



Standard Specifications Type: MS3714

MS3700

Slim-shaped Plug-in Limiter Converter with Isolated Single/Dual Output

Overview

MS3714 is a slim-shaped plug-in limiter converter with isolated single/dual output to convert DC current/voltage signals into various DC signals as selected and limit the output level between the upper and lower limits. (RoHS-conformed)

Ordering Format

MS3714 - - - -

Type _____

Power Supply _____
 A : AC 85 ~ 264V D : DC 24V
 P : DC 85 ~ 264V

Input Signal _____
 A : 4 ~ 20mA DC 3 : 0 ~ 1V DC
 B : 2 ~ 10mA DC 4 : 0 ~ 10V DC
 C : 1 ~ 5mA DC 5 : 0 ~ 5V DC
 D : 0 ~ 20mA DC 6 : 1 ~ 5V DC
 E : 4 ~ 20mA DC*1 4W : ±10V DC
 H : 10 ~ 50mA DC 5W : ±5V DC
 Z : Designated DC 0 : Designated VDC

*1Input Resistance 50Ω

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 550Ω, and that of Out-2 will be 350Ω.

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

Please specify upon ordering

- Product Model Number (Example) MS3714-A-666
- *Factory default setting: Upper limit=105%, lower limit=-10%.

Other items to be specified:
 •For input "0": MS3714-A-666(Input 0.2~1V)
 •For output "0": MS3714-A-660(Output 2~5V)
 •To specify the set value: (Limit setting: Upper & lower limit)
 MS3714-A-666(Upper limit 95%, Lower limit 5%)



Specifications

Power Supply Section

Power Supply	AC85~264V (Rating 100~240V) 47~63Hz DC24V±10% DC85~264V (Rating 100~240V)
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Power Sensitivity Within ±0.1% of Span for each power supply voltage.

Power Supply Fuse 160mA Fuse

Maximum Power Consumption

Power Supply	AC85~264V	DC24V	DC85~264V
Single Output	6.0VA max. / 1.7W max.	6.0W max.	
Dual Output	6.5VA max. / 2.1W max.	7.2W max.	

Input Section

Input Resistance

Voltage Input (DC)	With excitation	1MΩ
	Without excitation	1MΩ
Current Input (DC)	4~20mA(Standard)	250Ω
	2~10mA	250Ω
	1~5mA	100Ω
	0~20mA	250Ω
	10~50mA	10Ω

Input Voltage Allowable

DC voltage input	30V DC max. continuous (Span 10V max.: Standard)
DC current input	40mA DC max. continuous (4~20mA: Standard)

Range of Products Available

	Current Signal	Voltage Signal
Input Range(DC)	-100~100mA	-300~300V
Input Span(DC)	100 μA*1~200mA	200mV*2~600V
Input Bias	-100~100%	-100~100%

*When negative input is contained, the span becomes *1200 μA~, *2400mV~.
 (e.g.1) 3~8V⇒Input span 5V, Bias 60%
 (e.g.2) -5~0V⇒Input span 5V, Bias -100%

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. ±5% of Span (Adjustable by Trimmer on front panel)

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

● Output Section

Limit Setting Range	-10~+105% for both upper & lower limit (0.1% step; 1% step for 100% or more)	
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 ±0.2%/F.S.(@25°C±5°C)
Limit Setting Accuracy	Within ±0.2%/F.S.(@25°C±5°C)
Temp Characteristics	Within ±0.15% of Span with every 10°C variation
Response Time	85msec max. (0~90%) @100% step input
Upper/Lower Limit Display	Red LED Line height: 8.0mm 3 digits
CMRR	100dB min. (500V AC, 50/60Hz)
Signal Isolation	Between Input - Out1-Out2-Power Supply-Ground
Isolation Resistance	100MΩ 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

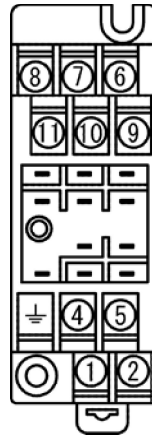
● Installation /Physical Specifications

Installation	Wall mounting &/or DIN-rail mounting
Wiring	M3.5 screw terminal connection (with P.S. terminal cover & screw drop-protection)
Screw Tightening Torque	0.8~1[N·m] Recommendable
Outer Dimension	W29×H86×D125mm (incl. set screws & terminal block)
Mass	Main body 120g max., Terminal Block 80g max.

