



LSPS Series - IEC Safety Limit Switches EN 50047

Operating Instructions



Application:

IDEM Limit switches are designed to be mounted for position sensing of moving applications e.g. guard doors, conveyors, machine beds, elevators etc. They are available with linear plungers, rotary levers or roller plungers and either slow or snap action contacts. All contact blocks are positively operated to satisfy IEC 60947-5-1.

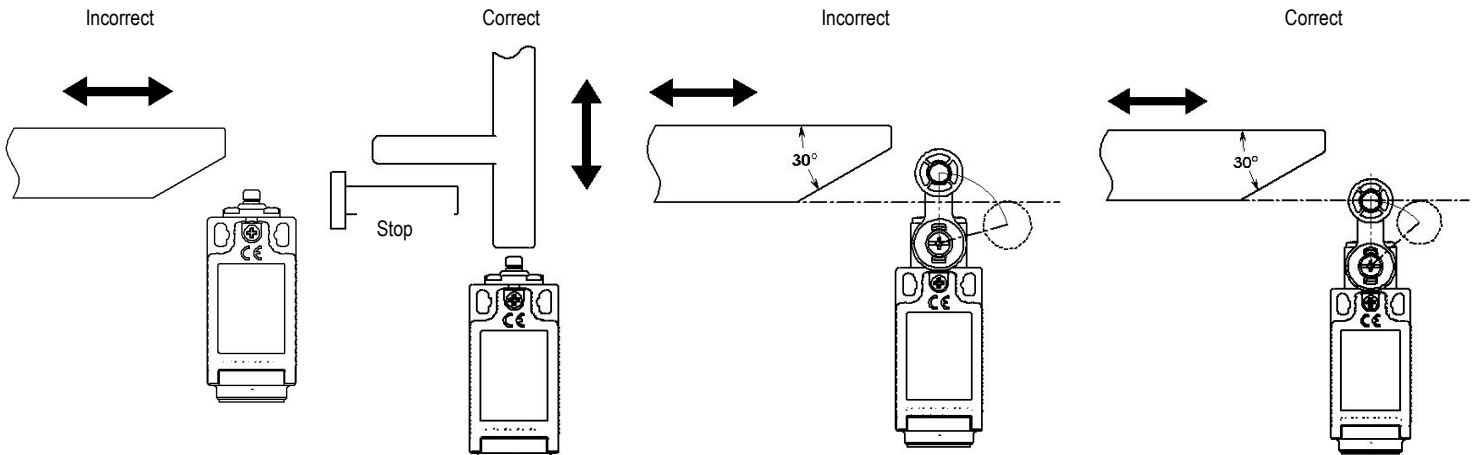
Operation:

Operation of the switches is achieved by a sliding actuation of the moving object to cause deflection of the switch plungers or levers. For Safety applications it is important that the moving object does not pass completely over the switch actuators so as to cause the actuator to return to its original position.

Installation guide: Correct Mounting of Limit Switches is critical to obtain optimum performance and ensure safety reliability.

Installation of all switches must be in accordance with a risk assessment for the individual application. Installation must only be carried out by competent personnel and in accordance with these instructions.

1. Never use the switch as a mechanical stop. Ensure that the actuator is protected from mechanical shock.
2. For switches with Linear actuators the actuating direction and force from the moving object should be applied in line with the axis of the plunger.
3. For switches with Rotary actuators or rollers the operating cam from the moving object should be designed such that the switch is never operated beyond its over travel position. Always use a 30 degree tapered actuating cam.
4. The heads of the switch can be rotated to obtain the best switch orientation by removing the 4 head screws and rotating the head through 90 degrees. Always ensure the 4 head screws are tightened to 1Nm to ensure switch robustness.

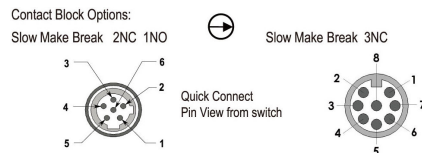


5. Always ensure that when fitting electrical conductors that they are routed correctly and do not interfere with the switch cover during fitting. Maximum conductor size is 1.5 sq.mm, contact terminal tightening torque is 1Nm.
6. Tightening torque for the lid screw is and cable glands is 1Nm to maintain IP rating.
7. Always use M4 mounting bolts and ensure 2Nm tightening torque for robust fitting.

Maintenance:

Every Week: Check switch actuator and body for signs of mechanical damage and wear. Replace any switch showing damage.
 Every 6 Months: Isolate power and remove cover. Check screw terminal tightness and check for signs of moisture ingress. Never attempt to repair any switch.

