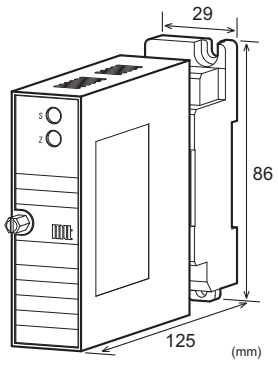
Slim Plug-In Distributor with Isolated Single Output with HART Communication

DESCRIPTION

The MS3707H is a slim, plug-in distributor that powers a two-wire transmitter, converts its 4 to 20mA signals into commonly used DC signals, and provides an isolated single output. It isolates bidirectional HART communication signals. This model can also be used as an isolator.



ORDERING CODE

MS3707H - □ -A

Model

Power Supply

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

Input

4 to 20mA DC from 2-wire transmitters

Output

A: 4 to 20mA DC

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.) MS3707H-A-A

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 7.7VA max	24V DC 2.2W max	100-240V DC 2.9W max

●INPUT SECTION

Input Signal	4 to 20mA DC from 2-wire transmitters
Input Resistance	250Ω
Transmitter Power Supply	Output voltage: 25V, typical. (0% input) 18V, typical. (100% input) Maximum current: 25mA, typical.
Limit Current for Short-Circuit Protection	26mA (typ.)
Permissible Short-Circuit Duration	Continuous.

●OUTPUT SECTION

Allowable Output Load	600Ω max. (250Ω ±10% for HART communication)
Zero Adjustment	Approx. ±5% of span. (Adjustable by the front-accessible trimmer.)
Span Adjustment	Approx. ±5% of span. (Adjustable by the front-accessible trimmer.)

●HART COMMUNICATION

Frequency Bandwidth	500Hz to 10kHz (with maximum attenuation of -10dB)
Transmission Gain	Approx. -3dB (over a range of 1kHz to 3kHz) Note that the gain is measured with 250Ω load.
Communication Mode	Bidirectional

●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	500ms max. (0 to 90%) with a step input at 100%.
CMRR	100dB min. (500V AC, 50/60Hz)
Isolation	3-way isolation between input, output, and power.
Insulation Resistance	100MΩ min. (@ 500V DC) between input, output, power, and ground.
Dielectric Strength	Input / Output / [Power, Ground]: 2000V AC for 1 minute (Cutoff current: 0.5mA) Power / Ground: 2000V AC for 1 minute (Cutoff current: 5mA)
Operating Environment	Ambient temperature: -5 to 55°C Humidity: 5 to 90% RH (non-condensing)
Storage Temperature	-10 to 60°C

