



**Standard Specifications Type: MS3702 MS3700**  
**Slim-shaped Plug-in RTD Signal Conditioner with isolated Single / Dual Output**

**Overview**

This MS3702 Signal Conditioner functions to convert input from RTD into standard process signal to generate isolated dual output. (RoHS - conformed)

**Ordering Format**

**MS3702** - [ ] - [ ] - [ ] - [ ]

Type \_\_\_\_\_

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

Input Signal \_\_\_\_\_  
 P 1 : Pt 100Ω J : JPt 100Ω  
 P 5 : Pt 50Ω N : Ni 508.4Ω  
 Y : Others

Output-1 \_\_\_\_\_  
 A : 4 ~ 20mA DC 1 : 0 ~ 10mV DC  
 D : 0 ~ 20mA DC 2 : 0 ~ 100mV DC  
 Z : Designated 3 : 0 ~ 1V DC  
 Current Signal 4 : 0 ~ 10V DC  
 5 : 0 ~ 5V DC  
 6 : 1 ~ 5V DC  
 3W : ± 1V DC  
 4W : ± 10V DC  
 5W : ± 5V DC  
 0 : Designated Voltage Signal

Output-2 \_\_\_\_\_  
 No entry : None  
 Similar to Out-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 will be less than 350ohm.  
 ☑ Standard Burn-out Protection is Upscale.

Option \_\_\_\_\_  
 No entry : None  
 /K : Fast Response type (10msec max. :0~90%)  
 /X : Special Order ..... +¥10,000

\* As for special order, consult MTT.

**Items to be specified at ordering**

•Type of instrument (Measuring Temperature Range)  
 (Ex.) MS3702-A-P1A6(0~150°C)  
 \* Specify the temperature range by a unit of 10°C.

Other items to be specified (example)  
 •For Input "Y" : MS3702-A-YAA(input Cu10Ω at0°C 0~100°C)  
 •For Output "0" : MS3702-A-P106(0~150°C/output 2~5V)  
 •For Option "X" : MS3702-A-P1AA/X  
 (0~150°C/ Response Frequency 50Hz)  
 •For more than one option : Enter Option Codes in succession (/KX)



**SPECIFICATIONS**

●Power Supply Section

Power Supply AC85~264V (Rating100~240V) 47~63Hz  
 DC24V ± 10%  
 DC85~264V (Rating100~240V)

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  
 1. Single Output 5.5VA max. / 1.6W max. / 6.0W max.  
 2. Dual Output 6.5VA max. / 1.8W max. / 6.0W max.

●Input Section

Excitation Approx 1mA @Pt0~100°C

Input Resistance 200Ω max. Per wire

Range of Product Available

< Standed Specification >		(At 0% input = 0°C)
Pt 100Ω	0~50°C ..... 0~500°C by step of every 50°C (Ex. Pt 100 ohm 0~150°C)	
JPt 100Ω	0~50°C ..... 0~500°C by step of every 50°C (Ex. JPt 100 ohm 0~250°C)	
Pt 50Ω	0~100°C	

< Quasi-Standard Specifications >

RTD	Measuring Range (°C)	Input Span	Input Bias
Pt 100Ω	-200~+850	50 °C min.	Up to 4times Input Span
JPt100Ω	-200~+500	50 °C min.	
Pt 50Ω	-200~+600	100 °C min.	
Ni 508.4Ω	- 50~+250	30 °C min.	

(Ex.)Pt100Ω (150~200°C) ⇒ Input Span 50°C, Bias 150°C (3times)  
 ☑ Such specifications as the measuring temperature range or bias deviates from the above condition shall be made to special order.

●Output Section

Output Load

Voltage Output (DC) 1V Span or larger. 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 Approx. ±5% of Span  
 Range (Adjustable by Trimmre on front panel)  
 Span Adjustment Approx. ±5% of Span  
 Range (Adjustable by Trimmre on front panel)  
 Burn-out Protection Upscale (with breakage of any of A, B or B')

● Output Section

Range of Products available		
	Current	Voltage
Output Range (DC)	0~20mA	-10~10V
Output Span (DC)	4~20mA	10mV~20V
Output Bias	0~100%	-100~100%
(Ex.1) 4~20mA ⇒ output span 16mA, bias 25%		
(Ex.2) -1~4V ⇒ output span 5V, bias -20%		
* Current Output smaller than 0.1mA shall be out of the accuracy guarantee.		

● Standard Performance

<b>Conversion Accuracy</b>	Within ±0.15%/F.S. (at 25°C±5°C)
<b>Temp. Characteristics</b>	Within ±0.2% of Span with every 10°C variation
<b>Response Time</b>	170msec max. (0~90%)@100% step input
<b>C M R R</b>	100dB min. (500V AC, 50/60Hz)
<b>Signal Isolation</b>	Between Input—Out1—Out2—Power Supply—Ground, mutually
<b>Isolation Resistance</b>	100MΩ min. (@500V DC) Between Input—Out1—Out2—Power Supply—Ground
<b>Dielectric Strength</b>	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
<b>S W C</b>	Conformed to ANSI/IEEE C37.90.1-1989
<b>Operating Environment</b>	Temperature : -5~55°C Humidity : 5~90%RH (Non-Condensing)
<b>Storage Temp</b>	-10~60°C

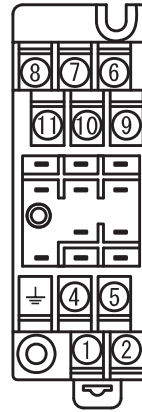
● Installation / Physical Specifications

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

● Materials

<b>Housing</b>	ABS resin (UL-94V-0)
<b>Terminal Block</b>	ABS resin (UL-94V-0)
<b>Terminal Screws</b>	Iron / Nickel-plated
<b>Terminal Surface Treatment</b>	0.2 μm gold-plated
<b>P.C. Board</b>	Glass-Epoxy (FR-4:UL-94V-0)
<b>Moisture-proof Coating</b>	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	A RTD	
⑩	B RTD	
⑪	B' RTD	

Block Diagram

