YAMATAKE **Specification**

SystempaK (Digital/Single Case) Thermocouple Conversion Module

Model J-STP 80/85

Introduction

The Thermocouple Conversion (J-STP) Module is a signal conversion module housed in a single case and accepts an emf of thermocouple input, and converts it into a 1 to 5V DC or 4 to 20mA DC signal.

The J-STP provides a linearization function as a standard to obtain a linear output proportional to the measured temperature.

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

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

Specification

Input signal:
Thermocouples [Types R, S, B, K, E, J, T (JIS), N(ASTM)]

Measuring range:

T/C type	Measuring range (°C)	Measuring range (mV)
R	0 to 1760°C	0 to 21.006mV
S	0 to 1760°C	0 to 18.612mV
B	400 to 1820°C	0.786 to 13.814mV
K	−200 to 1370°C	−5.891 to 54.807mV
E	−200 to 800°C	−8.824 to 61.022mV
J	−200 to 1100°C	−7.890 to 63.777mV
T	−200 to 400°C	−5.603 to 20.869mV
N	0 to 1300°C	0 to 47.502mV

Span: 2 to 100mV DC

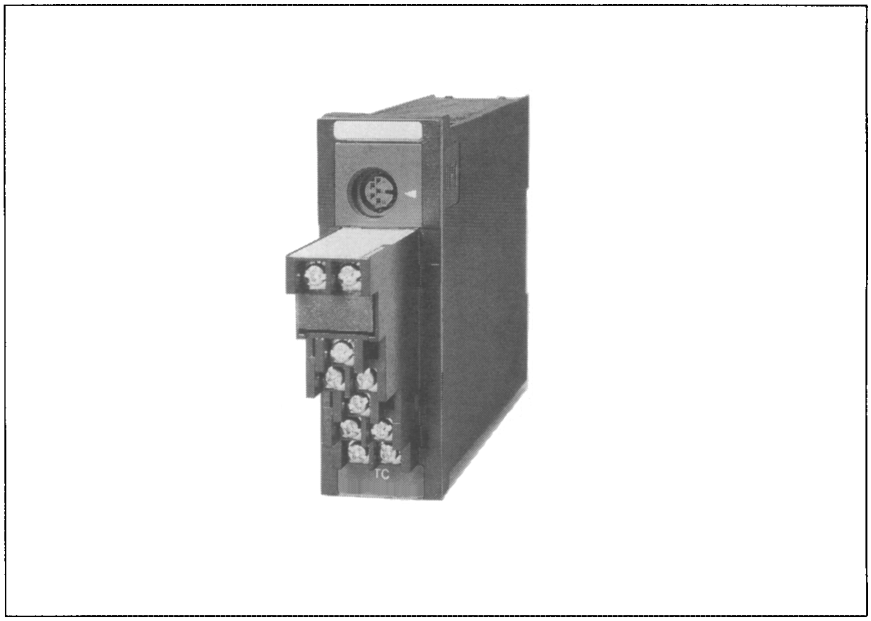
Suppression:
−10 to +35mV DC or three times the span, whichever smaller one.

Input bias current:
−100nA or less
(at upward burnout)
+100nA or less
(at downward burnout)

Allowable wiring resistance:
2kΩ or less

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: Sum of accuracy of cold junction compensation and that of No.1 (No. 2) output.

Input span	No. 1 output (Note 1)	No. 2 output
10mV or more	±0.25%FS	±0.75%FS
4 to less than 10mV	±0.5%FS	±1.0%FS
Less than 4mV	±[0.25% +10μV (input equivalent)]	±[0.75% +10μV (input equivalent)]

(Including linearization accuracy)

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

- Cold junction compensation accuracy: ±0.5°C

Common mode rejection ratio:
120dB (at 50Hz)

Power supply: 24V DC $^{+10}_{-15}$ %

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:
Cold junction compensation accuracy; ±0.5°C/10°C
Supply voltage effect;
±0.2%FS/24V DC $^{+10}_{-15}$ %
Temperature effect;
Span 10mV or more
... ±0.3%FS/10°C
Span less than 10mV
... $\pm \frac{3}{\text{span (mV)}}$ %FS/10°C

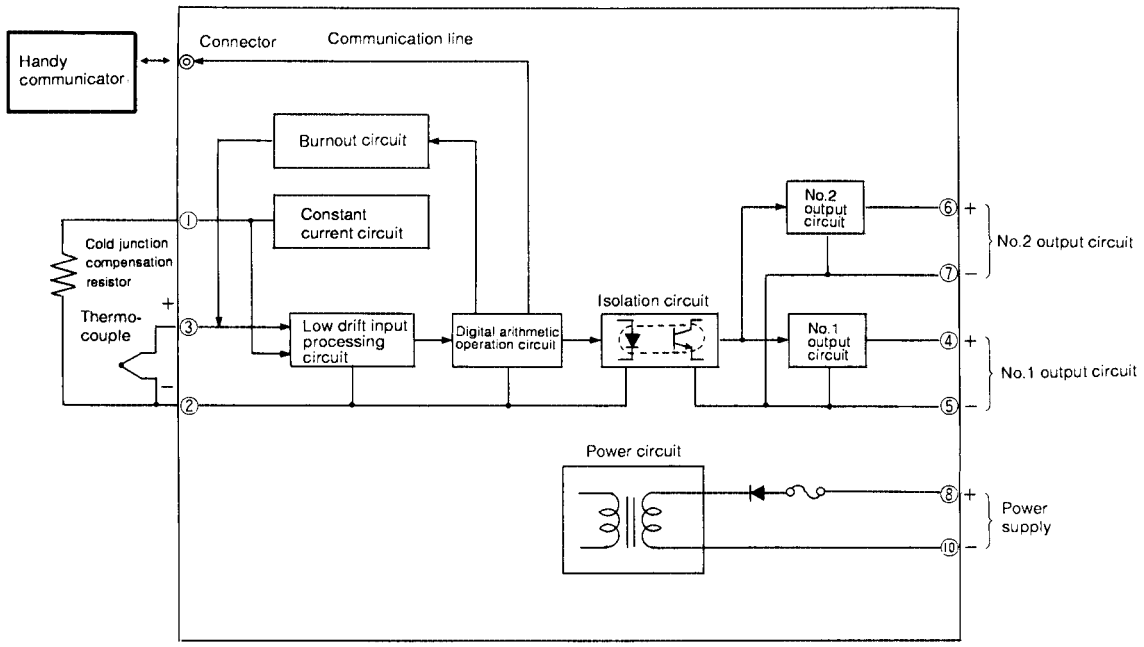


Figure 1. Functional block diagram of thormocouple conversion module

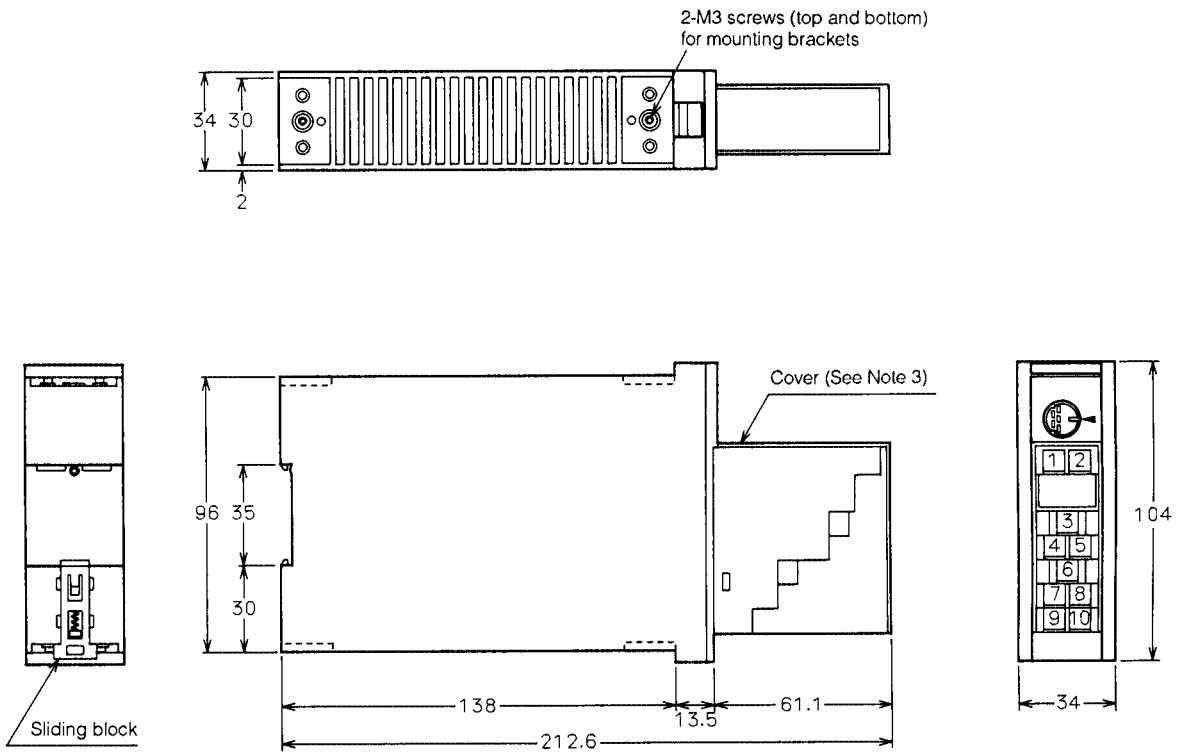
Model Number Table

One-output model

Basic model number	Selections		Description
	I	II	
J-STP 80			Thermocouple Conversion Module (1-output)
	– 0		Input Thermocouples (Types T, J, K, E, R, S, B, N)
		1	Output 1 to 5V DC
		2	Output 4 to 20mA DC

