

**DESCRIPTION**

The MS3706B 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**

**MS3706B** -  -

**Model** \_\_\_\_\_

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

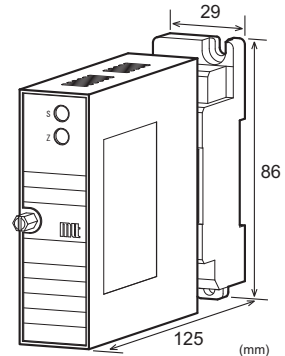
**Excitation Voltage** \_\_\_\_\_  
**E2:** 5V DC      **0:** Other DC voltage  
**E3:** 10V DC

**Input** \_\_\_\_\_  
**A:** 0 to 1mV DC      **AW:** ±1mV DC  
**B:** 0 to 2mV DC      **BW:** ±2mV 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:** ±1V DC  
    **4W:** ±10V DC  
    **5W:** ±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 550Ω maximum for Output 1 and 350Ω maximum for Output 2.

**Options** \_\_\_\_\_  
**No code:** None  
**/L:** Dual current output with high output load (OUT-1: 750Ω / OUT-2: 550Ω)  
**/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.) MS3706B-A-E2BW4W4W (700Ω)

**Other Ordering Examples:**  
 For an excitation voltage code of "0": MS3706B-A-0A11 (700Ω / Excitation voltage: 4V)  
 For an input code of "0": MS3706B-A-E20AA (700Ω / Input: 0 to 20mV)  
 For an output code of "Z": MS3706B-A-E2AZ6 (700Ω / Output: 8 to 20mA)  
 Note: If you wish to include multiple options in your order, specify the option codes in series (e.g. /LX).

**SPECIFICATIONS**
**POWER SECTION**

<b>Power Requirements</b>	100 to 240V AC: 85 to 264V AC (47 to 63Hz) 24V DC: 24V DC±10%		
<b>Power Sensitivity</b>	100 to 240V DC: 85 to 264V DC Better than ±0.1% of span for each power supply range.		
<b>Power Line Fuse</b>	160mA fuse is installed (standard).		
<b>Power Consumption</b>			
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**

<b>Input Resistance</b>	With power: 1MΩ min. (Without power: 10kΩ min.)
<b>Allowable Input Voltage</b>	30V DC max., continuous.
<b>Excitation Voltage</b>	5V DC at 120Ω bridge resistance 10V DC at 350Ω bridge resistance Other voltages

<b>Ranges Available</b>	
Input Range (DC)	-5mV to 5mV
Input Span (DC)	0.8mV* to 10mV
Input Bias	-100 to 100%
Excitation Voltage	3 to 10V

Note: For any input range including negative input signals, the input span ranges from \*1.6mV to 10mV.

Input Spec. Ex.: For -2 to 2mV input, the input span is 4mV and the bias -50%.

● **OUTPUT SECTION**

<b>Maximum Output Load</b>		
Voltage Output (DC)	1V span and up 10mV 100mV	2mA max. 10kΩ min. 100kΩ min.
Current Output (DC)	4-20mA single output 4-20mA dual output	750Ω max. 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.)	
<b>Ranges Available</b>		
	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 ±0.5% of span (at 25°C±5°C).
Temperature Effect	Better than ±1.0% 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 [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**

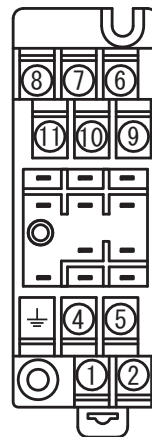
Installation	Wall/DIN rail mounting
Wiring	M3.5 screw terminal connection (with a power terminal block cover & drop-out prevention screws)
Screwing Torque	0.8 to 1.0 [Nm] * Recommended
External Dimensions	W29 × H86 × D125mm (including the mounting screw and socket)
Weight	Main unit: 120g max. Socket: 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.

**TERMINAL ASSIGNMENT**



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**

