General Specifications

Model JM12
Isolator
(2-output, mV Input Free Range Type)

JUXTA

GS 77J03M01-02E

■ General

The JM12 is a plug-in type isolator that converts mV DC voltage signals into isolated DC current or DC voltage signals

- Input setting, burnout setting, I/O adjustment, I/O monitoring, and segmental point setting (for custom order only) can be made through a PC (VJ77) or Handy Terminal (JHT200).
- The operation indicating lamp shows the operating status, abnormal setting and the like.
- I/O adjustment and wiring resistance correction can be made using a switch on the front of the JM12 without a setting tool such as Handy Terminal.

■ Model and Suffix Codes

JM12 -□□ - □□□□

Model

Usage
1: General use

Power supply
3: 24V DC±10%
4: 100-130 V AC/DC (Operating range: 85 to 150V AC/DC)
5: 200-240 V AC (Operating range: 170 to 264V AC)

Input signal
1: Within -60 to 240 mV DC
0: (Custom order) Segmental line linearization

Output-1 signal

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

* See Customized Signal Specifications

Output-2 signal

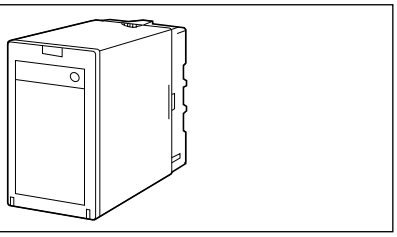
A: 4 to 20mA DC	6: 1 to 5V DC

Burnout function
U: Up
D: Down
N: Off

■ Items to be Specified when Ordering

- Model and Suffix Codes: e.g. JM12-14-1AAU
- Input Range: e.g. 0 to 100 mV DC

Specify segmental points (32 points) in Work Sheet when segmental line linearization is required.
The isolator will be shipped with proportional I/O if no specification of segmental points.



■ Input/Output Specifications

Input signal: mV DC potential difference
Measuring range: -60 to 240 mV DC
Input span: 3 mV minimum
Input resistance: 1 MΩ minimum; 10 kΩ minimum during power off
Allowable signal source resistance: 1 kΩ maximum
Allowable input level: -0.5 to +4.0 V DC
Output signal: DC voltage or DC current signal
Allowable load resistance:

Output-1 Range	Allowable Load Resistance	Output-1 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	15k Ω maximum	-10 to +10 V DC	10 kΩ minimum
Output-2 Range	Allowable Load Resistance	Output-2 Range	Allowable Load Resistance
4 to 20 mA DC	350 Ω maximum	1 to 5 V DC	2 kΩ minimum

Input adjustment: ±1% of span minimum (Zero/Span)
Output adjustment: ±5% of span minimum (Zero/Span)

■ Standard Performance

Accuracy rating:

Input conditions	Accuracy
When the input range is between -20 and +20 mV DC, and the span is 10 mV or more	±0.1% of span
When the input range is between -20 and +20 mV DC, and the span is less than 10 mV	$\frac{(0.1\ [\%] \times 10\ [\text{mV DC}])}{\text{Input span [mV DC]}}$ [%]
When the input range is between -60 and +100 mV DC, and the span is 40 mV or more	±0.1% of span
When the input range is between -60 and +100 mV DC, and the span is less than 40 mV	$\frac{(0.1\ [\%] \times 40\ [\text{mV DC}])}{\text{Input span [mV DC]}}$ [%]
When the input range is between -60 and +240 mV DC, and the span is 200 mV or more	±0.1% of span
When the input range is between -60 and +240 mV DC, and the span is less than 200 mV	$\frac{(0.1\ [\%] \times 200\ [\text{mV DC}])}{\text{Input span [mV DC]}}$ [%]

Accuracy is not guaranteed for output levels less than 0.1mA for the output codes D, E, and F, and for output levels less than 0.0125mA for the output code G.

