

Unimax



Switch Catalogue 2005

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UNIMAX THE COMPLETE SAFETY CONCEPT

Over the last 25 years Unimax Switch has been established as the foremost manufacturer of high quality machine safety switch systems.

Under the new direction from our parent company, In2tec Ltd. The portfolio has been significantly expanded to support a comprehensive range of cost effective and innovative solutions.

The Unimax Interlock and Safety Switch devices are designed to provide a positive-action protection against accidents to personnel operating in the vicinity of potentially hazardous machinery and apparatus. Personnel safety demands a high measure of protection from hazardous machinery. To accomplish this every hazard point on a machine or other installation should be guarded by shields to prevent access during operation.

A Unimax Fail safe switch controls power to the hazardous area and it is actuated by a small movement of the guard, or the guard handle. An electromechanical bolt may be engaged to delay opening of the guard until a remote sensor signals that the area is safe.



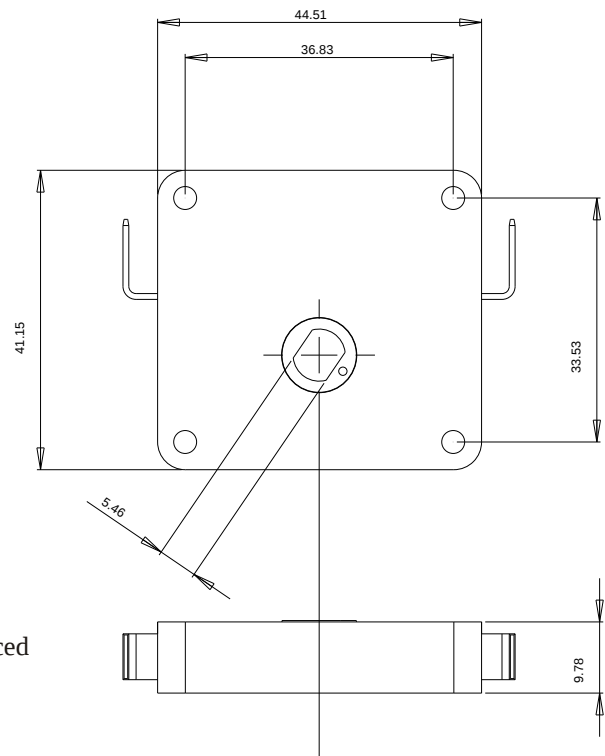
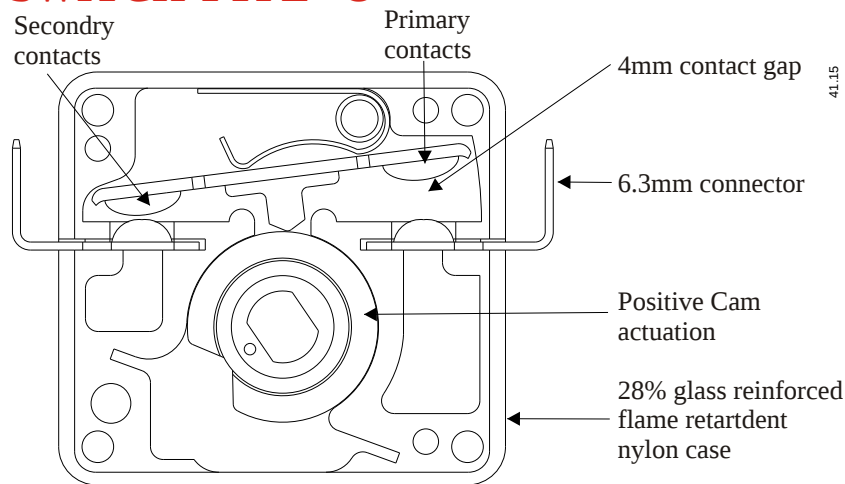
FAIL-SAFE SWITCHES

The Unimax Fail-Safe switch is the basis on which all Unimax Safety Interlocks Switches are based. Fitted in both the SAF and GW ranges, switch blocks are Available in three two and one-pole units. These positive break, fail-safe, load-switching controls may also be purchased without any additional hardware and actuated by the user's own mechanism.

Electrical ratings

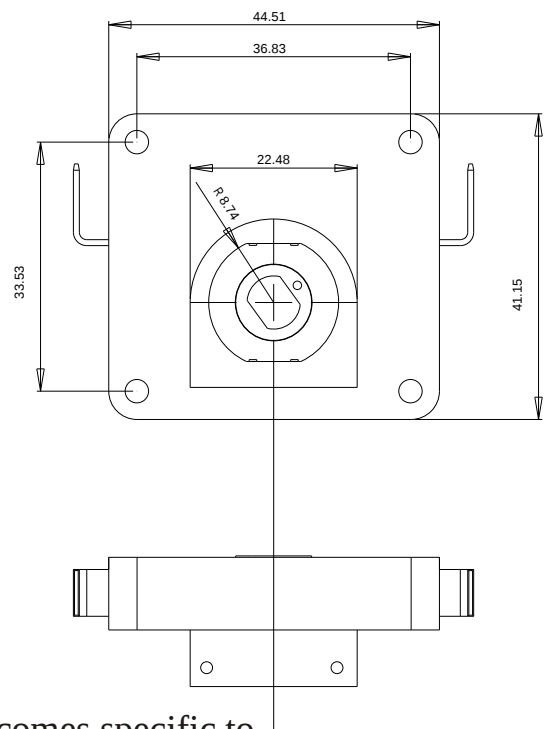
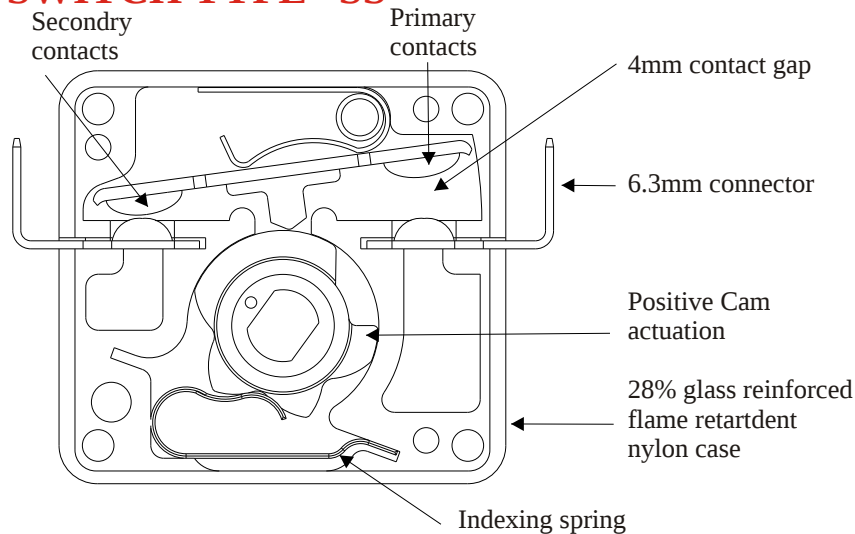
Manufactures rating	25A 250AC
CEE 24 Compliance	16(3)A 380V AC
UL/CSA Approval	15A 480V AC
Contact Gap	4mm Positive Break

SWITCH TYPE "O"



Fail Safe Features The contacts are forced open by a positive cam action. If the contacts weld the secondary contacts open and a shearing action then breaks the weld. Should a spring break, the contacts would still open and the design prevents any short-circuiting by a spring fragment.

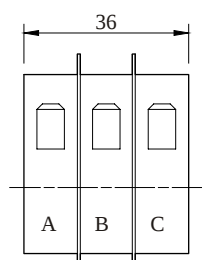
SWITCH TYPE "SS"



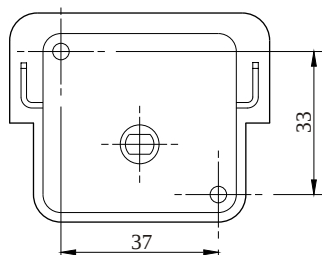
With a three position cam and indexing spring, the switch becomes specific to the Key-switch systems detailed on pages 4 to 15.

FAIL-SAFE SWITCHES

TYPE "0"

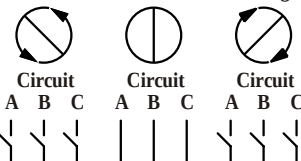


3-pole Fail-Safe Switch



2 holes 2.55 diameter for mounting

356° left 4° centre 356° right



Switch Function

Ordering Part No.

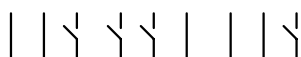
3-pole isolation

0/31



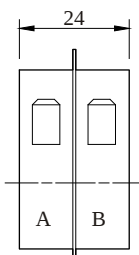
2-pole isolation and one switch for signal control

0/32

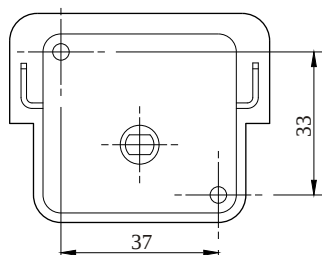


1-pole isolation and two switches for signal control

0/33

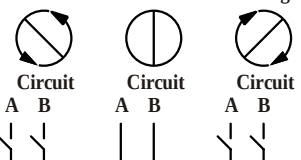


2-pole Fail-Safe Switch



2 holes 2.55 diameter for mounting

356° left 4° centre 356° right



Switch Function

Ordering Part No.

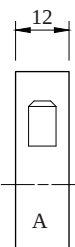
2-pole isolation

0/21

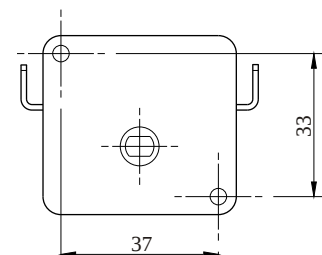


1-pole isolation and one switch for signal control

0/22

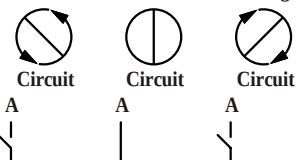


1-pole Fail-Safe Switch



2 holes 2.55 diameter for mounting

356° left 4° centre 356° right



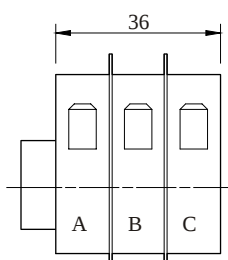
Switch Function

Ordering Part No.

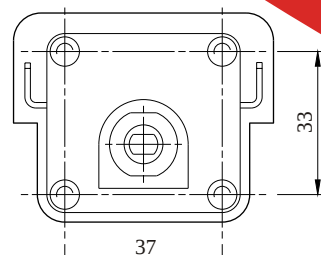
1-pole isolation

0/11

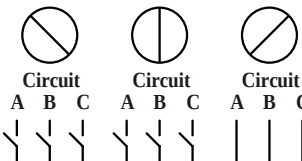
TYPE "SS"



3-pole Fail-Safe Switch



Position 1 Position 2 Position 3

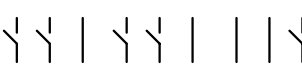


Switch Function

Ordering Part No.

3-pole isolation

SS/31



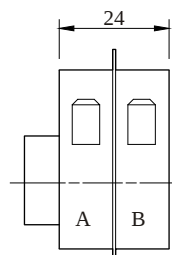
2-pole isolation and one switch for signal control

SS/32

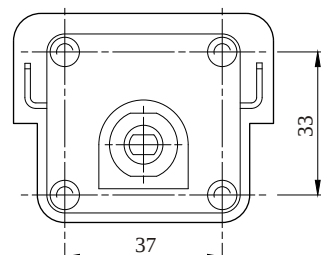


1-pole isolation and two switches for signal control

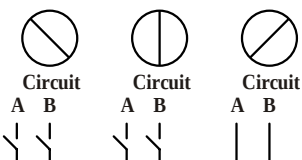
SS/33



2-pole Fail-Safe Switch



Position 1 Position 2 Position 3



Switch Function

Ordering Part No.

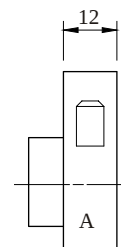
2-pole isolation

SS/21

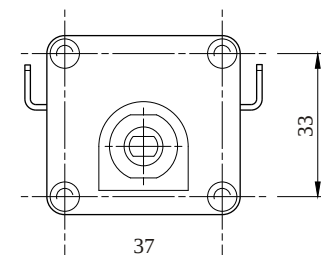


1-pole isolation and one switch for signal control

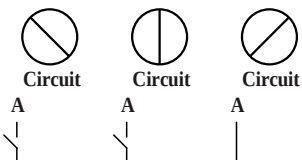
SS/22



1-pole Fail-Safe Switch



Position 1 Position 2 Position 3



Switch Function

Ordering Part No.

1-pole isolation

SS/11

SAF CAPTIVE KEY ACTUATION SYSTEM

The Captive Key System uses the patented stainless steel lock which was developed for severe environments. It is suitable for arduous and frequent use applications.

This type of system is suitable for removable, hinged or sliding guards. The switches are mounted inside an enclosure and can be actuated only through the lock mounted on the outer face.

Both Lock and enclosure are sealed to IEC 529 IP65 standard to prevent an ingress of water, oil and dust units maybe hosed for cleaning, as required by the food industry. The Actuating key is permanently mounted in the special handle which is supplied for fixing to the guard.(See page 22 for enclosure dimension details)

Stainless steel tamper proof screws secure the lid of the enclosure. The special key needed to remove them is supplied with each unit, together with full installation drawings.

Select guard handle from below and a key-switch type from the page opposite.

SAF2



Small knob moulded in black acetal polymer. Flange is die-cast in BS1004A zinc. Integral stainless steel AISI 304 key.

Dimensions 50mm radius 46mm height open 37mm closed.

SAF4



Lever handle and flange die-cast ZL3 BS1004A zinc. Handle is finished in red acrylic stoved enamel. Integral stainless steel AISI 304 key.

Dimensions 50mm radius 46mm height open 37mm closed.

SAF41



As above with added security lock in handle which can be locked in each of the three positions. Two security keys are included

SAF5



Large, firm grip knob and flange die-cast ZL3 BS1004A zinc. Handle is finished in red acrylic stoved enamel. Integral stainless steel AISI 304 key has a retractable shroud which protects the key and prevents it from being turned until fully engaged with the lock.

Dimensions 64mm radius 68mm height open 59mm closed.

SAF CAPTIVE KEY ACTUATION SYSTEM

Electrical ratings

Manufactures rating	25A 250AC
CEE 24 Compliance	16(3)A 380V AC
UL/CSA Approval	15A 480V AC
Contact Gap	4mm Positive Break



Single Pole (SS11)

Pole	Position 1	Position 2	Position 3
SPST	OFF	OFF	ON

Switch Function

1-pole isolation

Enclosure

Aluminium
Polycarbonate
Without Enclosure

Part no

SAF_B11M
SAF_B11P
SAF_B11

Double Pole (SS21)

Pole	Position 1	Position 2	Position 3
DPST	OFF	OFF	ON
DPST	OFF	OFF	ON

Switch Function

2-pole isolation

Enclosure

Aluminium
Polycarbonate
Without Enclosure

Part no

SAF_B21M
SAF_B21P
SAF_B21

Double Pole (SS22)

Pole	Position 1	Position 2	Position 3
DPST	OFF	OFF	ON
DPST	ON	ON	OFF

1-pole isolation
and one switch
for signal control

Aluminium
Polycarbonate
Without Enclosure

SAF_B22M
SAF_B22P
SAF_B22

Treble Pole (SS31)

Pole	Position 1	Position 2	Position 3
3PST	OFF	OFF	ON
3PST	OFF	OFF	ON
3PST	OFF	OFF	ON

Switch Function

2-pole isolation

Enclosure

Aluminium
Polycarbonate
Without Enclosure

Part no

SAF_B31M
SAF_B31PX
SAF_B31

Treble Pole (SS32)

Pole	Position 1	Position 2	Position 3
3PST	OFF	OFF	ON
3PST	OFF	OFF	ON
3PST	ON	ON	OFF

2-pole isolation
and one switch
for signal control

Aluminium
Polycarbonate
Without Enclosure

SAF_B32M
SAF_B32PX
SAF_B32

Treble Pole (SS33)

Pole	Position 1	Position 2	Position 3
3PST	OFF	OFF	ON
3PST	ON	ON	OFF
3PST	ON	ON	OFF

1-pole isolation
and two switches
for signal control

Aluminium
Polycarbonate
Without Enclosure

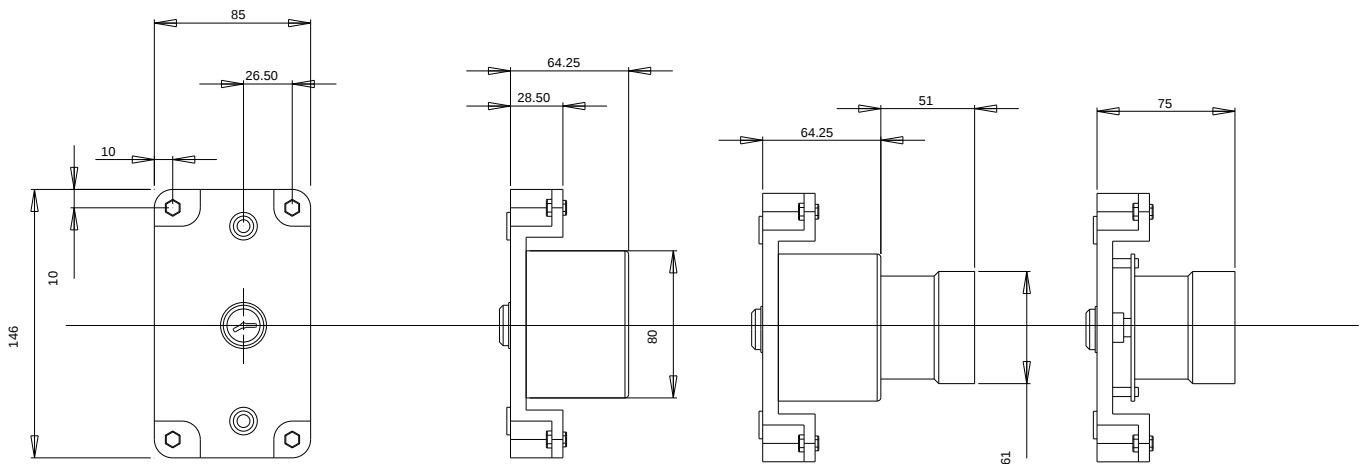
SAF_B33M
SAF_B33PX
SAF_B33

SAF CAPTIVE KEY HEAVY DUTY SYSTEM

The SAF heavy-duty interlock is in design and operation similar to the standard SAF interlock system. However the heavy-duty system is build with additional heavy-duty handle plates with hardened dowels and matching switch plates which have tapered receptors. These ensure that even on the heaviest of guards the key will enter the lock in line making these switches suitable for the largest of guards.

