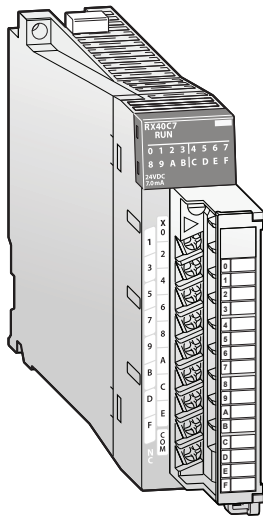# ■ Digital (high-speed) input modules

Digital input modules

Digital I/O modules are the senses of the automation system and provide an interface of various processes to the controller.

I/O modules are available in a wide range of densities (16, 32 and 64-points) depending on the I/O requirements and minimum use of space in the control cabinet.
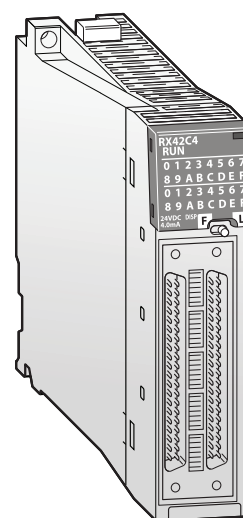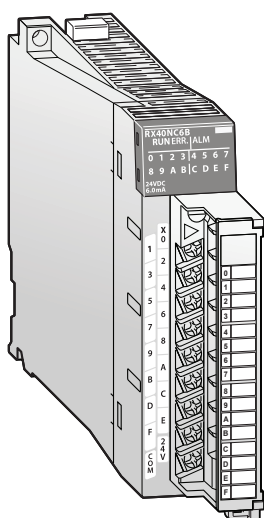
Terminal blocks are interchangeable with MELSEC System Q I/O terminals and can save on the cost of upgrading from existing control systems.

Special features:

● Input interrupt function available

● Existing 16-point terminal blocks are reusable

● Response time as fast as 0.1 ms

● Nearly all modules can be wired using either positive or negative common terminals.

● The input module RX40NC6B (with diagnostic function) offers
  - input disconnection detection
  - interrupt function in case of an error
  - error and event history function

| Specifications		RX10	RX28	RX40C7	RX40PC6H*/RX40NC6H*	RX40NC6B
Input points		16	8	16	16	16
Input type		AC input	AC input	DC input (positive or negative common)	DC high-speed input (RX40PC6H: positive common RX40NC6H: negative common)	DC input (negative common) with diagnostic functions
Rated input voltage		100–120 V AC (50/60 Hz)	100–120 V AC (50/60 Hz)	24 V DC	24 V DC	24 V DC
Operating voltage range		85–132 V AC	85–132 V AC	20.4–28.8 V DC	20.4–28.8 V DC	20.4–28.8 V DC
Max. simultaneously ON (at rated voltage)		100 % (at 45 °C)	100 % (at 45 °C)	100 %	100 % (input voltage 26.4 V DC and 55 °C) 75 % (input voltage 28.8 V DC and 55 °C)	100 %
Inrush current		Max. 200 mA within 1 ms	Max. 950 mA within 1 ms	—	—	—
Input voltage distortion ratio		5 %	5 %	—	—	—
Rated input current	mA	8.2 (100 V AC, 60 Hz) 6.8 (100 V AC, 50 Hz)	16.4 (AC 200 V, 60 Hz) 13.7 (AC 200 V, 50 Hz)	7.0	6.0	6.0
ON	Voltage V	≥AC 80	≥AC 80	≥15	≥15	≥14
	Current mA	≥5 (50 Hz, 60 Hz)	≥5 (50 Hz, 60 Hz)	≥4	≥4	≥3.5
OFF	Voltage V	≤30 AC	≤30 AC	≤8	≤8	≤6
	Current mA	≤1.7 (50 Hz, 60 Hz)	≤1.7 (50 Hz, 60 Hz)	≤2	≤1.7	≤1
Input impedance/resistance kΩ		Approx. 14.6 (50 Hz) Approx. 12.2 (60 Hz)	Approx. 14.6 (50 Hz) Approx. 12.2 (60 Hz)	3.3	3.9	4
Response time		≤20 ms	≤20 ms	0.1–70 ms ①	5 μs–70 ms ①	1 μs–70 ms ①
Common terminal arrangement points		16	8	16	8	16
Power and I/O status indicator		All modules possess a RUN LED and one status LED per input (Alternating toggle switch used to display between 32-point LED signals for 64-point type module.)				
Connection terminal		18-point removable terminal block with screws	18-point removable terminal block with screws	18-point removable terminal block with screws	18-point removable terminal block with screws	18-point removable terminal block with screws
Occupied I/O points		16	16	16	16	16
Applicable wire size mm²		0.3–0.75	0.3–0.75	0.3–0.75	0.3–0.75	0.3–0.75
Internal power consumption (5 V DC) mA		110	110	110	100	450
Weight kg		0.18	0.18	0.16	0.16	0.25
Dimensions (WxHxD) mm		27.8x106x131	27.8x106x131	27.8x106x131	27.8x106x131	27.8x106x131
Order information Art. no.		279546	308711	279533	290235/290236	301646
Accessories		40-pin connector and ready to use connection cables; spring clamp terminal block for exchange against the standard screw terminal block > refer to chapter 5				

