

# SystempaK (Digital/Single Case) Millivolt Conversion Module Model J-SMP 80/85

**Introduction**

The Millivolt Conversion Module (J-SMP) is a signal conversion module housed in a single case and accepts a DC millivolt input, and converts it into a 1 to 5V DC or 4 to 20mA DC signal.

The J-SMP Module is available for one-output (J-SMP 80) or two-output (J-SMP 85) module.

The J-SMP provides a linearization function as a standard, which employs up to 21 linearization points to allow a linear output.

Range, burnout, and linearization function changes are done with dedicated Handy Communicator (J-SHC00) in the field.

**Specification**

*Input signal:* DC millivolt

*Span:* 2 to 100mV DC

*Suppression:*

-10 to +35mV DC or three times the span, or whichever smaller one.

*Input bias current:*

-100nA or less (at upward burnout)

+100nA or less (at downward burnout)

*Burnout signal:*

UP/DOWN scale or setting OFF

Speed: 1 minute/FS or less

*Output signal:*

No.1 output;

1 to 5V DC or 4 to 20mA DC

No.2 output; 1 to 5V DC

(Between No.1 and No.2 outputs is not isolated.)

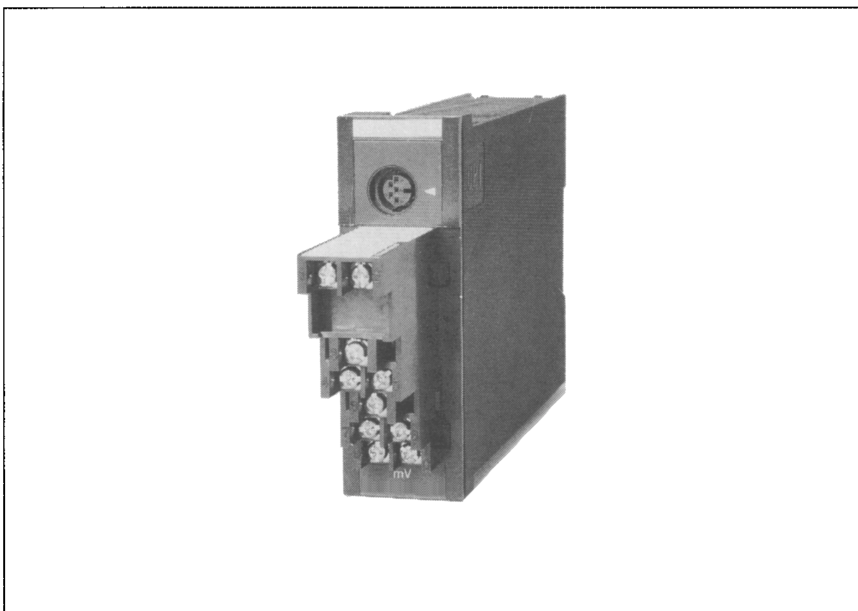
*Output impedance:*

Voltage output; 250Ω or less

Current output; 250kΩ or more

*Allowable load resistance:*

0 to 600Ω (current output)



*Accuracy:*

*Common mode rejection ratio:*

120dB (at 50Hz)

*Power supply:* 24V DC  $\pm 10\%$

*Current consumption:*

200mA or less (at 24V DC)

*Ambient temperature:* 5 to 45°C

*Ambient humidity:* 0 to 90%RH

*Mounting:*

Panel, Wall, DIN rail mounting

*Front mask color:* Black

*Weight:* 450g

*Operating influence:*

Supply voltage effect;

$\pm 0.2\%FS/24V DC \pm 10\%$

Temperature effect;

Span 10mV or more ...

$\pm 0.3\%FS/10^\circ C$

Span less than 10mV ...

$\pm \frac{3}{\text{span (mV)}} \% FS/10^\circ C$

Input span	No. 1 output (Note1)	No. 2 output
4mV or more	$\pm 0.25\%FS$	$\pm 0.75\%FS$
Less than 4mV	$\pm 10\mu V$ or less (input equivalent)	$\pm [0.5\% + 10\mu V]$ (input equivalent) ]

Note 1) For No. 1 current output, adds 0.1% to those indicated above.