Contact Blocks /Connections:



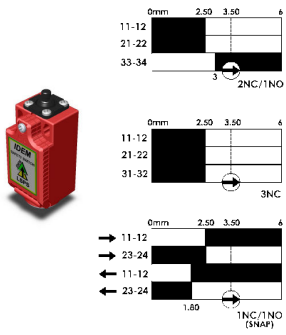
| Quick Connect (QC) ½" UNF 6 Way Male | Switch Circuit | Quick Connect (QC) M12 8 Way Male (on Flying Lead 250mm) Pin view from switch |
|---|--------------------|--|
| 1 5 | 11 / 12 | 1 7 |
| 2 6 | 21 / 22 or 23 / 24 | 6 5 |
| 3 4 | 33 / 34 or 31 / 32 | 4 3 |

Technical Specification:

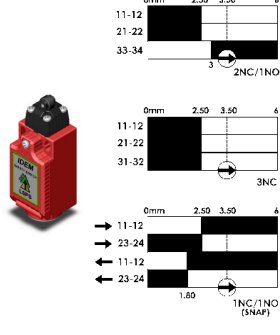
| | |
|---|---------------------------------------|
| Conforming to standards | EN1088 IEC 947-5-1 UL508 EN50047 |
| Positive Opening Operation | NC Contacts |
| Utilization Category | AC15 A300 240V, 3A. |
| Actuator Travel for Positive Opening | See contact operation diagram |
| Actuation Force to achieve Positive Opening | 12N. linear types 1.0Nm. rotary types |
| Min Current | 5V, 5mA, DC |
| Thermal Current (Ith) | 10A |
| Rated Insulation Voltage | 300VAC |
| Rated Impulse Withstand Volt | 2500VAC |
| Insulation Resistance | 100MΩmin.(DC500V) |
| Contact Resistance | 25mΩ max.(initial) |
| Max. Switching Speed | 250mm/s |

| | |
|---|--------------------------------|
| Max. Switching Frequency | 6,000 operation per hour |
| Case Material | UL approved glass-filled 5VA |
| Roller Material | Various Polymers |
| Enclosure Protection | IP67 |
| Operating Temperature | Min. -25°C Max 80°C |
| Pollution Degree | 3 |
| Mechanical Life Expectancy | 5 x 10 ⁶ Cycle min. |
| Electrical Life Expectancy at full load | 100,000 Cycle min. |
| Vibration | IEC 68-2-6, 10-55Hz 0.35mm |
| Conductors | 1.5 sq.mm max. |
| Conduit Entry | M20 or ½" NPT or QD M12 |
| Fixing | 2 x M4 |

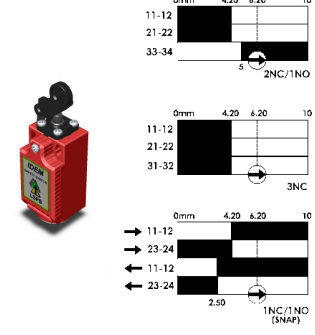
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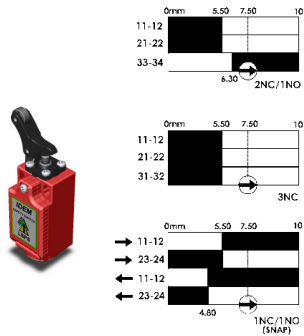
| Sales Numbers | | Pin Plunger | |
|---------------|--------|-------------|--------|
| Contacts | M20 | ½NPT | QD |
| 2NC 1NO | 171001 | 171002 | 171003 |
| 3NC | 171004 | 171005 | 171006 |
| 1NC 1NO Snap | 171007 | 171008 | 171009 |



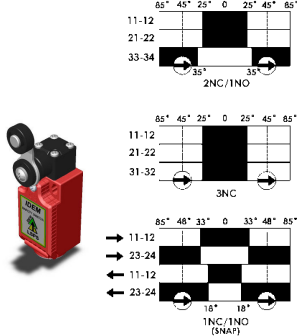
| Sales Numbers | | Roller Plunger | |
|---------------|--------|----------------|--------|
| Contacts | M20 | ½NPT | QD |
| 2NC 1NO | 171010 | 171011 | 171012 |
| 3NC | 171013 | 171014 | 171015 |
| 1NC 1NO Snap | 171016 | 171017 | 171018 |



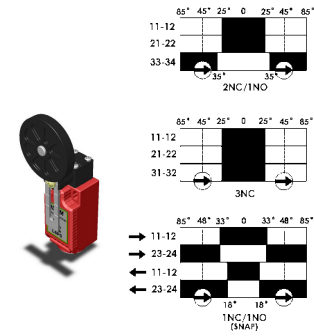
| Sales Numbers | | Hinge Lever | |
|---------------|--------|-------------|--------|
| Contacts | M20 | ½NPT | QD |
| 2NC 1NO | 171019 | 171020 | 171021 |
| 3NC | 171022 | 171023 | 171024 |
| 1NC 1NO Snap | 171025 | 171026 | 171027 |



