



Machine Safety Sensing Control Products Automation Solutions

262.652.8660
www.safeworkplace.org

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DOLD 

REES

SDKELI[®]

BIRCHER
Reglomat

 **REER**

ASO **Safety**
Solutions

 **pizzato**

 **COMITRONIC - BTI**

 **BERNSTEIN**

 **Shan Pu**


SIATECH

SOPHIA 

 **CATTRON**

SUNSTM
INDUSTRIAL SWITCHES
INTERNATIONAL, LLC

Machine Safety Products

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Wireless Emergency Stop Buttons

RADIO CONTROLLED SAFETY SYSTEM - PAIR MODE

SAFEMASTER W - Wireless Safety Wireless Functional Safety in pair mode

The safety approved, bidirectional radio controlled safety system UH 6900 from the SAFEMASTER W series, is for the transmission of safety inputs such as E-stop and conventional control functions and offers great flexibility for the protection of hazardous areas. By implementing the latest radio controlled technologies, a high degree of availability, a wide range, and safety is achieved. Two safety zones can easily be connected wirelessly over a considerable distance. The main application areas include applications covering large areas and mobile applications such as fully automated conveyor systems and driverless transport systems. Simple and inexpensive retrofitting of existing safety systems can also be achieved wirelessly with this system.

- For safety applications up to Cat. 4 / PL e or SIL CL 3
- High availability with long transmission range
- Two-channel safety inputs and outputs
- Control inputs and outputs
- Quick Start, fast set-up procedure
- Convenient diagnostic options



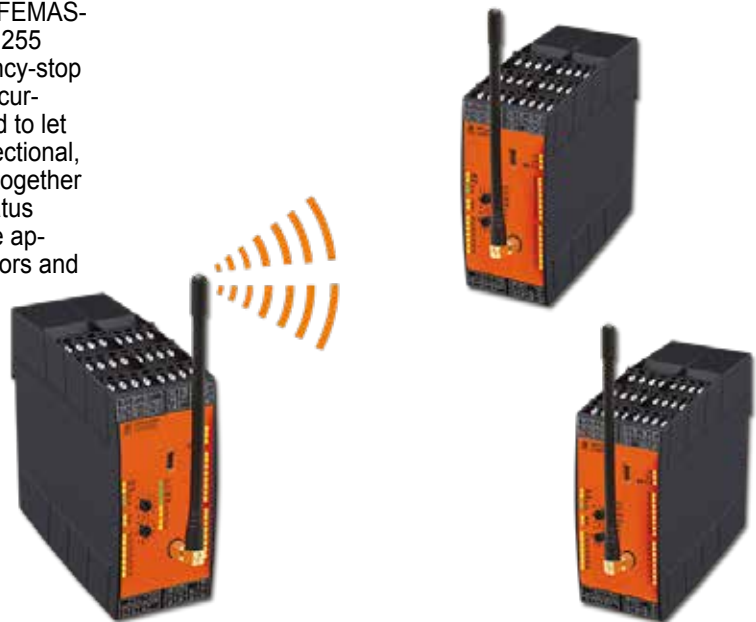
DOLD 

RADIO CONTROLLED SAFETY SYSTEM - GROUP MODE

SAFEMASTER W - Wireless Safety Wireless Functional Safety in group mode

The radio controlled safety system UH 6900 of the SAFEMASTER W series comprising a group controller and up to 255 group receivers for the safety transmission of emergency-stop and control functions provides more flexibility when securing dangerous areas. The group controller can be used to let several receivers securely shut down through a unidirectional, safety radio transmission. Furthermore, the controller together with a receiver can exchange indicator, control and status information. The main application areas include mobile applications, such as completely-automated floor conveyors and automated guided vehicles.

- For safety applications up to Cat. 4 / PL e or SIL CL 3
- High availability with long transmission range
- Two-channel safety inputs and outputs (Group receiver)
- Control inputs and outputs
- Quick Start, fast set-up procedure
- Convenient diagnostic options



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Wireless Emergency Stop Buttons

SAFEMASTER W



Radio controlled safety system UH 6900 -In group mode

The radio controlled safety system UH 6900 of the SAFEMASTER W series, consisting of one group controller and up to 255 group receivers for the safety-related, wireless transmission of emergency stop and control functions, offers more flexibility in safeguarding hazardous areas. High availability, long range and safety are achieved by implementing the latest radio technologies. With the group controller, several receivers can be safely switched off via a unidirectional, safety-related radio link. Furthermore, the controller can exchange message, control and status information with a receiving device.

The devices enable the connection of up to 3 two-channel safety sensors (emergency stop, LC, safety door, two-hand etc.) and offer simple configuration as well as extensive evaluation and diagnostic options.

The main areas of application include mobile applications such as fully automated floor conveyors and driverless transport systems. A simple and cost-effective retro-fitting of existing safety systems can also be realized without wiring.

Advantages and customer benefits:

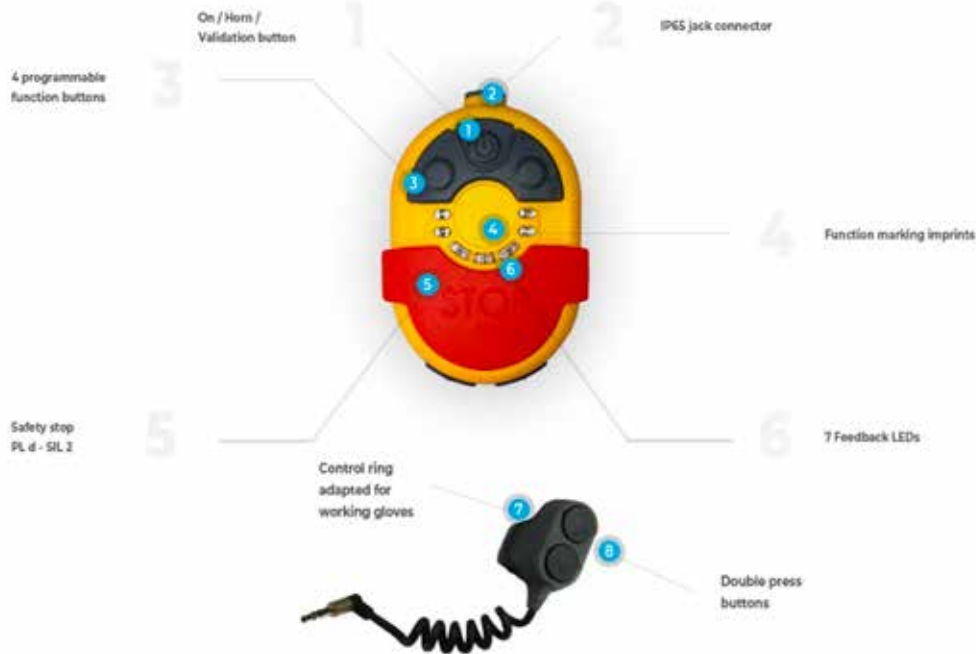
- For safety applications up to Cat. 4 / PL e or SIL 3, TÜV certified
- Safety-related, unidirectional emergency-stop transmission in group mode
- High availability at long distance (up to 800 m)
- Quick start, fast set-up procedure
- Reliable data transmission and low susceptibility to interference
- Comprehensive fault localization and diagnosis
- Two-channel safety inputs / outputs
- Control inputs / outputs
- Integrated analysis of the existing radio network



Wireless Emergency Stop Buttons

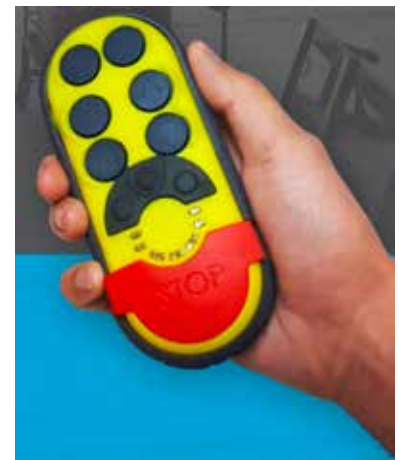
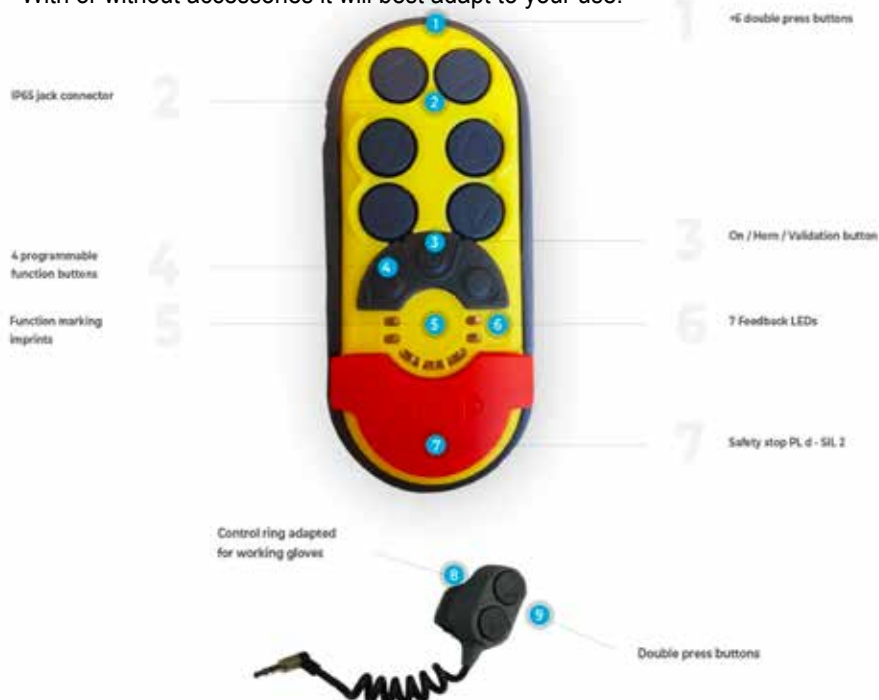
COMHAND

COMING FALL 2020! Free your hands! Perform your tasks easily and enjoy more ergonomics and versatility with this innovative remote control.



BABHAND

COMING FALL 2020! Gain flexibility with this compact and versatile remote control. With or without accessories it will best adapt to your use.



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Emergency Stop Buttons

REMTRON SAFE-T-STOP (WIRELESS)

- Large red Safe-T-Stop button
- Up to seven functions possible
- Can be used in operations that require UL913

Intrinsically Safe

UL listed for Class 1, Division 1, Group D available for T09, T10, T14 and T18

Configurations

24T09-01 – Two pushbuttons (On/Alarm, Off/Stop), large red stop button

24T09-02 – Two pushbuttons (On/Alarm, Off/Stop) 3 rocker switches, large red stop button

Housing: IP65 enclosure

Frequency: 902 - 928 MHz

Commands: Up to seven functions including three rocker switches, On/Alarm and Off/Stop buttons



MULTIFUNCTIONAL SAFETY RELAYS

SAFEMASTER C - Safety plus multifunctionality

Whether it is used as an individual device or integrated in complex safety systems - with SAFEMASTER C, you always have the right solution for protecting people and machinery. With the compact multifunctional safety switching devices from DOLD, various safety-oriented inputs, such as emergency stop, safety door, et cetera, are assigned to a single output. An additional important advantage of SAFEMASTER C is the cost-savings as a result of its multifunctionality: through taking up less space in the control cabinet than monofunctional safety devices, through reduced storage needs and through the simple and fast calibration of the safety functions and operating modes.



117.07.18 EN / 001A VARIBOX EMERGENCY STOP DEVICE

- NI 5061.06: Emergency stop with 2 NC contacts (forced opening)
- NI 5061.43: Emergency stop with 2 NC contacts (forced opening) 1 NO contact
- M12-connection – NI 5061.06: 4-poles – NI 5061.43: 8-poles
- Twist release left or right
- Foolproof acc. to EN ISO 13850
- According to EN 60947-5-1, EN 60947-5-5
- Approvals and Markings: CE
- Degree of protection: IP 65
- Contacts: 4-poles 2 NC contacts (forced opening)
- 8-poles 2 NC cont. (forced opening) + 1 NO cont.
- Force opening distance: > 3 mm



Emergency Stop Buttons

ILLUMINATED EMERGENCY BUTTON WITH LED INDICATORS

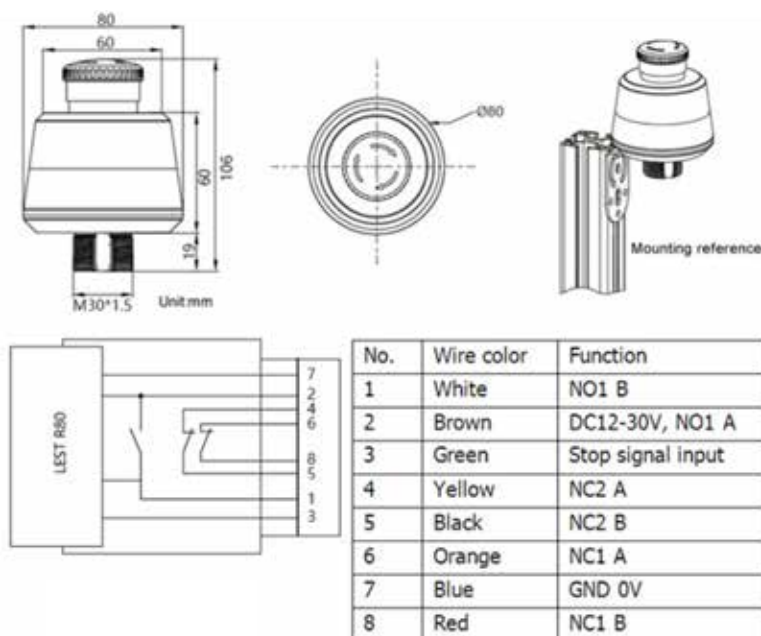
Widely used in automation industry, machines, automatic production lines, conveyor.



R80 Red Yellow



R80 Red Green



STOCK ITEM:

- R80 – Yellow LED
“operating mode”
- Red LED Flashing
“E-stop mode”

ADDITIONAL TECHNICAL DATA:

- [R80 Illuminated Emergency Stop Button 80mm Diameter PDF](#)

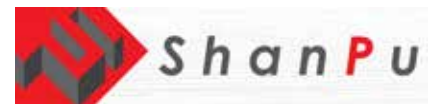
Item No.	R80 Red-Yellow
Standard voltage	DC 12-30V
Maximum current(LED color)	150mA@12V dc, 80mA @24V dc, 60mA@30V dc
Press button	Insulation resistance: >100MΩ; Impulse withstand voltage:2500VAC One minute Life cycle:>250,000 times
Color options	Red, Yellow,Red Solid On or Flashing
LED flash rate	1.6Hz at 50% duty cycle
	>7.2V, Input impedance 10K
Electrical protection	Over current protection, Over voltage protection, Reverse connection protection
IP rating	IP65
Vibration resistance	10Hz to 500Hz, amplitude 0.35mm acceleration 50m/s²
Shock resistance	150m/s²
Connection	1meter cable or M12 QD with 30cm cable
Working temperature (°C)	-20°C~50°C
Max Op. Relative Humidity	95% at50°C
Dimension	80mmx106mm(ODxH)
Mounting thread	M30x1.5mm
Material	ABS and Polyamide
Approval	CE FCC
Feature	Combine Emergency stop and indication functions. More convenient M30x1.5 thread, Easy to install 40mm button diameter, industrial standard, TUV approval, safe and reliable Latest LED technology. Red, Yellow. When press button, Red Steady ON or Flashing.

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Emergency Stop Buttons

EMERGENCY STOP ILLUMINATED SWITCHES SERIES SF66BB



General Specifications

Emergency stop switches

Switch Load

: 0.75A/250VAC ; 1A/30V DC

Operating Force

: Push to lock: 1100gf

: Pull to reset: 900gf

: Turn to reset: 1700gf-cm

Total Travel

: 4.5mm

Mechanical Life

: 100,000 cycles Min.

Operating Temperature

: -25 °C~+60 °C

Buzzer

Resonant frequency

: 3100±300 Hz

Sound pressure level

: Min. 85dB(A)

LED

: RGB

Application

- Industrial equipment
- Public building
- CNC Machine tool
- Medical equipment

Feature

- Panel cutting Ø66mm
- Front Panel IP65(SF66BB0□)
IP40(SF66BBB□)
- Emergency stop switch
- RGB LED Illuminated
- Buzzer

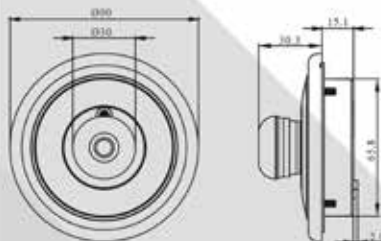
STOCK ITEM:

- Yellow LED
“operating mode”
- Red LED “E-stop mode”
without buzzer

ADDITIONAL TECHNICAL DATA:

- [SF66BD Series PDF](#)

Dimension of SF66BBB□ (Buzzer)



Front bezel color:
Black P/N: SF66BBB5
Yellow P/N: SF66BBB2

Pin Description & Contact Configuration

Pin	I/O	Function
1	I	VCC (3V~24V)
2	I	Reference tables 1) or (2)
3	I	Reference tables 1) or (2)
4	I	Reference tables 1) or (2)
5	I	GND (Ground)
6	I	DIN (Data input)
7	I	Switch
8	O	Switch Common



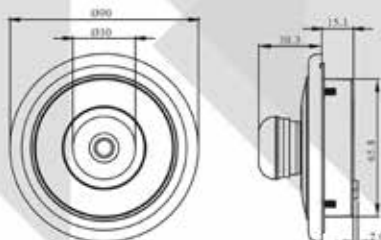
SW Pull up



SW Push down



Dimension of SF66BB0□ (Without Buzzer)



Front bezel color:
Black P/N: SF66BB05
Yellow P/N: SF66BB02

Table(1) SF66BBB□ (Buzzer)

Pin select short	Not Triggered	Triggered
2 3 4	Green Led	Red Led+Buzzer
• X X	Green Led	Explosion Flash Red / White Led+Buzzer
X • X	Rotating Green Led	Red Led+Buzzer
• • X	Rotating Green Led	Explosion Flash Red / White Led+Buzzer
X • •	Beath Green Led	Red Led+Buzzer
• • •	Beath Green Led	Explosion Flash Red / White Led+Buzzer

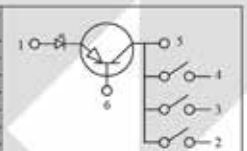
NOTE: X=Not Connector •=Connector to Pin 5(GND)



Table(2) SF66BB0□ (Without Buzzer)

Pin select short	Not Triggered	Triggered
2 3 4	Green Led	Red Led
• X X	Green Led	Explosion Flash Red / White Led
X • X	Rotating Green Led	Red Led
• • X	Rotating Green Led	Explosion Flash Red / White Led
X • •	Beath Green Led	Red Led
• • •	Beath Green Led	Explosion Flash Red / White Led

NOTE: X=Not Connector •=Connector to Pin 5(GND)



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Emergency Stop Buttons

22.5 MM

"HEAVY DUTY – A600 / N150"

Operator Color	Red
Padlock Feature	Yes
Switch Type	Maintained UL/NISD
Positive Opening Contact	Yes
Adapter Included	No
Legend Plate Included	No
Contact Block(s) Included	50703-NO/NC



22102-102

22.5 MM

"HEAVY DUTY – A600 / N150"

Operator Color	Red
Padlock Feature	Yes
Switch Type	Maintained UL/NISD
Positive Opening Contact	Yes
Adapter Included	No
Legend Plate Included	No
Contact Block(s) Included	(2) 50703 (2) NO/NC



22102-122

22.5 MM

"HEAVY DUTY – A600 / N150"

Operator Color	Red
Padlock Feature	No
Switch Type	Maintained UL/NISD
Positive Opening Contact	Yes
Adapter Included	No
Legend Plate Included	No
Contact Block(s) Included	50716 50723 NC/NO Make before Break



22102-202

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Emergency Stop Buttons

22.5 MM

"HEAVY DUTY – A600 / N150"

Operator Color	Red
Padlock Feature	Yes
Switch Type	Maintained UL/NISD
Positive Opening Contact	Yes
Adapter Included	No
Legend Plate Included	No
Contact Block(s) Included	(2) 52702 NC NC Opens upon Removal



22102-312

30.5MM

"HEAVY DUTY – A600 / N150"

Operator Color	Red
Operator Material, Size, Style	2.00 in. Plastic Mushroom
Padlock Feature	Yes
Switch Type	Maintained UL/NISD
Positive Opening Contact	Yes
Contact Block(s) Included	50703-NO/NC
Operating Force	8.0 lb
Approx. Shipping Weight	0.80 lb
Plunger Head Operator Replacement	43200-042
Operating Type	Maintained



40102-102

30.5MM

"HEAVY DUTY – A600 / N150"

Operator Color	Red
Operator Material, Size, Style	2.00 in. Plastic Mushroom
Padlock Feature	Yes
Switch Type	Maintained UL/NISD
Positive Opening Contact	Yes
Contact Block(s) Included	(2) 50703 (2) NO/NC
Operating Force	8.0 lb
Approx. Shipping Weight	0.80 lb
Plunger Head Operator Replacement	43200-042
Operating Type	Maintained



40102-122

Emergency Stop Buttons

30.5MM

"HEAVY DUTY – A600 / N150"

Operator Color	Red
Operator Material, Size, Style	2.00 in. Plastic Mushroom
Padlock Feature	Yes
Switch Type	Maintained UL/NISD
Positive Opening Contact	No
Contact Block(s) Included	(2) 52702 + 50724 (2) NC / (1) NO NC Opens upon Removal
Operating Force	12.0 lb
Approx. Shipping Weight	0.80 lb
Plunger Head Operator Replacement	43200-042
Operating Type	Maintained



40102-212

2.25 INCH MUSHROOM PLUNGER WITH SPRING LATCH

"HEAVY DUTY – A600 / N300"

Listed under UL 508 – File # E 58589

Certified under CSA C22.2 – File # LR 3648

CE Compliant IEC/EN 60947-5-1

Third party certified under DEMKO Certificate # D-01496-M1

Plunger Color	Black
Cover Color	Black
Operating Force	12.5 lb
Lock Hole Diameter	0.31 in
Latch/Plunger Operation	Latches when depressed Operate latch to release
Positive Opening Contact	Yes
Contact Arrangement	#09 NO + NC
Contact Type	Slow-Make Slow-Break
Switches comply with	IEC/EN 60947-5-1



22.5 & 30 MM LEGEND PLATES



09022-004

NEW PHOTO COMING

EMERGENCY STOP



Designed to mount to the single or double plunger pushbuttons and ring guards. Made from clear anodized aluminum with black lettering. Used on single plunger switches.