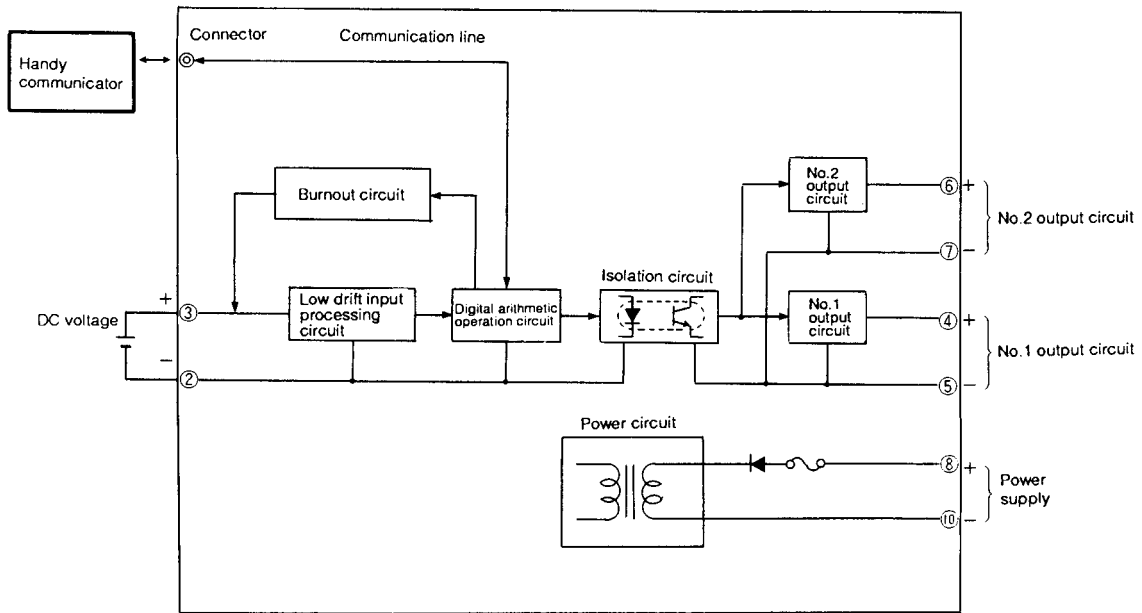


Figure 1. Functional block diagram of millivolt conversion module

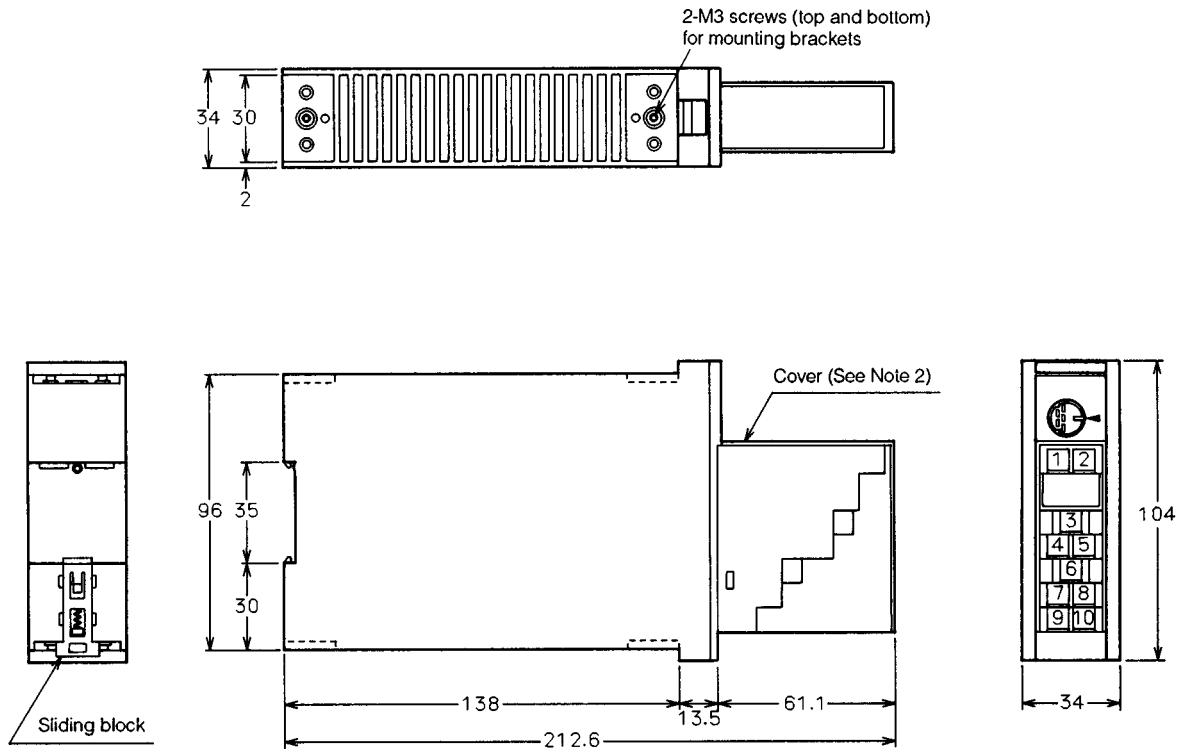
Model Number Table

One-output model

Basic model number	Selections		Description
	I	II	
J-SMP 80			Millivolt conversion module (1-output)
		- 0	Input 2 to 100mV span
		1	Output 1 to 5V DC
		2	Output 4 to 20mA DC

Two-output model

Basic model number	Selections		Description
	I	II	
J-SMP 85			Millivolt conversion module (2-output)
		- 0	Input 2 to 100mV span
		1	No.1 output 1 to 5V DC No.2 output 1 to 5V DC
		2	No.1 output 4 to 20mA DC No.2 output 1 to 5V DC



No.	Description
1	—
2	Input (-)
3	Input (+)
4	No.1 output (+)
5	No.1 output (-)
6	No.2 output (+) (Note 1)
7	No.2 output (-) (Note 1)
8	24V (PS +)
9	GND
10	0V (PS -)

