CROUZET SWITCHES

83894 metal interlock switches 83894120 / 83894130 3-pole Part number 83894120

- Monitoring of moving guards for machines with a stopping time which is greater than the time taken to access the danger zone
- Locked by removing the voltage, unlocked by applying voltage to the electromagnet
- Metal bodies and heads
- Heads have 4 possible positions at 90°
- Positive opening contacts

Part numbers

	Type	Type of contacts	Action
83 894 120	83894120 / 83894130 3-pole	NC+NO+NO (2NO break before make)	Slow action

Specifications

Environment

Conforming to standards Products	IEC 947-5-1, EN 60 947-5-1, UL 508, CSA C22-2 no.14, JIS C4520 (See P.3/4)
Conforming to standards Machine assemblies	IEC 204-1, EN 60 204-1, EN 1088, EN 292O
Certifications	UL, CSA
Protective treatment in normal operation	"TC"
Temperature Use (°C)	-25 →+70
Storage temperature (^{0}C)	-40 →+70
Vibration resistance according to IEC/EN 60068-2-6	
Schok resistance according to IEC 28-2-27	
Degree of protection according to IEC 529 and IEC 947-5-1	IP 67
Cable entry	One threaded hole for cable gland 13

Electrical characteristics

Assigned working characteristics	AC 15 B300 Ue = 240 V, Ie = 1.5 A or Ue = 120 V, Ie = 3 A DC 13 Q300 Ue = 250 V, Ie = 0.27 A or Ue = 125 V, Ie = 0.55 A
Assigned insulation voltage according to IEC 947-5-1	Ui = 500 V
Assigned insulation voltage according to UL 508, CSA C22-2 no.14	Ui = 300 V
Assigned impulse voltage according to IEC 947-5-1	Uimp = 4 KV
Thermal rating according to IEC 947-5-1	Ithe = 6 A
Electric shock protection Class 2 according to IEC 536	●
Resistance between terminals according to IEC 954-5-4	≤ 30 mΩ
Protection against short circuits	Cartridge fuse 10 A gG (gl)
Connection Screw clamp terminals	●
Clamping capacity with or without ferrule	min. 1 x 0,5 mm^2 , max. 1,5 mm^2
Electrical life according to IEC 947-5-1 appendix C	

Environment

Electromagnet supply voltage (50/60 Hz in AC)	24 V AC / DC
Maximum actuation speed	0,5 m/s
Minimum actuation speed	0,01 m/s
Resistance to removal of key	2000 N
Mechanical life (operating cycles)	>10^6
Minimun operating frequency (operating cycles per hour)	600
Minimum positive opening force	20 N
Cable entry according to NFC 68 300	2 PG 13
Weight (g)	1140

Electromagnet characteristics

Operating factor	100 %
Voltage limits	-20 % < +10 %
Service life	20 000
Consumption Inrush	10 VA
Consumption Sealed	10 VA

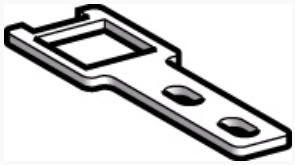
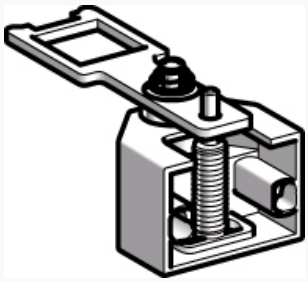
Indicator characteristics

Assigned insulation voltage according to IEC 947-5-1	50 V
Current consumption (mA)	7 mA
Assigned working voltage AC or DC	24 V
Voltage limits AC or DC (including ripple)	20...52 V
Service life (h)	100 000

