

MS3700

DESCRIPTION

ORDERING CODE

ORDERING INFORMATION

SPECIFICATIONS

● POWER SECTION

Power Requirements	100 to 240V AC: 85 to 264V AC (47 to 63Hz) 24V DC: 24V DC $\pm$ 10% 100 to 240V DC: 85 to 264V DC		
Power Sensitivity	Better than $\pm 0.1\%$ of span for each power supply range.		
Power Line Fuse	160mA fuse is installed (standard).		
Power Consumption			
Power	100-240V AC 6.5VA max	24V DC 1.8W max	100-240V DC 7.2W max

● INPUT SECTION

Input Resistance		
Voltage Input (DC)	With or without power: 1M Ω min.	
Current Input (DC)	4 to 20mA (std.)	250 Ω
	2 to 10mA	250 Ω
	1 to 5mA	100 Ω
	0 to 20mA	250 Ω
	10 to 50mA	10 Ω
Allowable Input Voltage		
Voltage Input Model	30V DC max., continuous (Standard for a span up to 10V)	
Current Input Model	40mA DC max., continuous (Standard for 4 to 20mA)	
Hold Input		
Contact Input Model	Dry contact; internal pull-up 5V DC @ 2mA or 24V DC @ 10mA	
TTL Input Model	Operated by external TTL input	

Ranges Available

	Current Signal	Voltage Signal
Input Range (DC)	-100 to 100mA	-300 to 300V
Input Span (DC)	100 μ A ^{*1} to 200mA	200mV ^{*2} to 600V
Input Bias	-100 to 100%	-100 to 100%

Note: For any input range including negative input signals, the input spans for current and voltage signals range from ^{(*)1}200 μ A to 200mA and ^{(*)2}400mV to 600V, respectively.

Input Spec. Ex. 1: For 3 to 8V input, the input span is 5V and the bias +60%.

Input Spec. Ex. 2: For -5 to 0V input, the input span is 5V and the bias -100%.

● OUTPUT SECTION

Allowable Output Load

Voltage Output (DC)	1V span and up	2mA max.
	10mV	10k Ω min.
	100mV	100k Ω min.
Current Output (DC)		750 Ω max.

Zero Adjustment Approx. $\pm 5\%$ of span.
(Adjustable by the front-accessible trimmer.)

Span Adjustment Approx. $\pm 5\%$ of span.
(Adjustable by the front-accessible trimmer.)

Ranges Available

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

Note: For current output signals, the accuracy of any current output smaller than 0.1mA is not guaranteed.

Output Spec Ex. 1: For 4 to 20mA output, the output span is 16mA and the bias +25%.

Output Spec Ex. 2: For -1 to 4V output, the output span is 5V and the bias -20%.

● PERFORMANCE

Accuracy Rating	Better than $\pm 0.2\%$ of span (at 25°C $\pm 5^\circ$ C).
Temperature Effect	Better than $\pm 0.2\%$ of span per 10°C change in ambient.
Response Time	400ms max. (0 to 90%) with a step input at 100%.
Memory Backup Function	Hold commands allow held values to be saved in the built-in flash memory.
CMRR	100dB min. (500V AC, 50/60Hz)
Isolation	Isolation between input, hold input, output, and power.
Insulation Resistance	100M Ω min. (@ 500V DC) between input, hold input, output, power, and ground.
Dielectric Strength	Input / [Output, Hold input] / [Power, Ground]: 2000V AC for 1 minute (Cutoff current: 0.5mA) Power / Ground: 2000V AC for 1 minute (Cutoff current: 5mA) Output / Hold input: 500V AC for 1 minute (Cutoff current: 0.5mA)
Surge Withstand Capability	Tested as per ANSI/IEEE C37.90.1-1989
Operating Environment	Ambient temperature: -5 to 55°C Humidity: 5 to 90% RH (non-condensing)
Storage Temperature	-10 to 60°C

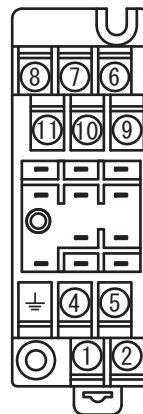
● PHYSICAL

Installation	Wall/DIN rail mounting
Wiring	M3.5 screw terminal connection (with a power terminal block cover & drop-proof screws)
Screwing Torque	0.8 to 1.0 [Nm] * Recommended
External Dimensions	W29 × H86 × D125 mm (including the mounting screw and socket)
Weight	Main unit: 130g max. Socket: 80g max.

