TEKNIC EUCHNER CE

# Precision Single and Multiple Limit Switches

TEKNIC EUCHNER is a joint venture between EUCHNER Germany and TEKNIC India. EUCHNER was founded in 1940 and TEKNIC in 1970. EUCHNER has been a pioneer in the field of multiple position switches. As early as 1952, the world's first multiple limit switch was produced by EUCHNER.

TEKNIC was started in 1970 and has pioneered the development of high quality electromechanical products ever since 1980. The joint venture TEKNIC EUCHNER was approved by the Government of India in 1989. The joint venture TEKNIC EUCHNER ELECTRONICS PVT LTD, established in Bangalore, with technology transfer from EUCHNER Germany, has started manufacturing a product range to start with inductive proximity switches, single and multiple limit switches with the intention to produce the full range of EUCHNER products. The buzzword is reliability, precision and quality backed by continual testing and maintenance of high quality with the aid of computer controlled inspection systems. The manufacturing facilities of TEKNIC EUCHNER are backed by a competent marketing set up and committed selling partners.

Manufacturing Works - Bangalore

# Contents

# TEKNIC EUCHNER

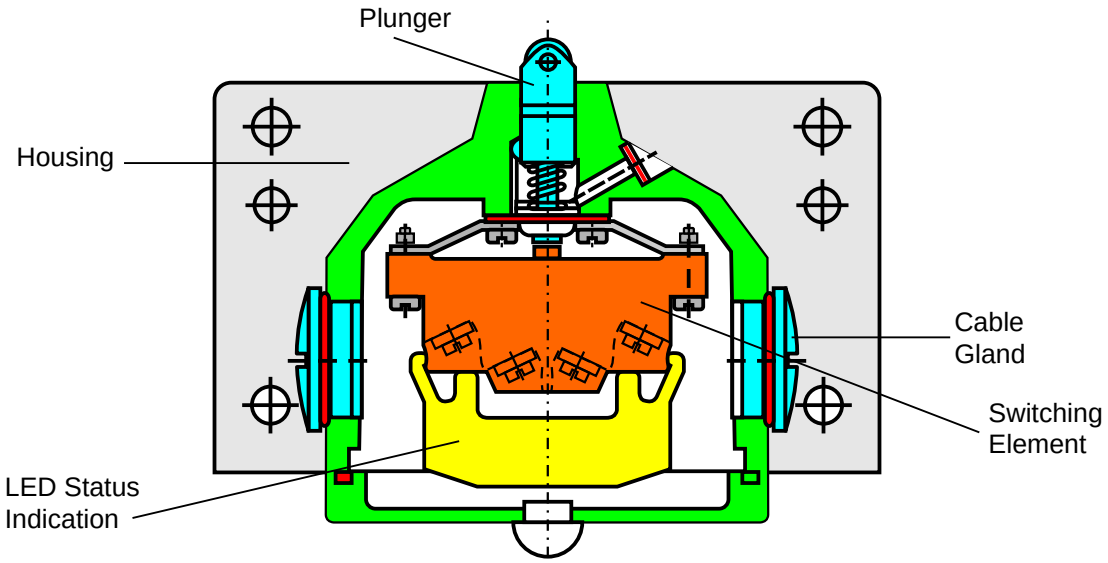
## Precision and know-how, the basis for your confidence

### TEKNIC EUCHNER Precision Single and Multiple Limit Switches

are outstanding controls which have been developed and perfected in close cooperation with the machine tool industry over the last 40 years, by EUCHNER Germany.
The use of high-grade materials, an excellence in technology resulting in the reliable co-ordination of all necessary functions, guarantees trouble free operation under the most arduous conditions.
TEKNIC EUCHNER precision single and multiple limit switches are used for the controlling and positioning of machines and industrial equipment.

The main advantages of these highly accurate and reliable positioning switches are:

Minimum space requirements due to compact design, low cost connection through the use of a common wiring cable, reduction in the number of sealing glands for cable entry, cross connection of switch elements without additional terminal boxes, and easy access to all switch stations for test, adjusting and service purposes.
The following pages of this catalogue give details of the design and full technical data of the standard range of TEKNIC EUCHNER precision single and multiple limit switches. Special requirements for specific control problems can be solved to your satisfaction by our design department.




