Changes for the Better

MITSUBISHI ELECTRIC

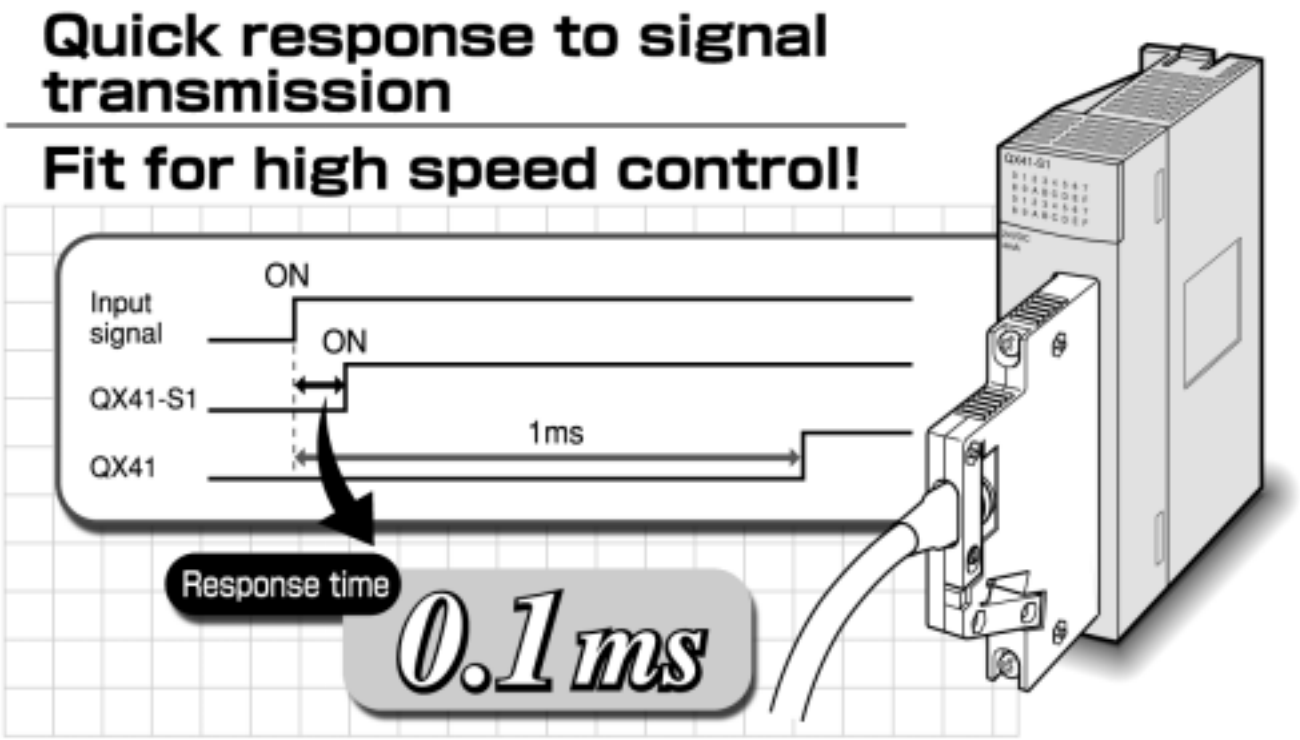
Mitsubishi PLC

2002 No.197E

NEW PRODUCT RELEASE

Q Series DC Input Module (Positive Common Type)
QX41-S1, QX42-S1
Soldering-Type 40-Pin Connector
A6CON4

New!



[Features]

QX41-S1, QX42-S1

- High speed input module that provides response time 0.1ms.
  (Response time is variable using GX Developer Version5 or later.)
- New positive common type 32-point and 64-point modules are now available, in addition to 16-point module (QX40-S1).

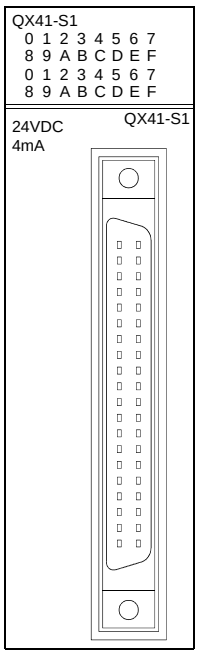
A6CON4

- The case allows 2 cable directions (lateral/oblique). It saves installation space (depth dimension).
- The moving screws and nuts are attached on the case. It saves assembly steps.

