

## **Safety Product Selection Guide**

*Safety Limit Switches*

*Safety Door Switches*

*Miniature Safety Limit Switches*

*Miniature Safety Door Switches*

*Slim-Profile Safety Door Switch*

*A22 Switches*

*Safety Relays*

*Safety Light Curtains*

*PLC Safety Relay Units*

**NOTE:** ALL DIMENSIONS SHOWN  
ARE IN MILLIMETERS.

To convert millimeters to  
inches, multiply by 0.03937.

To convert grams into ounces,  
multiply by 0.03527



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**Model D4B-N**

**Safety Limit Switch**

**Dimensions**

99.5 H x 40 W x 43 D mm  
(3.92 x 1.58 x 1.69 in.)

**Description**

Heavy-duty limit switch which features "positive-opening" on all NC contacts. Positive opening ensures that contacts always open during a weld condition.

**Switching Capacity**

10 A continuous @ 600 VAC

**Contact Configuration**

1 NO / 1NC – snap-action  
1 NO / 1NC – slow-action  
2 NC – slow-action

**Mechanical Service Life**

30 million operations min.

**Electrical Service Life**

500,000 operations min.

**Connection**

One-conduit – 1/2-14 NPT, PG13.5, G1/2  
Three-conduit - 1/2-14 NPT, PG13.5, G1/2

**Degree of Protection**

NEMA  
3,4,4X,6P,13  
IEC 144  
IP67

**Actuators**

Roller Lever  
Adjustable Roller Lever  
Adjustable Rod Lever  
Top Plunger  
Top Roller  
Coil Spring  
Plastic Rod



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**Model D4BS**

**Safety Door Switch**

**Dimensions**

115.5 H x 40 W x 43 D mm  
(4.45 x 1.58 x 1.69 in.)

**Description**

Heavy-duty keyed door switch which features "positive-opening" on all NC contacts. The operation head is rotatable in 4 directions and offers a side key entrance.

**Switching Capacity**

10 A continuous @ 600 VAC

**Contact Configuration**

1 NO / 1NC – slow-action  
2 NC – slow-action

**Mechanical Service Life**

1 million operations min.

**Electrical Service Life**

500,000 operations min.

**Connection**

One-conduit – 1/2-14 NPT, PG13.5, G1/2  
Three-conduit - 1/2-14 NPT, PG13.5, G1/2

**Degree of Protection**

IEC 144  
IP67

**Actuators**

Horizontal-mount Key  
Vertical-mount Key  
Adjustable Key



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**Model D4BL**

**Solenoid Door Switch**

**Dimensions**

123.5 H x 116.5 W x 46.3 D mm  
(4.86 x 4.59 x 1.82 in.)

**Description**

Heavy-duty keyed solenoid door switch which features "positive-opening" on all NC contacts. Solenoid lock and solenoid unlock versions are both available.

**Switching Capacity**

10 A continuous @ 600 VAC

**Contact Configuration**

1NO/1NC+1N/C–slow-action  
2NC+1N/C–slow-action

**Mechanical Service Life**

1 million operations min.

**Electrical Service Life**

500,000 operations min.

**Connection**

Two-conduit – 1/2-14 NPT, PG13.5, G1/2

**Degree of Protection**

IEC 144  
IP67

**Actuators**

Horizontal-mount Key  
Vertical-mount Key  
Adjustable Key



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### Model D4D-N

#### Miniature Safety Limit Switch

##### Dimensions

60 H x 31 W x 30 D mm  
(2.36 x 1.22 x 1.18 in.)

##### Description

Compact plastic-bodied limit switch featuring "positive-opening" on all NC contacts. Positive opening ensures that contacts always open during a weld condition.

##### Switching Capacity

10 A continuous @ 600 VAC

##### Contact Configuration

1 NO / 1NC – snap-action  
1 NO / 1NC – slow-action  
2 NC – slow-action

##### Mechanical Service Life

15 million operations min.

##### Electrical Service Life

150,000 operations min.

##### Connection

One-conduit – 1/2-14 NPT, PG13.5, G1/2  
Two-conduit - PG13.5, G1/2

##### Degree of Protection

NEMA  
3,4,4X,6P,13  
IEC 144  
IP65

##### Actuators

Roller Lever  
Adjustable Roller Lever  
Adjustable Roller Lever (50 dia.)  
Top Plunger  
Roller Plunger  
One-way Roller Arm (Hor.)  
One-way Roller Arm (Vert.)  
Cat Whisker  
Plastic Rod



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### Model D4D-R

#### Pull-reset Safety Limit Switch

##### Dimensions

94.5 H x 31 W x 36 D mm  
(3.72 x 1.22 x 1.42 in.)

##### Description

Compact plastic-bodied limit switch featuring "positive-opening" on all NC contacts. These switches also feature a pull-to-reset button to reset the actuator once tripped.