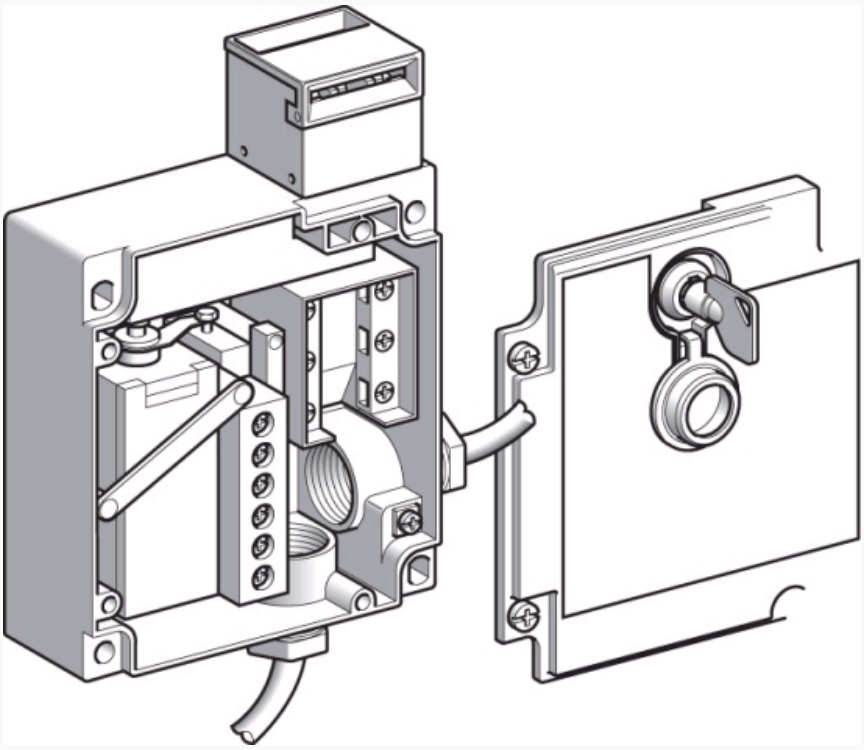
Unless otherwise specified, the characteristics given are applicable to all or part of the product range selected

Protection against voltage surges

Accessories

Symbol	Accessories	Code
	Straight key	79 214 578
	Wide key	79 214 579
	Flexible key	79 214 580

Principles

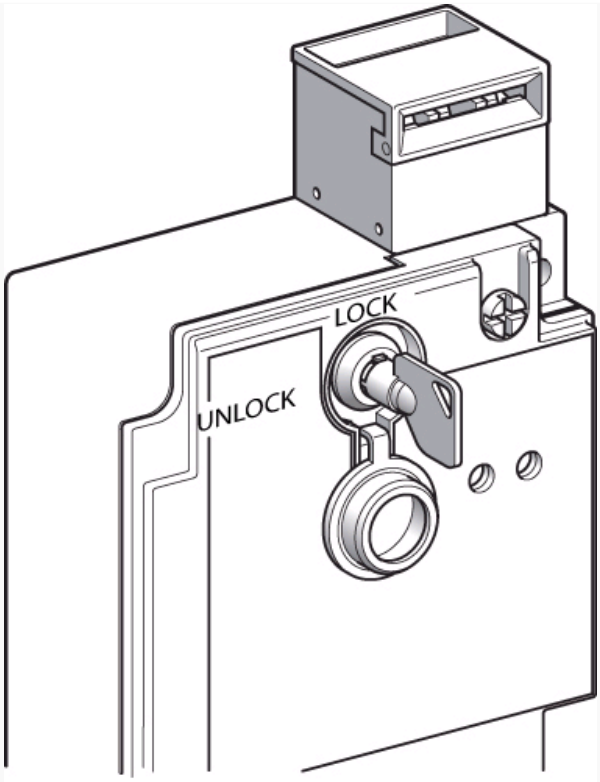


Type 83 894 1 safety switches are fitted with an electromagnet for locking/unlocking the guard.

With the guard locked, the force required to remove the key is **200 daN.**

In addition to the 3-pole contact element actuated by the key, 83 894 2 limit switches also have a positive break type **"NC + NO" contact** element, **actuated by the electromagnet.**
The "NC" contact is integrated in the machine safety circuit, and the "NO" contact indicates the position of the electromagnet.

