

SAFETY SWITCHES WITH SOLENOID AND SEPARATE ACTUATOR



Switches



KE N1...

| Order code | Key actuated contacts ① | Solenoid actuated contacts ① | Solenoid rated voltage [V] | Qty per pkg n° | Wt [kg] |
|------------|----------------------------|---------------------------------|-------------------------------|-------------------|------------|
|------------|----------------------------|---------------------------------|-------------------------------|-------------------|------------|

Locked actuator with energised solenoid.
Head orientation: front ②③.

| | | | | | |
|--------------|---------|---------|---------------|---|-------|
| KE N1 E1024F | 1NC | 2NC+1NO | 24V AC/DC | 1 | 0.440 |
| KE N1 E2024F | 1NO | 2NC+1NO | | 1 | 0.440 |
| KE N1 E3024F | 1NO+1NC | 2NC | | 1 | 0.440 |
| KE N1 E1120F | 1NC | 2NC+1NO | 120V AC/DC | 1 | 0.440 |
| KE N1 E2120F | 1NO | 2NC+1NO | | 1 | 0.440 |
| KE N1 E3120F | 1NO+1NC | 2NC | | 1 | 0.440 |
| KE N1 E1230F | 1NC | 2NC+1NO | 230V AC/DC | 1 | 0.440 |
| KE N1 E2230F | 1NO | 2NC+1NO | | 1 | 0.440 |
| KE N1 E3230F | 1NO+1NC | 2NC | | 1 | 0.440 |

Locked actuator with de-energised solenoid.
Head orientation: front ②③.

| | | | | | |
|--------------|---------|---------|---------------|---|-------|
| KE N1 M1024F | 1NC | 2NC+1NO | 24V AC/DC | 1 | 0.440 |
| KE N1 M2024F | 1NA | 2NC+1NO | | 1 | 0.440 |
| KE N1 M3024F | 1NO+1NC | 2NC | | 1 | 0.440 |
| KE N1 M1120F | 1NC | 2NC+1NO | 120V AC/DC | 1 | 0.440 |
| KE N1 M2120F | 1NO | 2NC+1NO | | 1 | 0.440 |
| KE N1 M3120F | 1NO+1NC | 2NC | | 1 | 0.440 |
| KE N1 M1230F | 1NC | 2NC+1NO | 230V AC/DC | 1 | 0.440 |
| KE N1 M2230F | 1NO | 2NC+1NO | | 1 | 0.440 |
| KE N1 M3230F | 1NO+1NC | 2NC | | 1 | 0.440 |

① Contacts status are referred to the operating condition (KEN1E...energised solenoid and inserted key actuator / KEN1M... de-energised solenoid and inserted key actuator).

② Versions with different head orientation are available in order to insert the key actuator in left, right or back direction. Replace the last letter of the order code with L(left), R(right) or B(back). Consult Technical support for information

③ Key actuator has to be ordered separately.

Accessories and spare parts



KE X N1



KE X N2



KE X N5

| Order code | Description | Qty per pkg n. | Wt [kg] |
|------------|--------------|-------------------|------------|
| KE X N1 | Straight key | 1 | 0.013 |
| KE X N2 | Angled key | 1 | 0.013 |
| KE X N5 | Toggle key | 1 | 0.019 |

General characteristics

The safety switches with solenoid avoid access in hazardous areas until the receiving of an appropriate signal: the actuator key could be locked or released through a solenoid dependent upon it's powered state (locked actuator with energised solenoid for KNE1E... / locked actuator with de-energised solenoid for KEN1M...).

A manual emergency release is available.

Three different electric contact combinations are available. Contacts are actuated separately by key actuator or by solenoid and allow to cover the installations main common needs.

