

83894 metal interlock switches 83894122 / 83894132 3-pole Part number 83894122



- 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 |
|------------|----------------------------|----------------------------------|-------------|
| 83 894 122 | 83894122 / 83894132 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 (°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) | 230 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 |
| Minimum 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 |

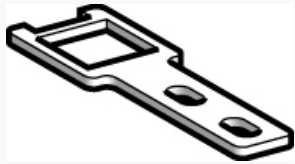

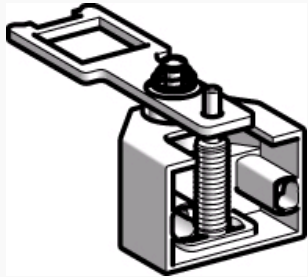
Electromagnet characteristics

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

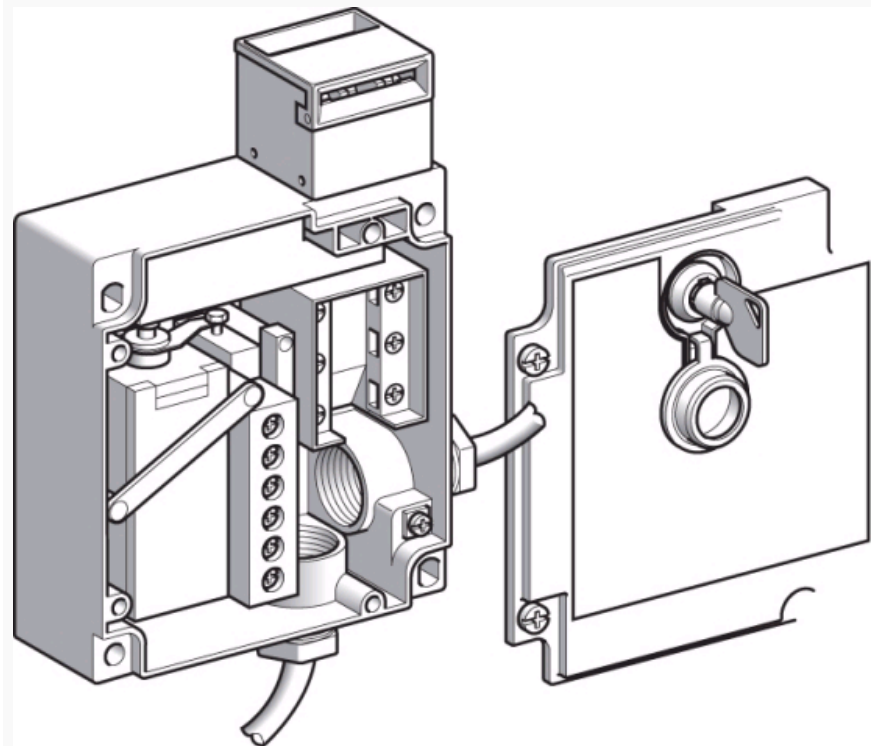
Indicator characteristics

| | |
|--|-------------|
| Assigned insulation voltage according to IEC 947-5-1 | 250 V |
| Current consumption (mA) | 7 mA |
| Assigned working voltage AC or DC | 110 / 240 V |
| Voltage limits AC or DC (including ripple) | 95...264 V |
| Service life (h) | 100 000 |

