

General Specifications

FT5A, FT5V
Thermocouple Converter
(Free Range Type)

JUXTA

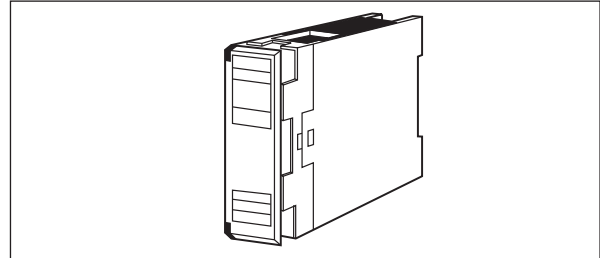
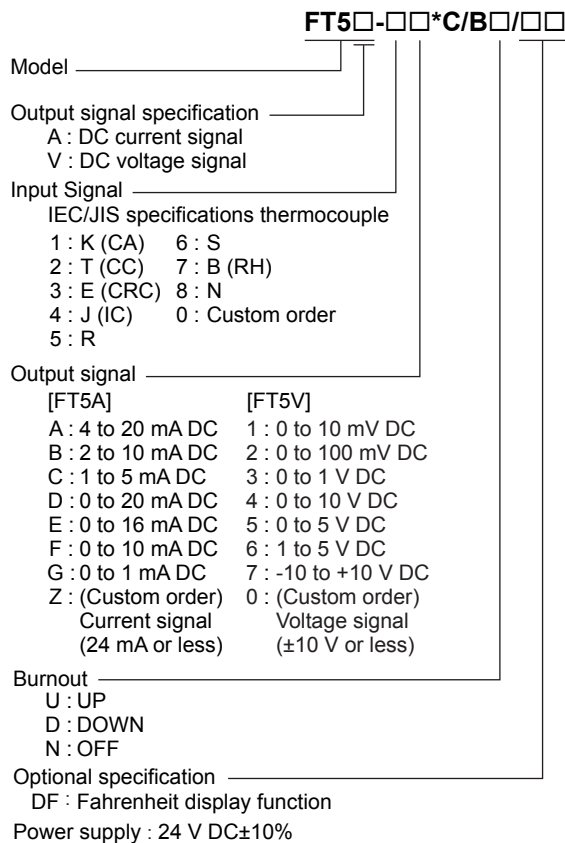
GS 77J08T05-01E

General

The FT5A/FT5V is a compact, front terminal connection type signal conditioner that is connected to an IEC/JIS-standard thermocouple (TC), such as a Type K, T, E, J, R, S, B or N thermocouples to convert temperature signals into isolated DC current or DC voltage signals.

- Selection of input type, input range setting, burnout setting, output adjustment, I/O monitoring, and loop back test can be made using the optional Parameter Setting Tool (VJ77) or Handy Terminal (JHT200).
- For the Fahrenheit display, specify the option "/DF".
- Available for the combination with Safety barrier (BARD-600).

Model and Suffix Codes



Input/Output Specifications

Input signal: An IEC/JIS-standard thermocouple
 (ITS-90, JIS C 1602: '95, IEC 584: '95)
 Input Type and Measuring range:

Code	Input Type	Measuring Range (°C)	Measuring Span	Zero Elevation
1	Type K	-270 to + 1372	3 mV or more	Within 3 times of the measuring span or ±25 mV, whichever is smaller
2	Type T	-270 to + 400		
3	Type E	-270 to + 1000		
4	Type J	-210 to + 1200		
5	Type R	-50 to + 1768		
6	Type S	-50 to + 1768		
7	Type B	0 to 1820		
8	Type N	-270 to + 1300		

Input resistance: 1 MΩ or more (10 kΩ or more when power off)
 Bournout detective current: 0.1 μA
 Permissible applied voltage: -0.5 to +4.0 V DC
 Signal source resistance: 1 kΩ or less
 Output signal: DC voltage or DC current signal

Ordering Information

Specify the following when ordering.

- Model and suffix codes :e.g. FT5V -16°C/BU
- Input range :e.g. 0 to 500°C

When the burnout is not specified, the product is manufactured as /BU.

Allowable load resistance:

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

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

Output adjustment: ±10% of span(Zero/Span)

In the case of the output specification code 7, it is ±5% of span.