* High-speed module
① User adjustable

▲▲ MITSUBISHI ELECTRIC

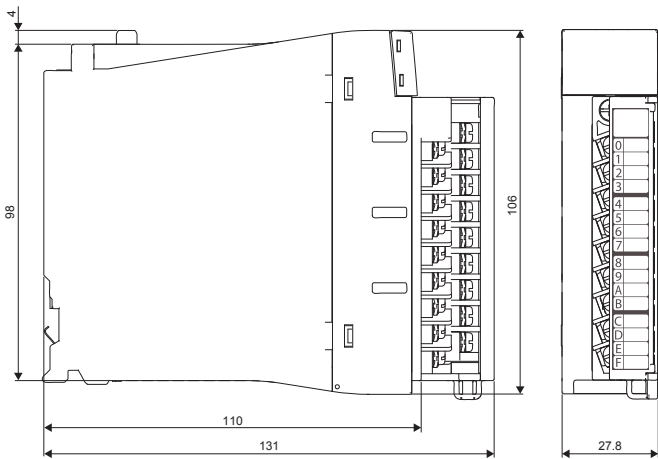| Specifications		RX41C4	RX41C6HS*	RX42C4	RX61C6HS*
Input points		32	32	64	32
Input type		DC input (positive or negative common)	DC high-speed input (positive or negative common)	DC input (positive or negative common)	DC high-speed input (positive or negative common)
Rated input voltage		24 V DC	24 V DC	24 V DC	5 V DC
Operating voltage range		20.4–28.8 V DC	20.4–28.8 V DC	20.4–28.8 V DC	4.25–6 V DC
Max. simultaneously ON (at rated voltage)		100 % (input voltage 26.4 V DC and 55 °C) 75 % (input voltage 28.8 V DC and 55 °C)	100 % (input voltage 24 V DC and 55 °C) 75 % (input voltage 26.4 V DC and 55 °C) 59.3 % (input voltage 28.8 V DC and 55 °C)	100 % (input voltage 24 V DC and 45 °C) 50 % (input voltage 26.4 V DC and 55 °C) 37.5 % (input voltage 28.8 V DC and 55 °C)	100 %
Inrush current		—	—	—	—
Input voltage distortion ratio		—	—	—	—
Rated input current	mA	4.0	6.0	4.0	6.0
ON	Voltage V	≥19	≥19	≥19	≥3.5
	Current mA	≥3	≥4	≥3	≥3
OFF	Voltage V	≤6	≤6	≤6	≤1
	Current mA	≤1	≤1.7	≤1	≤1
Input impedance/resistance	kΩ	5.3	4	5.3	0.6
Response time		0.1–70 ms ①	1 µs–70 ms ①	0.1–70 ms ①	1 µs–70 ms ①
Common terminal arrangement	points	32	32	32	32
Power and I/O status indicator		All modules possess a RUN LED and one status LED per input (Alternating toggle switch used to display between 32-point LED signals for 64-point type module.)			
Connection terminal		40-pin connector	40-pin connector	40-pin connector	40-pin connector
Occupied I/O points		32	32	64	32
Applicable wire size	mm²	0.088–0.3	0.088–0.3	0.088–0.3	0.088–0.3
Internal power consumption (5 V DC)	mA	150	150	180	150
Weight	kg	0.11	0.12	0.13	0.12
Dimensions (WxHxD)	mm	27.8x110x106	27.8x110x106	27.8x110x106	27.8x110x106
Order information	Art. no.	279534	307424	279545	304546
Accessories		40-pin connector and ready to use connection cables; spring clamp terminal block for exchange against the standard screw terminal block > refer to chapter 5			

