Product Specification Sheet **Model: MS3738** **MS3700**

Slim Plug-In Manual Setter with Isolated Single/Dual Output

DESCRIPTION

The MS3738 is a slim, plug-in manual setter that allows users to set a desired output value with the front-accessible switches and provides isolated single or dual output.

ORDERING CODE

MS3738 - □ - □ □

Model

Power Supply

A: 100 to 240V AC (50 to 60Hz)
D: 24V DC **P**: 100 to 240V DC

Output 1

A: 4 to 20mA DC
D: 0 to 20mA DC
Z: Other DC current signal
1: 0 to 10mV DC
2: 0 to 100mV DC
3: 0 to 1V DC
4: 0 to 10V DC
5: 0 to 5V DC
6: 1 to 5V DC
3W: ±1V DC
4W: ±10V DC
5W: ±5V DC
0: Other DC voltage signal

Output 2

No code: None
The codes are the same as for Output 1.

Note 1: When a voltage output is selected for Output 1, a current output cannot be selected for Output 2.
Note 2: When the code A (4 to 20mA) is selected for both of the two outputs, the output load will be 550Ω maximum for Output 1 and 350Ω maximum for Output 2.

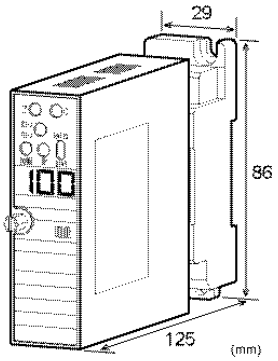
Options

No code: None
/L: Dual current output with high output load (OUT-1: 750Ω / OUT-2: 550Ω)
/X: Others (Special order)
* For non-standard options, ask MTT for availability.

ORDERING INFORMATION

To place an order, please use the ordering code format as shown above.
(e.g.) MS3738-A-AA
* The factory default output setting is 0%.

Other Ordering Examples:
For an output code of "Z": MS3738-A-AZ (Output: 8 to 20mA)
For a specific output setting: MS3738-A-A (Output setting: 50%)
Note: If you wish to include multiple options in your order, specify the option codes in series (e.g. /LX).



SPECIFICATIONS

POWER SECTION

Power Requirements	100 to 240V AC: 85 to 264V AC (47 to 63Hz) 24V DC: 24V DC±10% 100 to 240V DC: 85 to 264V DC		
Power Sensitivity	Better than ±0.1% of span for each power supply range.		
Power Line Fuse	160mA fuse is installed (standard).		
Power Consumption			
Power	100-240V AC	24V DC	100-240V DC
Single Output	6.0VA max	1.7W max	6.0W max
Dual Output	6.5VA max	2.1W max	7.2W max

OUTPUT SECTION

Allowable Output Load		
Voltage Output (DC)	1V span and up	2mA max.
	10mV	10kΩ min.
	100mV	100kΩ min.
Current Output (DC)	4-20mA single output	750Ω max.
	4-20mA dual output	Output 1: 550Ω max. Output 2: 350Ω max.
Output Setting Range	-10 to +105% (adjustable in steps of 0.1%; in steps of 1% for the range over 100% by the front-accessible switch.)	

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%

* 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 ±0.1% of span (at 25°C±5°C).
Temperature Effect	Better than ±0.15% of span per 10°C change in ambient.
Isolation	Isolation between output 1, output 2, power, and ground.
Set Value Indicator	Red LED, digit height 8.0mm, 3 digits.
Insulation Resistance	100MΩ min. (@ 500V DC) between output 1, output 2, power, and ground.
Dielectric Strength	[Output 1/Output 2] / [Power, Ground]: 2000V AC for 1 minute (Cutoff current: 0.5mA) Power / Ground: 2000V AC for 1 minute (Cutoff current: 5mA) Output 1 / Output 2: 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

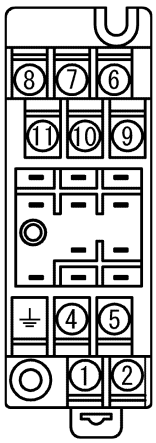
Installation	Wall/DIN rail mounting
Wiring	M3.5 screw terminal connection (with a power terminal block cover & drop-proof screws)
Screwing Torque	0.8 to 1.0 [Nm] * Recommended
External Dimensions	W29 × H86 × D125mm (including the mounting screw and socket)
Weight	Main unit: 120g max. Socket: 80g max.

