

RM-16WAY-MB-24VDC MODBUS RELAY MODULE



The relay module provides 16 individual relays controlled over an RS485 serial bus using the Modbus RTU protocol.

The relays can be either mechanical 46.61-024-DC relays or SSR-EDxxC5 solid state relays. The relay module can be populated with a mixture of mechanical relays or solid state relays to suit the loads being switched.

The module is powered from an external 24V DC supply.

Order code:

RM-16WAY-MB-24VDC 16 way relay module
Fitted with 16 x 46.61-024V-DC relays

Customer specified mixture of 46.61-024V-DC relays and SSR-EDxxC5 solid state relays on request

Specifications

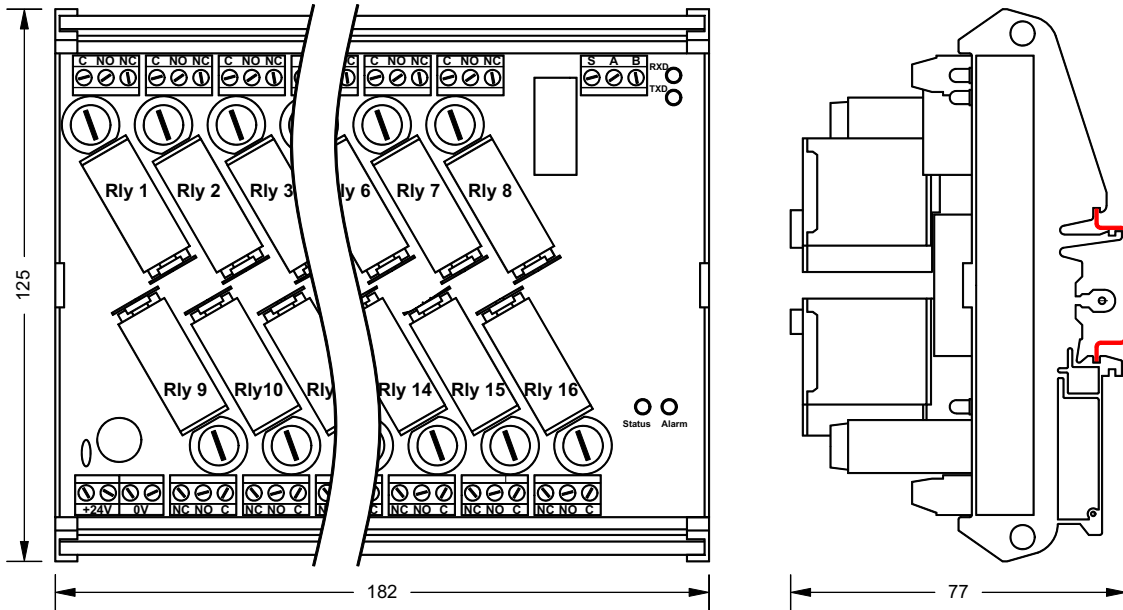
Comms	: Isolated RS485 port
	: Selectable 9600 (default) or 19200 Baud 8 bit no parity 1 stop bit
Protocol	: Modbus RTU slave, node addressing selectable 1 (default) to 247
Supported Functions	: 01 read discrete outputs
	: 03 read holding registers
	: 05 write discrete output
	: 06 write single register
	: 15 write multiple outputs
	: 16 write multiple registers
Outputs	16 individual relays with fuse holders
	Either 46.61-024-DC mechanical relays with SPCO contacts
	or SSR-EDxxC5 solid state relays with NO outputs
	* NOTE fuses not supplied with the unit
	46.61-024-DC relays : 250VAC 10A SPCO (fuse/fuse holder limited)
	SSR-ED06C5 relays : 1-48Vdc 5A NO
	SSR-ED24C5 relays : 24-280Vac 5A NO
Supply Input	: nominal 24V dc, operating range 18V to 30V dc
	: approx. 20mA + 25mA/relay, 450mA with all 16 relays on
Isolation	: 2kV isolation between the supply and RS485 bus.
Temperature	Operating : -10°C to +20°C to +50°C
	Storage : -20°C to +70°C
EMC Compliance	: AS/NZS 61000.6.3:2012
Housing	DIN rail mounted polyamide, flame retardant UL 94 V0.
Terminals	Spring steel clamp, tin plated copper alloy terminal
	: up to 1.5mm ² stranded conductor
	: wire stripping 9mm