Operational characteristics

- For safety applications up to:
 - SIL3 according to EN 62061
 - PLe according to EN ISO 13849-1
- Interlock with mechanical lock Type 2 according to EN ISO 14119
- Actuator insertion force: 15N
- Release actuator extraction force: 30N
- Locked actuator holding force: 1200N
- Maximum operating rate: 600 cycles/h
- Mechanical life: 1.000.000 cycles
- B10d: 4.000.000 cycles
- IEC conventional thermal current: 10A
- IEC/EN60947-5-1 designation: A300 Q300
- AC15 duty:
 - 24V - 10A
 - 230V - 4A
- DC13 duty:
 - 24V - 4A
- IEC rated insulation voltage U_i : 250V
- Rated impulse withstand voltage: 2,5kV
- Short-circuit backup protection: 10A Gg
- Max solenoid consumption:
 - 24V: 8,3W
 - 120V: 8,1W
 - 230V: 6,8W
- IEC body housing degree of protection: IP20
- IEC body housing degree of protection: IP65
- Self-extinguishing polymer thermoplastic housing and actuator head
- Actuator head orientation cannot be modified by operator. Operation heads available in 4 axial positions (90°C)
- Cables entries: 3 x M20
- Cable connection: Self-releasing screw terminal
- Tightening torque
 - Switch fixing: 2,5Nm
 - Contact terminals: 0,8Nm
 - Body lid screw fixing: 0,8Nm
- Conductor section: 1 or 2 conductors 1,5mm² max
- Ambient conditions:
 - Operating temperature: -25...+55°C
 - Storage temperature: -40...+70°C
 - Pollution degree: 3.

Certifications and compliance

Certifications obtained: cULus, EAC (pending)

Compliant with standards: IEC/EN 60947-1,

IEC/EN 60947-5-1, IEC/EN 60204, UNI EN ISO 14119,

Safety switches with solenoid and separate actuator

Dimensions [mm(in)]
Wiring diagrams

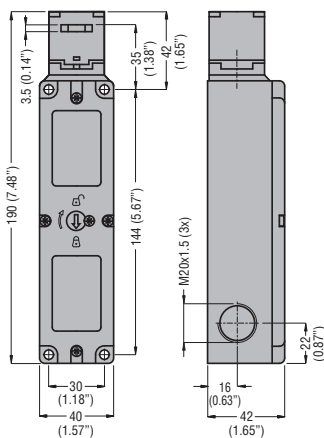
| Key actuator status | KEN1E...: Locked actuator with energised solenoid | | | KEN1M...: Locked actuator with de-energised solenoid | | |
|---------------------|---|-----------------------|--------------|--|-----------------------|--------------|
| | inserted and locked | inserted and unlocked | not inserted | inserted and locked | inserted and unlocked | not inserted |
| Solenoid status | energised | de-energised | - | de-energised | energised | - |
| | | | | | | |

Contact activation

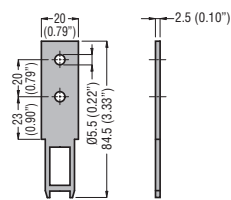
| | | | | | | | |
|-------------|--------------|----|----|----|----|----|----|
| KEN1...1... | Key actuator | 11 | 11 | 11 | 11 | 11 | 11 |
| | Solenoid | 21 | 21 | 21 | 21 | 21 | 21 |
| | Solenoid | 33 | 33 | 33 | 33 | 33 | 33 |
| | Solenoid | 41 | 41 | 41 | 41 | 41 | 41 |
| KEN1...2... | Key actuator | 13 | 13 | 13 | 13 | 13 | 13 |
| | Solenoid | 21 | 21 | 21 | 21 | 21 | 21 |
| | Solenoid | 33 | 33 | 33 | 33 | 33 | 33 |
| | Solenoid | 41 | 41 | 41 | 41 | 41 | 41 |
| KEN1...3... | Key actuator | 13 | 13 | 13 | 13 | 13 | 13 |
| | Solenoid | 21 | 21 | 21 | 21 | 21 | 21 |
| | Key actuator | 31 | 31 | 31 | 31 | 31 | 31 |
| | Solenoid | 41 | 41 | 41 | 41 | 41 | 41 |

Dimensions [mm(in)]

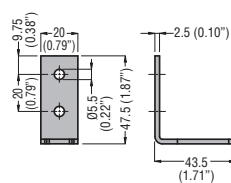
KEN1...



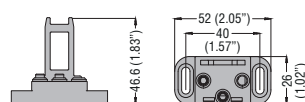
KEX N1



KEX N2



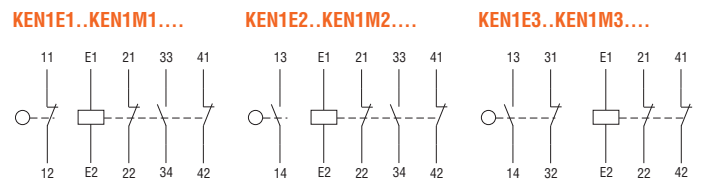
KEX N5



Wiring diagrams

SAFETY SWITCHES WITH SOLENOID

Actuator inserted and unlocked





ENERGY AND AUTOMATION

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