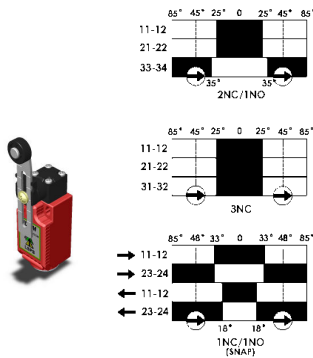
| Sales Numbers | | Long Hinge Lever | |
|---------------|--------|------------------|--------|
| Contacts | M20 | ½NPT | QD |
| 2NC 1NO | 171028 | 171029 | 171030 |
| 3NC | 171031 | 171032 | 171033 |
| 1NC 1NO Snap | 171034 | 171035 | 171036 |



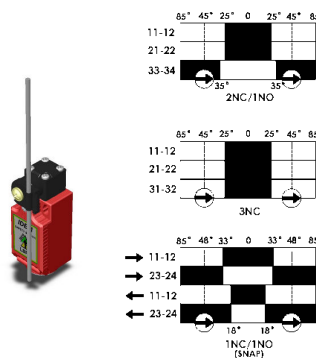
| Sales Numbers | | Roller Lever | |
|---------------|--------|--------------|--------|
| Contacts | M20 | ½NPT | QD |
| 2NC 1NO | 171037 | 171038 | 171039 |
| 3NC | 171040 | 171041 | 171042 |
| 1NC 1NO Snap | 171043 | 171044 | 171045 |



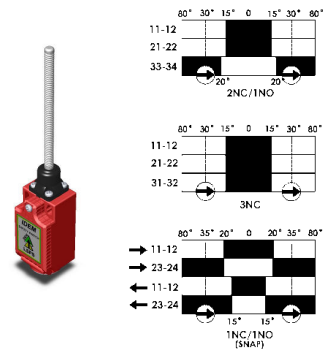
| Sales Numbers | | Large Roller Lever | |
|---------------|--------|--------------------|--------|
| Contacts | M20 | ½NPT | QD |
| 2NC 1NO | 171046 | 171047 | 171048 |
| 3NC | 171049 | 171050 | 171051 |
| 1NC 1NO Snap | 171052 | 171053 | 171054 |



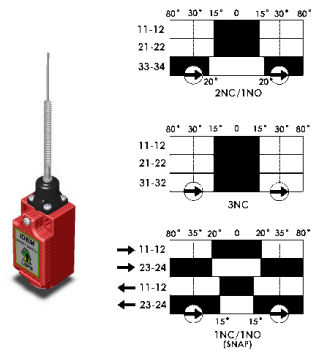
| Sales Numbers | | Adjustable Roller Lever | |
|---------------|--------|-------------------------|--------|
| Contacts | M20 | ½NPT | QD |
| 2NC 1NO | 171055 | 171056 | 171057 |
| 3NC | 171058 | 171059 | 171060 |
| 1NC 1NO Snap | 171061 | 171062 | 171063 |



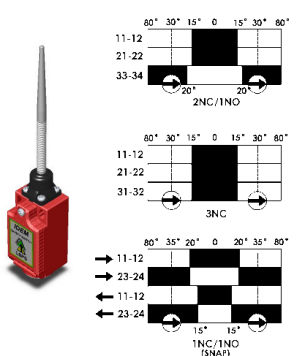
| Sales Numbers | | Rod Lever | |
|---------------|--------|-----------|--------|
| Contacts | M20 | ½NPT | QD |
| 2NC 1NO | 171064 | 171065 | 171066 |
| 3NC | 171067 | 171068 | 171069 |
| 1NC 1NO Snap | 171070 | 171071 | 171072 |



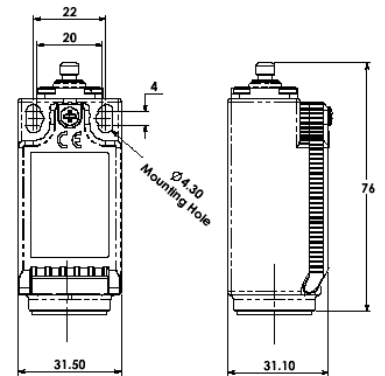
| Sales Numbers | | Spring Lever | |
|---------------|--------|--------------|--------|
| Contacts | M20 | ½NPT | QD |
| 2NC 1NO | 171091 | 171092 | 171093 |
| 3NC | 171094 | 171095 | 171096 |
| 1NC 1NO Snap | 171097 | 171098 | 171099 |



| Sales Numbers | | Cats Whisker | |
|---------------|--------|--------------|--------|
| Contacts | M20 | ½NPT | QD |
| 2NC 1NO | 171073 | 171074 | 171075 |
| 3NC | 171076 | 171077 | 171078 |
| 1NC 1NO Snap | 171079 | 171080 | 171081 |



| Sales Numbers | | Plastic Spring Lever | |
|---------------|--------|----------------------|--------|
| Contacts | M20 | ½NPT | QD |
| 2NC 1NO | 171082 | 171083 | 171084 |
| 3NC | 171085 | 171086 | 171087 |
| 1NC 1NO Snap | 171088 | 171089 | 171090 |



Outline dimensions - Body housing