

# PACSafe Configurable Safety Controllers

## Intuitive, Integrated, and Fast Machine Safety

Designed with Original Equipment Manufacturers and their end-users in mind, PACSafe Configurable Safety Controllers are perfect for machine automation applications requiring integrated SIL3 machine safety with multiple coordinated safety sensors for a variety of industries like packaging, food and beverage, life sciences, and manufacturing. The PACSafe Configurable Safety Controllers easily scales from small to complex machines and provides an intuitive graphical-based interface for configuration and programming, easy integration to Emerson's PACSystems and VersaMax controllers over Industrial Ethernet, and fast safe state reaction times. These qualities result in reduced development and commissioning times and smaller overall machine sizes – leading to higher productivity and profitability.



### Intuitive Programming

With intuitive, icon-based programming, drag-and-drop configuration, and integrated online help, programming your safety solution has never been easier. An extensive library of TÜV-certified SIL3 function blocks allow for the quick integration of e-stops, interlock gates, optical sensors, two-hand controls, safety mats and many more safety devices. Built-in system simulation tools, online monitoring and live diagnostics capabilities create a user-friendly commissioning and troubleshooting process.

### Integrated Safety Solutions

PACSafe Configurable Safety Controller development tools are integrated and delivered within our PAC Machine Edition (PME) development suite. Built-in Ethernet with support for PROFINET and Modbus/TCP protocols and new standard PLC integration function blocks allow for seamless monitoring and integration with the rest of the Emerson industrial controls portfolio. This ensures that you can easily integrate machine safety into new designs or your existing PACSystems or VersaMax architectures.

### Fast Time to Safe State

PACSafe Configurable Safety Controllers combine the advantages of an expandable design with the fast performance of non-configurable relays. With system safe state reaction times as fast as 15ms, you'll no longer have to choose between performance and flexibility.

### Scalable Safety Solutions

With models of 10 and 26 integrated safety inputs and optional expansion safety I/O modules, PACSafe users have the flexibility to scale their solutions to as many as 154 safety I/O points. Six different types of expansion I/O modules provide a variety of safety functions including safety inputs, solid-state safety outputs and safety relay outputs. All these modules allow safety inputs to be converted to status outputs for added application flexibility. With the available 80 configurable virtual non-safe inputs and 256 configurable virtual non-safe status outputs, you can keep your entire control solution coordinated with ease.

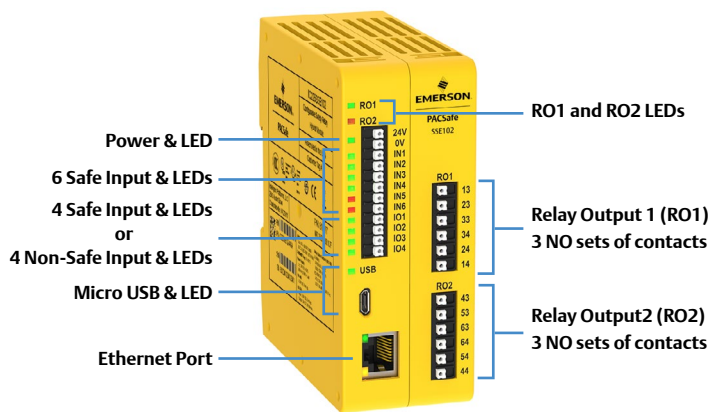
## Features and Indicators

### PACSafe Configurable Safety Controllers



- Flexible and intuitive icon-based programming with drag-and-drop configuration
- Pre-configured safety function blocks to simplify application programming
- Twenty-six inputs, including eight that can be used as non-safe outputs
- Two OSSD\* outputs, each can be split into two single-channel safety outputs
- Expandable models for adding up to 8 additional I/O modules
- Standard Industrial Ethernet, optional LCD Display, and accessories for full customization






### PACSafe Configurable Safety Controller with Relay Outputs



- Same intuitive, icon-based programming with drag-and-drop configuration as the larger Sxx262 models in a compact footprint
- Ten inputs, including four that can be used as non-safe outputs
- Two six-amp safety relay outputs, each with three N.O. sets of contacts
- Automatic Terminal Optimization (ATO) can increase the inputs from 10 to up to 14
- Standard Industrial Ethernet two-way communication
- External drive for fast swap and quick configuration without a PC

