

Thank you for choosing us. Before use, check specifications on the unit label.
If you have any problems or questions with the product, please contact our sales office or representatives.

General Description

The M-PAC Model MP1000 through MP1023 accept a large variety of DC inputs and provide relay contact closure(s) at a preset input level. The MP1000 Series reflects three styles of output selection:

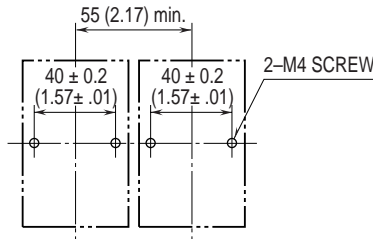
- MP1000 – MP1003** Single (Hi) trip, non-latching (DPDT, 3A)
- MP1010 – MP1013** Single (Hi) trip, latching (DPDT, 3A)
- MP1020 – MP1023** Dual (Hi/Lo) trip, non-latching (SPDT, 3A)

- Failsafe operation available
- Deadband adjustable from 1 to 100%
- Indicator LED provided

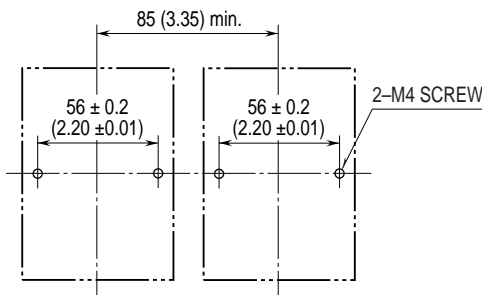
Installation [Scale: mm(inch)]

- Operating temperature: -5 to +60°C (23 to 140°F)
 - Operating humidity: 30 to 90% RH (non-condensing)
- Keep away from water, corrosive gas, dust and vibration. DIN rail mounting available for 11-pin-base modules. Use DIN rail of 35 mm width.

•11-Pin Base



•20-Pin Base



Terminal Connections

Make wiring to terminals as shown in the Tables in Page 2 through 3. Use the socket provided with the module. For low-level or high-impedance signal, use shielded cable or twisted-pair cable.

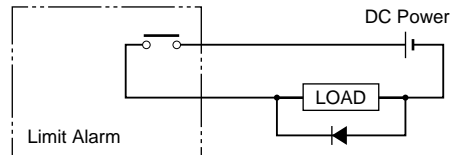
Adjustments

- Setpoint** The MP1000 Series has five styles of setpoint adjustment:
 - MP10X0** Top-accessed, 3-turn screw(s)
 - MP10X2** Remote dial connection(s), 1k to 100k ohms
 - MP10X3** DC-programmable, 0 to 1V
 The setpoint is adjustable over the entire input span.
 - A) Set deadband at its minimum (fully counterclockwise) before adjusting the setpoint.
 - B) With the specified trip voltage or current input applied, adjust setpoint until the relay trips. For Hi trip calibration, start with the setpoint above the desired trip. For Lo trip calibration start below the desired trip.
- Deadband** The deadband is independently adjustable for both setpoints in dual alarms.
 - A) Set deadband at its minimum (fully counterclockwise). Set setpoint to desired trip.
 - B) Adjust voltage/current input until relay trips.
 - C) Re-adjust deadband to 100% (fully clockwise).
 - D) Set voltage/current input to desired deadband position.
 - E) Slowly adjust deadband until relay untrips.
- Transmitter Output (Option T)**
 - A) With the specified minimum input applied, adjust Zero for 0.00V at the transmitter output.
 - B) With the specified maximum input applied, adjust Span for 1.00V. Repeat A) to B) for best accuracy.

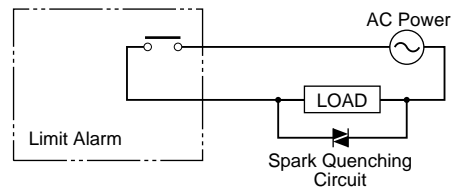
Relay Protection

- Output Relay Rating** 30V DC @3A (resistive load) or 120V AC @3A (cosφ=1)
- For maximum relay life with inductive loads, external protection is recommended. Refer to the Figures below.

- DC Line Powered Loop** Place a diode across the load.

