

DESCRIPTION

The MS5502 is a plug-in RTD temperature transmitter that converts input signals from an RTD into commonly used DC signals and provides an isolated single output.

ORDERING CODE

MS5502 - -

Model _____

Power Supply _____

A: 100 to 240V AC (50 to 60Hz)
D: 24V DC **P:** 100 to 240V DC

Input _____

P1: Pt 100Ω **J:** JPt 100Ω
P5: Pt 50Ω **N:** Ni 508.4Ω
Y: Other than those above.

Output _____

A: 4 to 20mA DC **1:** 0 to 10mV DC
D: 0 to 20mA DC **2:** 0 to 100mV DC
Z: Other DC current signals **3:** 0 to 1V DC
 4: 0 to 10V DC
 5: 0 to 5V DC
 6: 1 to 5V DC
 3W: ±1V DC
 4W: ±10V DC
 5W: ±5V DC
 0: Other DC voltage signals

Note: Upscale burnout protection is standard.

Options

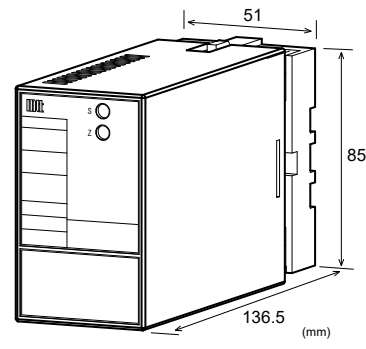
- No code:** None
 - /K:** Fast response (0 to 90% response time: 10ms max.)
 - /H:** Polyurethane conformal coating
 - /X:** Others (Special order)
- * For non-standard options, ask MTT for availability.

ORDERING INFORMATION

To place an order, please use the ordering code format as shown above. Also specify a measuring temperature range*.
(e.g.) MS5502-A-P16/K (0 to 150°C)

* Note that the temperature range should be specified in steps of at least 10 degrees Celsius.

Other Ordering Examples:
For an input code of "Y": MS5502-A-YA (Input: Cu 10Ω at 0°C / 0 to 100°C)
For an output code of "0": MS5502-A-P10 (0 to 150°C / Output: 2 to 5V)
For an option code of "X": MS5502-A-P1A/X (0 to 150°C / Response frequency 50Hz)
Note: If you wish to include multiple options in your order, specify the option codes in series (e.g. /KX).


SPECIFICATIONS
POWER SECTION

Power Requirements	100 to 240V AC: 85 to 264V AC (47 to 63Hz) 24V DC: 24V DC±10% 100 to 240V DC: 85 to 264V DC		
Power Sensitivity	Better than ±0.1% of span for each power supply range.		
Power Line Fuse	160mA fuse		
Maximum Power Consumption			
Power	100-240V AC	24V DC	100-240V DC
	Approx. 5.5VA	Approx. 1.6W	Approx. 6.0W

INPUT SECTION

Excitation Current	Approx. 1mA with Pt for 0 to 100°C		
Lead Wire Resistance	200Ω max. per wire		
Ranges Available			

<Standard specifications> (Temp at 0% input = 0°C)

Pt 100Ω	Specify between 0-50°C and 0-500°C in steps of 50°C (e.g. Pt 100Ω, 0 to 150°C).
JPt 100Ω	Specify between 0-50°C and 0-500°C in steps of 50°C (e.g. JPt 100Ω, 0 to 250°C).
Pt 50Ω	0 to 100°C

<Quasi-standard specifications>

RTD	Temperature Range (°C)	Input Span	Input Bias
Pt 100Ω	-200 to +850	50°C min.	Up to 4x the input span.
JPt 100Ω	-200 to +500	50°C min.	
Pt 50Ω	-200 to +600	100°C min.	
Ni 508.4Ω	-50 to +250	30°C min.	

Input Spec Ex.: For Pt 100Ω (150 to 200°C), the input span is 50°C and the bias 150°C (3x the span).

Note: Any specification out of the temperature range or bias requirement listed above is handled as a special order.

OUTPUT SECTION

Allowable Output Load			
Voltage Output (DC)	1V span and up	2mA max.	
	10mV	10kΩ min.	
	100mV	100kΩ min.	
Current Output (DC)	4 to 20mA	750Ω max.	

Zero Adjustment	Approx. ±5% of span. (Adjustable by the front-accessible trimmer.)	
Span Adjustment	Approx. ±5% of span. (Adjustable by the front-accessible trimmer.)	
Burnout Protection	Upscale (even if any of the three wires, A, B, and B' is opened)	
Ranges Available	Current Signal	Voltage Signal
Output Range (DC)	0 to 20mA	-10 to 10V
Output Span (DC)	4 to 20mA	10mV to 20V
Output Bias	0 to 100%	-100 to 100%

* For current output signals, the accuracy of any current output smaller than 0.1mA is not guaranteed.

Output Spec Ex. 1: For 4 to 20mA output, the output span is 16mA and the bias +25%.

Output Spec Ex. 2: For -1 to 4V output, the output span is 5V and the bias -20%.

● PERFORMANCE

Accuracy Rating	Better than ±0.15% of span (at 25°C±5°C).
Temperature Effect	Better than ±0.2% of span per 10°C change in ambient.
Response Time	170ms max. (0 to 90%) with a step input at 100%.
CMRR	100dB min. (500V AC, 50/60Hz)
Isolation	3-way isolation between input, output, and power.
Insulation Resistance	100MΩ min. (@ 500V DC) between input, output, and power.
Dielectric Strength	Input / Output / Power: 2000V AC for 1 minute (Cutoff current: 0.5mA)
Surge Withstand Capability	Tested as per ANSI/IEEE C37.90.1-1989.
Operating Environment	Ambient temperature: -5 to 55°C Humidity: 5 to 90% RH (non-condensing)
Storage Temperature	-10 to 60°C

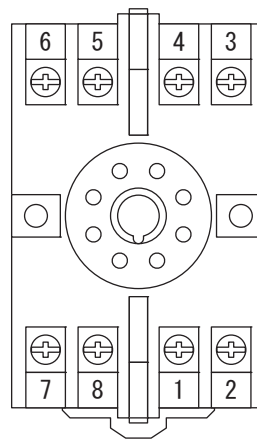
● PHYSICAL

Installation	Wall/DIN rail mounting
Mounting Direction	Vertical
Screwing Torque	0.78 to 1.18 [Nm] * Recommended
Wiring	M3.5 screw terminal connection
External Dimensions	W51 × H85 × D136.5 mm (including the socket)
Weight	Main unit: 200g max. Socket: 60g max.

● MATERIAL

Housing	ABS resin (UL 94V-0)
Socket	ABS resin (UL 94V-0)
Screw Terminal	Galvanized steel with trivalent chromate finish
Printed Circuit Board	Glass fabric, epoxy resin (FR-4: UL 94V-0)

TERMINAL ASSIGNMENTS



①	+ OUTPUT	
②	- OUTPUT	
③	RTD A	
④	RTD B	
⑤	RTD B'	
⑥	N.C.	
⑦	P (+)	POWER
⑧	N (-)	

BLOCK DIAGRAM

