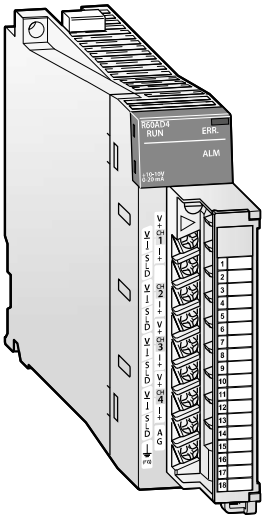
■ Analog (high-speed) input modules



MELSEC iQ-R series analog modules are the interface between external analog signals and the control system. Various modules are available to cover a wide range of requirements.

The R60ADI8-HA module supports the HART® communication protocol, allowing communication with field devices.

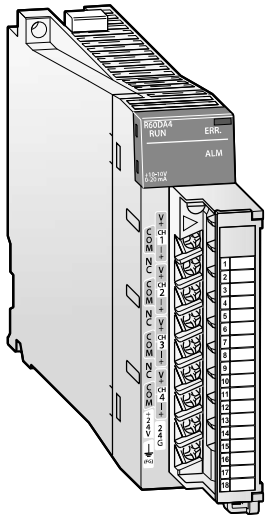
Special features:

- Up to 16 channels per module
- 5 µs high-speed sampling, 16-bit high resolution (1/32,000)
- High-frequency noise filtering
- Enhanced alarm and warning features
- Data logging function
- Scaling and shifting of digital values without any programs
- Galvanic channel isolation
- Ideal for high-speed precision inspection applications
- Synchronization of multiple channels
- HART® communication
- SIL2-compliant

Specifications			R60AD4	R60ADV8	R60ADI8	R60ADI8-HA ①	R60AD8-G ②	R60AD16-G	R60ADH4 ③
Input points			4	8				16	4
Analog input	Voltage	V	-10–10		—		-10–10		
	Current	mA	0–20	—	0–20				
Resolution			16-bit, signed binary						
Input resistance	Voltage	MΩ	1		—		1		
	Current	Ω	250	—	250				
Max. input	Voltage	V	±15		—		±15		
	Current	mA	30	—	30				
I/O characteristics	Digital output (voltage input)		-32000–32000		—		-32000–32000		
	Digital output (current input)		0–32000	—	0–32000				
Max. resolution	Voltage input	µV	47.7		—		29.2		125.0
	Current input	nA	190.7	—	190.7		115.5		500.0
Overall accuracy			±0.3% (0–55 °C), ±0.1 % (20–30 °C)				±0.1 %		±0.2% (0–55 °C), ±0.1 % (20–30 °C)
Temperature coefficent			—				±35 ppm/°C (0.0035 %/°C)		—
Max. conversion time			80 µs/channel			80 ms/8 channels	10 ms/channel		5 µs/4 channels
Insulation method			Photocoupler insulation between I/O terminals and PLC power supply; no insulation between analog input channels				Transformer insulation between I/O terminals and PLC power supply and between analog input channels		Photocoupler insulation between I/O terminals and PLC power supply; no insulation between analog input channels
Occupied I/O points			16						
Connection terminal			18-point removable terminal block with screws			Spring clamp terminal block	40-pin connector		18-point removable terminal block with screws
Applicable wire size		mm^2	0.3–0.75			0.34–1.5	0.088–0.3 (A6CON1/4) 0.088–0.24 (A6CON2)		0.3–0.75
Internal power consumption (5 V DC)		mA	220			170	330	520	730
Weight		kg	0.12			0.21	0.19	0.26	0.20
Dimensions (WxHxD)		mm	27.8x106x131			27.8x106x125	27.8x106x110	56x106x110	27.8x106x131
Order information		Art. no.	279556	279558	279561	411025	285502	285501	308708

① HART® communication
② SIL2-compliant
③ High-speed analog input module

■ Analog output modules



MELSEC iQ-R series analog output modules reliably deliver accurate analog values. A variety of modules (voltage, current, or mixed) are available to cover a wide range of application requirements, such as frequency inverters, valves or slide valves.

