

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.
- Weight: 780 g (the weight of the installed unit must be added, pls refer to page I20).

- 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

Contact Unit

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

	AC15 - A600			DC13 - Q600		
U _e (V)	240	400	500	24	125	250
I _e (A)	6	4	1	6	1.1	0.4

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.

NOTES

To read the installation and maintenance instructions is recommended.

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.

(*) 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).

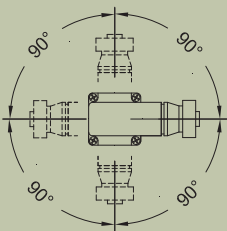


Fig. 1

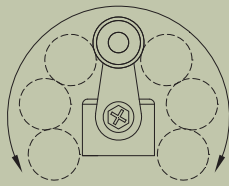


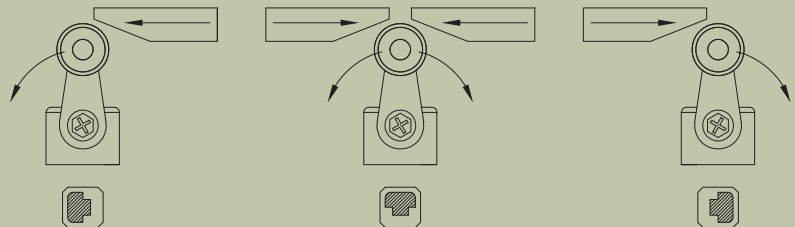
Fig. 2

Adjustable levers

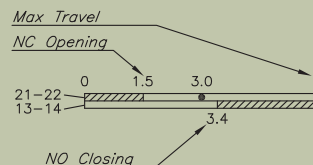
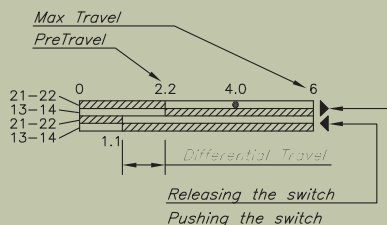
Position switches with roller lever have the lever adjustable by 10° x 10° (fig. 2). The positive movement transmission is always ensured by the particular geometric coupling between the lever and the shaft.

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



Opened Contact
Closed Contact
Positive Opening

Example: PSI 511N

Order coding

Type	Contact Unit	Actuator	Threading
PSI	C5	11	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.

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

A PERNO With push button

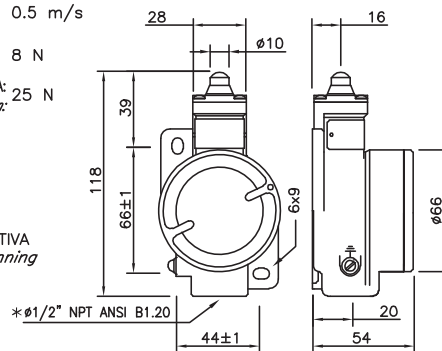
VELOCITA' MASSIMA:
Max speed 0.5 m/s

FORZA MIN. DI AZIONAMENTO:
Min. force actuation: 8 N

FORZA MIN. PER APERTURA POSITIVA:
Min. force positive opening operation: 25 N

LEGENDA Legenda

- APERTURA POSITIVA
Positive opening
- INIZIO APERTURA POSITIVA
Positive opening beginning
- PREMENDO
Pushing
- ◄ RILASCIANDO
Releasing



A PERNO ALLUNGATO With lengthened push button

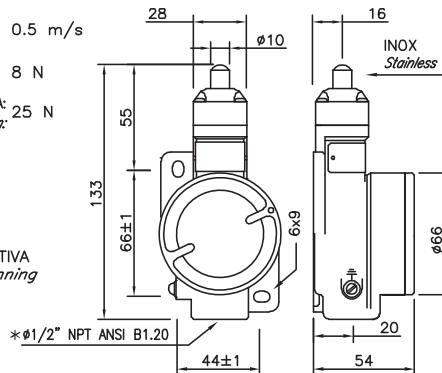
VELOCITA' MASSIMA:
Max speed 0.5 m/s

FORZA MIN. DI AZIONAMENTO:
Min. force actuation: 8 N

FORZA MIN. PER APERTURA POSITIVA:
Min. force positive opening operation: 25 N

LEGENDA Legenda

- APERTURA POSITIVA
Positive opening
- INIZIO APERTURA POSITIVA
Positive opening beginning
- PREMENDO
Pushing
- ◄ RILASCIANDO
Releasing