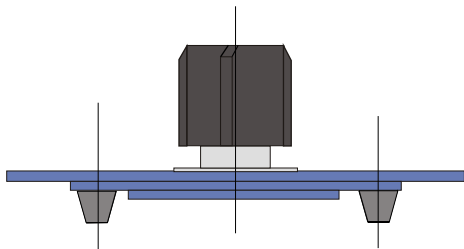
With these units we can also provide a safety circuit pneumatic valve in addition to or in place of the electrical switch. Suitable for pressures up to 10 bars (140psi) the value may also be used in pilot circuits of hydraulic systems.

Both Lock and enclosure are sealed to IEC 529 IP65 standard to prevent ingress of water, oil and dust units maybe hosed for cleaning, as required by the food industry. The Actuating key is permanently mounted in the special handle which is supplied for fixing to the guard. Stainless steel tamper proof screws secure the lid of the enclosure. The special key needed to remove them is supplied with each unit, together with full installation drawings.

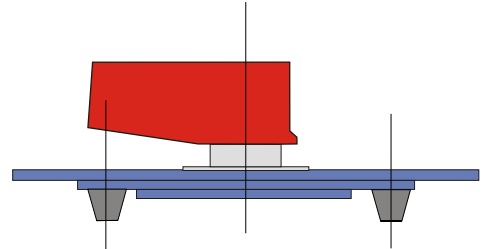


Select guard handle from below and key-switch type from the page opposite.

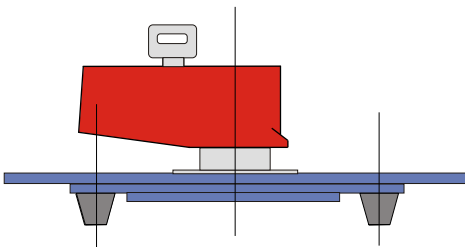
SAF2X Small knob moulded in black acetal polymer on a blue hammer finished die-cast aluminium plate.



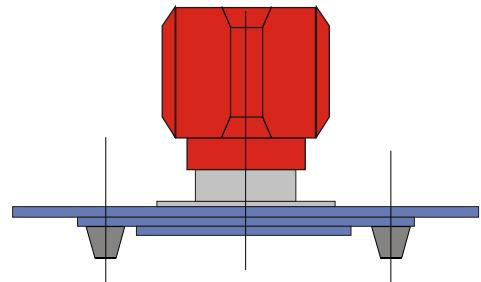
SAF4X Lever handle die-cast finished in red acrylic stoved enamel on blue hammer finished die-cast aluminium plate.



SAF41X As SAF4 but with a added security lock in handle which can be lock in any of 3 positions 2 security keys included



SAF5X large firm-grip die-cast knob finished in red acrylic stove enamel on a blue hammered finished die-cast aluminium plate



SAF CAPTIVE KEY HEAVY DUTY SYSTEM

Electrical ratings

Manufactures rating	25A 250AC
CEE 24 Compliance	16(3)A 380V AC
UL/CSA Approval	15A 480V AC
Contact Gap	4mm Positive Break



Single Pole (SS11)			
Pole	Position 1	Position 2	Position 3
SPST	OFF	OFF	ON

Switch Function

1-pole isolation

Type

Switch only
Switch and Valve
Valve Only

Part no

SAF_XB11
SAF_XB11V
SAF_XBV

Double Pole (SS21)			
Pole	Position 1	Position 2	Position 3
DPST	OFF	OFF	ON
DPST	OFF	OFF	ON

Switch Function

2-pole isolation

Type

Switch only
Switch and Valve
Valve Only

Part no

SAF_XB21
SAF_XB21V
SAF_XBV

Double Pole (SS22)			
Pole	Position 1	Position 2	Position 3
DPST	OFF	OFF	ON
DPST	ON	ON	OFF

1-pole isolation
and one switch
for signal control

Switch only
Switch and Valve
Valve Only

SAF_XB22
SAF_XB22V
SAF_XBV

Treble Pole (SS31)			
Pole	Position 1	Position 2	Position 3
3PST	OFF	OFF	ON
3PST	OFF	OFF	ON
3PST	OFF	OFF	ON

Switch Function

3-pole isolation

Type

Switch only
Switch and Valve
Valve Only

Part no

SAF_XB31
SAF_XB31V
SAF_XBV

Treble Pole (SS32)			
Pole	Position 1	Position 2	Position 3
3PST	OFF	OFF	ON
3PST	OFF	OFF	ON
3PST	ON	ON	OFF

1-pole isolation
and one switch
for signal control

Switch only
Switch and Valve
Valve Only

SAF_XB32
SAF_XB32V
SAF_XBV

Treble Pole (SS33)			
Pole	Position 1	Position 2	Position 3
3PST	OFF	OFF	ON
3PST	ON	ON	OFF
3PST	ON	ON	OFF

1-pole isolation
and one switch
for signal control

Switch only
Switch and Valve
Valve Only

SAF_XB33
SAF_XB33V
SAF_XBV

SAF CAPTIVE KEY REMOTE DELAY SYSTEM

Many industrial machines have inertial overrun when turned off. In these cases, it is vital that unlocking is delayed until the hazard is removed.

Unimax Remote Delay units have a safety bolt built into the switching unit which has to be withdrawn and are, therefore, fail-safe systems.

The interlock has three positions. When in the ON position, the machine can operate normally and access is prevented. In the OFF position access is still denied but the machine is isolated and allowed to run down to a safe condition. When the machine is safe, the OPEN position can be selected and the guard opened.

The remote delay interlock relies on outside sensing to trigger the electromechanical bolt which prevents the handle being turned from OFF to OPEN until all the control elements for safety have been met.

Both Lock and enclosure are sealed to IEC 529 IP65 standard to prevent ingress of water, oil and dust units maybe hosed for cleaning, as required by the food industry. The Actuating key is permanently mounted in the special handle which is supplied for fixing to the guard. Stainless steel tamper proof screws secure the lid of the enclosure. The special key needed to remove them is supplied with each unit, together with full installation drawings.(See page 22 for enclosure dimension details)

Select guard handle from table below and key-switch type from page opposite



SAF2

Small knob moulded in black acetal polymer. Flange is die-cast ZL3 BS1004A zinc. Integral stainless steel AISI 304 key. Dimensions: 50mm radius 46mm height open 37mm closed.



SAF4

Lever handle and flange die-cast ZL3 BS1004A zinc. Handle is finished in red acrylic stoved enamel. Integral stainless steel AISI 304 key.

Dimensions: 50mm radius 46mm height open 37mm closed.



SAF41

As above with added security lock in handle which can be locked in each of the three positions. Two security keys are included



SAF5

Large, firm grip knob and flange die-cast ZL3 BS1004A zinc. Handle is finished in red acrylic stoved enamel. Integral stainless steel AISI 304 key has a retractable shroud which protects the key and prevents it from being turned until fully engaged with the lock.

Dimensions: 64mm radius 68mm height open 59mm closed

SAF CAPTIVE KEY REMOTE DELAY SYSTEM

Electrical ratings

Manufactures rating	25A 250AC
CEE 24 Compliance	16(3)A 380V AC
UL/CSA Approval	15A 480V AC
Contact Gap	4mm Positive Break



Single Pole (SS11)			
Pole	Position 1	Position 2	Position 3
SPST	OFF	OFF	ON

Switch Function

1-pole isolation

Circuit

Remote 240v
Remote 120v
Remote 24v
Remote 24v DC

Part no

SAF_B11RD2C
SAF_B11RD3C
SAF_B11RD5C
SAF_B11RD6C

Double Pole (SS21)			
Pole	Position 1	Position 2	Position 3
DPST	OFF	OFF	ON
DPST	OFF	OFF	ON

Switch Function

2-pole isolation

Circuit

Remote 240v
Remote 120v
Remote 24v
Remote 24v DC

Part no

SAF_B21RD2C
SAF_B21RD3C
SAF_B21RD5C
SAF_B21RD6C

Double Pole (SS22)			
Pole	Position 1	Position 2	Position 3
DPST	OFF	OFF	ON
DPST	ON	ON	OFF

1-pole isolation
and one switch
for signal
control

Remote 240v
Remote 120v
Remote 24v
Remote 24v DC

SAF_B22RD2C
SAF_B22RD3C
SAF_B22RD5C
SAF_B22RD6C

Treble Pole (SS31)			
Pole	Position 1	Position 2	Position 3
3PST	OFF	OFF	ON
3PST	OFF	OFF	ON
3PST	OFF	OFF	ON

Switch Function

3-pole isolation

Circuit

Remote 240v
Remote 120v
Remote 24v
Remote 24v DC

Part no

SAF_B31RD2C
SAF_B31RD3C
SAF_B31RD5C
SAF_B31RD6C

Treble Pole (SS32)			
Pole	Position 1	Position 2	Position 3
3PST	OFF	OFF	ON
3PST	OFF	OFF	ON
3PST	ON	ON	OFF

2-pole isolation
and one switch
for signal
control

Remote 240v
Remote 120v
Remote 24v
Remote 24v DC

SAF_B32RD2C
SAF_B32RD3C
SAF_B32RD5C
SAF_B32RD6C

Treble Pole (SS33)			
Pole	Position 1	Position 2	Position 3
3PST	OFF	OFF	ON
3PST	ON	ON	OFF
3PST	ON	ON	OFF

1-pole isolation
and two switches
for signal
control

Remote 240v
Remote 120v
Remote 24v
Remote 24v DC

SAF_B33RD2C
SAF_B33RD3C
SAF_B33RD5C
SAF_B33RD6C

GW CAPTIVE KEY ACTUATION SYSTEM

The GW captive key system uses high security six-tumbler brass lock. The lock tumblers are external to the seals and maybe damaged by severe environments. For severe environments attention is drawn to the SAF system on pages 4 & 5.

This type of system is suitable for removable, hinged or sliding guards. the switches are mounted inside an enclosure and can be actuated only through the lock mounted on the outer face.

Both Lock and enclosure are sealed to IEC 529 IP65 standard to prevent ingress of water, oil and dust. The Actuating key is permanently mounted in the special handle which is supplied for fixing to the guard. (See page 22 for enclosure dimension details)

Stainless steel tamper proof screws secure the lid of the enclosure. The special key needed to remove them is supplied with each unit, together with full installation drawings.

Select guard handle from below and key-switch type from the page opposite.



GW5

Small knob moulded in black acetal polymer. Flange is die-cast ZL3 BS1004A zinc. Integral 6-bit stainless steel AISI 316 key.

Dimensions 48mm radius 45mm height open 36mm closed.



GW7

Lever handle and flange die-cast ZL3 BS1004A zinc. Handle is finished in red acrylic stoved enamel. Integral 6-bit stainless steel AISI 316 key.

Dimensions 48mm radius 44mm height open 35mm closed.



GW61

Flush, when closed and operated by a 4mm socket key. Nickel plated brass with integral 6-bit nickel plated key. Dimensions 41mm radius 11mm height open 2mm closed.

GW CAPTIVE KEY ACTUATION SYSTEM

Electrical ratings

Manufactures rating	25A 250AC
CEE 24 Compliance	16(3)A 380V AC
UL/CSA Approval	15A 480V AC
Contact Gap	4mm Positive Break



Single Pole (SS11)			
Pole	Position 1	Position 2	Position 3
SPST	OFF	OFF	ON

Switch Function

1-pole isolation

Enclosure

Aluminium
Polycarbonate
Without Enclosure

Part no

GW_11M
GW_11P
GW_11

Double Pole (SS21)			
Pole	Position 1	Position 2	Position 3
DPST	OFF	OFF	ON
DPST	OFF	OFF	ON

Switch Function

2-pole isolation

Enclosure

Aluminium
Polycarbonate
Without Enclosure

Part no

GW_21M
GW_21P
GW_21

Double Pole (SS22)			
Pole	Position 1	Position 2	Position 3
DPST	OFF	OFF	ON
DPST	ON	ON	OFF

1-pole isolation
and one switch
for signal control

Aluminium
Polycarbonate
Without Enclosure

GW_22M
GW_22P
GW_22

Treble Pole (SS31)			
Pole	Position 1	Position 2	Position 3
3PST	OFF	OFF	ON
3PST	OFF	OFF	ON
3PST	OFF	OFF	ON

Switch Function

3-pole isolation

Enclosure

Aluminium
Polycarbonate
Without Enclosure

Part no

GW_31M
GW_31PX
GW_31

Treble Pole (SS32)			
Pole	Position 1	Position 2	Position 3
3PST	OFF	OFF	ON
3PST	OFF	OFF	ON
3PST	ON	ON	OFF

2-pole isolation
and one switch
for signal control

Aluminium
Polycarbonate
Without Enclosure

GW_32M
GW_32PX
GW_32

Treble Pole (SS33)			
Pole	Position 1	Position 2	Position 3
3PST	OFF	OFF	ON
3PST	ON	ON	OFF
3PST	ON	ON	OFF

1-pole isolation
and two switches
for signal control

Aluminium
Polycarbonate
Without Enclosure

GW_33M
GW_33PX
GW_33

GW CAPTIVE KEY REMOTE DELAY SYSTEM

Many industrial machines have inertial overrun when turned off. In these cases, it is vital that unlocking is delayed until the hazard is removed.

Unimax remote delay units have a safety bolt built into the switching unit which has to be withdrawn and are therefore fail-safe systems. The interlock has three positions. When in the ON position, the machine can operate normally and access is prevented. In the OFF position access is still denied but the machine is isolated and allowed to run down to a safe condition. When the machine is safe then the OPEN position can be selected and the guard opened.

The remote delay interlock relies on outside sensing to trigger the electromechanical bolt which prevents the handle being turned from OFF to OPEN until all the control elements for safety have been met.

This type of system is suitable for removable, hinged or sliding guards. The switches are mounted inside an enclosure and can be actuated only through the lock mounted on the outer face. Both Lock and enclosure are sealed to IEC 529 IP65 standard to prevent ingress of water, oil and dust. The Actuating key is permanently mounted in the special handle which is supplied for fixing to the guard. Stainless steel tamper proof screws secure the lid of the enclosure. The special key needed to remove them is supplied with each unit, together with full installation drawings. (see page 22 for enclosure dimension details)

Select guard handle from below and key-switch type from the page opposite.



GW5

Small knob moulded in black acetal polymer. Flange is die-cast in ZL3 BS1004A zinc. Integral 6-bit stainless steel AISI 316 key.

Dimensions 48mm radius 45mm height open 36mm closed.



GW7

Lever handle and flange die-cast ZL3 BS1004A zinc. Handle is finished in red acrylic stoved enamel. Integral 6-bit AISI 316 steel key.

Dimensions 48mm radius 44mm height open 35mm closed.



GW61

Flush, when closed and operated by a 4mm socket key. Nickel plated brass with integral 6-bit nickel plated key.

Dimensions 41mm radius 11mm height open 2mm closed.

GW CAPTIVE KEY REMOTE DELAY SYSTEM

Electrical ratings

Manufactures rating	25A 250AC
CEE 24 Compliance	16(3)A 380V AC
UL/CSA Approval	15A 480V AC
Contact Gap	4mm Positive Break



Single Pole (SS11)			
Pole	Position 1	Position 2	Position 3
SPST	OFF	OFF	ON

Switch Function

1-pole isolation

Circuit

Remote 240v
Remote 120v
Remote 24v
Remote 24v DC

Part no

GW_11RD2C
GW_11RD3C
GW_11RD5C
GW_11RD6C

Double Pole (SS21)			
Pole	Position 1	Position 2	Position 3
DPST	OFF	OFF	ON
DPST	OFF	OFF	ON
Double Pole (SS22)			
Pole	Position 1	Position 2	Position 3
DPST	OFF	OFF	ON
DPST	ON	ON	OFF

Switch Function

2-pole isolation

Circuit

Remote 240v
Remote 120v
Remote 24v
Remote 24v DC

Part no

GW_21RD2C
GW_21RD3C
GW_21RD5C
GW_21RD6C

Treble Pole (SS31)			
Pole	Position 1	Position 2	Position 3
3PST	OFF	OFF	ON
3PST	OFF	OFF	ON
3PST	OFF	OFF	ON
Treble Pole (SS32)			
Pole	Position 1	Position 2	Position 3
3PST	OFF	OFF	ON
3PST	OFF	OFF	ON
3PST	ON	ON	OFF
Treble Pole (SS33)			
Pole	Position 1	Position 2	Position 3
3PST	OFF	OFF	ON
3PST	ON	ON	OFF
3PST	ON	ON	OFF

Switch Function

3-pole isolation

Circuit

Remote 240v
Remote 120v
Remote 24v
Remote 24v DC

Part no

GW_31RD2C
GW_31RD3C
GW_31RD5C
GW_31RD6C

2-pole isolation
and one switch
for signal
control

Remote 240v

Remote 120v
Remote 24v
Remote 24v DC

GW_32RD2C

GW_32RD3C
GW_32RD5C
GW_32RD6C

1-pole isolation
and two switches
for signal
control

Remote 240v

Remote 120v
Remote 24v
Remote 24v DC

GW_33RD2C

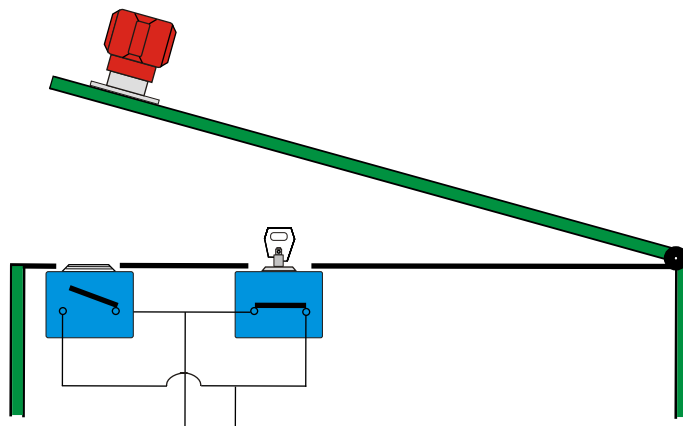
GW_33RD3C
GW_33RD5C
GW_33RD6C

MAINTENANCE SWITCH SYSTEM

It may be necessary to allow a responsible person to switch ON with a guard open, for setting -up and maintenance. Unimax strongly recommends the installation of a special high security key-switch such as the seven-tumbler GW14 series.

Maintenance keys are available for Captive Key Systems but great care must be exercised in their allocation and use.

All 3 types of maintenance key are held captive in their respective key-switches through positions 2 and 3 being only released in position 1. Key-switches must be sited so that the key shank projecting from the lock prevents closing of the guard as a reminder to remove the key after use. Keys used to override captive key systems will, by design always obstruct the guard.



GW14

For use with 7 tumbler (GWLK2) lock, special high security Maintenance Key-Switches. This is the only recommended maintenance key.

GW3001

For use with 6 tumbler (GWLK1) lock used in all standard GW range switches.

SAF1

For use with stainless steel(SAFB1) lock used in all SAF range switches.



MAINTENANCE SWITCH SYSTEM

Electrical ratings

Manufactures rating	25A 250AC
CEE 24 Compliance	16(3)A 380V AC
UL/CSA Approval	15A 480V AC
Contact Gap	4mm Positive Break



Single Pole (SS11)			
Pole	Position 1	Position 2	Position 3
SPST	OFF	OFF	ON

Switch Function	Enclosure	Part no
1-pole isolation	Aluminium	GW1411M
	Polycarbonate	GW1411P
	Without Enclosure	Gw1411

Double Pole (SS21)			
Pole	Position 1	Position 2	Position 3
DPST	OFF	OFF	ON
DPST	OFF	OFF	ON
Double Pole (SS22)			
Pole	Position 1	Position 2	Position 3
DPST	OFF	OFF	ON
DPST	ON	ON	OFF

Switch Function	Enclosure	Part no
2-pole isolation	Aluminium	GW1421M
	Polycarbonate	GW1421P
	Without Enclosure	Gw1421

1-pole isolation and one switch for signal control	Aluminium	GW1422M
	Polycarbonate	GW1422P
	Without Enclosure	Gw1422

Treble Pole (SS31)			
Pole	Position 1	Position 2	Position 3
3PST	OFF	OFF	ON
3PST	OFF	OFF	ON
3PST	OFF	OFF	ON
Treble Pole (SS32)			
Pole	Position 1	Position 2	Position 3
3PST	OFF	OFF	ON
3PST	OFF	OFF	ON
3PST	ON	ON	OFF
Treble Pole (SS33)			
Pole	Position 1	Position 2	Position 3
3PST	OFF	OFF	ON
3PST	ON	ON	OFF
3PST	ON	ON	OFF

Switch Function	Enclosure	Part no
3-pole isolation	Aluminium	GW1431M
	Polycarbonate	GW1431PX
	Without Enclosure	Gw1431

2-pole isolation and one switch for signal control	Aluminium	GW1432M
	Polycarbonate	GW1432PX
	Without Enclosure	Gw1432

1-pole isolation and two switches for signal control	Aluminium	GW1433M
	Polycarbonate	GW1433PX
	Without Enclosure	Gw1433

HINGE SWITCH SYSTEM

The Hinge-Switch is for safe guarding personnel against hazards contained within a perimeter fence, but may also be used at machine loading stations.

The hinge switch responds to the slightest opening movement of a gate or guard. The stainless steel shaft can be rotated through 360 degrees and is adjusted to switch within 2 degrees of movement in either direction. Shafts are supplied bored and cross drilled ready for fixing to an extended hinge pin.

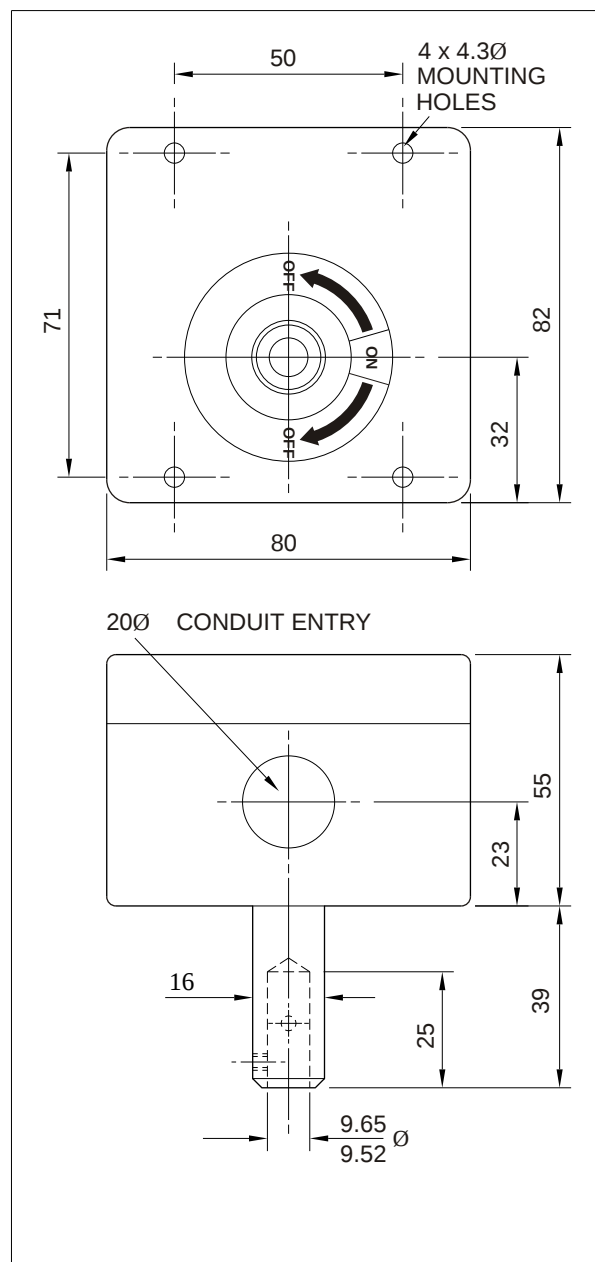
Model type GW81 is only available in metal enclosures and is sealed to IEC 529 IP65 to prevent ingress of water, oil and dust and may be hosed for cleaning.

Model type GW8 switches and shaft are mounted on a flexible platform inside the enclosure for installations where the guard hinge may not be properly aligned with the fixing surface. This model is not sealed where the shaft enters the box.

The die cast aluminium enclosure has four mounting holes, any two of which will adequately secure the unit.

Stainless steel tamper-proof screws secure the lid and the special key needed to remove them is included, together with full installation drawings.

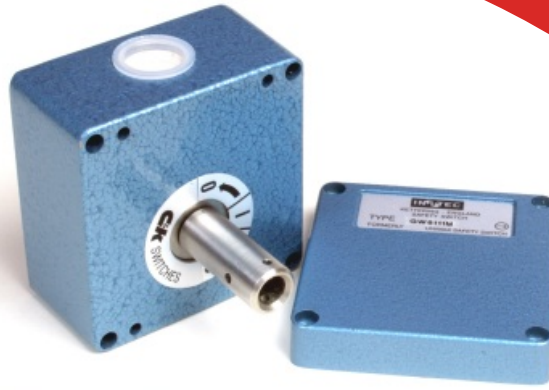
Conduit entries shown are stock standard. Special requirements can be manufactured to order.



HINGE SWITCH SYSTEM

Electrical ratings

Manufactures rating	25A 250AC
CEE 24 Compliance	16(3)A 380V AC
UL/CSA Approval	15A 480V AC
Contact Gap	4mm Positive Break



Single Pole (GW011)			
Pole	356 Left	4 Centre	356 Right
SPST	OFF	ON	OFF

Switch Function

1-pole isolation

Shaft

Bored and cross-drilled

Part no

GW811P
GW_11M
GW8111M

Double Pole (GW021)			
Pole	356 Left	4 Centre	356 Right
DPST	OFF	ON	OFF
DPST	OFF	ON	OFF
Double Pole (GW022)			
Pole	356 Left	4 Centre	356 Right
DPST	ON	OFF	ON
DPST	OFF	ON	OFF

Switch Function

2-pole isolation

Shaft

Bored and cross-drilled

Part no

GW821P
GW821M
GW8121M

Treble Pole (GW031)			
Pole	356 Left	4 Centre	356 Right
3PST	OFF	ON	OFF
3PST	OFF	ON	OFF
3PST	OFF	ON	OFF
Treble Pole (GW032)			
Pole	356 Left	4 Centre	356 Right
3PST	ON	OFF	ON
3PST	OFF	ON	OFF
3PST	OFF	ON	OFF
Treble Pole (GW033)			
Pole	356 Left	4 Centre	356 Right
3PST	ON	OFF	ON
3PST	ON	OFF	ON
3PST	OFF	ON	OFF

