



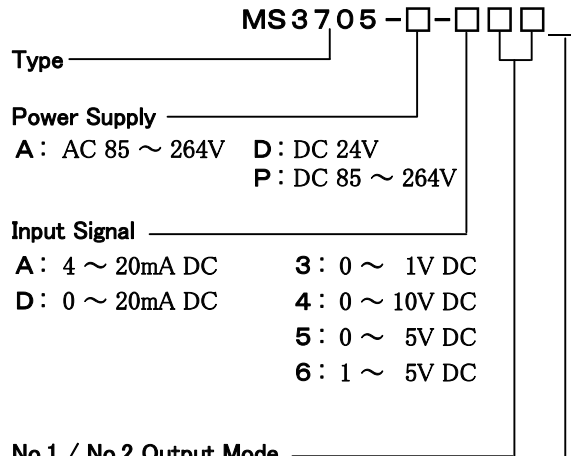
Standard Specifications Type: MS3705
Slim-shaped Plug-in Isolated Dual points Alarm Setter

MS3700

Overview

This MS3705 Alarm Setter functions to generate two independent relay contact ON/OFF outputs by comparing high level DC Input Signal with two pre-set Trip Points (upper and lower limits). (RoHS-conformed)

Ordering Format



	Input < Trip Point	Input < Trip Point
H:	Relay Not Excited	Relay Excited
L:	Relay Excited	Relay Not Excited

* Relay action for each output can be designated in the two ways as above.

Option

Ne entry : None

/K : Fast Response type (100msec max.:0~90%)

/X : Special Order +¥10,000

* As for special order, consult MTT.

Items to be specified at ordering

- **Type of instrument**
 (Ex.)MS3705-A-6HL
- * Factory setting shall be 50% of input signal for both Out-1 and Out-2.

Other items to be specified (example)
• Option "X": MS3705-A-6HL/X (Response Time Constant T=50msec. 90% setting)
• Trip Points (Relay Excitation Points): MS3705-A-6HL (Out-1 40% / Out-2 70%) (* Specify within the range of 0~99% of input signal.)
• For more than one option, enter option code in succession (/KX)



SPECIFICATIONS

● **Power Supply Section**

Power Supply	AC85~264V (Rating 100~240V) 47~63Hz DC24V ± 10% DC85~264V (Rating 100~240V)
Power Sensitivity	Within ±0.1% of Span for each power supply voltage
Power Supply Fuse	160mA fuse
Power Consumption	AC85~264V DC24V DC85~264V 6.0VA max. / 2.0W max. / 8.4W max.

● **Input Section**

Input Resistance	
Voltage Input (DC)	With Power (ON) 1MΩ min. Without Power (OFF) 10kΩ min.
Current Input (DC)	4~20mA (Standard) 250Ω
Input Voltage applicable	
Voltage Input	30V DC max. Continuous (for Span smaller than 10V)
Current Input	40mA DC max. Continuous (for 4~20mA)

● **Output Section**

Output Signal	Relay Contact Dual Outputs, C contact
Trip Points Setting	
Way of setting	Via Rotary Switch on front panel
Setting Range	0~99% with every 1% step
Setting Accuracy	±0.5%/F.S.
Hysteresis	1.0% ± 0.3%
Monitor Lamp	Red LED lights on Relay excitation.
Output Mode at power failure	Connection between COM and NC turns ON.
Limitation of Relay Operation	Relay starts to operate about 2 seconds after the power is turned ON.

