

LIMIT SWITCHES

The TEKNIC EUCHNER – Limit Switch – Precision, Reliability and Versatility.

The TEKNIC EUCHNER – Limit switch is a versatile unit, according to the EUROPEAN STANDARD EN 50041 with EUCHNER know how and is further developed to produce a perfect universal construction.

Robust construction and the exclusive use of high quality corrosion resistant materials, precision finishing and the high Protection class IP67 to IEC 529, DIN 40 050 are the guarantees for a trouble free and reliable operation under the most arduous conditions.

Lever arm or plunger actuation, 7 different actuator designs, which can be set at 4 X 90 Deg.

Positions about the longitudinal axis and the choice of switching direction setting (with lever arm actuation) offer the user an almost unlimited possibility for individual applications.

The Limit Switch in Detail – Cross Section of an Excellence in Design.

The Plunger Actuation.

The plunger actuated versions allow the user a choice of 4 different types. The stainless steel hardened plunger with telescopic action is precisely guided within anodized die-cast light alloy head, and is practically maintenance free. This plain bearing principle which is designed for many millions of operations, and is also incorporated in our precision multiple limit switches, ensures the exceptional reliability of the TEKNIC EUCHNER limit switch. The direction of the actuator head can easily be changed in steps of 90 Deg.

The Diaphragm Seal.

In switches with plunger actuation, the plunger area is separated from the switch chamber by a diaphragm seal made from NBR elastomer. Due to high demands the seal has a designed minimum life of 30 million operations and is therefore practically indestructible.

The seal is firmly fixed to the plunger and is returned to the free position after each operation, not by the switching element but by the plunger return spring.

Any development of pressure due to plunger actuation is eliminated by a relief valve.

The switching element is actuated by a metal cap pressed on to the seal.

Switching point displacements (a logical consequence due to the high elasticity of the seal) are therefore completely eliminated.

The Lever arm – Actuation

Three different levers can be used on the lever arm actuated switches. The stainless steel shaft is precisely guided through a housing.

The numerous adjusting possibilities give great flexibility:

- a) Adjustment of the actuator head around the longitudinal axis is possible in 90 Deg. Steps
- b) Adjustment of the lever arm in positively fixed positions is possible in 90 Deg. Steps
- c) Infinite adjustment of the lever arm within 360 Deg.
- d) Adjustment of switching direction, from the right only, from the left only or from both directions.

The Edge Seal.

In lever arm actuated switches the actuating mechanism and the switch chamber is protected against ingress of liquids by an edge seal which is made from NBR elastomer and is resistant to all known coolant and lubricating agents.

The Enclosure.

The anodized die-cast aluminium housing has proved itself highly resistant to corrosion and is unaffected by even the most arduous conditions. Cable connection can be made through TECHNIC EUCHNER Cable glands (Pg13.5)

The Cable Connections.

Each TECHNIC EUCHNER Limit switch to EN 50041 is tested before dispatch to the customer. It must comply with protection class IP67. In order to meet this protection class, only high quality TECHNIC EUCHNER cable connectors with captive sealing rings should be used.

Switching elements.

Switching element type ES510

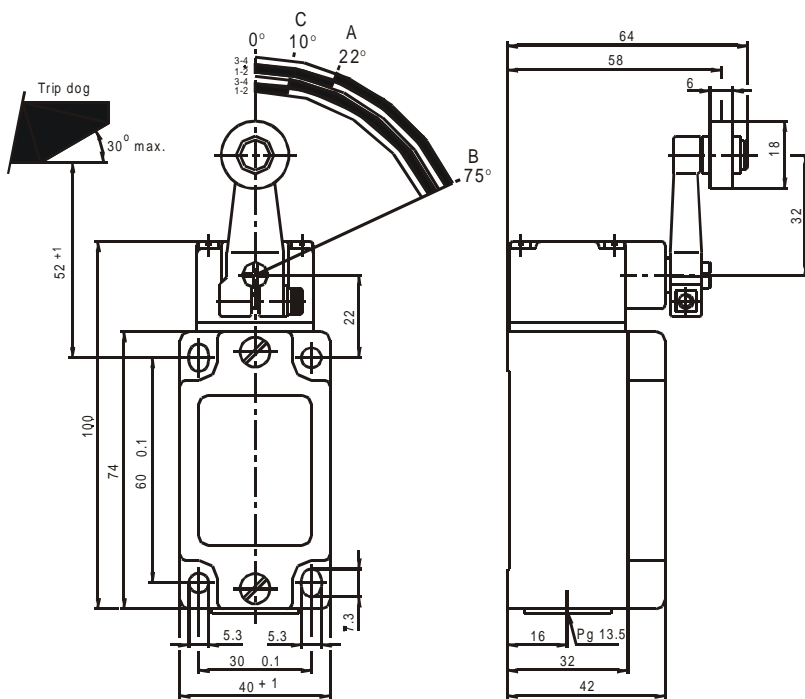
Snap action double gap switching element with one NO contact and one NC contact.
Contact gaps 2 x 0.6mm.



