



DESCRIPTION

The MS3710-01 is a slim, plug-in 4-wire potentiometer transmitter that detects changes in the resistance of potentiometric sensors, converts them into commonly used DC signals and provides isolated single or dual output.

ORDERING CODE

Model MS3710-01 - -

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

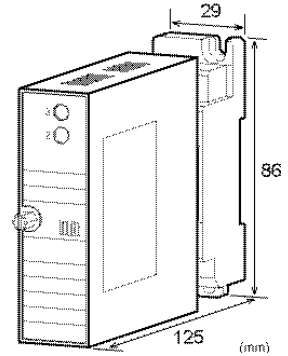
Input _____
R: 4-wire potentiometer
 Specify an input range.

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.
 Note 3: Burnout protection is upscale.

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)
/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 an input range. (e.g.) MS3710-01-A-RA6 (20 to 70Ω)

* Note that the total resistance and input range should be specified in steps of at least 50 ohms.

Other Ordering Examples:
 For an output code of "0": MS3710-01-A-R06 (50 to 100Ω / Output: 2 to 5V)
 For an option code of "X": MS3710-01-A-RA/X (0 to 50Ω / 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 Supply	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 is installed (standard).		
Power Consumption	Power	24V DC	100-240V DC
	100-240V AC	1.6W max	6.0W max
	Single Output	5.5VA max	1.8W max
	Dual Output	7.0VA max	6.0W max

INPUT SECTION

Excitation Current	Approx. 1mA
Allowable Lead Wire Resistance	50kΩ max. per wire
Ranges Available	<Standard specifications>
Total Resistance	300Ω max.
Input Range	Specify between 50Ω and 200Ω in steps of 50Ω.

Input Spec Ex.: For 125 to 175Ω input, the input span is 50Ω.
 Note: Any specification out of the total resistance or input range requirement listed above is handled as a special order.

● **OUTPUT SECTION**

Maximum Output Load		
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.)	
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 ±0.25% of span (at 25°C±5°C).
Temperature Effect	Better than ±0.2% of span per 10°C change in ambient.
Response Time	170ms 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**

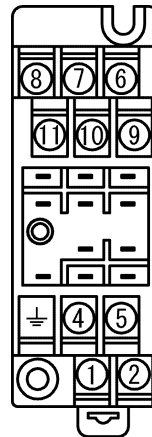
Installation	Wall/DIN rail mounting
Wiring	M3.5 screw terminal connection (with a power terminal block cover & drop-out prevention screws)
Screwing Torque	0.8 to 1.0 [Nm] * Recommended
External Dimensions	W29 × H86 × D125mm (including the mounting screw and socket)
Weight	Main unit: 120g max. Socket: 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	A POT	
⑦	+ OUTPUT 2	
⑧	- OUTPUT 2	
⑨	B POT	
⑩	C POT	
⑪	D POT	

BLOCK DIAGRAM