Faster, smoother predefined wave signal output

The analog output module enables pre-registration of waveforms easily using MELSOFT GX Works3, realizing a smoother continuous output that closely matches the precision required for the application, such as torque control for a press or injection molding machine. Registering the waveform in the module is simple and easy, and does not require a dedicated analog output program, such as for continuous line control, further reducing programming time.

Special features:

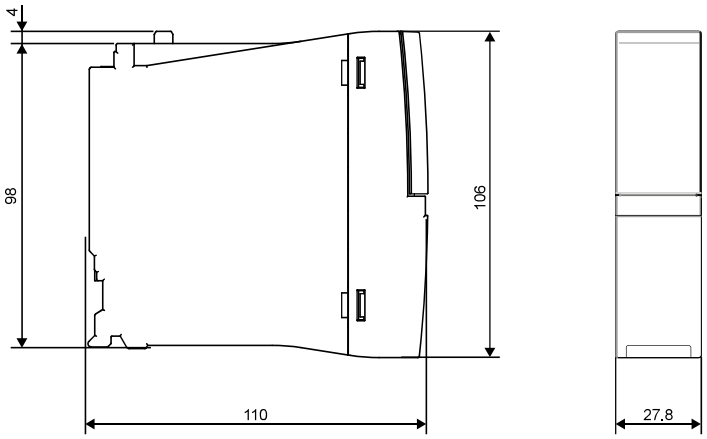
- Up to 16 channels per module
- Shift operation and scaling can be used without creating programs; they can be simply set on parameters. This simple setting minimizes program development cost as well as the program size.
- SIL2-compliant (R60DA8-G), RY40PT5B-AS
- High conversion speed, up to 1µs/channel (R60DAH4)

Specifications			R60DA4	R60DAH4 ①	R60DAV8	R60DAI8	R60DA8-G ②	R60DA16-G
Output points			4		8			16
Digital input			16-bit, signed binary					
Analog output	Voltage	V DC	-10–10			—	-12–12	
	Current	mA DC	0–20		—	0–20		
Load resistance	Voltage		1 kΩ–500 Ω	Min. 1 kΩ	1 kΩ–500 Ω	—	Min. 1 kΩ	
	Current		0–600 Ω		—	0–600 Ω		
Digital input value	Voltage output		-32000–32000			—	-32000–32000	
	Current output		0–32000		—	0–32000		
Max. resolution	Voltage output	µV	125	—	125	—	125	
	Current output	nA	350.9	—			360.1	
Overall accuracy			± 0.3 % (0–55 °C), ± 0.1 % (20–30 °C)				±0.1 %	
Conversion speed			80 µs/channel	1 µs/channel	80 µs/channel		1 ms/channel	
Insulation method			Photocoupler insulation between I/O terminals and PLC power supply; no insulation between analog output channels; transformer between external power supply and output channels.				Transformer insulation between I/O terminals and PLC power supply, between analog output channels and between external power supply and output channels.	
Occupied I/O points			16					48
Connection terminal			18-point removable terminal block with screws				40-pin connector	
Applicable wire size		mm^2	0.3–0.75				0.088–0.3 (A6CON1/4) 0.088–0.24 (A6CON2)	
External power consumption			24 V DC, +20 %, -15 %, 0.14 A		24 V DC, +20 %, -15 %, 0.16 A	24 V DC, +20 %, -15 %, 0.26 A	24 V DC, +20 %, -15 %, 0.36 A	24 V DC, +20 %, -15 %, 0.70 A
Internal power consumption 5 V DC		mA	160				180	250
Weight		kg	0.14				0.21	0.32
Dimensions (WxHxD)		mm	27.8x106x131				27.8x106x110	56x106x110
Order information		Art. no.	279557	307260	279560	279559	285504	285503

Specifications		RY40PT5B-AS ②
Output points		16
Rated load voltage	V DC	24
Max. load current	A/point	0.5
Response time	ms	≤1.5
Control cycle time	ms	2
Connection terminal		18-point removable terminal block with screws
External interface		For applicable options, please refer to the relevant product manual.
Internal power consumption 5 V DC	mA	190
Weight	kg	0.24
Dimensions (WxHxD)	mm	27.8x106x131
Order information	Art. no.	339369

① High-speed analog output module ② SIL2 analog control output module. The resulting analog output value is verified with the set value.