Standard Performance

Accuracy rating:

±0.1% of span or ±10 μV, whichever is greater; see the following exceptions:
 Accuracy is not guaranteed for less than 400°C of Type B.
 Type K, E, T and N: For the measured temperatures less than -200°C, multiply the input accuracy mentioned above by K, where

$$K = \frac{\text{(Thermocouple output change/°C near 0°C)}}{\text{(Thermocouple output change/°C at measured temperature)}}$$

Accuracy is not guaranteed for output level less than 0.5% of the span of a 0 to X mA output range type.

Accuracy of reference junction compensation:

Other than Type R and S: ±1°C (0 to 50°C)

Type R and S: ±2°C (0 to 50°C)

Reference junction compensation of Type B is not carried out.

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

Burnout: Up, Down or Off; the maximum burnout time is specified as 60 seconds.

Effect of power supply voltage fluctuations: ±0.1% of span or less for the fluctuation within the operating range of power supply voltage specification.

Effect of ambient temperature change: ±0.2% of span or less for a temperature change of 10°C.

Effect of leadwire resistance change: ±15 μV or less for a change of 100 Ω (Need adjustmet when combining with BARD-600).

Environmental conditions

Operating temperature range: 0 to 50°C

Operating humidity range: 5 to 90% RH (no condensation)

Avoid the following environments for installation locations: Areas with vibration, corrosive gases, dust, water, oil, solvents, direct, sunlight, radiation, a strong electric field, and/or a strong magnetic field, altitude of more than 2000 m above sea level.

Power Supply and Isolation

Supply input voltage range: 24 V DC±10%(Ripple content 5% p-p or less)

Consumption current: 24 V DC 65 mA(FT5A), 50 mA(FT5V)

Insulation resistance: 100 MΩ minimum at 500 V DC between input, output and power supply mutually.

Withstanding voltage: 1500 V AC for one minute between input, output and input, power supply. 500 V AC for one minute between output and power supply.

Mounting and Appearance

Mounting method: Rack, Wall or DIN rail mounting

Connection method: M4 screw terminals

External dimensions: 72 (H) × 24 (W) × 127 (D) mm

Weight: Approx. 130 g

Accessories

Tag number label: 1

Range label:1

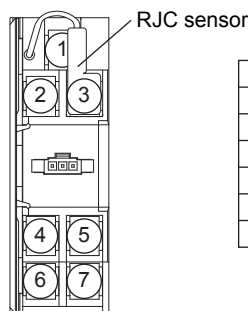
Mounting blocks:2

M4 mounting screws:2

Customized Signal Specifications

	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%	-100 to +200%

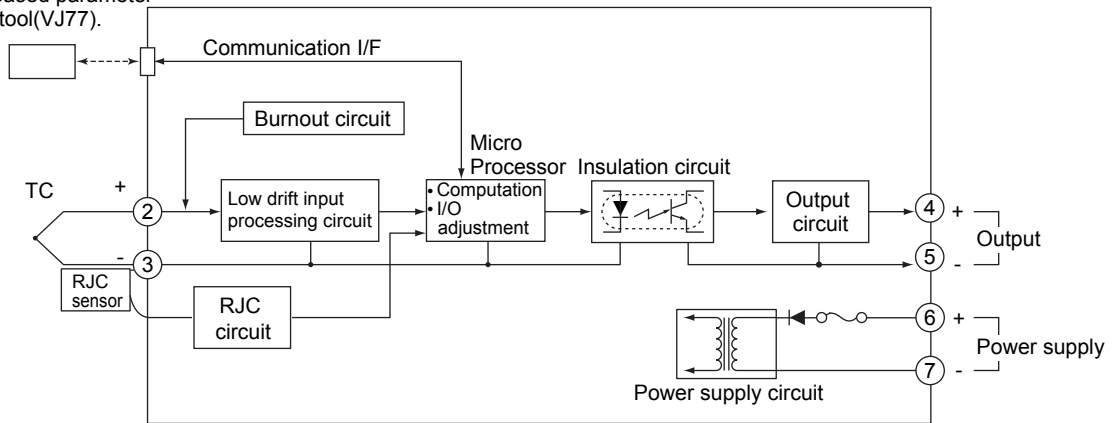
Terminal Assignments



1	Prohibited to connect
2	Input (+)
3	Input (-)(RJC)
4	Output (+)
5	Output (-)
6	Supply (+)
7	Supply (-)

■ Block Diagram

Handy terminal(JHT200)
or PC-based parameter
setting tool(VJ77).



■ External Dimensions