Principles

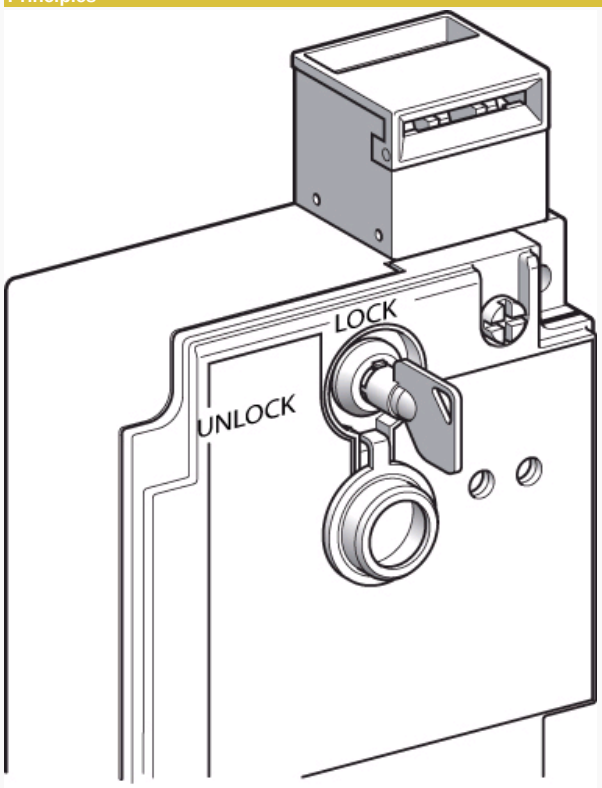


Type 83 894 1 safety switches are supplied with a key-operated lock which can be used to unlock the moving guard, bypassing the electromagnet.

Unlocking using a key-operated lock is recommended in the following cases :
- machine maintenance (if the key is turned to "UNLOCK" and then removed, this will prevent the machine from restarting accidentally, therefore ensuring the safety of maintenance personnel).
- mains failure
- problem with unlocking (locking cannot be released : fail-safe condition). Unlocking by applying voltage to the electromagnet always takes priority over unlocking using a key-operated lock.

The locking mechanism for standard devices allows the key to be removed in the "LOCK" and "UNLOCK" positions.

Principles



Power supply for the electromagnet on 83 894 1

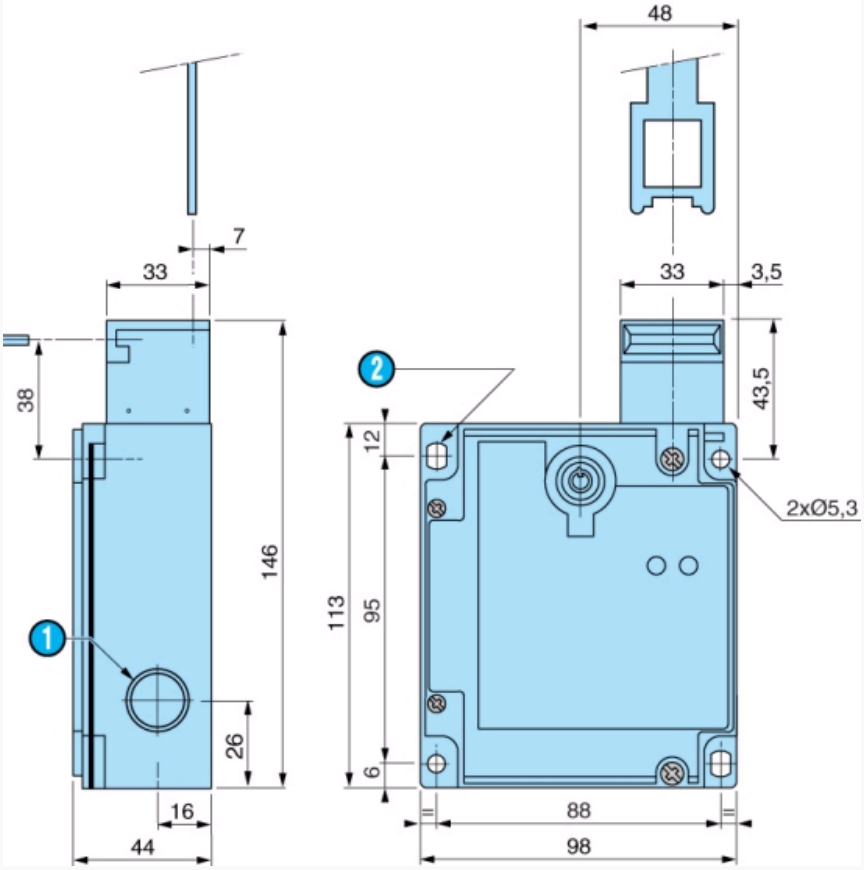
The electromagnet for type 83 894 1 safety switches runs on D.C. and is therefore particularly reliable.
As it is protected by a **bridge rectifier** A.C. or D.C. supplies can be used (24 V, 48 V, 120 V or 230 V).