The system drawing shows in clear detail, the perfected design features of the TEKNIC EUCHNER precision limit switch. The material used by TEKNIC EUCHNER for the enclosure is a special aluminium alloy. The enclosure surface and thus the plunger guide are transformed by, a special surface coating into an aluminium oxide layer. This surface, combined with the hardened & polished plunger, offers particularly high wear and corrosion resistance.

A variety of enclosure designs and sizes, three different plungers for specific actuation from various directions, together with switching elements for many electrical applications, offer a high degree of flexibility. The final testing of all precision multiple limit switches ensures that our customers receive a product of excellence, which has been perfected with the EUCHNER know-how.
Have confidence in TEKNIC EUCHNER, with the back up of EUCHNER, the oldest and most experienced manufacturer of Precision Limit Switches.

# Details – Solutions with outstanding features:

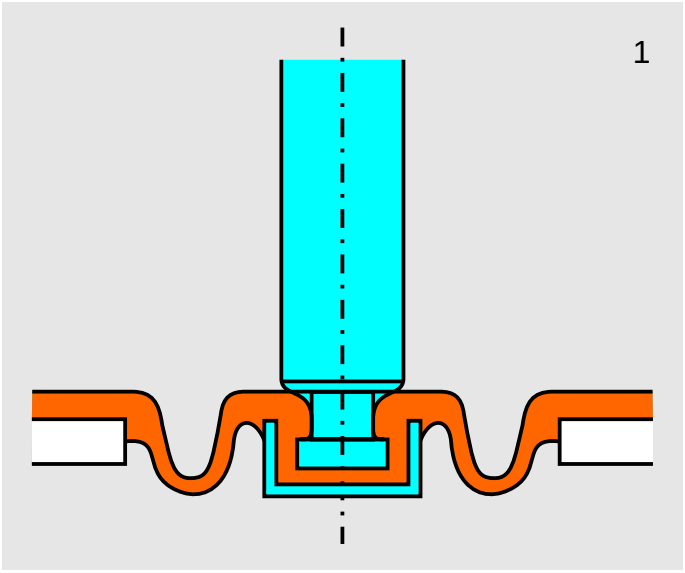
The perfected technology, the use of high-grade materials for manufacturing the high precision parts and the clever attention to details are used together to make TEKNIC EUCHNER multiple limit switches a uniformly high quality unit which is complemented by the use of high quality seals. The seals, made from NBR elastomer (Nitro Rubber), have a high degree of elasticity, very good mechanical properties and are resistant to all known coolant and lubricating agents.

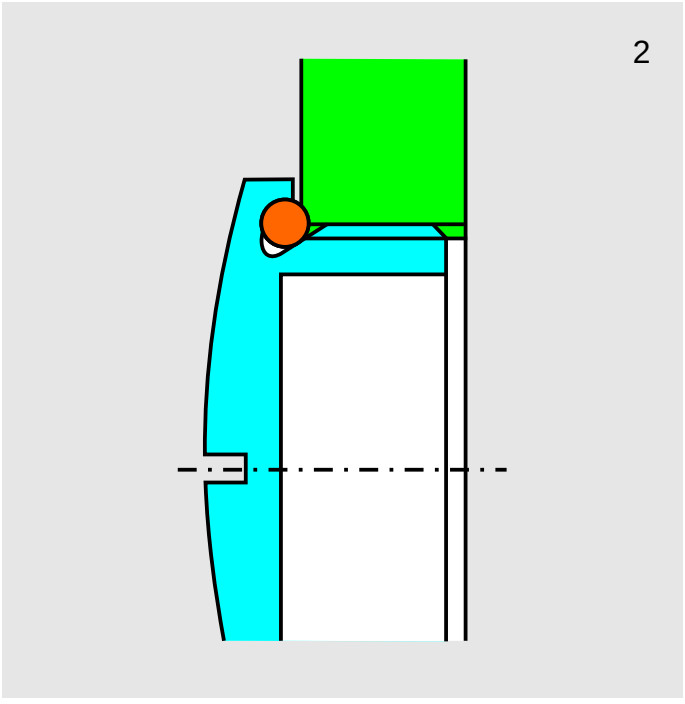
1 The Diaphragm Seal
The diaphragm seal separates the plunger area from the switch chamber of the enclosure. Due to the high demands made upon the seals, they have a designed minimum life of 50 million operations and are therefore practically undestructable . The seal is firmly fixed to the plunger and is returned to the free position after each operation, not by the switching element, but by the plunger return spring.
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.

