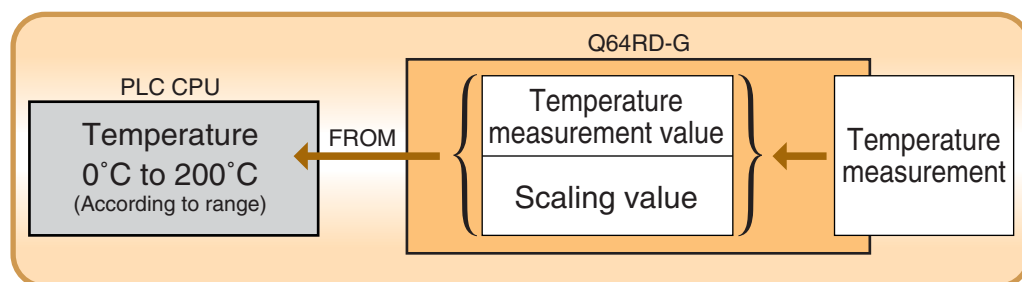


Temperature-Measuring Resistor Input Module

Q64RD-G

Introducing the channel-isolated type Q Series temperature-measuring resistor input module!!



Functions added from Q64RD

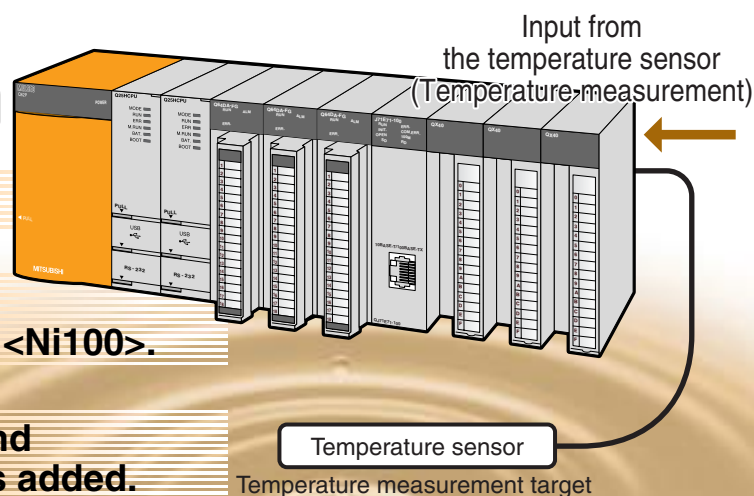
● **Isolated channels.**

● **Compatible with nickel temperature-measuring resistor <Ni100>.**

● **Moving averaging processing and the first-order lag filter functions added.**

● **0 to 200°C and -60 to 180°C^{*1} have been added to the range selection, increasing the temperature sensing range.**

*1: Ni100 only

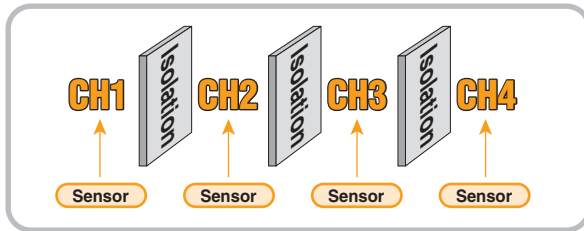


Mitsubishi Electric Corporation Nagoya Works is a factory certified for ISO14001 (standards for environmental management systems) and ISO9001 (standards for quality assurance management systems)



1. Channel-isolated

Including isolation between channels.



2. Measure up to four channels with one module

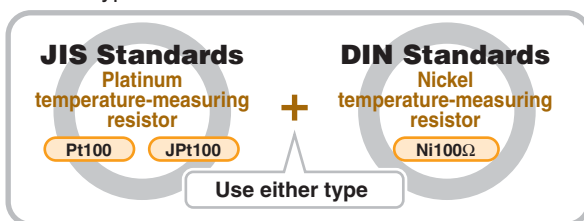
Measure the temperature of up to four channels with one module. The detected temperature measurement values can be converted into scaling values (ratio (%)).

3. Set conversion enable/disable

The conversion enable/disable state can be set for each channel. The sampling time can be shortened by disabling conversion for unused channels. Unnecessary disconnection detection of unused channels can also be prevented.

4. Temperature-measuring resistor compatible with JIS Standards

Two types of platinum temperature-measuring resistors compatible with JIS Standards (Pt100, JPt100) can be used. In addition, a nickel temperature-measuring resistor (Ni100Ω) compatible with DIN Standards can also be used. Using GX Developer, the temperature-measuring resistor type can be selected for each channel.