Accessories

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

Principles

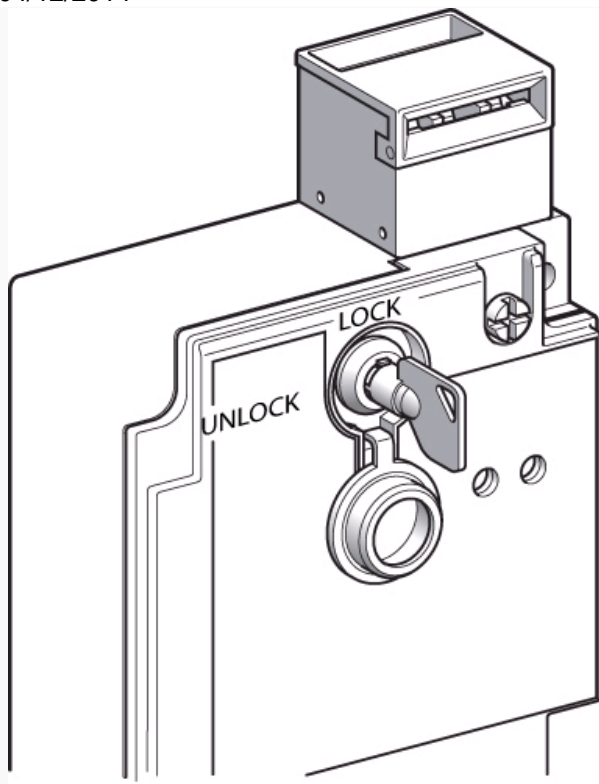


Type 83 894 1 safety switches are fitted with an electromagnet for locking/unlocking the guard.

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

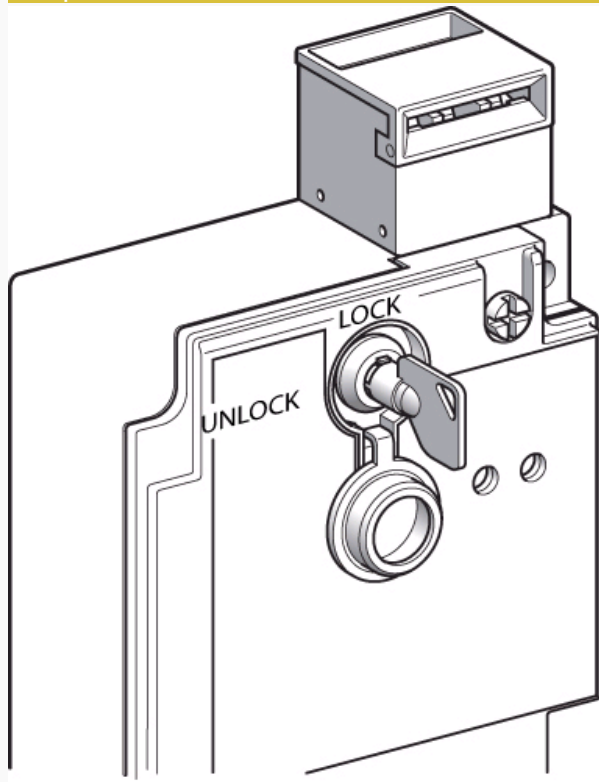


Type 83 894 1 safety switches are supplied with a key-operated lock which can be used to unlock the moving guard, bypassing the electromagnet.

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



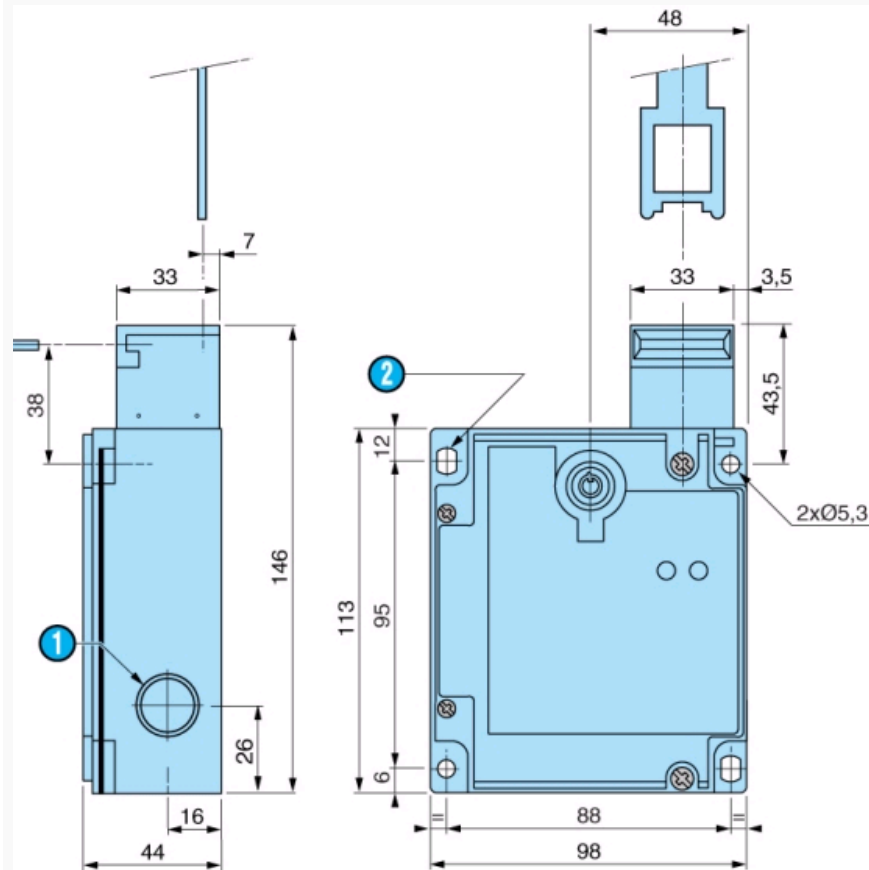
Power supply for the electromagnet on 83 894 1

