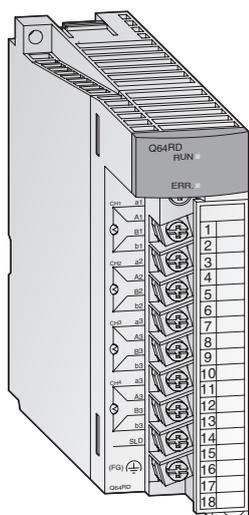


■ Analog Modules for Temperature Measurement



Temperature measurement by temperature sensors

These modules are designed to convert external platinum temperature-measuring resistor input values into 16 or 32-bit signed binary temperature measurement values and scaling values.

The reference temperature is determined by means of a Pt100 resistance thermometer for the Q64RD module (Q64RD-G additionally with Ni100 resistors) and by means of a thermocouple for the Q64TD and Q64TDV-GH modules.

Special features:

- Temperature of 4 channels can be measured by one module
- Two kinds of platinum temperature measuring resistors compliant with the JIS, IEC and DIN standards are supported.
- The disconnection of a platinum temperature-measuring resistor or cable can be detected on each channel
- Selection of sampling processing/time averaging processing/count averaging processing
- Error compensation by offset/gain value setting
- Alarm output when limit value is exceeded
- Potential isolation between process and control by means of an optocoupler is a standard feature. Additional potential isolation between the channels for Q64TDV-GH and Q64RD-G.
- Removable terminal block fastened with screws.

Specifications	Q64RD	Q64RD-G	Q64TD	Q64TDV-GH	Q68RD3-G	Q68TD-G-H01/H02
Input channels	4	4	4	4	8	8
Connectable temperature sensors type	Pt100 (conforms to JIS C 1604-1989 and DIN IEC 751), JPt100 (conforms to JIS C 1604-1981)	Pt100 (conforms to JIS C 1604-1997 and DIN IEC 751-1983), JPt100 (conforms to JIS C 1604-1981), Ni100Ω (conforms to DIN 43760-1987)	K, E, J, T, B, R, S, N (conforms to JIS C1602-1995, IEC 584-1 and 584-2)	K, E, J, T, B, R, S, N (conforms to JIS C1602-1995, IEC 584-1 and 584-2)	Pt100 (conforms to JIS C 1604-1997 and DIN IEC 751), JPt100 (conforms to JIS C 1604-1981), Ni100Ω (conforms to DIN 43760-1987)	K, E, J, T, B, R, S, N (conforms to JIS C1602-1995, IEC 584-1 and 584-2)
Temperature measuring range	Pt100: -200~850 °C, JPt 100: -180~600 °C	Pt100: -200~850 °C, JPt100: -180~600 °C, Ni100 Ω: -60~180 °C	Depends on the thermocouple used	Depends on the thermocouple used	Pt100: -200~850 °C, JPt100: -180~600 °C, Ni100Ω: -60~180 °C	Depends on the thermocouple used
Temperature scaling value	16-bit, signed binary: -2000~+8500 32-bit, signed binary: -200 000~+850 000	16-bit, signed binary: -2000~+8500 32-bit, signed binary: -200 000~+850 000	16-bit, signed binary: -2700~+18 200 32-bit, signed binary: —	16-bit, signed binary: -25 000~+25 000 32-bit, signed binary: —	16-bit, signed binary: -2000~+8500	16-bit, signed binary: -2700~+18 200
Max. resolution °C	0.025 °C	0.025 °C	B, R, S, N: 0.3 °C; K, E, J, T: 0.1 °C	B: 0.7 °C; R, S: 0.8 °C; K, T: 0.3 °C; ET: 0.2 °C; J: 0.1 °C; N: 0.4 °C; Voltage: 4 μV	0.1 °C	B, R, S, N: 0.3 °C; K, E, J, T: 0.1 °C
Cold junction temp. compensation accuracy	—	—	±1.0 °C	±1.0 °C	—	provided
Overall accuracy	±0.08 % (accuracy relative to full-scale value) at ambient temperature 25±5 °C	±0.04 % (accuracy relative to full-scale value) at ambient temperature 25±5 °C	Depends on the thermocouple used	Depends on the thermocouple used	Depends on the thermocouple used	Depends on the thermocouple used
Max. conversion time	40 ms/channel	40 ms/channel	20 ms/channel	20 ms/channel	320 ms/8 channels	320 ms/8 channels (H01), 640 ms/8 channels (H02)
Analog inputs	4 channels/module	4 channels/module	4 channels/module + Pt100 connection	4 channels/module + Pt100 connection	8 channels	8 channels/module
Temp. measurement output current mA	1	1	—	—	1	—
Insulation method	Transformer insulation ①	Photocoupler insulation ② Transformer insulation ③	Transformer insulation ④	Transformer insulation ⑤	Transformer insulation ⑤	Transformer insulation ⑤
Disconnection detection	For each channel independent					
I/O points	16	16	16	16	16	16
Connection terminal	All modules are fitted with a removable terminal block with 18 screw terminals.				A6CON 40pin connector	
Applicable wire size mm <sup>2</sup>	0.3~0.75	0.3~0.75	0.3~0.75	0.3~0.75	≤0.3	≤0.3
Internal power consumption (5 V DC) mA	600	620	500	500	0.54 A	0.49 A (H01) 0.65 A (H02)
Weight kg	0.17	0.20	0.25	0.25	0.20	0.17
Dimensions (WxHxD) mm	27.4x98x90	27.4x98x112	27.4x98x90	27.4x98x90	27.4x102x130	27.4x98x90 (H01) 27.4x102x130 (H02)
Order information	Art. no. 137592	154749	137591	143544	216482	216481/221582

① between power supply and temperature inputs ② between each channel and PLC power ③ between measuring input channels  
④ between thermocouple inputs as well as thermocouple and earth ⑤ between each channel and between the channels and PLC power