● Standard Performance

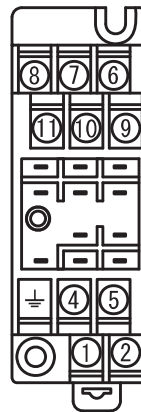
Temp. Characteristics	Within $\pm 0.15\%$ of Span with every 10°C variation
Response Time	150msec max. (90% setting)@100% step input
Signal Isolation	Between Input—Out1—Out2—Power Supply—Ground, mutually
Isolation Resistance	100M Ω min. (@500V DC) Between Out1—Out2—Power Supply—Ground
Dielectric Strength	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 5.0mA, for 1 minute
Relay Contact	
Rated Load	5A 125V AC, 5A 30V DC
Maximum Voltage Applicable	250V AC, 30V DC
Maximum Current Applicable	5A (N.O.) / 3A (N.C.)
Electrical Life Span	5A 250V AC (N.O.) 50K times / Frequency 1.8K times / hr. 5A 30V DC (N.O.) 100K times / Frequency 1.8K times / hr.
Mechanical Life Span	5000K times / Frequency 18K times / hr.
S W C	Conformed to ANSI/IEEE C37.90.1-1989
Operation Environment	Temperature : $-5\sim 55^{\circ}\text{C}$ Humidity : $5\sim 90\%$ RH (Non-Condensing)
Storage Temp	$-10\sim 60^{\circ}\text{C}$

● Installation / Physical Specifications

Installation	Wall-mounting &/or DIN-rail mounting
Wiring	M3.5 screw terminal connection (with P.S. terminal cover/Screw drop-protection)

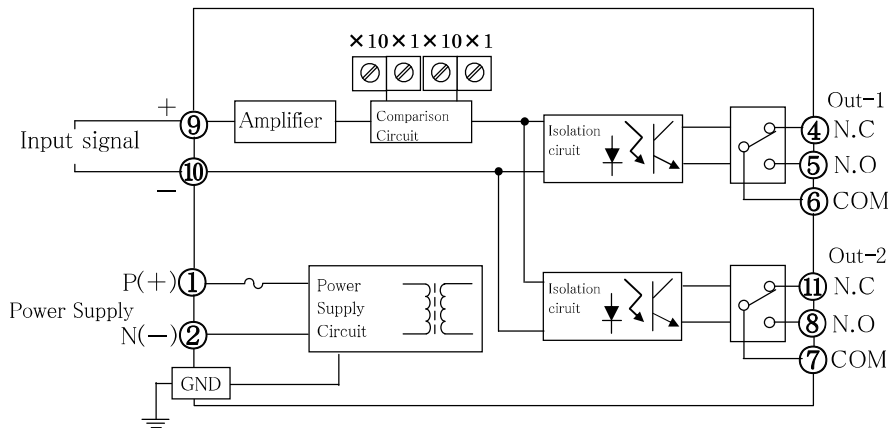
Screw Tighting Torque	0.8~1[N·m] recommendable
Outer Dimension	W29×H86×D125mm (incl. set screws and terminal block)
Mass	Main Body 130g max, Terminal Block 80g max.
● Materials	
Housing	ABS resin (UL-94V-0)
Terminal Block	ABS resin (UL-94V-0)
Terminal Screws	Iron / Nickel-plated
Terminal Surface Treatment	0.2 μm gold-plated
P.C. Board	Glass-Epoxy (FR-4:UL-94V-0)
Moisture-proof Coating	:HumiSeal 1A27NS (Polyurethane Resin)

Terminal Arrangement / Signal Assignment



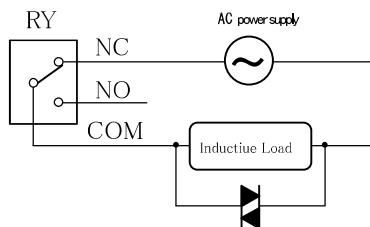
①	P(+)	POWER
②	N(-)	
⊥	GND	
④	NC	OUT 1
⑤	NO	OUT 1
⑥	COM	OUT 1
⑦	COM	OUT 2
⑧	NO	OUT 2
⑨	+	INPUT
⑩	-	INPUT
⑪	NC	OUT 2

Block Diagram



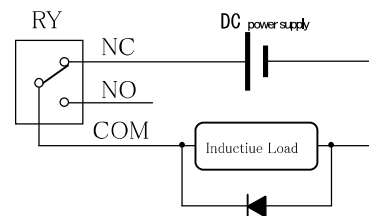
* If any inductive load like an electric motor was connected, a relay contact protection circuit must be used.

Example of AC power supply connection



Protection Circuit of barrister or OR circuit

Example of DC power supply connection



Protection Circuit of diodes barrister or OR circuit