

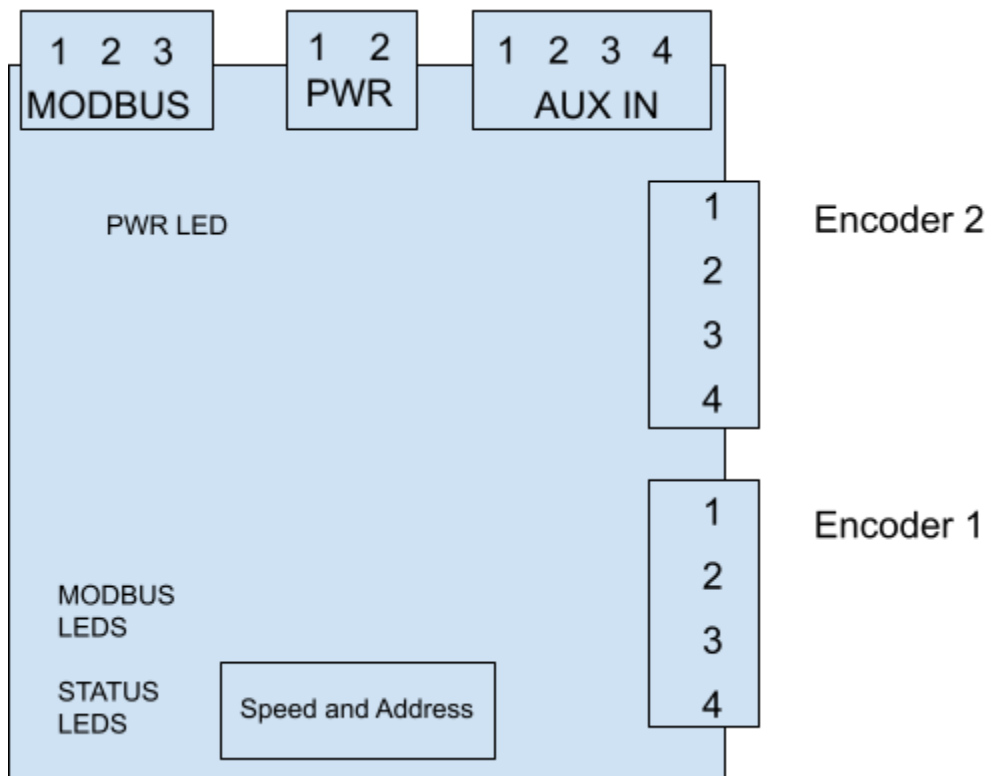
TEM18

Dual Isolated MODBUS encoder module

TEM18 module Provides a MODBUS interface to 2 rotary encoders with 2 reset inputs and 2 additional binary inputs.

It utilizes 2 isolated DC-DC converters to provide isolation between:

- Power input
- Rotary encoders
- MODBUS communication media



Connection details:

MODBUS	
1	MODBUS GND
2	A
3	B

PWR	
1	PWR IN (12-24V)
2	PWR GND

AUX IN	
1	IN 1
2	IN 2
3	IN 3
4	IN 4

Encoder <n>	
1	5V
2	Channel A
3	Channel B
4	Encoder GND

Speed and Address:

A	A	A	A	A	A	S	S
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Speed	
00	38400
01	19200
10	9600

00	4800
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Address (binary encoded)	
000000	0
000001	1
000010	2
etc..	

Communication details:

The device communicates over RS485 MODBUS RTU.

It responds to the following commands:

- Read input registers:
 - Reads the 6 registers as shown in the above below
- Read holding registers:
 - Reads the holding registers status (2 registers). Should always be 0
- Write Multiple Registers:
 - Write to the holding registers (2 registers). A non-zero write to each of them resets the respective position counter to 0. After that the holding register is automatically reset to 0.
- Read Discrete inputs
 - Reads the binary (discrete) inputs of the module as shown in the table below
- Write multiple coils 0x0f:
 - Use to reset positions. See table below

Input Registers (each is 2 bytes, signed)	
Address	Data
0	Encoder 1 position

1	Encoder 1 speed (signed)
2	Encoder 1 speed (absolute)
3	Encoder 2 position
4	Encoder 2 speed (signed)
5	Encoder 2 speed (absolute)

Discrete inputs (R)	
Address	Data
0	IN 4 (Reset Position 1)
1	IN 3 (Reset Position 2)
2	IN 2
3	IN 1
4	Encoder 1 channel B
5	Encoder 2 channel B
6	Encoder 1 channel A
7	Encoder 2 channel A

Coils (W)	
Address	Data
0	Write 1 to reset encoder 1
1	Write 1 to reset encoder 2

Holding Registers (R/W)	
Address	Data

0	Write 1 to reset encoder 1
1	Write 1 to reset encoder 2