##### Switching Capacity

10 A continuous @ 600 VAC

##### Contact Configuration

1 NO / 1NC – slow-action  
2 NC – slow-action

##### Mechanical Service Life

1 million operations min.

##### Electrical Service Life

150,000 operations min.

##### Connection

One-conduit – 1/2-14 NPT, PG13.5, G1/2  
Two-conduit - PG13.5, G1/2

##### Degree of Protection

NEMA  
3,4,4X,6P,13  
IEC 144  
IP65

##### Actuators

Roller Lever  
Adjustable Roller Lever  
Adjustable Roller Lever (50 dia.)  
Top Plunger  
Roller Plunger  
One-way Roller Arm (Hor.)  
One-way Roller Arm (Vert.)



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### Model D4DS

#### Miniature Safety Door Switch

##### Dimensions

92 H x 31 W x 30.5 D mm  
(3.62 x 1.22 x 1.2 in.)

##### Description

Compact plastic-bodied keyed door switch featuring "positive-opening" on all NC contacts. The highly visible red operating head has key entrances on the side a top and rotates in 4 directions.

##### Switching Capacity

10 A continuous @ 600 VAC

##### Contact Configuration

1 NO / 1NC – slow-action  
2 NC – slow-action

##### Mechanical Service Life

1 million operations min.

##### Electrical Service Life

150,000 operations min.

##### Connection

One-conduit – 1/2-14 NPT, PG13.5, G1/2  
Two-conduit - PG13.5, G1/2

##### Degree of Protection

NEMA  
3,4,4X,6P,13  
IEC 144  
IP67

##### Actuators

Horizontal-mount Key  
Vertical-mount Key  
Adjustable Key  
2-way Adjustable Key



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**Model D4DL**

**Miniature Solenoid Door Switch**

**Dimensions**

95 H x 88.5 W x 30.5 D mm  
(3.74 x 3.48 x 1.2 in.)

**Description**

Compact plastic-bodied keyed solenoid door switch featuring "positive-opening" on all NC contacts. These switches are available in solenoid lock and solenoid unlock versions.

**Switching Capacity**

10 A continuous @ 600 VAC

**Contact Configuration**

1NO/1NC+1N/C—slow-action  
2NC+1N/C—slow-action

**Mechanical Service Life**

1 million operations min.

**Electrical Service Life**

500,000 operations min.

**Connection**

Two-conduit - PG13.5, G1/2

**Degree of Protection**

IEC 144  
IP65

**Actuators**

Horizontal-mount Key  
Vertical-mount Key  
Adjustable Key  
2-way Adjustable Key



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**Model D4DH**

**Hinged Door Switch**

**Dimensions**

78.5 H x 31 W x 30 D mm  
(3.09 x 1.22 x 1.18 in.)

**Description**

Compact plastic-bodied limit switch featuring "positive-opening" on all NC contacts. These switches fit on the hinge or top of a door and activate within 7 degrees of rotation.

**Switching Capacity**

10 A continuous @ 600 VAC

**Contact Configuration**

1 NO / 1NC – slow-action  
2 NC – slow-action

**Mechanical Service Life**

1 million operations min.

**Electrical Service Life**

150,000 operations min.

**Connection**

One-conduit – 1/2-14 NPT, PG13.5, G1/2  
Two-conduit - PG13.5, G1/2

**Degree of Protection**

NEMA  
3,4,4X,6P,13  
IEC 144  
IP65

**Actuators**

Shaft  
Arm Lever



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**Model D4GS-N**

**Slim-Profile Safety Door Switch**

**Dimensions**

85 H x 30 W x 17 D mm  
(3.35 x 1.18 x 0.67 in.)

**Description**

Slim-profile plastic-bodied keyed door switch featuring "positive-opening" on all NC contacts. There are 2 different models available, top or side key entry. These switches come pre-wired in 1, 3 or 5 meters in length and have up to 3 sets of NC contacts.

**Switching Capacity**

2.5 A continuous @ 240 VAC

**Contact Configuration**

1 NO / 1NC – slow-action  
2 NC – slow-action  
1 NO / 2NC – slow-action  
3 NC – slow-action

**Mechanical Service Life**

1 million operations min.

**Electrical Service Life**

100,000 operations min.

