Product Specification Sheet Model: MS5506

Plug-In Strain Gauge Transmitter with Isolated Single Output

DESCRIPTION

The MS5506 is a 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 an isolated single output.

ORDERING CODE

MS5506 - □ - □ □ □

Model

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

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

Input
- **1**: 0 to 10mV DC
- **2**: 0 to 100mV DC
- **1W**: ±10mV DC
- **2W**: ±100mV DC
- **0**: Other DC voltage signal

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
- **0**: Other DC voltage signal

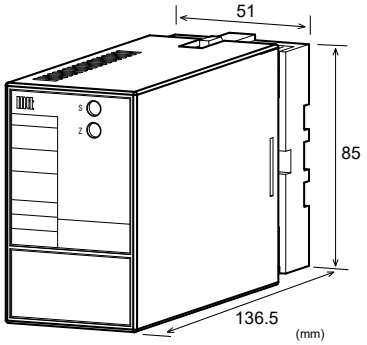
Options
- **No code**: None
- **/K**: Fast response (0 to 90% response time: 10ms max.)
- **/X**: Others (Special order)

* For non-standard options, ask MTT for availability.

ORDERING INFORMATION

To place an order, please use the ordering code format as shown above. Also specify a bridge resistance.
(e.g.) MS5506-A-E31A (350Ω)

Other Ordering Examples:
For an excitation voltage code of "0": MS5506-A-011 (700Ω / Excitation voltage: 4V)
For an input code of "0": MS5506-D-E204 (120Ω / Input: 0 to 20mV)
For an output code of "Z": MS5506-A-E32Z (350Ω / Output: 8 to 20mA)
For an option code of "X": MS5506-D-E215/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 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.
Power Line Fuse	160mA fuse

Maximum Power Consumption

Power	100-240V AC	24V DC	100-240V DC
	Approx. 7.0VA	Approx. 2.1W	Approx. 7.2W

INPUT SECTION

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

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 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	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 -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	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

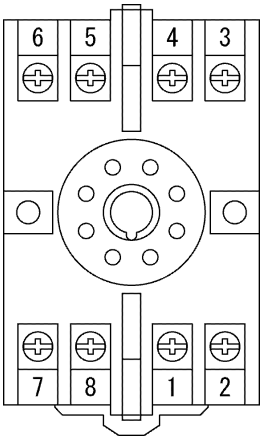
Installation	Wall/DIN rail mounting
Mounting Orientation	Vertical
Screwing Torque	0.78 to 1.18 [Nm] * Recommended
Wiring	M3.5 screw terminal connection
External Dimensions	W51 × H85 × D136.5mm (including the socket)
Weight	Main unit: 200g max. Socket: 60g max.

●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	+ EX (Excitation voltage)	
⑥	- EX (Excitation voltage)	
⑦	P (+)	POWER
⑧	N (-)	

BLOCK DIAGRAM