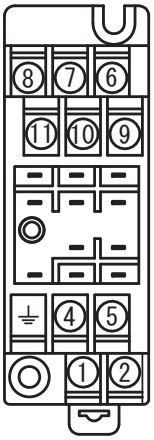
●PHYSICAL

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

●MATERIAL

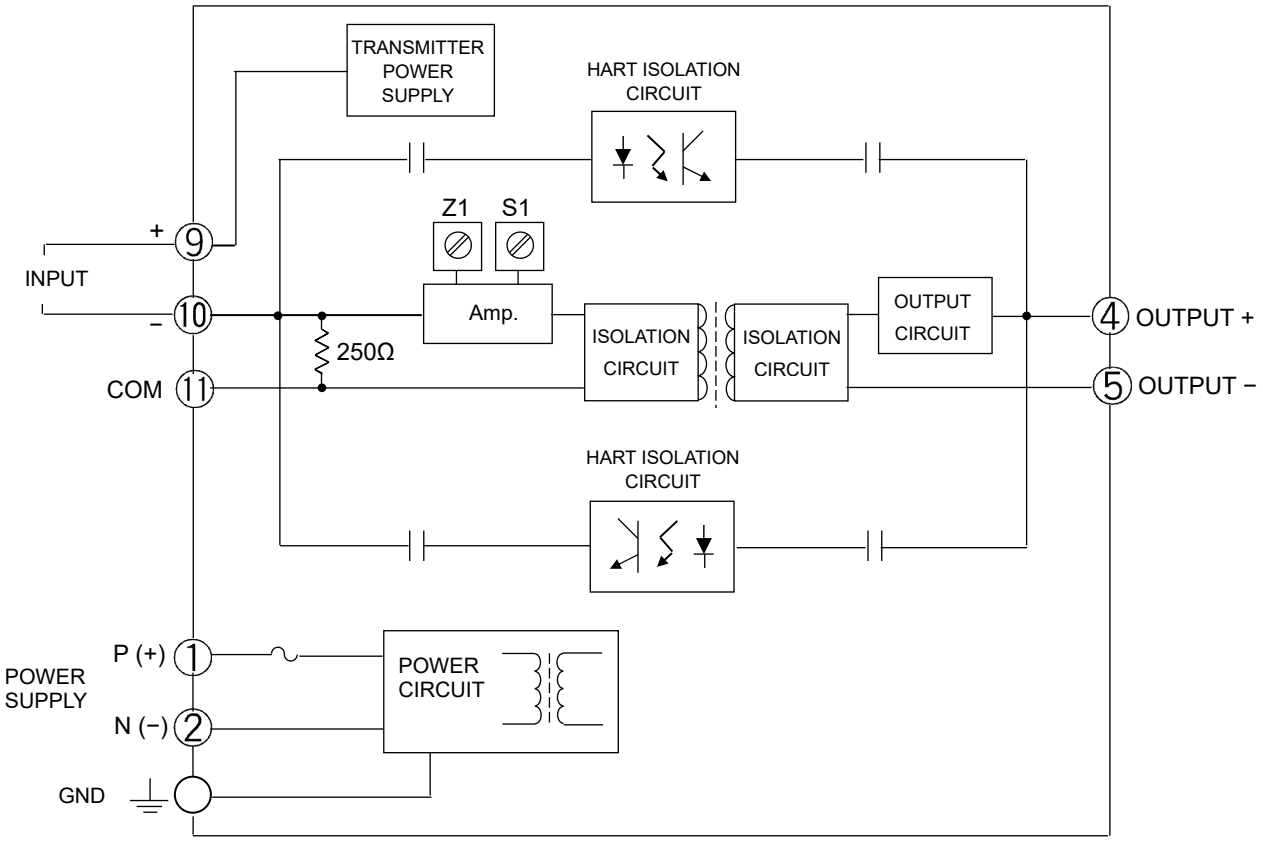
Housing	ABS resin (UL 94V-0)
Terminal Block	PBT resin (UL 94V-0)
Terminal Block Cover	PC resin (UL 94V-2)
DIN Rail Stopper	PP resin (UL 94HB)
Screw Terminal	Nickel-plated steel
Contacts Material and Finish	Brass with 0.2μm gold plating
Printed Circuit Board	Glass fabric, epoxy resin (FR-4: UL 94V-0)

TERMINAL ASSIGNMENTS

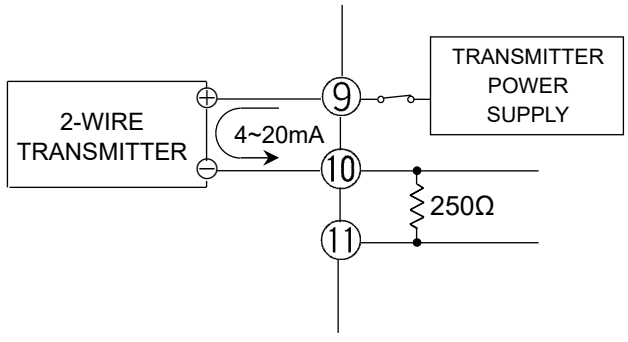


①	P (+)	POWER
②	N (−)	
⏚	GND	
④	+ OUTPUT	
⑤	− OUTPUT	
⑥	N.C.	
⑦	N.C.	
⑧	N.C.	
⑨	+ INPUT	
⑩	− INPUT	
⑪	COM	

BLOCK DIAGRAM



When used as a distributor:



When used as an isolator: