

## WS Safety Input and I/O Combined Modules

Model Number		WS0-XTDI80202	WS0-XTIO84202
Stocked Item		S	S
Certification		UL • cUL • CE	
Category		Category 4 (EN/ISO 13849-1), Category 4 (EN 954-1)	
Safety Integrity Level (SIL)		SIL3 (IEC 61508)	
Performance Level (PL)		PLe (EN/ISO 13849-1)	
PFHd		0.4 x 10 <sup>-9</sup> 1/h	0.9 x 10 <sup>-9</sup> 1/h (double channel) 4.8x10 <sup>-9</sup> 1/h (single channel)
Enclosure Rating (EN/IEC 60529)		Terminals: IP20, Housing: IP40	
EMC		EN61000-6-2, EN55011 (Class A)	
Protection Class		III (IEC 61140)	
External Connection Method		By spring clamp terminal block	
Internal Power Consumption (W/O Test Pulse Output)		Max. 1.4 W	Max. 1.1 W
Cross-Circuit of Connecting Wires		Single-core or finely stranded: 1×0.14 mm <sup>2</sup> to 2.5 mm <sup>2</sup> or 2×0.14 mm <sup>2</sup> to 0.75 mm <sup>2</sup> Finely stranded with ferrules to EN 46228: 1×0.25 mm <sup>2</sup> to 2.5 mm <sup>2</sup> or 2×0.25 mm <sup>2</sup> to 0.5 mm <sup>2</sup>	
External Power Specs	Supply Voltage	24VDC (16.8 to 30VDC)	
	Type of Supply Voltage	PELV or SELV (The current of the power supply unit that supplies the CPU module has to be limited to a maximum of 4 A - either by the power supply unit itself or by a fuse.)	
	Power Consumption	Max. 96 W (including Q1 to Q4)	
	Switch-On Time	Max. 18 seconds	
	Short-Circuit Protection	4 A gG (with tripping characteristics B or C)	
Input Specs	ON Voltage	-13 to 30VDC	
	OFF Voltage	-5 to +5VDC	
	ON Current	2.4 to 3.8 mA	
	OFF Current	-2.5 to 2.1 mA	
	Redundancy Mismatch Time	4 ms to 30 s (Default: 3 s, Increase or decrease 4 ms by 4 ms)	
Test Pulse Output Specs	Number of Inputs	8 points (Single), 4 points (Dual-channel)	
	Number of Outputs	8 points (2 kinds)	2 points (2 kinds)
	Output Type	PNP	
	Output Voltage	15.6 to 30VDC	
	Output Current (DC)	Max. 120 mA	
	Test Pulse Cycle	1 to 25 Hz (Changeable by settings)	
	Test Pulse OFF Time	1 to 100 ms (Changeable by settings)	
	Load Capacity	1 μF for test pulse duration ≥ 4 ms, 0.5μF for test pulse duration 1 ms < 100 Ω	
	Cable Resistance	100 Ω or less	
	Output Specs	Output Points	4 points (Single), 2 points (Dual-channel)
Output Type		PNP	
Output Voltage		24VDC (15.6 to 30VDC)	
Output Current (DC)		2 A	
Total Output Current		Max. 3.2 A	
Test Pulse OFF Time		≤ 0.65ms	
Test Pulse Cycle		0.8 Hz	
Load Capacity		≤ 0.5 μF	
Cable Length		100m, 1.5mm <sup>2</sup>	
Response Time		Changeable by logic configuration	
Fast Shut Off Time	8ms		
Weight (g)	139		164
Dimensions (W x H x D) mm		22.5 x 106.5 x 120.8	

## WS Safety Relay Module

Used in tandem with the WS0-XTIO84202 for Safety Relay.

Model Number		WS0-4R04002	
Stocked Item		S	
Category		Category 4	
Safety Integrity Level (SIL)		SIL3	
PFDd		1.6×10 <sup>-7</sup>	
PFHd		1×10 <sup>-9</sup> 1/h	
Supply Voltage		24VDC (19.2 - 30VDC)	
Enclosure Rating (EN/IEC 60529)		Terminals: IP20, Housing: IP40	
EMC		EN61000-6-2, EN55011 (Class A)*	
Power Consumption		Max. 2 W	
Impulse Resistance Voltage		4 kV	
Rated Voltage		300VAC	
Peeled Off Length of Wire		8 mm	
Max. Tension		0.6 Nm	
Certification		UL • cUL • CE	
Floating Contacts	Number of N/O Contacts	4	
	Number of N/C Contacts	2	
	AC Switching Voltage	5 - 275VAC (250VAC Typical)	
	DC Switching Voltage	5 - 275VDC (230VDC Typical)	
	Switching Current	10mA - 6A (12A max.)	
Non-Isolated Current-Limited N/O Contacts	Response Time	30ms	
	Number of N/O Contacts	2	
	Output Voltage	18 - 30VDC (24VDC Typical)	
Output Current	75 mA		
Weight (kg)		0.19	
Dimensions (W x H x D) mm		22.5 x 106.5 x 120.8	

Specifications of MELSEC-WS differ from MELSEC-Q/QS mainly in:  
General specifications (Operating ambient temperature, storage ambient temperature, etc.)  
EMC standards: MELSEC-WS-EN61000-6-2, EN55011; MELSEC-Q/QS-IEC 61131-2