

# MMB Back Spin Relay

## Technical specifications

### 1. Measured Variables

Frequency	-100 to 100 Hz
Voltage (Phase-Phase)	100 to 5000 V <sub>RMS</sub>
Ground Fault (Unbalance)	50 %
Relay Time Delays	0 to 2000 sec.

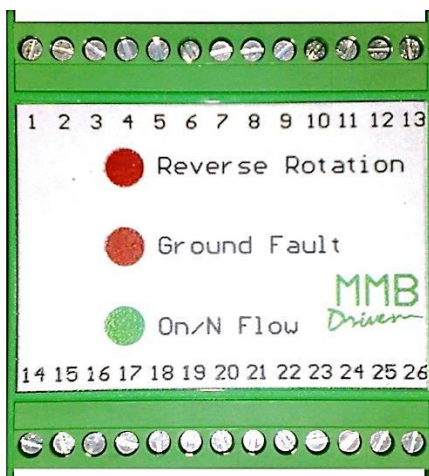


Fig. 1. Front view

### 2. Operating Specification

Variable	Range
Operating Temperature	-25 to 50 Deg C
Response Times and Delay Times	User Configurable via Modbus
Power Supply	85 to 260 V <sub>RMS</sub> (50-60 Hz)
Sensor	Voltage Divider
Voltage Inputs	Fully Isolated Input from Communication ports
Communication	RS-485 Modbus Slave Port, 4-20mA or 0-10V output for Speed Meter

### 3. Pin connections

PIN NO.	FUNCTION
1	Modbus RTU RS-485 – B (-)
2	Modbus RTU RS-485 – A (+)
3	Modbus RTU RS-485 – GND
4	Modbus RTU RS-485 – GND
5	Modbus RTU RS-485 – GND
6	4-20mA Output (-)
7	4-20mA Output (+)
8	Modbus RTU RS-485 – GND
9	GND (Voltage Inputs Common)
10	Voltage Input (Phase A) – from High Voltage Divider
11	Voltage Input (Phase B) – from High Voltage Divider
12	Voltage Input (Phase C) – from High Voltage Divider
13	GND (Voltage Inputs Common)
14	AC Power Supply (L)
15	AC Power Supply (N)
16	AC Power Supply (PE) - Optional
17	Not Connect
18	Reverse Rotation Relay – Normally Open Contact
19	Reverse Rotation Relay – Common
20	Reverse Rotation Relay – Normally Close Contact
21	Ground Fault – Normally-Open Contact
22	Ground Fault – Common
23	Ground Fault – Normally-Close Contact
24	Normal Flow – Normally-Open Contact
25	Normal Flow – Common
26	Normal Flow – Normally-Close Contact

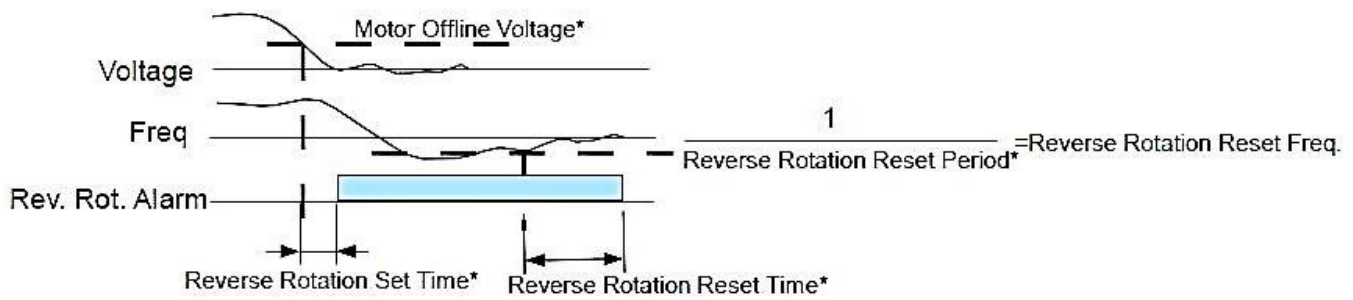
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## 4. Modbus Map

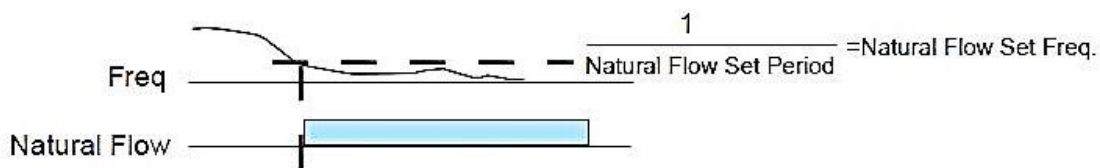
MODBUS ADDRESS	FUNCTION	FACTORY SETTING	RANGE
40013	Modbus Address	1	1 – 254
40014	Firmware Version	0	--
40015	Reverse Rotation Set Time	2 [s]	1 – 60 [s]
40016	Reverse Rotation Reset Time	5 [s]	1 – 60 [s]
40017	Natural Flow Set Period	500 [ms]	1 – 1000 [ms]
40018	Reverse Rotation Reset Period	500 [ms]	1 – 1000 [ms]
40019	Motor Offline Voltage	250 [V]	100 – 5000 [V]
40020	Voltage Inputs Offset	8	0 – 255 [V]
40021	Set To Factory Setting	--	255
40028	Vab RMS [V]	--	--
40029	Vbc RMS [V]	--	--
40030	Vca RMS [V]	--	--
40031	Period [ $\mu$ s]	--	--

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## 5. Back Spin Relay Actions



\*Modbus parametr



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