General Specifications

Model MA1
Distributor

JUXTA

GS 77J04A01-01E

■ General

The MA1 is a plug-in type distributor that is used in combination with a two-wire type transmitter to convert the transmitter's 4 to 20 mA DC signals into isolated DC current or DC voltage signals.

- Supports BARD-800.
- Provided with power indicator lamp (RDY).

■ Model and Suffix Codes

MA1-A □-□ *C /□

Model

Input signal
A: 4 to 20 mA DC
(Transmitter power supply: 25.25 ± 0.25 V DC)

Output signal

A: 4 to 20 mA DC	1: 0 to 10 mV DC
B: 2 to 10 mA DC	2: 0 to 100 mV DC
C: 1 to 5 mA DC	3: 0 to 1 V DC
D: 0 to 20 mA DC	4: 0 to 10 V DC
E: 0 to 16 mA DC	5: 0 to 5 V DC
F: 0 to 10 mA DC	6: 1 to 5 V DC
G: 0 to 1 mA DC	7: -10 to +10 V DC

Z: Custom order (DC current/voltage signal)
See Table 1.

Power supply
1: 15-40 V DC (Operating range: 12 to 48 V)
2: 100-240 V AC (Operating range: 85 to 264 V)

Option
/SN: No socket (with socket if not specified)
/C0: Coating
/FB: Fuse bypass

(Note 1) "/C0" option: Polyurethane coating. The "/C0" option does not guaranteed the coating effect though it is expected that the corrosion resistance for electric circuit is reinforced. And it is not able to submit coating test data.
(Note 2) "/FB" option: The primary power supply fuse is deleted, short circuit and ship it.

■ Ordering Information

- Model and Suffix Codes: e.g. MA1-A6-2*C

■ Input/Output Specifications

Input signal: 4 to 20 mA DC signal from two-wire type transmitter
Input resistance: 250 Ω
Transmitter power supply: 25.25±0.25 V DC (provided with a current limiter to keep the current between 25 and 35 mA)
Allowable conductor resistance (RL): Up to [(20 – transmitter's minimum operating voltage) V/0.02 A] Ω
Maximum allowable input current: 40 mA DC
Output signal: DC voltage or DC current signal

Output variable range: -6 to 106 %
Allowable load resistance:

Output Range	Allowable Load Resistance	Output Range	Allowable Load Resistance
4 to 20 mA DC	750 Ω maximum	0 to 10 mV DC	250 kΩ minimum
2 to 10 mA DC	1500 Ω maximum	0 to 100 mV DC	250 kΩ minimum
1 to 5 mA DC	3000 Ω maximum	0 to 1 V DC	2 kΩ minimum
0 to 20 mA DC	750 Ω maximum	0 to 10 V DC	10 kΩ minimum
0 to 16 mA DC	900 Ω maximum	0 to 5 V DC	2 kΩ minimum
0 to 10 mA DC	1500 Ω maximum	1 to 5 V DC	2 kΩ minimum
0 to 1 mA DC	15 kΩ maximum	-10 to +10 V DC	10 kΩ minimum

Output resistance: Current output; 500 kΩ or more
Voltage output other than below: 1 Ω or less
0 to 10 mV DC, 0 to 100 mV DC
Zero adjustment: −5 to +5%
Span adjustment: 95 to 105%

■ Standard Performance

Accuracy rating: ±0.1% of span; accuracy is not guaranteed for output levels less than 0.5% of the span of a 0 to X mA output range type.
Response speed: 150 ms, 63% response (10 to 90%)
Effect of power supply voltage fluctuation: Within the accuracy range of span for power supply voltage fluctuation.
Effect of ambient temperature change: ±0.15 % of span for change of 10 °C

■ Power Supply and Isolation

Supply rated voltage range: 100-240 V AC/DC ~ 50/60 Hz or 15-40 V DC ⎓
Supply input voltage range: 100-240 V AC (–15, +10%) 50/60 Hz or 15-40 V DC (±20%)
Power consumption: 2.6 W at 24 V DC; 4.9 VA at 100 V AC; 6.9 VA at 200 V AC
Insulation resistance: 100 MΩ minimum at 500 V DC between input, output, power supply and grounding terminals mutually
Withstanding voltage: 2000 V AC for one minute between input, output, power supply and grounding terminals mutually

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■ Environmental Conditions

Temperature: 0 to 50 °C (0 to 40 °C for multiple mounting)
Humidity: 5 to 90 % RH (no condensation)
Ambient Condition: Avoid installation in such environments as corrosive gas like sulfide hydrogen, dust, sea breeze and direct sunlight.
Magnetic field: 400 A/m or less.
Continuous vibration (at 5 to 9 Hz) Half amplitude of 3 mm or less (at 9 to 150 Hz) 4.9 m/s^2 or less, 1 oct/min for 90 minutes each in the 3-axis directions.
Impact: 98 m/s^2 or less, 11 msec, 3-axis 3 times each in 6 directions.
Altitude: 2000 m or less.
Warm-up time: At least 30 minutes after power on.

