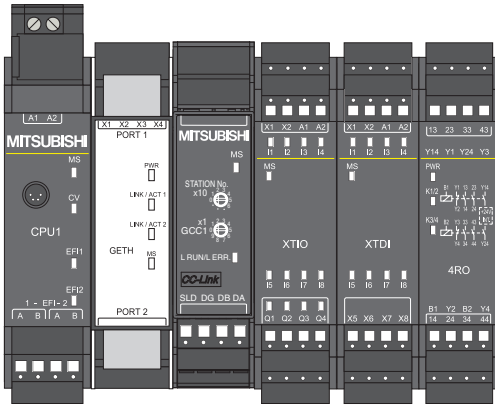


WS Safety Controllers



WS Safety Controllers

The WS Safety Controller provides FB-style programming for control of safety assets, complying with ISO13849-1 PLe and IEC61508 SIL3 safety standards. The most suitable application for the MELSEC-WS is to ensure the safe operation of stand-alone machines. The safety controller allows expansion of up to 144 points of I/O as well as an Ethernet communication interface. Easily configure a controller, adjust parameters, and create programs using the WS Developer Setting and Monitoring Tool software, exclusively provided for the controller.

WS Safety Controller Modules

Model Number	Description	Stk Item
WS0-CPU000200	WS SAFETY, CPU, 144 I/O, RS-232	S
WS0-CPU130202	WS SAFETY, CPU, 144 I/O, RS-232, EFI	S
WS0-CPU320202	WS SAFETY, CPU, 144I/O, RS-232, flexi line Interface	-
WS0-MPL000201	WS SAFETY, CPU memory plug	S
WS0-MPL100201	WS SAFETY, WS0-CPU3 memory plug	-
WS0-XTDI80202	WS SAFETY, input module, 8 IN	S
WS0-XTIO84202	WS SAFETY, I/O Module, 8 IN, 4 OUT	S
WS0-4RO4002	WS SAFETY, 4 OUT safety relay module	S
WS0-C20R2	WS SAFETY, RS-232 programming cable	S
WS0-UC-232A	WS SAFETY, USB-RS-232 converter	S
WS0-GETH00200	WS SAFETY, Ethernet module	S
WS0-GCC100202	WS SAFETY, CC-Link interface module	S
WS0-TBS4	WS SAFETY, screw terminal	S
WS0-TBC4	WS SAFETY, spring terminal	S

Max. Configuration	1 CPU module 12 safety I/O modules (max. 4 safety relay output modules) 2 different network modules
Max. I/O	96 inputs and 48 outputs
Program Capacity	255 standard (i.e. AND, OR, NOT, XNOR, XOR, etc.) or application-specific logic blocks (i.e. emergency stop, two-hand, muting, pressing, reset, restart, etc.)
Network Options	Ethernet, CC-Link
EFI Interfaces	2 (WS0-CPU130202 only)
Flexi Link	Up to 4 WS0-CPU130202
Max. Power Supply Current	4A (limited at Power Supply or Fuse)

*Required elements are CPU, Memory Plug, and I/O modules

General Specifications

Operating Ambient Temperature	-25 to 55°C					
Storage Ambient Temperature	-25 to 70°C					
Operating Ambient Humidity	10 to 95 % RH, non-condensing (*4)					
Storage Ambient Humidity	10 to 95 % RH, non-condensing (*4)					
Vibration Resistance	Conforms to IEC 61131-2		Frequency Range	Constant Acceleration	Half Amplitude	Sweep Count 10 times each in X, Y, Z directions
		Under intermittent vibration	5 to 8.4 Hz 8.4 to 150 Hz	- 9.8 m/s ²	3.5 mm -	
		Under continuous vibration	5 to 8.4 Hz 8.4 to 150 Hz	- 4.9 m/s ²	1.75 mm -	
Shock Resistance	Conforms to IEC 61131-2 (147 m/s ² , 3 times each in X, Y, Z directions)					
Operating Ambience	No corrosive gases					
Operating Ambience (*1)	2,000 m or less					
Installation Location	Inside control panel					
Overvoltage Category (*2)	II or less					
Pollution Degree (*3)	2 or less					
Equipment Category	Class III					

Notes:

- Do not store or use the programmable controller under the pressure higher than the atmospheric pressure of altitude 0 m.
- This indicates the section of power supply to which the equipment is assumed to be connected between the public electrical power distribution network and the machinery within the premises. Category II applies to equipment for which electrical power is supplied from fixed facilities. The surge voltage withstand level for up to the rated voltage of 300 V is 2500 V.
- This index indicates the degree to which conductive material is generated in the environment where the device is used. Pollution degree 2 is when only non-conductive pollution occurs. However, temporary conductivity caused by condensation is to be expected.
- 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

WS Safety CPU Modules

Model Number	WS0-CPU000200	WS0-CPU130202	WS0-CPU320202
Stocked Item	S	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) SILCL3 (IEC 62061)		
Performance Level (PL)	PLe (EN/ISO 13849-1)		
PFHd	1.07×10 ⁻⁹ 1/h	1.69×10 ⁻² 1/h	
Enclosure Rating (EN/IEC 60529)	Terminals: IP20, Housing: IP40		IP20
EMC	EN61000-6-2, EN55011 (Class A) (*1)		
Number of EFI Interfaces	0	2	3
Number of Flexi Line Interfaces	0	0	2
EFI Connection	-	By spring clamp terminal block	
Data Interface	Backplane bus (FLEX BUS+)		
Configuration Interface	RS-232		RS-232 and USB
Cross-Circuit of Connecting Wires	Single-core or finely stranded: 1×0.14 mm ² to 2.5 mm ² or 2×0.14 mm ² to 0.75 mm ² Finely stranded with ferrules to EN 46228: 1×0.25 mm ² to 2.5 mm ² or 2×0.25 mm ² to 0.5 mm ²		
Weight (g)	111	119	
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. 2.5 W		
Switch-On Time	Max. 18 seconds		
Short-Circuit Protection	4 A gG (with tripping characteristics B or C)		
Dimensions (W x H x D) mm	22.5 x 101.7 x 120.8	22.5 x 106.5 x 120.8	

Note: 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