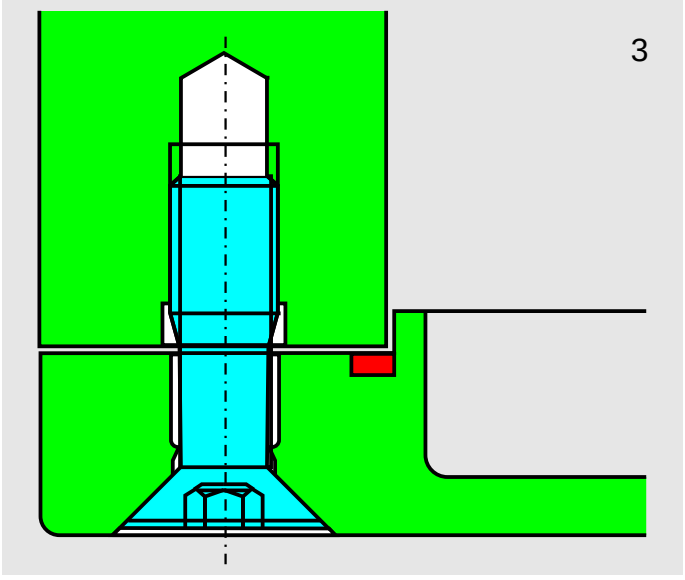
2 The Cable Glands.
All cable entries are sealed with metal screw plugs which have captive sealing rings. The main advantage of this is that the seals cannot be lost or pushed out. The diameter and type of cable entry correspond to the types of cable normally used in practice.

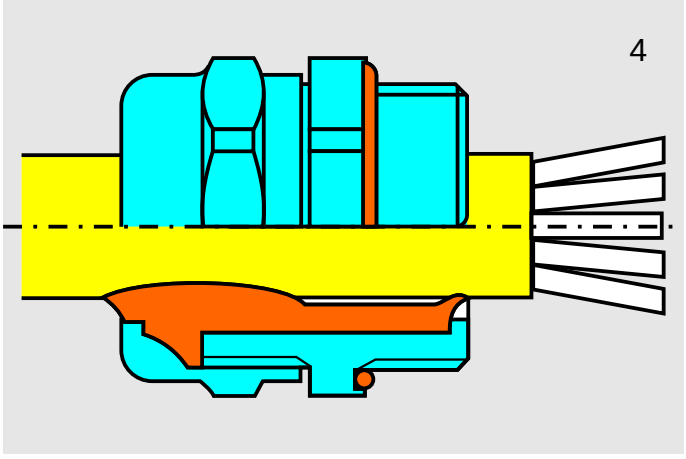
3 The Enclosure Cover.
The accurately machined cover is equipped with a captive seal and is easily removable by screws for testing or service purposes.

4 The Protection.
Each TEKNIC EUCHNER precision single or multiple limit switch is tested before dispatch to the customer. It must comply with protection class IP 67. In order to satisfy this protection class, only high quality TEKNIC EUCHNER cable connectors with captive sealing rings should be used.



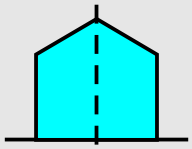



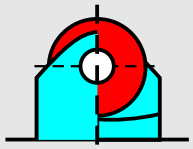



# The Plunger – Outstanding Perfection with High Switching Accuracy.

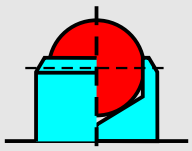
The high precision plungers are made from stainless steel and are lubricated for life. The special telescopic design eliminates any damage to the switching element when the plunger is actuated, even if pushed in as far as the reference surface. In a single or multiple limit switches with safety switching elements the telescopic plunger is replaced by a 'rigid' plunger which at overload in an emergency will open the safety circuit, even when the contact have been welded together. Three functionally different plunger designs are available in 8 or 12mm plunger spacings.



