

# LSPS-R Series - IEC Safety Limit Switches EN 50047 **Operating Instructions**



#### Application:

IDEM LSPS-R Limit Switches with Reset Button 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:

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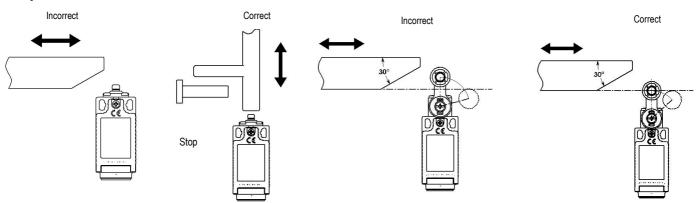
Operation of the switches is achieved by a sliding actuation of the moving object to cause deflection of the switch plungers or levers.

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.

- Never use the switch as a mechanical stop. Ensure that the actuator is protected from mechanical shock.
  - 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 it's over travel position. Always use a 30 degree tapered actuating cam.
- 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 4 tightened to 1Nm to ensure switch robustness.



- Always ensure that when fitting electrical conductors that they are routed correctly and do not interfere with the switch cover during fitting. 5.
- 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 is1Nm to maintain IP rating.
- 7 Always use M4 mounting bolts and ensure 2Nm tightening torque for robust fitting.
- 8 The switches are reset by pulling out the blue pin after switch actuation.

The safety functions and mechanics must be tested regularly. For applications were infrequent guard access is foreseeable, the system must have a manual function test to detect a 9 possible accumulation of faults. At least once per month for PLe Cat3/4 or once per year for PLd Cat3 (ISO13849-1). Where possible it is recommended that the control system of the machine demands and monitors these tests, and stops or prevents the machine from starting if the test is not done. (See ISO14119).

### Maintenance:

Every Week: Check the 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:	Contact Block Options: Slow Make Break 2NC 1NO	$\ominus$	Slow Make Break 3NC		nnect (QC) 6 Way Male	Switch Circuit		
		Quick Connect Pin View from s		1	5	11 / 12	1	7
		Pin view from s	switch	2	6	21/22 or 23/24	6	5
Taskaisel Cassifications	51		* *	3	4	33/34 or 31/32	4	3

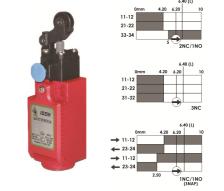
#### Technical Specification:

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Conforming to standards	ISO14119 IEC947-5-1 UL60947-5-1 EN50047 ISO13849-1	Case Material	UL approved glass-filled plastic
Positive Opening Operation	NC Contacts	Roller Material	Various Polymers Steels
Utilization Category	AC15 A300 240V. 3A.	Enclosure Protection	IP67
Actuation Force/Torque for Positive Opening	12N. linear types 1.0Nm. rotary types	Operating Temperature	Min25°C Max 80°C
Min Current	5V, 5mA, DC	Mechanical Life Expectancy	2,500,000 Cycles
Thermal Current (Ith)	10A	Electrical Life Expectancy at full load	100,000 Cycle min.
Rated Insulation Voltage	300VAC	Vibration	IEC 68-2-6, 10-55Hz 0.35mm
Rated Impulse Withstand Volt	2500VAC	Conduit Entry	M20 or 1/2" NPT
Max. Switching Speed	250mm/s	Fixing	2 x M4

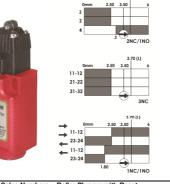
## **Original Instructions.**

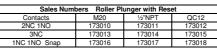
WARNING: DO NOT DEFEAT, TAMPER, OR BYPASS THE SAFETY FUNCTION. To request this data sheet in other languages please contact info@idemsafety.com FAILURE TO DO SO CAN RESULT IN DEATH OR SERIOUS INJURY. Um dieses Datenblatt in Deutscher Sprache wenden Sie sich bitte anfordern info@idemsafety.com AVERTISSMENT: NE PAS DESACTIVER, MODIFIER, RETIRER, OU CONTOURNER Pour obtenir cette fiche en Français, veuillez contacter info@idemsafety.com **CETI INTERVERROUILLAGE IL PEUT EN RESULTER DES** Para solicitar esta hoja de datos en Español, por favor contacto con info@idemsafety.com