Switch Function

3-pole isolation

Shaft

Bored and cross-drilled

Part no

GW831P
GW831M
GW8131M

2-pole isolation and one switch for signal control

Bored and cross-drilled

GW832P
GW832M
GW8132M

1-pole isolation and two switches for signal control

Bored and cross drilled

GW833P
GW833M
GW8133M

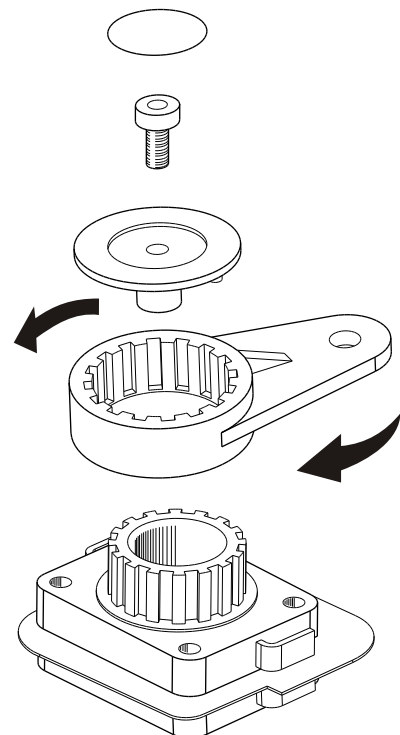
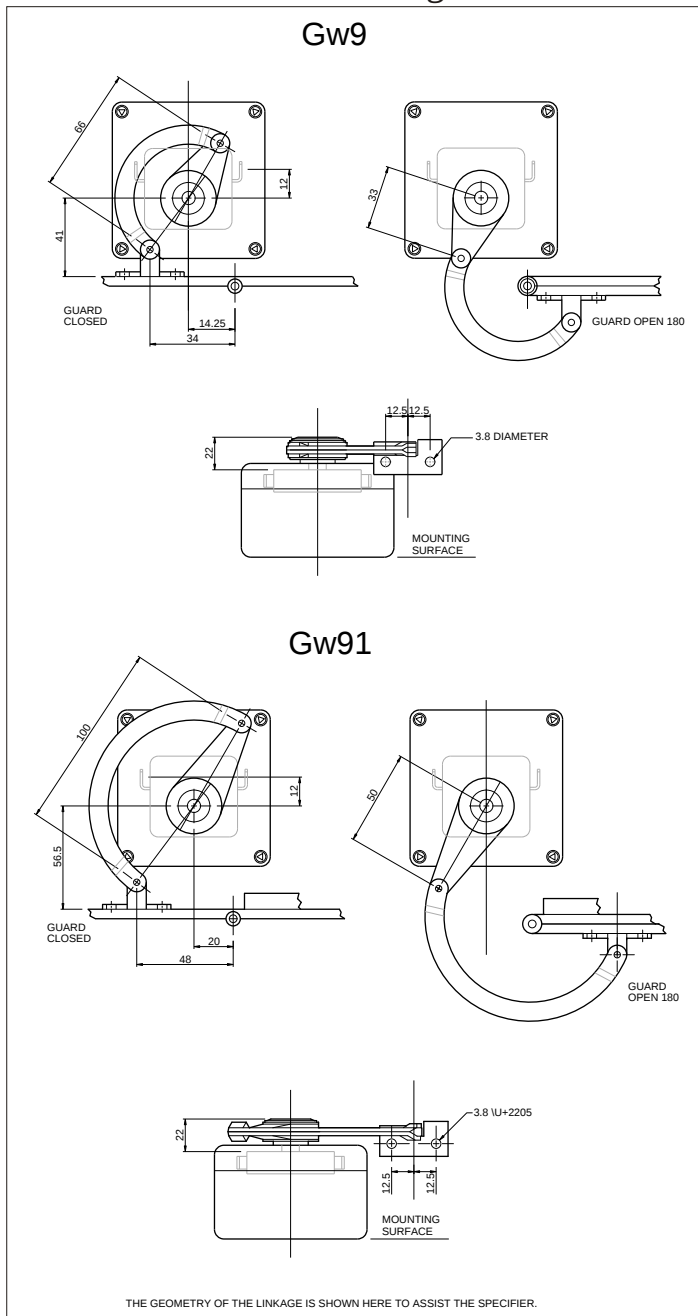
LINK SWITCH SYSTEM

The Unimax link switch is for safeguarding machine operators at loading stations, but has many other uses.

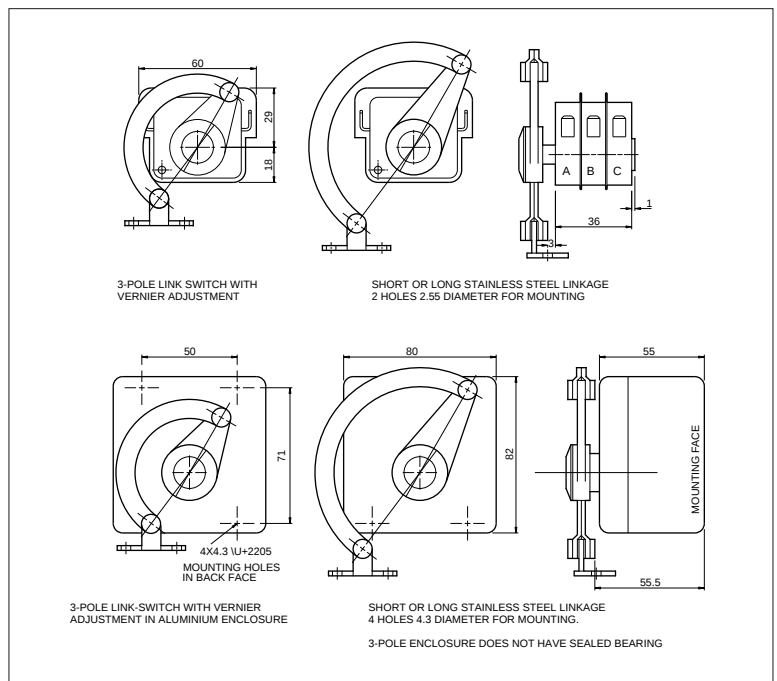
The link switch responds to the slightest opening movement of the guard yet facilitates 180 degrees of fast and frequent opening.

Fully enclosed units are available but also link switches without enclosures are also supplied. The link and bracket are stainless steel and the crankshaft is acetal polymer. Link Switches are available in aluminium and polycarbonate sealed to IEC 529 Ip65 and have four mounting holes, any two of which will adequately secure the unit. (For enclosure details see page 22)

Stainless steel tamper proof screws secure the lid and the special key needed to remove them is included, together with full installation drawings.



Vernier adjustment enables the installation engineer to set switching point relative to the guard movement.



LINK SWITCH SYSTEM

Electrical ratings

Manufactures rating	25A 250AC
CEE 24 Compliance	16(3)A 380V AC
UL/CSA Approval	15A 480V AC
Contact Gap	4mm Positive Break



Single Pole (GW011)			
Pole	356 Left	4 Centre	356 Right
SPST	OFF	ON	OFF

Switch Function

1-pole isolation

Linkage

Short enclosed
long Enclosed
short
long

Part no

GW911M
GW9111M
Gw911
Gw9111

Double Pole (GW021)			
Pole	356 Left	4 Centre	356 Right
DPST	OFF	ON	OFF
DPST	OFF	ON	OFF

Switch Function

2-pole isolation

Linkage

Short enclosed
long Enclosed
short
long

Part no

GW921M
GW9121M
Gw921
Gw9121

Double Pole (GW022)			
Pole	356 Left	4 Centre	356 Right
DPST	ON	OFF	ON
DPST	OFF	ON	OFF

1-pole isolation
and one switch
for signal
control

Short enclosed
long Enclosed
short
long

GW922M
GW9122M
Gw922
Gw9122

Treble Pole (GW031)			
Pole	356 Left	4 Centre	356 Right
3PST	OFF	ON	OFF
3PST	OFF	ON	OFF
3PST	OFF	ON	OFF

Switch Function

3-pole isolation

Linkage

Short enclosed
long Enclosed
short
long

Part no

GW931M
GW9131M
Gw931
Gw9131

Treble Pole (GW032)			
Pole	356 Left	4 Centre	356 Right
3PST	ON	OFF	ON
3PST	OFF	ON	OFF
3PST	OFF	ON	OFF

2-pole isolation
and one switch
for signal
control

Short enclosed
long Enclosed
short
long

GW932M
GW9132M
Gw932
Gw9132

Treble Pole (GW033)			
Pole	356 Left	4 Centre	356 Right
3PST	ON	OFF	ON
3PST	ON	OFF	ON
3PST	OFF	ON	OFF

1-pole isolation
and two switches
for signal
control

Short enclosed
long Enclosed
short
long

GW933M
GW9133M
Gw933
Gw9133

All options Available in plastic enclosure change M to P in part number

EMERGENCY STOP SWITCH SYSTEM

The Emergency stop switch is new to the Unimax range built to the same high standard as the Interlock switches.

40mm mushroom head range of press to lock emergency stop buttons available in 3 styles; twist to release, key to release and pull to release (to latest machine safety directives). Fully sealed to IEC 529 IP65. All fitted with red buttons.

The contact blocks are positive action UL and CSA rated and enclosed in polycarbonate or die-cast metal enclosures.

