

RTD INPUT LIMIT ALARM

model
MP1400 through MP1423

Thank you for choosing M-System. Before use, check specifications on the unit label.

If you have any problems or questions with the product, please contact M-System's Sales Office or representatives.

General Description

The M-PAC Model MP1400 through MP1423 accept 2- or 3-wire RTD inputs and provide relay contact closure(s) at a preset input level. The MP1400 Series reflects three styles of output selection:

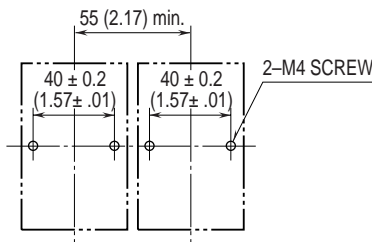
- MP1400 – MP1403** Single (Hi) trip, non-latching (DPDT, 3A)
- MP1410 – MP1413** Single (Hi) trip, latching (DPDT, 3A)
- MP1420 – MP1423** Dual (Hi/Lo) trip, non-latching (SPDT, 3A)

- Upscale burnout protection as standard
- Failsafe operation available
- Deadband adjustable from 1 to 100%
- indicator LED provided

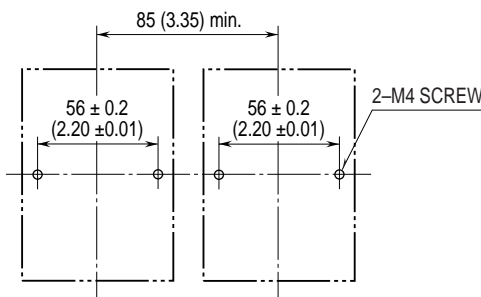
Installation [Scale: mm(inch)]

- 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.

Adjustments

•**Setpoint** The MP1400 Series has five styles of setpoint adjustment:

- MP14X0** Top-accessed, 3-turn screw(s)
- MP14X2** Remote dial connection(s), 1k to 100k ohms
- MP14X3** 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 Resistance/RTD 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 Resistance/RTD input until relay trips.
- C) Re-adjust deadband to 100% (fully clockwise).
- D) Set Resistance/RTD input to desired deadband position.
- E) Slowly adjust deadband until relay untrips.

•**Transmitter Output (Option T)**

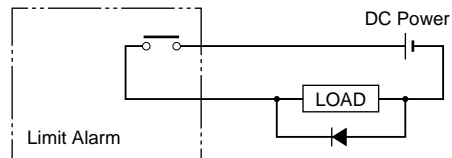
- A) With the specified minimum input applied, adjust Zero for 0.00V at the transmitter output.
- B) With the specified maximum input applied, adjust Span for 1.00V. Repeat A) to B) for best accuracy.

Relay Protection

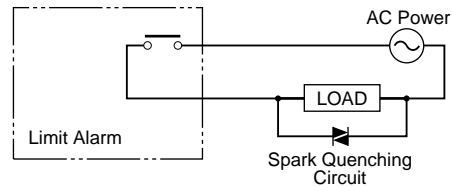
- Output Relay Rating** 30V DC @3A (resistive load) or 120V AC @3A (cosφ=1)

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.

