

DESCRIPTION

The MS3710-02 is a slim, plug-in constant-current 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
MS3710-02 - -
Model
Power Supply
A: 100 to 240V AC (50 to 60Hz)

D: 24V DC

P: 100 to 240V DC

Input

Range between 0-100Ω and 0-10kΩ

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.

Note 3: Burnout protection is upscale.

Options
No code: None

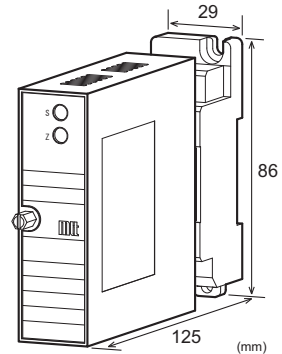
/K: Fast response (0 to 90% response time: 10ms max.)

/L: Dual current output with high output load (OUT-1: 750Ω / OUT-2: 550Ω)

/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.

(e.g.) MS3710-02-A-A6 (0 to 100Ω)

Other Ordering Examples:

For an output code of "0": MS3710-02-A-06 (0 to 100Ω / Output: 2 to 5V)

For an option code of "X": MS3710-02-A-A/X (0 to 10kΩ / 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)
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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	5.5VA max	1.6W max	6.0W max
Dual Output	7.0VA max	1.8W max	6.0W max

INPUT SECTION

Excitation Current	Approx. 1mA: Input range between 0-100Ω and 0-2kΩ.
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Approx. 0.2mA: Input range between 0-2kΩ and 0-10kΩ.

Allowable Lead Wire Resistance	200Ω max. per wire
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Ranges Available

<Standard specifications>

Specify between 0-100Ω and 0-1kΩ in steps of 10Ω.

Specify between 0-1kΩ and 0-10kΩ in steps of 100Ω.
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Note: Any specification out of the above listed requirement is handled as a special order.

● **OUTPUT SECTION**

Allowable 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%
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 ±0.2% 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 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

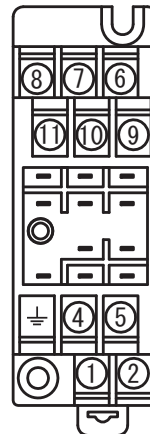
● **PHYSICAL**

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	N.C.	
⑦	+ OUTPUT 2	
⑧	- OUTPUT 2	
⑨	POT A	
⑩	POT B	
⑪	POT B'	

BLOCK DIAGRAM