5. Connect either 3-wire type or 4-wire type temperature-measuring resistor

Either a 3-wire type or 4-wire type temperature-measuring resistor can be connected to each channel. A 2-wire type temperature-measuring resistor can be connected by short-circuiting the terminal.

6. Detect disconnections

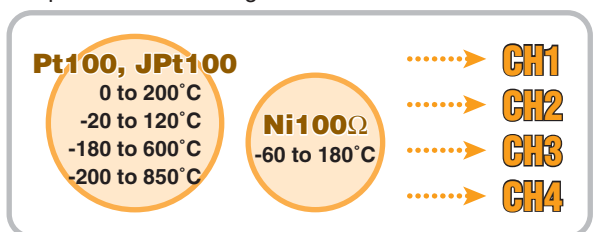
The temperature-measuring resistor or cable disconnection can be detected for each channel.

7. Select averaging processing according to application

Sampling processing, time averaging processing, count averaging processing, moving averaging processing or the first-order lag filter can be selected for each channel.

8. Select switching range according to application

When using the platinum temperature-measuring resistor Pt100 or JPt100, the range can be selected from 0 to 200°C, -20 to 120°C, -180 to 600°C or -200 to 850°C for each channel. The -60 to 180°C range can be selected for each channel when using the nickel temperature-measuring resistor.



9. Compensate errors by setting offset/gain values

Errors can be compensated by setting the offset/gain values for each channel. Either the user range setting or factory settings can be selected for the offset and gain values.

10. Output warnings

A warning is output for each channel when a temperature exceeding the preset measurement range is detected.

11. Online module change

Modules can be changed without stopping the system. In addition, the "offset and gain setting values can be loaded to the Q64RD/Q64RD-G modules changed in the offset state", and the "offset and gain setting values can be transferred to Q64RD/Q64RD-G mounted in other slots" by using the dedicated instructions (G. OGLOAD, G. OGSTOR) or by turning writing to the buffer memory and turning the Y signal ON. (Note that this is limited to the same module models.)

12. Easy setting with utility package

The optional utility package (GX Configurator-TI) is available. While use of the utility package is not mandatory, it can be used to set the initial and automatic refresh settings on the screen, to reduce sequence programs, and to easily check the settings and operating status.

Performance specifications

Item			Specifications										
Number of channels			4 channels										
Output	Temperature measurement value		16-bit, signed binary data (-2000 to 8500: Value to the first decimal place x 10 times) 32-bit signed binary data (-200000 to 850000: Value to the third decimal place x 1000 times)										
	Scaling value		16-bit signed binary data										
Usable temperature-measuring resistors			Pt100 (JIS C1604-1997, IEC 751 1983), JPt100 (JIS C1604-1981), Ni100Ω (DIN43760 1987)										
Measured temperature range	Pt100		-200 to 850°C										
	JPt100		-180 to 600°C										
	Ni100Ω		-60 to 180°C										
Range changing	Pt100		-20 to 120°C/0 to 200°C/-200 to 850°C										
	JPt100		-20 to 120°C/0 to 200°C/-180 to 600°C										
	Ni100Ω		————										
Accuracy *1 Accuracy at selection range max. value	Reference accuracy		Within ±0.04%										
	Temperature coefficient*2	Pt100/JPt100 (-20 to 120°C)	±70ppm/°C (±0.0070%/°C)										
		Pt100/JPt100 (0 to 200°C)	±65ppm/°C (±0.0065%/°C)										
		Pt100/JPt100 (-200 to 850°C)	±50ppm/°C (±0.0050%/°C)										
		Ni100Ω (-60 to 180°C)	±70ppm/°C (±0.0070%/°C)										
Resolution			0.025°C										
Conversion speed			40ms/channel *3										
Number of analog input points			4 channels/module										
Temperature detecting output current			1mA										
E ² -PROM write count			Max. 100 thousand times										
Isolation			<table><tr><th>Isolation area</th><th>Isolation specifications</th><th>Dielectric withstand voltage</th><th>Insulation resistance</th></tr><tr><td>Between temperature-measuring resistor input and PLC power supply</td><td>Photo coupler isolation</td><td rowspan="2">1780VACrms/3 cycles (altitude 2000m)</td><td rowspan="2">Over 10MΩ at 500VDC insulation resistance tester</td></tr><tr><td>Between temperature-measuring resistor input and channel</td><td>Transformer isolation</td></tr></table>	Isolation area	Isolation specifications	Dielectric withstand voltage	Insulation resistance	Between temperature-measuring resistor input and PLC power supply	Photo coupler isolation	1780VACrms/3 cycles (altitude 2000m)	Over 10MΩ at 500VDC insulation resistance tester	Between temperature-measuring resistor input and channel	Transformer isolation
Isolation area	Isolation specifications	Dielectric withstand voltage	Insulation resistance										
Between temperature-measuring resistor input and PLC power supply	Photo coupler isolation	1780VACrms/3 cycles (altitude 2000m)	Over 10MΩ at 500VDC insulation resistance tester										
Between temperature-measuring resistor input and channel	Transformer isolation												
Disconnection detection			Yes (Each channel independent) *4										
Number of occupied points			16 points										
Connection terminals			18-point terminal block										
Applicable wire size			0.3 to 0.75mm ²										
Applicable crimping terminals			1.25-3 R1.25-3 (Sleeved crimping terminals are unusable.)										
Cables between Q64RD-G and temperature-measuring resistor			Total resistance not more than 2kΩ										
Internal current consumption (5VDC)			0.62A										
Weight			0.20kg										
External dimensions			98 (H) x 27.4 (W) x 112 (D)mm										

