

Selection Guide

Selecting the Proper Monitoring Relay for Your Application

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Safety monitoring relays range in function from two-hand palm button control to dual channel input units with time-delayed outputs that provide conformity to ANSI B11.19-2003, Section 6 for *Performance of the Safety Related Function(s)*.

The following questions and charts will guide you from the various capabilities and features to the proper model number.



1

Does the application require two dual channel inputs?

Yes: See Chart Below

No: Go to Question 2

Relay Model	Terminals	Inputs†	Outputs				Operating Voltage					Catalog Page
			Safety N/O	Aux. N/C	Solid State Aux.	Safety Delayed N/O	24 DC	24 AC	120 AC	200 AC	230 AC	
Safety Monitoring Relays												
SR131A	Fixed	(2) 1 N/C + 1 N/O	2	–	2	–	–	●	–	–	–	H54
SR231A	Removable	(2) 1 N/C + 1 N/O	2	–	2	–	–	●	–	–	–	H98

2

Does the application require one single channel or one dual channel input?

Yes: See Chart Below

No: Go to Question 3

Relay Model	Terminals	Inputs†	Outputs				Operating Voltage					Catalog Page
			Safety N/O	Aux. N/C	Solid State Aux.	Safety Delayed N/O	24 DC	24 AC	120 AC	200 AC	230 AC	
Safety Monitoring Relays												
G9SB-3010	Fixed	1 N/C, Supply Voltage	3	1	–	–	–	●	–	–	–	Vol. 2, EE-59*
SR101A	Fixed	1 N/C, Supply Voltage	2	–	–	–	–	●	●	●	–	H6
CS1W-SF200	Fixed	1 N/C, 2 N/C	2	–	–	–	–	●	–	–	–	Vol. 2, EE-76*
CQM1-SF200	Fixed	1 N/C, 2 N/C	2	–	–	–	–	●	–	–	–	Vol. 2, EE-76*
G9S-301	Fixed	1 N/C, 2 N/C	3	1	–	–	–	●	●	●	■	Vol. 2, EE-67*
G9S-501	Fixed	1 N/C, 2 N/C	5	1	–	–	–	●	●	●	■	Vol. 2, EE-67*
G9SA-301 ¹	Fixed	1 N/C, 2 N/C, PNP	3	1	–	–	–	●	●	●	–	Vol. 2, EE-45*
G9SA-501 ¹	Fixed	1 N/C, 2 N/C, PNP	5	1	–	–	–	●	●	●	–	Vol. 2, EE-45*
G9SB-200 ²	Fixed	1 N/C, 2 N/C, PNP	2	–	–	–	–	●	●	–	–	Vol. 2, EE-59*
G9SB-301 ²	Fixed	1 N/C, 2 N/C, PNP	3	1	–	–	–	●	●	–	–	Vol. 2, EE-59*
SR102AM	Fixed	1 N/C, 2 N/C, PNP	2	–	–	–	–	●	●	●	–	H10
SR103AM	Fixed	1 N/C, 2 N/C, PNP	3	1	–	–	–	●	●	●	–	H14
G9S-2002	Fixed	2 N/C	2	–	–	–	–	•	–	–	–	Vol. 2, EE-67*
G9SB-2002 ²	Fixed	2 N/C	2	–	–	–	–	●	●	–	–	Vol. 2, EE-59*
G9SB-3012 ²	Fixed	2 N/C	3	1	–	–	–	●	●	–	–	Vol. 2, EE-59*
SR201A	Removable	1 N/C, Supply Voltage	3	–	1	–	–	●	●	●	–	H58
SR202AM	Removable	1 N/C, 2 N/C	3	–	–	–	–	●	●	–	–	H62
SR203M/AM	Removable	1 N/C, 2 N/C, PNP	3	1	–	–	–	●	●	●	–	H66

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3

Does the application require the ability to accept input from a variety of safety devices such as E-stops, interlocks or light curtains?

Yes: See Chart Below

No: Go to Question 4

Relay Model	Terminals	Inputs [†]	Outputs					Operating Voltage					Catalog Page
			Safety N/O	Aux. N/C	Solid State Aux.	Safety Delayed		24 DC	24 AC	120 AC	200 AC	230 AC	
Multi-Input Safety Monitoring Relays													
SR120MP	Fixed	1 N/C, 2 N/C, SM, PNP	3	1	4	–	–	●	●	●	–	–	H34
SR126AM	Fixed	1 N/C, 2 N/C, PNP	7	2	4	–	–	●	●	●	–	–	H46
SR130DD	Fixed	1 N/C, 2 N/C, SM, PNP (2 total)	6	–	3	–	–	●	–	–	–	–	H50
SR220MP	Removable	1 N/C, 2 N/C, SM, PNP	3	1	4	–	–	●	●	●	–	–	H78
SR226AM	Removable	1 N/C, 2 N/C, PNP	7	2	4	–	–	●	●	●	–	–	H90
SR230DD	Removable	1 N/C, 2 N/C, SM, PNP (2 total)	6	–	3	–	–	●	–	–	–	–	H94

4

Does the application require single or dual channel inputs with 2 or 3 delayed safety outputs?