● MATERIAL

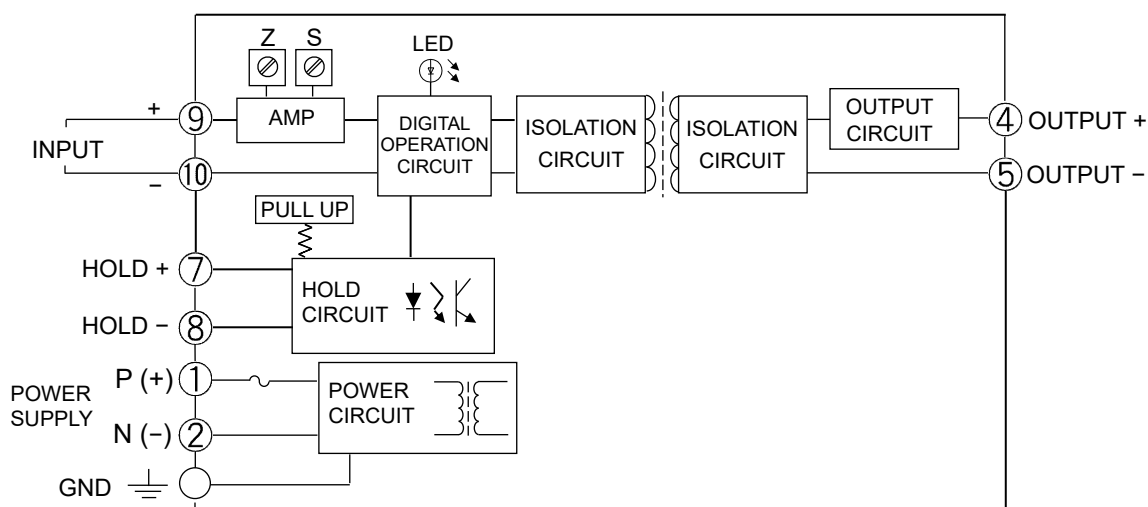
Housing	ABS resin (UL 94V-0)
Terminal Block	PBT resin (UL 94V-0)
Terminal Block Cover	PC resin (UL 94V-2)
DIN Rail Stopper	PP resin (UL 94HB)
Screw Terminal	Nickel-plated steel
Contacts Material and Finish	Brass with 0.2 μ m gold plating
Printed Circuit Board	Glass fabric, epoxy resin (FR-4: UL 94V-0)

TERMINAL ASSIGNMENTS

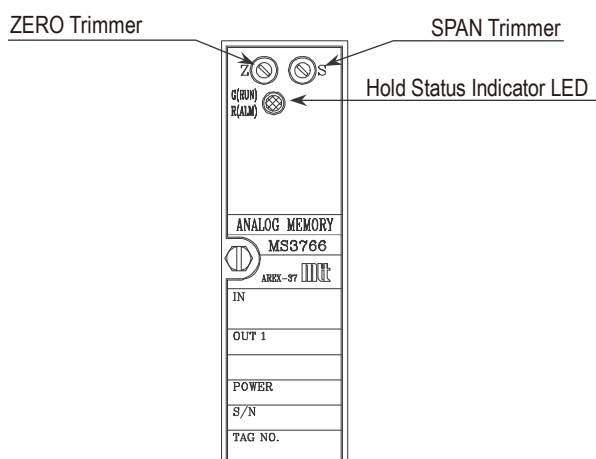


①	P (+)	POWER
②	N (-)	
⏏	GND	
④	+ OUTPUT	
⑤	- OUTPUT	
⑥	N.C.	
⑦	+ HOLD	
⑧	- HOLD	
⑨	+ INPUT	
⑩	- INPUT	
⑪	N.C.	

BLOCK DIAGRAM



FRONT VIEW



LED STATUS INDICATORS

● INDICATOR PATTERNS

No.	Event	Hold Status Indicator LED	Output	Recovery Operation
1	Power ON	Green LED turns ON for 1 second, and then red LED turns ON for 0.5 second. This cycle is repeated 3 times.	Normal	—
2	Normal operation	Green LED is ON.	Normal	—
3	Hold operation	Green LED blinks at 1 second intervals.	Held value	—
4	Held value recording error	Red LED blinks at 1 second intervals.	Held value: 0% or less	Cancel the hold mode.
5	DAC error	Red LED blinks at 0.25 second intervals.	Typically 0% or less, but may vary.	None
6	System error	Red LED is ON; Green LED is not defined.	Typically 0% or less, but may vary.	None

Note:

No. 6: The red LED may fail to light up.