## LSPS-R Series - IEC Safety Limit Switches EN 50047



Sales Numbers Hinge Lever with Reset				
Contacts	M20	1/2"NPT	QC12	
2NC 1NO	173019	173020	173021	
3NC	173022	173023	173024	
1NC 1NO Snap	173025	173026	173027	





11-12

21-22

33-3

11-12

21-22

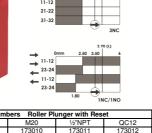
31-3

11-12 → 23-24

11-12

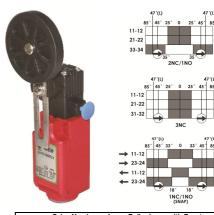
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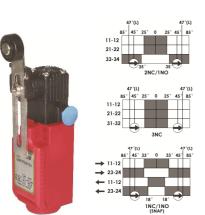


	11-12			
81 0	21-22			
	31-32		4	
IDEM FEDERATCH			Ð	3NC
			3.70	
	_	0mm 2.50	3.50	6
	→ 11-12			
	23-24			
	11-12			
	23-24			
		1.80	<b>_</b>	C/1NO
			IN	C/INO
Sales Numb	pers Roller Pl	unger with	Rese	et
ontacts	M20	1⁄2"NP	Г	C

173013 173014 173015
173013 173014 173015
173016 173017 173018



	Sales Numbers		Large Roller Lever with Reset			
Cont	acts	M20	1/2"NPT	QC12		
2NC	1NO	173046	173047	173048		
3N	IC	173049	173050	173051		
1NC 1N	O Snap	173052	173053	173054		



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31-3

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Pin P

11.1

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33-3

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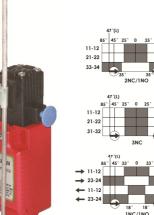
23-24

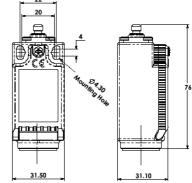
11-13

Long Hinge

ontacts INC 1NO Sna / 1NC/1NC

Sales Numbers	Adjustable Ro	oller Lever with	Reset
Contacts	M20	1⁄2"NPT	QC12
2NC 1NO	173055	173056	173057
3NC	173058	173059	173060
1NC 1NO Snap	173061	173062	173063





Outline dimensions - Body housing

#### Safety Classification and Reliability Data:

Mechanical Reliability B10d	2.5 x 10 <sup>6</sup> operations at 100mA load
ISO 13849-1	Up to PLe depending upon system architecture
Safety Data – Annual Usage	8 cycles per hour / 24 hours per day / 365 days
	MTTFd 356 years

Information with regard to UL Standards: Type 1 Enclosures. Electrical Rating: A300 240V.ac 3A. (6,000 cycles) 120V. 60A. Making 6A. Braking PF >0.38 (100,000 cycles). 240V. 10A. carry only. Use 16 - 12AWG copper conductors, rated 90°C minimum. Intended for same polarity use and one polymeric conduit connection.

Lever Arm with

IDEM SAFETY SWITCHES Ltd., 2 Ormside Close, Hindley Industrial Estate, Hindley Green, Wigan, WN2 4HR UK. Tel: +44 (0)1942 257070 Fax.: +44 (0)1942 257076 IDEM (USA) 4416 Technology Drive, Fremont, CA 94538 Tel:510-445-0751 Fax:1866-431-7064 email: <u>sales@idemsafety.com</u> Web: <u>www.idemsafety.com</u>

Sales Numbers