D = Chisel



R = Roller

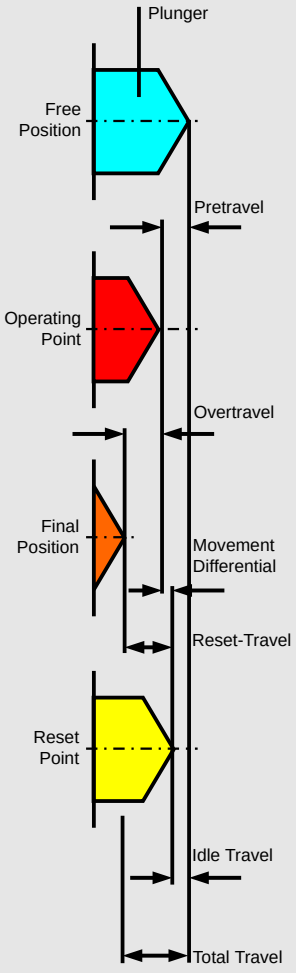


K = Ball

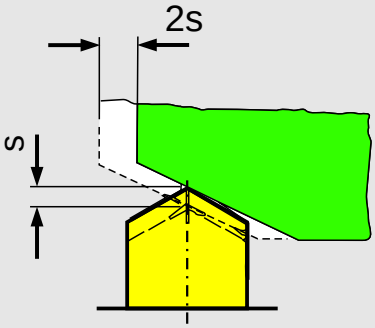
**Chisel Plunger:**
Hardened and polished. Operating point reproducibility up to ± 0,002mm. Max. approach speed 40m/min.

**Roller Plunger:**
Hardened roller, Operating points reproducibility up to ±0,01mm. The limit switches to DIN 43697 (RG type) have plain bearings. This permits problem free approach and plunger speeds of up to 120m/min.

**Ball Plunger:**
Hardened ball. Plunger can be actuated from various directions. Operating point reproducibility ±0,01mm. Max approach speed 40 m/min. This plunger must not be used for safety switch applications.



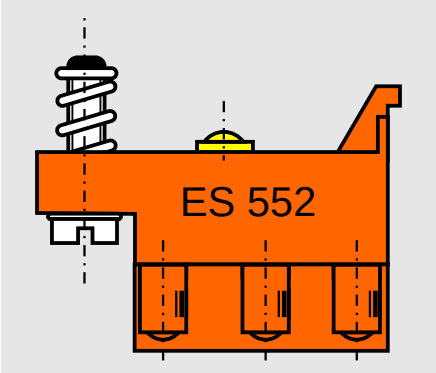

**Plunger Travel Path**:
The schematic illustration indicates the various positions and terms of the plunger action. The different values are determined by the type and size of the various multiple limit switches, and are detailed in the technical specifications.

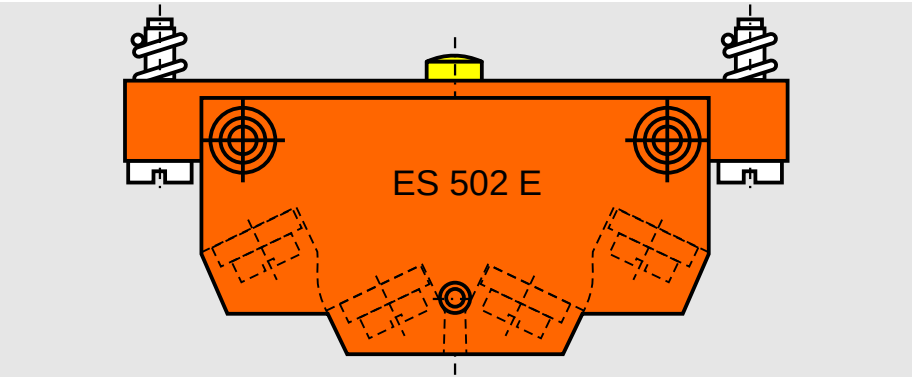


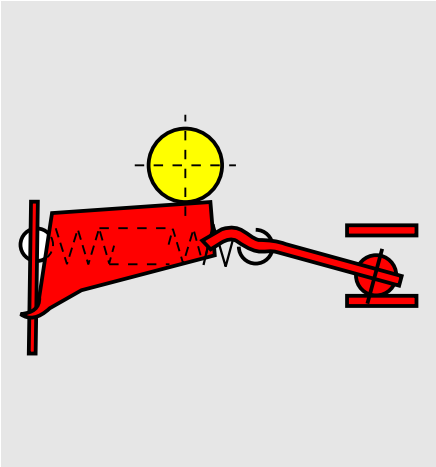

**Path Ratio – Plunger – Trip Dog**
All the information in the technical specifications relating to the plunger path refers to the axial actuation (S). When using **TEKNIC EUCHNER** trip dogs, all switch point travel date are doubled on the trip rail path (2S).