09001-004

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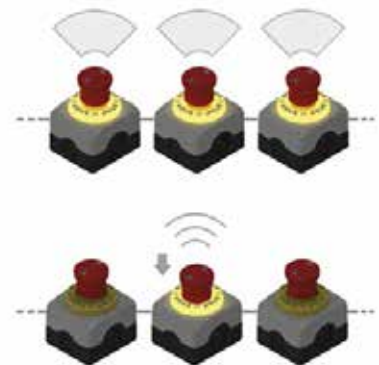
Emergency Stop Buttons

DUAL PURPOSE ILLUMINATED RING, EROUND SERIES

The new dual purpose illuminated ring is now available, in addition to the already existing versions with fixed or flashing light. This new version can have both fixed and flashing light through a simple wiring, thus avoiding the use of an external intervention. The dual purpose illuminated ring is provided with three supply wires: depending on the electrical connection, the light can be fixed or flashing.

For example, this could be useful for a series of emergency buttons, each combined with the new illuminated ring and all connected in a chain. When the customer pushes the emergency button, that ring becomes flashing and all the others turn off, so that it is easy to understand where the emergency actuation has happened.

The new double purpose illuminated disc is available in the 24 Vac/dc version.



PUSH BUTTONS IP69K

Nominal thermal current : 10 A conforming to IEC 60947-5-1, NF C 63-140, UL 508, CSA 22-2 No. 14, VDE 0660 part 2, NEMA / UL Type A600-Q600.

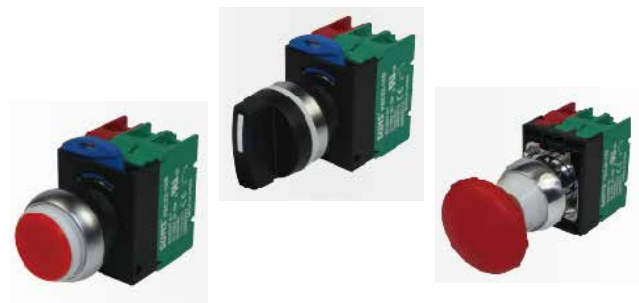
Nominal insulation voltage: 500 V conforming to NF C 20-040, VDE 0110, IEC 60158-1, 600 V conforming to UL 508

Contact operation: Slow- make N.O. or slow-break N.C. with direct opening operation conforming to EN60947-5-1 section 3.

Approvals: UL/cUL(E216958):push buttons and selector switches NEMA / UL Type A600-Q600; pilot lights and illuminated push buttons direct supply (250 V max.); pilot lights and illuminated push buttons with transformer (600 V)

Conformity to standards : UL 508, IEC 60947-5-1, EN60947-5-1, IEC 60337-1, IEC 60337-2, VDE 0660 , CSA C 22-2

SUNS™
INTERNATIONAL, LLC
INDUSTRIAL SWITCHES



PB / PBM22

PUSH BUTTONS IP69K

Nominal thermal current : 10 A conforming to IEC 60947-5-1, NF C 63-140, UL 508, CSA 22-2 No. 14, VDE 0660 part 2, NEMA / UL Type A600-Q600.

Nominal insulation voltage: 500 V conforming to NF C 20-040, VDE 0110, IEC 60158-1, 600 V conforming to UL 508

Contact operation: Slow- make N.O. or slow-break N.C. with direct opening operation conforming to EN60947-5-1 section 3.

Approvals: UL/cUL(E216958):push buttons and selector switches NEMA / UL Type A600-Q600; pilot lights and illuminated push buttons direct supply (250 V max.); pilot lights and illuminated push buttons with transformer (600 V)

Conformity to standards : UL 508, IEC 60947-5-1, EN60947-5-1, IEC 60337-1, IEC 60337-2, VDE 0660 , CSA C 22-2

SUNS™
INTERNATIONAL, LLC
INDUSTRIAL SWITCHES



PB / PBM22

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Enabling Switches

ENABLING / CONTROL UNIT

COMING FALL 2020! Wired enabling / control unit with emergency stop and expandable functions. Customer benefits:

- Safe working in hazardous areas
- Ergonomic design and effortless operation
- Versatile, expandable and usable
- Safety during setup, operation or maintenance of machinery and plant

Highlights:

- Modular design
- 3-step enabling switch
- Integrated emergency-stop button
- Versatile command functions
- Additional function buttons can be added for control functions
- Robust IP 65 enclosure
- Universal mounting

DOLD 



RE 6909

Key switch

Additional integration of a key switch i.e. for selection of setup mode.

Expandable function buttons

A wide range of expansion options with up to four buttons, which turn the enabling switch into a small multifunction command unit.

Ergonomic design

The smart ergonomic design enables effortless operation, which is equally suitable for both left- and right-handed users and it can be operated with a gloved hand.

Emergency-stop button

Optional emergency-stop button gives the enabling switch extra functionality and safety.

Start button

Ergonomically located button for frequently used functions such as release of the enabling switch.

Enabling switch

The 3-step enabling switch ensures optimum safety during operation in the danger zone. Only when in the mid position, the enabling device allows certain dangerous movements together with additional safety precautions.

Connection / Cable

The enabling / command unit is supplied as standard with a 5 metre long cable. Further cables lengths and types on request.

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Safety Relays – Multifunctional Safety Relays – Standstill Monitoring Safety Relays – Zero Speed Safety Relays – Time Delay Safety Relays – Programmable Safety Relays

SAFEMASTER



SAFEMASTER - Innovation solutions for every function

Safety technology is an essential product group of the business area of switching devices at DOLD. What began decades ago with the development of a two-hand switch relay has been decisively continued in the last 20 years and expanded into a universal device programme. Today, safety switching devices from DOLD monitor various safety functions such as emergency stop, two-hand switching, safety mat, safety door, light barrier and more.

- Safety switching devices
- Standstill / speed monitoring
- Wireless safety systems
- Extension / delay time / interface modules
- Multifunctional safety solutions
- Special devices



SAFEMASTER C MULTIFUNCTIONAL SAFETY TIMER UG 6960

The multifunctional safety timer UG 6960 from the SAFEMASTER C family serves the protection of staff and machinery by releasing and interrupting safety circuits. The UG 6960 combines safety time functions and safety functions in one device. Five different time functions with delay times of up to 300 minutes can be implemented, and selected flexibly and without programming via latching rotary switches. Besides safety functions such as emergency stop, protective door, non-equivalent safety sensor, two-hand or light barrier, it also allows you to connect your safety-related safety-mats and safety edges. The fine adjustment of time which is also done gradually via latching rotary switches is particularly advantageous for an optimal adjustment of the device in accordance with your application.

- Output: 2 N/O contacts instant contacts and 2 N/O contacts delayed
- 2-channel design with digital timer
- Complies with - Performance Level (PL) e and category 4 in accordance with EN ISO 13849-1: 2008- Safety Integrity Claim Limit 3 (SIL CL) 3 according to IEC/EN 6206 - Safety Integrity Level (SIL) 3 according to IEC/EN 61508 and IEC/EN 61511



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Safety Relays – Multifunctional Safety Relays – Standstill Monitoring Safety Relays – Zero Speed Safety Relays – Time Delay Safety Relays – Programmable Safety Relays

SAFEMASTER C MULTIFUNCTIONAL SAFETY MODULE UG 6970

The multifunctional safety module UG 6970 from the SAFEMASTER C family serves the protection of staff and machinery by releasing and interrupting safety circuits. Up to two independent safety functions which are selected in a simple way and without programming via latching rotary switches can be implemented in a single device. The flexible adjustment of the safety functions lead to a sustainable reduction in storage costs. Besides safety functions such as emergency stop, protective door, non-equivalent safety sensor, two-hand or light barrier, it also allows you to connect your safety-related mats and safety edges. The variable start configuration which can also be adjusted via rotary switches, allow for an optimal adjustment in accordance with the application. Besides the manual and automated start, the mutual manual start can also be selected for both safety functions. With its width of 22.5 mm, the multifunctional safety module UG 6970 supplies two N/O contacts and one semiconductor monitoring output for each safety function. In accordance with the requirements, the number of safety contacts can be multiplied via the related extension module UG 6929 or the combine extension module UG 6912.28.

- Output: 2 contacts per safety function
- 2-channel design
- Complies with - Performance Level (PL) e and category 4 in accordance with EN ISO 13849-1: 2008 - Safety Integrity Claim Limit 3 (SIL CL) 3 according to IEC/EN 62061 - Safety Integrity Level (SIL) 3 according to IEC/EN 61508 and IEC/EN 61511

DOLD 



SAFEMASTER - INNOVATION SOLUTIONS FOR EVERY FUNCTION

DOLD 



Safety switching
devices



Extension / delay time /
interface modules



Standstill /
speed monitoring



Multifunctional
safety solutions

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Two Hand Control Solutions

FLAT CHROME PLUNGER PUSH BUTTON SWITCHES

"HEAVY DUTY – A600 / N300"

Listed under UL 508 – File # E 58589

Certified under CSA C22.2 – File # LR 3648

CE Compliant IEC/EN 60947-5-1

Third party certified under DEMKO File # FI-17205

Plunger Color	2.75" dia. Chrome
Cover Color	Yellow Dry Powder Paint
Operating Force	1.9 lb
Positive Opening Contact	No
Contact Arrangement	#64 2 NO + 2 NC
Contact Type	Snap-Action
Operating Type	Momentary



04957-012

FLAT CHROME PLUNGER PUSH BUTTON SWITCHES

"HEAVY DUTY – A600 / N300"

Listed under UL 508 – File # E 58589

Certified under CSA C22.2 – File # LR 3648

CE Compliant IEC/EN 60947-5-1

Third party certified under DEMKO File # FI-17205

Plunger Color	2.25" dia. Chrome
Cover Color	Black Dry Powder Paint
Operating Force	2.5 lb
Positive Opening Contact	Yes
Contact Arrangement	#09 NO + NC
Contact Type	Slow-Make
Operating Type	Momentary



02653-112

2.25 INCH PLASTIC MUSHROOM PLUNGER

"HEAVY DUTY – A600 / N300"

Listed under UL 508 – File # E 58589

Certified under CSA C22.2 – File # LR 3648

CE Compliant IEC/EN 60947-5-1

Third party certified under DEMKO File # FI-17205

Plunger Color	Green
Cover Color	Black
Operating Force	4.3 lb
Positive Opening Contact	Yes
Contact Arrangement	#09 NO + NC
Contact Type	Slow-Make / Slow-Break
Operating Type	Momentary



00662-003

Two Hand Control Solutions

2.25 INCH PLASTIC MUSHROOM PLUNGER

"HEAVY DUTY – A600 / N300"

Listed under UL 508 – File # E 58589

Certified under CSA C22.2 – File # LR 3648

CE Compliant IEC/EN 60947-5-1

Third party certified under DEMKO File # FI-17205

Plunger Color	Black
Cover Color	Black
Operating Force	4.3 lb
Positive Opening Contact	Yes
Contact Arrangement	#09 NO + NC
Contact Type	Slow-Make / Slow-Break
Operating Type	Momentary



00662-001

2.25 INCH PLASTIC MUSHROOM PLUNGER

"HEAVY DUTY – A600 / N300"

Listed under UL 508 – File # E 58589

Certified under CSA C22.2 – File # LR 3648

CE Compliant IEC/EN 60947-5-1

Third party certified under DEMKO File # FI-17205

Plunger Color	Yellow
Cover Color	Black
Operating Force	4.3 lb
Positive Opening Contact	Yes
Contact Arrangement	#09 NO + NC
Contact Type	Slow-Make / Slow-Break
Operating Type	Momentary



00662-004

PUSH BUTTON SWITCHES WITH LARGER MOUNTING PATTERN

"HEAVY DUTY – A600 / N300"

Listed under UL 508 – File # E 58589

Certified under CSA C22.2 – File # LR 3648

CE Compliant IEC/EN 60947-5-1

Third party certified under DEMKO File # FI-17205

Plunger Color	2.75" dia. Chrome Plated Die Cast
Cover Color	Yellow
Operating Force	2.0 lb
Integral Ring Guard	Yes
Positive Opening Contact	No
Contact Arrangement	#64 2 NO + 2 NC
Contact Type	Snap-Action
Operating Type	Momentary



00917-712

262.652.8660

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Two Hand Control Solutions

2.25 INCH MUSHROOM PLUNGER WITH SPRING LATCH

"HEAVY DUTY – A600 / N300"

Listed under UL 508 – File # E 58589

Certified under CSA C22.2 – File # LR 3648

CE Compliant IEC/EN 60947-5-5

Third party certified under DEMKO File # FI-17205

Plunger Color	Red
Cover Color	Yellow
Operating Force	12.5 lb
Lock Hole Diameter	0.31 in
Latch/Plunger Operation	Latches when depressed Operate latch to release
Positive Opening Contact	Yes
Contact Arrangement	#09 NO + NC
Contact Type	Slow-Make Slow-Break



02182-002

RING GUARDS

- Additional length mounting screws are provided with each guard.
- Series 09002 legend plates can be mounted on these ring guards.

The following guards are designed to mount to the single or double plunger push button switches. They are die cast from a high strength zinc alloy (Zamac #3).

The usage chart below shows the minimum recommended guard to use to provide protection against inadvertent actuation caused by accidental contact of the switch plunger. Use of a taller guard is an acceptable alternate method.

Color	Painted Powder Yellow
Height	1.00 in



04933-091

PALM SWITCH GUARD/ACTUATOR

- Designed to replace the ring guard on REES palm operated switches.
- Sturdy zinc die cast and steel.
- Large operating pad which reduces the activation force on the center of the hand and directly on the ulnar artery and median nerve where they pass through the palm.

Guard Color	Orange
Operating Pad Color	Yellow



04949-000

Two Hand Control Solutions

STANDARD AND LARGE ENCLOSURES

- Rated Nema 12/13, IP 65.
- 14 GA. sheet steel painted with a dry powder paint.

02261-000		3 Standard	1" NPT	Orange
02715-000		2 Standard	1" NPT	Orange
02718-000		4 Standard	1.25" NPT	Orange
02765-000		1 Standard	1" NPT	Black
02765-100		1 Standard	1" NPT	Yellow
03007-000		5 Standard	1.25" NPT	Orange
04938-100		1 Large	1" NPT	Black
04938-200		1 Large	(2) 1" NPT	Black
04938-300		3 Large	(2) 1.25" NPT	Orange



04938-100



02765-000



02261-000

For accessories see page 43.

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Two Hand Control Solutions

SAFEMASTER TWO-HAND SAFETY RELAY

- Performance Level (PL) e and category 4 to EN ISO 13849-1
- SIL Claimed Level (SIL CL) 3 to IEC/EN 62061
- Safety Integrity Level (SIL) 3 to IEC/EN 61508
- Safety Level Type III-C according to EN 574
- The safety regulations for two-hand controls on power-operated presses in metalworking ZH 1-456
- Inputs for 2 push buttons with 1 NC and 1 NO contact
- Output: 2 NO contacts, 1 NC contact or 3 NO contacts, 1 NC contact
- Overvoltage and short circuit protection
- Wire connection: also 2 x 1.5 mm² stranded ferruled (isolated), DIN 46 228-1/-2/-3/-4 or 2 x 2.5 mm² stranded ferruled DIN 46 228-1/-2/-3
- BG 5933: width 22.5 mm
- BH 5933: width 45 mm



BG 5933, BH 5933

SAFEMASTER TWO-HAND SAFETY RELAY

- Performance Level (PL) e and category 4 to EN ISO 13849-1
- SIL Claimed Level (SIL CL) 3 to IEC/EN 62061
- Safety Integrity Level (SIL) 3 to IEC/EN 61508
- Safety level Type III-C to EN 574
- Inputs for 2 push buttons with 1 NC and 1 NO contact
- Output: 3 NO contacts, 1 NC contact
- Overvoltage and short circuit protection
- Wire connection: also 2 x 1.5 mm² stranded ferruled, or 2 x 2.5 mm² solid DIN 46 228-1/-2/-3/-4
- Removable terminal strips
 - LG 5933: fixed screw terminals
 - LG 5933 PS: plug in screw terminals
 - LG 5933 PC: plug in cage clamp terminals
- Width 22.5 mm



LG 5933

SAFEMASTER C MULTIFUNCTIONAL SAFETY MODULE

- Complies with
 - Performance Level (PL) e and category 4 in accordance with EN ISO 13849-1: 2008
 - Safety Integrity Claim Limit 3 (SIL CL) 3 according to IEC/EN 62061
 - Safety Integrity Level (SIL) 3 according to IEC/EN 61508 and IEC/EN 61511
- In accordance with EN 50156-1 for furnace installations
- Line fault detection at the start button
- Activation via start button or automatic start, joint start possible
- With or without cross fault detection
- 2-channel design
- Forcibly guided output contacts
- Output: 2 contacts per safety function
- 1 semiconductor monitoring output per safety function
- LED displays operating voltage, safety function 1, 2 and faults
- Pluggable terminal blocks for fast device change
 - screw terminals
 - cage clamp terminals
 - double cage clamp terminals
- Sealable transparent cover
- Width 22.5 mm



UG 6970

Two Hand Control Solutions

ENCLOSURE FOR AUTOMATION SECTOR

- Housing Polymer housing
- Protection degree IP65 according to IEC 60529.
- EAC Certificate
- EC Declaration of Conformity



EA AC SERIES

TWO-HAND DUAL-TECHNOLOGY TOUCH CONTROL BUTTON

- Performance level with COM3C controller: PL = e
- Safety category with COM3C: IIIC (EN 574), 4 (ISO 13849-1)
- 'Failsafe' level with COM3C: SIL 3
- Time before dangerous failure: MTTFd = 100 years
- Activation distance: on touch (0 force = MSD reduction)
- Safety contacts: 1 x PNP NO/50mA OSSD and 1 x PNP NF/50mA OSSD
- Diagnostics: fraud, simultaneity, short-circuiting of contacts with multi-function illuminated ring
- Reset: automatic with two buttons correctly activated
- Attachment: Attachment: 51mm bore and 2 to 6 invisible D3 screws (not included)
- Mounting position: 1
- Material: TR90UV yellow
- Electrical connection: 6-way screwless push terminal 1.5mm²
- Water resistance: IP 67 with silicone seal on the trim
- Temperature: -25°C to +60°C
- Marking: screen printed + serial no. for traceability
- Recommendations: use gloves in accordance with EN 388



KOB101T

TWO HAND CONTROLS ARE SAFEGUARDING DEVICES

These are safeguarding devices in the single stroke mode of operation on part revolution clutch presses. It is similar to the two-hand trip; this device keeps the operators hands away from the point of operation during the entire machine stroke.

