Product Specification Sheet Model: MS3704SW

Slim Plug-In High-Level Signal Conditioner (Isolator) with Isolated Dual Output (I/O Switch-Selectable)

DESCRIPTION

The MS3704SW is a slim, plug-in high-level signal conditioner (isolator) that converts DC current or voltage signals into commonly used DC signals and provides an isolated dual output. This model features built-in input and output selector switches, which allow users to preset either 1-5V or 4-20mA input and output signals.

ORDERING CODE

MS3704SW- ☐

Model

Power Supply

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

Options

No code: None
/X: 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.) MS3704SW-A

Another Ordering Example:
For an option code of "X": MS3704SW-A/X (0-90% response time: 200ms max.)

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

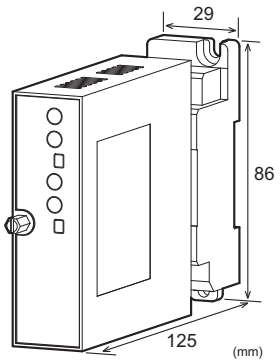
Power	100-240V AC	24V DC	100-240V DC
	6.5VA max.	2.0W max.	2.5W max.

●INPUT SECTION

Input Signal	1 to 5V or 4 to 20mA Selectable by the rear-accessible switch.
Input Resistance	
Voltage Input (DC)	1MΩ min. with or without power.
Current Input (DC)	250Ω
Allowable Input Voltage	
Voltage Input	30V DC max., continuous.
Current Input	40mA DC max., continuous.

●OUTPUT SECTION

Output Signal	1 to 5V or 4 to 20mA Selectable by the front-accessible switch.



Maximum Output Load		
Voltage Output (DC)	Output 1:	2mA max.
	Output: 2	2mA max.
Current Output (DC)	Output 1:	750Ω max.
	Output: 2	350Ω max.
Zero Adjustment	Output 1:	Approx. ±5% of span.
	Output: 2	Approx. ±5% of span.
	(Adjustable by the front-accessible trimmer.)	
Span Adjustment	Output 1:	Approx. ±5% of span.
	Output: 2	Approx. ±5% of span.
	(Adjustable by the front-accessible trimmer.)	
Burnout Protection	Selectable between upscale and downscale only for voltage input. (Downscale for current input)	

●PERFORMANCE

Accuracy Rating	Better than ±0.1% of span (at 25°C±5°C).
Temperature Effect	Better than ±0.2% of span per 10°C change in ambient.
Response Time	85ms max. (0 to 90%) with a step input at 100%.
CMRR	100dB min. (500V AC, 50/60Hz)
Isolation	4-way isolation between input, output [Output 1/Output 2], power, and ground.
Insulation Resistance	100MΩ min. (@ 500V DC) between input, output [Output 1/Output 2], power, and ground.
Dielectric Strength	Input / Output [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-out prevention 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)
Anti-Humidity Coating	HumiSeal® 1A27NS (Polyurethane)

* HumiSeal® is a registered trademark of Chase Corporation.

●STANDARDS CONFORMITY

CE Directive Conformity	EMC Directive (2014/30/EU) EN61326-1: 2013 Low Voltage Directive (2014/35/EU) IEC61010-1/EN61010-1: 2010 Installation Category II Pollution Degree 2 Maximum operating voltage 300V Reinforced insulation between [input/output/GND] and power.

INPUT SETTING

Input: 1 to 5V
Burnout: Upscale

1	2	3
ON	OFF	OFF

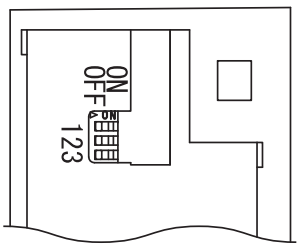
Input: 1 to 5V
Burnout: Downscale

1	2	3
OFF	ON	OFF

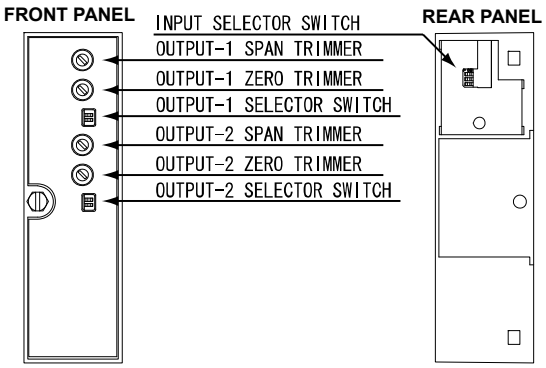
Input: 4 to 20mA

1	2	3
OFF	OFF	ON

REAR PANEL



FRONT & REAR PANEL COMPONENTS



OUTPUT SETTING

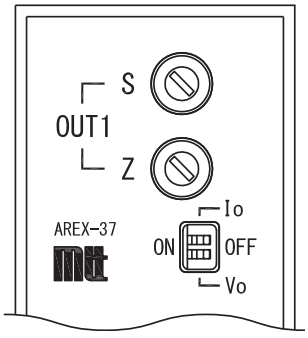
Output: 4 to 20mA

Io	Vo
ON	OFF

Output: 1 to 5V

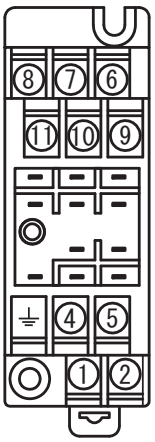
Io	Vo
OFF	ON

FRONT PANEL



Note: Unless otherwise specified, both input and output will be set to 4 to 20mA.

TERMINAL 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