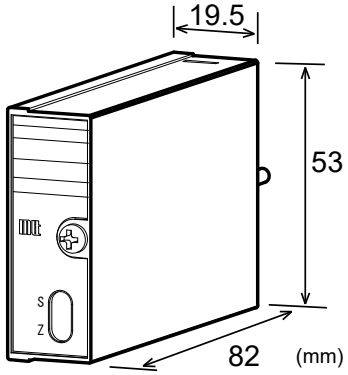
Product Specification Sheet **Model: MS3904F** **MS3900**

Chassis-Mount Fast-Response High-Level Signal Conditioner (Isolator) with Isolated Dual Output

DESCRIPTION

The MS3904F is a chassis-mount fast-response high-level signal conditioner (isolator) that converts DC input signals into mutually isolated dual channel DC output signals.

- ▽ 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
MS3904F-1☐☐-8☐☐_ [1] [2] [3]

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	160mA fuse
Current Consumption	45mA max. at 24V DC

INPUT SECTION

Input (Specify a code in the field [1].)	■ 1–5V DC ····· V1 ■ 0–1V DC ····· V4 ■ 0–5V DC ····· V5 ■ 0–10V DC ····· V6 ■ ±5V DC ····· W5 ■ ±10V DC ····· W6 ■ 4–20mA DC (input resistance 250Ω) ····· C1 ■ Other DC voltage signals ····· X2 (☐–☐) Specify a voltage range in parentheses. The span must be between 1V and 50V.
Input Resistance	Voltage input: 1MΩ min. with or without power Current input: 250Ω (standard for 4–20mA)
Allowable Input Voltage	Voltage input: 30V DC max., continuous. Current input: 40mA DC max., continuous.

OUTPUT SECTION

Output (Specify a code in the field [2].)	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 Note: Combinations of two outputs are only available as shown above.
Allowable Output Load	Voltage output: 2mA max.
Zero Adjustment	Approx. ±2% of span (Adjustable by front-accessible trimmer)
Span Adjustment	Approx. ±2% of span (Adjustable by front-accessible trimmer)

ADDITIONAL

Option [3]	■ 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 (200Hz to 1kHz) ■ Response time constant Tc = ☐☐☐s (600μs to 2ms @ 90%)

PERFORMANCE

Accuracy Rating	Better than ±0.1% of span (at 25°C±5°C)
Temperature Effect	Better than ±0.2% of span per 10°C change in ambient.
Response Time	600μs max. (0 to 90%) with a step input at 100% (Frequency characteristics: Approx. 1kHz-3dB).
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

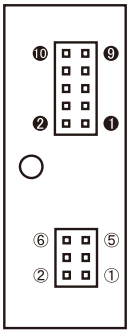
PHYSICAL

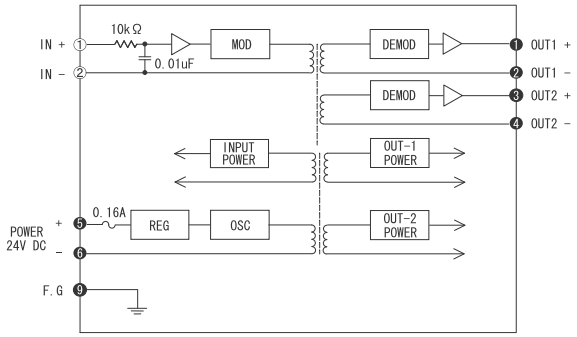
Installation	Mounted in an optional chassis (RC3900A-☐☐AI or RS3900-01TB).
Wiring	Wired to an optional chassis (RC3900A-☐☐AI or RS3900-01TB).
External Dimensions	W19.5 × H53 × D82 mm
Weight	70g max.

MATERIAL

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

PIN ASSIGNMENTS



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

BLOCK DIAGRAM