Regulation: 29 CFR 1910.217

Press operations requiring more than one operator must provide each machine guarding, two-hand control, osha 10, construction safety operator with separate two-hand controls where each set must be engaged to complete a machine stroke. The removal of a hand from any control button will stop the slide.

Each two-hand control must meet the construction requirements of paragraph 29 CFR 1910.217(b)(7)(v).

The safety distance between each hand control device and the point of operation must be greater than the distance determined by the safety distance formula. Two-hand controls' position must be fixed so that only a supervisor of safety engineer is capable of relocating them.

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Two Hand Control Solutions

TWO-HAND TOUCHSCREEN & OPTICAL TWO-HAND CONTROL IP69K TECHNOLOGY

Supply voltage :	20 VDC to 30 VDC
Standby current :	60 mA
Connections :	Push-in connector for wire up to 1.5mm ²
Light ring :	Ring with 3 sectors
Contact specifications :	1 x NO and 1 x NC PNP / 50 mA OSSD type
Response time :	40ms
Risk period :	4 msec
Desynchronism :	~ 400 msec
Operating temperature :	-25°C to +50°C.
Detection distance :	about 20 mm (depends on skin/glove color)
Overall dimensions :	D61.5 mm x 42.2 mm
Front sealing :	IP 69K (+ seal/nut)
Back sealing :	IP 40
Fastening :	1 x PG42 nut
Housing material :	PC: HL3/R4 and M1/M2

COMITRONIC - BTI



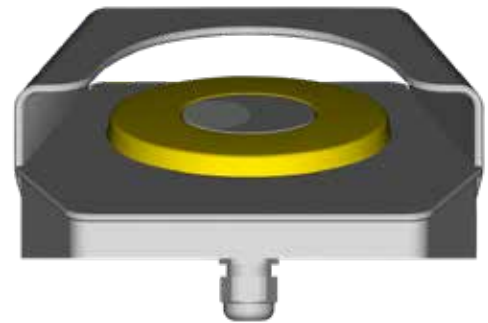
FZ 50 BITECH

FZ 50 BITECH	Button for two-hand control
FZ 50 BITECH I	2 Button for two-hand control+ COM3C

CONTROL DESK BIMANUELLE, ERGONOMIQUE, INOX, DECREASE TMS, COMPATIBLE WITH KOB101T

- Contacts are momentary action with a NO PNP and an NF PNP.
- KOB101T is a button that mixes two technologies, optical and capacitive.
- KOB101T kit allows a complete two-hand control (2xKOB101T + 1xCOM3C).

COMITRONIC - BTI



BX1 & BX2

TWO-HAND CONTROL EN 574 AND ISO 13849-1

- Performance level with AWAX controller: PL = e
- Safety category: IIIC
- Safety Integrity Level: SIL 3
- Time before dangerous failure: MTTFd = 190 years
- Cycle before dangerous failure: B10d=100,000 at 5A
- Risk duration: 20 ms max.
- Safety contacts/diagnostics:
 - 3x NO 8A/250V redundant / 1x NF 8A/250V parallel redundant
- Reset: automatic with simultaneity control at 400 ms
- Position control: high press position contact input
- Mounting: symmetrical DIN 35mm rail on DIN 50022 -and- IP 20 electrical box
- Electrical connection: Maximum 14 AWG (2.08 mm²) / 250V minimum
- Temperature: -20°C to +40°C
- Certification: INERIS 0080.5486.520.04.12.0059

COMITRONIC - BTI



COM3C

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Safety Laser Scanners

SAFETY LASER SCANNER INDUSTRIAL PROTECTION AND AGV

Features: LSPD is the first Safety Laser Scanner in China. The performance can meet advanced level in the world. It meets safety requirement of IEC 61496 Type 3 and ISO 13849 PLd. Maximum scan radius 15, maximum scan range 190 degree. User can set the protection area and warning area according to requirement by connecting the scanner with computer. Class 1 laser product. Safe with human eye. Fast response speed. 25000 scanning times can be finished in 1 second. The default response time is 80ms. High detecting resolution, angle resolution is 0.36 degree. Object of 7cm radius can be detected at 4 meter. Narrow band filtering technology, high capacity of anti light interference.

Professional EMC design and stern test to ensure the product is stable and reliable under complicated electromagnetic environment.

Model No.: LSPD Safety Laser Scanner
Safety Level: Type 3, PLd
Scanning Angle Range: 190°
Angle Resolution: 0.36°
Maximum Radius Of Protection Zone: 4m/5m/6m/7m
Maximum Radius Of Warning Zone: 15m
Certificate: ISO9001:2008



NPN PNP LIDAR SENSOR FORKLIFT UAV OBJECT DETECTOR

Features: It is the current smallest domestic pulse laser radar on the market, with dimensions of 6cm×6cm×8cm, thus facilitating user integration; Based on pulse laser ranging technology, the pulse light energy value is 1000 times higher than that of a continuous constant light source, thus ensuring the stability and reliability of measurement. Meanwhile, combined with nanosecond narrow pulse technology, it is Class 1 laser product which is safe to human eyes; With very fast scanning speed, it can complete 25000 times of measurement within 1s, and the scanning time of single turn is 40ms; With industrial design, it is stable and reliable. IP65, dedicated temperature drift error elimination design, professional EMC design and harsh testing, environmental light, shock and vibration and other tests;

Model No.: LS Laser Radar
IP Rating: IP65
Model Number: LS
Wavelength: 905nm
Applicable Standards: IEC 61496-1, IEC61496-2, ISO13849-1
Power Consumption: < 3W (no Load At Output Terminal)
Standard Voltage: 24VDC
Response Time: 80ms-640ms
Scanning Range: 10m, 20m
Maximum Scanning Angle: 270°
Certificate: ISO9001:2008



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Safety, Muting – Light Curtains – Safety Relays

TUV CERTIFIED INFRARED CURTAIN SENSOR

T4 Series suitable to the actual field conditions, protection height, resolution spacing, distance etc. can be tailored. Exclusively designed IC for improved the noise resistance. Inside surge protection, reverse polarity protection, overcurrent protection. Long use-life cycle and high reliability, easy install, enconomic price. It can output two-way safe PNP signals.

- Dual independent OSSD output
- External relay contact monitor (EDM) function
- Provide two-way PNP signal output, with higher safety performance
- The detection ability is up to 14mm, suitable for finger protection
- The maximum operating range is up to 6m
- Infrared light communication and special optical system
- Ability to resist light interference and electromagnetic interference is strong

IP Rating: IP65

Certification: CE, TUV

Response Time: 14ms - 65ms

Resolution/Detection Capability: 18mm, 28mm, 38mm, 48mm

Operating Range: 0~3m, 0~6m, 0~12m, 8~20m, 0~40m

Output Type: PNP/NPN Or Relay Contact

Safety Standard: Type 4 European Standard

Applicable Standards: IEC61496-1(Type4)\ IEC61496-2(Type4)

SDKELI®



MULTIFUNCTIONAL SAFETY RELAYS

SAFEMASTER C - Safety plus multifunctionality

Whether it is used as an individual device or integrated in complex safety systems - with SAFEMASTER C, you always have the right solution for protecting people and machinery. With the compact multifunctional safety switching devices from DOLD, various safety-oriented inputs, such as emergency stop, safety door, et cetera, are assigned to a single output. An additional important advantage of SAFEMASTER C is the cost-savings as a result of its multifunctionality: through taking up less space in the control cabinet than monofunctional safety devices, through reduced storage needs and through the simple and fast calibration of the safety functions and operating modes.

DOLD



SAFEMASTERLIGHT CURTAIN CONTROLLER LG 5925/900

- Performance Level (PL) e and category 4 to EN ISO 13849-1-SIL Claimed Level (SIL CL) 3 to IEC/EN 62061 -Safety Integrity Level (SIL) 3 to IEC/EN 61508 and IEC/EN 61511
- According to EN 50156-2 for furnaces
- For light curtains with symmetric or asymmetric outputs adjustment with switch S1
- Output: max. 4 NO contacts, see contacts
- Single and 2-channel operation
- Line fault detection on On-button
- Manual restart or automatic restart, switch S2
- LED indicator for state of operation
- LED indicator for channel 1 and 2 and power
- Removable terminal strips
- Wire connection: also 2 x 1.5 mm² stranded ferruled, or 2 x 2.5 mm² solid DIN 46 228-1/-2/-3/-4

DOLD



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Safety, Muting – Light Curtains – Safety Relays

SAFETY LIGHT CURTAINS

Type 2, Type 4 safety light curtains for industrial applications

Safety Light curtains are electro sensitive devices using one or more light beams, emitted by an Emitter and received by a Receiver, to create an intangible controlled area.

Safety type - Defines the self-monitoring and safety principles contained in the device; it must be chosen as a function of the risk level characterising the machine.

Protected height - This is the height controlled by the light curtain. If it is positioned horizontally, this value shows the depth of the protected zone.

Range - This is the maximum working distance that may exist between the emitter and the receiver. When deflection mirrors are used, it is necessary to take into account the attenuation factor introduced by each of them, which is about 15%.



WATERTIGHT SAFETY LIGHT CURTAINS

IP69K and Ecolab “food-graded” certified models

Watertight enclosures allow light curtains and light grids to be used in a harsh working environments with exposure to water and steam.

The products protected by WT (WaterTight) cases are capable of resisting to water jets under pressure IP 69K protection rate. The WT housings furthermore comprise a valid mechanical protection of the light curtain.

H version (Heated) has a thermostatically-controlled heating system and can work down to -25°C.

F version (Food) with use of inert and non-toxic components allow WTF and WTHF enclosures to be used in the Food & Beverage industry, where frequent washdown procedures are requested.



EXPLOSION PROOF SAFETY LIGHT CURTAINS

ATEX Zone 2, 22 compliant models

ATEX protective enclosures. Are designed to secure operators working in industrial potentially explosive atmospheres.

The cylindrical housing ATEX can fit the following safety light curtain ReeR familie: EOS.



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Safety, Muting – Light Curtains – Safety Relays

ACCESSORIES FOR SAFETY LIGHT CURTAINS

Cables, brackets, floor-mounting columns, deflecting mirrors

The range of accessories include:

- columns and floor support columns
- deflection mirrors for the realization of perimeter protection
- laser alignment device
- anti-vibration dampers
- adjustable brackets
- test rod
- connection cables



SAFETY CONTROLLERS

Modular safety integrated controllers

Modular, configurable safety controller for protecting machines or plants.

Safety controller is capable of monitoring several safety sensors and commands, such as safety light curtains, laser scanners, photocells, mechanical switches, mats, emergency stops, two-hand controls, concentrating management of these in a single, flexible device. The analogue inputs expansion unit allows the connection of several analogue sensors such as loading cells, pressure switches, temperature, flow, level measurements, etc. The MSD software, installed on a PC, can be used to create complex logical conditions using logical operators and safety functions, such as muting, timer, counters, memories, etc. via an easy, intuitive graphic configuration interface. Configuration data are transferred to the M1 unit via a USB link. The configuration is transferred to the main module via a USB connection.



SAFETY INTERFACES / SAFETY RELAYS

Modules for safety light curtains, two-hand controls and e-stops

The Safety interfaces are a dedicated interfaces between safety light curtains equipped with self-controlled safety static outputs and control circuits of the machine or plant.

Modules for safety light curtains and safety devices

AD SR0 and AD SR0A modules can only be connected to safety sensors equipped with feedback input for monitoring external relays (EDM)

With guided-contact safety relays, 2 NO + 1 NC (AD SR0) or 2 NO contacts (AD SR0A). Additional N.C. contact line for the monitoring by light curtain (EDM).



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Safety Interlocking Systems

SAFEMASTER STS

Don't you wish you had a simple safety switch and trapped key interlock system to protect your dangerous working areas. If you are looking for a reliable, expandable, flexible and cost saving solution, then you have found the perfect product with our TÜV-approved system SAFEMASTER STS. The SAFEMASTER STS Program consists of modules that can be individually combined and adapted to your application. They combine the advantages of safety switches, interlocks and key transfer in one system. The modular design allows systems to be assembled out of several units, or to modify and expand existing systems as required. All mechanical interlocks can be utilised in machine and plant concepts without wiring. They provide an economic and reliable protection in wide applications. With only a few single components, a number of individual interlock units can be assembled. The stainless steel units guarantee good stability. Extensive equipment allows a simple mounting.

DOLD 



SAFEMASTER STS - INDIVIDUAL MODULS

Flexibly, individually and perfectly adapted to your applications

The modularity of the SAFEMASTER STS allows individual adaptations to the corresponding applications. By means of bayonet locks (see accessory) any number of units can be mounted of only a few basic modules. The function of the units are defined from the way and arrangement of the modules, whereby several unities form a system. The possible combinations of the composed unities determine the individual functions of the total system.

DOLD 



COMMAND DEVICES

The robust stainless steel option module expands the modular SAFEMASTER STS safety switch and key transfer system with variable command, indication, selection and emergency stop functions. This turns the system into a true "control centre" from where command functions, status displays, release signals, main and maintenance access points can be controlled. The option module is form-fitting and can be installed directly underneath safety switches or hold closed units thus enabling direct command execution at the access points for machines and systems. It can also be installed as a standalone command device. You too can benefit from the high degree of system flexibility.

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Safety Interlocking Systems

SAFETY SWITCH

Electromechanical safety switches monitor accesses and safety gates

SAFEMASTER STS series safety switches reliably secure access and protective doors and hatches, and are suitable for safety applications up to Cat. 4 / PL e in accordance with EN ISO 13849-1 without fault exclusion. They are suited for applications requiring a high level of security. The very narrow design also allows them to be installed on movable safety guards.

DOLD 



GUARD LOCK

Electromechanical solenoid locking units prevent the opening of access or safety gates

Guard locks in the SAFEMASTER STS family combine our trusted mechanical principle with the advantages of electromechanical safety switches with a 2-channel locking function. Thanks to their lock monitoring features, they can be used to reliably protect both processes and personnel. Different coding levels, very high locking forces, and comprehensive diagnostic capabilities allow them to be used in almost all safety-relevant applications.

DOLD 

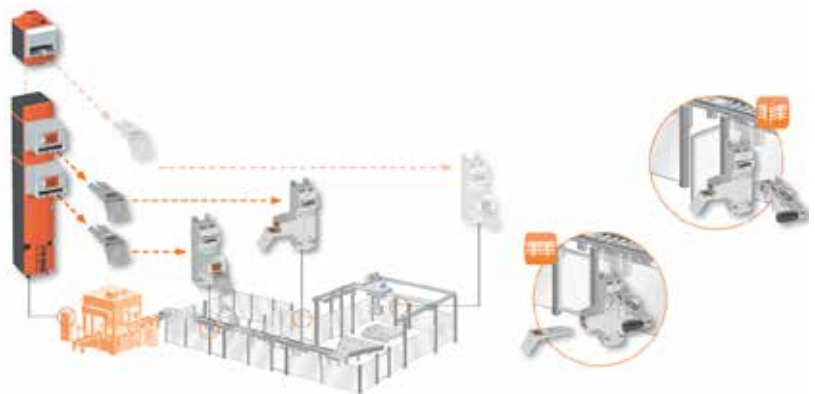


KEY TRANSFER

The key transfer system combines the advantages of none wiring, mechanical safety with electrical safety

The basic principle of the key transfer system ensures that a machine or system is in a safe state before an access can be made. A further safety aspect is that a key is inserted either in a safety switch or can be used for opening a door lock. This property can be used to force a certain operating sequence, which can not be deviated from. As a result, a high safety level is achieved and a large number of different danger areas can be ensured.

DOLD 



Safety Interlocking Systems

SAFETY HANDLES P-KUBE



P-KUBE 1 for FD series



P-KUBE 1 for
FG series



P-KUBE Fast for
FD series



P-KUBE Fast for
FG series



P-KUBE 2 for
NG series



P-KUBE
Super for
NG series



P-KUBE Krome
for
NG series



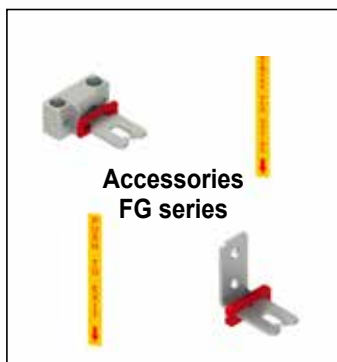
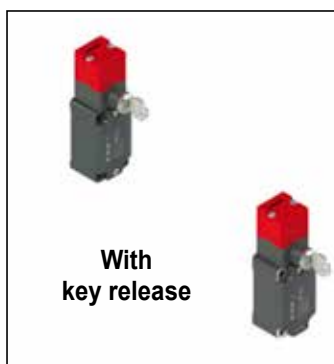
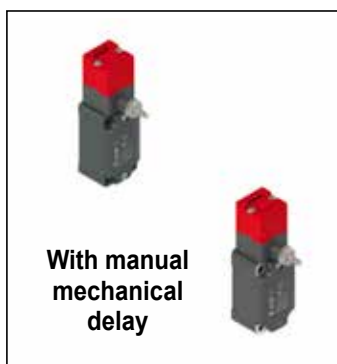
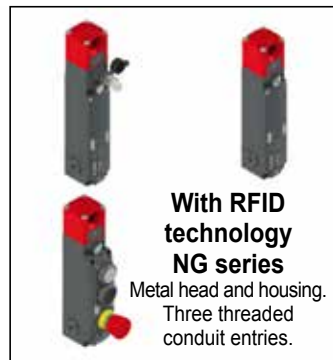
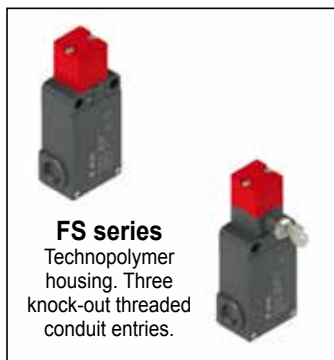
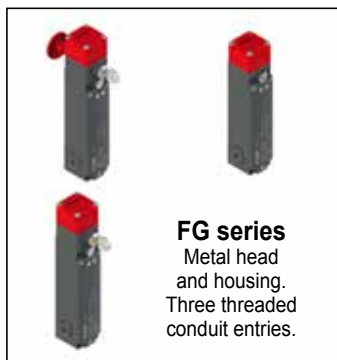
P-KUBE Krome
for
NS series

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Safety Interlocking Systems

SAFETY SWITCHES WITH SEPARATE ACTUATOR AND LOCK



Safety Interlocking Systems

SAFEMASTER STS – COMMAND FUNCTIONS



Guard lock with integrated command and indication functions.