■ Transport and Storage Conditions

Ambient temperature: –25 to 70 °C
Temperature change rate: 20 °C per hour or less
Ambient humidity: 5 to 95 %RH (no condensation)

■ Mounting and Appearance

Construction: Compact plug-in type
Material: Modified polyphenylene oxide (casing)
Mounting method: Wall or DIN rail mounting
More than 5 mm interval is required for side-by-side close mounting.
Connection method: M3.5 screw terminals
External dimensions: 86.5 (H)× 51 (W)× 123 (D) mm (including a socket)
Weight: Main unit: 200 g or less
Socket: 60 g or less

■ Accessories

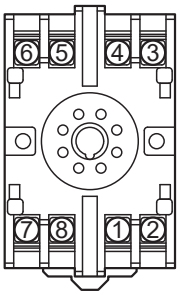
Spacer: One (used for DIN rail mounting)

■ Customized Signal Specifications

Table 1 Manufacturable Ranges

	Current Signal	Voltage Signal
Output range (DC)	0 to 24 mA	-10 to +10 V
Span (DC)	1 to 24 mA	10 mV to 20 V
Zero elevation	0 to 200%	-125 to +200%

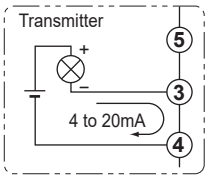
■ Terminal Assignments



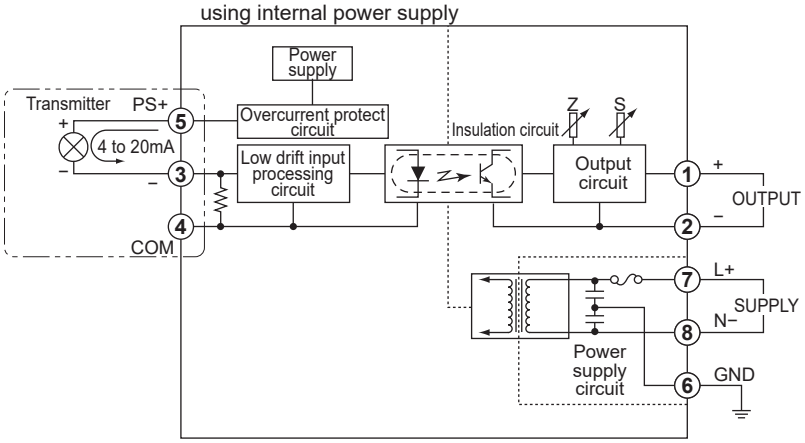
1	Output	(+)
2	Output	(−)
3	Input	(−)
4	Input	(COM)
5	Input	(PS+)
6	GND	
7	Supply	(L+)
8	Supply	(N−)

■ Block Diagrams

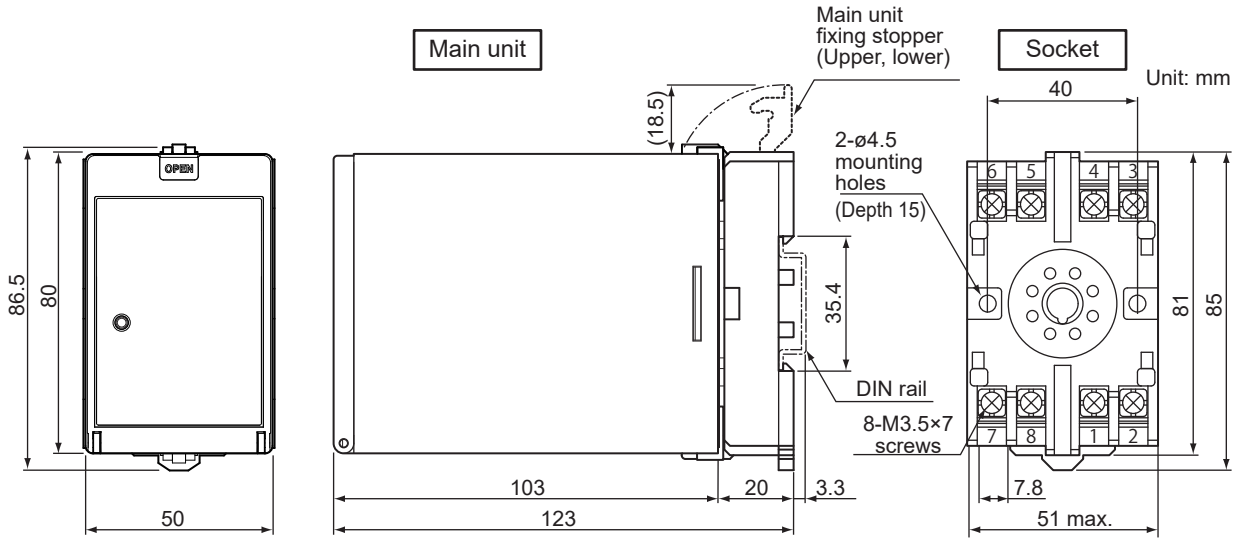
(2) Combination with two-wire type transmitter using external power supply



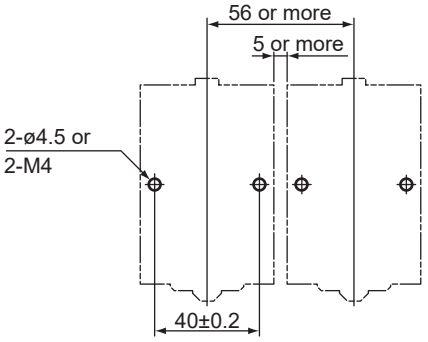
(1) Combination with two-wire type transmitter using internal power supply



■ External Dimensions



<Mounting Dimensions>



Note:
- When mounting the units close together, leave a space of at least 5 mm between them.
- Use the supplied spacer to keep a space of 5 mm for DIN rail mounting.

Normal Allowable Deviation= ± (Value of JIS B 0401-1998 tolerance grade IT18) / 2