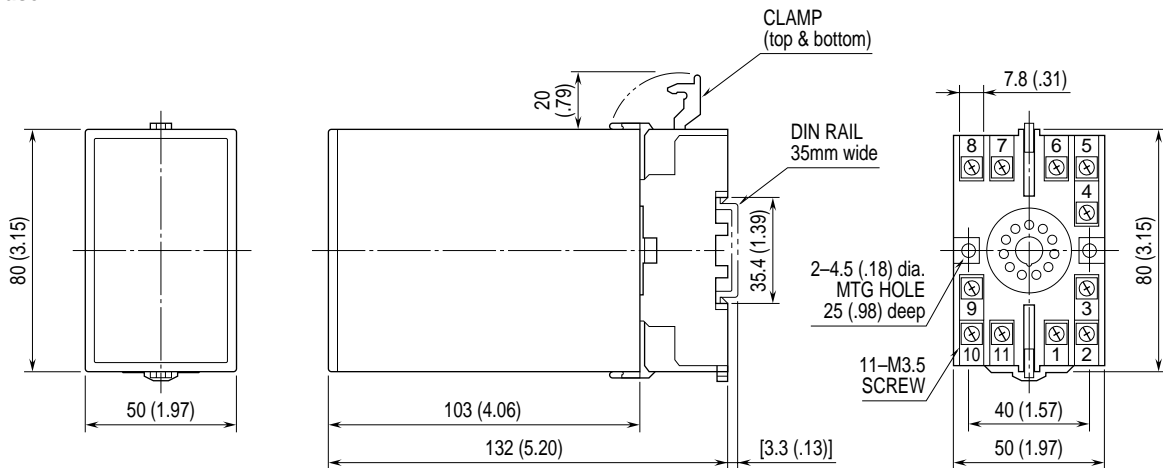


- AC Line Powered Loop** Place a varistor or CR spark killer across the load.

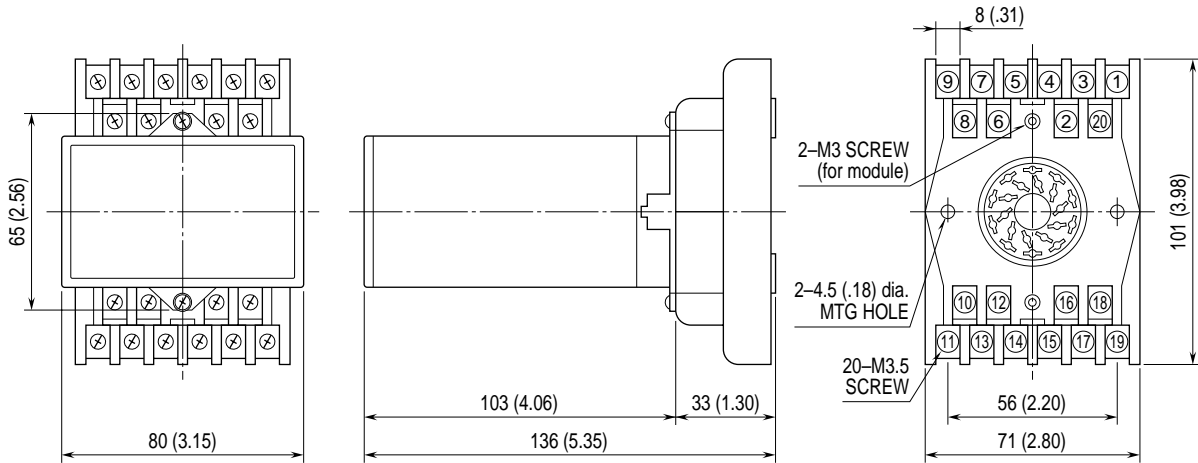


External Dimensions [Scale: mm(inch)]