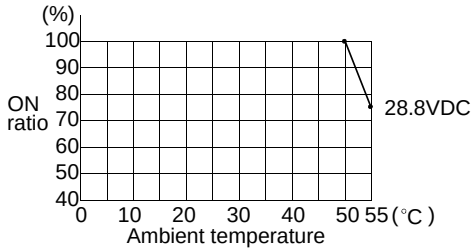
[Performance Specifications]

(1) QX41-S1 DC Input Module (Positive Common Type)

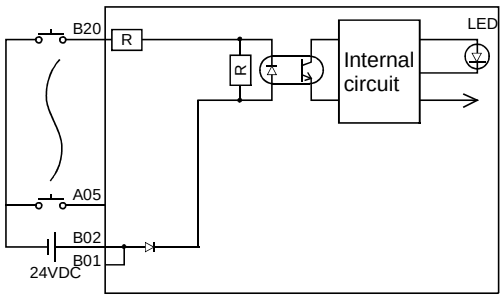
Specifications \ Type			DC Input Module (Positive Common Type) QX41-S1					Appearance
Number of input points			32 points					
Isolation method			Photocoupler					
Rated input voltage			24VDC (+20/-15%, ripple ratio within 5%)					
Rated input current			Approx. 4mA					
Input derating			Refer to the derating chart					
ON voltage/ON current			19V or higher/4.0mA or higher					
OFF voltage/OFF current			9.5V or lower/1.5mA or lower					
Input resistance			Approx. 5.6kΩ					
Response time	Set value ＊1		0.1	0.2	0.4	0.6	1	
	OFF to ON	TYP.	0.05ms	0.15ms	0.30ms	0.55ms	1.05ms	
		MAX.	0.12ms	0.20ms	0.40ms	0.60ms	1.20ms	
	ON to OFF	TYP.	0.15ms	0.20ms	0.35ms	0.60ms	1.10ms	
		MAX.	0.20ms	0.30ms	0.50ms	0.70ms	1.30ms	
Dielectric withstand voltage			560VAC rms/3 cycles (altitude 2000m (6557.38ft.))					
Insulation resistance			10MΩ or more by insulation resistance tester					
Noise durability			By noise simulator of 500Vp-p noise voltage, 1μs noise width and 25 to 60Hz noise frequency					
			First transient noise IEC61000-4-4: 1kV					
Level of protection			IP2X					
Wiring method for common			32 points/common (common terminal: B01, B02)					
Number of occupied I/O points			32 (I/O assignment is set as a 32 points high speed input module)					
Operation indication			ON indication (LED)					
Applicable connection			40-pin connector					
Applicable wire size			0.3mm^2 (A6CON1)					
Applicable connector			A6CON1, A6CON2, A6CON3, A6CON4 (Sold separately)					
Applicable connector/terminal block conversion module			A6TBXY36, A6TBXY54, A6TBX70					
5VDC internal current consumption			75mA (TYP. all points ON)					
Weight			0.15kg					



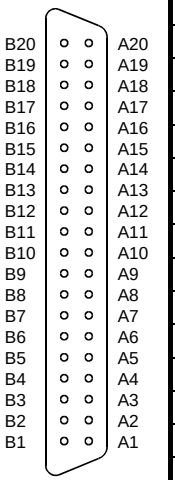
Derating Chart



External Connections



Pin Layout



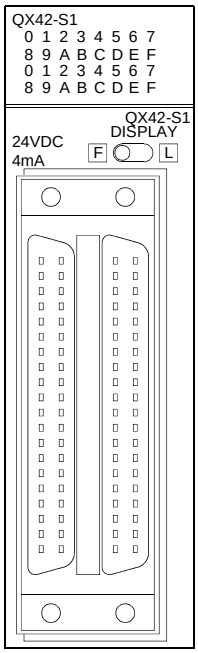
Module front view

Pin No.	Signal No.	Pin No.	Signal No.
B20	X00	A20	X10
B19	X01	A19	X11
B18	X02	A18	X12
B17	X03	A17	X13
B16	X04	A16	X14
B15	X05	A15	X15
B14	X06	A14	X16
B13	X07	A13	X17
B12	X08	A12	X18
B11	X09	A11	X19
B10	X0A	A10	X1A
B09	X0B	A09	X1B
B08	X0C	A08	X1C
B07	X0D	A07	X1D
B06	X0E	A06	X1E
B05	X0F	A05	X1F
B04	Empty	A04	Empty
B03	Empty	A03	Empty
B02	COM	A02	Empty
B01	COM	A01	Empty

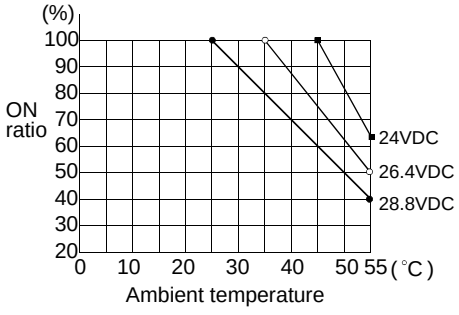
＊1: CPU parameter setting. (default: 0.2ms)
Response time is variable using GX Developer Version5 or later.