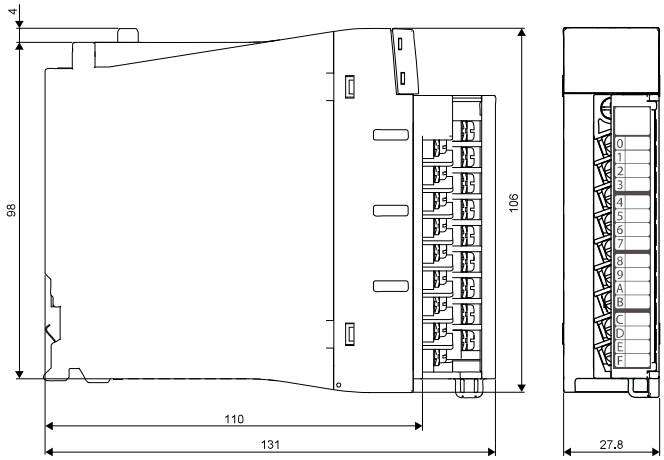
■ Safety function module and safety CPU



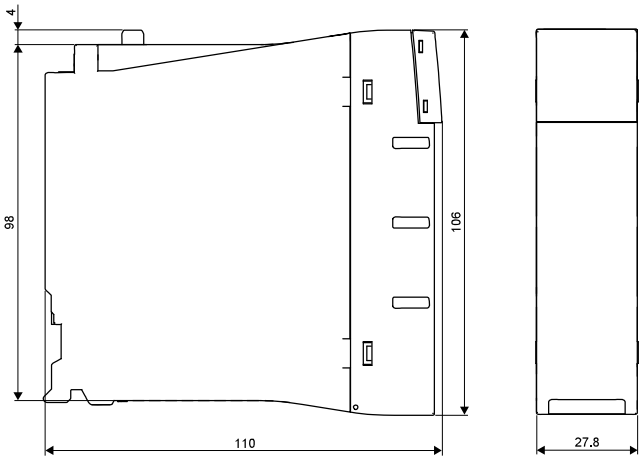
Unit: mm

■ I/O modules, blank cover module and special function modules

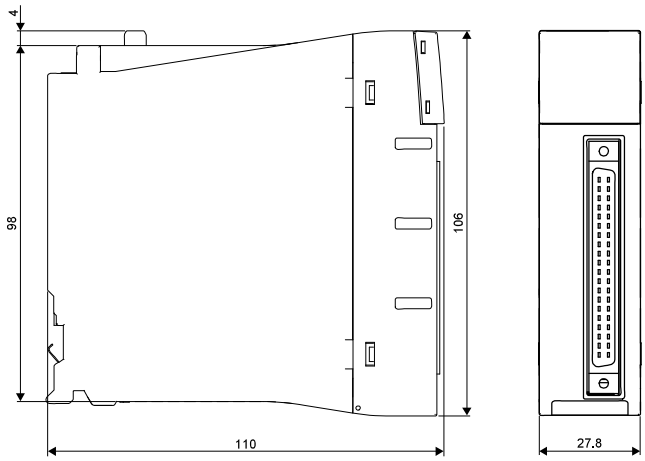
18-point screw terminal block



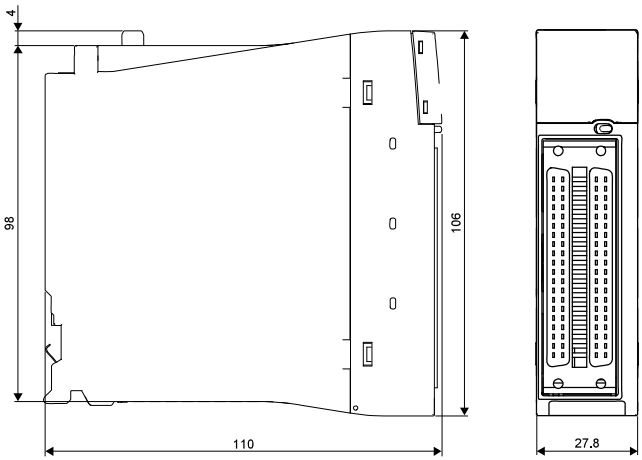
Blank cover module



40-pin connector, 32 points module



40-pin connector, 64 points module



Unit: mm