MELSEC-Q I/O module

Digital I/O Modules

Digital input modules provide the CPU interface for monitoring on/off voltage signals in your system.

Input Modules

Model Number		QX10	QX28	QX40	QX40-S1	QX40H	QX41	QX41-S1
Stocked Item		S	-	S	S	-	S	-
Certification		UL • cUL • CE						
Input Type		AC	AC	DC positive common (sink)				
No. of Input Points		16	8	16	16	16	32	32
Input Voltage		100-120VAC +10%/-15%, 50/60Hz ±3Hz	100-240VAC +10%/-15%, 50/60Hz ±3Hz	24VDC +20%/-15%		24VDC +20%/ -15%, ripple ratio: within 5%	24VDC +20%/-15%	
Input Current (mA)		8	17 (@200 VAC/60Hz)/ 14 (@200 80@100 VAC/60Hz)/ VAC/50Hz) 7 (100 VAC/50Hz)	4	6		4	
Response Time (ms)	OFF – ON	15@100VAC, 50/60Hz	10@100VAC, 50/60Hz	1/5/10/20/70 (*1)	0.1/0.2/0.4/0.6/1 (*1)	.04/.10/.25/ .50/.95 (*1)	1/5/10/20/70 (*1)	0.1/0.2/0.4/0.6/1 (*1)
	ON – OFF	20@100VAC, 50/60Hz	20@100VAC, 50/60Hz	1/5/10/20/70 (*1)	0.1/0.2/0.4/0.6/1 (*1)	.04/.10/.25/ .50/.95 (*1)	1/5/10/20/70 (*1)	0.1/0.2/0.4/0.6/1 (*1)
Connection Type		Screw Terminals	Screw Terminals	Screw Terminals	Screw Terminals	Crimping Terminal	FCN x 1 (*2)	FCN x 1 (*2)
Points/Common		16	8	16	16	8	32	32
Maximum 5VDC Current Consumption (mA)		50	50	50	60	80	75	75
Weight (kg)		0.17	0.2	0.16	0.2	0.16	0.15	0.15
Base Unit Slots Occupied		1						

Notes: See notes next page.

Model Number		QX41-S2	QX42	QX42-S1	QX70	QX70H	QX71	QX72
Stocked Item		-	S	S	S	S	S	-
Certification		UL • cUL • CE						
Input Type		DC positive common (sink)			DC positive/negative common (sink/source)	DC positive/common (sink)	DC positive/negative common (sink/source)	
No. of Input Points		32	64	64	16	16	32	64
Input Voltage		24VDC +20%/-15%			5/12VDC +20%/-15%	5VDC +20%/-15%	5/12VDC +20%/-15%	
Input Current (mA)		6	4	4	1.2 / 3.3	3	1.2 / 3.3	1.2 / 3.3
Response Time (ms)	OFF – ON	1/5/10/20/70 (*1)	1/5/10/20/70 (*1)	0.1/0.2/0.4/0.6/1 (*1)	1/5/10/20/70 (*1)	.04/.10/.25/ .50/.95 (*1)	1/5/10/20/70 (*1)	
	ON – OFF	1/5/10/20/70 (*1)	1/5/10/20/70 (*1)	0.1/0.2/0.4/0.6/1 (*1)	1/5/10/20/70 (*1)	.04/.10/.25/ .50/.95 (*1)	1/5/10/20/70 (*1)	
Connection Type		FCN x 2 (*2)	FCN x 2 (*2)	FCN x 2 (*2)	Screw Terminals	Crimping Terminal	FCN x 1 (*2)	FCN x 2 (*2)
Points/Common		32	32	32	16	8	32	32
Maximum 5VDC Current Consumption (mA)		75	90	90	55	80	70	85
Weight (kg)		0.15	0.18	0.18	0.14	0.14	0.12	0.13
Base Unit Slots Occupied		1						

Notes: See notes next page.

