

Tongue Interlock Switch with Guard Locking & RFID Coding



WARNING:

DO NOT DEFEAT, TAMPER, OR BYPASS THE SAFETY FUNCTION. FAILURE TO DO SO CAN RESULT IN DEATH OR SERIOUS INJURY.

AVERTISSEMENT:

NE PAS DESACTIVER, MODIFIER, RETIRER, OU CONTOURNER CETI INTERVERROUILLAGE IL PEUT EN RESULTER DES BLESSURES GRAVES DU PERSONNEL UTILISATEUR

Original Instructions

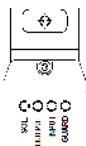
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GUARD	
Guard Closed and Locked	Green (Steady)
Guard Closed and Unlocked	Green (Flash)
Code Incorrect	Red (Flash)
Guard Open	Red

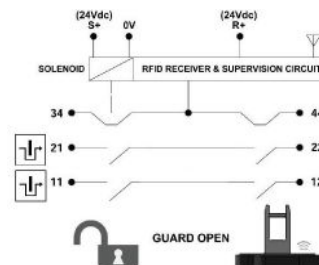
INPUT	
Safety Inputs On	Green (Steady)
Safety Input Missing	Green (Flash)
Safety Inputs Off	Off
Internal fault	Red (Steady)

OUTPUT	
Safety Outputs On	Green (Steady)
Safety Outputs Off	Off
External fault	Red (Flashing)

SOLENOID	
Solenoid Energised	Red
Solenoid De-energised	Off



Quick Connect Pin out from switch (M12)	Terminal	Switch Circuit
2	R+	Supply +24V.dc
3	0V	Supply 0V.dc
7	11	Safety Input 1
1	12	Safety Output 1
4	21	Safety Input 2
6	22	Safety Output 2
8	44	Guard open signal +24V.dc out
N/A	34	Guard unlocked signal +24V.dc out
5	S+	Unlock signal Apply +24V.dc



Internal Schematic

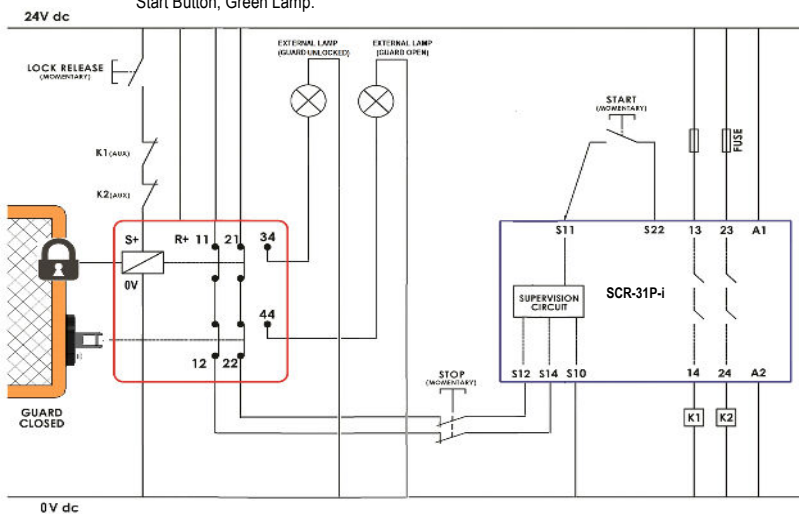
Technical Data:

Standards: IEC60947-5-1 IEC60947-5-3 ISO14119 ISO13849-1 IEC62061 UL60947-5-1

Supply Voltage	24Vdc (+/- 10%) SELV/PELV or Class 2
Power Consumption	R+ (50mA Max.)
	S+ (500mA Max.) (Solenoid)
Safety Circuits	24Vdc 200mA max. switching.
Auxiliary Circuits (34 & 44)	24Vdc 200mA max. Output feed.
Rated Insulation Voltage	500VAC
Rated Impulse withstand	1000VAC
Holding Force (ISO14119)	KLP-Z: F1Max 2000N Fzh 1538N KLM-Z: F1Max 3000N Fzh 2307N
Coding level (ISO14119)	Type 4 High
Actuator insertion for locking	5mm
Sao / Sar (RFID)	15mm / 25mm
Operating Frequency	1Hz
Actuator entry minimum radius	175mm
Body Material	KLP-Z: Polyester KLM-Z: Die cast - Painted red KL3-SS-Z: Stainless Steel 316
Head Material	Stainless Steel 316
Mechanical Actuator Material	Stainless Steel 316
Enclosure Protection	IP67 (IP69K KL3-SS-Z version only).
Operating Temperature	-25°C to +40°C
Mechanical Life Expectancy (B10d)	2.5 x 10 ⁶ cycles at 100mA load
Vibration	IEC68-2-6, 10-55Hz+1Hz
	Excursion: 0.35mm, 1 octave/min

Schematic example.

