



Product Specification Sheet

Model: MS3704HI

MS3700

Slim Plug-In High-Level Signal Conditioner (Isolator) with Isolated Single Output (High Output Load Model)

DESCRIPTION

The MS3704HI is a slim, plug-in high-level signal conditioner (isolator) that converts DC current or voltage signals into commonly used DC current signals and provides an isolated single output. This model features connection of output load resistance up to 1k Ω .

ORDERING CODE

Model MS3704HI - ☐ - ☐ ☐

Power Supply

A: 100 to 240V AC (50 to 60Hz)
D: 24V DC **P:** 100 to 240V 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 **4W:** $\pm$ 10V DC
H: 10 to 50mA DC **5W:** $\pm$ 5V DC
Z: Other DC current signals **0:** Other DC voltage signals

*1: Shunt resistor 50 Ω

Output

A: 4 to 20mA DC
D: 0 to 20mA DC
Z: Other DC current signals

Options

No code: None
/H: Polyurethane conformal coating
/X: Others (Special order)
* For non-standard options, ask MTT for availability.

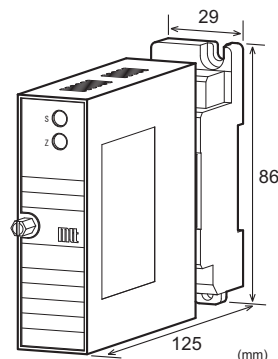
ORDERING INFORMATION

To place an order, please use the ordering code format as shown above.
(e.g.) MS3704HI-A-AA

Other Ordering Examples:

For an input code of "Z": MS3704HI-A-ZA (Input: 8 to 20mA)

For an output code of "Z": MS3704HI-A-AZ (Output: 2 to 10mA)



SPECIFICATIONS

POWER SECTION

Power Requirements	100 to 240V AC: 85 to 264V AC (47 to 63Hz)
	24V DC: 24V DC $\pm$ 10%
	100 to 240V DC: 85 to 264V DC
Power Sensitivity	Better than $\pm$ 0.1% of span for each power supply range.
Power Line Fuse	160mA fuse is installed (standard).
Power Consumption	
Power	100-240V AC 24V DC 100-240V DC
	6.0VA max 1.5W max 2.5W max

INPUT SECTION

Input Resistance	
Voltage Input (DC)	With or without power: 1M Ω min.
Current Input (DC)	4 to 20mA (std.) 250 Ω
	2 to 10mA 250 Ω
	1 to 5 mA 100 Ω
	0 to 20mA 250 Ω
	10 to 50mA 10 Ω
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)
Ranges Available	
	Current Signal Voltage Signal
Input Range (DC)	-100 to 100mA -300 to 300V
Input Span (DC)	100 μ A*1 to 200mA 200mV*2 to 600V
Input Bias	-100 to 100% -100 to 100%
Note: For any input range including negative input signals, the input spans for current and voltage signals range from (*1)200 μ A to 200mA and (*2)400mV to 600V, respectively.	
Input Spec. Ex.1: For 3 to 8V input, the input span is 5V and the bias +60%.	
Input Spec. Ex. 2: For -5 to 0V input, the input span is 5V and the bias -100%.	

● OUTPUT SECTION

Allowable Output Load		
Current Output (DC)	4 to 20mA	1kΩ 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.)	
Ranges Available		
	Current Signal	
Output Range (DC)	0 to 20mA	
Output Span (DC)	4 to 20mA	
Output Bias	0 to 100%	
Note: For current output signals, the accuracy of any current output smaller than 0.1mA is not guaranteed.		
Output Spec. Ex.: For 4 to 20mA output, the output span is 16mA and the bias +25%.		

● 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	85ms max. (0 to 90%) with a step input at 100%.
CMRR	100dB min. (500V AC, 50/60Hz)
Isolation	3-way isolation between input, output 1, and power.
Insulation Resistance	100MΩ min. (@ 500V DC) between input, output, power, and ground.
Dielectric Strength	Input / Output / [Power, Ground]: 2000V AC for 1 minute (Cutoff current: 0.5mA) Power / Ground: 2000V AC for 1 minute (Cutoff current: 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

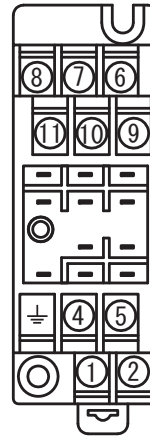
● PHYSICAL

Installation	Wall/DIN rail mounting Note: Avoid direct contact between units. (It is recommended that a space of at least 10mm should be maintained.)
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 × H86 × 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 0.2μm 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	
⑤	- OUTPUT	
⑥	N.C.	
⑦	N.C.	
⑧	N.C.	
⑨	+ INPUT	
⑩	- INPUT	
⑪	N.C.	

BLOCK DIAGRAM