Dimensional Details

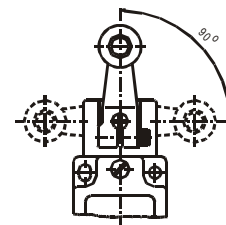
Limit switch with roller lever arm HS.
Switches in both directions. Roller is either made of steel or plastic. Operating point reproducibility is ± 0.25 degrees. Approach speed max. 300 m/min.

Limit switch with Lever Arm Actuation.

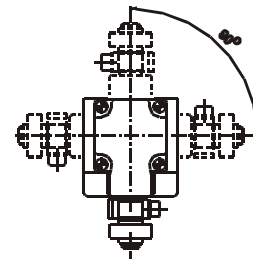


A = Operating Point B = Final position C = Reset point

Adjustment Variations



Vertical adjustment : 4 x 90° (form fitted)
or infinitely adjustable through 360° (no
positive fixing).



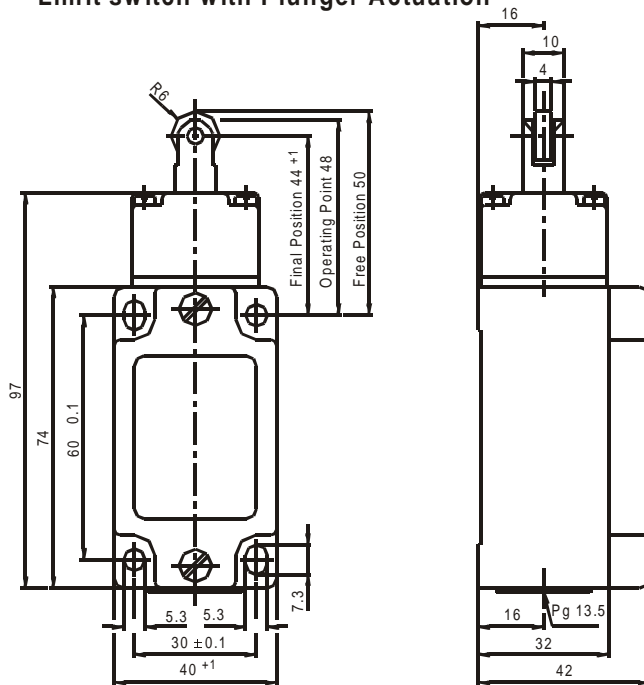
Horizontal assembly : 4 x 90°



Dimensional Details

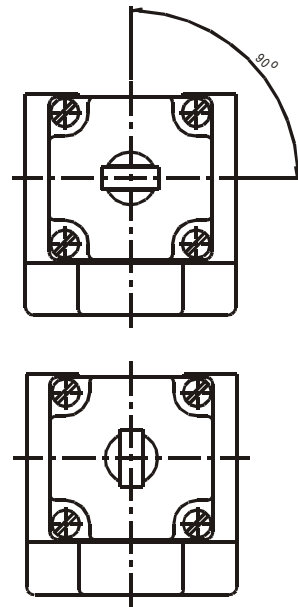
Limit switch with standard roller plunger RS.
 Both steel (with plain bearing) and plastic roller available. Operating point reproducibility ± 0.1 mm. Approach speed max. 20 m/min.

Limit switch with Plunger Actuation



Roller plunger standard EN 50041 Form C
 RG = Plastic roller RS = Steel roller.

Assembly Variations

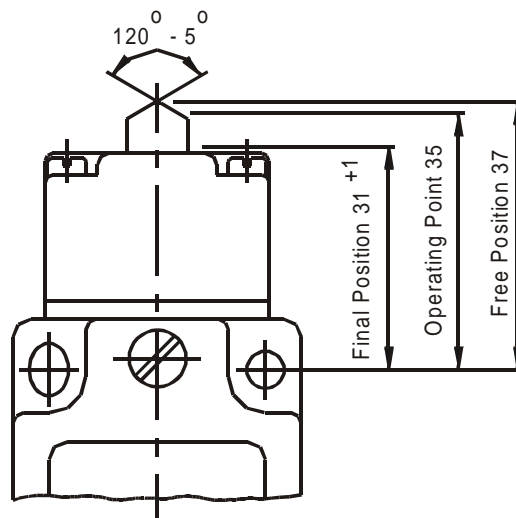


Horizontal change through 90°



Limit switch with chisel plunger DO.
Hardened and polished. Operating point reproducibility ± 0.002 mm. Approach speed max. 10m/min.