## Specifications

### PACSafe Configurable Safety Controllers

	IC225SXF262	IC225SXE262	IC225SSF262	IC225SSE262	IC225SSE102
<b>Expandable</b>	Yes – up to 8 Expansion Modules			No	
<b>LCD Display</b>	Yes	No	Yes	No	
<b>Safety Module Type</b>	Base Controller				
<b>Dimension (mm)</b>	110H x 45W x 129D				115H x 45W x 100D
<b>Certifications and Compliance</b>	    				
<b>Relative Humidity</b>	90% @ 50° C				
<b>Max Operating Temperature</b>	55° C				
<b>Input Operation</b>	Simultaneous or Concurrent				
<b>Number of Safe Inputs</b>	26				10
<b>Input Configuration</b>	Configurable				
<b>Number of Convertible Inputs</b>	8				4
<b>Safety Input - Dual Channel (Dry Contact)</b>	5-50 mA @ 24 VDC (Initial contact closure current is 50mA for contact cleaning that reduces to 5mA)				
<b>Safety Input - Dual Channel (Solid-State)</b>	50 mA @ 15 – 30 VDC				
<b>Safety Input - Reset</b>	5-50 mA @ 24 VDC				
<b>Independently Controlled Safe Outputs</b>	4				2
<b>Output Configuration</b>	2 OSSD Pairs				2 sets of 3 N.O.
<b>Non-Safe Output Configuration</b>	Up to 11 PNP				Up to 4 PNP
<b>Non-Safe Output Rating</b>	80 mA @ 24 VDC (individual) max for IOx; overcurrent protected 500 mA @ 24 VDC for SOx; overcurrent protected Note: IOx Inputs can be configured as status outputs & SOx reassigned as status output				80 mA @ 24 VDC (individual) max; overcurrent protected
<b>Safe Output Rating</b>	OSSD 0.50 A max. @ 24 VDC OSSD = Output Solid State Device (PNP Source) Pulse Test: OSSD pair turn on within 5ms; 200uS max Test Pulses				N.O. Relay - 6 A 250VAC or 24VDC
<b>Splittable Safe Output</b>	Yes				No
<b>Mechanical Life</b>	N/A				20 Million Operations
<b>24VDC +/- 20% Power Consumption</b>	0.16 A (controller only)				0.24 A (no load, relays off), 0.53 A (full load, relays on)
<b>Response Time (ms)</b>	Varies with Configuration				
<b>Supply Voltage</b>	24 VDC +/- 20%				
<b>Terminal Type</b>	Screw (Spring Clamp available as an accessory)				Spring Clamp
<b>Removable Terminals</b>	Yes				NO
<b>Vibration</b>	9-150 Hz at 1g occasional/0.5g continuous				
<b>Electrical Life</b>	N/A				50,000 cycles @ full resistive load
<b>IP Rating</b>	IP20				
<b>Safety Certifications</b>	Category 4, PL e (EN ISO 13849), SIL CL 3 (IEC 62061, IEC 61508)				
<b>SISTEMA value</b>	PFHd = 1.05 x 10 <sup>-9</sup>				PFHd = 5.0 x 10 <sup>-10</sup>
<b>THC Rating (Two Hand Control)</b>	IIIC				

	IC225XF262	IC225XE262	IC225SF262	IC225SE262	IC225SE102
THC Rating (Two Hand Control)	IIC				
Safety Input - Single Channel	5-50 mA @ 24 VDC				
Input Resistance	150 Ω max. per lead				
E-Stops/Rope Pulls	Yes				
Motor Speed	No				
Safety Mat	Yes				
Two-Hand Controls	Safety Controller				Yes
Input Recovery Time	250mS (typical), 400mS (max)				
Muting	Yes				
Gate Switch (NC/NC) Input	Yes				
Gate Switch (NC/NO) Input	Yes				
Gate Switch (OSSD*) Input	Yes				
Light Curtains/Scanner with EDM Input	Yes				
Light Curtains/Scanner without EDM Input	Yes				
Modbus/TCP	Yes				
PROFINET	Yes				

Safety I/O Expansion Modules

	IC225SDD841	IC225SDD842	IC225SDL720	IC225SDL740	IC225SDL910	IC225SDL920
Module Type	Input	Input	Solid State Output	Solid State Output	Relay Output	Relay Output
Dimension (mm)	110H x 22.5W x 129D					
Relative Humidity	90% @ 50° C					
Max Operating Temperature	55° C					
Input Operation	Simultaneous or Concurrent					
Safety Inputs	8	16	-			
Input	Configurable					
Convertible Inputs	2	4	-			
	When used as 24V for dry contacts, IOx Outputs generate test pulses.		-			
Safety Input (Dry Contact)	5-50 mA @ 24 VDC EA (Initial contact closure current is 50mA for contact cleaning that reduces to 5mA)		-			
Safety Input (Solid-State)	50 mA @ 15 - 30 VDC EA		-			
Independently Controlled Safe Outputs	-	-	4	8	1	2
Output Configuration	-		2 OSSD Pairs	4 OSSD Pairs	2 NO	2 sets of 2 NO
Non-Safe Output Configuration	Up to 2 PNP	Up to 4 PNP	Up to 4 PNP	Up to 8 PNP	1NC	2 separate NC
Non-Safe Output Rating	80 mA max @ 24 VDC (individual); overcurrent protected		-			
Safe Output Rating			OSSD 0.75 A max. @24 VDC	OSSD 0.50 A max. @24 VDC	Relay: 2 NO 6A & 1 NC 2.5A 240VAC/24VDC	Relay: 4 NO, 6A; 2 NC, 2.5A 240VAC/24VDC
Splittable Safe Output	No		Yes		No	

