

DESCRIPTION

The MS3706 is a slim, plug-in strain gauge transmitter that supplies excitation voltage to strain-gauge type pressure sensors, load cells, and the like and converts their output signals into standard process signals. It provides isolated single or dual output.

ORDERING CODE

MS3706 - -

Model _____

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

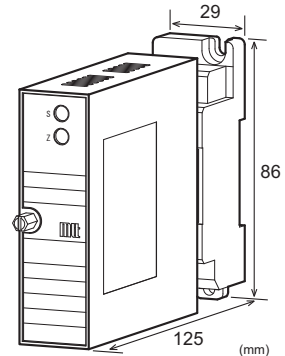
Excitation Voltage _____
E2: 5V DC **0:** Other DC voltage
E3: 10V DC

Input _____
1: 0 to 10mV DC **1W:** ±10mV DC
2: 0 to 100mV DC **2W:** ±100mV DC
0: Other DC voltage signals

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 signals **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 signals

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.)
/L: Dual current output with high output load (OUT-1: 750Ω / OUT-2: 550Ω)
/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 on the left. Also specify a bridge resistance. (e.g.) MS3706-A-E3144 (700Ω)

Other Ordering Examples:

For an excitation voltage code of "0": MS3706-A-011A (700Ω / Excitation voltage: 4V)

For an input code of "0": MS3706-A-E20AA (700Ω / Input: 0 to 20mV)

For an output code of "Z": MS3706-A-E21Z6 (700Ω / Output: 8 to 20mA)

For an option code of "X": MS3706-A-E22A6/X (700Ω / 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 Requirements	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.
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Power Line Fuse	160mA fuse is installed (standard).
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Power Consumption

Power	100-240V AC	24V DC	100-240V DC
Single Output	7.0VA max	2.1W max	7.2W max
Dual Output	7.0VA max	2.4W max	8.4W max

INPUT SECTION

Input Resistance	With power: 1MΩ min. (Without power: 10kΩ min.)
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Allowable Input Voltage	30V DC max., continuous.
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Excitation Voltage	5V DC at 120Ω bridge resistance 10V DC at 350Ω bridge resistance Other voltages
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Ranges Available	
Input Range (DC)	-200mV to 200mV
Input Span (DC)	5mV* to 400mV
Input Bias	-100 to 100%
Excitation Voltage	3 to 10V

Note: For any input range including negative input signals, the input span ranges from *10mV 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 -10 to 30mV input, the input span is 40mV and the bias -25%.

● 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: 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.)	

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%

Note: 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%.

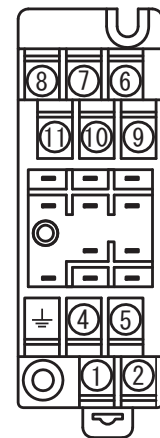
Output Spec. Ex. 2: For -1 to 4V output, the output span is 5V and the bias -20%.

● 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	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 1, output 2, and power.
Insulation Resistance	100MΩ min. (@ 500V DC) between input, output 1, output 2, power, and ground.
Dielectric Strength	Input / [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-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 (-)	
⊥	GND	
④	+ OUTPUT 1	
⑤	- OUTPUT 1	
⑥	- EX (Excitation voltage)	
⑦	+ OUTPUT 2	
⑧	- OUTPUT 2	
⑨	+ INPUT	
⑩	- INPUT	
⑪	+ EX (Excitation voltage)	

BLOCK DIAGRAM