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).

Dimensions (mm)

Product

83 894 1

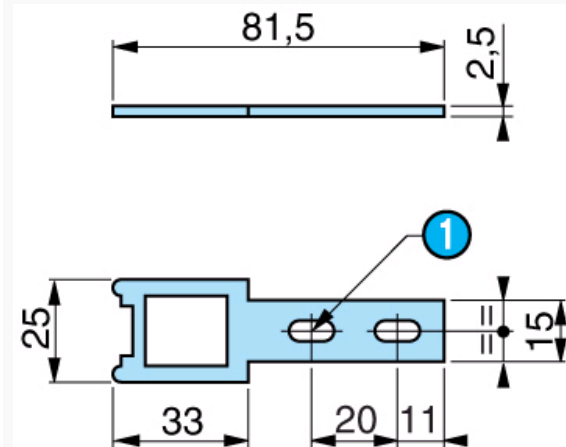


| N° | Legend |
|----|---------------------------------|
| 1 | 1 threaded hole for cable gland |
| 2 | 2 slots Ø 7.3 x 5.3 |

Dimensions (mm)

Actuators

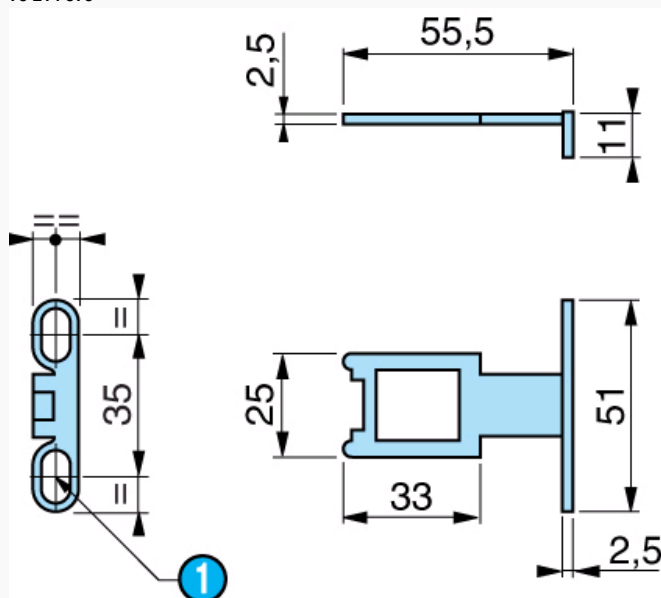
Straight key
79 214 578



Dimensions (mm)