It is also protected against voltage surges.

Dimensions (mm)

Product

83 894 1

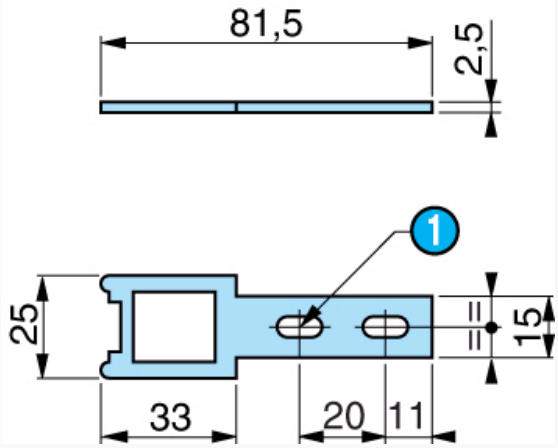


Nº	Legend
1	1 threaded hole for cable gland 13
2	2 slots Ø 7.3 x 5.3

Dimensions (mm)

Actuators

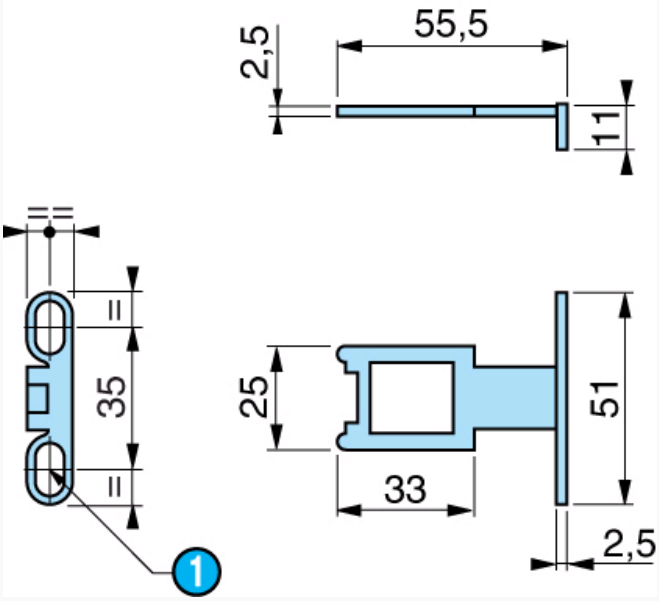
Straight key
79 214 578



Dimensions (mm)

Actuators

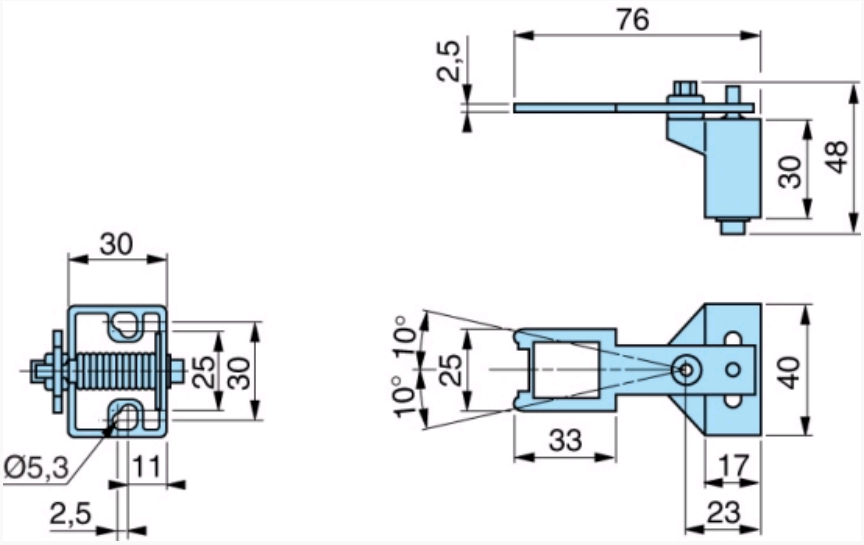
Wide key
79 214 579



Dimensions (mm)

