

DESCRIPTION

The MS3743 is a slim, plug-in millivolt (mV) isolator that converts mV input signals from sensors or other devices into commonly used DC signals and provides isolated single or dual output. This model features a fast response time of 80 μ s (0-90%) with voltage output or 150 μ s (0-90%) with current output.

ORDERING CODE

MS3743 - -

Model _____

Power Supply _____
A: 100 to 240V AC (50 to 60Hz)
D: 24V DC **P:** 100 to 240V DC

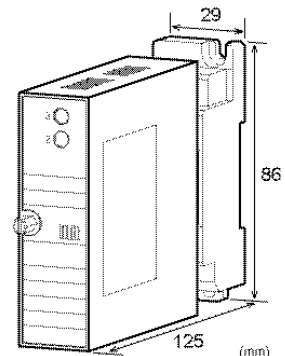
Input _____
7: 0 to 50mV DC **7W:** \pm 50mV DC
2: 0 to 100mV DC **2W:** \pm 100mV DC
0: Other DC voltage signal

Output 1 _____
A: 4 to 20mA DC **1:** 0 to 10mV DC
D: 0 to 20mA DC **2:** 0 to 100mV DC
Z: Other DC current signal **3:** 0 to 1V DC
4: 0 to 10V DC
5: 0 to 5V DC
6: 1 to 5V DC
3W: \pm 1V DC
4W: \pm 10V DC
5W: \pm 5V DC
0: Other DC voltage signal

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 550 Ω maximum for Output 1 and 350 Ω maximum for Output 2.

Options _____
No code: None
/X: Special order
 * For non-standard options, ask MTT for availability.


ORDERING INFORMATION

To place an order, please use the ordering code format as shown on the left.
 (e.g.) MS3743-A-244

Other Ordering Examples:

For an input code of "0": MS3743-A-044 (Input: 0 to 75mV)
 For an output code of "0": MS3743-A-240 (Output: 2 to 10V)
 For an option code of "X": MS3743-A-24/X (Response frequency: 5kHz)

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
Single Output	4.0VA max	1.6W max	4.8W max
Dual Output	5.0VA max	1.8W max	6.0W max

INPUT SECTION

Input Resistance	1M Ω min. with or without power.		
Allowable Input Voltage	30V DC max., continuous.		
Ranges Available			
Input Range (DC)	-200mV to 200mV		
Input Span (DC)	20mV* to 400mV		
Input Bias	-100 to 100%		
Note: For any input range including negative input signals, the input span ranges from *40mV to 400mV.			
Input Spec. Ex. 1: For 50 to 150mV input, the input span is 100mV and the bias +50%.			
Input Spec. Ex. 2: For -20 to 80mV input, the input span is 100mV and the bias -20%.			

● 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:
		Output 2:
		350Ω max.
Zero Adjustment	Approx. ±5% of span. (Adjustable by the front-accessible trimmer.)	
Span Adjustment	Approx. ±5% span. (Adjustable by the front-accessible trimmer.)	
Ranges Available		
	Current Signal	Voltage Signal
Output Range (DC)	0 to 20mA	-10 to 10V
Output Span (DC)	4 to 20mA	10mV to 20V
Output Bias	0 to 100%	-100 to 100%
* For current output signals, the accuracy of any current output smaller than 0.1mA is not guaranteed.		
Output Spec. Ex. 1: For 4 to 20mA output, the output span is 16mA and the bias +25%.		
Output Spec. Ex. 2: For -1 to 4V output, the output span is 5V and the bias -20%.		

● 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	Voltage output: 80μs max. (0 to 90%) with a step input at 100% (Frequency characteristics: 10kHz-3dB). Current output: 150μs max. (0 to 90%) with a step input at 100% (Frequency characteristics: 3kHz-3dB).
CMRR	100dB min. (500V AC, 50/60Hz)
Isolation	4-way isolation between input, output [Output 1/Output 2], power, and ground.
Insulation Resistance	100MΩ 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°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-out prevention screws)
Screwing Torque	0.8 to 1.0 [Nm] * Recommended
External Dimensions	W29 × H86 × D125mm (including the mounting screw and socket)
Weight	Main unit: 120g max. Socket: 80g max.

● MATERIALS

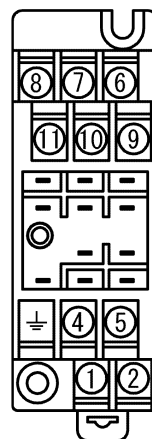
Housing	ABS resin (UL 94V-0)
Terminal Block	PBT resin (UL 94V-0)
Terminal Block Cover	PC resin (UL 94V-2)
DIN Rail Stopper	PP resin (UL 94HB)
Screw Terminal	Nickel-plated steel
Contacts Material and Finish	Brass with 0.2μm gold plating
Printed Circuit Board	Glass fabric epoxy resin (FR-4: UL 94V-0)
Anti-Humidity Coating	HumiSeal® 1A27NS (Polyurethane)

* HumiSeal® is a registered trademark of Chase Corporation.

● STANDARDS CONFORMITY

EC Directive Conformity	EMC Directive (2014/30/EU) EN61326-1: 2013 Low Voltage Directive (2014/35/EU) IEC61010-1/EN61010-1: 2010 Installation Category II Pollution Degree 2 Maximum operating voltage 300V Reinforced insulation between [input/output/GND] and power.
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TERMINAL ASSIGNMENT



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

BLOCK DIAGRAM