Connected to SCR-31P-i relay to give Ple to ISO13849-1.
 Stop Button, Lock Release Button,
 Start Button, Green Lamp.



Safety Classification for Guard position monitoring:

Characteristic data according to IEC62061 (used as a subsystem)

Safety Integrity Level	SIL 3	
PFH (1/h)	1.0 E-09	Corresponds to 1% of SIL3
PFV (Av.)	8.7 E-05	Corresponds to 9% of SIL3
Proof Test Interval T ₁	20a	

Characteristic data according to EN ISO13849-1

Performance Level	e	
Category	Cat 4.	
MTTF _d	771a	
Diagnostic Coverage DC	High	

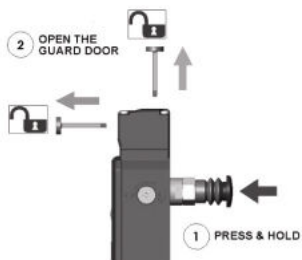
Information with regard to UL Standards: Type 1 enclosure. Use Class 2 power supply or equivalent. Maximum temperature 40°C.

Use 16-28AWG copper conductors (rated 90°C). Terminal Torque 6 lb ins. (0.7Nm).

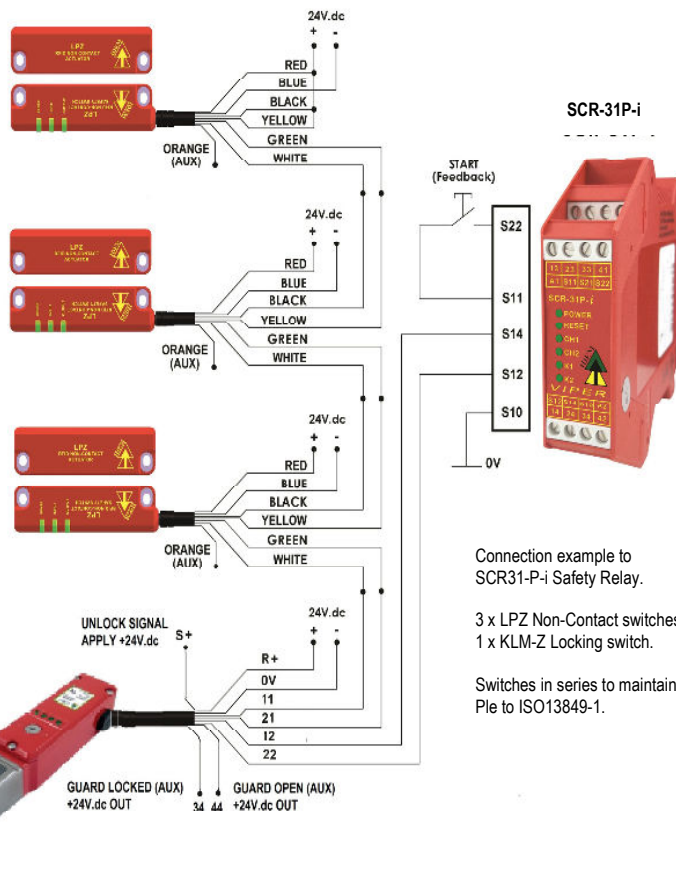
Intended for same polarity use. Safety Circuits (11-12 & 21-22) 24V.dc 200mA max.

Use one polymeric conduit connection. Not suitable for connection to rigid metal conduit.

(Earth bonding terminal inside metal enclosures (if required). Use 16-12AWG conductors).



Where the Risk Assessment for the application permits, non latching escape release versions of the KLM-Z or KL3-SS-Z enable quick release of the switch lock in case of emergency. The switch can be mounted such that access to the release button is available from inside the active guard area. Pressing and holding the release button will release the lock mechanism and open the lock monitoring contacts, whilst the guard can be pushed open. Measures should be taken to reduce the risk of improper activation.



Connection example to SCR31-P-i Safety Relay.

3 x LPZ Non-Contact switches
 1 x KLM-Z Locking switch.

Switches in series to maintain Ple to ISO13849-1.