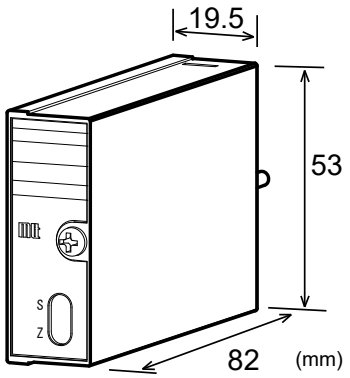
Product Specification Sheet Model: MS3902 MS3900

Chassis-Mount RTD Temperature Transmitter with Isolated Dual Output

DESCRIPTION

The MS3902 is a chassis-mount RTD temperature transmitter that supplies constant current to a three-wire RTD and converts its mV input signals into mutually isolated dual channel DC output signals.

- ▽ Features linearization and burnout protection.
- ▽ A multi-slot chassis provides ease of maintenance and high-density mounting.
- ▽ Input, output 1, output 2, and power circuits are all isolated from each other.
- ▽ Equipped with a fuse on the DC power line as standard.



ORDERING INFORMATION

Ordering Code
MS3902-□(□–□)-8□□_ [1] └[2]┘ [3] [4]

SPECIFICATIONS

POWER SECTION

Power Requirement	24V DC±10%
Power Sensitivity	Better than ±0.1% of span per 10% change in supply voltage
Power Line Fuse	Output codes other than C2: 160mA fuse Output code C2: 125mA fuse
Current Consumption	60mA max. at 24V DC

INPUT SECTION

Input (Specify a code in the field [1].)	JIS or other standard RTDs Code ■ Pt 100Ω ····· Pt100 ■ JPt 100Ω ····· JPt100 ■ Pt 50Ω ····· Pt50 ■ Cu 25Ω ····· Cu25 ■ Cu 100Ω ····· Cu100 ■ Ni 508.4Ω ····· Ni508 ■ Other than the above ····· X Specify an RTD standard (A) and symbol (B) as indicated below: X = A / B Notes: 1. When Pt100 is specified, the resistance table of the latest edition of the relevant JIS will be used, unless otherwise specified. 2. For other RTD types, submission of a resistance table may be required.
Input Range (Specify a range in the field [2].)	Specify an input range in °C within the range given in the resistance table.
Excitation Current	Approx. 1mA
Input Resistance	1MΩ min. (1kΩ min. without power)
Allowable Lead Wire Resistance	200Ω max. per wire

OUTPUT SECTION

Output (Specify a code in the field [3].)	Output 1 / Output 2 ····· Code ■ 1–5V DC / 1–5V DC ····· V1 ■ 0–5V DC / 0–5V DC ····· V5 ■ 0–10V DC / 0–10V DC ····· V6 ■ ±5V DC / ±5V DC ····· W5 ■ ±10V DC / ±10V DC ····· W6 ■ 1–5V DC / 4–20mA DC ····· C1 ■ 4–20mA DC / 4–20mA DC ····· C2 Note: Combinations of two outputs are only available as shown above.
Allowable Output Load	Voltage output: 2mA max. Current output: 300Ω max. (350Ω max. for dual current output)
Zero Adjustment	Approx. ±2% of span (Adjustable by front-accessible trimmer)
Span Adjustment	Approx. ±2% of span (Adjustable by front-accessible trimmer)
Burnout Protection	Upscale (even if any of the three wires, A, B, and B' is opened)

ADDITIONAL

Options [4]	■ CE compliant ····· /C Note: CE-compliant chassis must be used to meet the CE marking requirements. ■ Polyurethane conformal coating ···· /H
Optional Parameter Changes	You can optionally specify the following parameters when ordering. Please ask our Sales representatives for availability in advance. <Parameter> ····· <How to specify> ■ Response frequency Fc = □□□Hz ■ Response time constant Tc = □□□s

PERFORMANCE

Accuracy Rating	Better than ±(0.15% of span + 0.1°C) (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	4-way isolation between input, output 1, output 2, and power.
Insulation Resistance	100MΩ min. (@ 500V DC) between input, output 1, output 2, and power.
Dielectric Strength	Input / [Output 1, Output 2, Power]: 1500V AC for 1 minute (Cutoff current: 0.5mA) Output 1 / Output 2 / Power: 500V AC for 1 minute (Cutoff current: 0.5mA)
Surge Withstand Capability	Tested as per ANSI/IEEE C37.90.1-1989.
Operating Environment	Ambient temperature: 0 to 55°C Humidity: 5 to 90% RH (non-condensing)
Storage Temperature	−10 to 60°C

PHYSICAL

Installation	Mounted in an optional chassis (RC3900A-☐☐AI or RS3900-01TB)
Wiring *1	Wired to an optional chassis (RC3900A-☐☐AI or RS3900-01TB)
External Dimensions	W19.5 × H53 × D82 mm
Weight	70g max.

*1: For a dual current output version, external connection to the Output-1 shall only be made with either the terminal block or D-subminiature connector.

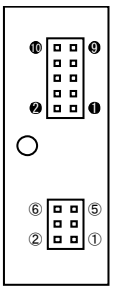
MATERIAL

Housing	ABS resin
PC Board	Glass fabric, epoxy resin (FR-4: UL 94V-0)

STANDARDS CONFORMITY

EC Directive Conformity	EMC Directive (2014/30/EU) EN61326-1:2013

PIN ASSIGNMENTS



PIN	SIGNAL	PIN	SIGNAL
①	A RTD	❶	+ OUTPUT 1
②	B RTD	❷	− OUTPUT 1
③	N. C.	❸	+ OUTPUT 2
④	N. C.	❹	− OUTPUT 2
⑤	B' RTD	❺	+ POWER DC24V
⑥	N. C.	❻	− POWER DC24V
		❼	N. C.
		❽	N. C.
		❾	F. G.
		❿	N. C.

BLOCK DIAGRAM