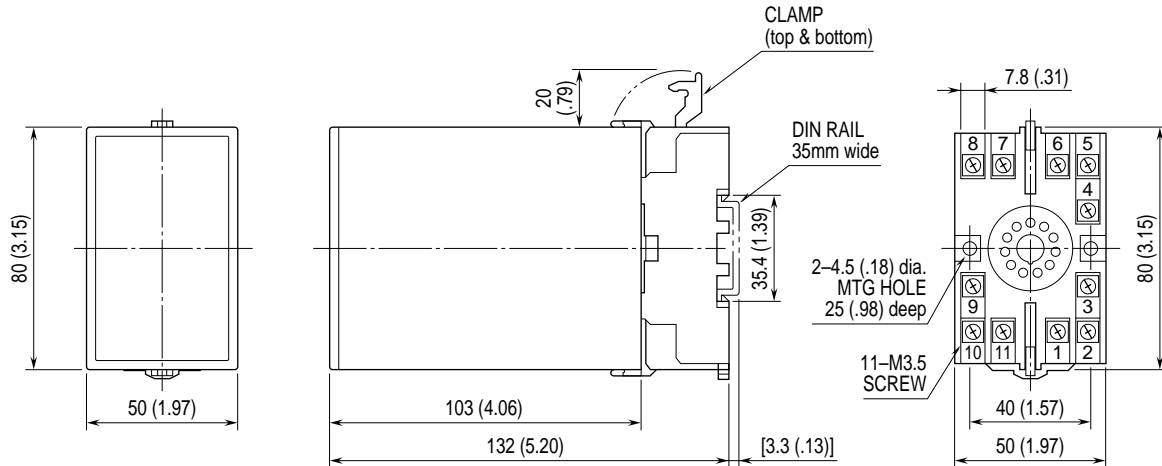


•**AC Line Powered Loop** Place a varistor or CR spark killer across the load.

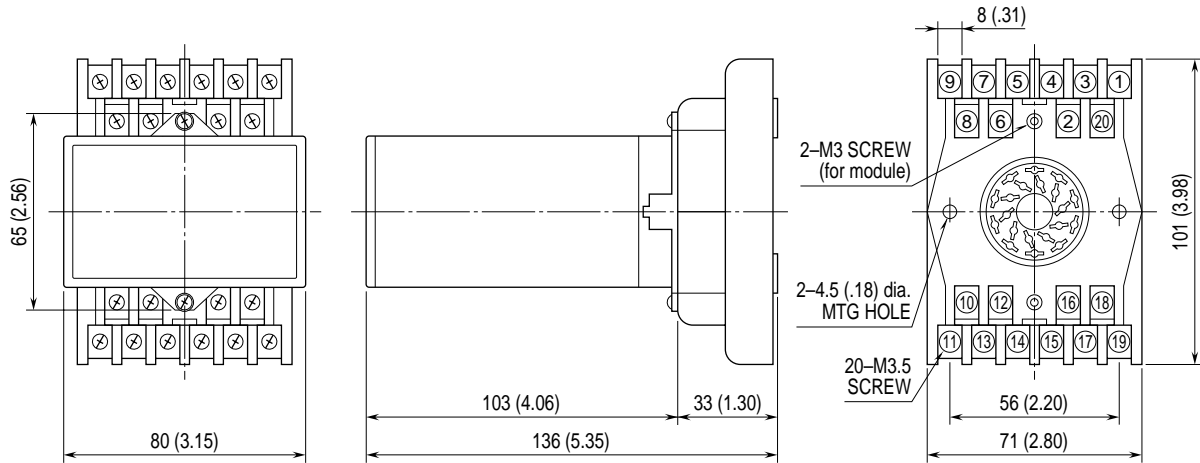


External Dimensions [Scale: mm(inch)]

•11-Pin Base



•20-Pin Base



Terminal Assignment

•Single Output

MP1400	MP1400 w/Option T	MP1402	MP1402 w/Option T	MP1403	MP1403 w/Option T
1 POWER (Hot/+)	1 POWER (Hot/+)	1 POWER (Hot/+)	1 POWER (Hot/+)	1 POWER (Hot/+)	1 POWER (Hot/+)
2 RTD Comp Lead	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 RTD Hi	4 No Connection	4 No Connection	4 No Connection	4 No Connection	4 No Connection
5 RTD Lo	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 RTD Lo	9 RTD Lo	9 RTD Lo	9 RTD Lo	9 RTD Lo
10 COM	10 Xmtr Common	10 No Connection	10 Xmtr Common	10 No Connection	10 Xmtr Common
11 N.C.	11 RTD Hi	11 RTD Hi	11 RTD Hi	11 RTD Hi	11 RTD Hi
	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 RTD Comp Lead	20 RTD Comp Lead	20 RTD Comp Lead	20 RTD Comp Lead	20 RTD Comp Lead