**Connection**

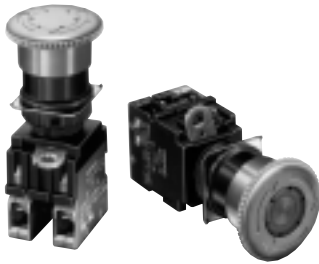
1, 3, or 5 meter pre-wired cable

**Degree of Protection**

IEC 144  
IP67

**Actuators**

Horizontal-mount Key  
Vertical-mount Key



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**Model  
A22**

**22 dia. Switches**

**Dimensions**

22mm mounting hole dia.  
30, 40 or 60 mm dia. buttons

**Description**

The A22 is a series of switches with a 22 mm diameter mounting hole dimension. Available models include: pushbutton, emergency stop button, key-type selector, knob-type selector and indicators. Some options include: lighted or non-lighted, momentary, latching, plus a variety of colours.

**Switching Capacity**

10 A continuous @ 440 VAC

**Contact Configuration**

SPST – NO  
SPST – NC  
DPST – NC

**Mechanical Service Life**

300,000 operations min.

**Electrical Service Life**

300,000 operations min.

**Connection**

Screw Terminal

**Degree of Protection**

IEC 144  
IP65

**Actuators**

A22 Pushbutton  
A22E Emergency Stop  
A22K Key-type Selector  
A22S/K Knob-type Selector  
M22 Indicator



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**Model  
G9S**

**Safety Relay Unit**

**Dimensions**

G9S-2\_\_\_ - 76H x 23W x 111D mm  
G9S-301 – 76H x 68W x 111D mm  
G9S-321/501 -76H x 91W x 111D mm

**Description**

The G9S is available with 2,3 or 5 pole outputs. Output delay models are available in 3 pole models. The G9S-2001/2 models have self-resetting fuses where as the 3 and 5 pole models have replaceable fuses.

**Input Channels**

G9S-2001 – 1 NC  
G9S-2002/301/321/501 – 1 or 2 NC

**Switching Capacity**

G9S-2\_\_\_ - 5 A @ 240 VAC  
G9S-301/321/501- 3 A @ 240 VAC

**Outputs**

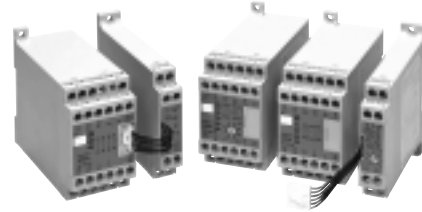
2, 3, 5

**Output Delay Times**

0.8 / 1 / 1.5 / 3 / 4 / 5 / 6 / 10 / 30 seconds

**Supply Voltage**

G9S-2001/2 – 24VDC  
G9S-3\_1/501:24VDC  
100VAC  
120VAC  
200VAC  
240VAC



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**Model  
G9SA**

**Slim-profile Safety Relay Unit**

**Dimensions**

G9SA- 76H x 23W x 111D mm  
G9SA-EX\_ – 76H x 17.5W x 111D mm

**Description**

The G9SA is available with 3 or 5 pole outputs with an additional 3 poles available with an expansion unit. Output delay models are available in 2 pole models and are expandable with 15 step selectable times in 7.5 / 15 and 30 second ranges. The new series also offers a Two-hand control or anti-tie down relay as well.

**Input Channels**

1 or 2 NC

**Switching Capacity**

5 A @ 250 VAC

**Outputs**

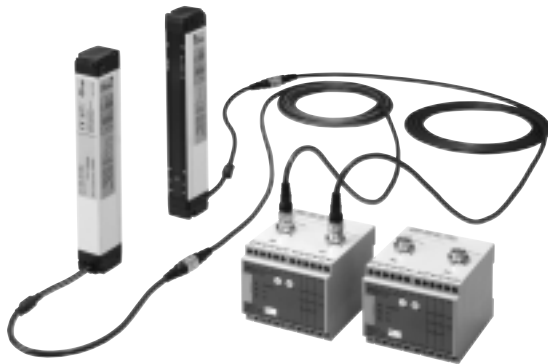
3 or 5 + 1 Aux.  
Expandable to 3 + 1 Aux.

**Output Delay Times**

15 step selectable times  
7.5 / 15 and 30 second ranges.

**Supply Voltage**

24 VAC/VDC  
100 to 240 VAC (CSA/UL Pending)



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### Model G9SA-300-SC

#### Safety Relay Unit / F3S-A\_P Interface

##### Dimensions

76H x 91W x 111D mm

##### Description

The G9SA-300-SC is Safety Relay Unit designed to be interfaced with the F3S-A\_P Type 4 Safety Light Curtain. It has two M12 connectors so the F3S-A\_P can be plugged directly into it without additional wiring. Plus, there are two external inputs to connect to an emergency stop or safety gate switches.

##### Input Channels

F3S-A\_P (M12 connectors)  
1 or 2 NC

##### Switching Capacity

5 A @ 250 VAC

##### Outputs

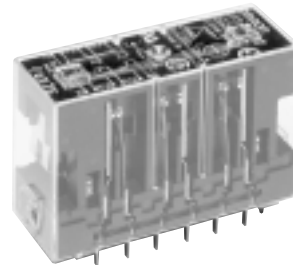
3 + 1 Aux.