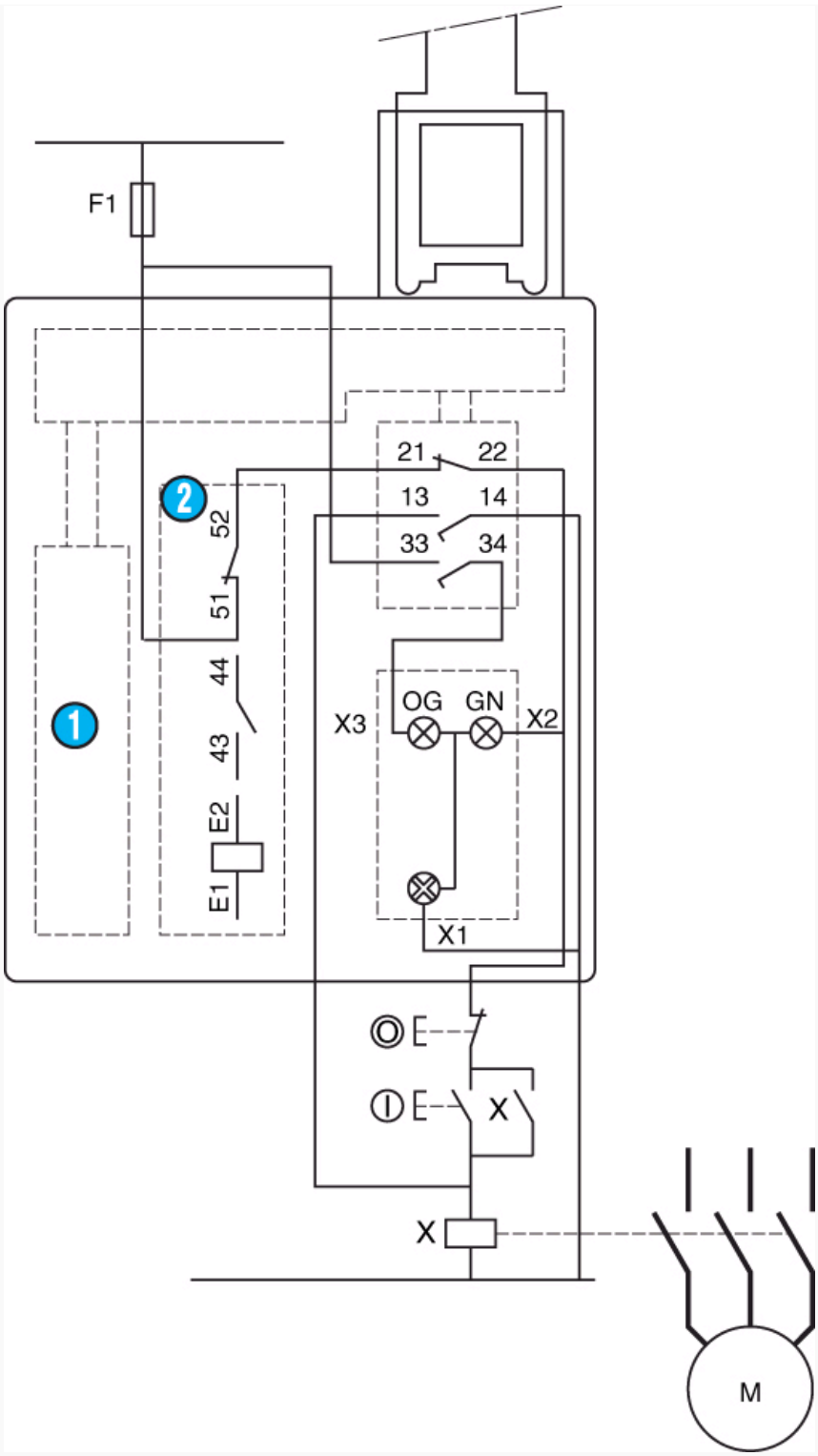
Actuators

Flexible key
79 214 580



Connections

Category 1 in accordance with EN 954-1

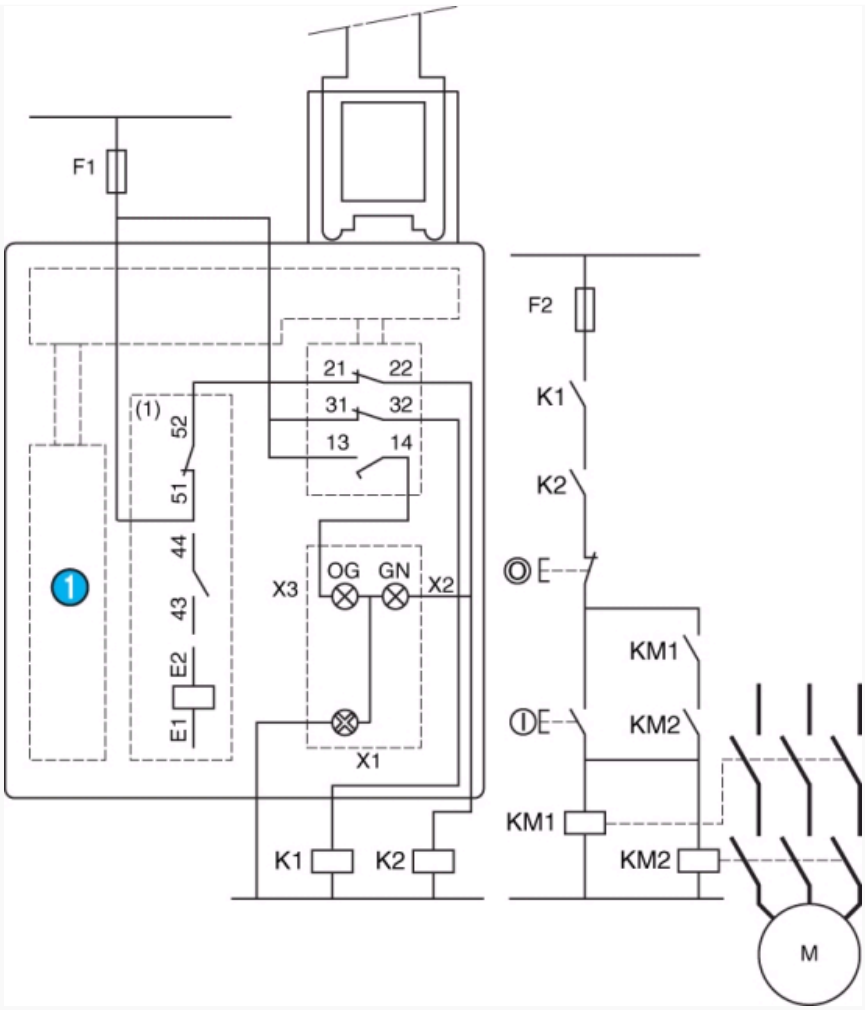


Examples of wiring diagrams with a fuse to provide protection against short-circuits in the cable or tampering. Locking by removal of voltage "NC+NO+NO" 83 894 12

Nº	Legend
1	Electromagnet
2	Auxiliary contact
	E1-E2 : Power supply for electromagnet
	43-44 : Electromagnet signal contact
	13-14 : Safety contact available for redundancy

Connections

Category 3 according to EN 954-1



Examples of wiring diagrams with redundancy of the switch contacts, without monitoring. Locking by removal of the voltage "NC+NC+NO" 83 894 13

Nº	Legend
1	Electromagnet
	33-X1 : LED (orange) : key not inserted
	51-X1 : LED (green) : key inserted and locked
	21-52 : Safety pre-wiring compulsory

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