(2) QX42-S1 DC Input Module (Positive Common Type)

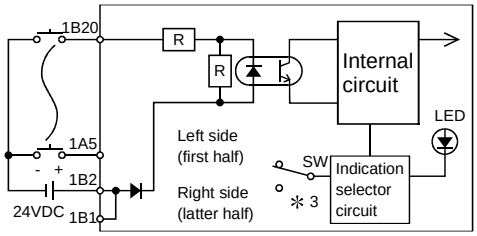
Specifications \ Type			DC Input Module (Positive Common Type) QX42-S1					Appearance
Number of input points			64 points					
Isolation method			Photocoupler					
Rated input voltage			24VDC (+20/-15%, ripple ratio within 5%)					
Rated input current			Approx. 4mA					
Input derating			Refer to the derating chart.					
ON voltage/ON current			19V or higher/3mA or higher					
OFF voltage/OFF current			9.5V or lower/1.5mA or lower					
Input resistance			Approx. 5.6kΩ					
Response time	Set value ＊1		0.1	0.2	0.4	0.6	1	
	OFF to ON	TYP.	0.05ms	0.15ms	0.30ms	0.55ms	1.05ms	
		MAX.	0.12ms	0.20ms	0.40ms	0.60ms	1.20ms	
	ON to OFF	TYP.	0.15ms	0.20ms	0.35ms	0.60ms	1.10ms	
		MAX.	0.20ms	0.30ms	0.50ms	0.70ms	1.30ms	
Dielectric withstand voltage			560VAC rms/3 cycles (altitude 2000m (6557.38ft.))					
Insulation resistance			10MΩ or more by insulation resistance tester					
Noise durability			By noise simulator of 500Vp-p noise voltage, 1μs noise width and 25 to 60Hz noise frequency					
			First transient noise IEC61000-4-4: 1kV					
Level of protection			IP2X					
Wiring method for common			32 points/common (common terminal: 1B01, 1B02, 2B01, 2B02)					
Number of occupied I/O points			64 (I/O assignment is set as a 64-point high speed input module)					
Operation indication			ON indication (LED), 32 point switch-over					
Applicable connections			40-pin connector					
Applicable wire size			0.3mm^2 (For A6CON1)					
Applicable wiring connector			A6CON1, A6CON2, A6CON3, A6CON4 (Sold separately)					
Applicable connector/terminal block conversion module			A6TBXY36, A6TBXY54, A6TBX70					
5VDC internal current consumption			90mA (TYP. all points ON)					
Weight			0.18kg					



Derating Chart

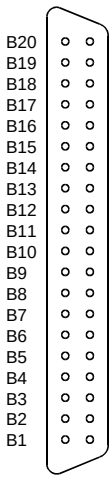


External Connections



The above diagram shows the first half of 32 points (F).
The latter half of 32 points (L) are similar.

Pin Layout ＊2



Module front view

Pin No.	Signal No.	Pin No.	Signal No.	Pin No.	Signal No.	Pin No.	Signal No.
1B20	X00	1A20	X10	2B20	X20	2A20	X30
1B19	X01	1A19	X11	2B19	X21	2A19	X31
1B18	X02	1A18	X12	2B18	X22	2A18	X32
1B17	X03	1A17	X13	2B17	X23	2A17	X33
1B16	X04	1A16	X14	2B16	X24	2A16	X34
1B15	X05	1A15	X15	2B15	X25	2A15	X35
1B14	X06	1A14	X16	2B14	X26	2A14	X36
1B13	X07	1A13	X17	2B13	X27	2A13	X37
1B12	X08	1A12	X18	2B12	X28	2A12	X38
1B11	X09	1A11	X19	2B11	X29	2A11	X39
1B10	X0A	1A10	X1A	2B10	X2A	2A10	X3A
1B09	X0B	1A09	X1B	2B09	X2B	2A09	X3B
1B08	X0C	1A08	X1C	2B08	X2C	2A08	X3C
1B07	X0D	1A07	X1D	2B07	X2D	2A07	X3D
1B06	X0E	1A06	X1E	2B06	X2E	2A06	X3E
1B05	X0F	1A05	X1F	2B05	X2F	2A05	X3F
1B04	Empty	1A04	Empty	2B04	Empty	2A04	Empty
1B03	Empty	1A03	Empty	2B03	Empty	2A03	Empty
1B02	COM1	1A02	Empty	2B02	COM2	2A02	Empty
1B01	COM1	1A01	Empty	2B01	COM2	2A01	Empty