CARREL ELECTRADE LTD

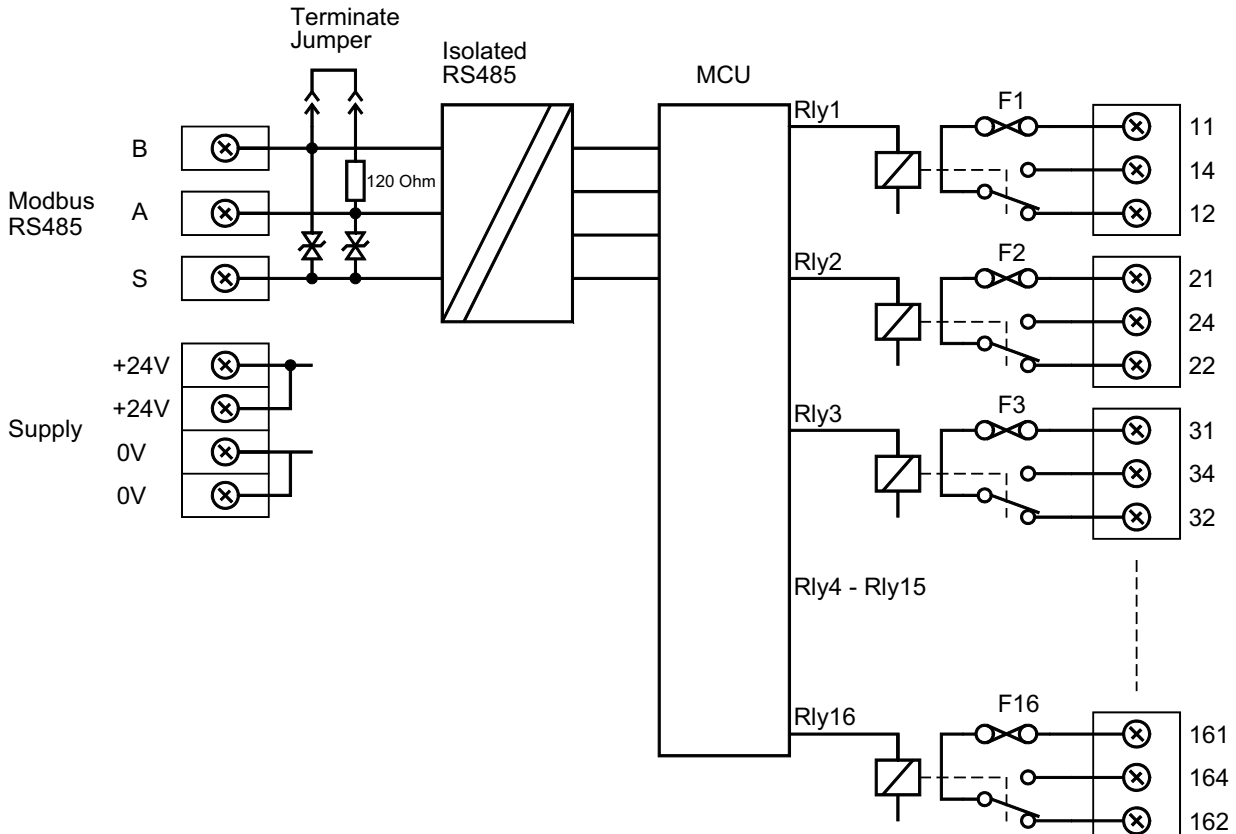
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Dimensions

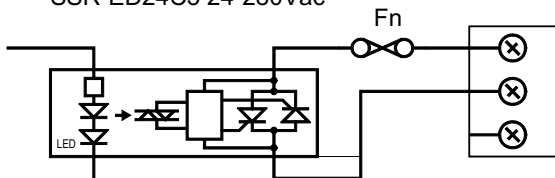


Circuit Diagram

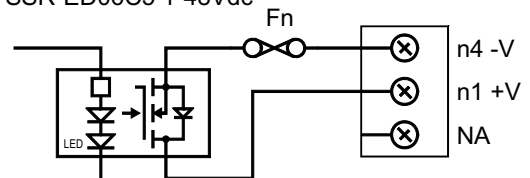


Solid state relay output configuration

SSR-ED24C5 24-280Vac



SSR-ED06C5 1-48Vdc



RM-16WAY-MB-24VDC MODBUS RELAY MODULE

Modbus Operation

Modbus RTU slave over RS485.

Baud rate 9600 (default) or 19200, no parity 8 bit 1 stop bit.

Node address range 1 (default) to 247.

The relay states can be read using function 01 read outputs (coils) or function 03 read holding registers.

The relay states correspond to bits 0 to 15 in register 40001.

The relay states can be written using function 05 write single output (coils), function 06 write single register, function 15 write multiple outputs (coils) or function 16 write multiple registers.

Broadcast slave address 0 read supported for function 01 read outputs (coils) and function 03 read holding registers.

Responds with actual node address plus data.

Supported Modbus functions:

Function 01, read outputs(coils)

Address range 10001 to 10016

Function 03, read holding registers

Address range 40001 to 40007

Function 05, write single output (coils)

Address range 10001 to 10016

Function 06, write single register

Address range 40001 to 40007

Function 15, write multiple outputs (coils)

Address range 10001 to 10016

Function 16, write multiple registers

Address range 40001 to 40007

Modbus Registers

Outputs (coils):

10001	Relay output 1	10009	Relay output 9
10002	Relay output 2	10010	Relay output 10
10003	Relay output 3	10011	Relay output 11
10004	Relay output 4	10012	Relay output 12
10005	Relay output 5	10013	Relay output 13
10006	Relay output 6	10014	Relay output 14
10007	Relay output 7	10015	Relay output 15
10008	Relay output 8	10016	Relay output 16

Holding Registers:

40001 MbReg1 Relay outputs.

Relay output 1, bit 0	Relay output 9, bit 8
Relay output 2, bit 1	Relay output 10, bit 9
Relay output 3, bit 2	Relay output 11, bit 10
Relay output 4, bit 3	Relay output 12, bit 11
Relay output 5, bit 4	Relay output 13, bit 12
Relay output 6, bit 5	Relay output 14, bit 13
Relay output 7, bit 6	Relay output 15, bit 14
Relay output 8, bit 7	Relay output 16, bit 15

40002 - 40005 not used

40006 MbBaud RS485 Baud rate, 9600 (default) or 19200

40007 MbNode Modbus node address, 1 (default) to 247