



Standard Specifications Type: MS3108

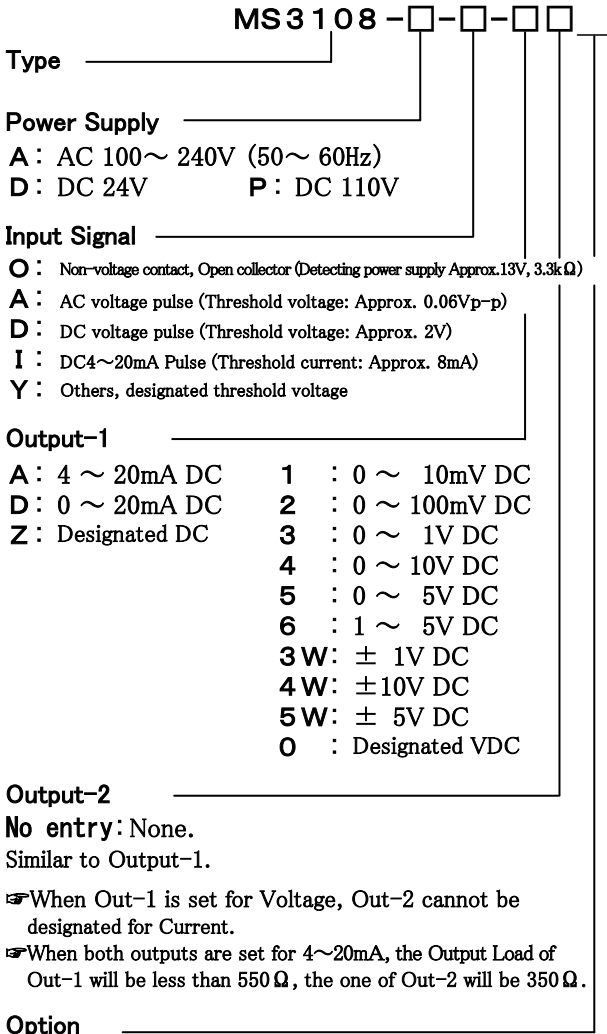
MS3100

Terminal Block Type Frequency/Analog Converter with an Isolated Single/Dual Output

Overview

MS3108 is a terminal block type frequency/analog converter with an isolated single/dual output to convert pulse train frequency signals from a flow sensor, etc. into various DC signals as selected.

Ordering Format

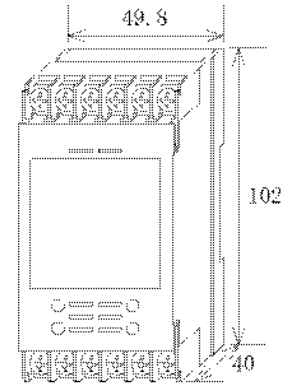


Option _____
 No entry: None.
 / X : Custom Order.
 *Contact us for custom-order requirement.

Please specify upon ordering

•Product Model Number (Measuring Temperature Range)
 (Example) MS3108-A-DA6(0~850Hz)

Other items to be specified:
 •For input "Y": MS3108-A-YAA(0~500Hz/Input DC Voltage pulse 0~12V SH=8.5V,SL=2.5V)
 •For input "Y": MS3108-A-YAA(0~500Hz/Input AC pulse 200Vp-p S=2Vp-p)
 *For DC pulse, specify the range between 0~100μA and 0~100mA.
 *SH=High threshold level, SL=Low threshold level, S=Threshold level



Specifications

●Power Supply Section

Range of allowable voltages	AC100~240V : AC85~264V (47~63Hz) DC24V : DC24V ± 10%
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. 4.0VA / Approx.1.5W/ Approx.4.8W
Dual Output	Approx. 5.0VA / Approx. 1.7W/ Approx. 6.0W

●Input Section

Input Resistance		
Voltage input(DC)	With excitation: 1MΩ min. (Standard, 5V input) Without excitation: 30kΩ min.	
Current input(DC)	250Ω (4~20mA: Standard)	
Input Voltage Allowable		
DC voltage input	30V DC max. continuous	
DC current input	40mA DC max. continuous	
AC voltage input	200Vp-p AC (±100V with reference value of 0V) max. continuous	
Input Pulse Width	20 μ sec. min.	
Duty Ratio	40~60%	
Range of Products Available		
	AC Voltage Pulse	DC Voltage Pulse
Input Range	-300~300V	0~300V
Input Voltage Span	0.1~600Vp-p	1~300V
Input Bias	—	0~+300%
Threshold Voltage	50mVp-p min.	Hi-Lo width 0.2Vmin.
Input Frequency	Within range between 0~20Hz and 0~20kHz (e.g.) 10~15V⇒ Input Span 5V, Bias 200%	