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

MP1410	MP1410 w/Option T	MP1412	MP1412 w/Option T	MP1413	MP1413 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 Latch Reset	4 Latch Reset	4 Latch Reset	4 Latch Reset	4 Latch Reset	4 Latch Reset
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 RTD Lo	9 RTD Lo	9 RTD Lo	9 RTD Lo	9 RTD Lo	9 RTD Lo
10 No Connection	10 Xmtr Common	10 No Connection	10 Xmtr Common	10 No Connection	10 Xmtr Common
11 RTD Hi	11 RTD Hi	11 RTD Hi	11 RTD Hi	11 RTD Hi	11 RTD Hi
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 RTD Comp Lead	20 RTD Comp Lead	20 RTD Comp Lead	20 RTD Comp Lead	20 RTD Comp Lead	20 RTD Comp Lead

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

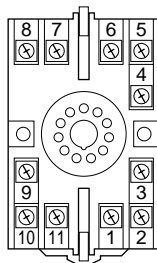
•Dual Output

MP1420	MP1420 w/Option T	MP1422	MP1422 w/Option T	MP1423	MP1423 w/Option T
1 POWER (Hot/+)	1 POWER (Hot/+)	1 POWER (Hot/+)	1 POWER (Hot/+)	1 POWER (Hot/+)	1 POWER (Hot/+)
2 RTD Comp Lead	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 RTD Hi	4 No Connection	4 Lo SP Pot CW	4 Lo SP Pot CW	4 No Connection	4 No Connection
5 RTD Lo	5 No Connection	5 Lo SP Pot W	5 Lo SP Pot W	5 Lo SP +	5 Lo SP +
6 N.O.	6 Xmtr Common	6 SP Pots CCW	6 SP Pots CCW/ Xmtr Common	6 SP Common	6 SP Common/ Xmtr Common
7 COM * } Hi Set	7 No Connection	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 RTD Lo	9 RTD Lo	9 RTD Lo	9 RTD Lo	9 RTD Lo
10 COM * } Lo Set	10 Proc Xmtr +	10 No Connection	10 Proc Xmtr +	10 No Connection	10 Proc Xmtr +
11 N.C. * }	11 RTD Hi	11 RTD Hi	11 RTD Hi	11 RTD Hi	11 RTD Hi
	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 RTD Comp Lead	20 RTD Comp Lead	20 RTD Comp Lead	20 RTD Comp Lead	20 RTD Comp Lead

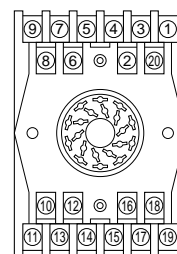
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 COM = Common
 N.C. = Normally Closed
 Proc = Process
 Xmtr = Transmitter
 SP = Setpoint
 W = Wiper
 CW = Clockwise
 CCW =
 Counterclockwise

***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



M-SYSTEM WARRANTY

M-System warrants such new M-System product which it manufactures to be free from defects in materials and workmanship during the 36-month period following the date that such product was originally purchased if such product has been used under normal operating conditions and properly maintained, M-System's sole liability, and purchaser's exclusive remedies, under this warranty are, at M-System's option, the repair, replacement or refund of the purchase price of any M-System product which is defective under the terms of this warranty. To submit a claim under this warranty, the purchaser must return, at its expense, the defective M-System product to the below address together with a copy of its original sales invoice. THIS IS THE ONLY WARRANTY APPLICABLE TO M-SYSTEM PRODUCT AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. M-SYSTEM SHALL HAVE NO LIABILITY FOR CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES OF ANY KIND WHATSOEVER.

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