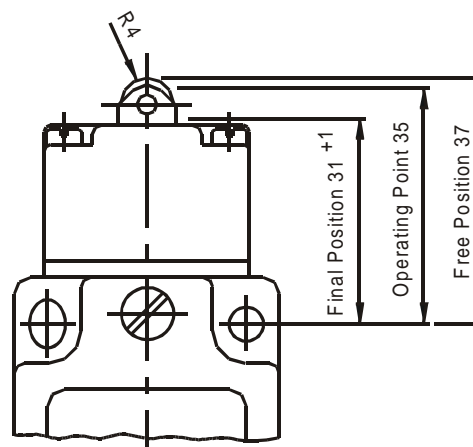
Actuator Heads



DO = Chisel Plunger



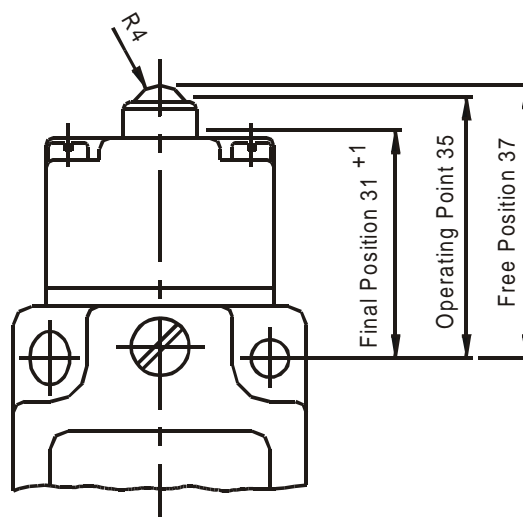
Limit switch with short roller plunger RK.
Hardened roller with plain bearing. Operating point reproducibility ± 0.01 mm. Approach speed max. 50 m/min.



RK = Roller Plunger short with plain bearing



Limit switch with ball plunger KO.
Hardened ball can be actuated from various directions. Operating point reproducibility ± 0.01 mm. Approach speed max. 10 m/min.

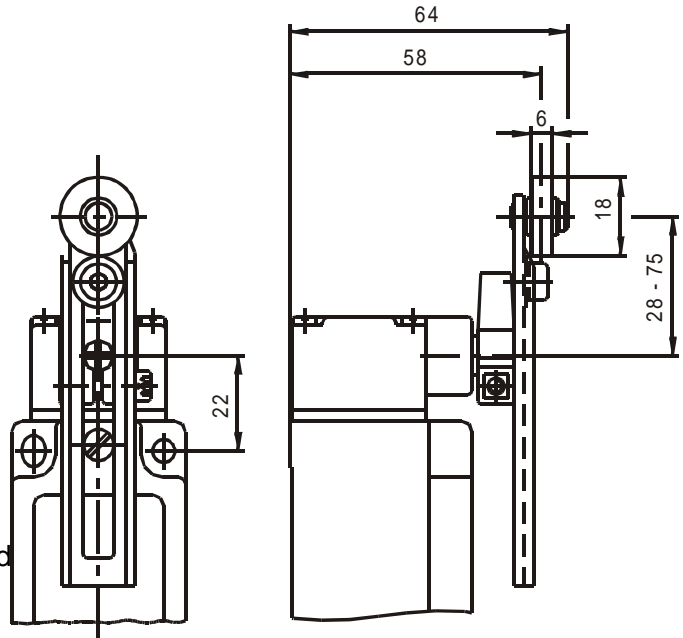


KO = Ball Plunger



Limit switch with adjustable roller lever arm VS.

