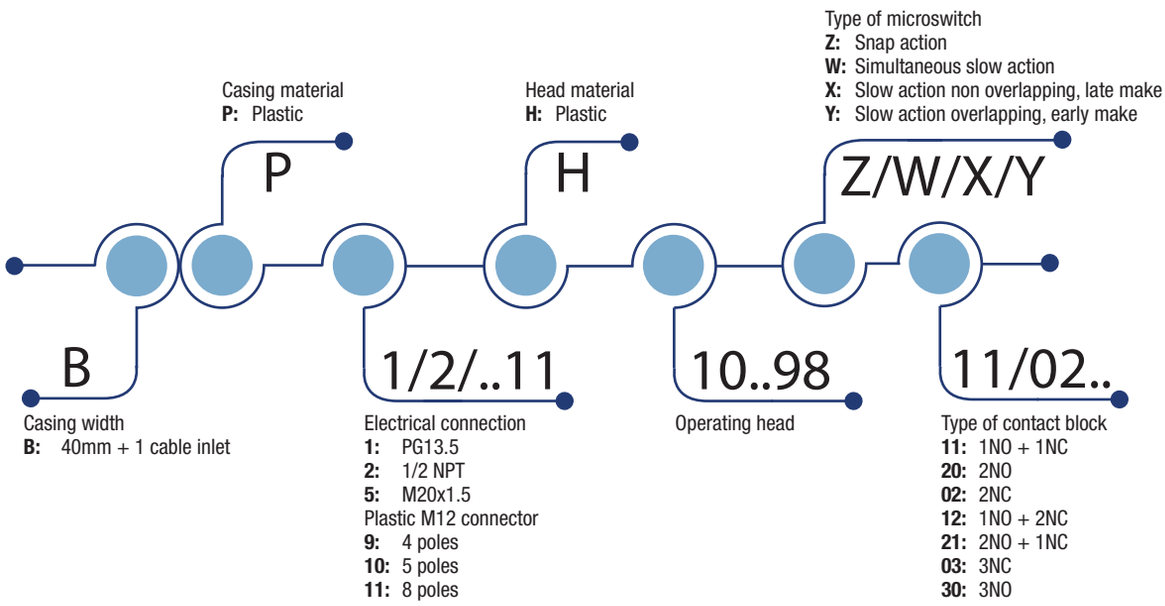
Limit Switches **BP series**

Summary

APPROVALS: UL 508 / CSA C22-2 N. 14 / IEC 60947-5-1

CB-SCHEME certification according to IEC 60947-5-1



HOW IS IT MADE?

01 A variety of actuators
- Plain plunger
- Roller plunger
- Roller lever, adjustable or not, etc.

02 Wide range of heads
- Assembled using 4 x ∅3 screws

03 Casing:
- 40 mm. with dimensions acc. to EN 50041

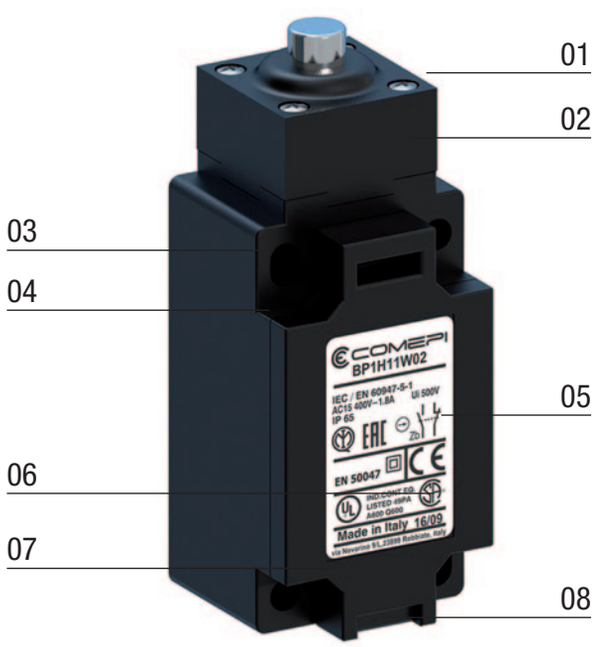
04 Mounting screws
- 2 or 4 x M5 screws on top part

05 Cover
- None

06 Contact Block
- Positive opening operation
- Snap action or slow action
- Electrically separated contacts

07 Connecting terminals
- Block of 2 contacts: M3.5 (+, –) pozidriv 2 screw
- Block of 3 contacts: M3 (+, –) screw
- Screw head with captive cable clamp
- Markings conform with IEC 60947-1, IEC 60947-5-1 standards

08 Electrical connection
- 1 x threaded cable inlet suitable for cable gland or M12 connector



Limit Switches **BP series**
Description

APPLICATIONS

Easy to use, electromechanical limit switches offer specific qualities:

- Visible operation.
- Able to switch strong currents (10 A conventional thermal current).
- Electrically separated contacts.
- Precise operating points (consistency).
- Immune to electromagnetic disturbances.

