Product Specification Sheet Model: MS5544

Plug-In High-Level Signal Conditioner with Isolated Single Output (Fast Response Model)

DESCRIPTION

The MS5544 is a plug-in high-level signal conditioner that converts DC current or voltage signals into commonly used DC signals and provides an isolated single output. This model features fast response.

ORDERING CODE

MS5544 - □ - □ □

Model

Power Supply

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

Input

B: 2 to 10mA DC
C: 1 to 5mA DC
D: 0 to 20mA DC
E: 4 to 20mA DC*1
H: 10 to 50mA 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
4W: ±10V DC
5W: ±5V DC
0: Other DC voltage signal

*1: Shunt resistor 50 Ω

Output

A: 4 to 20mA DC
D: 0 to 20mA DC
Z: Other DC current signal
1: 0 to 10mV 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
3W: ±1V DC
4W: ±10V DC
5W: ±5V DC
0: Other DC voltage signal

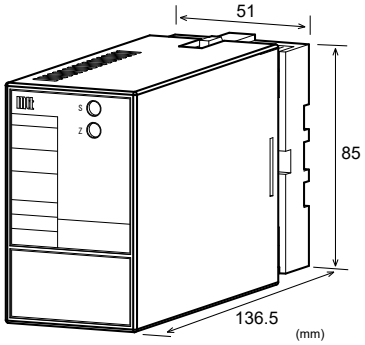
Options

No code: None
/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.) MS5544-A-4W4W

Other Ordering Examples:
For an input code of "0": MS5544-A-06/C (Input: 0.2 to 1V)
For an output code of "0": MS5544-A-A0 (Output: 2 to 5V)
For an option code of "X": MS5544-A-66/X (Response frequency: 5kHz)



SPECIFICATIONS

POWER SECTION

Power Requirement	100 to 240V AC: 85 to 264V AC (47 to 63Hz) 24V DC: 24V DC±10% 100 to 240V DC: 85 to 264V DC		
Power Sensitivity	Better than ±0.1% of span for each power supply range.		
Power Line Fuse	160mA fuse		
Maximum Power Consumption			
Power	100-240V AC Approx. 4.0VA	24V DC Approx. 1.2W	100-240V DC Approx. 4.8W

INPUT SECTION

Input Resistance		
Voltage Input (DC)	1MΩ min. with or without power.	
Current Input (DC)	4 to 20mA (std.)	50Ω
	2 to 10mA	250Ω
	1 to 5 mA	100Ω
	0 to 20mA	50Ω
	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)	

Ranges Available

	Current Signal	Voltage Signal
Input Range (DC)	-100 to 100mA	-300 to 300V
Input Span (DC)	100μA*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)200μA 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		
Voltage Output (DC)	1V span and up	2mA max.
	10mV	10kΩ min.
	100mV	100kΩ min.
Current Output (DC)	4 to 20mA	750Ω 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	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	3-way isolation between input, output, and power.
Insulation Resistance	100MΩ min. (@ 500V DC) between input, output, and power.
Dielectric Strength	Input / Output / Power: 2000V 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

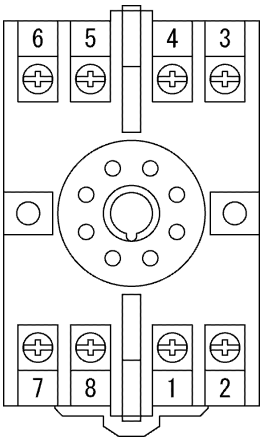
Installation	Wall/DIN rail mounting
Mounting Orientation	Vertical
Screwing Torque	0.78 to 1.18 [Nm] * Recommended
Wiring	M3.5 screw terminal connection
External Dimensions	W51 × H85 × D136.5mm (including the socket)
Weight	Main unit: 200g max. Socket: 60g max.

●MATERIALS

Housing	ABS resin (UL 94V-0)
Socket	ABS resin (UL 94V-0)
Screw Terminal	Galvanized steel with trivalent chromate finish
Printed Circuit Board	Glass fabric epoxy resin (FR-4: UL 94V-0)
Conformal Coating	HumiSeal® 1A27NS (Polyurethane)

* HumiSeal® is a registered trademark of Chase Corporation.

TERMINAL ASSIGNMENT



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

BLOCK DIAGRAM