Two-output model

Basic model number	Selections		Description
	I	II	
J-STP 85			Thermocouple Conversion Module (2-output)
	– 0		Input Thermocouples (Types T, J, K, E, R, S, B, N)
		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 (Note 2)	———
2 (Note 2)	T/C input (–)
3	T/C 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) Used for cold junction resistor.
3) Operate the Module with a cover.
4) Terminal screws: M3.5
5) Use the pressured terminals with insulation sheath.

Figure 2. Dimensions and wiring diagram

Ordering Information

When ordering, please specify:

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

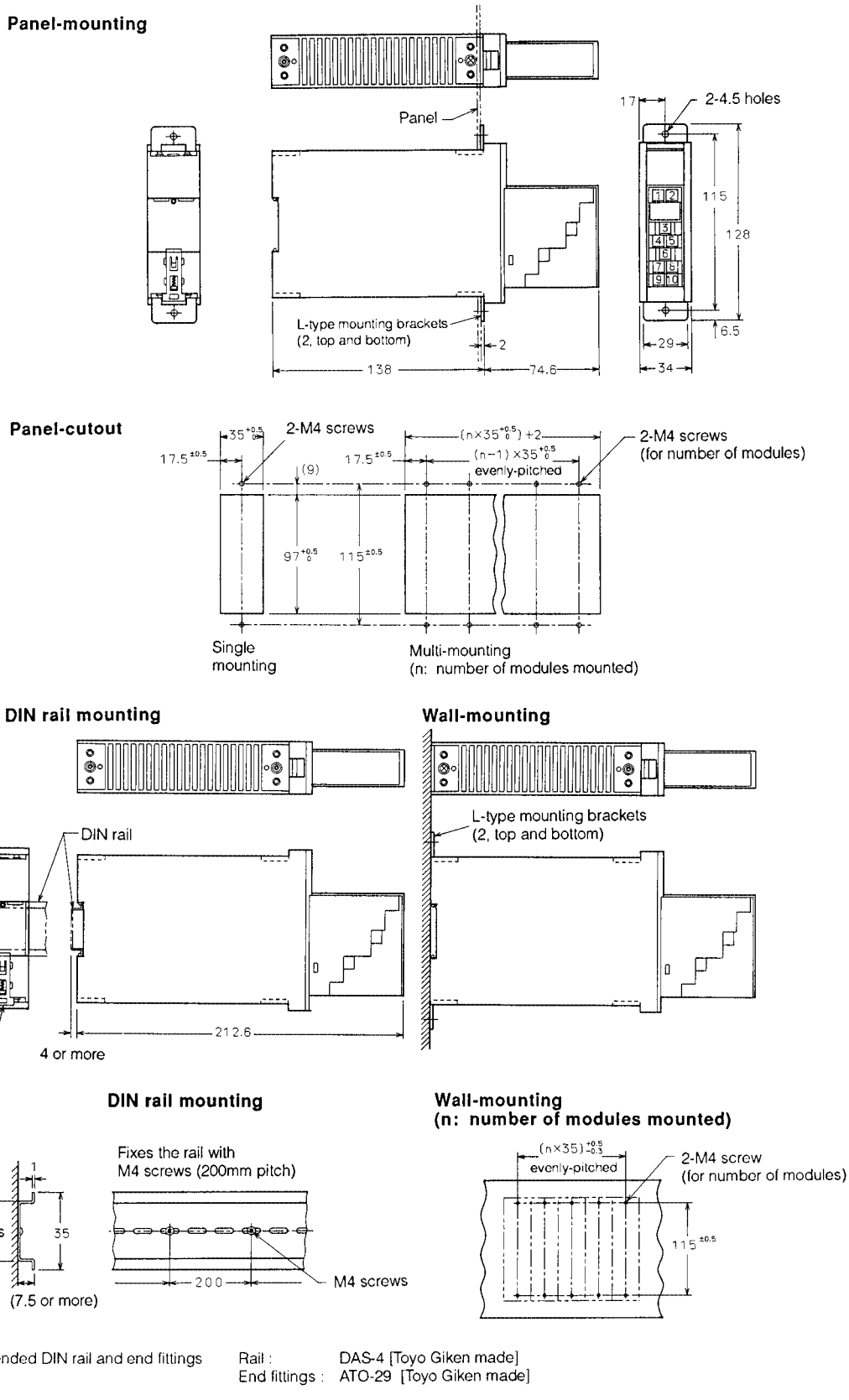


Figure 3. Mounting method

Specifications are subject to change without notice.

YAMATAKE

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