Response speed: 200 ms, 63% response (10 to 90%)

GS 77J03M01-02E

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Burnout: Up, Down or Off; the maximum burnout time is specified as 60 seconds.
Insulation resistance: 100 MΩ minimum at 500 V DC between input, output-1, output-2, power supply and grounding terminals mutually
Withstanding voltage: 2000 V AC for one minute between input, (output-1, output-2), power supply and grounding terminals mutually
1000 V AC for one minute between output-1, output-2 terminals mutually
Operating temperature range: 0 to 50°C
Operating humidity range: 5 to 90% RH (no condensation)
Supply voltage range: 24 V DC ±10%
100 to 130 V AC/DC (±15%)
200-240 V AC (-15%, +10%)
Effects of power line regulation: Up to ±0.1% of span for the regulation within allowable range of each supply voltage range
Effects of ambient temperature variations: Up to ±0.2% of span per 10°C
Power consumption:
2.6 W at 24 V DC; 2.5 W at 110 V DC;
5.0 VA at 100 V AC; 7.0 VA at 200 V AC

■ Mounting and Appearance

Material: Case body; ABS resin (black), UL94 V-0
Socket; Modified polyphenylene oxide, including glass fiber (black), UL94 V-1
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)×133 (D) mm (including a socket)
Weight: Approx. 200 g (main unit), approx. 80 g (socket)

■ Accessories

Spacer: One (used for DIN rail mounting)
Range labels: Two

■ Customized Signal Specifications

Customized output

	Current Signal	Voltage Signal
Output range (DC)	0 to 20 mA	-10 to +10 V
Span (DC)	1 to 20 mA	10mV to 20 V
Zero elevation	0 to 150 %	-125 to +400 % *

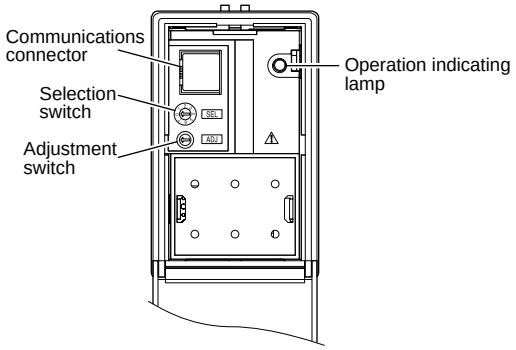
* -50 to +25% for the span of 20 mV DC or less.

Customized segmental line linearization

Segmental points: 32 (Set I/O relation by percentage)
Settable range of segmental points: -6 to +106% for both of input and output

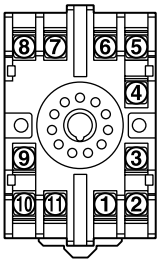
■ Front Panel

I/O adjustment is available using selection switch and adjustment switch.



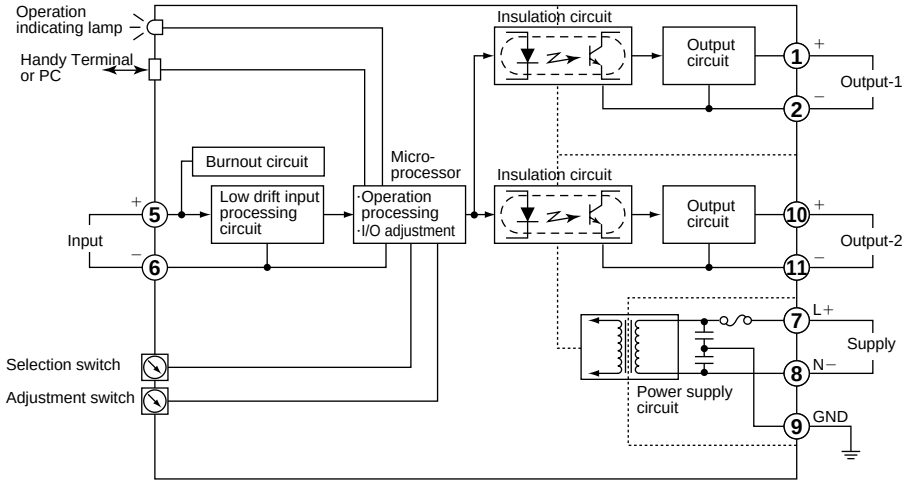
The position of a selection switch	Adjustment item
0	No function
1	Output-1 zero adjustment
2	Output-1 span adjustment
3	Output-2 zero adjustment
4	Output-2 span adjustment
5	Wiring resistance correction