●MATERIALS

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 0.2μm gold plating
Printed Circuit Board	Glass fabric epoxy resin (FR-4: UL 94V-0)
Conformal Coating	HumiSeal® 1A27NS (Polyurethane)

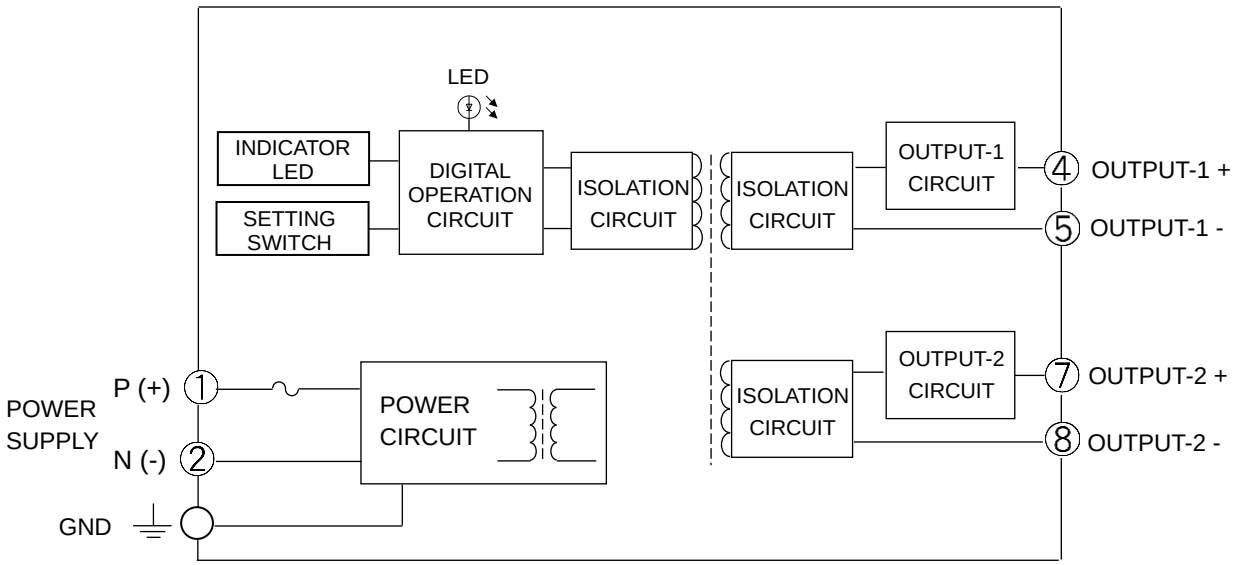
* HumiSeal® is a registered trademark of Chase Corporation.

TERMINAL ASSIGNMENT

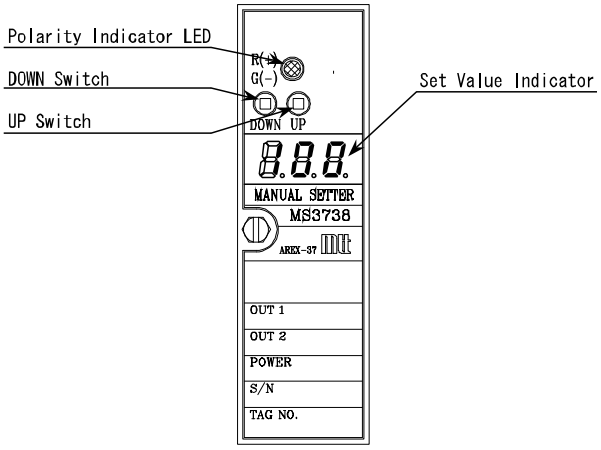


①	P (+)	POWER
②	N (-)	
⏚	GND	
④	+ OUTPUT 1	
⑤	- OUTPUT 1	
⑥	N.C.	
⑦	+ OUTPUT 2	
⑧	- OUTPUT 2	
⑨	N.C.	
⑩	N.C.	
⑪	N.C.	

BLOCK DIAGRAM



FRONT VIEW



SETTING

●OUTPUT SETTING

When the power is turned on, the Set Value Indicator shows the current set value. This value can be changed to a desired value by pressing the UP/DOWN switch.

Indicator

The Polarity Indicator LED is red when the set value is positive and green when it is negative.
The Set Value Indicator is dimmed if no switch is operated for one minute, while the Polarity Indicator LED keeps illuminating depending on the polarity.

UP/DOWN Switch

The switch is of a push button type. Pressing and holding the switch increases the speed at which the value changes.

Factory Default Setting

If not specified, the output will be set to the factory default of 0%.

LED STATUS INDICATORS

●INDICATOR PATTERNS

No.	Event	Set Value Indicator (7-segment LED)	Polarity Indicator LED	Output	Recovery Operation
1	Power ON or switch operation	Blinks 3 times (1 s ON - 0.5 s OFF cycle).	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	Dimmed	Red LED is ON when the set value is positive; Green LED is ON when it is negative.	Normal	–
3	Value setting	Set value	Red LED is ON when the set value is positive; Green LED is ON when it is negative.	Normal	–
4	DAC error	Error code: 1	Red LED blinks at 0.25 second intervals.	Typically 0%, but may vary.	None
5	CRC error of a set value	Error code: 2	Red LED blinks at 1 second intervals.	0%	Reconfig-uration
6	CRC error of a compensated value	Error code: 4	Red LED blinks at 1 second intervals.	0%	None
7	System error	Not defined.	Red LED is ON; Green LED is not defined.	Typically 0%, but may vary.	None

Notes:
No. 1: When the Set Value Indicator is turned on, a 3-digit number “888” with dots is displayed.
No. 4 - 7: Only the last digit is displayed in the event of an error.
No. 7: The red LED may fail to light up.