

# STAINLESS STEEL LIMIT SWITCHES

series  
**PSI**

Protection	Mines	Zone	n.a.	IM2	Ex db I Mb
	Gas		1-2	II2G	Ex db IIC T6÷T5 Gb
	Dusts		21-22	II2D	Ex tb IIIC T85°C÷T100°C Db



Degree of Protection  
**IP66/67**

Amb. Temp. Standard -20°C +40°C  
Extended -50°C +80°C

Entries Threading  
**NPT ANSI B1.20**

Material  
**Stainless Steel AISI 316L**

Painting  
**On request**

**Standards and Certificates**

**Directive 2014/34/EU (ATEX)**

**EN 60079-0 • EN 60079-1 EN 60079-31**

**CE** **BVI 13 ATEX 0083**

**IEC 60079-0 • IEC 60079-1 IEC 60079-31**

**IECEX EPS 13.0033**

- Compact design with ideal features for use in dangerous process and hazardous environments.
- Wide range of actuators in metal or in self-extinguishing glass-fiber-reinforced polymer (GFRP).
- Wide variety of options for adaptation and assembly.
- Internal operating rod in Stainless Steel AISI 316L.
- External screws in Stainless Steel except for actuators that may have components in tropicalized steel.

- Options**
- Aluminum light alloy version (see page D13).
  - Quick snap-action contact units 2NC (C11) with positive opening
  - Cable entry with metric thread M20x1.5 (M).

- Rollers in Metal.
- Different diameters rollers.
- Actuators with some metal parts in Stainless Steel.

**Degree of pollution:** 3 conforming to IEC/EN 60947-5-1 Standards.  
**Frequency of operations:** 20/min (\*) max  
**Number of cycles:** 8÷10 millions  
**Storage Temperature:** -40°C ÷ +70°C

## NOTES

To read the installation and maintenance instructions is recommended.

### Contact Unit

Nominal current (active): I: 10 A  
 Insulating Voltage: U<sub>i</sub>: 500 Vac / 600 Vdc [°]  
 Impulse Withstand Voltage: U<sub>imp</sub>: 6 kV  
 Short Circuit Current : 1000 AV  
 Short Circuit Protection: Fuse 10 A 500 V  
 Minimum conductor section : 1.5 mm<sup>2</sup>  
 Max Current Density : 5 A/mm<sup>2</sup>

	AC15 - A600			DC13 - Q600		
U <sub>e</sub> (V)	240	400	500	24	125	250
I <sub>e</sub> (A)	6	4	1	6	1.1	0.4

The temperature class T6/T85°C considers an Ambient Temperature (A.T.) extended up to +60°C, whereas, class T5/T100°C considers an A.T. extended up to +80°C.

[°] The insulating voltage is equal to 400 VAC / 500 VDC for C2 and C11 contacts.

### Electrical Diagram

Type	Contact	Diagram	Operating	Type	Contact	Diagram	Operating
C2	1NO+1NC		Snap action	C10	2NO		Slow action
C5	1NO+1NC		Snap action	C11	2NC		Snap action
C6	1NO+1NC		Slow action	C14	2NC		Slow action
C7	1NO+1NC		Overlapping slow action	C15	2NO		Slow action
C9	2NO		Slow action	C20	1NO+2NC		Slow action

**Contacts identification (by numbers)** in compliance with IEC/EN 60947-1 Standards  
 All types (except C2) allow different voltages at the contacts terminals.  
 For type C2 the contacts 13-14 and 21-22 are electrically separated from contacts 31-32 and 43-44.

**Positive opening of contacts** (\*\*) for some models available in compliance with IEC/EN 60947-5-1 e CEI 17-45 - F. 1914 Standards.

(\*) For A.T. up to +40°C the max surface temperature is 65°C reducing the number of operations to 600/h.

(\*\*) As safety switches only those with symbol shall be used.

The safety circuit must always be connected to NC contacts (11-12 or 21-22). Exceed by 1.5 mm (25°) the gap between the contacts. Operate the switch with the indicated opening force.

### Swivel heads

All switches allow to rotate the head by 90° x 90° by unscrewing the four fixing screws (fig. 1).

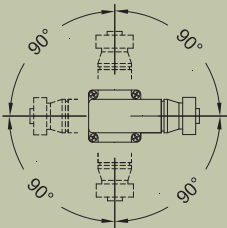


Fig. 1

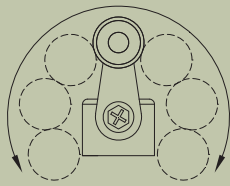


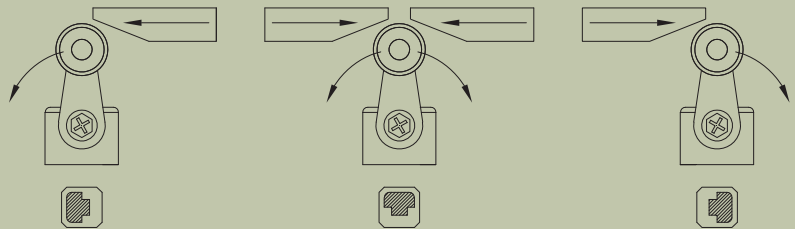
Fig. 2

### Adjustable levers

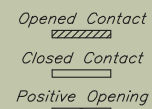
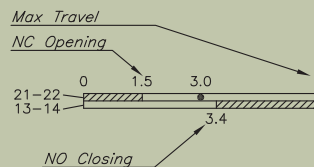
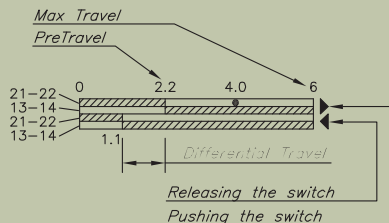
Position switches with roller lever have the lever adjustable by 10° x 10° (fig. 2). The positive movement transmission is always ensured by the particular geometric coupling between the lever and the shaft.