●Output Section

Maximum Output Load		
Voltage Output (DC)	1V Span min. 10mV 100mV	2mA max. 10kΩ min. 100kΩ min.
Current Output (DC)	4~20mA Single output 4~20mA Dual output	750Ω max. Out-1 550Ω max. Out-2 350Ω max.
Zero Adjustment Range	Approx. ±5% of Span (Adjustable by Trimmer on front panel)	
Span Adjustment Range	Approx. ±5% of Span (Adjustable by Trimmer on front panel)	

●Output Section

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	Within ±0.3%/F.S.
Accuracy	Ripple: Within 0.2%p/F.S. (Input 10% min.) (@25°C±5°C)

Temp. Characteristics Within ±0.2% of Span with every 10°C variation

Response Time

Input Frequency	(0~90%)@100% step input
20Hz	8sec max.
200Hz	1sec max.
2kHz	500msec max.
20kHz	500msec max.

CMRR 100dB min. (500V AC, 50/60Hz)

Signal Isolation Between Input - Out1-Out2-Power Supply-Ground

Isolation 100MΩ min. (@500V DC)

Resistance Between Input-Out1-Out2-Power Supply-Ground

Dielectric Between Input-[Out1,Out2]-[Power Supply, Ground]

Strength :200V AC, Shut Down Current 0.5mA for 1 minute

Between Power Supply - Ground :200V 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 Temperature: -5~55°C

Environment Humidity : 5~90%RH(Non-Condensing)

Storage Temp. -10~60°C

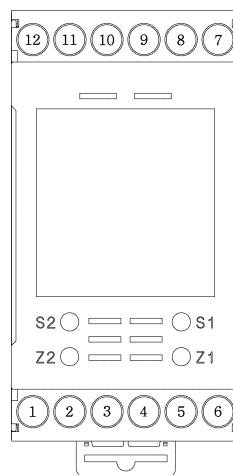
●Installation / Physical Specifications

Installation	DIN-rail mounting
Wiring	M3.5 screw terminal connection (Screw drop-protection)
Screw Tightening Torque	0.8~1[N·m] Recommendable
Outer Dimension	W49.8×H102.0×D40.0mm (incl. DIN rail.)
Mass	140g max.

●Materials

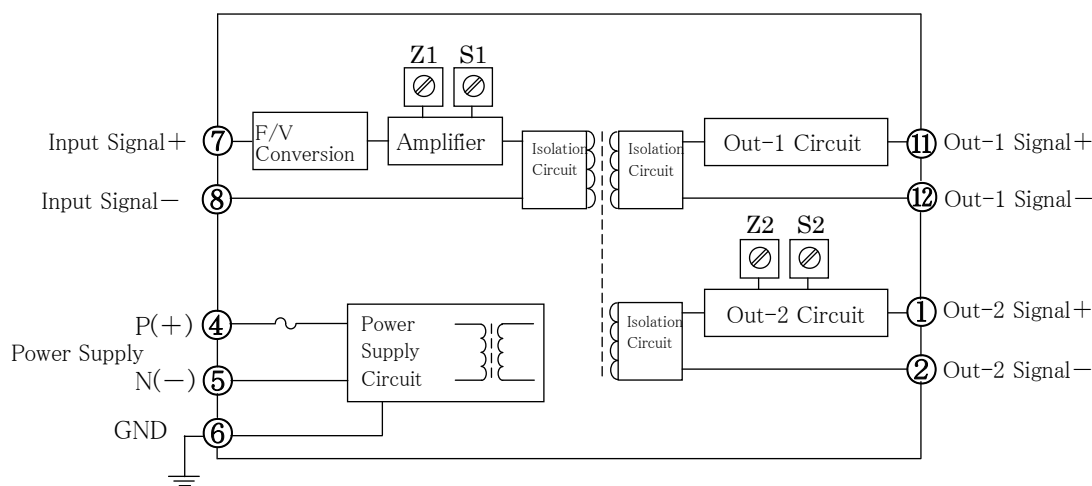
Housing	ABS Resin (UL-94V-0)
Terminal Screws	Iron/Nickel-plated
P.C. Board	Glass-Epoxy (FR-4:UL-94V-0)
Moisture-proof	HumiSeal Coating
Coating	:HumiSeal 1A27NS(Polyurethane Resin)

Terminal Arrangement / Signal Assignment

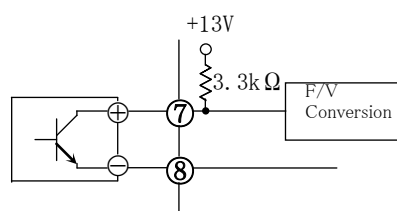


①	+ OUTPUT 2
②	- OUTPUT 2
③	N.C
④	P(+)
⑤	N(-)
⑥	GND
⑦	+ INPUT
⑧	- INPUT
⑨	N.C
⑩	N.C
⑪	+ OUTPUT 1
⑫	- OUTPUT 1

Block Diagram



*In case of non-voltage contact, open collector input



*In case of voltage pulse input