Yes: See Chart Below

No: Go to Question 5

Relay Model	Terminals	Inputs [†]	Outputs					Operating Voltage					Catalog Page
			Safety N/O	Aux. N/C	Solid State Aux.	Safety Delayed		24 DC	24 AC	120 AC	200 AC	230 AC	
Safety Monitoring Relays with Delayed Outputs													
G9S-321	Fixed	1 N/C, 2 N/C	3	–	–	2	–	●	●	●	■	■	Vol. 2, EE-67*
G9SA-321 ¹	Fixed	1 N/C, 2 N/C, PNP	3	1	–	2	–	●	●	●	–	■	Vol. 2, EE-45*
SR107AD	Fixed	1 N/C, 2 N/C, PNP	1	–	–	3	–	●	●	–	–	–	H30
SR108AD	Fixed	1 N/C, 2 N/C, PNP	2	–	–	2	–	●	●	–	–	–	H30
SR109AD	Fixed	1 N/C, 2 N/C, PNP	3	–	–	1	–	●	●	–	–	–	H30
SR208AD	Removable	1 N/C, 2 N/C, PNP	2	–	–	3	–	●	●	●	–	–	H74
SR209AD	Removable	1 N/C, 2 N/C, PNP	2	–	–	2	1	●	●	●	–	–	H74

5

Does the application require the monitoring of two-hand palm buttons?

Yes: See Chart Below

No: Go to Question 6

Relay Model	Terminals	Inputs [†]	Outputs					Operating Voltage					Catalog Page
			Safety N/O	Aux. N/C	Solid State Aux.	Safety Delayed		24 DC	24 AC	120 AC	200 AC	230 AC	
Two Hand Controls													
G9SA-TH301 ¹	Fixed	2 N/C	3	1	–	–	–	●	●	●	–	■	Vol. 2, EE-45*
SR104P	Fixed	1 N/C + 1 N/O	2	–	–	–	–	●	●	●	–	–	H18
SR204P	Removable	1 N/C + 1 N/O	2	–	–	–	–	●	–	●	–	–	H70

Notes:

*Please consult our companion catalog for products found in Volume 2.

[†] Codes: SM = 4-wire safety mat, PNP = light curtain, 2H = two-hand control

¹ Dedicated expansion module available

² Must specify manual or auto restart

³ Unit must be configured at factory.

● = Available ■ = Available on special order

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Does the application require an expansion module?

Yes: See Chart Below

No: Go to Question 7

Relay Model	Terminals	Inputs [†]	Outputs						Operating Voltage				Catalog Page	
			Safety N/O	Aux. N/C	Solid State		Safety Delayed		24 DC	24 AC	120 AC	230 AC		
					Safety	Aux.	Safety	N/O						N/C
Expansion Units														
G9SA-EX031	Fixed	Dedicated	-	-	-	-	-	3	1	-	-	-	-	Vol. 2, EE-45*
G9SA-EX301	Fixed	Dedicated	3	1	-	-	-	-	-	-	-	-	-	Vol. 2, EE-45*
SR105E	Fixed	1 N/C, PNP	3	1	-	-	-	-	-	●	●	●	-	H22
SR106ED	Fixed	1 N/C, PNP	-	1	-	-	-	3	-	●	●	●	-	H26
SR121E	Fixed	2 N/C	4	1	-	1	-	-	-	●	●	●	-	H38
SR122E	Fixed	2 N/C	8	1	-	1	-	-	-	●	●	●	-	H38
G9SX-EX041	Removable	Dedicated	-	-	-	1	-	4	-	●	-	-	-	Vol. 2, EE-17*
G9SX-EX401	Removable	Dedicated	4	-	-	1	-	-	-	●	-	-	-	Vol. 2, EE-17*

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7

Does the application require stop motion sensing or time "on-delay" after initiation of stop command?

Yes: See Chart Below

No: Go to Question 8

Relay Model	Terminals	Inputs [†]	Outputs						Operating Voltage				Catalog Page	
			Safety N/O	Aux. N/C	Solid State		Safety Delayed		24 DC	24 AC	120 AC	230 AC		
					Safety	Aux.	Safety	N/O						N/C
Stop Motion Sensing Units														
			1 N/O											
SR125SMS	Fixed	Back EMF	1 N/C	-	-	2	-	-	-	●	-	●	-	H42
SR223SMT	Removable	Time Delay	-	-	-	2	-	1	2	●	●	●	-	H82
SR224SMT	Removable	Time Delay	-	-	-	2	-	1	2	●	●	●	-	H86

Notes:

* Please consult our companion catalog for products found in Volume 2.