■ Terminal Assignments

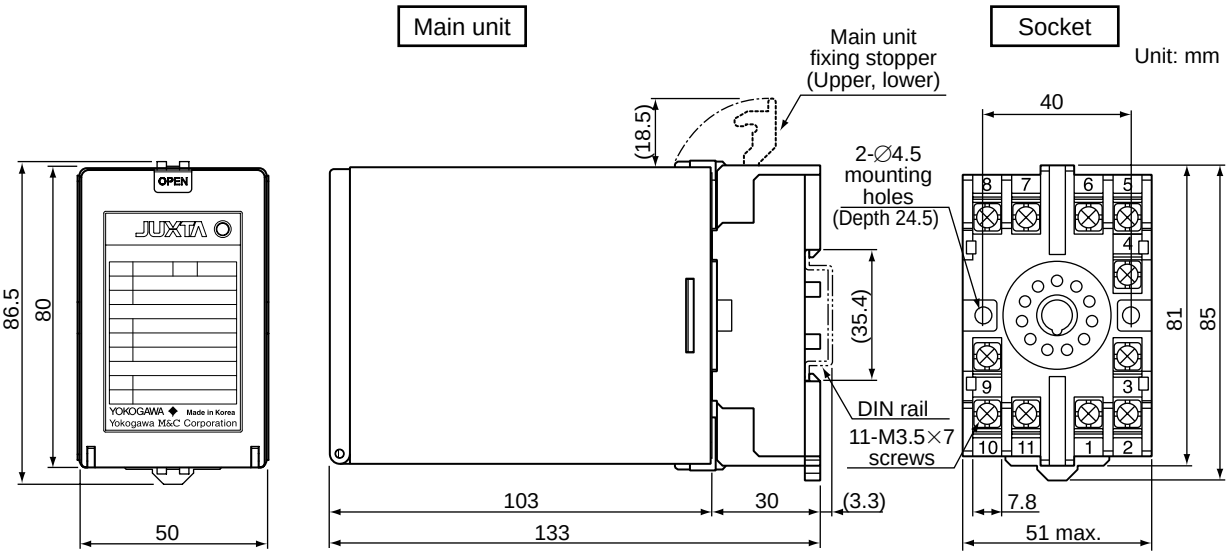


1	OUTPUT-1	(+)
2	OUTPUT-1	(−)
3	N.C.	
4	N.C.	
5	INPUT	(+)
6	INPUT	(−)
7	SUPPLY	(L+)
8	SUPPLY	(N−)
9	GND	
10	OUTPUT-2	(+)
11	OUTPUT-2	(−)

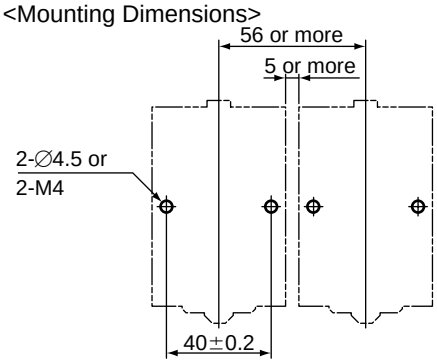
■ Block Diagrams



■ External Dimensions



<Mounting Dimensions>



Unit: mm

(1)More than 5 mm interval is required for side-by-side close mounting.
(2)Use the supplied spacer for DIN rail mounting to keep 5 mm interval.

■ Work Sheet

Model and Suffix Codes

Write at least 2 points for input and output segmental points data.

Input (%)		Output (%)		Input (%)		Output (%)	
X0		Y0		X16		Y16	
X1		Y1		X17		Y17	
X2		Y2		X18		Y18	
X3		Y3		X19		Y19	
X4		Y4		X20		Y20	
X5		Y5		X21		Y21	
X6		Y6		X22		Y22	
X7		Y7		X23		Y23	
X8		Y8		X24		Y24	
X9		Y9		X25		Y25	
X10		Y10		X26		Y26	
X11		Y11		X27		Y27	
X12		Y12		X28		Y28	
X13		Y13		X29		Y29	
X14		Y14		X30		Y30	
X15		Y15		X31		Y31	

(Specification conditions)

Input conditions: -6.0%≦X0<X1<X2< ····· Xn-1<Xn≦106.0%

Output conditions: -6.0%≦ (Y0 to Yn) ≦106.0%

• The information covered in this document is subject to change without notice for reasons of improvements in quality and/or performance.