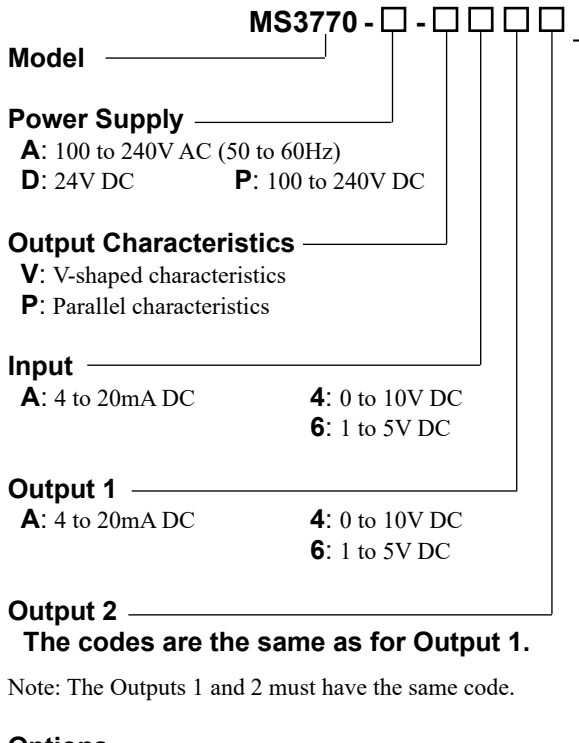


DESCRIPTION

The MS3770 is a slim, plug-in split-range transmitter that amplifies DC current or voltage input signals, converts them into split range control signals, and provides isolated dual output. It is available in two ordering options: V-shaped or parallel characteristics.

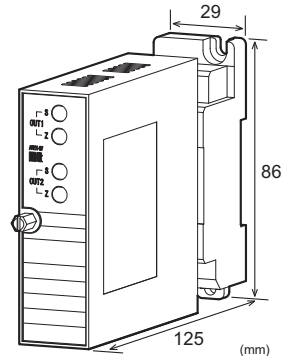
ORDERING CODE

Options

- No code:** None
- /H:** Polyurethane conformal coating
- /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.) MS3770-A-VAAA

Another Ordering Example:
For an option code of "X": MS3770-A-P444/X (0-90% response time: 300ms 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 Resistance	
Voltage Input (DC)	With or without power: 1MΩ min.
Current Input (DC)	4 to 20mA 250Ω
Allowable Input Voltage	
Voltage Input Model	30V DC max., continuous.
Current Input Model	40mA DC max., continuous.

OUTPUT SECTION

Maximum Output Load	
Voltage Output (DC)	2mA max.
Current Output (DC)	600Ω max.
Zero Adjustment	Output 1: Approx. ±1% of span with 100% input. Output 2: Approx. ±1% of span with 0% input. (Adjustable by the front-accessible trimmer.)
Span Adjustment	(Adjustable by the front-accessible trimmer.)
Output 1	
V-shaped:	Output can be set to 0% within the input range of 0 to 65%.
Parallel:	Output can be set to 0% within the input range of 0 to 65%.
Output 2	(Adjustable by the front-accessible trimmer.)
V-shaped:	Output can be set to 0% within the input range of 35 to 100%.
Parallel:	Output can be set to 100% within the input range of 35 to 100%.

● PERFORMANCE

Accuracy Rating	Better than $\pm 0.3\%$ of span (at $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$; gain = 1 or -1).
Temperature Effect	Better than $\pm 0.2\%$ of span per 10°C change in ambient.
Response Time	500ms max. (0 to 90%) with a step input at 100%.
CMRR	100dB min. (500V AC, 50/60Hz)
Isolation	Isolation between input, [output 1, output 2], and power.
Insulation Resistance	100M Ω min. (@ 500V DC) between input, [output 1, output 2], power, and ground.
Dielectric Strength	Input / [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)
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

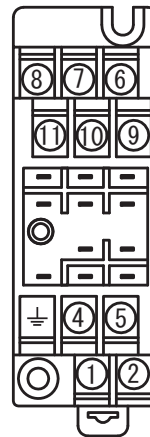
● PHYSICAL

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 x H86 x D125 mm (including the mounting screw and socket)
Weight	Main unit: 120g max. Socket: 80g max.

● MATERIAL

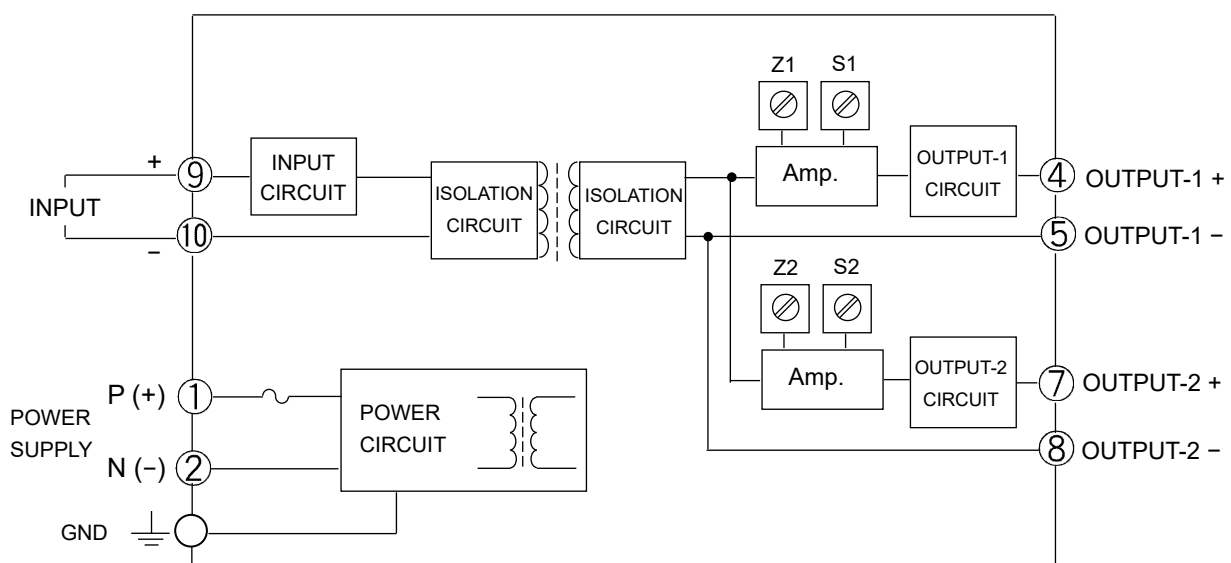
Housing	ABS resin (UL 94V-0)
Terminal Block	PBT resin (UL 94V-0)
Terminal Block Cover	PC resin (UL 94V-2)
DIN Rail Stopper	PP resin (UL 94HB)
Screw Terminal	Nickel-plated steel
Contacts Material and Finish	Brass with 0.2 μm gold plating
Printed Circuit Board	Glass fabric, epoxy resin (FR-4: UL 94V-0)