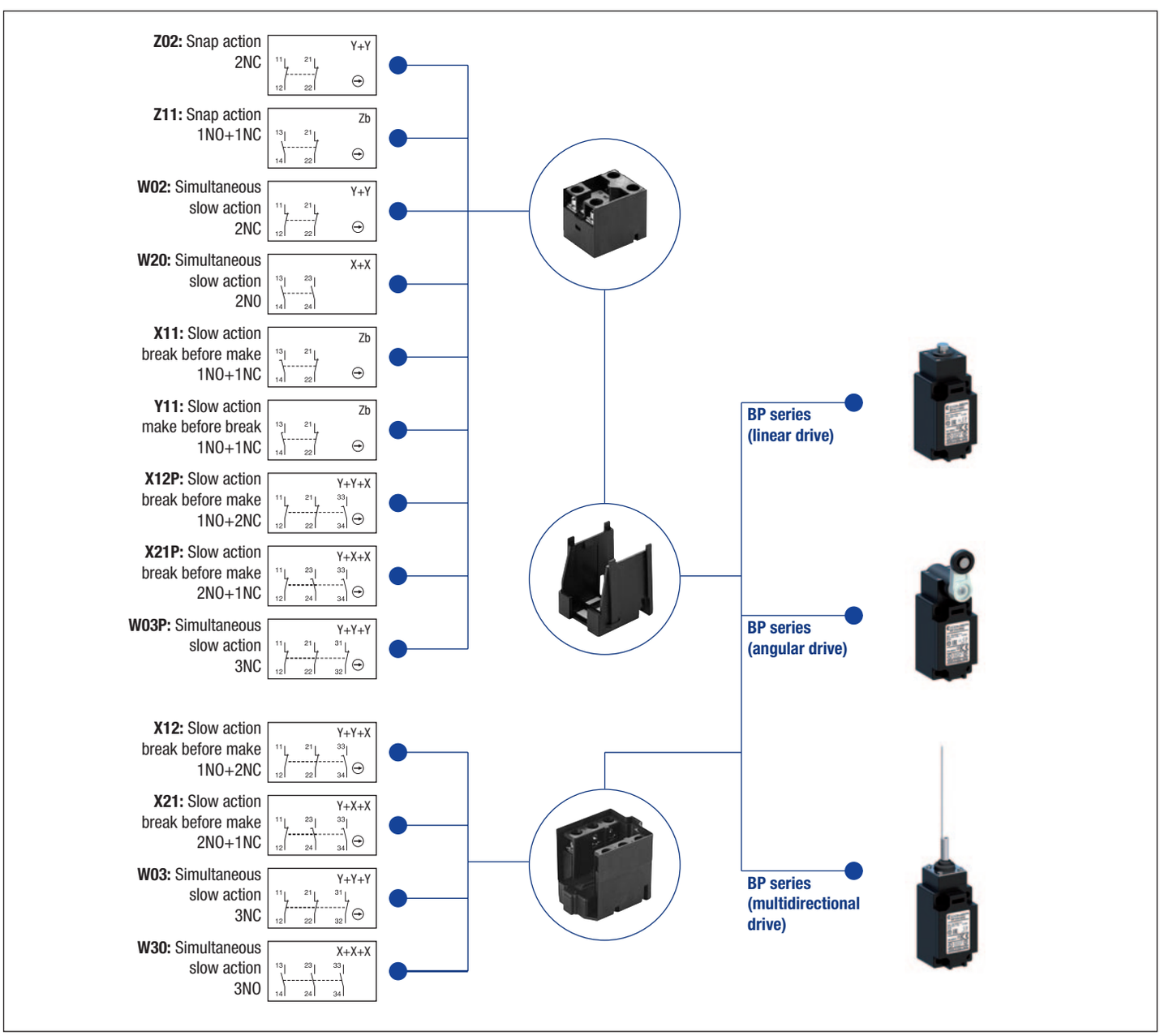
They are purpose-built detection devices thanks to these characteristics:

- Presence/absence.
- Positioning and travel limit.
- Objects passing/counting.

DESCRIPTION

Limit switches, which are made of reinforced UL-VO thermoplastic fiber-glass, offer double insulation ⧈ and a degree of protection of IP65.