The SAFEMASTER STS series safety switch with guard lock offers the possibility of integrating up to three command and indication functions. This allows control signals such as emergency stop or acknowledgement of the safety door to be triggered directly at the entrances of machines and plant access points. In addition emergency stop buttons, illuminated buttons, pushbuttons or selector switches are also available. The safety switch with guard lock is also available with auxiliary and emergency release as well as coded actuators. Due to its very slim design, the robust and attractive fibre reinforced polymer (FRP) enclosure can be mounted directly on safety fences to save space. The optional M23 plug connectors ensure fast set-up and reduce the wiring effort to a minimum.

Modular and expandable

The modularity makes it possible to build several units into one system or to adapt and extend existing systems as required. Modules can be mounted in 4 positions, rotated through 90°.

Maximum space saving

The integration of command and indication functions in the guard lock unit enables maximum space saving and a reduced overall height.

Selectable command devices

Up to 3 selectable command devices allow for starting and stopping of safety-related functions as well as the assignment as status indicators. Emergency stop buttons, illuminated buttons, pushbuttons or selector switches are available as command device options.

Reliable fibre reinforced polymer design

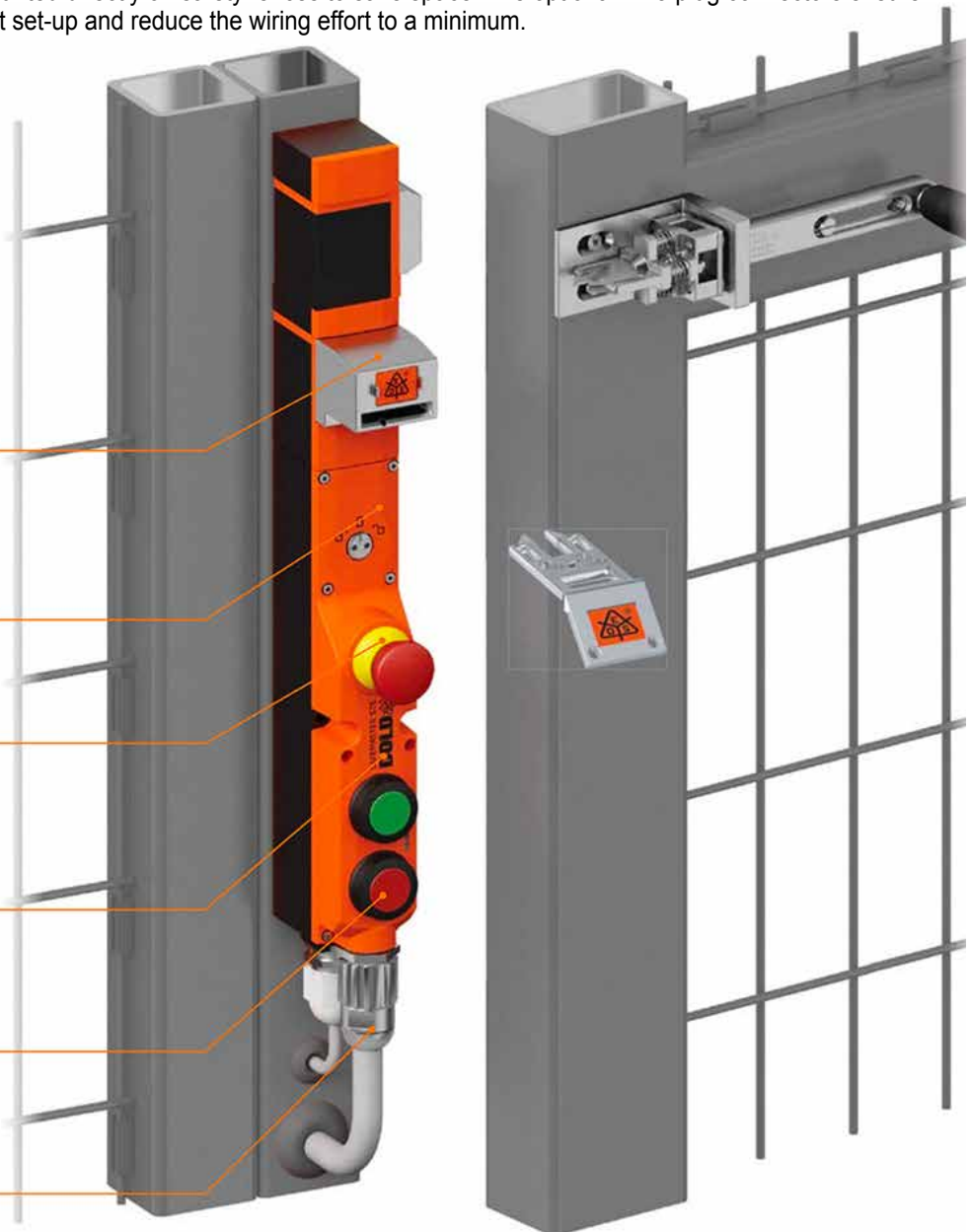
The FRP version is characterised by a sophisticated design, a high level of signal integration and simple handling and offers versatile application possibilities due to the robust combination of stainless steel and fibre reinforced polymer.

Flexible colour panel adaptation

The colours of the illuminated buttons can be individually adapted / changed as alternative. Colour panels and symbol signs for the illuminated pushbuttons are available as accessories.

Plug connectors with cable (options)

Pre assembled cables with different lengths allow quick and easy connection. Plug connector options are also available.



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Keyed Interlock Safety Switches – Latching Keyed Interlocks – Guard Lock Systems

GUARD LOCK WITH INTEGRATED COMMAND AND INDICATION FUNCTIONS

DOLD 

The SAFEMASTER STS series safety switch with guard lock offers the possibility of integrating up to three command and indication functions. This allows control signals such as emergency stop or acknowledgement of the safety door to be triggered directly at the entrances of machines and plant access points. In addition emergency stop buttons, illuminated buttons, pushbuttons or selector switches are also available. The safety switch with guard lock is also available with auxiliary and emergency release as well as coded actuators.



INTERLOCKING SAFETY SWITCH

SUNS™
INTERNATIONAL, LLC
INDUSTRIAL SWITCHES

- Galvanically separated contacts
- Screw terminals with self-lifting clamps for easy wiring
- Positive Opening of NC contacts
- 4 x 90° actuator positions
- Horizontal or Vertical Operation
- Degree of protection: IP65/IP67
- Electrical Rating: UL/cUL Listed(E216958) for AC15 A600/ DC13 Q300
- Operating Temperature: -25~80 (-13~176°F) without formation of ice



SOLENOID KEY-OPERATED INTERLOCK SWITCH

SUNS™
INTERNATIONAL, LLC
INDUSTRIAL SWITCHES

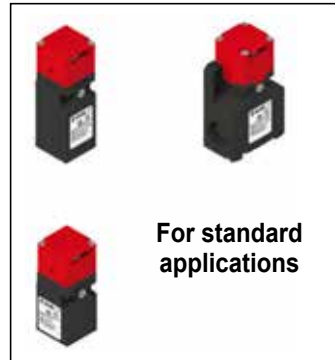
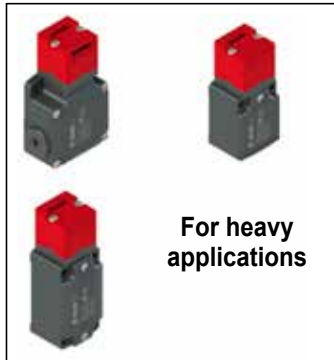
- Robust zinc die cast head assembly with glass fiber reinforced plastic or zinc die cast body
- Three solenoids voltages: 24Vac/dc, 120Vac and 240Vac
- Power-to-lock or power-to-unlock types for key trap
- Flexible switching arrangement
- 24 V, 110 Vac, and 230 Vac coil voltages
- Head may be rotated into 4 different positions
- Three conduit openings (knock-out style)
- Switch position provides status
- Choice of different contact blocks
- Positive Opening of NC contacts
- Cable entry available: M20, and 1/2"NPT
- Approval: CE, cULus (pending)
- Indicators for switch and solenoid status (optional)



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Keyed Interlock Safety Switches – Latching Keyed Interlocks – Guard Lock Systems

SAFETY SWITCHES WITH SEPARATE ACTUATOR



SAFETY SWITCHES WITH SEPARATE ACTUATOR



Safety switches with separate actuator are positive opening position switches. In terms of design, the switching element and actuator are separated. On actuation, the switching element and actuator are brought together or separated. The positive opening NC contact is always open when the actuator is withdrawn. These switches are assigned to Type 2.



Type SKT



Type SKI



Type SK



Type SKC



Switches with VTW, VTU, VT actuator

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Non Contact Safety Switches – Coded – RFID – Latching – Safety Proximity Switches & Safety Relays

OPT02S - MINIATURE SAFETY SWITCH

- Position control for doors / casings on hazardous machinery
- Contactless encoded electronic sensor with relay
- Category 3 total safety management without an external controller
- 12V version for embedded applications
- Water resistance: IP 68
- Temperature: -20°C to +60°C
- Level of performance without an external controller: PL = c
- Level of performance with AWAX controller: up to PL = e
- Safety category without an external controller: 1



OPT02S

AMX - SAFETY SWITCH STAND ALONE

- Controls the position of hazardous machine doors/cases with integrated self-checking
- Contactless coded sensor with electronic technology and relays
- IP68 PA6 / IP69K INOX316L
- Performance level and category without external controller: Cat 3 PL=d according to ISO 13849-1
- Performance level and category with AWAX controller: Cat 4 up to PL=e
- Integrated safety level: SIL 2 according to IEC 61508
- Water resistance: IP 68 (PA6) or IP 69K with stainless steel - new generation
- Temperature: -25°C to +60°C
- UL 508 / C22.2 no.14 C-UL-US listed 34CB (file E214209)



AMX3



AMX5



AMX5OX

SM1 & SM1-0X - ELECTROMAGNETIC LOCKING

- Electromagnetic safety lock control with 580 N force
- No power or under-voltage locking on machine casings
- Machine protection closing control for harsh environments
- 100% stainless steel version available
- Water resistance: IP 67/68
- Temperature: -25°C to +50°C
- Level of performance with AWAX controller: up to PL = e
- Safety category: up to 4 with AWAX controller or PLC SIL 3
- Maximum detection activation distance: 2 mm



SM1

Non Contact Safety Switches – Coded – RFID – Latching – Safety Proximity Switches & Safety Relays

SM2-OX - ELECTROMAGNETIC LOCKING STAINLESS STEEL316L

- Electromagnetic safety lock control with 936 N force and 100% stainless steel
- No power or under-voltage locking on machine casings
- Machine protection closing control for harsh environments
- Antimicrobial handle available
- Water resistance: IP 69K
- Temperature: -25°C to +50°C (thermal protection for suction cups in case of overheating due to a persistent command)
- Maximum detection activation distance: 2 mm
- Level of performance with AWAX controller: up to PL = e
- Safety category: up to 4 with AWAX controller or PLC SIL 3

COMITRONIC - BTI



SM2-OX

AMXR-S - SAFETY SWITCH STAND ALONE WITH RFID CODING

- Controls the position of safety doors/casings with RFID encoding
- RFID sensor with 16 million codes
- Category 3 total security management without an external controller
- Programmable code through auto-learning (no software or PC)
- Level of performance with AWAX controller: up to PL = e
- Safety category without an external controller: 3 (EN 954-1)
- Cycle after dangerous failure: B10d = 2000000 at 2 Amps
- Electrical Connection: 3, 6, 12m cable (UL2464 PVC)
- Sealing: IP 67
- Temperature: -20 °C to +60 °C

COMITRONIC - BTI



AMXR-S

XORF-SA-MKT - NON-AUTONOMOUS SAFETY SWITCH WITH RFID CODING

- Controls the position of security doors with RFID encoding for wheeled vehicles
- RFID sensor with 16 million codes
- Suitable for metallic environments
- Programmable code through auto-learning (no software or PC)
- Level of performance with AWAX controller: up to PL = e
- Safety category: up to 4 (EN 954-1) with AWAX controller
- Time to dangerous failure: MTTFd = 40 years
- Sealing: IP 68
- Standing room temperature: -30 °C to +50 °C.
- Storage temperature: -40 °C to +85 °C
- Certificate: E2 10R-04 14053 (UTAC)

COMITRONIC - BTI



XORF-SA-MKT

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Non Contact Safety Switches – Coded – RFID – Latching – Safety Proximity Switches & Safety Relays

INDUCTIVE SAFETY PROXIMITY SWITCH

- Double-sided detection with inverted output.
- Avoids unintentional triggering
- Cable outlet control (crushing, connection)
- Ambient temperature: -25°C +70°C, Storage -30°C +80°C
- Protection class: IP67 (IEC)
- Protection: Reverse polarity protection, Short-circuit protection
- Switching frequency: 1000Hz
- Temperature variation: Max +/- 20% of an operation range at +23°C in -25°C to +70°C temperature range

COMITRONIC - BTI



AWAX 26XXL - SAFETY RELAYS - SELF CHECK BOX

- Sensor controller on Acotom process / mechanical switches / emergency stops
- Output contacts 8A/250V
- Ultra-fast "DLC" short-circuit check : Short-circuit detection in 2 µs, self-resetting
- Safety management in a compact 22.5 mm format
- Anti-gluing control of the reset button
- 12V version for embedded applications
- Performance level with AWAX controller: PL = e
- Safety category: 4
- Safety Integrity Level: SIL 3

COMITRONIC - BTI



AWAX 26XXL

COM3C - TWO-HAND CONTROL EN 574 AND ISO 13849-1

- Two-hand control EN 574 and ISO 13849-1
- Version for mechanical or touch buttons KOB101T
- Controls the position of the press
- Removable terminals
- Mounting: IP 20 electrical box
- Electrical connection: Maximum 14 AWG (2.08 mm²) / 250V minimum
- Temperature: -20°C to +40°C
- Performance level with AWAX controller: PL = e
- Safety category: IIIC
- Safety Integrity Level: SIL 3

COMITRONIC - BTI



COM3C

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Non Contact Safety Switches – Coded – RFID – Latching – Safety Proximity Switches & Safety Relays

MP MAGNETIC SAFETY INTERLOCK SWITCH

SUNSTM INTERNATIONAL, LLC
INDUSTRIAL SWITCHES

- Glassfiber Reinforced Plastics housing
- High resistance to vibration
- High switching capacity
- EN 61496-1/EN 50022
- Ambient temperature : -25 to 70°C (-13 to 158°F)
- Degree of protection : IP68 (IEC/EN 60529)
- Switching voltage : 100V AC/DC
- Impact strength: 50 g/ms
- Shock resistance : 11 g/ms
- EMC compliance : In acc. with EN 61496-1/EN 50022 Part A



MF SERIES RFID NON-CONTACT SAFETY SWITCH

SUNSTM INTERNATIONAL, LLC
INDUSTRIAL SWITCHES

- Actuation without contact, using RFID technology
- Digitally coded actuator
- 3 LEDs for status display
- Connecting up to 32 sensors in series
- Short-circuit protection, polarity-reversing protection
- Safety category: up to SIL 3, PL e and Category 4
- Operating temperature: -25~+70°C (-13~158°F)
- Switching frequency: 2Hz
- Sensing distance: 10mm
- Enclosure protection: IP69K



SAFETY CODED MAGNETIC SENSOR WITH ACTUATOR

- Housing: Polymer housing, right side connection
- Contacts: 2NC (with door closed)
- Type of cable or connector: PVC cable, length 0.1 m with M12 connector, 4 pole
- Actuator: Actuation distance 5 mm
- cULus Certificate
- EAC Certificate
- EC Declaration of Conformity
- TÜV SÜD Certificate

 **pizzato**



SR AD40AM0.1-A01N

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Non Contact Safety Switches – Coded – RFID – Latching – Safety Proximity Switches & Safety Relays

SAFETY SENSORS WITH RFID TECHNOLOGY



ST D SERIES



ST G SERIES

CONTACTLESS SAFETY TECHNOLOGY



The use of contact-free locking facilities, in particular for monitoring movable safety guards, offers the following advantages:

- Simple adjustment
- No broken actuator
- High degree of tolerance to vibrations, moved doors and hoods
- No wear
- Exceptionally easy cleaning

BERNSTEIN offers two different technologies in the area of contactless safety technology:

- Safety sensors on RFID basis (SRF)
- Safety sensors on magnetic basis (MAK series)



SRF
RFID



Safety Magnetic
Controllers



Coded magnetic
switches

Cable & Rope Operated Switches

CABLE/ROPE OPERATED SWITCHES WITH BROKEN CABLE DETECTION

"HEAVY DUTY – A600 / N300"

CSA-US (File LR 3648)

Certified under CSA C22.2 – File # LR 3648

CE Compliant IEC/EN 60947-5-5

Third party certified under DEMKO Certificate # D-01901-M1

UL/NISD File E357870, Sec. 2

Trip Force	52 lb
Operating Force Between 10 ft. Supports	15.0 lb
Connector	None
Indicator Light	None
Contact Arrangement	2 NO + 2 NC, Manual Reset
Direction of Pull	Right



04962-100

CABLE OPERATED SWITCHES

"HEAVY DUTY – A600 / N300"

Listed under UL 508 – File # E 58589

Certified under CSA C22.2 – File # LR 3648

CE Compliant IEC/EN 60947-5-1

Third party certified under DEMKO Certificate # D-01474-M1

Color	Black
Trip Force	15 lb
Operating Force Between 10 ft. Supports	3 lb
Reset Type	Manual
Contact Arrangement	NO + NC



04944-000

CABLE OPERATED SWITCHES

"HEAVY DUTY – A600 / N300"

Listed under UL 508 – File # E 58589

Certified under CSA C22.2 – File # LR 3648

CE Compliant IEC/EN 60947-5-1

Third party certified under DEMKO Certificate # D-01474-M1

Color	Black
Trip Force	15 lb
Operating Force Between 10 ft. Supports	3.8 lb
Reset Typ	Manual
Contact Arrangement	2 NO + 2 NC



04944-200

262.652.8660

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Cable & Rope Operated Switches

CABLE OPERATED SWITCHES

"HEAVY DUTY – A600 / N300"

Listed under UL 508 – File # E 58589

Certified under CSA C22.2 – File # LR 3648

CE Compliant IEC/EN 60947-5-1

Third party certified under DEMKO Certificate # D-01474-M1

Color	White
Trip Force	15 lb
Operating Force Between 10 ft. Supports	3 lb
Reset Type	Manual
Contact Arrangement	NO + NC



04944-900

NEW BI-DIRECTIONAL CABLE OPERATED SWITCH

"HEAVY DUTY – A600 / N300"

CSA-US (File LR 3648)

Certified under CSA C22.2 – File # LR 3648

CE Compliant IEC/EN 60947-5-1

Third party certified under DEMKO Certificate # D-01899

Trip Force	52 lb (23.6 kg)
Contact Arrangement	2NO+2NC
Type / Style	Bi-Directional



04964-204

CABLE OPERATED SWITCHES WITH DOUBLE FLAG INDICATOR(S) OR LATCH PLATES

"HEAVY DUTY – A600 / N150"

Listed under UL 508 – File # E 58589

Certified under CSA C22.2 – File # LR 3648

CE Compliant IEC/EN 60947-5-1

Third party certified under DEMKO File # FI-17205

Trip Force per End	25 lb
Flag End Replaceable	Both
Operating Force Between 10 ft. Supports	6 lb
Reset Type	Manual
Contact Arrangement	NO + NC
Contact Arrangement Each End	NO + NC
Type / Style	Flags



04954-202

Cable & Rope Operated Switches

ROPE OPERATED SEQUENCE SWITCHES

"HEAVY DUTY – A600 / N150"

Listed under UL 508 – File # E 58589

Certified under CSA C22.2 – File # LR 3648

CE Compliant IEC/EN 60947-5-1

Third party certified under DEMKO Certificate # D-01891

Trip Force	10 lb
Operating Force Between 10 ft. Supports	1.2 lb
Reset Type	Manual
Contact Arrangement	NO + NC



04945-000

ROPE OPERATED SWITCH (A600 / N150)

"HEAVY DUTY – A600 / N150"

Listed under UL 508 – File # E 58589

Certified under CSA C22.2 – File # LR 3648

Trip Force	10 lb
Operating Force Between 10 ft. Supports	1.2 lb
Operating Type	Momentary
Contact Arrangement	Held NO Block #50702-000



04958-100

TECHNICAL STANDARDS

The main standards references for conveyor applications are:

- ASME B20.1, 2015. Safety Standard for Conveyors and Related Equipment
- EN 617:2001+A1:2010, Continuous handling equipment and systems – Safety and EMC requirements for the equipment for the storage of bulk materials in silos, bunkers, bins and hoppers
- EN 618:2002+A1:2010, Continuous handling equipment and systems – Safety and EMC requirements for equipment for mechanical handling of bulk materials except fixed belt conveyors
- EN 619:2002+A1:2010, Continuous handling equipment and systems – Safety and EMC requirements for equipment for mechanical handling of unit loads
- EN 620:2002+A1:2010, Continuous handling equipment and systems – Safety and EMC requirements for fixed belt conveyors for bulk materials

Emergency stop devices (buttons, pull-cords and foot pedals) are covered by IEC 60947-5-5, Low voltage switchgear and control gear Part 5-5: Control circuit devices and switching elements—Emergency stop device with mechanical latching function. Each of these standards includes requirements for the emergency stop systems associated with conveyor systems. It's worth noting that there are other applications for pull-cord emergency stop devices that are not conveyor applications at all.