### Unidirectional heads

To get the unidirectional operation on switches with revolving lever it is necessary to remove the four screws of the head and totate the internal piston.



### Stroke Diagrams



### Example: PSI 511N

Order coding

Type  
**PSI**

Contact Unit  
**C5**

Actuator  
**11**

Threading  
**N = NPT (N)**  
**M = metric (M)**

## Series PSI : AVAILABLE MODELS

- Stainless steel limit switches series PSI is available with a widespread range of actuators for different purposes. Please see from page D14 to D20 for all the available actuators.
- Limit switch series PSI is available also in key-lock safety version, ideal to control Gates, Protections, Carters and any moving mechanical part. For further details please see pages D21 and D22.
- When necessary to control any moving mechanical parts especially conveyors, limit switches series PSI are available in cable operated safety version. They make possible to stop the machine from any point of intervention by manually pulling the cable. Please see pages D23 and D24.
- Limit switch series PSI is available in buoyant operated safety version whenever the liquid level inside a tank shall be monitored. For further details see page D.25.

# STAINLESS STEEL LIMIT SWITCHES

series  
PSI

The following models have the actuators completely made in Stainless Steel AISI 316L.

	UNITA' DI CONTATTO <i>Contact blocks</i>	N° CATALOGO <i>Catalogue n°</i>	DIAGRAMMI CORSE <i>Travel diagrams</i>
<b>A PERNO</b> <i>With push button</i>  VELOCITA' MASSIMA: <i>Max speed</i> 0.5 m/s FORZA MIN. DI AZIONAMENTO: <i>Min. force actuation:</i> 8 N FORZA MIN. PER APERTURA POSITIVA: <i>Min. force positive opening operation:</i> 25 N  LEGENDA <i>Legenda</i> ◉ APERTURA POSITIVA <i>Positive opening</i> • INIZIO APERTURA POSITIVA <i>Positive opening beginning</i> ► PREMENDO <i>Pushing</i> ◄ RILASCIANDO <i>Releasing</i>	C2 1NO, 1NC+ 1NO, 1NC	PSI 20IN	
	C5 1NO+1NC	PSI 50IN	
	C6 1NO+1NC	PSI 60IN	
	C7 1NO+1NC	PSI 70IN	
	C9 2NC	PSI 90IN	
	C10 2NO	PSI 100IN	
	C14 2NC	PSI 140IN	
	C15 2NO	PSI 150IN	
	C20 1NO+2NC	PSI 200IN	
	<b>A PERNO ALLUNGATO</b> <i>With lengthened push button</i>  VELOCITA' MASSIMA: <i>Max speed</i> 0.5 m/s FORZA MIN. DI AZIONAMENTO: <i>Min. force actuation:</i> 8 N FORZA MIN. PER APERTURA POSITIVA: <i>Min. force positive opening operation:</i> 25 N  LEGENDA <i>Legenda</i> ◉ APERTURA POSITIVA <i>Positive opening</i> • INIZIO APERTURA POSITIVA <i>Positive opening beginning</i> ► PREMENDO <i>Pushing</i> ◄ RILASCIANDO <i>Releasing</i>	C2 1NO, 1NC+ 1NO, 1NC	PSI 21IN
C5 1NO+1NC		PSI 51IN	
C6 1NO+1NC		PSI 61IN	
C7 1NO+1NC		PSI 71IN	
C9 2NC		PSI 91IN	
C10 2NO		PSI 101IN	
C14 2NC		PSI 141IN	
C15 2NO		PSI 151IN	
C20 1NO+2NC		PSI 201IN	
<b>A PERNO CON ROTELLA</b> <i>With push button roller</i>  VELOCITA' MASSIMA: <i>CON CAMMA A 30°</i> <i>Max speed with 30° cam:</i> 0.5 m/s FORZA MIN. DI AZIONAMENTO: <i>Min. force actuation:</i> 8 N FORZA MIN. PER APERTURA POSITIVA: <i>Min. force positive opening operation:</i> 25 N  LEGENDA <i>Legenda</i> ◉ APERTURA POSITIVA <i>Positive opening</i> • INIZIO APERTURA POSITIVA <i>Positive opening beginning</i> ► PREMENDO <i>Pushing</i> ◄ RILASCIANDO <i>Releasing</i>		C2 1NO, 1NC+ 1NO, 1NC	PSI 216N
	C5 1NO+1NC	PSI 516N	
	C6 1NO+1NC	PSI 616N	
	C7 1NO+1NC	PSI 716N	
	C9 2NC	PSI 916N	
	C10 2NO	PSI 1016N	
	C14 2NC	PSI 1416N	
	C15 2NO	PSI 1516N	
	C20 1NO+2NC	PSI 2016N	

\*IN ALTERNATIVA:  
*Alternative:* M20x1.5 ISO 262