*1: The selection ranges and accuracies have the following relationship.

Selection Range Ambient Temperature	Pt100 and JPt100: -20 to 120°C	Pt100: -200 to 850°C	JPt100: -180 to 600°C	Pt100 and JPt100: 0 to 200°C	Ni100Ω: -60 to 180°C
0 to 55°C	±0.300°C	±1.615°C	±1.140°C	±0.470°C	±0.450°C
25±5°C	±0.090°C	±0.553°C	±0.390°C	±0.145°C	±0.135°C

*2: Accuracy for the temperature change of 1°C

Example) The accuracy when the temperature changes from 25°C to 30°C

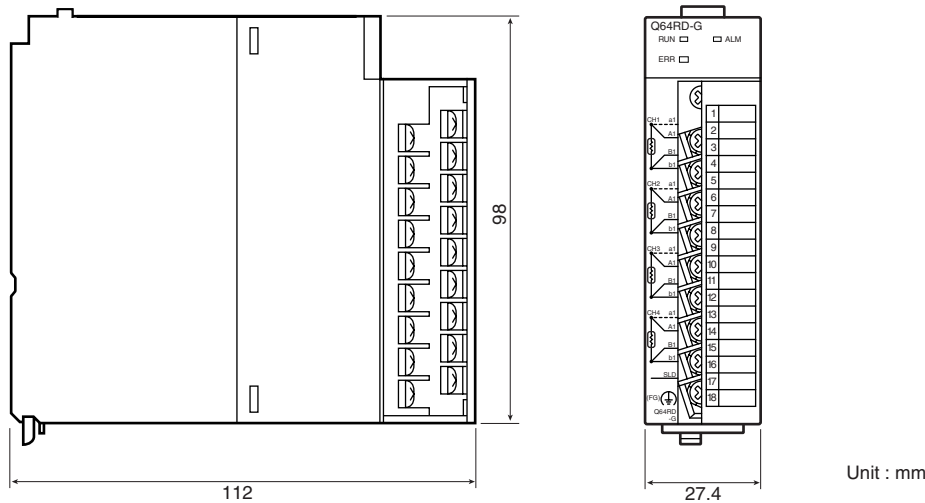
0.04% (reference accuracy) + 0.0070%/°C (temperature coefficient) x 5°C (difference in temperature change) = 0.075%

*3: The conversion speed is the period from when a temperature is input and converted into a corresponding digital value until the value is stored into the buffer memory.

When two or more channels are used, the conversion speed is "40ms x number of conversion enabled channels".

*4: At disconnection detection, the temperature conversion value right before disconnection occurrence is held.

External dimensions



Product list

Product name	Model	Model code
Q64RD-G type Channel-Isolated Temperature-Measuring Resistor Input Module	Q64RD-G	1W4574
GX Configurator-TI Version 1	SW1D5C-QTIU-E *1	13PX24

*1: Compatible with version 1.17 or higher.

Manual

Relevant manual

Manual name	Manual shipping style	IB/SH No	Compatible sub-No.	Model code
Thermocouple Input module User's Manual Q64RD,Q64RD-G / GX Configurator-TI (SW1D5C-QTIU-E)	Sold separately	SH-080142	-E or higher	13JR31

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