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Cable & Rope Operated Switches

CP7 SERIES CABLE PULL SAFETY SWITCHES

- Max span 80 meter (262 ft)
- Compatible to EN418 required with emergency stop button on the surface cover
- Works in two direction: tripped when the wire is pulled or breaking.
- Available in One-way actuation version
- Optional indicator light to show the state.
- Positive Opening of NC contacts
- Conform to EN60947-5-5, ISO13850, ISOTR 12100, IEC 60947-5-1, EN 418



SUNS™ INTERNATIONAL, LLC
INDUSTRIAL SWITCHES

Operating Frequency	Mechanical: 120ops/min Electrical: 30 ops/min
Insulation Resistance	>100MΩ@500V DC
Contact Resistance	<25mΩ (initial value)
Rated Current/Voltage	Ith:10A 600V AC (EN60947-5-1) AC15 A600 / DC13 Q300
Dielectric Strength	1000VAC for 1 min between current carrying parts 2500VAC for 1 min between non-current carrying parts
Service Life	Mechanical: 1.0 x10 ⁶ (operations) Electrical: 5 x10 ⁵ (operations)
Operating Temperature	-25~+80°C (-13~176°F)
Humidity	< 95%RH
Degree of Protection	IP67

SELECTION GUIDE

CP7170	-	SL22	-	A	-	R	-	24	-	E	-	N
		Contact Block		Conduits		Blank: Momentary		LED		Emergency stop button		One-way or two-way
		SL13: 1NO/3NC		A: 1/2NPT		R: Manual reset		Blank		Blank		Blank: Two-way Actuation
		SL22: 2NO/2NC		C: M20				24: 24VDC				N: One-way Actuation
								120: 120VAC				
								240: 240VAC				
								240U: 12-250VAC/DC				

Please contact us for other contact block configuration

CP8 SERIES CABLE PULL SAFETY SWITCHES

- Max span 160m (524 ft) for CP8171, 80m (262 ft) for CP8171R and CP8171L
- Compatible to EN418 required with emergency stop button on the surface cover
- Works in two direction: tripped when the wire is pulled or breaking.
- Optional indicator light to show the state.
- Positive Opening of NC contacts
- Conform to EN60947-5-5, ISO13850, ISOTR 12100, IEC 60947-5-1, EN 418



CP8171



CP8171L

SUNS™ INTERNATIONAL, LLC
INDUSTRIAL SWITCHES

Insulation Resistance	>100MΩ@500V DC
Contact Resistance	<25mΩ (initial value)
Rated Current/Voltage	Ith:10A 600V AC (EN60947-5-1) AC15 A600 / DC13 Q300
Dielectric Strength	1000VAC for 1 min between current carrying parts 2500VAC for 1 min between non-current carrying parts
Service Life	Mechanical: 1 x10 ⁶ (operations) Electrical: 5 x10 ⁵ (operations)
Operating Temperature	-25~+80°C (-13~176°F)
Humidity	< 95%
Degree of Protection	IP67

SELECTION GUIDE

CP 81	71	-	SL6	-	A	-	R	-	24	-	E	-	N
	Pull direction		4NC/2NO		Conduits		Blank: Momentary		LED		Emergency stop button		One-way or two-way
	71L: Left				A: 1/2NPT		R: Manual reset		Blank		Blank		Blank: Two-way Actuation
	71R: Right				C: M20				24: 24VDC				N: One-way Actuation
	71: Left and right								120: 120VAC				
									240: 240VAC				
									240U: 12-250 VAC/DC				

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Cable & Rope Operated Switches

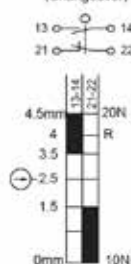
CABLE PULL SAFETY SWITCHES (ONE - WAY ACTUATION)

SUNS™
INTERNATIONAL, LLC
INDUSTRIAL SWITCHES

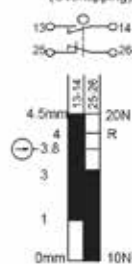
SND4170-R



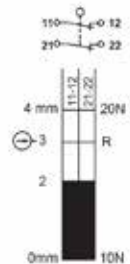
SND4170-SL-R
Slow Action
(Changeover)



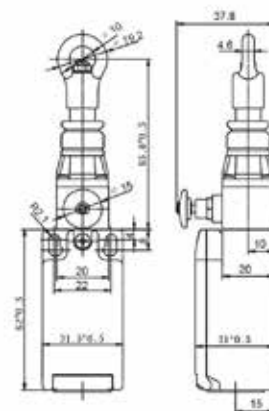
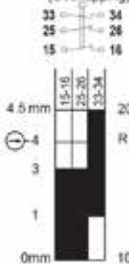
SND4170-SL1-R
Slow Action
(Overlapping)



SND4170-SL2-R
Slow Action



SND4170-SL7-R
Slow Action
(Overlapping)



Order Code

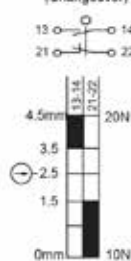
Contact block

SND4170-SL- _R	SL	→	slow action	1NO+1NC	BBM
SND4170-SL1- _R	SL1	→	slow action	1NO+1NC	MBB
SND4170-SL2- _R	SL2	→	slow action	2NC	
SND4170-SL7- _R	SL7	→	slow action	2NC+1NO	

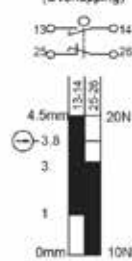
SND2170



SND2170-SL
Slow Action
(Changeover)



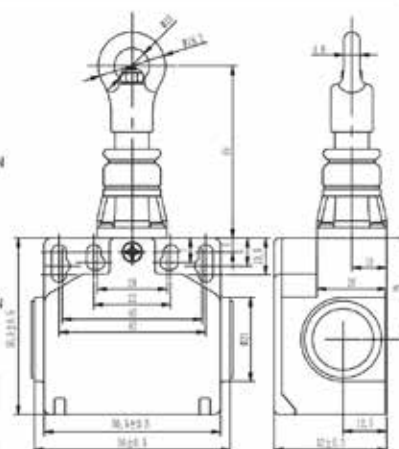
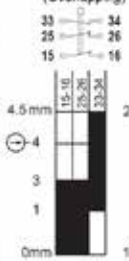
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Slow Action
(Overlapping)



SND2170-SL2
Slow Action



SND2170-SL7
Slow Action
(Overlapping)



Order Code

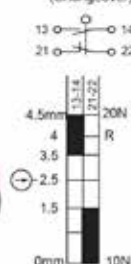
Contact block

SND2170-SL- _	SL	→	slow action	1NO+1NC	BBM
SND2170-SL1- _	SL1	→	slow action	1NO+1NC	MBB
SND2170-SL2- _	SL2	→	slow action	2NC	
SND2170-SL7- _	SL7	→	slow action	2NC+1NO	

SND2170-R



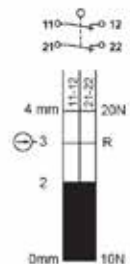
SND2170-SL-R
Slow Action
(Changeover)



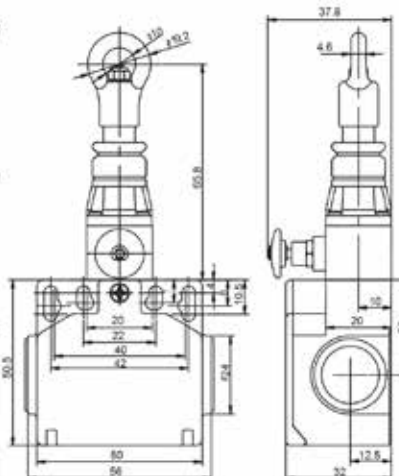
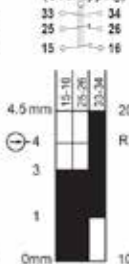
SND2170-SL1-R
Slow Action
(Overlapping)



SND2170-SL2-R
Slow Action



SND2170-SL7-R
Slow Action
(Overlapping)



Order Code

Contact block

SND2170-SL- _R	SL	→	slow action	1NO+1NC	BBM
SND2170-SL1- _R	SL1	→	slow action	1NO+1NC	MBB
SND2170-SL2- _R	SL2	→	slow action	2NC	
SND2170-SL7- _R	SL7	→	slow action	2NC+1NO	

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Cable & Rope Operated Switches

ROPE SAFETY SWITCH WITH RESET FOR EMERGENCY STOP

- Housing: Metal housing, three threaded M20x1,5 conduit entries (FL series)
- Contact block: 1NO+1NC slow action (B33)
- Head: Rope with reset for emergency stop
- Protection degree: IP67 according to EN 60529
- Positive opening: Yes
- CCC Certificate
- cULus Certificate
- EAC Certificate
- EC Declaration of Conformity
- IMQ Certificate



FL 3378-M2

ROPE SAFETY SWITCH WITH RESET FOR EMERGENCY STOP

- Housing: Metal housing, three threaded M20x1,5 conduit entries (FL series)
- Contact block: 1NO+1NC slow action (B33)
- Head: Rope with reset for emergency stop, left transversal head
- Protection degree: IP67 according to EN 60529
- Positive opening: Yes
- CCC Certificate
- cULus Certificate
- EAC Certificate
- EC Declaration of Conformity
- IMQ Certificate



FL 3383-M2

ROPE SAFETY SWITCH WITH RESET FOR EMERGENCY STOP

- Housing: Metal housing, three threaded M20x1,5 conduit entries (FL series)
- Contact block: 1NO+1NC slow action (B33)
- Head: Rope with reset for emergency stop, right transversal head
- Protection degree: IP67 according to EN 60529
- Positive opening: Yes
- CCC Certificate
- cULus Certificate
- EAC Certificate
- EC Declaration of Conformity
- IMQ Certificate



FL 3384-M2

Cable & Rope Operated Switches

SAFETY ROPE PULL SWITCH SRO

MORE SAFETY ON THE PRODUCTION LINE

When it comes to maximum safety on the assembly line, in the production line, or directly at the machine, the Safety Rope Pull Switches from BERNSTEIN AG are a reliable and proven solution. BERNSTEIN has now added a particularly small and compact version to the product family of safety rope pull switches. Thanks to its modular design, the new SRO (Safety Rope Pull) is extremely space-saving as well as being highly versatile. The modular principle has the advantage of always being able to offer exactly the right product for a specific customer application.

PRODUCT HIGHLIGHTS

- As metal or thermoplastic variant – or as a combination of both
- Compact design for confined spaces
- Emergency stop button upon request
- Max. rope length of 30 m

TECHNICAL DATA

- Metal or thermoplastic enclosure
- Up to 4 contacts
- Ambient temperature: -30 °C to +75 °C



Safety rope pull switch

SRO-I73...VT...	Designation
	SRO-I73-11-VT30-1
without emergency stop	SRO-I73-20-VT30-1
	SRO-I73-22-VT30-1
	SRO-I73-31-VT30-1
	thermoplastic enclosure


SRO-M78...VT...	Designation
	SRO-M78-11-VT30-1
without emergency stop	SRO-M78-20-VT30-1
	SRO-M78-22-VT30-1
	SRO-M78-31-VT30-1
	metal enclosure

SRO-I73...VT...	Designation
	SRO-I73-11-VT30-2
with emergency stop	SRO-I73-20-VT30-2
	SRO-I73-22-VT30-2
	SRO-I73-31-VT30-2
	thermoplastic enclosure

SRO-M78...VT...	Designation
	SRO-M78-11-VT30-2
with emergency stop	SRO-M78-20-VT30-2
	SRO-M78-22-VT30-2
	SRO-M78-31-VT30-2
	metal enclosure

SRO-M78...HL...	Designation
	SRO-M78-11-HL30-1
without emergency stop	SRO-M78-20-HL30-1
	SRO-M78-22-HL30-1
	SRO-M78-31-HL30-1
	metal enclosure

SRO-M78...HR...	Designation
	SRO-M78-11-HR30-1
without emergency stop	SRO-M78-20-HR30-1
	SRO-M78-22-HR30-1
	SRO-M78-31-HR30-1
	metal enclosure

SRO-M78...HL...	Designation
	SRO-M78-11-HL30-2
with emergency stop	SRO-M78-20-HL30-2
	SRO-M78-22-HL30-2
	SRO-M78-31-HL30-2
	metal enclosure

SRO-M78...HR...	Designation
	SRO-M78-11-HR30-2
with emergency stop	SRO-M78-20-HR30-2
	SRO-M78-22-HR30-2
	SRO-M78-31-HR30-2
	metal enclosure

Standard rope pull switch

with IN73 (glassfibre reinforced thermoplastic) or MN78 (metal enclosure)

IN73...RP	Designation
	IN73-11 RP
	IN73-20 RP
	IN73-V11 RP
	IN73-22 RP
	IN73-31 RP
	thermoplastic enclosure

MN78...RP	Designation
	MN78-11 RP
	MN78-20 RP
	MN78-V11 RP
	MN78-22 RP
	MN78-31 RP
	metal enclosure

262.652.8660

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Cable & Rope Operated Switches

WEATHER-PROOF ALL-ROUNDER – SRM ROPE PULL SWITCH



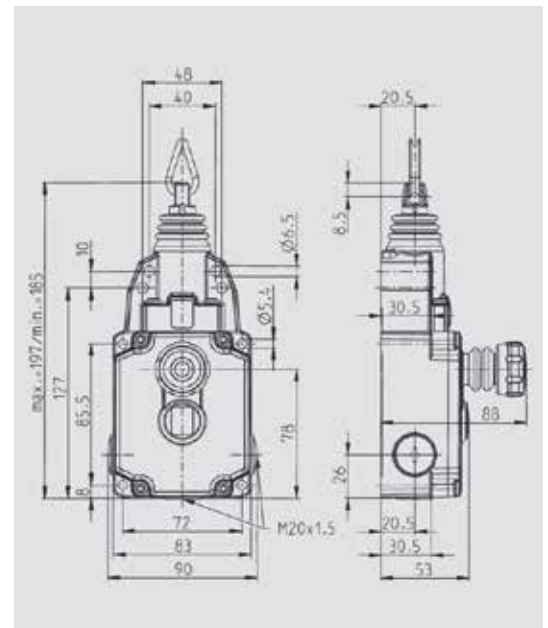
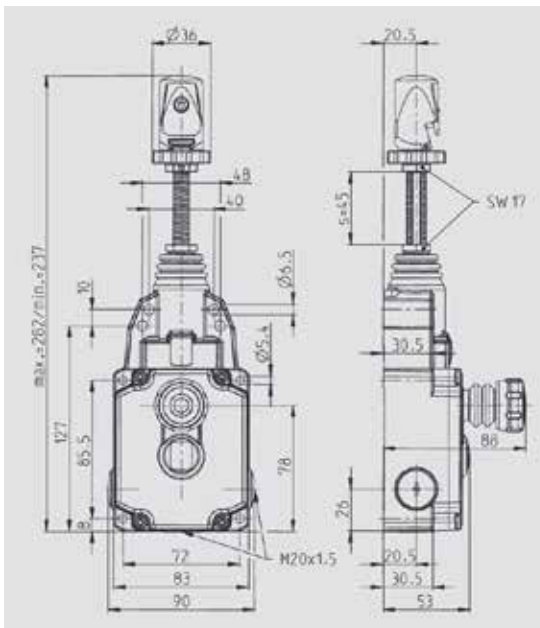
Even under extreme conditions, such as major temperature fluctuations, the SRM rope pull switch continues to work reliably.



TECHNICAL DATA SRM

- Rated insulation voltage
Ui 250 V AC
- Rated operating voltage Ue 240 V
- Utilization category / switching capacity: AC-15, 240 V / 3 A ;
120 V / 6 ADC-13, 250 V / 0,27 A ;
125 V / 0,55 A
- Mechanical switching frequency
max. ≤ 20/min.
- Mechanical service life 1 x 10⁵
switching cycles
- B10d: 2 x 10⁵ million
- Admissible ambient temperature
-30 °C to +80 °C
- Protection class IP67 in
accordance with IEC 60529
- Aluminium pressure die-casting
enclosure

- Rope pull switch manufactured in accordance with IEC 60947-5-5 and ISO 13850
- Stable and durable metal housing (Aluminium pressure die-casting)
- Suitable for outdoor use
- Can be deployed at temperatures between -30 °C and +80 °C
- Easy to fasten due to hole template patterns common for most rope pull switch models
- Flexible handling with three M20 x 1.5 cable entries
- Easy installation due to the maximum connection space
- Up to four positively driven NC contacts
- Separate-action built-in switches
- Protection class IP67
- AS-i Safety at Work versions available



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Cable & Rope Operated Switches

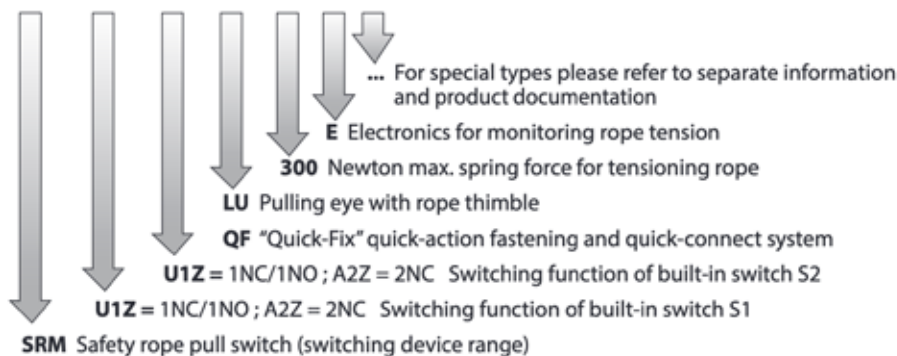
(continued)

WEATHER-PROOF ALL-ROUNDER – SRM ROPE PULL SWITCH



Designation	Contact type	Max. span length	Features
SRM-U1Z/U1Z-QF-300	2NC / 2NO	75 m	Quick-Fix QF
SRM-A2Z/U1Z-QF-300	3NC / 1NO	75 m	Quick-Fix QF
SRM-U1Z/U1Z-QF-300-E	2NC / 2NO	75 m	Quick-Fix QF, remote indicator E
SRM-A2Z/U1Z-QF-300-E	3NC / 1NO	75 m	Quick-Fix QF, remote indicator E
SRM-U1Z/U1Z-QF-175	2NC / 2NO	37,5 m	Quick-Fix QF
SRM-A2Z/U1Z-QF-175	3NC / 1NO	37,5 m	Quick-Fix QF
SRM-U1Z/U1Z-QF-175-E	2NC / 2NO	37,5 m	Quick-Fix QF, remote indicator E
SRM-A2Z/U1Z-QF-175-E	3NC / 1NO	37,5 m	Quick-Fix QF, remote indicator E
SRM-U1Z/U1Z-LU-300	2NC / 2NO	75 m	Eye LU
SRM-A2Z/U1Z-LU-300	3NC / 1NO	75 m	Eye LU
SRM-U1Z/U1Z-LU-300-E	2NC / 2NO	75 m	Eye LU, remote indicator E
SRM-A2Z/U1Z-LU-300-E	3NC / 1NO	75 m	Eye LU, remote indicator E
SRM-U1Z/U1Z-LU-175	2NC / 2NO	37,5 m	Eye LU
SRM-A2Z/U1Z-LU-175	3NC / 1NO	37,5 m	Eye LU
SRM-U1Z/U1Z-LU-175-E	2NC / 2NO	37,5 m	Eye LU, remote indicator E
SRM-A2Z/U1Z-LU-175-E	3NC / 1NO	37,5 m	Eye LU, remote indicator E
AS-i SRM-QF-175		37,5 m	Quick-Fix QF, AS-i Safety at Work
AS-i SRM-QF-300		75 m	Quick-Fix QF, AS-i Safety at Work
AS-i SRM-LU-175		37,5 m	Eye LU, AS-i Safety at Work
AS-i SRM-LU-300		75 m	Eye LU, AS-i Safety at Work

SRM-U1Z/U1Z-QF-300-E-...