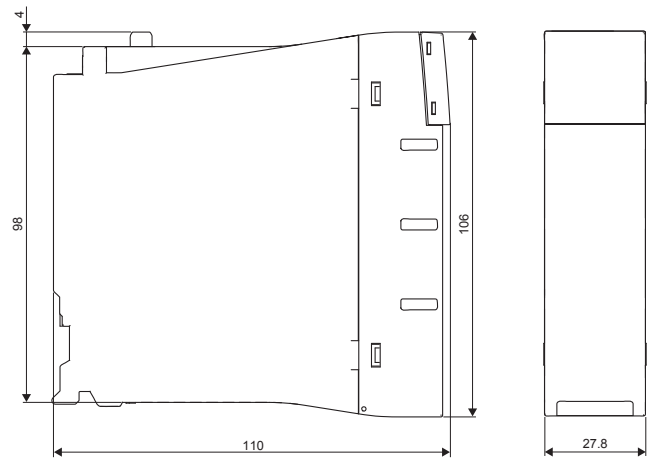* High-speed module
① User adjustable

Dimensions

■ **Safety function module and safety CPU**

98
4
106
110
27.8
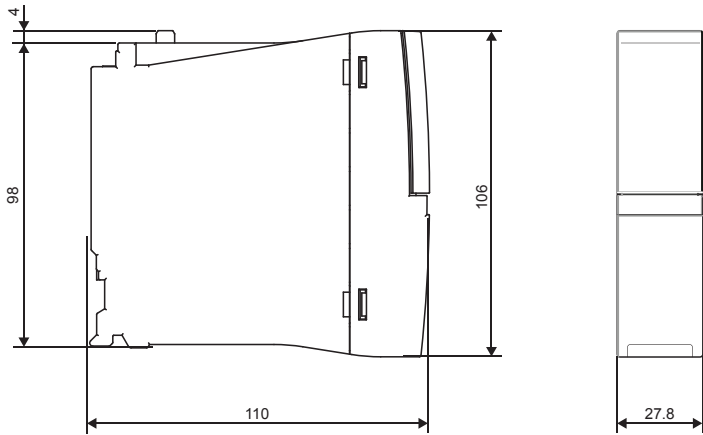
Unit: mm

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

18-point screw terminal block

98
4
106
110
131
27.8

Blank cover module

98
4
106
110
27.8

40-pin connector, 32 points module

98
4
106
110
27.8
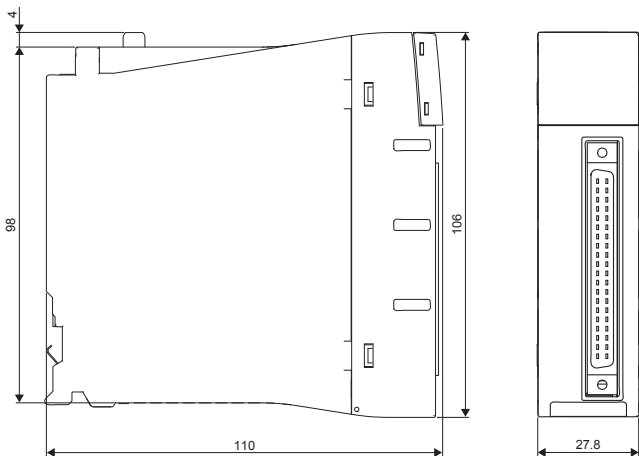
40-pin connector, 64 points module

98
4
106
110
27.8

Unit: mm

MITSUBISHI ELECTRIC