Actuators

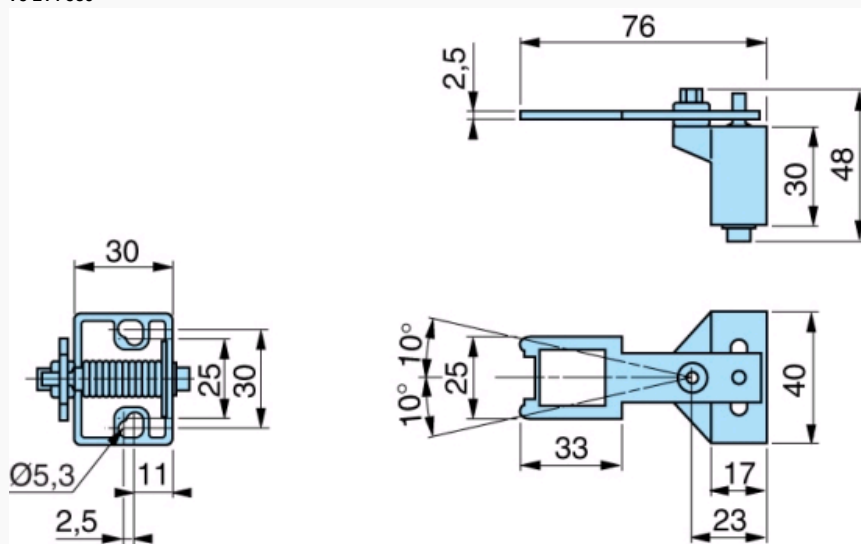
Wide key
79 214 579



Dimensions (mm)