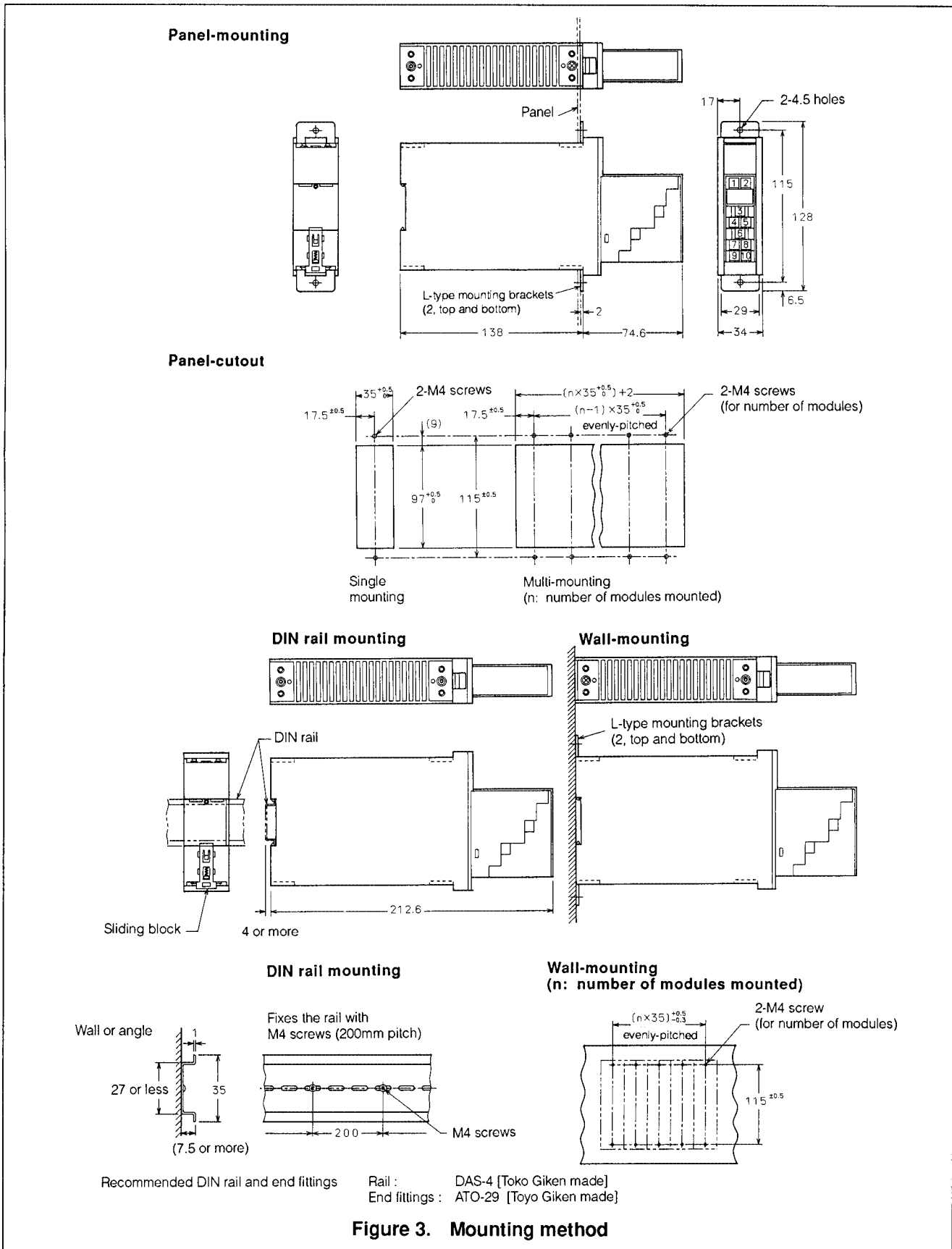
- Notes: 1) For two-output model.  
 2) Operate the Module with a cover.  
 3) Terminal screws: M3.5  
 4) Use the pressured terminals with insulation sheath.

**Figure 2. Dimensions and wiring diagram**

### Ordering Information

When ordering, please specify:

- 1) Tag number
- 2) Input range Lo
- 3) Input range Hi
- 4) Burnout



**Figure 3. Mounting method**

Specifications are subject to change without notice.

**Yamatake Corporation**

Totate International Building  
 2-12-19 Shibuya  
 Shibuya-ku Tokyo 150-8316  
 Tel : 81-3-3486-2216  
 Fax: 81-3-3486-2503

Yamatake-SIC Control Systems Co., Ltd.	: China	86-10-8510-2505
Shanghai Yamatake Jinshan Control Instruments Co., Ltd.	: China	86-21-6428-8661
Yamatake Korea Co., Ltd.	: Korea	82-2-785-0280-2
Yamatake (Thailand) Co., Ltd.	: Thailand	66-2-210-0900-7
Yamatake Philippines, Inc.	: Philippines	63-2-817-6452
PT. Yamatake Berca Indonesia	: Indonesia	62-21-230-5538
Yamatake Controls Singapore Pte. Ltd.	: Singapore	65-778-5966
Yamatake Automation (M) Sdn. Bhd.	: Malaysia	60-3-706-5740
YCV Corporation	: U.S.A.	1-602-548-1800



**Savemation**

*Saving through Automation*

**Yamatake Industrial Systems Co.,Ltd.**

This has been printed on recycled paper.

<http://www.yamatake.co.jp/>

9910-Y/Y