TERMINAL ASSIGNMENTS



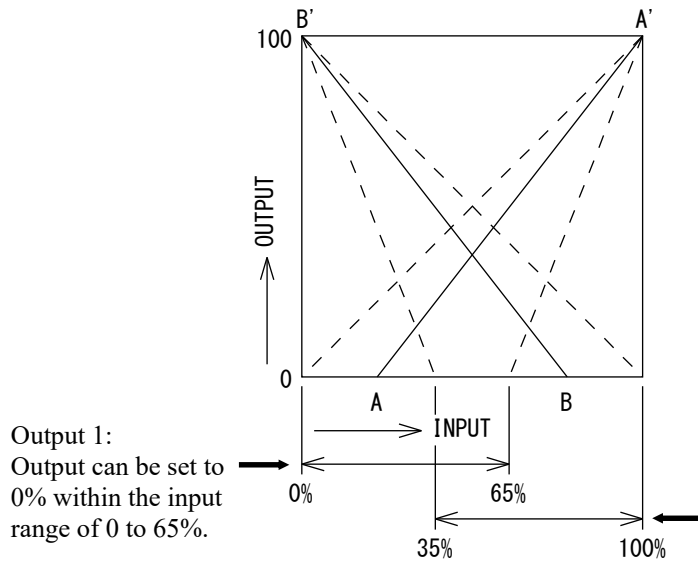
①	P (+)	POWER
②	N (-)	
③	GND	
④	+ OUTPUT 1	
⑤	- OUTPUT 1	
⑥	N.C.	
⑦	+ OUTPUT 2	
⑧	- OUTPUT 2	
⑨	+ INPUT	
⑩	- INPUT	
⑪	N.C.	

BLOCK DIAGRAM



INPUT/OUTPUT CHARACTERISTICS

● V-SHAPED CHARACTERISTICS



The solid lines indicate examples of I/O characteristic settings, and the broken lines indicate the limits of the setting range.

Point A: Input set value corresponding to 0% of Output 1

Line A-A': I/O characteristics for Output 1

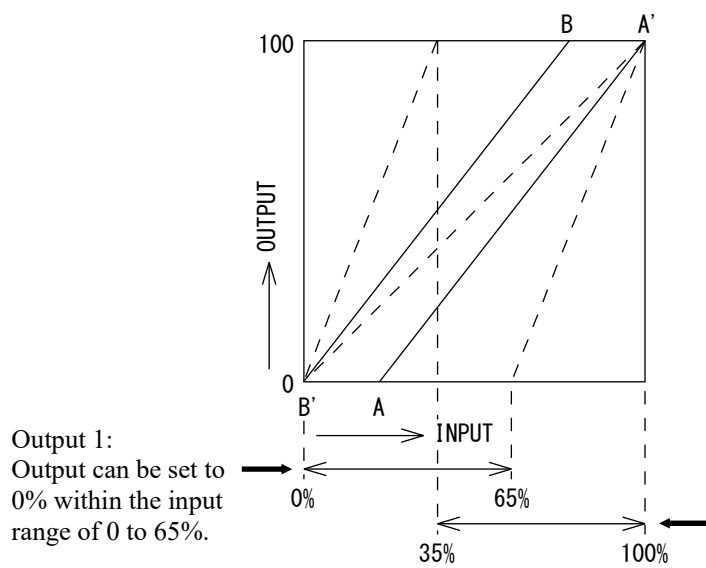
Point B: Input set value corresponding to 0% of Output 2

Line B-B': I/O characteristics for Output 2

Note: The output is from 0 to 100% with no fixed limitation values. If the input is open, the Output 1 gives 0% or smaller output and the Output 2 gives 100% or greater.

Output 2:
Output can be set to 0% within the input range of 35 to 100%.

● PARALLEL CHARACTERISTICS



The solid lines indicate examples of I/O characteristic settings, and the broken lines indicate the limits of the setting range.

Point A: Input set value corresponding to 0% of Output 1

Line A-A': I/O characteristics for Output 1

Point B: Input set value corresponding to 100% of Output 2

Line B-B': I/O characteristics for Output 2

Note: The output is from 0 to 100% with no fixed limitation values. If the input is open, both the Output 1 and Output 2 give 0% or smaller output.

Output 2:
Output can be set to 100% within the input range of 35 to 100%.