•11-Pin Base



•20-Pin Base



Terminal Assignment

•Single Output

MP1000	MP1000 w/Option T	MP1002	MP1002 w/Option T	MP1003	MP1003 w/Option T
1 POWER (Hot/+)	1 POWER (Hot/+)	1 POWER (Hot/+)	1 POWER (Hot/+)	1 POWER (Hot/+)	1 POWER (Hot/+)
2 No Connection	2 No Connection	2 No Connection	2 No Connection	2 No Connection	2 No Connection
3 POWER (Neu/-)	3 POWER (Neu/-)	3 POWER (Neu/-)	3 POWER (Neu/-)	3 POWER (Neu/-)	3 POWER (Neu/-)
4 INPUT +	4 No Connection	4 No Connection	4 No Connection	4 No Connection	4 No Connection
5 INPUT -	5 No Connection	5 SP Pot CCW	5 SP Pot CCW	5 SP -	5 SP -
6 N.O.	6 No Connection	6 SP Pot W	6 SP Pot W	6 SP +	6 SP +
7 COM *	7 No Connection	7 SP Pot CW	7 SP Pot CW	7 No Connection	7 No Connection
8 N.C. *	8 SP Xmtr +	8 No Connection	8 SP Xmtr +	8 No Connection	8 SP Xmtr +
9 N.O.	9 INPUT +	9 INPUT +	9 INPUT +	9 INPUT +	9 INPUT +
10 COM	10 Xmtr Common	10 No Connection	10 Xmtr Common	10 No Connection	10 Xmtr Common
11 N.C.	11 INPUT -	11 INPUT -	11 INPUT -	11 INPUT -	11 INPUT -
	12 Proc Xmtr +	12 No Connection	12 Proc Xmtr +	12 No Connection	12 Proc Xmtr +
	13 N.O.	13 N.O.	13 N.O.	13 N.O.	13 N.O.
	14 COM *	14 COM *	14 COM *	14 COM *	14 COM *
	15 N.C. *	15 N.C. *	15 N.C. *	15 N.C. *	15 N.C. *
	16 No Connection	16 No Connection	16 No Connection	16 No Connection	16 No Connection
	17 N.O.	17 N.O.	17 N.O.	17 N.O.	17 N.O.
	18 COM	18 COM	18 COM	18 COM	18 COM
	19 N.C.	19 N.C.	19 N.C.	19 N.C.	19 N.C.
	20 No Connection	20 No Connection	20 No Connection	20 No Connection	20 No Connection

KEYS
 N.O. = Normally Open
 COM = Common
 N.C. = Normally Closed
 Proc = Process
 Xmtr = Transmitter
 SP = Setpoint
 W = Wiper
 CW = Clockwise
 CCW = Counterclockwise

***Pins used for Option V**
 20-pin = 14(+) - 15(-)
 11-pin = 7(+) - 8(-)

•Latching Output

MP1010	MP1010 w/Option T	MP1012	MP1012 w/Option T	MP1013	MP1013 w/Option T
1 POWER (Hot/+)	1 POWER (Hot/+)	1 POWER (Hot/+)	1 POWER (Hot/+)	1 POWER (Hot/+)	1 POWER (Hot/+)
2 No Connection	2 No Connection	2 No Connection	2 No Connection	2 No Connection	2 No Connection
3 POWER (Neu/-)	3 POWER (Neu/-)	3 POWER (Neu/-)	3 POWER (Neu/-)	3 POWER (Neu/-)	3 POWER (Neu/-)
4 No Connection	4 No Connection	4 No Connection	4 No Connection	4 No Connection	4 No Connection
5 No Connection	5 No Connection	5 SP Pot CCW	5 SP Pot CCW	5 SP -	5 SP -
6 No Connection	6 No Connection	6 SP Pot W	6 SP Pot W	6 SP +	6 SP +
7 No Connection	7 No Connection	7 SP Pot CW	7 SP Pot CW	7 No Connection	7 No Connection
8 No Connection	8 SP Xmtr +	8 No Connection	8 SP Xmtr +	8 No Connection	8 SP Xmtr +
9 INPUT +	9 INPUT +	9 INPUT +	9 INPUT +	9 INPUT +	9 INPUT +
10 No Connection	10 Xmtr Common	10 No Connection	10 Xmtr Common	10 No Connection	10 Xmtr Common
11 INPUT -	11 INPUT -	11 INPUT -	11 INPUT -	11 INPUT -	11 INPUT -
12 No Connection	12 Proc Xmtr +	12 No Connection	12 Proc Xmtr +	12 No Connection	12 Proc Xmtr +
13 N.O.	13 N.O.	13 N.O.	13 N.O.	13 N.O.	13 N.O.
14 COM *	14 COM *	14 COM *	14 COM *	14 COM *	14 COM *
15 N.C. *	15 N.C. *	15 N.C. *	15 N.C. *	15 N.C. *	15 N.C. *
16 Latch Reset	16 Latch Reset	16 Latch Reset	16 Latch Reset	16 Latch Reset	16 Latch Reset
17 N.O.	17 N.O.	17 N.O.	17 N.O.	17 N.O.	17 N.O.
18 COM	18 COM	18 COM	18 COM	18 COM	18 COM
19 N.C.	19 N.C.	19 N.C.	19 N.C.	19 N.C.	19 N.C.
20 Latch Reset	20 Latch Reset	20 Latch Reset	20 Latch Reset	20 Latch Reset	20 Latch Reset