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Foot Switches

FOOT SWITCH WITH CONTROLLER OUTPUT (ANALOGUE OUTPUT)

- Variable controlling current and voltage output that is directly proportional to the pedal position.
- Teachable signalling output is additionally activated if a certain pedal position which has been adjusted before has been reached.
- Analogue output can be delivered in a 0–5 V, 0–10 V, 0–20 mA or 4–20 mA version.
- Available in single pedal version.



FOOT SWITCHES WITH SAFETY LOCK WITH MANUAL RELEASE

- Pedal pressed up to pressure point: The make contact is closed and the work process is started.
- Pedal pressed beyond resistance of the pressure point in an emergency situation: The make contact is interrupted and locked, the work process is interrupted. In this phase the lock remains in the Off position even when the pedal is not pressed. This reliably prevents uncontrolled restart of the machine or moving parts.
- Release:
Only after the hazardous situation has been remedied does manual release (pushbutton on the side of the enclosure) release the contacts again and the work process can be restarted by pressing the pedal as far as the pressure point.



SINGLE FOOT SWITCH WITH PROTECTION

- Housing: Polymer housing, one threaded conduit entry M20x1,5
- Protection type: With protection, Yellow colour (RAL 1023) with M25 hole for VF KIT31
- Contact block: 1NO+1NC fast action
- Protection degree: IP53
- Positive opening: Yes
- EAC Certificate
- EC Declaration of Conformity



PX 10110-BM2

Foot Switches

THREE-POSITION SAFETY FOOT SWITCHES (FS-61G-SP-S-ZR SINGLE PEDAL)

SUNSTM INTERNATIONAL, LLC
INDUSTRIAL SWITCHES

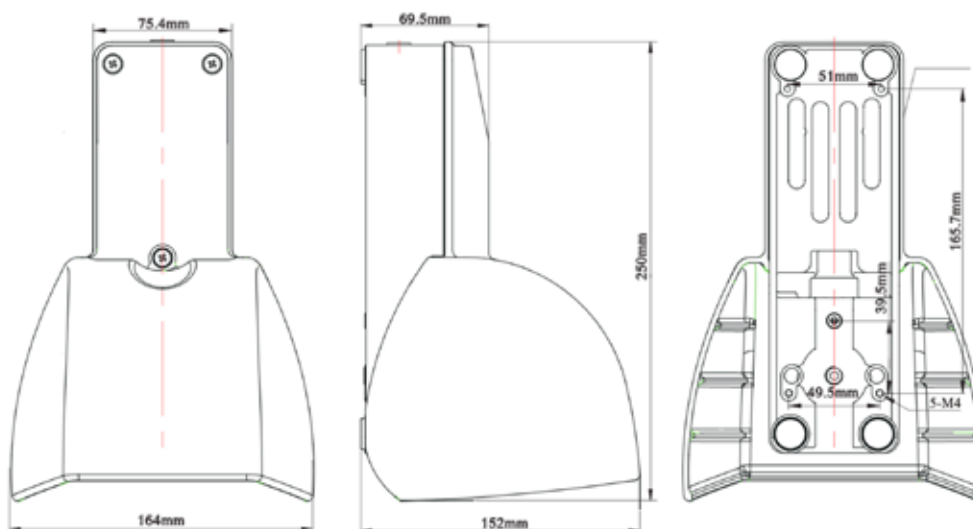
These foot switches are designed for some critical applications such as press brake machine control. These footswitches have at least one of the pedals with 3 positions, with a pressure point, to control dangerous movements. For press brake control as an example: press the pedal to lower down a press brake. It has 4 working contacts (2NC+2NO) to drive the movement and one safety switch (1 positive opening NC contact + 1NO) to stop the movement. Pressing the foot pedal, until the pressure point where resistance is noticeable. This allows the changeover of the 2 working contacts and press is moving downward. When press harder beyond the pressure point, the 2 working contacts return to their first position and the positive opening safety contact is activated as redundant safety circuit in order to initiate immediately the dangerous movement. A restart of the machine is only possible after releasing the foot switch.



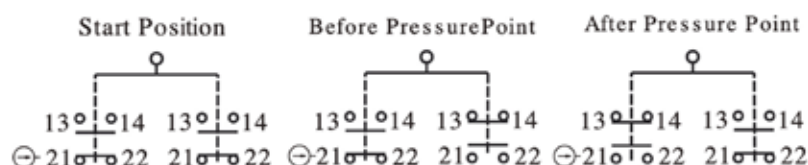
SPECIFICATIONS

Operating Frequency	60 ops/min
Insulation Resistance	>100MW@500V DC
Contact Resistance	<25mW
Rated Current/Voltage	10A/600V AC A600/AC15 Q300/DC13
Inrush Current	Complies with IEC947-5-1: AC15/DC13
Dielectric Strength	1000VAC for 1 min between current carrying parts 2500VAC for 1 min between non-current carrying parts
Service Life	Mechanically 1 x10 ⁶ (operations) Electrically 5 x10 ⁵ (operations)
Operating Temperature	-30~+80°C (-22~176°F)
Degree of Protection	IP65, NEMA type 2, 4, 13 (IP68, NEMA type 6, 6P available on request)

DIMENSIONS (MM)



ACTUATION SEQUENCE DIAGRAM:



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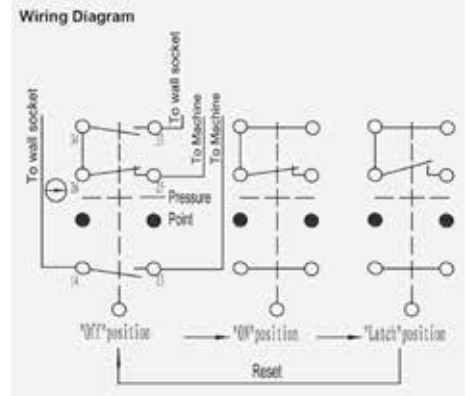
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Foot Switches

FS-6 SERIES SAFETY FOOT SWITCHES WITH EMERGENCY STOP

SUNSTM INTERNATIONAL, LLC
INDUSTRIAL SWITCHES

This is a special design foot switch with two stage momentary contacts. There is noticeable resistance between stage one and stage two. When pressing the pedal without reaching the pressure point, the foot switch operates in the normal model. In case of emergency, the user depresses the foot pedal even harder instead of releasing the pedal. This special safety foot switch will break the electrical contact and lock. The manual reset button needs to be pushed before it can operate in normal model again. This can quickly prevent damage to the machine or injury to human life.

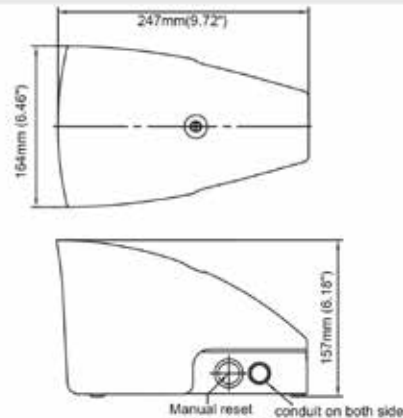


OPERATING SEQUENCE:

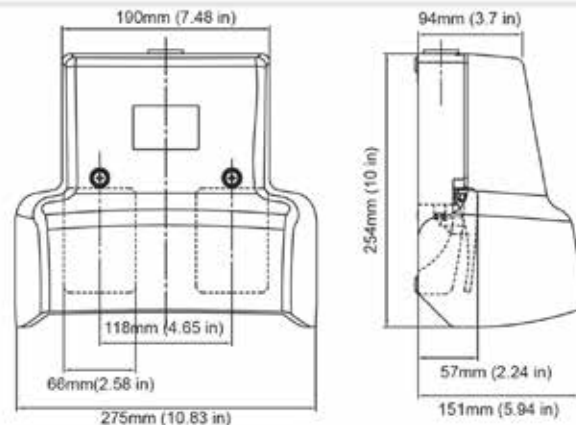
- | | |
|-------------------|---|
| "OFF" | Step 1: The pedal is not depressed. The contacts are open. The machine is turned off. |
| "ON" | Step 2: To start the machine, the pedal must be depressed until the "pressure point", where resistance is noticeable. |
| "EMERGENCY - OFF" | Step 3: In an emergency, if the pedal is depressed beyond the pressure point, the machine will stop. Beyond the pressure point, the contacts are locked in the "OFF" - Position. The machine cannot operate at this time. Note: The machine can also be stopped by releasing the pedal instead of depressing harder. (Back to Step 1) |
| "RESET" | Step 4: The push button on the side of the foot switch must be pushed by hand to enable the foot switch to start the machine function again. |
| "ON" | Step 5: Return to condition described in Step 2. |

DIMENSIONS

FS-61G-SP-_R



FS-62G-SP-_R



Foot Switches

FS-6 SERIES SAFETY FOOT SWITCHES

- Robust aluminum alloy die cast body
- Choice of different type of contact blocks
- Galvanically separated contacts
- Double break contacts
- Screw terminals with self-lifting clamps for easy wiring
- Positive opening of NC contacts
- Safety reset option available
- UL/CSA approval(E216958)
- Threaded hole available in:
PG13.5, M20x1.5 and 1/2NPT

SUNSTM INTERNATIONAL, LLC
INDUSTRIAL SWITCHES

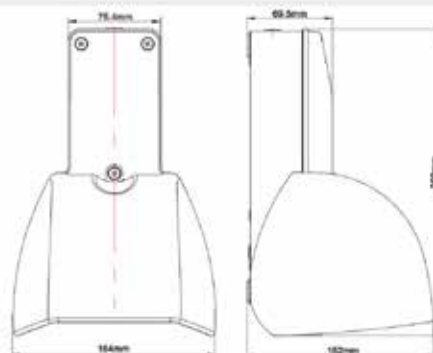
Operating Frequency	60 ops/min
Insulation Resistance	>100MΩ@500V DC
Contact Resistance	<25mΩ (initial)
Rated Current/Voltage	10A/600V AC A600/AC15 Q300/DC13
Inrush Current	Complies with IEC947-5-1: AC15/DC13
Dielectric Strength	1000VAC for 1 min between current carrying parts 2500VAC for 1 min between non-current carrying parts
Service Life	Mechanically 1 x 10 ⁶ (operations) Electrically 5 x 10 ⁶ (operations)
Operating Temperature	-30~+80°C (-22~176°F)
Degree of Protection	IP65, NEMA type 2, 4, 13 (IP68, NEMA type 6, 6P available on request)

SELECTION GUIDE

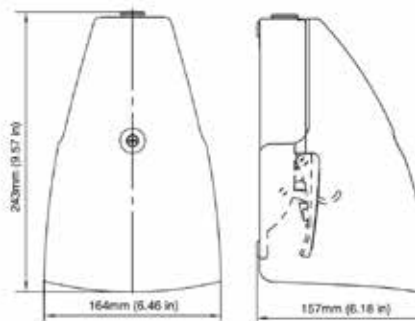
FS - 61 - G - SP - - - - -	Number of Pedals	Guarding Options	Switch Type	Special Features	Switch Configuration	Options	Conduit Type
61: Single pedal	Blank: No guard	SP: Snap action	Blank:	Blank: SPDT			A: 1/2NPT
62: Dual pedals	G: Fully guarded	SL: Slow action break before make	A: Anti-trip	T: DPDT	K: Gold plated contacts		B: PG13.5
		SL1: Slow action make before break		S: 2 stages			C: M20 x1.5
				S(150N):2-stage with 150N pressure point			
				S(300N): 2-stage with 300N pressure point			

DIMENSIONS

FS-61G(IP68)



FS-61G (Anti-trip)



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Foot Switches

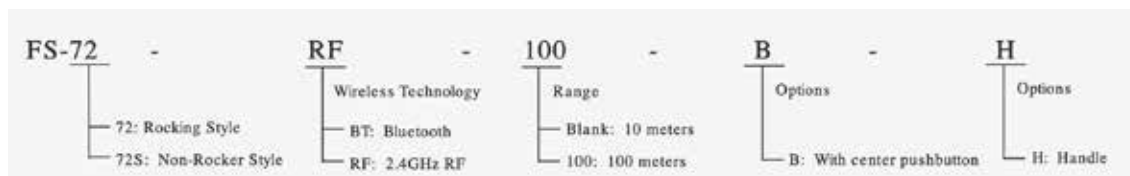
FS-8 SERIES WIRELESS MEDICAL FOOT SWITCHES

SUNSTM INTERNATIONAL, LLC
INDUSTRIAL SWITCHES

- 2 wireless technologies available:
 - 2.4GHz RF wireless
 - Bluetooth wireless
- Removes clutter of wires
- Easy to clean and move around
- Multiple systems can be used in close vicinity
- RF wireless uses frequency-hopping spread spectrum (FHSS) RFID technology
- Transmitter powered by 4 (AA) batteries
- Long battery life

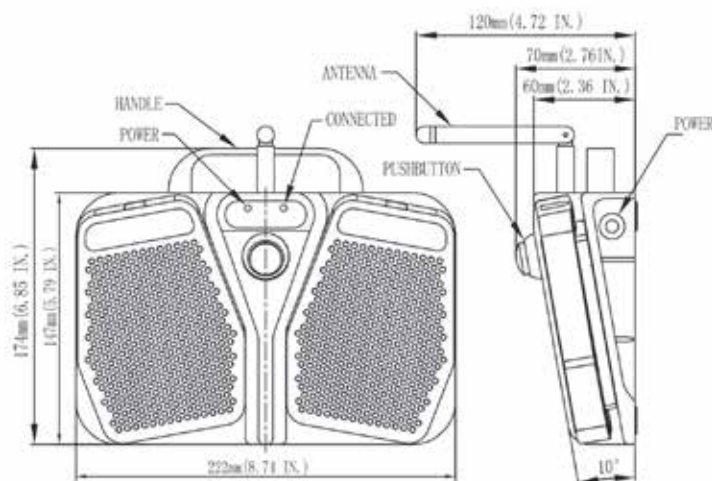
Operating Frequency	60 ops/min
Insulation Resistance	>100M Ω @ 500V DC
Contact Resistance	<25m Ω (initial)
Rated Current/Voltage	Receiver output 10A/250VAC
Service Life	Mechanically 1 x10 ⁶ (operations)
Operating Temperature	-10~+80°C (14~176°F)
Transmission Frequency	2.40 - 2.483 GHz
Protocols	IEC802.15.1
Standards	EN 300 328,V1.7.1, EN612326-1(2006); EN 301 489-1,V1.8.1 EN301 489-17,V2.1.1
Degree of Protection	IP20

SELECTION GUIDE



DIMENSIONS

- FS-72S-RF (2.4GHz, 2 channels)
- FS-72S-BT (Bluetooth, 2 channels)
- FS-72S-RF-B (2.4GHz, 3 channels)
- FS-72-RF (2.4GHz, 4 channels)
- FS-72-BT (Bluetooth, 4 channels)
- FS-72-RF-B (2.4GHz, 5 channels)
- FS-72-BT-B (Bluetooth, 5 channels)



5-Channel Receiver Module (with relay output)

- RCV-RF-5 (2.4GHz)
- RCV-BT-5 (Bluetooth)

Power Supply: 10-30V AC/DC
Output rating: 10A/250V



7-Channel Receiver Module

- RCV-RF-7 (2.4GHz)
- RCV-BT-7 (Bluetooth)

Power Supply: 10-30V AC/DC

- Outputs:
- 5-channel switch output: 200mA (voltage=input voltage)
- 1 channel linear potentiometer output: 0-10K Ohm
- 1 channel analog linear output: 0- 5VDC



* Contact us for custom circuit for OEM applications

Safety – Mats, Edges, Bumpers, Controllers

SAFETY EDGES

The SENTIR edge safety edges of ASO Safety Solutions are pressure-sensitive sensors applied to ensure the safety of closing edges at potential crushing or shearing points which are prone to accidents. They may be installed in the case of automatic gates, machines and other facilities for handling equipment or moving stage elements in order to protect individuals from bodily harm or machinery from damage.



The Right Impulse at the Right Time.

SAFETY BUMPERS

Adaptable, extremely versatile and totally reliable. These qualities are the hallmarks of our SENTIR safety bumper. They are highly valued as a guarantee of safety in transport vehicles and industrial trucks, high-shelf warehouses, production lines, mobile systems. In fact, whenever great flexibility of safety equipment is required and a wide selection is demanded in terms of form, color and size.

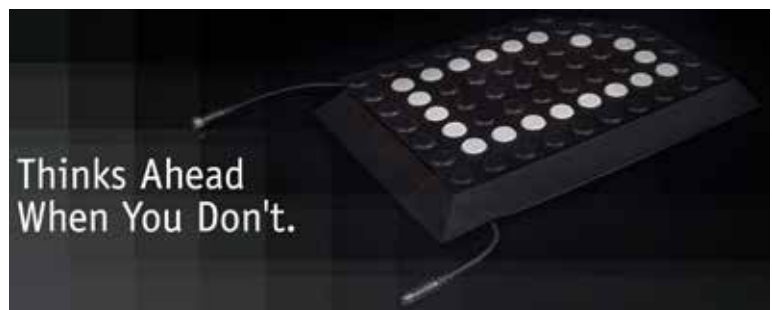


Stops Reliably and within Seconds.

SAFETY MATS

SENTIR mat safety mats are laminar sections which are used to safeguard dangerous areas in the entire industrial and production automation. Stepping on the mat triggers an immediate “stop” signal in order to prevent endangering movements.

A single compound polyurethane material assures impermeability against oils, water and dirt. An anti-slip surface is also implemented into the design. Optional checkered surfaces in aluminum or high-grade steel can be used in areas where high mechanical demand is placed on the upper SENTIR mat surface. Individual design, various switching zones and full or partly colored mats are possible.



Thinks Ahead When You Don't.

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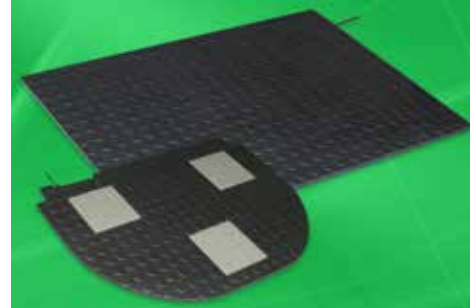
Safety – Mats, Edges, Bumpers, Controllers

SAFETY MATS

- Surface switch for convenience and safety applications
- System is simple to install
- Resistant to the effects of weather
- Thickness: 0.4" / 1cm
- Materials: Silicone free. PVC free upon request.
- Insulation strength: > 1500 VAC
- Isolation class: IEC IP67

For safe activation and deactivation of machines, devices and automatic doors. BBC Bircher Smart Access contact mats are used for detecting people or objects within a defined area. In conjunction with the EsMatix 3 safety switching device, they form a certified system for safeguarding danger zones, and thus for protecting people. In combination with the EsMatix 3 safety switching device, the BBC Bircher Smart Access safety contact mat according to EN 13856-1 is type-tested and corresponds to PLe, cat. 3 according to EN ISO 13849-1.