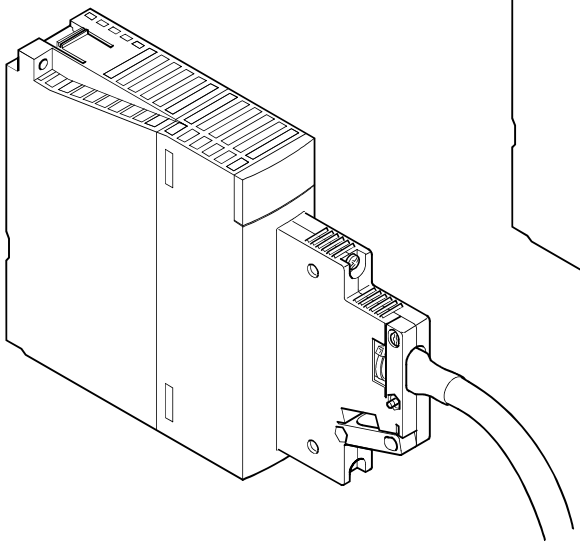
＊1: CPU parameter setting. (default: 0.2ms)
Response time is variable using GX Developer Version5 or later.
＊2: Pin number specifies the connectors; the first digit number “1” indicates left side connector and “2” indicates right side connector.
＊3: The LED displays X00 to X1F by turning the SW to F. It displays X20 to X3F by turning the SW to L.

(3) A6CON4 Soldering-Type 40-Pin Connector

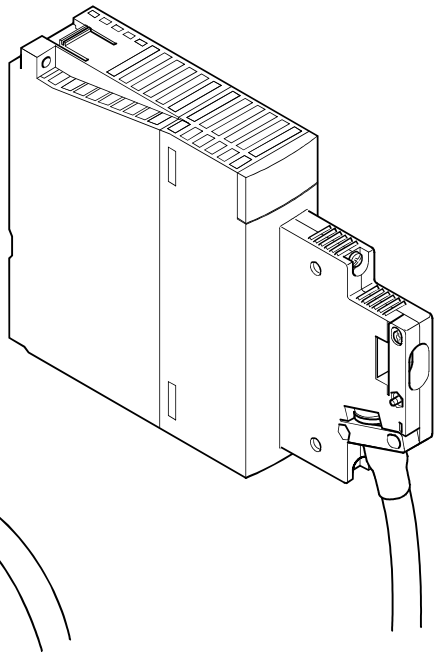
(a) Selectable cable direction

A6CON4 allows two cable directions (lateral/oblique direction).
The lateral direction saves the installation space (depth dimension).

1) Lateral direction



2) Oblique direction



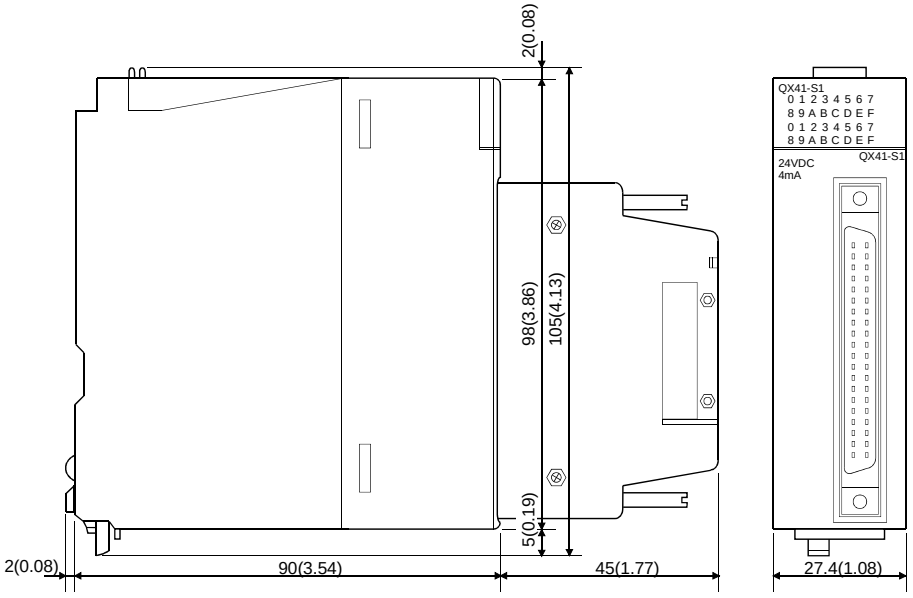
(b) Reduction in the number of assembly steps