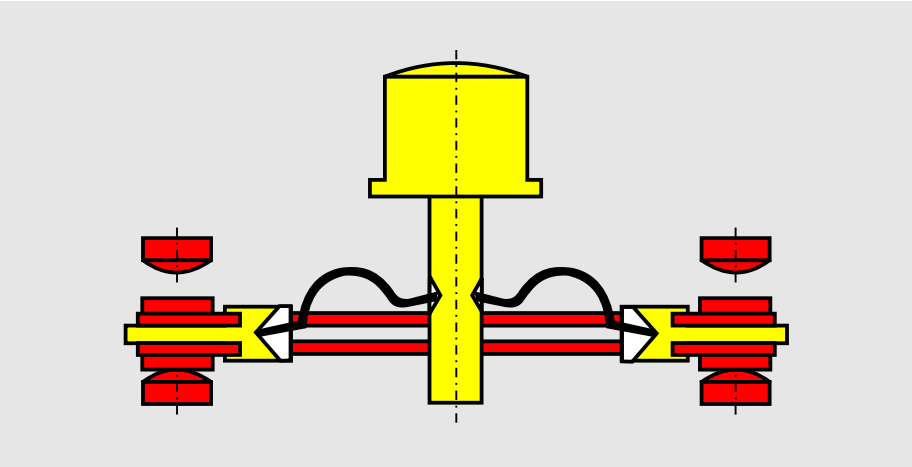
# The Switching Elements – modern technique for reliable control commands.

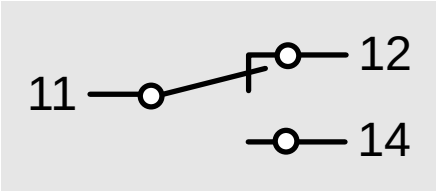
The **TEKNIC EUCHNER** precision single and multiple limit switches, shown in the catalogue are all equipped with snap-action elements. The snap – action mechanism is designed so that the switching speed is, to a great extent, independent of the actuating speed. The well proven switching systems and the high-grade material used guarantee trouble free operation of the switching elements for up to 50 million mechanical operating cycles.

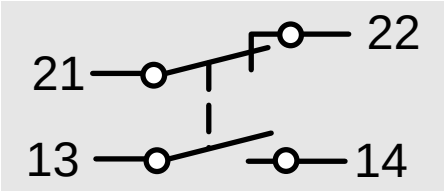







**For special applications different switching elements are available:**

**For particularly low currents and voltages.**
**For safety applications, switching elements with positive opening operation according to DIN 57113/VDE 0113.**

**Our experts welcome the opportunity to advise you in the selection of controls for your specific needs.**

**Switching Element ES 552**:
Snap action switch with one CO-contact. Screw type connection. Used with all multiple limit switches with 8 mm plunger spacing.

**Switching Elements ES 502E**:
Snap action switch according to DIN 43695 page 2, with 1 NC and 1 NO contact and electrically separated double break contacts. Captive screw connections with self lifting clamp washers. Used with all multiple limit switches with 12mm plunger spacing.

**Switching Elements ES 514:**
Switching elements with built in snap action and 1 NO and a positively driven NC-contact, double break electrically separated contact bridge (safety switching elements) and screw terminals. Used for multiple limit switches type RGBF. No LED display.