BIRCHER
Reglomat



SENSING EDGES

Electrical sensing edges for automatic gates, doors, public transport and industry. Suitable profile for every application. High mechanical load capacity. Conformity acc. to EN 12978.

Electrical sensing edges from BBC Bircher Smart Access are used for protecting crushing and shearing points on automatic doors, gates and grids. Profiles of different sizes in combination with various switching devices protect people and objects safely and reliably according to the applicable standards.

They are based on the tried-and-tested principle of the drawing the contact strip into the rubber profile. Even with only minimal pressure, the conductive rubber profiles are pressed against one another and the opening pulse is forwarded to a switching device or a transmission system. The technical design ensures high reliability even in unusual applications.

BIRCHER
Reglomat



SAFETY CONTROLLERS

- Easy installation
- Can be configured for a wide range of applications
- High level of safety thanks to tried-and-tested technology

Safety controllers from BBC Bircher Smart Access monitor the connected contact mats and safety edges for actuation and interrupts. They are also monitored for a change of the quiescent current. The clear LED and LCD displays show the status of the connected sensors at a glance. Since programming is performed at the factory and adjustments are really easy for the user to make, you can rely on getting your switching device started up quickly.

BIRCHER
Reglomat



Safety – Mats, Edges, Bumpers, Controllers

SAFETY RELAYS

ELMON safety relays serve to monitor tactile sensors such as SENTIR safety mats, edges and bumpers. All control units comply with EN 13849-1 and the new Machinery Directive 2006/42/EC. Ongoing research and development and the use of modern technology ensure a permanent improvement of our ELMON relays.



SAFETY MAT MODULES

Switching device for safety-oriented safety mats and safety edges

Safety mat modules from DOLD to secure large hazardous areas and to serve as access controls to machines. These safety devices immediately stop hazardous movements when triggered by an actuating force, such as when a person steps on them, by issuing a control command that is conducted via the DOLD evaluation module. The safety mat modules are in accordance with safety category 4 / PL e as per DIN EN ISO 13849. Their functionality is continuously monitored and can be individually adjusted to the areas to be protected.



SAFETY MAT DISTANCE CALCULATION

The minimum distance calculated is the minimum horizontal distance from the outer edge of the Safety Mat detection zone to the nearest part of the hazard.

THE EUROPEAN PREN-999 FORMULA FOR FLOOR MOUNTED SAFE-GUARDING MATS IS:

$$S = (1600 \times T) + 1200\text{mm}$$

S is the minimum safety distance in millimeters.

The factor of 1600 is based on the standard assumption of 1600mm/s as the approach speed.

T is the overall stopping time in seconds.

The added 1200mm take into account stride length and arm reach.

The overall stopping time T is made up of two parts: $T = t_1 + t_2$

(t₁) is the maximum time between actuation of the sensing function and the output signal switching devices being in the OFF state. For the RT6, t₁ = 20ms

(t₂) is the response time of the machine i.e. the time required to stop the machine or remove the risks after receiving the output from the ME151-4 Safe-Guarding Mat.

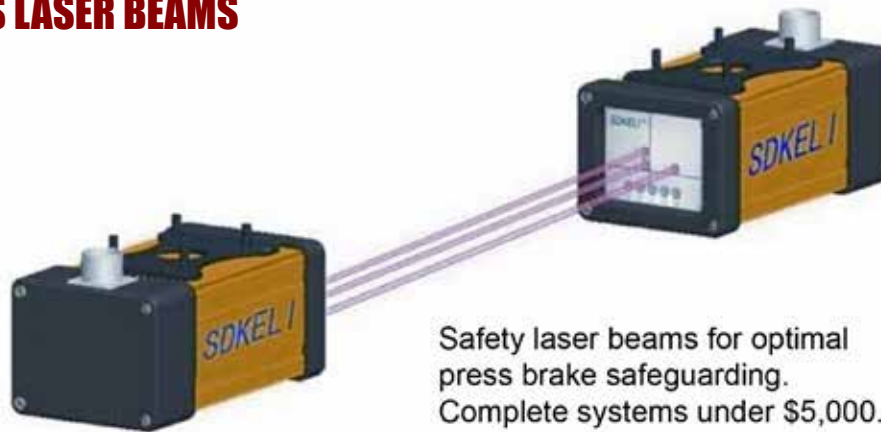
The response time of the machine used in the calculations needs to be the worst case time. Some machines have inconsistent response times, which are dependent upon mode of operation, nature of the workpiece and point in the operating cycle at which stopping is initiated. An allowance should be made for wear in brakes etc., if this can affect the response time. An allowance for further delays in the machine control system may be required in some circumstances.

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Press Brake Safety

BLPS LASER BEAMS



Safety laser beams for optimal press brake safeguarding.
Complete systems under \$5,000.



Product introduction BLPSsafety laser scanner is the Type 4 AOPD that is designed and developed for the personal safety protection of hydraulic bending machine. Its dynamic detection technology has passed the TUV functional Type 4 assessment and won the national invention patents.

The product has fully reached the international advanced level of similar products.

The BLPSsafety laser scanner provides a protective near the upper die tip on the bending machine, so as to provide operators with effective safety protection in the arms and fingers near the upper die tip zone. It takes into account the operator's safety and machine productivity, so it is the most effective solution currently.

Product components It is composed of transmitter, receiver, controller, transmission cable, signal cable and power cable.

- Product features**
- As a Class 1 laser product, it is safe to human eyes;
 - L-type protection beam is set up near the upper die tip on the bending machine, and the beam should move in parallel to the upper die tip;
 - It provides a complete functional design to meet the safety protection requirements of bending machine for processing parts in different shapes;
 - It has a independent controller system, which is also applicable to the bending machine without editing ability;
 - Its has a high anti-electromagnetic interference, light interference ability.

Press Brake Safety

THREE-POSITION SAFETY FOOT SWITCHES

SUNS™
INDUSTRIAL SWITCHES
INTERNATIONAL, LLC



(FS-61G-SP-S-1ZR Single Pedal)

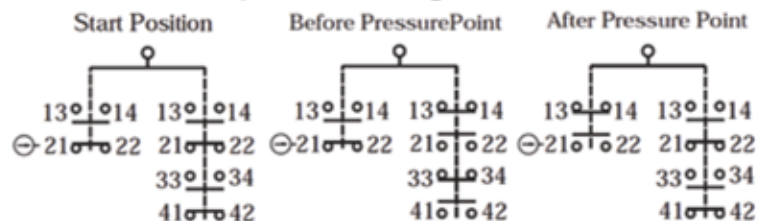
These foot switches are designed for some critical applications such as press brake machine control. These foot switches have at least one of the pedals with 3 positions, with a pressure point, to control dangerous movements. For press brake control as an example: press the pedal to lower down a press brake. It has 4 working contacts (2NC+2NO) to drive the movement and one safety switch (1 positive opening NC contact + 1NO) to stop the movement. Pressing the foot pedal, until the pressure point where resistance is noticeable.

This allows the changeover of the 2 working contacts and press is moving downward. When press harder beyond the pressure point, the 2 working contacts return to their first position and the positive opening safety contact is activated as redundant safety circuit in order to initiate immediately the dangerous movement. A restart of the machine is only possible after releasing the foot switch.

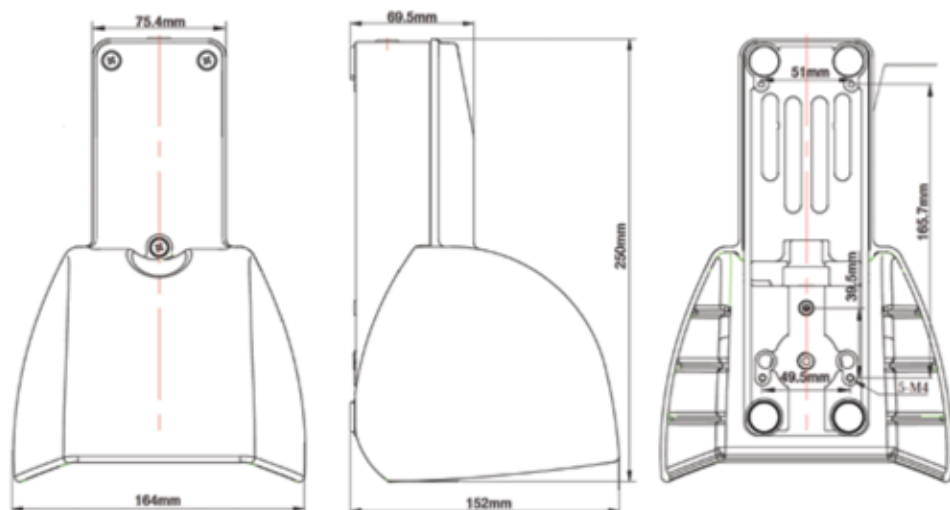
Specifications

Operating Frequency	60 ops/min
Insulation Resistance	>100MW@500V DC
Contact Resistance	<25mW
Rated Current/Voltage	10A/600V AC A600/AC15 Q300/DC13
Inrush Current	Complies with IEC947-5-1: AC15/DC13
Dielectric Strength	1000VAC for 1 min between current carrying parts 2500VAC for 1 min between non-current carrying parts
Service Life	Mechanically 1 x10 ⁶ (operations) Electrically 5 x10 ⁵ (operations)
Operating Temperature	-30~+80°C (-22~176°F)
Degree of Protection	IP65, NEMA type 2, 4, 13 (IP68, NEMA type 6, 6P available on request)

Actuation Sequence Diagram:



Dimensions (mm)



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DOLD 

 **di-soric**

Wick Sensors

TECHNER SENSORS

 Remote Control Technology

CONTRINEX 

SUNS TM INTERNATIONAL, LLC
INDUSTRIAL SWITCHES

 **pizzato**

BACO [®] CONTROLS

sälzer
The Switch Company

Enclosure
Solutions, Inc.

E^s_G Electrotech

 **REES**

 **LINE SEIKI**

Sensors / Controls / Automation

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MONITORING DEVICES

Early detection of critical limit value violations

DOLD offers you a comprehensive offer of measuring and monitoring relays for your individual needs. The devices detect and provide early notification if critical limits of electrical variables such as current, voltage, power, insulation resistance, et cetera are violated. This allows dangers to people and machinery to be reliably avoided. In addition, the availability of your machines and systems will be increased and production outages will be minimised. DOLD's portfolio ranges from standard devices for the monitoring of individual variables to multifunctional devices to flexible error message systems.



POWER ELECTRONICS

High-performance and flexible device solutions for demanding drive tasks

Demanding drive tasks call for high-performance and flexible device solutions. Power electronics from DOLD contain a wide range of product offers consisting of semiconductor contactors, soft start/brake devices as well as reversing contactors, speed controllers as well as multifunctional motor control devices. The products play a large role in part in modern motor control systems.



CONTROL DEVICES

Control technology for all requirements

DOLD is a pioneer in the field of control technology and present the first SPS in a standard housing in the automobile and tool machine industry in 1978. Benefit from this experience. DOLD offers you a universal portfolio of safe, efficient solutions for control technology that is tailored to your needs. A comprehensive palette of field bus-capable input and output modules are available for you.



TIMERS

Safe relays for applications with high demands

DOLD has been a renowned, innovative manufacturer in the field of timer technology for decades that has continued to set standards with its developments. Time relays, that is, relays with specific time response, help you to cost-effectively realised start-up and shut-down delays in industry and building technology. The timer technology from DOLD includes both electro-mechanical and electro-pneumatic time relays as well as electronic devices on the basis of modern microprocessor technology.



INSTALLATION ELECTRONICS

Innovative installation devices so that you aren't left standing in the dark

DOLD offers you a wide palette of products for installation technology. These basic devices for modern building automation ensure that you aren't left standing in the dark or ensure that energy is reasonably saved over the scope of the lighting controls. Alongside timers and remote switches, energy-saving switches and load shedding relays, additional installation devices, such as Venetian blinds switches, network relays or the innovative hybrid switch relays round out the coordinated DOLD program of installation devices.

MINISTART

**Smart motorstarter UG 9256 -
With motor protection function**



Sophisticated drive tasks require powerful and flexible device solutions. The smart motorstarter UG 9256 of the MINISTART series from DOLD with load monitoring for motors up to 4 kW combines up to six functions in a space saving compact enclosure with only 22,5 mm width. Besides the reversal function our smart motorstarter also offers a soft start / soft stop function, a current monitoring as well as a motor protection function and a galvanic separation by an all pole disconnection when motor is switched off.

- Up to six functions in one device: reversing clockwise / anticlockwise, soft start, current monitoring or motor protection, galvanic separation, soft stop
- Space saving in switching cabinet
- Simple and time-saving commissioning as well as user-friendly operation, optionally with motor protection
- Robust power semiconductors up to 1500 V
- Increased system availability
- Higher lifetime by hybrid building
- Energy saving by fast over current protection

SAFEMASTER S

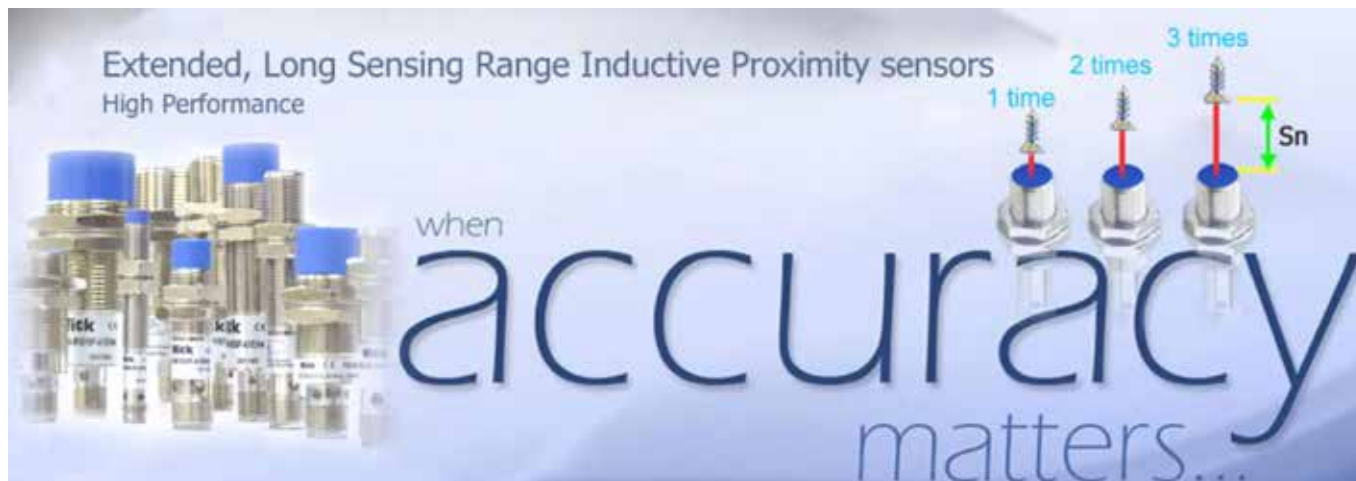
**Standstill monitor UG 6946 -
Safe sensorless standstill monitoring**



Detects the standstill of 3-phase and 1-phase motors independent of the direction of rotation. This means sensors such as encoders or proximity switches are not required. Access to the danger zone of a system is only possible by the enabling signal of the standstill monitor after the drive has been switched off and run down. In order to detect a standstill, the remanence voltage induced by the motor windings is evaluated and provides safe standstill monitoring up to Cat. 4 / PL e or SIL 3, even if the motor has already been switched off. Using a conventional release via a time control, dangerous movement could not necessarily be excluded.

- Space saving in switch cabinet due to 22.5 mm width
- Adjustable response voltage 20 - 400 mV or 0.2 - 4 V
- Possibility of bridging the standstill monitoring
- Standstill detection without additional sensors
- For safety applications up to Cat. 4 / PL e or SIL 3
- Rotary switches protected by sealable transparent cover
- Can be combined with safety interlock SAFEMASTER STS

INNOVATIVE SENSORS AND INDUSTRIAL AUTOMATION



Ultra-mini & ultra-short sensors



Inductive proximity sensors DC



Inductive proximity sensors AC



Inductive proximity sensors AC/DC



INNOVATIVE SENSORS AND INDUSTRIAL AUTOMATION



Extended inductive
proximity sensors



Long inductive
proximity sensors



Analog inductive
proximity sensors



High temperature
proximity sensors



when
durability
matters...

MetalFace Series

IP69K protection with SUS303 STAINLESS STEEL housing



INNOVATIVE SENSORS AND INDUSTRIAL AUTOMATION

High temperature Inductive Proximity Sensors
/T Series from Wick Sensor

when
temperature
matters...



**Weld field immune
proximity sensors**



**MetalFace inductive
proximity sensors**



**High pressure
proximity sensors**



**Capacitive proximity
sensors DC**



**Capacitive sensors
AC AC/DC**



**Photoelectric
sensors**



**Light curtain /
light screen**



**Connectors and
cordsets**



CAPACITIVE SENSORS

KAS High Performance Sensors

Rechner Sensors' High Performance capacitive sensor line features Rechner's industry leading Quattro EMC protection against interference voltage, electrostatic discharge, electromagnetic radiation, and transient burst. The High Performance line also features superior temperature drift characteristics built into the sensor that keeps your machines running accurately on the coldest nights and hottest days. Additionally, High Performance sensors are linearly optimized so that they detect a large range of dielectric products at the same distance. This is useful if your product has the potential for variations in materials or in pellet size: like in mixed grains, or in regrind. All of these features translate into a much more stable signal for the customer. As an additional consequence of the signal stability, High Performance sensors are able to achieve a 25% larger sensing distance over all of the competition.



KAS-26 Series Level Sensors

The 26 Series of capacitive sensors proudly wears Rechner's HP badge while also having unique physical characteristics in shape and size of the sensor that all it to outperform any traditional sensor when it comes to ignoring material buildup.



With no moving parts, the 26 Series gets rid of the headaches of other finicky level sensors like: vibrating rods, tuning forks, and paddle wheels which are prone to cavitation, bridging, and seizing with material accumulation.

This series also includes two types of models: 1 model for High dielectric materials (like ketchup and bread batters), and 1 model for everything else (e.g. grains, flours, and alcohol products).

KAS-NL Capacitive NormLine Sensors

The NormLine series maintains some of the same physical features as the HP models, including the 20-turn trim pot for up to 25X more precise adjustment control over traditional 3/4-turn trim pots.

NL models are also available in a 32mm variant which offers 20% more sensing distance of 30mm models.



KFS Level Probes

The KFS Series of level probes operates on Rechner Sensors 3-electrode Principle which has the unrivaled ability to give highly accurate point level detection of highly viscous materials (like hot melt glue up to +482°F) even in miniature tanks with diameters of only a few inches.

The 3-Electrode Principle is a patented technology that uses the tank as part of the sensor to achieve level control as well-defined as 1 mm even when the sensor is coated in dried liquid or glue.



KS Extreme Temperature Sensors

For applications where an extremely high or extremely low temperature rating is needed, the KS Series operates between -328°F up to +482°F (-200°C to +250°C). That is an operating temperature between liquid nitrogen and the temperature of standard cooking equipment. This sensor can go where most other sensors can't.

KXS Extreme Range & High Temp Sensors

The KXS Series is another member of the 3-Electrode family. By using the metal that the sensor is mounted in, or a metal plate opposite the material you are detecting, sensing distances of 10X those of standard capacitive sensors can be achieved. This allows you to detect far away targets, or targets that have very low dielectric properties (like foam packaging pellets, dielectric as low as 1.1). This series can reach high temperatures up to +482°F by choosing metal + PTFE housing materials.

EGI-RECHNER LOGIC CONTROLLERS

Rechner's line of EGI Rechner Logic Controllers make integrating sensors into new and existing projects easy. The EGI-RLC series controllers are a DC power supply, relay contacts, and logic - all in one easy to use package. The new Rechner Logic Controllers are the easiest way to integrate sensors in any project. It really is level control made easy.