Expansion I/O con't	IC225SDD841	IC225SDD842	IC225SDL720	IC225SDL740	IC225SDL910	IC225SDL920
<b>24VDC +/- 20% Power Consumption</b>	0.07 A (no load); 0.23 A (full load)	0.09 A (no load); 0.41 A (full load)	3.075 A (external load maximum)	4.1 A (external load max)	0.125 A (outputs on)	0.15 A (outputs on)
<b>Response Time</b>	Varies with Configuration					
<b>Terminal Type</b>	Screw (Spring Clamp available as an accessory)					
<b>Removable Terminals</b>	Yes					
<b>Vibration</b>	9-150 Hz at 1g occasional/0.5g continuous					
<b>IP Rating</b>	IP20					
<b>Safety Certifications</b>	Category 4, PL e (EN ISO 13849), SIL CL 3 (IEC 62061, IEC 61508)					
<b>SISTEMA</b>	PFHd = 4 x 10 <sup>-10</sup>		PFHd = 5.8 x 10 <sup>-10</sup>		PFHd = 7.6 x 10 <sup>-10</sup>	
<b>THC Rating</b>	IIIC					
<b>Safety Input - Single Channel</b>	5-50 mA @ 24 VDC		-			
<b>Input Resistance</b>	150 Ω max. per lead		-			
<b>Input Recovery Time</b>	250ms (typical), 400ms (max)		-			
<b>E-Stops / Rope Pulls</b>	Yes		-			
<b>Safety Mat</b>	Yes		-			
<b>Motor Speed</b>	No		-			
<b>Two-Hand Controls</b>	Yes		-			
<b>Muting</b>	Yes		-			
<b>Gate Switch (NC/NC) Input</b>	Yes		-			
<b>Gate Switch (NC/NO) Input</b>	Yes		-			
<b>Gate Switch (OSSD*) Input</b>	Yes		-			
<b>Light Curtains/Scanner with EDM Input</b>	Yes		-			
<b>Light Curtains/Scanner without EDM Input</b>	Yes		-			

\*OSSD – Output Solid State Device

## Ordering Information

Part Number	Description
<b>Configurable Safety Controllers</b>	
IC225SXF262	PACSafe Configurable Safety Controller, Expandable with display. Base unit has 26 safety inputs and 2 pairs of PNP safety outputs. Ethernet
IC225SXE262	PACSafe Configurable Safety Controller, Expandable, No display. Base unit has 26 safety inputs and 2 pairs of PNP safety outputs. Ethernet
IC225SSF262	PACSafe Configurable Safety Controller, Standalone with display, Non-expandable, 26 safety inputs and 2 pairs of PNP safety outputs. Ethernet
IC225SSE262	PACSafe Configurable Safety Controller, Standalone, No display, Non-expandable, 26 safety inputs and 2 pairs of PNP safety outputs. Ethernet
IC225SSE102	PACSafe Configurable Safety Controller Standalone, In-Series Diagnostics (ISD) Compatible; 10 Safety Inputs, 2 relay outputs. Ethernet
<b>Safety I/O Expansion Modules for use with SXF262 &amp; SXE262</b>	
IC225SDD841	PACSafe Safety Input Module 24VDC, 8 inputs, 2 convertible
IC225SDD842	PACSafe Safety Input Module 24VDC, 16 inputs, 4 convertible
IC225SDL720	PACSafe Safety Output Module, Solid State 24VDC, 2 pairs of PNP Safety Outputs (0.75 Amp each)
IC225SDL740	PACSafe Safety Output Module, Solid State 24VDC, 4 pairs of PNP Safety Outputs (0.5 Amp each)
IC225SDL910	PACSafe Safety Relay Output Module, 2 NO, 6 A; Aux Outputs: 1 NC, 6 A
IC225SDL920	PACSafe Safety Relay Dual Output Module, 4 NO, 6 A; Aux Outputs: 2 NC, 6 A
<b>Accessories</b>	
IC225CBL001	PACSafe Control Safety Controller USB to Micro USB Programming Cable for programming SXF, SXE, SSF & SSE Controllers. 6'
IC225ACC001	PACSafe External Program Memory to load-store-compare programs in SXF, SXE, SSF & SSE Controllers without a PC. Qty 1 with label
IC225ACC002	PACSafe External Program Memory converter to PC USB. Allows connection of PACSafe External Program Memory to standard PC USB ports.
IC225STB008	Replacement Screw Type terminals for the XS26 or SC26 base units. Qty 4
IC225STB004	Replacement Screw Type terminals for the XS Expansion Modules. Qty 4
IC225STS008	Replacement Spring Clamp Style terminals for the XS26 or SC26 base units. Qty 4
IC225STS004	Replacement Spring Clamp Style terminals for the XS Expansion Modules. Qty 4
IC225DEM001	PACSafe SXF262 Demo Kit

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