● Materials

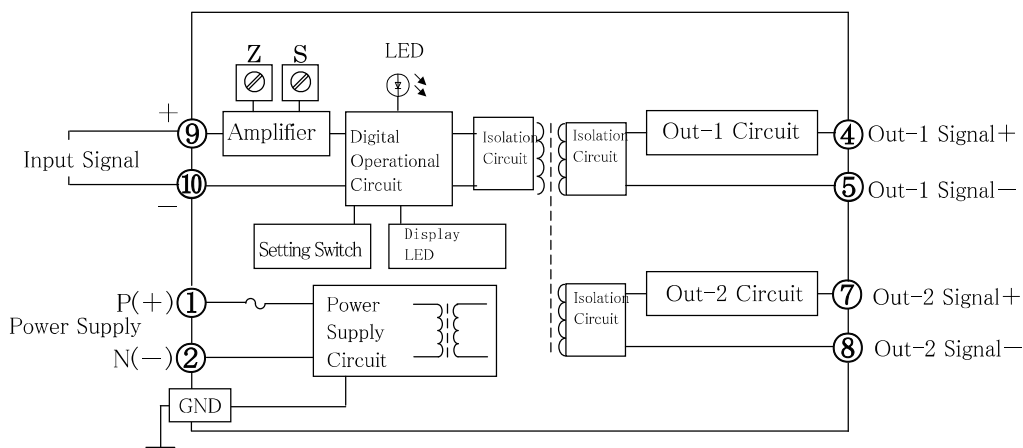
Housing	ABS Resin (UL-94V-0)
Terminal Block	ABS Resin (UL-94V-0)
Terminal Screws	Iron/Nickel-plated
Terminal Surface Treatment	0.2 μm / Gold plated
P.C. Board	Glass-Epoxy (FR-4:UL-94V-0)
Moisture-proof Coating	HumiSeal Coating :HumiSeal 1A27NS(Polyurethane Resin)

Terminal Arrangement / Signal Assignment

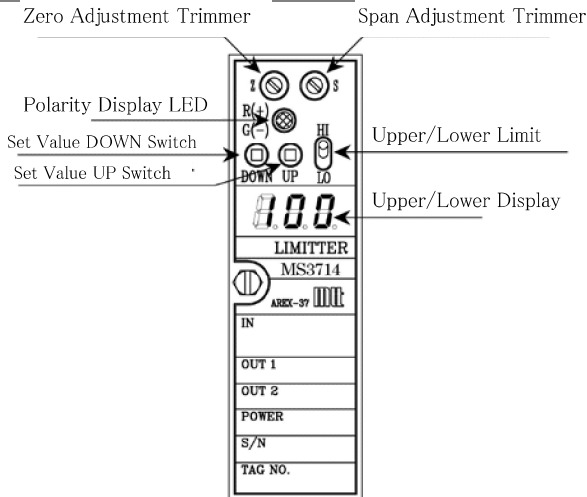


①	P(+)	POWER
②	N(-)	
⊥	GND	
④	+ OUTPUT 1	
⑤	- OUTPUT 1	
⑥	N. C	
⑦	+ OUTPUT 2	
⑧	- OUTPUT 2	
⑨	+ INPUT	
⑩	- INPUT	
⑪	N. C	

Block Diagram



Front Drawing



Setting

● Setting Limit

Setting the Upper Limit

When the Upper/Lower Limit Switch is set to the upper side, the display will show the current upper limit. Please set the new upper limit by manipulating the Set Value UP/DOWN Switch.

Setting the Lower Limit

When the Upper/Lower Limit Switch is set to the upper side, the display will show the current lower limit. Please set the new lower limit by manipulating the Set Value UP/DOWN Switch.

Display

The Set Value Polarity Display LED will be lighting in red when the set value is positive and green when the value is negative.

The Upper/Lower Limit Display will be off in about 1 min. after the last manipulation of the setting switch, but the Set Value Polarity Display will keep lighting in green regardless of the polarity.

Set Value UP/DOWN Switch

During the Set Value UP/DOWN Switch is kept pressed, the shift Speed of setting values will be accelerated.

Factory Default Setting

The factory-set upper/lower limit value, unless otherwise specified, will be -10% for lower limit and 105% for upper limit.

State Display LED

● Display Pattern

Item	Event	7SEG LED Display	Red LED	Green LED	Output Signal	Recovery
1	Power activation and SW operation	Blinking with 1 sec. ON and 0.5 sec. OFF, 3 times	Blinking with 1 sec. OFF and 0.5 sec. ON 3 times	Blinking with 1 sec. ON and 0.5 sec. OFF, 3 times	Normal output	—
2	Normal operation	Light OFF	Light OFF	Light ON	Normal output	—
3	Setting	Set value	As per the pattern when setting the SW	As per the pattern when setting the SW	Normal output	—
4	DAC error detected	Error code 1	Blinking with 0.25-sec. interval	Light OFF	0% output	None
5	Set value CRC error detected	Error code 2	Blinking with 1-sec. interval	Light OFF	0% output	Reset
6	Correction value CRC error detected	Error code 4	Blinking with 1-sec. interval	Light OFF	0% output	Readjust
7	System error	Irregular	Light ON	Irregular	0% output	None

*Item 1: "888" and the dot light when 7SEG LED is ON.

*Item 4: Output signals may be irregular.

*Item 7: Output signals may be irregular.

*Item 7: Red LED may not be on.

*Items 4 to 7: Error code is indicated in the last 1 digit to be distinguished from the normal set value.