Input Modules (Continued)

Model Number		QX80	QX80H	QX81	QX81-S2	QX82	QX82-S1	QX90H
Stocked Item		S	S	S	-	S	-	S
Certification		UL • cUL • CE						
Input Type		DC negative common (source)						
No. of Input Points		16	16	32	32	64	64	16
Input Voltage		24VDC +20%/-15%	24VDC +20%/-15%	24VDC +20%/-15%	24VDC (+20/-15%, ripple ratio within 5%)	24VDC +20%/-15%	24VDC +20%/-15%	5VDC +20%/-15%
Input Current (mA)		4	6	4	6	4	4	6
Response Time (ms)	OFF – ON	1/5/10/20/70 (*1)	.04/.10/.25/.50/.95 (*1)	1/5/10/20/70 (*1)			.05/.15/.3/.55/1.05 (*1)	.04/.10/.25/.50/.95 (*1)
	ON – OFF	1/5/10/20/70 (*1)	.04/.10/.25 /.50/.95 (*1)	1/5/10/20/70 (*1)			.15/.2/.35/.6/1.1 (*1)	.04/.10/.25 /.50/.95 (*1)
Minimum On Voltage/ Current		19VDC/3mA	13V or higher/3mA	19VDC/3mA	15VDC/3mA	19VDC/3mA	19VDC/3mA	3.5V or higher/3mA
Maximum Off Voltage/ Current		11VDC/ 1.7mA	8V or lower/1.6mA	11VDC/ 1.7mA	5VDC/ 1.7mA	11VDC/ 1.7mA	9.5VDC/1.5mA	1V or lower/1mA
Connection Type		Screw Terminals	Crimping Terminal	D-Sub (*3)	D-Sub	FCN x 2 (*2)	FCN x 2 (*2)	Crimping Terminal
Points/Common		16	8	32	32	32	32	8
Maximum 5VDC Current Consumption (mA)		50	80	75	75	90	90	80
Weight (kg)		0.16	0.16	0.16	0.16	0.18	0.18	0.14
Base Unit Slots Occupied		1						

Notes:

1. Set response time by parameters in GX Works2. Default is 10ms (0.2ms for -S1 versions). Input and output response times cannot be set independently.
2. 40 pin FCN connector. Supplied separately. See "I/O Wiring Connectors" for ordering information.
3. 37 pin D-sub connector. Supplied separately. See "I/O Wiring Connectors" for ordering information.

Combination I/O Modules

Combination input/output modules allow both input and output points to be combined in a single module. This offers the chance to reduce the number of I/O modules, enabling a more compact system in some applications.

Model Number		QH42P	QX41Y41P (*1)	QX48Y57
Stocked Item		S	S	S
Certification		UL • cUL • CE		
Input Type		DC positive common (sink)		
No. of Input Points		32	32	8
Input Voltage		24VDC +20%/-15%		
Input Current (mA)		4		
Response Time (ms)	OFF – ON	1/5/10/20/70 (*2)		
	ON – OFF	1/5/10/20/70 (*2)		
Minimum On Voltage/ Current		19VDC/3mA		
Maximum Off Voltage/ Current		11VDC/1.7mA		
Points/Common		32	32	8
Output Type		Sink transistor		
No. of Output Points		32	32	7
Load Voltage		12-24VDC +20%/-15%		
Maximum Load Current		0.1A/pt, 2A/common	0.1A/pt, 2A/common	0.5A/pt, 2A/common
Response Time (ms)	OFF – ON	1		
	ON – OFF	1 (rated resistive load)		
External Supply Voltage/ Current		12-24VDC +20%/-15%/15mA (24VDC)/common		
Protection		Thermal and short circuit	Thermal and short circuit	Fused (4A), with blown fuse detection
Points/Common		32	32	7
Connection Type		FCN (*3)	FCN (*3)	Screw Terminals
Maximum 5VDC Current Consumption (mA)		130	130	80
Weight (kg)		0.2		
Base Unit Slots Occupied		1		

Notes:

1. The QX41Y41P has consecutive I/O addressing, unlike the QH42P, and is meant to replace A Series I/O blocks.
2. Set response time by parameters in GX Works2. Default is 10ms (0.2ms for -S1 versions). Input and output response times cannot be set independently.
3. 40 pin FCN connector. Supplied separately. See "I/O Wiring Connectors" for ordering information.

Digital Output Modules

Digital output modules provide the CPU interface for turning devices in your system on and off under program control.