Plastic or steel roller. Adjustable with slotted steel arm, adjusting range 28 to 75 mm. Operating point reproducibility ± 0.25 degrees. Approach speed max. 120m/min

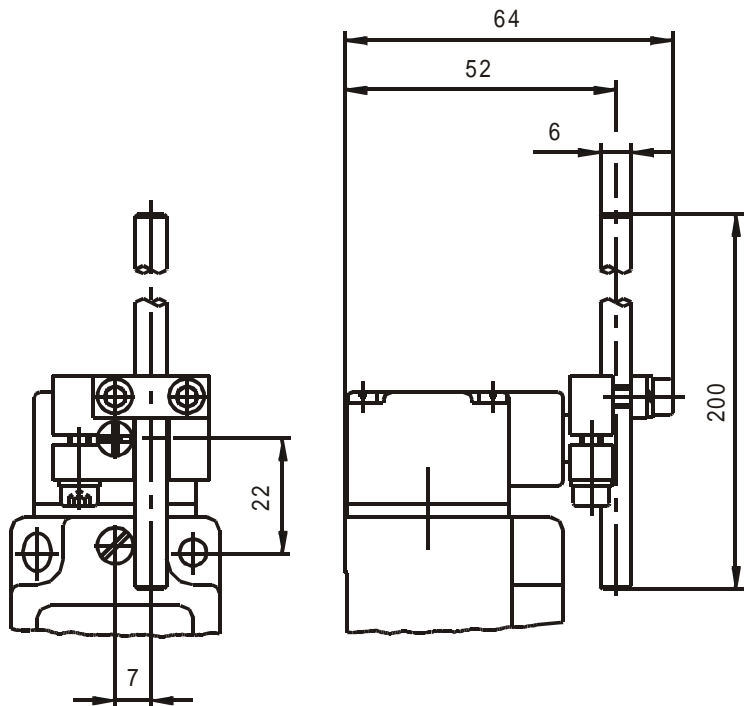


Adjustable roller lever arm
 VS = Steel Roller
 VB = Plastic Roller



Limit switch with pivoted arm SM.

Switches in both directions. Plastic or Aluminium rod. Operating point reproducibility ± 1 degree. Approach speed max. 60 m/min.



Pivoted arm switching from both directions
 EN 50041 Form D
 SM = Aluminium Rod
 SB = Plastic Rod

General Data and Ordering Code.

	Limit Switch NG							
Housing Material	Aluminium diecasting, anodised							
Environmental protection to IEC 529	IP67							
Mounting Position	Optional							
Ambient temperature (Dev.C)	-25 to + 80							
Plunger guide	Maintenance free							
Mechanical service life	30 X 10 ⁶ Deg.Switching cycles							
Switching element	ES 510							
Contact element	1 NO + I NC							
Switching principle	Snap-action							
Contact gap to VDE 0660 (mm)	2 x 0.5							
Contact material	Silver, AgNi 10 galvanically gold plated							
Connection type	Captive screw terminals with self lifting clamping washers.							
Cable cross-section max. (mm ²)	2 x 1.5							
Utilization category to IEC 947-5-1	AC-15Ue230V Ie6A DC-13Ue 24V Ie 6A							
Rated insulation voltage (U _{iv}) ≙	250							
Switching voltage min. (V)	12							
Switching current min.at 12V(mA)	10							
Contact closing time (ms)	<4							
Contact bounce time (ms)	<3							
Short circuit protection (fuse)	10 A, HRC							
Actuator	HB/HS	KO	RG/RS	RK	DO	VB/VS	SB/SM	
Design according to EN 50 041 Form	A1	-	C1	-	-	-	D1	
Approach speed max. (m/min)	300/60	10	20	120	10	120/30	60	
Approach speed min. (m/min)	0.1	0.01	0.01	0.01	0.01	0.5	0.5	
Pre-travel, before switch point (mm)	-	2	2	2	2	-	-	
Pre-travel, before switch point (Deg.)	22	-	-	-	-	22	22	
Operating point reproducibility(mm)-	-	0.01	0.1	0.01	0.002	-	-	
Operating point reproducibility(Deg.)-	0.25	-	-	-	-	0.25	1	
Movement differential (mm)	-	0.7	0.7	0.7	0.7	-	-	
Movement differential (Deg.)	12	-	-	-	-	12	12	
Operating force (N)	10	15	15	15	15	10	10	
Switching frequency max (min ¹)	600	300	300	300	300	300	300	

Actuator:

- HB** = Roller lever arm (plastic roller)
- HS** = Roller lever arm (steel roller)
- KO** = Ball Plunger
- RG** = Roller plunger standard (plastic roller)
- RS** = Roller plunger standard (steel roller)
- RK** = Roller plunger (short)
- DO** = Chisel plunger
- VB** = Adjustable roller lever arm (plastic roller)
- VS** = Adjustable roller lever arm (steel roller)
- SB** = Pivot arm (plastic rod)
- SM** = Pivot arm (aluminium rod)

Ordering code	N	G	1	-	5	1	0
Type							
Actuator							
Switching element							
Ordering example:	Limit switch with cable connection Pg 13.5 Roller lever arm (steel roller) NG1HS - 510						