Enclosures have four mounting holes any two of which will adequately secure the unit and are fitted with tamper-proof screws that secure the lid, the special key needed to remove them is provided.(See page 22 for enclosure dimension details)

Description

Part Number



40mm twist release actuator

EMT



40mm pull release actuator

EMP



40mm key release actuator

EMK

EMERGENCY STOP SWITCH SYSTEM

Electrical ratings

Making and breaking capacity
AC 6A, 415V AC-DC 1A, 220V DC
rated thermal current 10A
Ambient temp -25 to 75 degrees
Mechanical Life 3 x 10,5
Terminal Capacity 2.5mm
short circuit protection 10A gl 500V fused
Dielectric strength 3kV (1sec)



please use table below to select required switch type

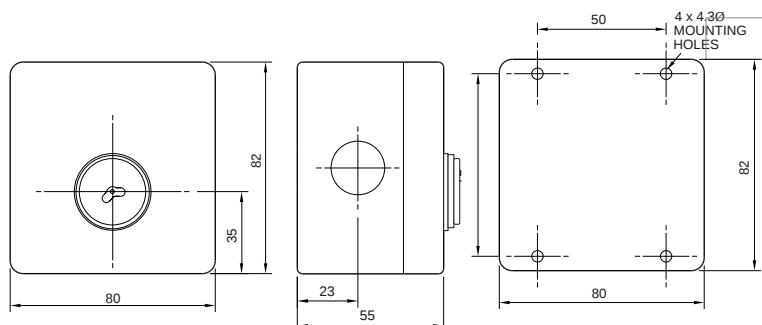
Actuator	Part number		
twist release	EMT		
pull release	EMP		
key release	EMK		
Switch Circuit			
single pole n/c		11	
single pole n/o		12	
double pole 2 n/c		21	
double pole 1 n/c 1 n/o		22	
double pole 2 n/o		23	
three pole 3 n/c		31	
three pole 2 n/c 1 n/o		32	
three pole 1 n/c 2 n/o		33	
three pole 3 n/o		34	
four pole 4 n/c		41	
four pole 3 n/c 1 n/o		42	
four pole 2 n/c 2 n/o		43	
four pole 1 n/c 3 n/o		44	
four pole 4 n/o		45	
Enclosure			
polycarbonate std			P
polycarbonate extra deep			PX
metal die cast			M

Select Actuator, switch contacts and enclosure from table above to make final switch unit
Example (EMT31PX). Twist release actuated three pole n/c polycarbonate enclosure extra deep.

ENCLOSURES AND ACCESSORIES

Unimax Enclosure details

Standard enclosures “P, M” SAF/GW/EM ranges

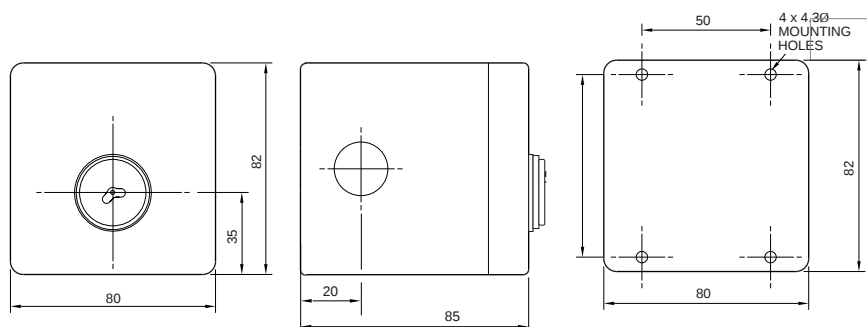


Order part number

EMP	Polycarbonate
GWP	Polycarbonate
SAFP	Polycarbonate
EMM	Aluminium
GWM	Aluminium
SAFM	Aluminium

Enclosure shown with SAF lock fitted also available with GW lock or 22mm hole cut out.

Extra deep enclosure “PX” SAF/GW/EM ranges

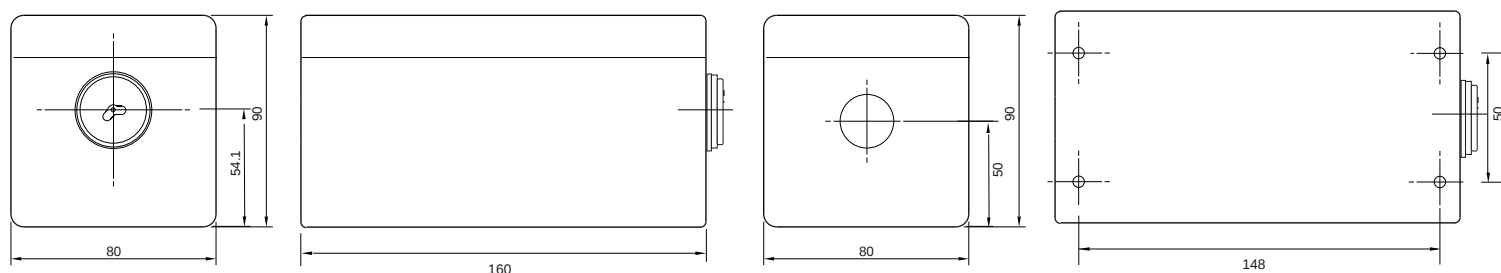


Order part number

EMPX	Polycarbonate
GWPX	Polycarbonate
SAFPX	Polycarbonate

Enclosure shown with SAF lock fitted also available with GW lock or 22mm hole cut out.

Remote delay enclosure “C” SAF/GW/EM ranges



Enclosure shown with SAF lock fitted also available with GW lock or 22mm hole cut out.

Order part number

EMRDPC	Polycarbonate
GWRDPC	Polycarbonate
SAFRDPC	Polycarbonate

Aluminium Castings conforms to BS 1490:1988 Lm24

All Enclosures are rated at IEC 529, I P 65

Also available T071 socket tool for removal of enclosure screws
(supplied with every complete switch and enclosure)

ENCLOSURES AND ACCESSORIES

Unimax provide a range of spare parts and accessories for there interlock product range.

Switch blocks

All ranges pages 2 & 3

Actuators

GW range see page 10

SAF range see page 4

Enclosures

All ranges page 22

Locks

Unimax use 3 types of lock in there switches all can be purchase as separate items



GWLK1

Fitted as the standard lock in the GW series this lock is ZL3 zinc alloy BS1004 (alloy A) six-bit nickel plated high-security lock.

Sealed to IEC 529 IP65 to prevent ingress of water and dust. Tumblers are external to the seal and maybe damaged in severe environments. Attention is drawn to the SAFB1 lock for difficult environments.



GWLK2

Fitted in the Maintenance system this lock is a seven tumbler special high security. GWLK2 is the only lock recommended for maintenance applications.



SAFB1

Fitted as the standard lock in the SAF series. The patented stainless steel lock was developed for severe environments. It is suitable for arduous and frequent-use applications. Sealed to IEC 529 IP65 it is ideal for food processing and similar industries as it maybe hosed down.

FLEXIBLE PUSH SWITCH

The Flexible push switch utilises Unimax parent company In2tec's vast experience in Elastomeric keymats and membrane switch circuits on both membrane flexi-circuits and PCB based products.

Type	Part Number	Button Colour	LED Colour
Non illuminated	PS 4920	Blk(2) Red(3) Grn(6)	NNX
illuminated	PS 4921	Blk(2)	REX/GEX

Example : Order part number PS49212REX
(illuminated black button red Led)



This Design can be used in a wide variety of environment. Ip67 sealing is a relatively simple option using this technology An innovative approach to the development of a single push-button switch has resulted in a patent application for a low profile momentary action low current integrated switch design.

The market demand for simple push switch with optional illumination resulted in a unit, which can be installed simply and is able to be easily customised to suit many applications. Suitable for high volume low voltage applications, where space is at a premium. Providing a cost effective solution with optimum environmental protection.

Constructed with silicone body, PCB and tactile metal disc with 2 (4 if illuminated) flying leads for termination and interconnection. Standard options are Black body with button colours of Black Green or Red. Illuminated button options black button with Red or Green illuminated perimeter and symbols. Other options or custom products maybe available. For information on standard symbols or custom products contact the factory direct on 01536 419200.

Technical Data

Switch function	Spst momentary NO
Contact rating	1VA 100mA 48V DC max
Operating life	250 k tactile
Loop contact resistance	<1ohm typical
Actuation force	typical 8-12 N
Travel	0.5-1.0mm typical
Storage temp	-30 to +100 °C
Operating temp	-20 to +80 °C (illuminated limit +65 °C)
Mounting	13.5-14.0mm hole 2-3mm panel thickness
Sealing capability	IP 67
Weight	4.0gms non illuminated 5.5gms illuminated typical
Termination	150mm flying leads

FLEXIBLE ROCKER SWITCH

For more than 10 years, IN2TEC (UNIMAX parent company) has been designing and moulding Elastomeric keymats as the actuator layer for many different types of membrane circuits. Often this technology is expected to mimic the characteristics of electromechanical switches. This can be very challenging since most electromechanical switches are made up from separate parts like springs, bushings and actuators.

Rocker switches have often been the most difficult type of switch to design into rubber keymats without giving up the familiar rocker feel of a electromechanical switch



Now our broad experience and innovative flair have combined to produce a rocker switch which can be designed as part of a rubber keymat or as a single unit with a feel of a electromechanical switch.

Unimax FLEX-ROCKER is a low profile momentary action low current rocker switch design. A simple low cost rocker switch with optional backlighting, that is easily custom designed to suit end user applications.

The benefits of the FLEX-ROCKER are from its low cost to the ability to be sealed to IP67. The rockers can have legends illuminated in a number of colours with either LED, fiberoptic or EL backlighting. With the option of hard coating the silicon button where abrasion is an issue.

