

**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**

**MS3704 - D1** -

**Model** \_\_\_\_\_

**Power Supply** \_\_\_\_\_  
11 to 27V DC

**Input** \_\_\_\_\_

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

\*1: Shunt resistor 50Ω

**Output 1** \_\_\_\_\_

<b>A:</b> 4 to 20mA DC	<b>1:</b> 0 to 10mV DC
<b>D:</b> 0 to 20mA DC	<b>2:</b> 0 to 100mV DC
	<b>3:</b> 0 to 1V DC
	<b>4:</b> 0 to 10V DC
	<b>5:</b> 0 to 5V DC
	<b>6:</b> 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.

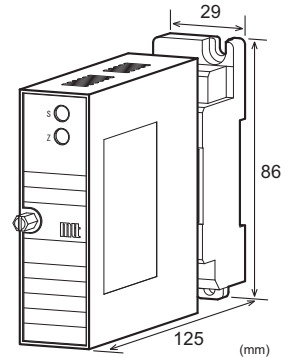
**Options** \_\_\_\_\_

**No code:** None

**/K:** Fast response (0 to 90% response time: 10ms max.)

**/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 ±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**

Maximum 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. ±5% of span. (Adjustable by the front-accessible trimmer.)
Span Adjustment	Approx. ±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

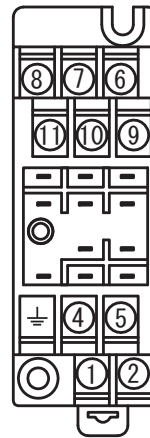
Accuracy Rating	Better than $\pm 0.1\%$ of span (at $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$ ).
Temperature Effect	Better than $\pm 0.2\%$ of span per $10^{\circ}\text{C}$ change in ambient.
Response Time	85ms max. (0 to 90%) with a step input at 100%.
CMRR	100dB min. (500V AC, 50/60Hz)
Isolation	4-way isolation between input, output [Output 1/Output 2], power, and ground.
Insulation Resistance	100M $\Omega$ min. (@ 500V DC) between input, output [Output 1/Output 2], power, and ground.
Dielectric Strength	Input / Output [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 $55^{\circ}\text{C}$ Humidity: 5 to 90% RH (non-condensing)
Storage Temperature	$-10$ to $60^{\circ}\text{C}$
<b>● PHYSICAL</b>	
Installation	Wall/DIN rail mounting
Wiring	M3.5 screw terminal connection (with a power terminal block cover & drop-out prevention screws)
Screwing Torque	0.8 to 1.0 [Nm] * Recommended
External Dimensions	W29 x H86 x D125mm (including the mounting screw and socket)
Weight	Main unit: 120g max. Socket: 80g max.

● MATERIALS

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 $\mu\text{m}$ gold plating
Printed Circuit Board	Glass fabric epoxy resin (FR-4: UL 94V-0)
Anti-Humidity Coating	HumiSeal <sup>®</sup> 1A27NS (Polyurethane)

\* HumiSeal<sup>®</sup> is a registered trademark of Chase Corporation.

TERMINAL ASSIGNMENT



①	P (+)	POWER
②	N (-)	
⊥	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

