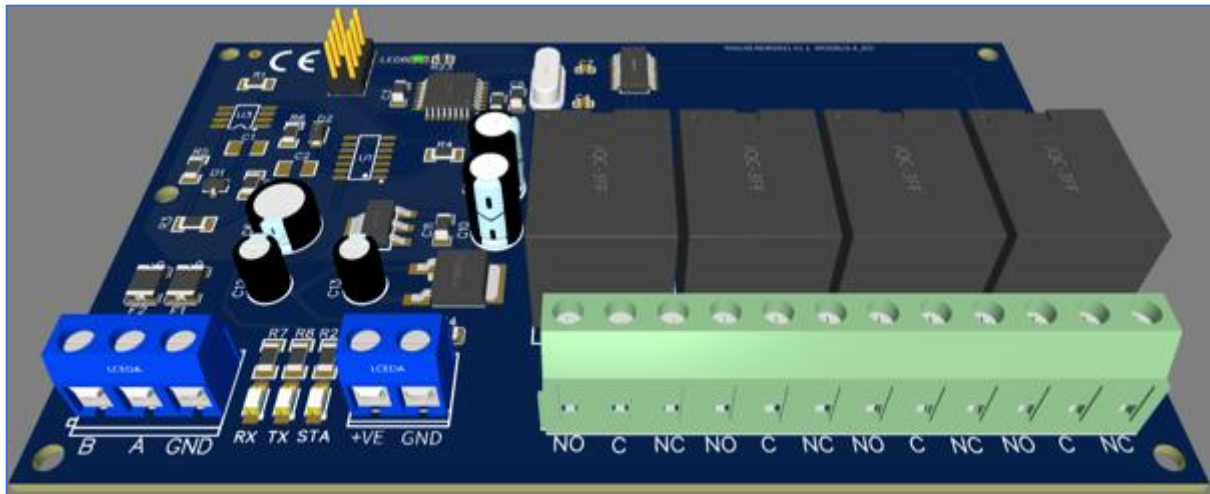# Technical Datasheet Input / Output Modules with Modbus RTU Protocol with RS485 Interface

The IO modules communicate via RS485. The port can drive distances up to max 700 meters without the use of any repeater (*this feature however also depends on the signal strength of the Modbus Master Device).*
The RS485 Digital IO module is sturdy, low power usage and easy to use.

4 Port DO Module: -

The IO modules are mounted on DIN rail mountable casing and will also have a top acrylic safety cover on top for safety.

The design of the modules incorporates '**resettable Fuses**' to safeguard against reverse polarity connection both for **Power** and **Communication** port.

Specifications

General –

I/O Connectors	12 Pin 5.08 mm pitch pluggable screw Terminal Block
Dimensions	72 mm x 195 mm
Power	Input Power – 12 – 24 VDC or 24 V AC/DC
	Typical – 12V DC @ 80mA
Operating Temperature	0 – 60° C (32 ~ 140°F)
Storage Temperature	-20 - 70° C (-4 ~ 158°F)
Storage Humidity	5 ~ 95 % RH, non – Condensing

Certifications

Relay Output –

Channels	4
Contact Form	1A, 1C
Contact Material	Ag Alloy
Contact Capacity	10A @ 240VAC, 10A @ 28VDC
Coil Voltage	5 – 48 VDC
Coil Power	0.36 W
Insulation Resistance	250MΩ
Electrical Life	1×10^5
Mechanical Life	1×10^7
Operating Time	7 msec, Max 15 msec
Release Time	2 msec, Max 6 msec

Additional Features: -

Communication port isolated
Input power reverse polarity safety
ESD Safety IEC 61000-4-2, ± 30KV contact, ± 30KV air
EFT IEC 61000-4-4, 50A (5/50ms)
750V isolation.
CRC Error check.
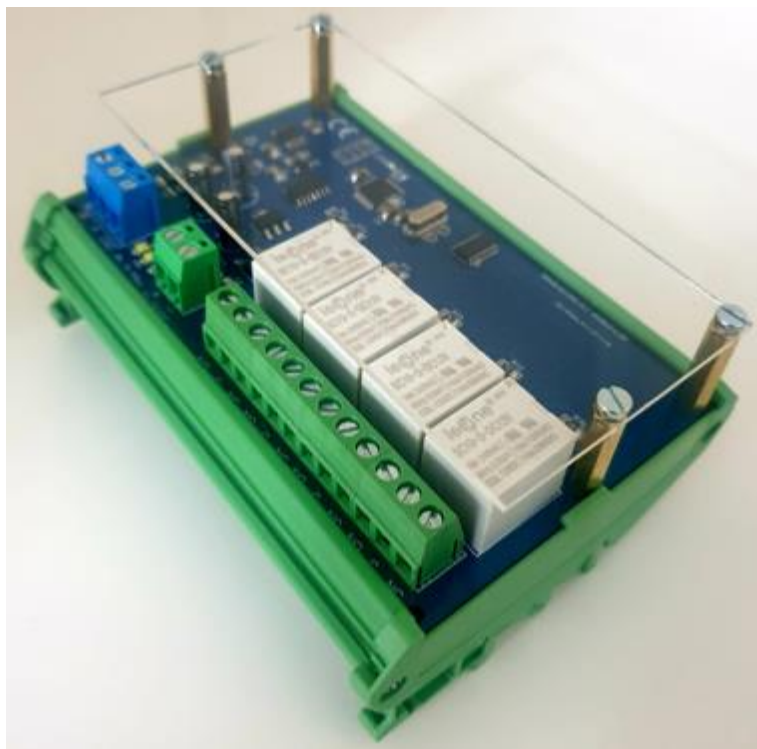**No configuration needed on the IO board**

Configuration Settings: -

Communication Speed	9600 – 115200 Kbps (Default 9600) DIP SW selectable
Data Bits	8
Parity	None
Stop bit	1
CRC	Yes
Slave ID	Pre-Configured OR DIP SW Selectable
Function code	0x05 and 0x0F (5 Single coil & 15 multiple coil)
DO Register Address	0,1,2,3.

Note: -

For MODBUS communications, **a shielded and twisted pair cable** is used. One example of such cable is Belden 3105A.

Recommended Cable Electrical Characteristics: -

22 AWG Cable   Shielded Twisted pair should be used
Tinned Copper   Recommended
Nominal Conductor DCR 14.7 ohm / 1000 ft
Nominal Capacitance   11 pf / feet (conductor to conductor)
High Frequency Non-Insertion Loss   0.5db / 100ft

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