A PERNO CON ROTELLA With push button roller

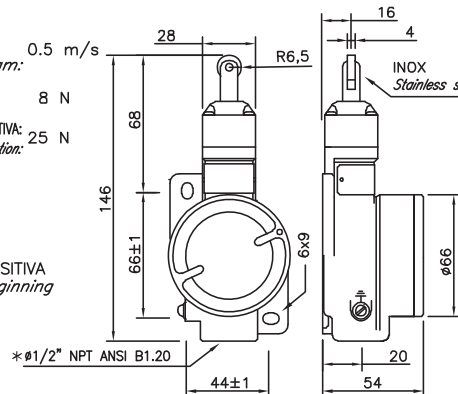
VELOCITA' MASSIMA:
CON CAMMA A 30°
Max speed with 30° cam: 0.5 m/s

FORZA MIN. DI AZIONAMENTO:
Min. force actuation: 8 N

FORZA MIN. PER APERTURA POSITIVA:
Min. force positive opening operation: 25 N

LEGENDA Legenda

- APERTURA POSITIVA
Positive opening
- INIZIO APERTURA POSITIVA
Positive opening beginning
- PREMENDO
Pushing
- ◄ RILASCIANDO
Releasing



UNITA' DI CONTATTO Contact blocks	N° CATALOGO Catalogue n°	DIAGRAMMI CORSE Travel diagrams
C2 1NO, 1NC+ 1NO, 1NC	PSI 20IN	13-14 0 1.3 6 21-22 0 2.2 4.0 6 43-44 0.7 31-32 0
C5 1NO+1NC	PSI 50IN	21-22 0 2.2 4.0 6 13-14 1.1 21-22 0
C6 1NO+1NC	PSI 60IN	21-22 0 1.5 3.0 6 13-14 3.4 21-22 0
C7 1NO+1NC	PSI 70IN	21-22 0 3.1 4.6 6 13-14 1.8 21-22 0
C9 2NC	PSI 90IN	11-12 0 2.9 4.4 6 21-22 0
C10 2NO	PSI 100IN	13-14 0 1.4 6 23-24 0
C14 2NC	PSI 140IN	11-12 0 3.0 4.5 6 21-22 1.4 21-22 0
C15 2NO	PSI 150IN	13-14 0 3.0 6 23-24 1.4 21-22 0
C20 1NO+2NC	PSI 200IN	13-14 0 1.5 3.0 6 21-22 2.0 33-34 0
C2 1NO, 1NC+ 1NO, 1NC	PSI 21IN	13-14 0 1.3 6 21-22 0 2.2 4.0 6 43-44 0.7 31-32 0
C5 1NO+1NC	PSI 51IN	21-22 0 2.2 4.0 6 13-14 1.1 21-22 0
C6 1NO+1NC	PSI 61IN	21-22 0 1.5 3.0 6 13-14 3.4 21-22 0
C7 1NO+1NC	PSI 71IN	21-22 0 3.1 4.6 6 13-14 1.8 21-22 0
C9 2NC	PSI 91IN	11-12 0 2.9 4.4 6 21-22 0
C10 2NO	PSI 101IN	13-14 0 1.4 6 23-24 0
C14 2NC	PSI 141IN	11-12 0 3.0 4.5 6 21-22 1.4 21-22 0
C15 2NO	PSI 151IN	13-14 0 3.0 6 23-24 1.4 21-22 0
C20 1NO+2NC	PSI 201IN	13-14 0 1.5 3.0 6 21-22 2.0 33-34 0
C2 1NO, 1NC+ 1NO, 1NC	PSI 216N	13-14 0 1.3 6 21-22 0 2.2 4.0 6 43-44 0.7 31-32 0
C5 1NO+1NC	PSI 516N	21-22 0 2.2 4.0 6 13-14 1.1 21-22 0
C6 1NO+1NC	PSI 616N	21-22 0 1.5 3.0 6 13-14 3.4 21-22 0
C7 1NO+1NC	PSI 716N	21-22 0 3.1 4.6 6 13-14 1.8 21-22 0
C9 2NC	PSI 916N	11-12 0 2.9 4.4 6 21-22 0
C10 2NO	PSI 1016N	13-14 0 1.4 6 23-24 0
C14 2NC	PSI 1416N	11-12 0 3.0 4.5 6 21-22 1.4 21-22 0
C15 2NO	PSI 1516N	13-14 0 3.0 6 23-24 1.4 21-22 0
C20 1NO+2NC	PSI 2016N	13-14 0 1.5 3.0 6 21-22 2.0 33-34 0

*IN ALTERNATIVA:
Alternative: M20x1.5 ISO 262

