Standard Specifications Type:MS3110 MS3100

Terminal Block Type Potentiometer Converter with Single/Dual Output

Overview

MS2110 is a terminal block type potentiometer converter with single /dual output to detect variable resistance values of potentiometer (slide rheostat) type sensor and convert them into various DC signals as selected.

Ordering Format

MS3110-□-□□

Type

Power Supply

A: AC 100～240V (50～60Hz)
D: DC 24V P: DC 110V

Input Signal

Within the range between 0～100Ω and 0～10kΩ

Output-1

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
3W: ± 1V DC
4W: ±10V DC
5W: ± 5V DC
0 : Designated VDC

Output-2

No entry: None.
Similar to Output-1.

☞When Out-1 is set for Voltage, Out-2 cannot be designated for Current.
☞When both outputs are set for 4～20mA, the Output Load of Out-1 will be less than 550Ω, the one of Out-2 will be 350Ω.

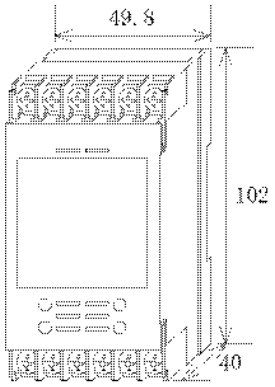
Option

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) MS3110-A-A6
***The product will be shipped after being measured with 0～5kΩ.**

Other items to be specified:
・For output "0": MS3110-A-600 (Output 2～5V)
・To specify resistance: MS3110-A-AA(0～500Ω)
(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": MS3110-A-AA/X (Response frequency 50Hz)
・For more than one option: Enter Option Codes in succession (/KX))



仕 様

●電 源 部

Range of AllowableVoltages	AC100～240V : AC85～264V (47～63Hz) DC24V : DC24V±10% DC110V : DC90～121V
Power Sensitivity	Within ±0.1% of Span for each power supply voltage.
Power Supply Fuse	160mA Fuse

Maximum Power Consumption

Power Supply	AC100-240V	DC24V	DC110V
Single Output	Approx.4.5VA	Approx.1.1W	Approx.4.8W
Dual Output	Approx. 5.0VA	Approx.1.5W	Approx.6.0W

●Input Section

Input Signal	Within range betwee n 0～100Ω and 0～10kΩ
Measuring Voltage	Approx.0.5V
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)	4～20mA Single output	750Ω max.
	4～20mA Dual output	Out-1 550Ω max.
		Out-2 350Ω max.

Zero Adjustment Range	Approx.0～30% of total resistance (Adjustable by Trimmer on front panel) *Out-2 must be within approx. ±5% of span with respect to Out-1.
Span Adjustment Range	Approx.70～100% of total resistance (Adjustable by Trimmer on front panel) *Out-2 must be within approx. ±5% of span with respect to Out-1.

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 Specifications Type:MS3110 Terminal Block Type Potentiometer Converter with Single/Dual Output

●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-Out1-Out2-Power Supply -Ground
Isolation Resistance	100MΩ min.(@500V DC) Between Input-Out1-Out2-Power Supply-Ground
Dielectric Strength	Between Input－[Out1,Out2]－[Power Supply, Ground] :2000V AC, Shut Down Current 0.5mA for 1 minute Between Power Supply - Ground :2000V AC, Shut Down Current 5mA for 1 minute Between Out1 - Out2 :500V AC, Shut Down Current 0.5mA for 1 minute
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	W49.8×H102.0×D40.0mm (incl. DIN rail.)
Mass	140g max.

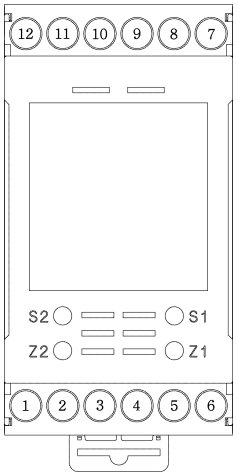
●Materials

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 Low Voltage Directive (2006/95/EC) IEC61010-1/EN61010-1 Installation category Ⅱ, Pollution degree 2, Max. operating voltage 300V Reinforced insulation between [Input・Output・GND]-Power Supply

Terminal Arrangement / Signal Assignment



①	＋ OUTPUT 2	
②	－ OUTPUT 2	
③	N.C	
④	P(＋)	POWER
⑤	N(－)	POWER
⑥	GND	
⑦	A	
⑧	B	
⑨	C	
⑩	N.C	
⑪	＋ OUTPUT 1	
⑫	－ OUTPUT 1	

Block Diagram