They comply with the requirements of European Directives (Low Voltage and RoHS) and are conform to European and International Standards.
The CE declaration of these products are available in the download section of website www.comepi.it or by writing to the following email address: tecnico@comepi.it
DDC02 - Limit Switches.



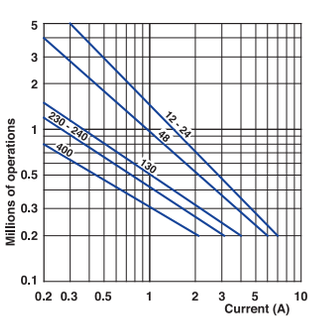
Limit Switches **BP series**
Technical Data

			BP Series
Standards			IEC 60947-5-1 EN 60947-5-1
Certifications - Approvals			UL - CSA - IMQ - EAC - CCC - UKCA
Air temperature near the device			
– during operation		°C	– 25 ... + 70
– for storage		°C	– 30 ... + 80
Mounting positions			All positions are authorised
Protection against electrical shocks (acc. to IEC 61140)			Class II
Degree of protection (according to IEC 60529 and EN 60529)			IP65 - IP67

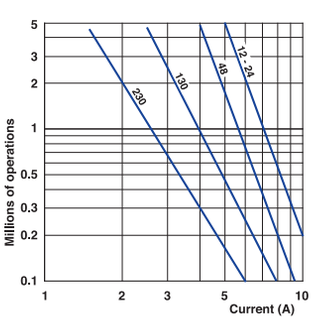
Electrical Data

Rated insulation voltage U_i - according to IEC 60947-1 and EN 60947-1 - according to UL 508 and CSA C22-2 n° 14			500 V (degree of pollution 3) (400 V for contacts type Z02) A 600, Q 600
Rated impulse withstand voltage U_{imp} (according to IEC 60947-1 and EN 60947-1)		kV	6
Conventional free air thermal current I_{th} (according to IEC 60947-5-1) $\theta < 40$ °C		A	10
Short-circuit protection U_e < 500 V a.c. - gG (gl) type fuses		A	10
Rated operational current			
I_e / AC-15 (according to IEC 60947-5-1)	24 V - 50/60 Hz	A	10
	120 V - 50/60 Hz	A	6
	400 V - 50/60 Hz	A	4 (1.8A for contacts type X12, X21, W03, W30)
I_e / DC-13 (according to IEC 60947-5-1)	24 V - d.c.	A	6 (2.8A for contacts type X12, X21, W03, W30)
	125 V - d.c.	A	0.55
	250 V - d.c.	A	0.4 (0.27A for contacts type X12, X21, W03, W30)
Switching frequency		Cycles/h	3600
Load factor			0.5
Resistance between contacts		mΩ	25
Connecting terminals			M3.5 (+, –) pozidriv 2 screw with cable clamp (M3 for 3 poles contacts type)
Terminal for protective conductor			–
Connecting capacity		1 or 2 x mm^2	0.34 ... 2.5 (0.34... 1.5 for 3 poles contacts type)
Terminal marking			According to IEC 60947-5-1
Recommended tightening torque			**Plastic**
Cover			0,5Nm, max 0,8
Head			0,5Nm, max 0,8
Microswitch			0,8Nm, max 0,9
Mechanical durability			30 millions of operations H11...13; H31...33 25 millions of operations H41...44; H51...54; H61...75 10 millions of operations H14; H19; H35...37; H91...93
Electrical durability (according to IEC 60947-5-1)			Utilization categories AC-15 and DC-13 (Load factor of 0.5 according to curves below)

AC-15 - Snap action



AC-15 - Slow action



DC-13		Snap action	Slow action
		Power breaking for a durability of 5 million operating cycles	
Voltage	24 V	9.5 W	12 W
Voltage	48 V	6.8 W	9 W
Voltage	110 V	3.6 W	6 W

Limit Switches **BP series**
Technical Data

Technical data approved by IMQ

Standards		Devices conform with international IEC 60947-5-1 and European EN 60947-5-1 standards
Degree of protection		IP 65
Rated insulation voltage U_i		500 V (degree of pollution 3) (400V for type Z02)
Rated impulse withstand voltage U_{imp}		6 kV
Conventional free air thermal current I_{th}		10 A
Short-circuit protection - gG (gl) type fuses		10 A
Rated operational current		
I_e / AC-15	24 V - 50/60 Hz	10 A
	400 V - 50/60 Hz	4 A (1.8A for contacts type X12, X21, W03, W30)
I_e / DC-13	24 V - d.c.	6 A (2.8A for contacts type X12, X21, W03, W30)
	125 V - d.c.	0.55 A
	250 V - d.c.	0.4 A (0.27A for contacts type X12, X21, W03, W30)