KEYS
 N.O. = Normally Open
 COM = Common
 N.C. = Normally Closed
 Proc = Process
 Xmtr = Transmitter
 SP = Setpoint
 W = Wiper
 CW = Clockwise
 CCW =
 Counterclockwise

*Pins used for
Option V
 20-pin = 14(+) - 15(-)

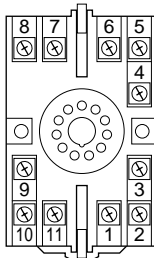
•Dual Output

MP1020	MP1020 w/Option T	MP1022	MP1022 w/Option T	MP1023	MP1023 w/Option T
1 POWER (Hot/+)	1 POWER (Hot/+)	1 POWER (Hot/+)	1 POWER (Hot/+)	1 POWER (Hot/+)	1 POWER (Hot/+)
2 No Connection	2 No Connection	2 No Connection	2 No Connection	2 No Connection	2 No Connection
3 POWER (Neu/-)	3 POWER (Neu/-)	3 POWER (Neu/-)	3 POWER (Neu/-)	3 POWER (Neu/-)	3 POWER (Neu/-)
4 INPUT +	4 No Connection	4 Lo SP Pot CW	4 Lo SP Pot CW	4 No Connection	4 No Connection
5 INPUT -	5 No Connection	5 Lo SP Pot W	5 Lo SP Pot W	5 Lo SP +	5 Lo SP +
6 N.O.	6 No Connection	6 SP Pots CCW	6 SP Pots CCW	6 SP Common	6 SP Common
7 COM *	Hi Set	7 Hi SP Pot W	7 Hi SP Pot W	7 Hi SP +	7 Hi SP +
8 N.C. *	8 No Connection	8 Hi SP Pot CW	8 Hi SP Pot CW	8 No Connection	8 No Connection
9 N.O.	9 INPUT +	9 INPUT +	9 INPUT +	9 INPUT +	9 INPUT +
10 COM *	Lo Set	10 No Connection	10 Proc Xmtr +	10 No Connection	10 Proc Xmtr +
11 N.C. *	11 INPUT -	11 INPUT -	11 INPUT -	11 INPUT -	11 INPUT -
	12 Lo SP Xmtr +	12 No Connection	12 Lo SP Xmtr +	12 No Connection	12 Lo SP Xmtr +
	13 N.O.	13 N.O.	13 N.O.	13 N.O.	13 N.O.
	14 COM * } Lo Set	14 COM * } Lo Set	14 COM * } Lo Set	14 COM * } Lo Set	14 COM * } Lo Set
	15 N.C. *	15 N.C. *	15 N.C. *	15 N.C. *	15 N.C. *
	16 Hi SP Xmtr +	16 No Connection	16 Hi SP Xmtr +	16 No Connection	16 Hi SP Xmtr +
	17 N.O.	17 N.O.	17 N.O.	17 N.O.	17 N.O.
	18 COM * } Hi Set	18 COM * } Hi Set	18 COM * } Hi Set	18 COM * } Hi Set	18 COM * } Hi Set
	19 N.C. *	19 N.C. *	19 N.C. *	19 N.C. *	19 N.C. *
	20 Xmtr Common	20 No Connection	20 Xmtr Common	20 No Connection	20 Xmtr Common

KEYS
 N.O. = Normally Open
 COM = Common
 N.C. = Normally Closed
 Proc = Process
 Xmtr = Transmitter
 SP = Setpoint
 W = Wiper
 CW = Clockwise
 CCW =
 Counterclockwise

*Pins used for
Option V
 20-pin:
 Hi Set = 19(+) - 18(-)
 Lo Set = 15(+) - 14(-)
 11-pin:
 Hi Set = 7(+) - 8(-)
 Lo Set = 10(+) - 11(-)

•Terminal No. for 11-Pin Base



•Terminal No. for 20-Pin Base

