

Datasheet

ADA-DIOC40

Isolated digital INPUT & OUTPUT MODBUS module



APPLICATION

ADA-DIOC40 module is the executive element, that extends control systems based on RS485-MODBUS bus with the ability to read status of circuits/devices, connected to digital input, and perform controls using the digital output. ADA-DIOC40 is dedicated to working together with PLC controllers, SCADA type software and devices supports MODBUS-RTU protocol. The module has one isolated digital input (marked on the case as DI+ and DI-), and one isolated digital output (marked on the case as DO+ and DO-).

The module can communicate with master devices in communication modes like:

- a/ **Signaling of DI status** – after each change of the input status, the module sends an informing frame about that the master device,
- b/ **Modbus** – the module is working like device Modbus SLAVE type
- c/ **Signaling of DI status and Modbus** – the module is working in two above modes simultaneously – this required connection 4-wire RS485 bus from the module to the master device.

The module has LEDs for signalling:

red LED – DI input status; yellow LED – DO output status; green LED – power supply PWR, useful for diagnostic purposes.

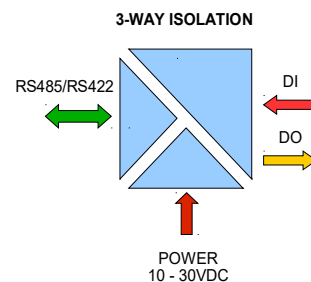
The module is mounting on DIN35 rail, according to DIN EN EN50022 norm. Module configuration is via RS485/RS422 interface by the use ADAConfig software. There is also possibilities of changing the setting by the use MODBUS protocol.

TECHNICAL DATA

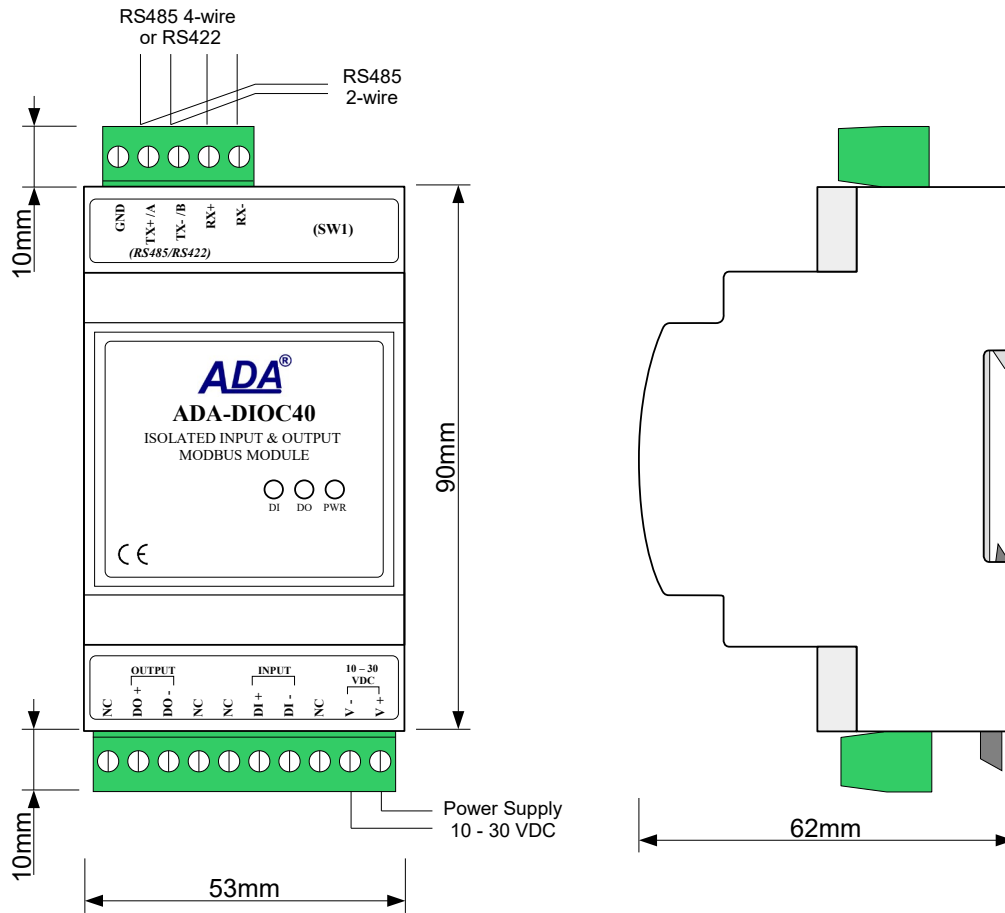
Transmission Parameters	
Interface	RS-485/RS-422
Connector	Screw terminal, wire max. Ø 2,5mm ² .
Max. Line length	up to 1200m
Max. number of connected device	up to 32
Max. baud rate	300, 600, 1200, 1800, 2400, 4800, 7200, 9600, 14400, 19200, 28800, 38400, 57600, 76800, 115200, 230400,
Data formats	Data bits 5, 6, 7, 8, Parity: None, Parity, Odd, Number of stop bits: 1, 2,
Transmission line	Twisted cable 1-pair or 2-pair, UTP Nx2x0,5 (24AWG), shield inside large interferences STP Nx2x0,5(24AWG).

Standards	EIA-485, CCITT V.11
Transmission type	Asynchronous half duplex or full duplex
Optical Signalization	<ul style="list-style-type: none"> • PWR – green LED power supply, • DI – red LED input status, • DO – yellow LED output status,
Communication protocol	MODBUS-RTU
Digital Input Parameters	
Number of inputs	1
Input voltage range	0 – 30V DC
Low status „0”	0 – 5,5V DC
High status „1”	6,5 – 30V DC
Input resistance	3kΩ
Optical isolation	3kV DC
Input type	Isolated transoptor
Digital Output Parameters	
Number of output	1
Max. current and voltage	20mA DC / 30V DC
Optical isolation	3kV DC
Output type	OC – Open Collector (PNP)
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	1kVDC or 3kVDC between power circuit and RS-485/RS-422 – depend on version.
Optoisolation	~3kV – between input&output circuits and module electronics
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	-25 ÷ 50°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	ABS/PC (self-extinguishing)
Degree of casing protection	IP40
Degree of terminal protection	IP20
Weight	0,20 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-DIOC40 -		-	
Version:	Standard		1
3-way galvanic isolation:	1kV=		23
	3kV=		33

Order example:
 Product Symbol: **ADA-DIOC40-1-23**
 1 – standard version,
 23 – 1kV=, 3-way galvanic isolation,