The moving screws and nuts are attached on the case. This design reduces the assembly steps.

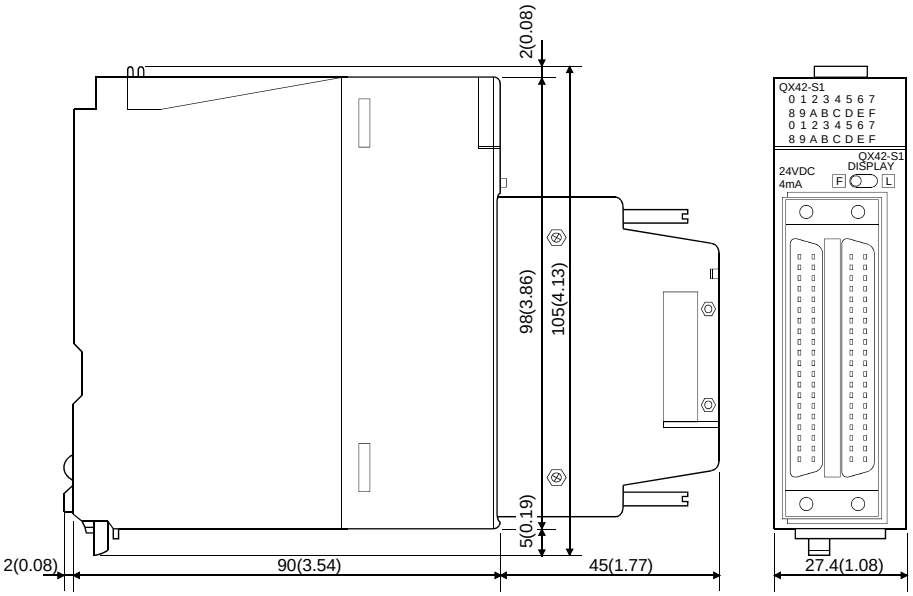
(c) A6CON4 is an alternative to A6CON1.

[External Dimensions]

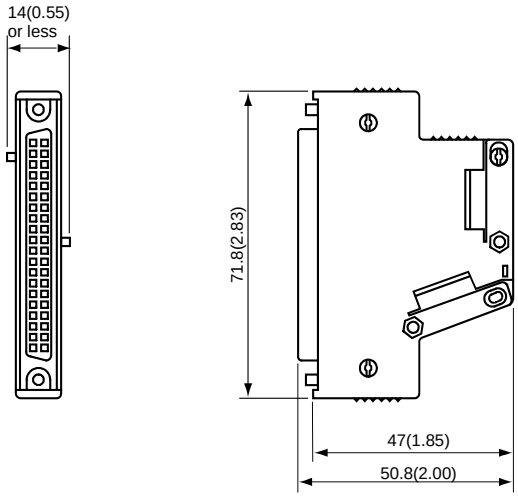
(1) QX41-S1



(2) QX42-S1



(3) A6CON4



Unit: mm(inch)

[Packing list]

Product name	Model
QX41-S1 DC Input Module (Positive Common Type)	QX41-S1
QX42-S1 DC Input Module (Positive Common Type)	QX42-S1
A6CON4 Soldering-Type 40-Pin Connector	A6CON4

[Manual]

Manual name	Manual supply status	IB/SH number	Model code
I/O Module Type Building Block User's Manual	Sold separately	SH-080042-I	13JL99
QCPU (Q mode) User's Manual (Hardware)	Included with main base (Q3□B-E)	IB-0800061-I	13JL96

Country/Region	Sales office	Tel/Fax
U.S.A	Mitsubishi Electric Automation Inc. 500 Corporate Woods Parkway Vernon Hills, IL 60061	Tel : +1-847-478-2100 Fax : +1-847-478-0328
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