Technical data approved by UL

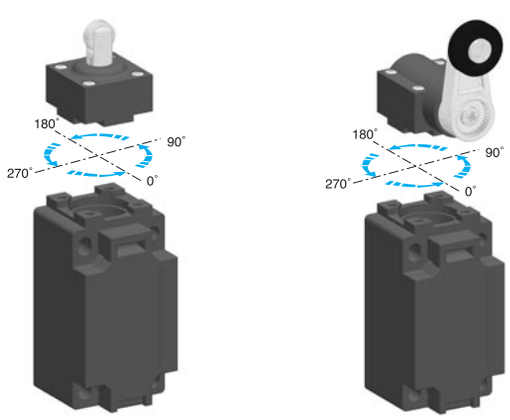
Standards	Devices conform with UL 508
Contact blocks type Z11, X11, Y11, W02 and Z02	
Utilization categories	A600, Q600
Contact blocks type X12, X21, W03 and W30	
Utilization categories	A600, Q600

Use 60/75°C copper (Cu) conductor only. Wire rages 14-18 AWG stranded or solid. The terminal tightening torque of 7 lbs-in / 0.78 Nm. Suitable for conduit connection only with use of adapter sleeve optionally provided or recommended by the manufacturer.

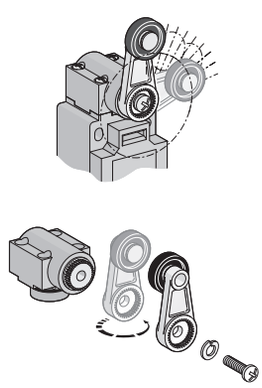
For the complete list of approved products, contact our technical department

IMPLEMENTATION

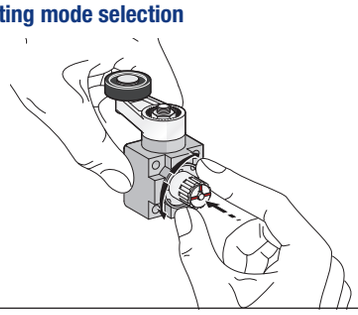
Operating head orientation
The head can be rotated each 90°.
Recommended tightening torque 0,5 Nm (max 0,8 Nm).

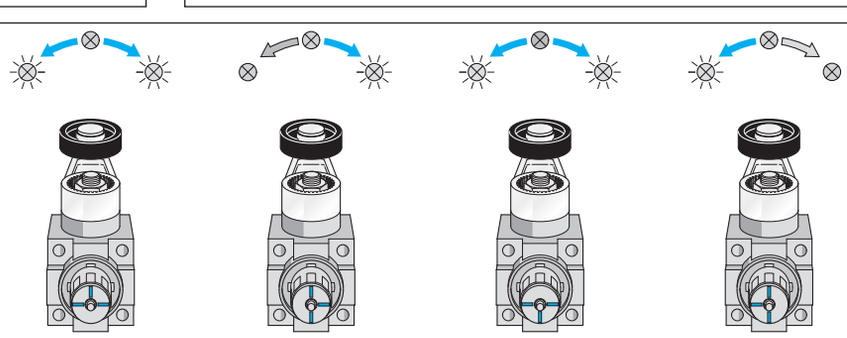


Lever adjustment
The lever of the angular actuators can be adjusted every 9° and round turned in order to obtain the maximum flexibility on the working plan.
Recommended tightening torque 0,5 Nm (max 0,8 Nm).



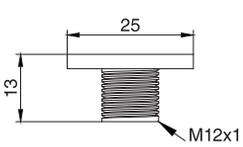
Operating mode selection

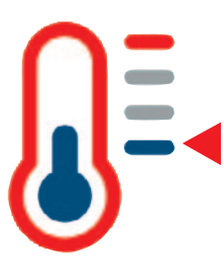




Special Versions

M12 CONNECTOR
Prewired versions with 4, 5 or 8 poles M12 male connectors. Avalable with plastic threaded body. See page 117 for more details.





Low Temperature
The limit switches for low temperature applications are useful for refrigerated cells or equipments where the air operational temperature is very low.
These devices, made in special materials, are able to extend the operational temperature range down to -40°C, maintaining mechanical performances intact.
To order add the digits “40” following the operating head indication in part number.
For example: BP1H11Z11 ➧ BP1H1140Z11