[†] Codes: SM = 4-wire safety mat, PNP = light curtain, 2H = two-hand control

¹ Dedicated expansion module available

² Must specify manual or auto restart

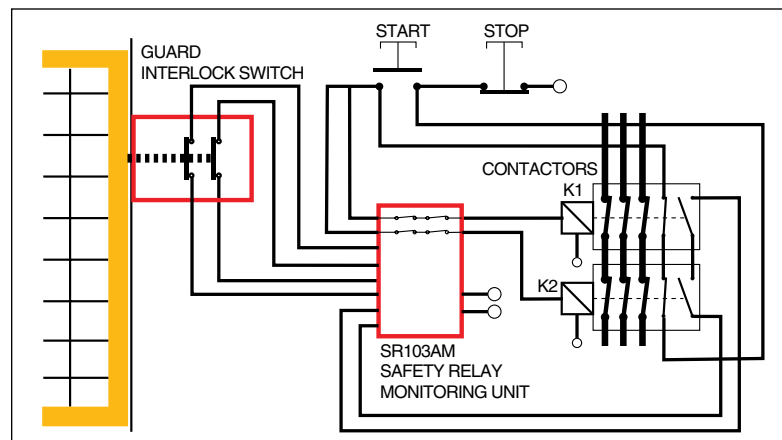
³ Unit must be configured at factory.

● = Available ■ = Available on special order

safety monitoring relays

A

See the article entitled "Safety Rated Control Systems" in the Engineering Section of this catalog for a complete guide to using Safety Monitoring Relays in control reliable circuits.



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Does the application require a modular safety system?

 Yes: See Chart Below
 No: Go to Question 9

Relay Model	Terminals	Inputs†	Outputs							Operating Voltage				Catalog Page
			Safety N/O	Aux. N/C	Solid State		Safety Delayed	Safety Delayed		24 DC	24 AC	120 AC	230 AC	
					Safety	Aux.		N/O	N/C					
Modular Safety Relays														
F3SX ³	Removable	Configurable	0 to 2	0 to 1	0 to 2	0 to 1	0 to 2	0 to 2	0 to 1	●	–	–	–	Vol. 2, EE-87*
G9SX-ADA222 ¹	Removable	1 N/C, 2 N/C, PNP	–	–	2	2	2	–	–	●	–	–	–	Vol. 2, EE-17*
G9SX-AD322 ¹	Removable	1 N/C, 2 N/C, PNP	–	–	3	2	2	–	–	●	–	–	–	Vol. 2, EE-17*
G9SX-BC202	Removable	1 N/C, 2 N/C, PNP	–	–	2	2	–	–	–	●	–	–	–	Vol. 2, EE-17*

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Does the application require a programmable controller with safety networking capability?

 Yes: See Chart Below
 No: Go to Question 10

Controller Model	Terminals	Safety Inputs (PNP)	Safety Outputs (PNP)	Test Outputs (PNP)	Safety Network	Operating Voltage	Compatible I/O Terminals	Catalog Page
Programmable Safety Network Controllers								
NE1A-SCPU01-V1	Removable	16	8	4	DeviceNet Safety	24 VDC	DST 1 Series	Vol. 2, EE-6*
NE1A-SCPU02	Removable	40	8	8	DeviceNet Safety	24 VDC	DST 1 Series	Vol. 2, EE-6*
Safety Network I/O Terminals								
DST1-ID12SL-1	Removable	12	–	4	DeviceNet Safety	24 VDC	DST 1 Series	Vol. 2, EE-11*
DST1-MD16SL-1	Removable	8	8	4	DeviceNet Safety	24 VDC	DST 1 Series	Vol. 2, EE-11*
DST1-MRD08SL-1	Removable	4	4 (relay)	4	DeviceNet Safety	24 VDC	DST 1 Series	Vol. 2, EE-11*

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Does the application require the muting of safety light curtains?

 Yes: See Chart Below
 No: Contact Omron STI

Controller Model	Terminals	Light Curtains	Muting Sensors	Test Outputs Safety N/O	Aux. N/O	Operating Voltage	Catalog Page
Safety Sensor Muting Controller							
F3SP-U2P	Fixed	2	8	2	–	24 VDC	Vol. 2, EE-109*
RM-3	Removable	2	8	2**	3	24 VDC	D150

**The RM-3 has two solid-state PNP outputs.

Notes:

*Please consult our companion catalog for products found in Volume 2.

† Codes: SM = 4-wire safety mat, PNP = light curtain, 2H = two-hand control

¹ Dedicated expansion module available

² Must specify manual or auto restart

³ Unit must be configured at factory.

● = Available ■ = Available on special order

