



Product Specification Sheet

Model: MS3704-D1

MS3700

Slim Plug-In High-Level Signal Conditioner (Isolator) with Isolated Single/Dual Output (11-27V DC Powered)

DESCRIPTION

The MS3704-D1 is a slim, plug-in high-level signal conditioner (isolator) that converts DC current or voltage signals into commonly used DC signals and provides isolated single or dual output. This model operates with an 11-27V DC power supply.

ORDERING CODE

Model MS3704 - D1 - ☐ ☐ ☐

Power Supply 11 to 27V DC

Input

A: 4 to 20mA DC	3: 0 to 1V DC
B: 2 to 10mA DC	4: 0 to 10V DC
C: 1 to 5mA DC	5: 0 to 5V DC
D: 0 to 20mA DC	6: 1 to 5V DC
E: 4 to 20mA DC *1	
H: 10 to 50mA DC	

*1: Shunt resistor 50Ω

Output 1

A: 4 to 20mA DC	1: 0 to 10mV DC
D: 0 to 20mA DC	2: 0 to 100mV DC
	3: 0 to 1V DC
	4: 0 to 10V DC
	5: 0 to 5V DC
	6: 1 to 5V DC

Output 2

No code: None

The codes are the same as for Output 1.

Note 1: When a voltage output is selected for Output 1, a current output cannot be selected for Output 2.

Note 2: When the code A (4 to 20mA) is selected for both of the two outputs, the output load will be 550Ω maximum for Output 1 and 350Ω maximum for Output 2.

Options

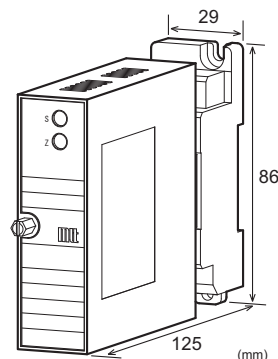
No code: None

/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.



SPECIFICATIONS

POWER SECTION

Power Requirement	11 to 27V DC
Power Sensitivity	Better than $\pm 0.1\%$ of span.
Power Line Fuse	160mA fuse is installed (standard).
Power Consumption	
Power	11 to 27V DC
Single Output	0.8W max.
Dual Output	1.2W max.

INPUT SECTION

Input Resistance	
Voltage Input (DC)	With or without power: 1MΩ min.
Current Input (DC)	4 to 20mA (std.) 250Ω
	2 to 10mA 250Ω
	1 to 5 mA 100Ω
	0 to 20mA 250Ω
	10 to 50mA 10Ω
Allowable Input Voltage	
Voltage Input Model	30V DC max., continuous. (Standard for a span up to 10V)
Current Input Model	40mA DC max., continuous. (Standard for 4 to 20mA)

OUTPUT SECTION

Allowable Output Load	
Voltage Output (DC)	1V span and up 2mA max.
	10mV 10kΩ min.
	100mV 100kΩ min.
Current Output (DC)	4-20mA single output 750Ω max.
	4-20mA dual output Output 1: 550Ω max.
	Output 2: 350Ω max.
Zero Adjustment	Approx. $\pm 5\%$ of span. (Adjustable by the front-accessible trimmer.)
Span Adjustment	Approx. $\pm 5\%$ of span. (Adjustable by the front-accessible trimmer.)

ORDERING INFORMATION

To place an order, please use the ordering code format as shown above.
(e.g.) MS3704-D1-AA6

Another Ordering Example:
For an option code of "X": MS3704-D1-66/X (0-90% response time: 5ms max.)
Note: If you wish to include multiple options in your order, specify the option codes in series (e.g. /KX).

● PERFORMANCE

Accuracy Rating	Better than $\pm 0.1\%$ of span (at $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$).
Temperature Effect	Better than $\pm 0.2\%$ of span per 10°C change in ambient.
Response Time	85ms 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	100M Ω min. (@ 500V DC) between input, output 1, output 2, power, and ground.
Dielectric Strength	Input / [Output 1, Output 2] / [Power, Ground]: 2000V AC for 1 minute (Cutoff current: 0.5mA) Power / Ground: 2000V AC for 1 minute (Cutoff current: 5mA) Output 1 / Output 2: 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: -5 to 55°C Humidity: 5 to 90% RH (non-condensing)
Storage Temperature	-10 to 60°C

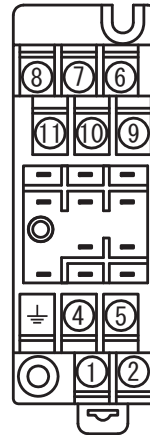
● PHYSICAL

Installation	Wall/DIN rail mounting
Wiring	M3.5 screw terminal connection (with a power terminal block cover & drop-proof screws)
Screwing Torque	0.8 to 1.0 [Nm] * Recommended
External Dimensions	W29 $\times$ H86 $\times$ D125 mm (including the mounting screw and socket)
Weight	Main unit: 120g max. Socket: 80g max.

● MATERIAL

Housing	ABS resin (UL 94V-0)
Terminal Block	PBT resin (UL 94V-0)
Terminal Block Cover	PC resin (UL 94V-2)
DIN Rail Stopper	PP resin (UL 94HB)
Screw Terminal	Nickel-plated steel
Contacts Material and Finish	Brass with 0.2 μm gold plating
Printed Circuit Board	Glass fabric, epoxy resin (FR-4: UL 94V-0)

TERMINAL ASSIGNMENTS



①	P (+)	POWER
②	N (-)	
③	GND	
④	+ OUTPUT 1	
⑤	- OUTPUT 1	
⑥	N.C.	
⑦	+ OUTPUT 2	
⑧	- OUTPUT 2	
⑨	N.C.	
⑩	+ INPUT	
⑪	- INPUT	

BLOCK DIAGRAM