Model Number		QY10	QY18A	QY22	QY40P	QY41P	QY42P
Stocked Item		S	S	S	S	S	S
Certification		UL • cUL • CE	UL • cUL • CE	UL • cUL • CE	UL • cUL • CE	UL • cUL • CE	UL • cUL • CE
Output Type		Relay	Isolated Relay	Triac	Sink Transistor	Sink Transistor	Sink Transistor
No. of Output Points		16	8	16	16	32	64
Load Voltage		24VDC/240VAC	24VDC/240VAC	100-240VAC, +5%	12-24VDC, +20/-15%	12-24VDC, +20/-15%	12-24VDC, +20/-15%
Maximum Load Current		2A/pt, 8A/common	2A/point	0.6A/pt, 4.8A/common	0.1A/pt, 1.6A/common	0.1A/pt, 2.0A/common	0.1A/pt, 2.0A/common
Response Time (ms)	OFF – ON	10	10	1	1	1	1
	ON – OFF	12	12	1ms+0.5 cycle (rated resistive load)	1 (rated resistive load)	1 (rated resistive load)	1 (rated resistive load)
External Supply Voltage/Current		N/A	N/A	N/A	12-24VDC (+20/-15%) 10mA	12-24VDC (+20/-15%) 10mA	12-24VDC (+20/-15%) 10mA
Protection		N/A; use surge suppressor	N/A; use surge suppressor	RC surge suppressor	Thermal and short-circuit	Thermal and short-circuit	Thermal and short-circuit
Points/Common		16	All points interdependent	16	16	32	64
Connection Type		Screw Terminal	Screw Terminal	Screw Terminal	Screw Terminal	FCN (*1)	FCN x 2 (*1)
Maximum 5VDC Current Consumption (mA)		430	240	250	65	105	150
Weight (kg)		0.22	0.22	0.4	0.16	0.15	0.17
Base Unit Slots Occupied		1					

Note 1: Supplied separately. See "I/O Wiring Connectors" for ordering information.

Model Number		QY50	QY68A	QY70	QY71	QY80	QY81P	QY82P
Stocked Item		S	S	-	-	S	S	S
Certification		UL • cUL • CE	UL • cUL • CE	UL • cUL • CE	UL • cUL • CE	UL • cUL • CE	UL • cUL • CE	UL • cUL • CE
Output Type		High current sink Transistor	Independent sink/ source Transistor	Sink Transistor	Sink Transistor	Source Transistor	Source Transistor	Source Transistor
No. of Output Points		16	8	16	32	16	32	64
Load Voltage		12-24VDC, +20/-15%	5-24VDC, +20/-10%	5-12VDC, +25/-10%	5-12VDC, +25/-10%	12-24VDC, +20/-15%	12-24VDC, +20/-15%	12-24VDC, +20/ -15%
Maximum Load Current		0.5A/pt, 4.0A/ common	2A/pt, 8A total	16mA/pt, 256mA/ common	16mA/pt, 512mA/ common	0.5A/pt, 4A/common	0.1A/pt, 2A/common	0.1A/pt, 2A/common
Response Time (ms)	OFF – ON	1	3	0.5	0.5	1	1	1
	ON – OFF	1 (rated resistive load)	10 (resistive load)	0.5 (resistive load)	0.5 (resistive load)	1 (rated resistive load)	1 (rated resistive load)	1 (rated resistive load)
External Supply Voltage/Current		12-24VDC (+20/-15%) 20mA	N/A	5/12VDC (+25/-10%), 90mA	5/12VDC (+25/ -10%), 170mA	12-24VDC (+20/-15%)	12-24VDC (+20/-15%)	12-24VDC (+20/-15%)
Protection		Fuse (4A)	N/A	Fuse (1.6A)	Fuse (1.6A)	Fuse (4A)	Thermal and short-circuit	Thermal and short-circuit
Points/Common		16	All points interdependent	16	32	16	32	64
Connection Type		Screw Terminal	Screw Terminal	Screw Terminal	FCN	Screw Terminal	D-sub (*1)	FCN x2
Maximum 5VDC Current Consumption (mA)		80	110	95	150	80	95	160
Weight (kg)		0.17	0.14	0.14	0.14	0.17	0.15	0.15
Base Unit Slots Occupied		1						

Note 1: Supplied separately. See "I/O Wiring Connectors" for ordering information.