Terminal Block Type Distributor with Isolated Single Output

DESCRIPTION

The MS3007 is a terminal block type distributor that powers a two-wire transmitter, converts its 4 to 20mA signals into commonly used DC signals, and provides an isolated single output. This model can also be used as an isolator.

ORDERING CODE

MS3007 - □

Model

Power Supply
24V DC

Input
4 to 20mA DC from 2-wire transmitters

Output

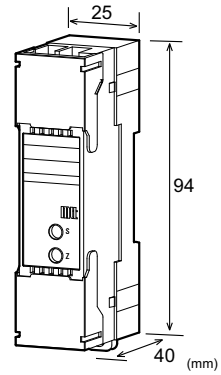
A: 4 to 20mA DC	**1**: 0 to 10mV DC
D: 0 to 20mA DC	**2**: 0 to 100mV DC
Z: Other DC current signal	**3**: 0 to 1V DC
	4: 0 to 10V DC
	5: 0 to 5V DC
	6: 1 to 5V DC
	0: Other DC voltage signal

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.

ORDERING INFORMATION

To place an order, please use the ordering code format as shown above.
(e.g.) MS3007-A

Other Ordering Examples:
For an output code of "0": MS3007-0 (Output: 2 to 5V)
For an option code of "X": MS3007-A/X (Response frequency: 50Hz)
Note: If you wish to include multiple options in your order, specify the option codes in series (e.g. /KX).



SPECIFICATIONS

●POWER SECTION

Power Requirement	24V DC: 24V DC±10%
Power Sensitivity	Better than ±0.1%
Power Line Fuse	250mA fuse is installed (standard).
Power Consumption	
Current Output	75mA max.
Voltage Output	45mA max.
Note: The above figures are in the condition of the rated voltage supplied.	

●INPUT SECTION

Input Signal	4 to 20mA DC from 2-wire transmitters
Input Resistance	250Ω
Transmitter Power Supply	Output voltage: 25V, typical. (0% input) 18V, typical. (100% input) Maximum current: 25mA, typical.
Limit Current for Short-Circuit Protection	26mA (typ.) * The unit has a built-in short-circuit detection circuit.
Permissible Short-Circuit Duration	Continuous.

●OUTPUT SECTION

Allowable Output Load		
Voltage Output (DC)	1V span and up	2mA max.
	10mV	10kΩ min.
	100mV	100kΩ min.
Current Output (DC)		550Ω max.
Zero Adjustment	Approx. ±2.5% of span. (Adjustable by the front-accessible trimmer.)	
Span Adjustment	Approx. ±2.5% of span. (Adjustable by the front-accessible trimmer.)	

Ranges Available		
	Current Signal	Voltage Signal
Output Range (DC)	0 to 20mA	0 to 10V
Output Span (DC)	4 to 20mA	10mV to 10V
Output Bias	0 to 100%	0 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 4 to 8V output, the output span is 4V and the bias +100%.

●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, and power.
Insulation Resistance	100MΩ min. (@ 500V DC) between input, output, and power.
Dielectric Strength	Input / Output / Power: 1500V 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	DIN rail mounting
Wiring	M3.5 screw terminal connection (with drop-out prevention screws)
Screwing Torque	0.8 to 1.0 [Nm] * Recommended
External Dimensions	W25.0 × H94.0 × D40.0mm
Weight	80g max.

●MATERIALS

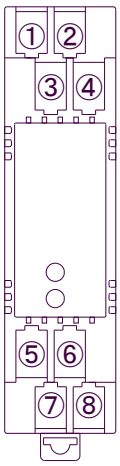
Housing	ABS resin (UL 94V-0)
Screw Terminal	Nickel-plated steel
Printed Circuit Board	Glass fabric epoxy resin (FR-4: UL 94V-0)
Anti-Humidity Coating	HumiSeal® 1A27NS (Polyurethane)

* HumiSeal® is a registered trademark of Chase Corporation.

●STANDARDS CONFORMITY

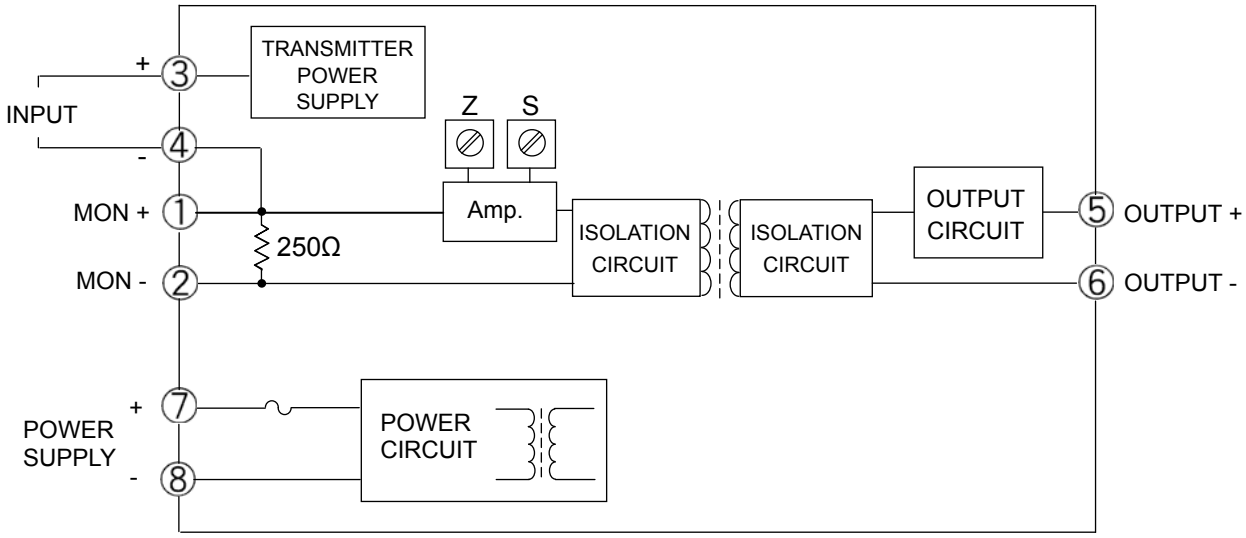
EC Directive Conformity	EMC Directive (2014/30/EU) EN61326-1: 2013

TERMINAL ASSIGNMENT

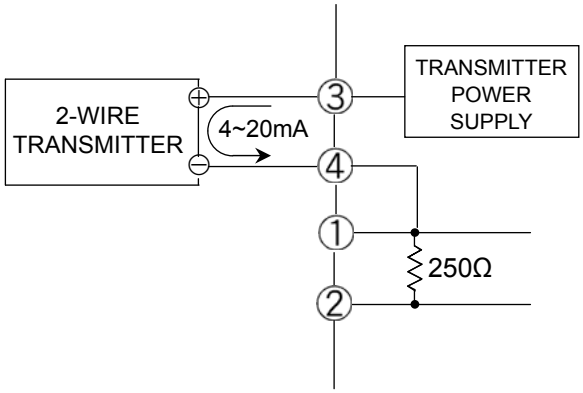


①	MON +
②	MON -
③	INPUT +
④	INPUT –
⑤	OUTPUT +
⑥	OUTPUT -
⑦	+ POWER
⑧	-

BLOCK DIAGRAM



Used as a distributor:



Used as an isolator: