Standard Specifications Type: MS3010 MS3000

Terminal Block Type Potentiometer Converter with an Isolated Single Output

Overview

MS3010 is a terminal block type potentiometer converter with an isolated single output to detect variable resistance values of a potentiometer (slide rheostat) type sensor and convert them into various DC signals as selected.

Ordering Format

MS3010 – □ – □□

Type

Power Supply

D : DC 24V Q : DC 12V

*The spec. of DC12V is exempt from CE marking.

Input Signal

A : Total resistance 100Ω ～ 999Ω
B : Total resistance 1kΩ ～ 10kΩ

Output Signal

A : 4 ～ 20mA DC
D : 0 ～ 20mA DC
Z : Designated DC

1 : 0 ～ 10mV DC
2 : 0 ～ 100mV DC
3 : 0 ～ 1V DC
4 : 0 ～ 10V DC
5 : 0 ～ 5V DC
6 : 1 ～ 5V DC
1W : ± 10mV DC
2W : ±100mV DC
3W : ± 1V DC
4W : ±10V DC
5W : ± 5V DC
0 : Designated VDC

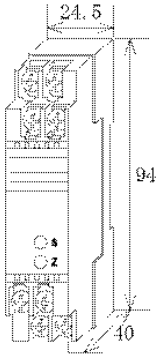
Option

No entry : None.
／K : Fast Response (Faster than 10msec: 0～90%)
／X : Custom Order
*Contact us for custom-order requirement.

Please specify upon ordering

・Product Model Number
(Example) MS3010-D-A6
***Factory default measurement: The product will be shipped after being measured with 0～500Ω for input signal code A and 0～5kΩ for B.**

Other items to be specified:
・For output "0": MS3010-D-A0 (Output 2～5V)
・To specify resistance: MS3010-D-B6(0～2kΩ)
(When resistance value is specified, the product will be shipped with the product label indicating the result of measurement conducted with the specified resistance value.)
・For option "X": MS3010-D-A6/X (Response frequency 50Hz)
・For more than one option: Enter Option Codes in succession (/KX)



Specifications

●Power Supply Section

Range of Allowable Voltages	DC24V : DC24V±10% DC12V : DC12V±20%
Power Sensitivity	Within ±0.1% of Span for each power supply voltage.
Power Supply Fuse	250mA Fuse

Maximum Power Consumption

Power Supply	DC24V	DC12V
Current Output	50mA max.	70mA max.
Voltage Output	20mA max.	30mA max.

*The above values apply when the rated supply voltage is used.

●Input Section

Measurement Resistance	Total resistance 100～999Ω :Approx.0.5V Total resistance 1kΩ～10kΩ :Approx. 5V
Maximum Input Leadwire Resistance	10% max. of total resistance (per wire) (Each wire's resistance must be identical.)

●Output Section

Maximum Output Load

Voltage Output (DC)	1V Span min.	2mA max.
	10mV	10kΩ min.
	100mV	100kΩ min.
Current Output (DC)	550Ω max.	

Zero Adjustment Range	Approx.0～30% of total resistance (Adjustable by Trimmer on front panel)
Span Adjustment Range	Approx.70～100% of total resistance (Adjustable by Trimmer on front panel)

Range or Products Available

	Current Signal	Voltage Signal
Output Range (DC)	0～20mA	-10～10V
Output Span(DC)	4～20mA	10mV～20V
Output Bias	0～100%	-100～100%

*For current output smaller than 0.1mA, the accuracy is not guaranteed.
(e.g.1) 4～20mA⇒Output Span 16mA, Bias 25%
(e.g.2) -1～4V⇒Output Span 5V, Bias -20%

●Standard Performance

Conversion Accuracy	Within ±0.2%/F.S.(@25℃±5℃)
Temp. Characteristics	Within ±0.2% of Span with every 10℃ variation
Response Time	170msec max.(0～90%)@100% step input
CMRR	100dB min.(500V AC, 50/60Hz)
Signal Isolation	Between Input -Output - Power Supply, mutually
Isolation Resistance	100MΩ min.(@500V DC) Between Input -Output - Power Supply, mutually
Dielectric Strength	Between Input -Output - Power Supply, mutually :1500V AC, Shut Down Current 0.5mA for 1 min.
Measures against SWC	Conform to ANSI/IEEE C37.90.1-1989
Operating Environment	Temperature : -5～55℃ Humidity : 5～90%RH(Non-Condensing)
Storage Temp.	-10～60℃

●Installation / Physical Specifications

Installation	DIN-rail mounting
Wiring	M3.5 screw terminal connection(Screw drop-protection)
Screw Tightening Torque	0.8～1[N・m] Recommendable
Outer Dimension	W24.5×H94.0×D40.0mm (incl.DIN rail)
Mass	90g max.

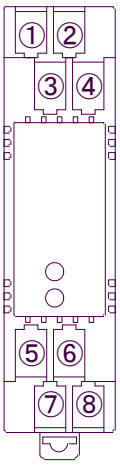
●Materials

Housing	ABS Resin (UL-94V-0)
Terminal Screws	Iron/Nickel-plated
P.C.Board	Glass-Epoxy(FR-4:UL-94V-0)
Moisture-proof Coating	HumiSeal Coating :HumiSeal 1A27NS(Polyurethane Resin)

●Compatible Standards

Compatible EC Directive	EMC Directive (2004/108/EC) EN61326-1:2006 Class A

Terminal Arrangement / Signal Assignment



①	N.C
②	C
③	B
④	A
⑤	OUTPUT ＋
⑥	OUTPUT －
⑦	＋ Power
⑧	－ Supply

Block Diagram