



Standard Specifications Type: MS3120

MS3100

Terminal Block Type CT Transmitter with Isolated Single/Dual Output

Overview

MS3120 is a terminal block type CT transmitter with isolated single/dual output to convert AC signals from a CT to various DC signals as selected using effective value computing.

Ordering Format

Type **MS3120** - - - -

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

Input Signal (AC signal)
 1 : 0 ~ 1A AC 50/60Hz
 5 : 0 ~ 5A AC 50/60Hz

Output-1

A : 4 ~ 20mA DC	1 : 0 ~ 10mV DC
D : 0 ~ 20mA DC	2 : 0 ~ 100mV DC
Z : Designated 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

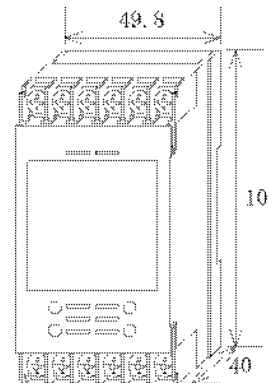
Output-2
No entry: None.
 Similar to Output-1.
 ☞When Out-1 is set for Voltage, Out-2 cannot be designated for Current.
 ☞When both outputs are set for 4~20mA, the Output Load of Out-1 will be less than 550 Ω, the one of Out-2 will be 350 Ω.

Option
No entry: None.
 / X : Custom Order.
 *Contact us for custom-order requirement.

Please specify upon ordering

•Product Model Number
 (Example) MS3120-A-5A6

- Other items to be specified:
 •For output "0": MS3120-A-160 (Output 2~5V)
 •For option "X": MS3120-A-1AA/X (Response rate 100msec max.: 0~90%)



Specifications

●Power Supply Section

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

Maximum Power

Power Supply	AC100~240V	DC24V	DC110V
Single Output	Approx. 4.5VA	/Approx. 1.2W	/Approx.4.8W
Dual Output	Approx. 5.0VA	/Approx. 1.6W	/Approx. 6.0W

●Input Section

Input Resistance	AC 5A Input	2 m Ω (Shunt Resistor)
	AC 1A Input	10m Ω (Shunt Resistor)
Input Current	Continuous	120% Rated Input
Allowable	Instantaneous	10 x Rated Input (3 sec.)
Crest Factor		3 max.

●Output Section

Maximum Output Load

Voltage Output (DC)	1V Span min.	2mA max.
	10mV	10k Ω min.
	100mV	100k Ω min.
Current Output (DC)	4~20mA Single output	750 Ω max.
	4~20mA Dual output	Out-1 550 Ω max. Out-2 350 Ω max.

Zero Adjustment	Approx. ±5% (of Span)
Range	(Adjustable by Trimmer on front panel)
Span Adjustment	Approx. ±5% (of Span)
Range	(Adjustable by Trimmer on front panel)

Range of 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 $\pm 0.25\%$ /F.S. at 10% or more of Span (@25°C $\pm 5^\circ\text{C}$)
Temp. Characteristics	Within $\pm 0.2\%$ of Span with every 10°C variation
Response Time	400msec max. (0~90%) @100% step input
CMRR	100dB min. (500V AC, 50/60Hz)
Signal Isolation	Between Input - Out1-Out2-Power Supply-Ground
Isolation Resistance	100M Ω min. (@500V DC)
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°C Humidity : 5~90%RH (Non-Condensing)
Storage Temp.	-10~60°C

● Installation / Physical Specifications

Installation	DIN-rail mounting
Wiring	M3.5 screw terminal connection (Screw drop-protection) The attached shunt resistor to be fixed to terminal block (⑦⑩: Mounting hardware)
Screw Tightening Torque	0.8~1[N·m] Recommendable
Outer Dimension	W49.8×H102.0×D40.0mm (incl. DIN rail, but not including shunt resistor)
Mass	140g max. Shunt resistor 5g max.

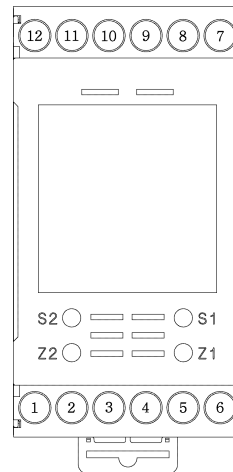
● Materials

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
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Terminal Arrangement / Signal Assignment



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

Block Diagram

