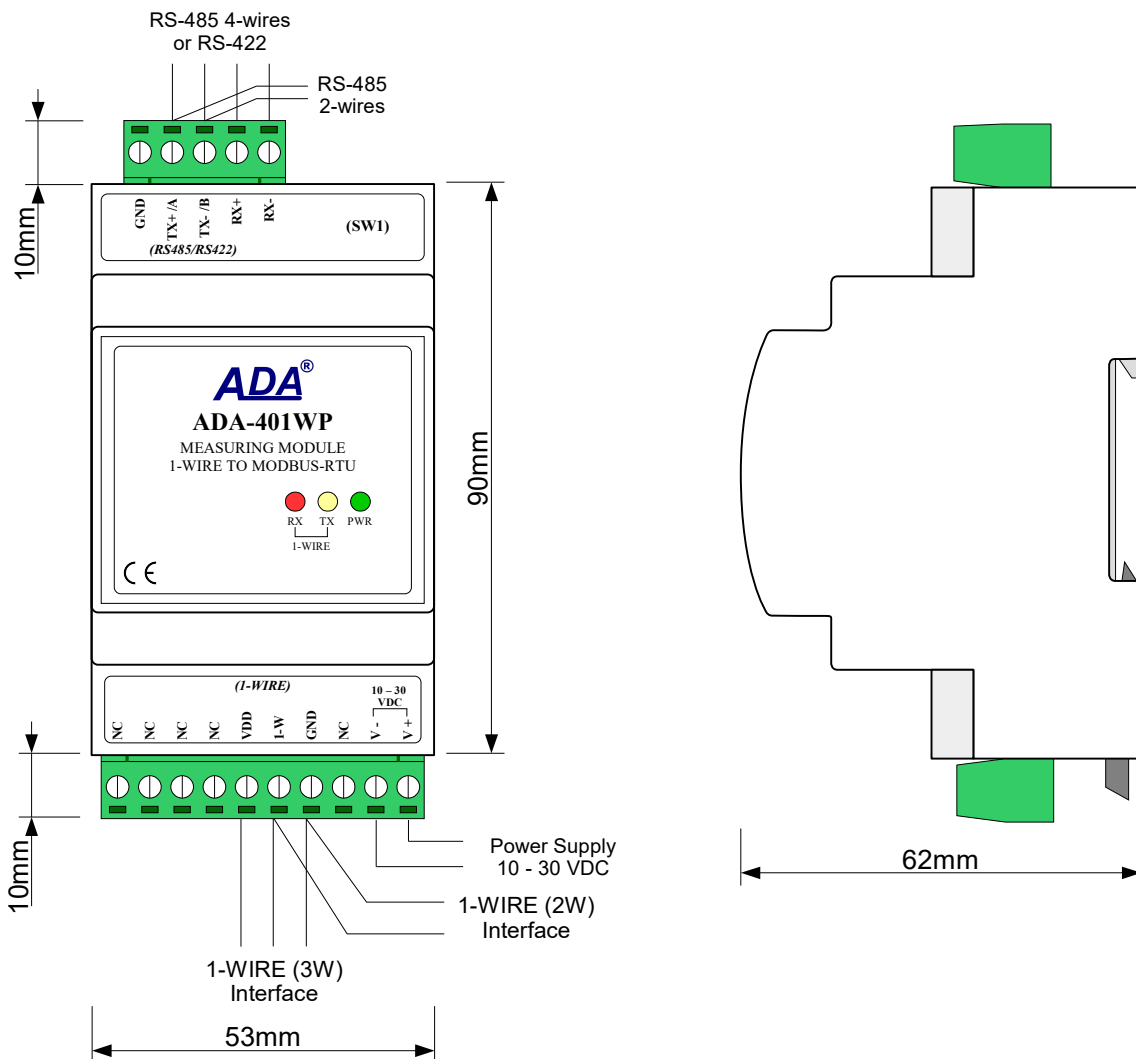
TECHNICAL DATA

Transmission Parameters		
Interface	RS485/RS422	1-WIRE
Connector	Screw terminal block - max. Ø 2,5mm ²	Screw terminal block - max. Ø 2,5mm ²
Max. Line length	1200 m	Up to 300 m Depends on 1-Wire bus and used cables
Max. number of connected device	32 devices	64 sensors
Max. baud rate	up to 230,4 [kbit/sek]	standard: 0 do 16,3 kbps,
Transmission line	2-pair twisted cable eg UTP 4x2x0,5(24AWG), shield inside large interferences eg STP 4x2x0,5(24AWG)	1-pair, 2-pair twisted cable eg UTP 4x2x0,5(24AWG), shield inside large interferences eg STP 4x2x0,5(24AWG)
Standards	EIA-485, CCITT V.11.	1-WIRE
Transmission type	MODBUS - halfduplex (inquiry - response)	fullduplex (sending and receiving on the same wire)
Optical Signalization	<ul style="list-style-type: none"> • PWD – green LED power supply, • RX - red LED data receiving via 1-WIRE interface, • TX - yellow LED data transmission via 1-WIRE interface. 	
Electrical Parameters		
Power requirements	10 - 24 – 30 V DC	
Power Cable	Recommended length of power cable – do 3m	
Power	<3W	
Protection from reverse power polarization	YES	
Galvanic Isolation	1kV DC or 3kV DC - between power circuit and RS485/422 signal line	
Optoisolation	~3kV - between signals lines 1-WIRE 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	Noryl UL. 94 V-O	
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



NO VERSIONS