##### Supply Voltage

24 VDC

##### Accessories

F3S-A\_P Interface Cables; 3 ,7 or 10 m



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### Model G7S

#### Safety Relay

##### Description

The G7S contributes to the protection of machinery when used as part of an interlocking circuit.

##### Contact Ratings

250 VAC / 24 VDC @ 3A max.

##### Contact Form

4A and 2B  
3A and 3B

##### Contact Type

Forcibly-guided

##### Min. Permissible Load

100mA @ 5VDC

##### Coil Specifications

24 VDC @ 0.8 W

##### Mechanical Service Life

10,000,000 operations min.

##### Electrical Service Life

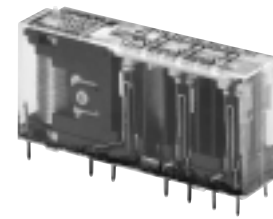
100,000 operations min.

##### Dielectric Strength

2,500 VAC—coil and contact  
1,500 VAC—between contacts

##### Operating Temperature

-25C to 70C



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### Model G7SA

#### Slim-profile Safety Relay

##### Description

The G7SA comes is a lower profile package than the G7S and contributes to the protection of machinery when used as part of an interlocking circuit.

##### Contact Ratings

250 VAC / 30 VDC @ 6A max.

##### Contact Form

4-pole  
3A and 1B  
2A and 2B  
6-pole  
5A and 1B  
4A and 2B  
3A and 3B

##### Contact Type

Forcibly-guided

##### Min. Permissible Load

1mA @ 5VDC

##### Coil Specifications

4-pole: 24 VDC @ 360 mW  
6-pole: 24VDC @ 500mW

##### Mechanical Service Life

10,000,000 operations min.

##### Electrical Service Life

100,000 operations min.

##### Dielectric Strength

2,500 VAC—coil and contact  
1,500 VAC—between contacts

##### Operating Temperature

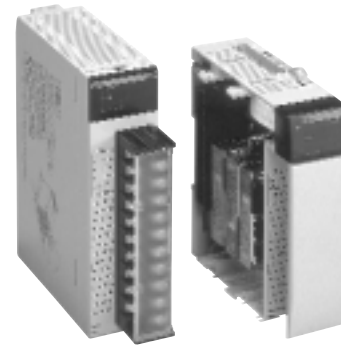
-40C to 85C



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**Model  
F3S-A\_P**

**Type 4 Safety Light Curtain**

**Dimensions**

30 W x 40 D mm

**Description**

The F3S-A\_P is a Safety Light Curtain with Type 4 approvals for use in the most dangerous situations. These units come with 10mm (finger) and 20mm (hand) protective beam spacing and have 2-PNP transistor outputs. "P" models have M12 connector extensions.

**Minimum Detectable Object**

10mm models – 15 mm (finger)  
20mm models – 25mm (hand)

**Supply Requirements**

24VDC @ 200mA max.(no load)

**Output Configuration**

Two – PNP transistors, 300mA max.

**Protective Heights**

10mm models:  
150, 310, 470 mm  
20mm models:  
140, 300, 460, 620, 940 mm

**Accessories**

Extension Cables; 3 ,7, 10 m  
Protective Lens Covers (Acrylic)  
Series Connection Cable (200mm)  
G9SA-300-SC (Safety Relay Unit)

**Model  
F3S-B**

**Type 2 Safety Light Curtain**

**Dimensions**

30 W x 40 D mm

**Description**

The F3S-B is a Safety Light Curtain with Type 2 approvals for use in category 2 situations or lower as per EN954. All units come with a 30 mm minimum detectable object size. Other features include: Fixed Blanking, External Relay Monitoring, Start/Restart Interlock, Output ON-Delay.

**Minimum Detectable Object**

25mm models – 30 mm (hand)

**Supply Requirements**

24VDC @ 400mA (no load)

**Output Configuration**

Two – PNP transistors, 200mA max.

**Protective Heights**

300 to 1650 mm

**Accessories**

Extension Cables; 3 ,7, 10 m  
E39-EU1E (Programming Unit)

**Model  
CQM1-SF200/CS1W-SF200**

**PLC Safety Relay Unit**

**Description**

These special I/O Cards fits right onto the backplane of Omron's CS1 or CQM1 PLC. It provides monitoring of power, inputs and output directly onto the PLC bus.

**Input Channels**

1 or 2 NC

**Switching Capacity**

5 A @ 250 VAC

**Outputs**

2 Poles

**Supply Voltage**

24 VDC @ 1.7W