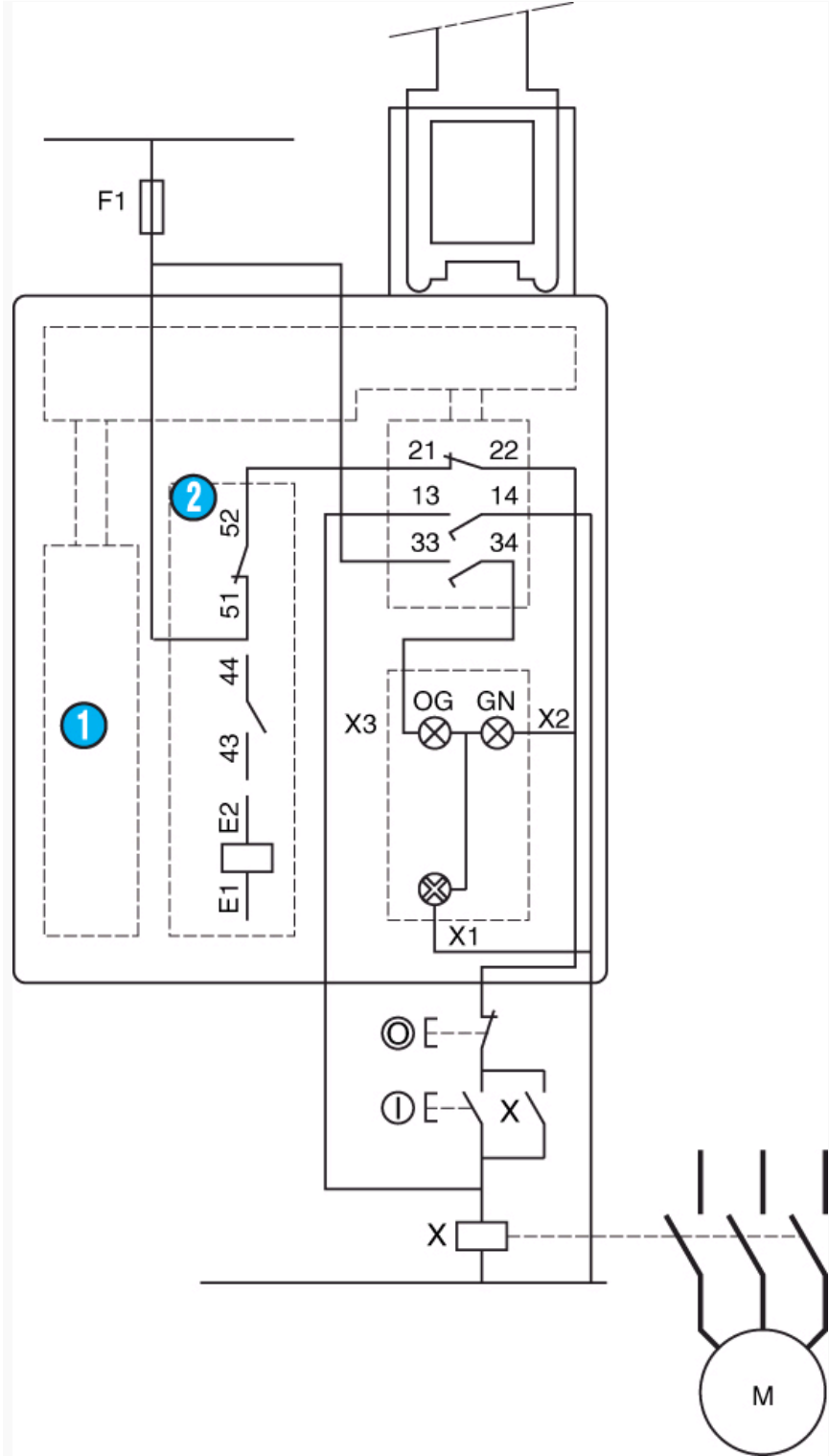
Actuators

Flexible key
79 214 580



Connections

Category 1 according to EN 954-1

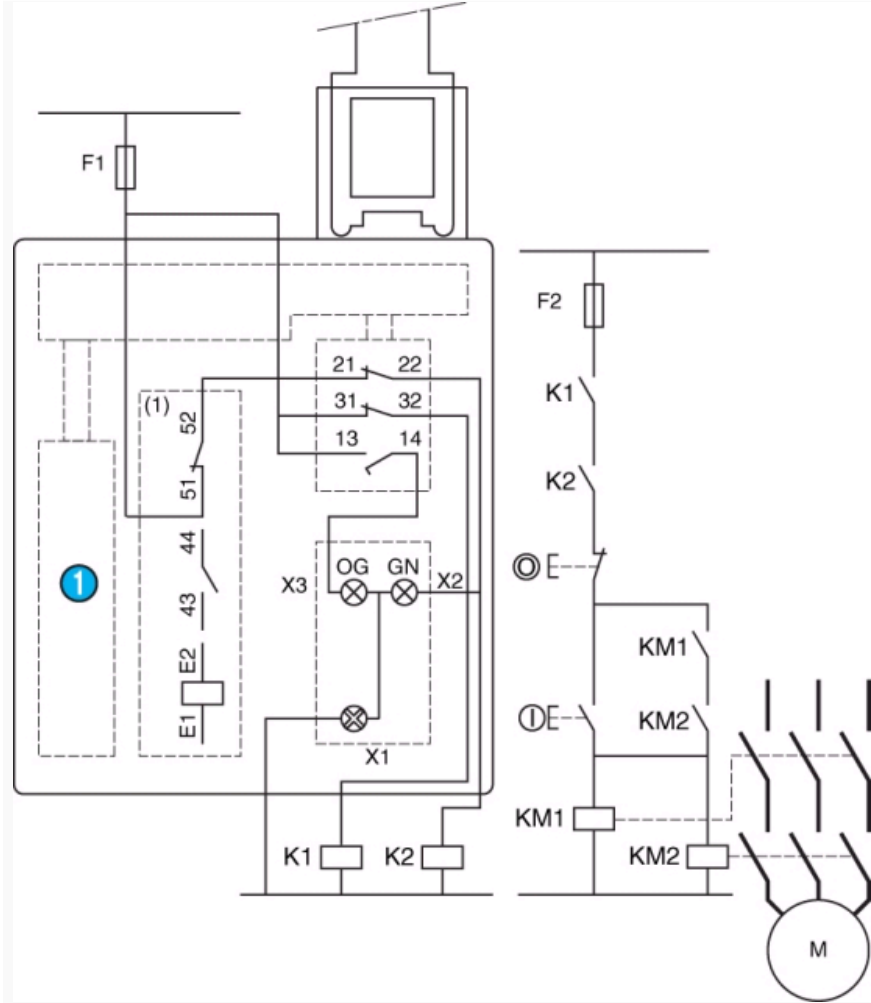


Examples of wiring diagrams with a fuse to provide protection against short-circuits in the cable or tampering. Locking by removal of voltage "NC+NO+NO" 83 894 12

| N° | Legend |
|----|---|
| 1 | Electromagnet |
| | 33-X1 : LED (orange) : key not inserted |
| | 51-X1 : LED (green) : key inserted and locked |
| | 21-52 : Safety pre-wiring compulsory |

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

| N° | Legend |
|----|---|
| 1 | Electromagnet |
| 2 | Auxiliary contact |
| | E1-E2 : Power supply for electromagnet |
| | 43-44 : Electromagnet signal contact |
| | 13-14 : Safety contact available for redundancy |

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