Technical Data

Electrical Power Resistance

Silver printed track per track Max 0.5Watts Ohm/cm Typical non arcing

Resistance per joint .3 Ohm/cm Typical

Circuit Voltage 100 volts dependant on design

Typical rating per switch 1 to 10mA

Standard Max 100mA

Switch Capacitance 10pF Typical

Dielectric Volume

Material Strength Resistivity

Polyester 125kV/mm 10 GOhm.cm

Polycarbonate 67kV/mm 100 MOhm.cm

IP rating 54 to 67 Dependant on design

Environment

Operating temperature -30 to 120C subject to Design

Illumination Methods

LED Indicator or full backlight

Mechanical Typically .3 to .5 mm + component height

Stroke Typically 0.5 to 1mm

Note: The above data is approximate and for information only.

4000 SERIES KEYPAD

4000 series standard keypads

Standard graphic red button on black background, sealed switches splash proof
Graphic overlay resists chemicals Built-in static shield, standard 6 inch flexible tail
with female connector. Detent available for tactile feedback
Customer graphics and tails available.

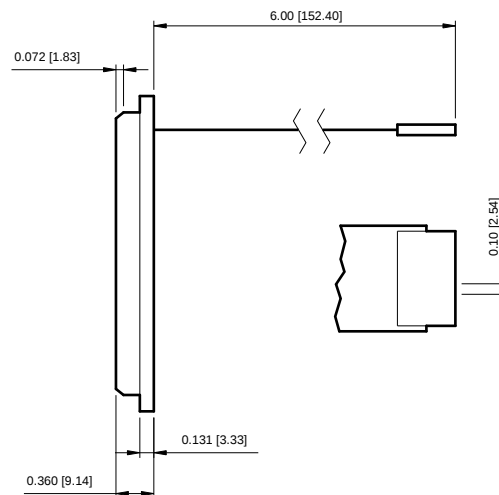
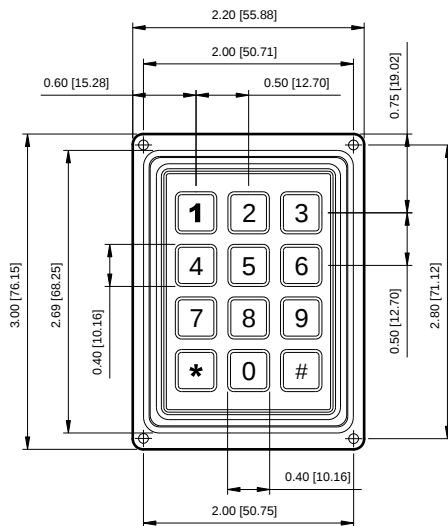
Specifications

Switch function: SPST momentary, normally open
Contact Rating: 0.5VA, 100mA, 30V DC max.
Electrical Life: 2,000,000 cycles(tactile) 5,000,000 cycles (non-tactile)
Loop Contact resistance: 50 ohms typ.
Contact Bounce: Below 10 msec. Typ.
Actuation Force: 200-300g typ.(tactile) 85-140g typ.(non-tactile)
Travel: 0.63-0.76mm typ.(tactile) 0.20-0.25mm (non-tactile)
Storage Temperature: -40 C to 80 C (60 C max tactile)
Operating Temperature: -30 C to 70 C (60 C max. Tactile)

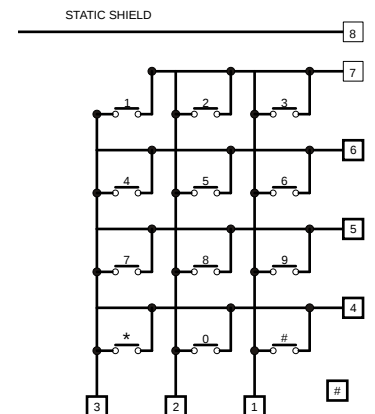


3 X 4 Array

Part Number	Operation	Connector
4A01T322PCFQ	Tactile	Female
4A01T322NCFQ	Non Tactile	Female

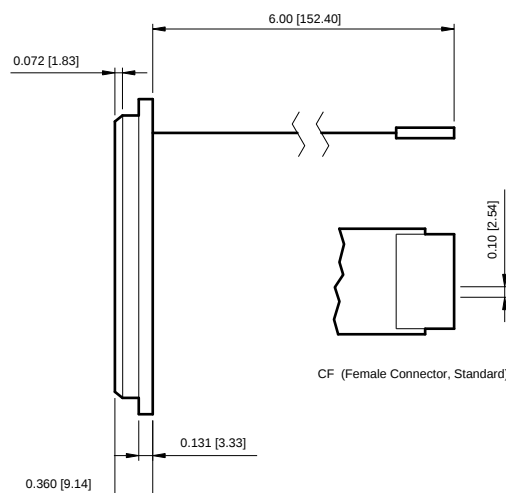
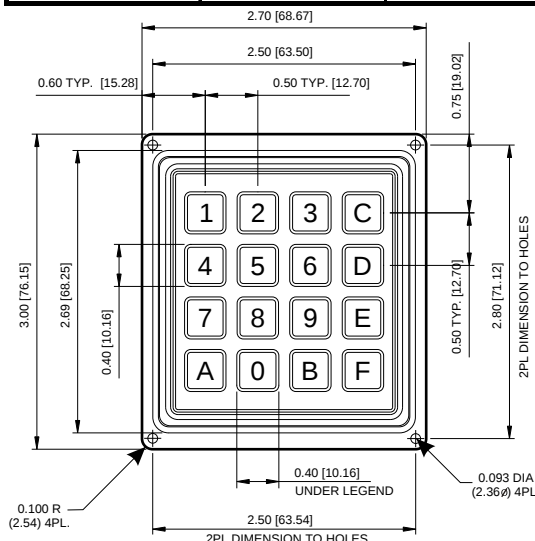


Schematic

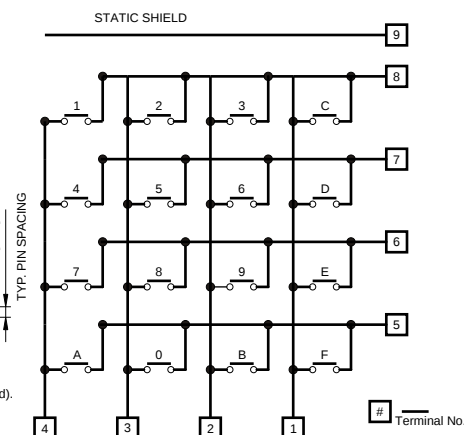


4 X 4 Array

Part Number	Operation	Connector
4B01H322PCFQ	Tactile	Female
4B01H322NCFQ	Non Tactile	Female



Schematic



X - Y Matrix output configuration with static shield.
Switch function - SPST N.O. Momentary.

4200 SERIES KEYPAD

4200 series insert legend keypads

Adhesive backed for east mounting allows for custom legends
Tactile feedback on all keys, Rim embossed keys for finger placement
Splash proof, sealed switches

Specifations

Switch function SPST, momentary, normally open
contact rating 0.5va 100ma, 30 V dc max
Actuation force 300 50 grams
insulation resistance 5 megohms min
Dielectric strength 250 v rms min
Capacitance 10pF typ.
Contact Bounce below 10 msec typ.
Travel 0.63-0.76mm typ.
Storage temp -40c to 60c.
Operating temp -30c to 60c



1X 4 Array 4 Keys (Part number 4214A1)

3 X 4 Array 12 Keys (Part number 4234A1)

4 X 4 Array 16 Keys (Part number 4244A1)

4800 SERIES KEYPAD

4800 Series Vandal Resistant Keypad

Stainless steel vandal resistant construction, brushed stainless finish.
Used in ATM and other outdoor applications Keys and faceplate sealed IP 66.
Low profile with Positive tactile feedback.

Specifications

Contact Rating: 0.1mA-50mA
Voltage: 1.5V DC min to 30V DC max (resistive smooth supply)
Contact resistance less than 45 ohms.
Switch power 1.5 watt max
Contact Bounce 20msec.max
Dielectric strength 100 V rms for 1 min
Insulation resistance 10 megohms at 40 C, 93% r.h.

1x 4 Array 4 Keys (Part Number 4814S1)



3 x 4 Array 4 Keys (Part Number 4834S1)



4 x 4 Array 4 Keys (Part Number 4844S1)



PRODUCT APPLICATION CHART

SAFETY PRODUCT APPLICATION CHART

SWITCH FAMILY GROUP	SWITCH TYPE	TYPE NUMBER	FEATURES							
			SUITABLE FOR SLIDING GUARDS	SUITABLE FOR HINGED GUARDS	SUITABLE FOR LIFT OFF GUARDS	MECHANICALLY OPERATED	METAL CASE	PLASTIC CASE	REMOTE CONTROLLED	IP RATING
CAPTIVE KEY INTERLOCK SWITCHES	STD	GW / SAF								65
	REMOTE DELAY	GW / SAF								65
	HEAVY DUTY	SAFXB								65
CAPTIVE INTERLOCK POSITION SWITCHES	HINGE OPERATED	GW8								
	HINGE OPERATED	GW81								65
	LINK OPERATED	GW9								65
	LINK OPERATED	GW91								65
EMERGENCY STOP SWITCHES	PUSH / KEY TWIST OPERATED									65

To use the chart

Select from the switch family group the type of switch required and cross reference the features offered. Or, check the features required and cross reference back to show the group most suitable. For full details refer to the relevant section

Cheating and tampering

No device is totally proof against the wrongdoer. Anyone determined to jeopardise their own or their colleagues lives or well being can neutralise a safety devise. However, when installed in the correct manner Unimax Safety Switches are fool-proof and fail to safety cannot be by-passed accidentally or easily rendered inoperative



Unimax Switch

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