Part Description: EGI-RLC
Article Number: NA7001
Connection type: Screw Terminals
Output signal: Relay (SPDT)
Operating voltage: 100-240 VAC in, 24 VDC out

Output current: 580 mA max
Mounting: DIN Rail
Housing material: Plastic
Input signal: PNP or NPN
IP rating: IP 20 / 30

The core model (EGI-RLC) simplifies the use of DC sensors by combining a DC power supply, relay, and terminal blocks while also eliminating the need to cut, strip, tin, and label wires. This simplifies installations, saves space, and saves time all while increasing your company's productivity by automating tasks. The relay can be connected to control an AC pump or motor, or even be used to output a signal into a PLC.



Part Description: EGI-RLC-TD (Time Delay)
Article Number: NA7002
Connection type: Screw Terminals
Output signal: Relay (SPDT) with Time Delay Logic
Operating voltage: 100-240 VAC in, 24 VDC out

Output current: 580 mA max
Mounting: DIN Rail
Housing material: Plastic
Input signal: PNP or NPN
IP rating: IP 20 / 30

An additional model (EGI-RLC-TD) includes a time delay feature. This can be set either to delay energizing the built-in relay after the sensor has detected the level or delay de-energizing the relay after the sensor no longer sees the product. A trimming potentiometer allows you to adjust the time delay between 0.1-60 seconds.



Part Description: EGI-RLC-MM (Min-Max)
Article Number: NA7003
Connection type: Screw Terminals
Output signal: Relay (SPDT) with Min-Max Logic
Operating voltage: 100-240 VAC in, 24 VDC out

Output current: 580 mA max
Mounting: DIN Rail
Housing material: Plastic
Input signal: 2 x PNP or NPN (NO only)
IP rating: IP 20 / 30

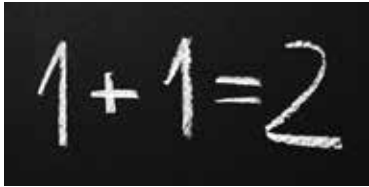
For a more completely automated system, a min-max model is also available (EGI-RLC-MM). Connect two sensors to this unit and place them at your low level and your high level points in a tank. When the level in the tank drops below the min sensor, the relay will energize to start a pump or a motor. The relay will remain energized until the tank has been filled to the max sensor. At this point, the relay will de-energize and stop the filling process. The relay will remain de-energized until the level drops below the min sensor again. The cycle then repeats to keep the tank filled. This model simplifies a complex task without the need to hire a PLC programmer.

STANDARD AND SPECIAL SENSORS

			
Photoelectric Sensors	Laser Distance Sensors	Fiber optic sensors	Colour Sensors
			
Fork Light Barriers	Angled Light Barriers	Frame and Ring Light Barriers	Ring and Tube Sensors
			
Level Probes	Label Sensors	Cylinder Sensors	Sensors for Gripper Systems
			
Ultrasonic Sensors	Contact Sensors	Magnetic Field Sensors	Radar Sensors
			
Light Curtains	Proximity Switches	Movement Sensors	

INDUCTIVE SENSORS

Inductive BASIC



Inductive MINIATURE



Inductive EXTREME



Inductive EXTRA PRESSURE
up to 200 bar



Inductive HIGH PRESSURE
up to 1000 bar peak



Inductive EXTRA TEMPERATURE
up to 120°C



Inductive HIGH TEMPERATURE
up to 230°C



Inductive WASHDOWN



Inductive ANALOG OUTPUT



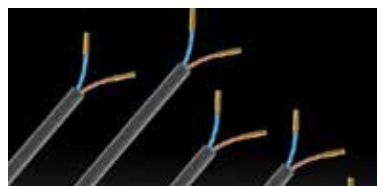
Inductive WELD-IMMUNE



Inductive DOUBLE-SHEET



Inductive 2-WIRE



Inductive CHIP-IMMUNE



Inductive MARITIME



Inductive SMART



STATIONARY LEGACY SYSTEMS 27MHZ

Short Range Wireless Remote Control Systems

UP TO 1/2 MILE

Remote Control Technology's Short Range Wireless Remote Control System includes built-in relays with several modes of operations and simple wireless PLC controls.

Medium Range Wireless Control and Telemetry

UP TO 2 MILES

A great solution for applications that do not require the full functionality of the Long Range System. Features include: plastic NEMA 4x enclosures, high-gain antennas, and 27 MHz communications for non-line-of-sight applications. The receivers come with 12VDC relays already installed.

Long Range Industrial Remote Controls

OVER 2 MILES

Long Range Switching is Remote Control Technology's most advanced industrial radio remote control. Features include powder-coated steel NEMA 4x enclosures, high-gain antennas, and the option for Long Range RF or digital cellular communications.

ADVANCED SYSTEMS 900MHZ

Advanced Stationary System

Part #:80660S 900 MHz radio frequency network with integrated I/O that can operate in most environments while eliminating the need for wiring runs. Wireless radio control systems are built around a Gateway, which acts as the wireless network master device, and one or more Nodes. It is an industrial wireless radio control I/O device with six discrete DIP switch selectable inputs, and six discrete (sourcing) outputs, with DIP switches for user configuration. It combines Frequency Hopping Spread Spectrum (FHSS) technology and Time Division Multiple Access (TDMA) control architecture to ensure reliable data delivery within the unlicensed Industrial, Scientific, and Medical (ISM) bands. The transceivers provide two-way communication between the Gateway and Node, including fully acknowledged data transmission site survey analyses. Lost RF links are detected, and relevant outputs set to user-defined conditions.



data transmission site survey analyses. Lost RF links are detected, and relevant outputs set to user-defined conditions.

Advanced Stationary System

900 MHz radio frequency network with integrated I/O that can operate in most environments while eliminating the need for wiring runs. Systems are built around a Gateway, which acts as the wireless network master device, and one or more Nodes. The Wireless Automation System combines Frequency Hopping Spread Spectrum (FHSS) technology and Time Division Multiple Access (TDMA) control architecture to ensure reliable data delivery within the unlicensed Industrial, Scientific, and Medical (ISM) bands. The transceivers provide two-way communication between the Gateway and Node, including fully acknowledged data transmission site survey analyses. Lost RF links are detected, and relevant outputs set to user-defined conditions. **Part#:80222S** – two discrete inputs, two discrete (sourcing) outputs, two analog (0–20 mA) inputs, and two analog (0–20 mA) outputs. **Part#:80442S** – four discrete inputs, four discrete (sourcing) outputs, two analog (0–20 mA) inputs, and two analog (0–20 mA) outputs.

Advanced Cellular Controller

This versatile industrial wireless controller allows for cellular as well as local ISM band (900MHz) communication and Ethernet connectivity.

- Cellular communications via Verizon LTE (4G)
- Ethernet connectivity
- (4) Universal Inputs; (2) Discrete Outputs / (2) Analog Outputs
- MicroSD card for data logging
- Email and text alerts
- LCD display for I/O information

Cellular module is available for LTE (4G). Compatible with RCT's Advanced Switch Systems (900MHz) and can act as either a standard Gateway radio (for use with remote Node radios) or as a Multi-Mesh Master radio (for use with remote Repeater radios).

The controller is mounted in a NEMA-4X enclosure with 12VDC power supply, I/O terminal blocks and SPDT relays (if required). For cellular modules, a small rubber duck style antenna is provided standard; additional external antennas are available depending on signal strength and local cellular coverage.



HANDHELD LEGACY SYSTEMS 27MHZ

Short Range Wireless System

UP TO 350 YARDS

Remote Control Technology offers the following FM transmitter and receiver products in its line of RF wireless short-range handheld industrial remote controls for PLC activation, conveyor control, lighting systems, and other industrial control applications.

Long Range Wireless System

UP TO 2 MILES

Long range handheld wireless remote controller offers great range capabilities, durable transmitters and receivers, and the ability to control up to 16 outputs on one receiver and up to 199 receivers from one transmitter.

HANDHELD ADVANCED SYSTEMS 900MHZ

Advanced Handheld 6 Station (with feedback)

Part #: 80660HH

- The 902-928 MHz model requires line-of-sight but is more resistant to electrical noise
- Handheld transmitters are available in 8, 4, 2, and 1 buttons in a heavy-duty aluminum enclosure
- Receivers are available with 8, 4, 2, and 1 relay outputs (5A at 250V contact rating) in a plastic NEMA 4x enclosure
- Includes antenna, mount, and coaxial cable
- Replaces wire or conduit when repair or new installation is not possible or practical
- Performance Guaranteed



Short Range Wireless Switch System Handheld 900MHz

The Short Range Wireless Switch System Handheld (SRWSSHH) is designed for short range (up to 350 yards*) and simple wireless switching. The SRWSSHH the simple solution where faulty wire replacement is required, new installation is not possible or practical, or many different pieces of equipment need to be controlled.

The SRWSSHH consists of one, two, four, or eight-key handheld transmitters and a one, two, four, or eight-output (SPDT Class C relay) 902-928MHz frequency hopping receiver. Simply connect the devices you want to control to the SRWSSHH, and the SRWSSHH is ready for use and guaranteed to perform.



ELECTROMECHANICAL AND ELECTRONIC COMPONENTS

Limit switches



Safety switches



Heavy duty limit switches



Explosion proof limit switches



Industrial foot switches



Medical foot switches



USB medical foot switches



Wireless foot switches



Micro switches



Miniature switches



Toggle switches



Push buttons (22mm & 30mm)



Capacitive touch buttons



LED indicator lights



Pendant & control stations



Proximity switches



Shifter & turn signal



IH series ignition switches



Audio visual signaling



Load cell



Other products



INNOVATION / TECHNOLOGY / QUALITY



POSITION SWITCHES

Position switches for standard applications



Position switches for heavy applications



Modular pre-wired position switches



Position switches for indoor use



Microswitches



Switches for special applications

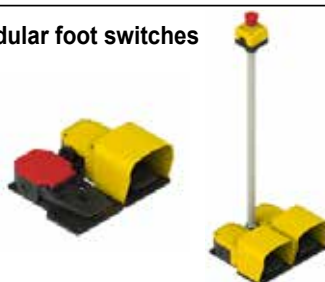


HUMAN-MACHINE INTERFACE

Single foot switches



Modular foot switches



Buttons



Emergency buttons



Selectors



Contact blocks



LED units



Sockets



Indicator lights



Potentiometers



Joystick



Housings



Illuminated discs



Accessories EROUND line



Buzzers



LIFT DEVICES

Position switches for standard applications



Position switches for heavy applications



Switches with manual reset



Switches for over-speed devices with manual reset



Switches with electrical reset



Door switches



Operator switches



Lift control stations



Signaling switches



CONTROL AND SIGNALING

Push buttons



Control stations



Pilot lights



Selector switches



Cam switches



Disconnect switches



Emergency stops

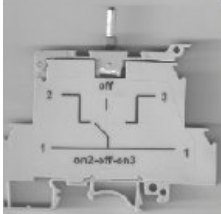


Time switches



QUALITY AUTOMATION, CONTROL AND POWER PRODUCTS

Special function terminals



Power supplies



Bilge pump monitoring



Circuit protection



16mm & 22mm pilot devices



Wireless pushbuttons



Motor control



Woertz collector grounds



LED tower lights



Control relays



Wire management products



Disconnects / disconnects in a box



Cable entry systems



Programmable relays / interface modules



ENCLOSURES / JUNCTION BOXES

We bring the next generation of non-metallic electrical enclosures, cabinets, junction boxes, equipment protection, custom enclosures and custom products, all manufactured using the highest quality engineered thermoplastic materials.

PolyGuard™ UL Listed Types 12/4X/6P Polycarbonate Enclosures"



Large PVC NEMA 4X Junction Boxes



NEMA 4X Wireless Repeater Enclosures



Universal™ Series of NEMA 4X Medium and Large PVC Enclosures



TrueCustom™ PVC or ABS Custom Enclosures



COUNTERS / TACHOMETERS / MEASURING INSTRUMENTS

Line Seiki products are designed and manufactured with the users in mind and are committed to providing only high quality and reliable products. They have a wide variety of products ranging from Counters, Measuring Instruments, Thermometers, Tachometers, Sensors and Laser Products to suit your needs. From a highly industrial applications (OEMs, industrial machine equipments, etc.) to "the everyday use" products (hobbyist, household, etc.), Line Seiki has something to satisfy your counting or measuring needs.

Electronic Counters



Our Electronic Counters range consists of Totalizers, Single/Multiple Preset type, Self-Powered, Communication type and Large Displays. These are available in LED or LCD display types and it comes in different panel sizes and digits sizes.

Electromagnetic Counters



Our Electromagnetic Counters are available in Totalizer or Preset type. Choose from different mounting styles and sizes.

Mechanical Counters



Our Mechanical Counters are designed and built to last for a long time with its robust and sturdy designs. Totalizer or Preset Types are available and it comes in different sizes and mounting styles.

Length Measuring Counters



Our Length Measuring Counters are designed specifically for length measuring or cut-to-length applications of various materials such as Plastic or Metal sheets, Textiles, Cables, etc.

Shut Height Counter



Our Shut height Counters/Slide adjuster are designed for press machines and various machine tools to adjust the die height or the shut height. Upper and Lower limit output is available and it comes in different sizes.

Tally Counters



Our Tally Counters makes counting easy even for the complicated tally counting application.

Timers



Our Timers range provides measurement of elapsed time in Hours, Minutes or Seconds.

Measuring Instruments



Our Measuring Instruments range is a collection of test instruments using microprocessor technology to measure different parameters such as Temperature, Humidity, pH level, water quality, wind velocity, electrical, etc.

Tachometers



Our Tachometers range is designed specifically for speed/rate measurement and control. Hand-held type and Panel Type tachometers are available to suit any degree of user.



DOUBLE PLUNGER PUSH BUTTON SWITCHES

1.00 inch double plastic plunger



1.00 inch and 1.75 inch double plastic plunger



1.38 inch double plastic plunger



Doubleplastic plunger with padlock latch



22.5 MM CONTROL UNITS

22.5 mm operators

Available in Lockable, Push-Pull, and Momentary versions, the following switches are hand operated, control circuit devices, rated 'Heavy Duty' normally for use with electromagnetic equipment. The body is made from die-cast zinc. The mushroom shaped plungers are molded from DuPont Delrin 100ST Acetal for improved impact resistance and are solid colors throughout.

- Nema 12/13, IP 65
- Gold Plated Contacts

Each operator will accept up to three tiers of two contact blocks for a total of six separate blocks. Each operator is supplied with all mounting hardware and a Buna-N (NBR) o-ring which provides an oil tight seal upon installation. The mechanical life of these units is 1,000,000 operations.



Contact blocks

These contact blocks are designed for use on ALL REES push button operators and selector switches as shown on the preceding pages. The mechanical life of these devices is 1,000,000 operations. Each captive terminal on the contact block will accept (2) # 14 AWG stranded wires and the contacts are gold plated to eliminate high resistance tarnishing. The 52702 block consists of a B block (50702) attached to an adapter. This adapter Opens the NC contact of the B block Upon Removal from the switch operator.



22mm legend plates





30.5 MM CONTROL UNITS

30.5mm push buttons

These switches are hand operated, control circuit devices, rated 'Heavy Duty' normally for use with electromagnetic equipment. The body is made from die-cast zinc. The plungers are also made from diecast zinc with the 1.00 in. diameter style having a colored plastic (poly-carbonate) insert. The mushroom style plastic plunger heads are solid colors throughout. Each operator will accept up to three tiers of two contact blocks for a total of six separate circuits. Each operator is supplied with all mounting hardware and a solid neoprene rubber gasket which provides an oil tight seal upon installation. The mechanical life of these units is 1,000,000 operations. These devices can be found on a variety of machinery, used to perform such operations as 'start', 'stop', 'top stop', 'inch', 'on', 'off', 'forward', 'reverse' etc.



30.5mm mushroom and rope pull operators

These switches are hand operated, control circuit devices, rated 'Heavy Duty' normally for use with electromagnetic equipment. The body is made from die-cast zinc. The zinc plated ring eye operator is also made from die-cast zinc. The mushroom ergonomic shaped plungers are molded from DuPont Delrin 100ST Acetal for improved impact resistance and are solid colors throughout. Each operator will accept up to three tiers of two contact blocks for a total of six separate blocks. Each operator is supplied with all mounting hardware and a solid neoprene rubber gasket which provides an oil tight seal upon installation. The mechanical life of these units is 1,000,000 operations. These devices can be found on a variety of machinery, used to perform such operations as 'start', 'stop', 'top stop', 'inch', 'jog', 'on', 'off', 'forward', 'reverse', etc.





SINGLE PLUNGER PUSH BUTTON SWITCHES

Push button switches with larger mounting pattern

These switches are hand operated, control circuit devices, rated 'Heavy Duty' normally for use with electromagnetic equipment. The body, painted with a dry powder paint, is made from die-cast zinc. The plunger head is powder painted or chrome plated die-cast zinc. The plunger head of the 04662 is plastic. Each switch is supplied with all mounting hardware and a solid santoprene rubber gasket which provides an oil tight seal upon installation. The mechanical life of these devices is 1,000,000 operations. These switches can be found on a variety of machines such as punch presses, press brakes, and spot-welding equipment as "RUN", "START" or "STOP" buttons. They are also used on transfer machines.



Flat chrome plunger push button switches

These switches are hand operated, control circuit devices, rated 'Heavy Duty' normally for use with electromagnetic equipment. The cover, painted with a dry powder paint, and the chrome plated/painted plunger are made from die-cast zinc. Each captive terminal will accept (2) #14 AWG stranded wires and the contacts are gold plated to eliminate high resistance tarnishing. The mechanical life of these devices is 1,000,000 operations. These switches can be found on a variety of machines such as punch presses, press brakes, and spot-welding equipment as "RUN" or "START" buttons. Their rugged construction and long term reliability make these switches extremely well suited to function within various environments.

2.25 inch plastic mushroom plunger

The following switches are hand operated, control circuit devices, rated 'Heavy Duty' normally for use with electromagnetic equipment. The body, painted with a dry powder paint, is made from die-cast zinc. The plunger heads are solid colors throughout. Each switch is supplied with all mounting hardware and a solid santoprene rubber gasket which provides an oil tight seal upon installation. The mechanical life of these devices is 1,000,000 operations. These switches can be found on a variety of machines such as punch presses, press brakes, and spot-welding equipment as "RUN", "START" or "STOP" buttons. They are also used on transfer machines. Well suited to function within various industrial/ commercial environments.



2.25 inch metal mushroom plunger

Hand operated, control circuit devices, rated 'Heavy Duty' normally for use with electromagnetic equipment. The body, painted with a dry powder paint, is made from die-cast zinc. The plunger heads are powder painted or chrome plated zinc die-cast. Each switch is supplied with mounting hardware and a solid santoprene rubber gasket which provides an oil tight seal upon installation. The mechanical life of these devices is 1,000,000 operations. Built for a variety of machines such as punch presses, press brakes and spot-welding equipment as "RUN", "START" or "STOP" buttons. The "Positive Break" styles comply with all standards for 'emergency stop' applications. The rugged construction and long term reliability make these switches extremely well suited to function within various industrial / commercial environments.

2.25 inch mushroom plunger with shield and weatherproof

Hand operated, control circuit devices, rated 'Heavy Duty' normally for use with electromagnetic equipment. The body with shield, painted with a dry powder paint, is made from die-cast zinc. The plunger head is powder painted or chrome plated steel. Supplied with all mounting hardware and a solid neoprene rubber gasket for an oil tight seal upon installation. The mechanical life of these devices is 1,000,000 operations. These switches can be found on a variety of machines such as punch presses, press brakes, and spot-welding equipment as "RUN", "START" or "STOP" buttons. They also are used for "Pedestrian Cross-walks" and even found in parking garages and car wash applications. Their rugged construction and long term reliability make these switches extremely well suited to function within various industrial / commercial environments.





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