# TEKNIC EUCHNER

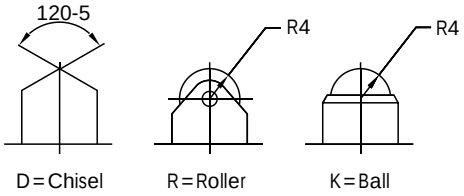
## Multiple Limit Switches. RGBF

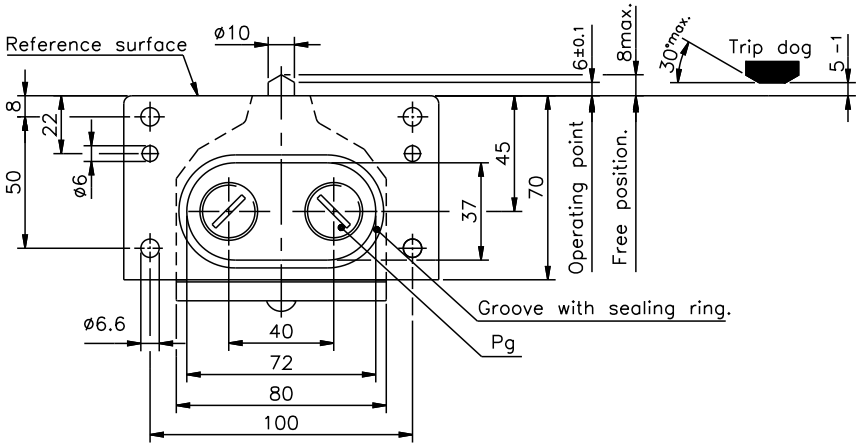
Type : RGBF

Design : DIN 43697

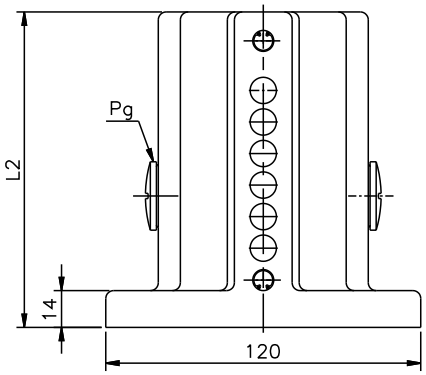
Plunger Spacing : 12mm

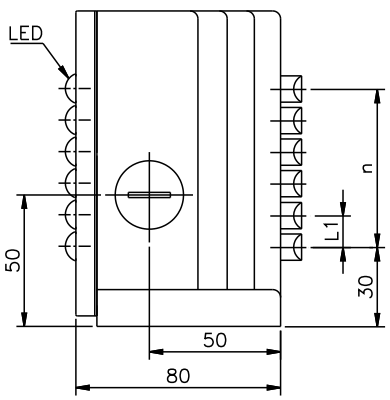
Plunger Forms




| n Number of Plungers | L1=12 L2 | Pg |
|---|---|---|
| 02 | 70 | 16 |
| 03 | 80 | 16 |
| 04 | 90 | 16 |
| 05 | 105 | 16 |
| 06 | 120 | 16 |




Ordering code

| R | G | B | F | | | | | 1 | 2 | - | | | | | L | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Type

Number of plungers (see technical data)

Plunger form (D=Chisel,R=Roller,K=Ball)

Plunger spacing (12mm)

Switching element 502

LED Indication (24-220 V = 024)

Ordering example: Multiple limit switch to DIN 43697/04 Chisel plungers/Plunger spacing 12mm/ Switching element ES 502E/with LED - RGBF04D12-502 L024

Note : Please contact us for pre-wired connector models.

# Technical Data

| | | | |
|---|---|---|---|
| Enclosure Material | Die Cast Aluminium,anodized | | |
| Environmental Protection to DIN 40050 | IP67 | | |
| Mechanical Operations to VDE 0660 part2 | E 3($3x10^7$ Operations) | | |
| Ambient Temperature [°C] | -5 to +80 | | |
| Mounting Position | Optional | | |
| Plunger Material | Stainless Steel | | |
| Plunger Guide | Maintenance free | | |
| Plunger Spacing [mm] | 12 | | |
| No. of Plungers | 02-06 | | |
| Plunger Form | D=Chisel | R=Roller (Plain Bearing) | K=Ball |
| Operating Point Reproducibility[mm][1]) | ±0,002 | ±0,01 | ±0,01 |
| Approach Speed max[m/min][2]) | 40 | 120 | 10 |
| Approach Speed min[m/min] | 0,01 | | |
| Plunger Travel [mm] | 6 | | |
| Operating Force [N] | 15 | | |
| Switching Element | ES 502E | | |
| Switching Principle | Snap Action | | |
| Switch Contacts | 1NO+1NC, electrically separated contact bridge | | |
| Contact Material | Silver alloy - AgNi 10 - Gold,electroplated | | |
| Connections | Terminals with captive screws and self-lifting clamping disc | | |
| Cable Cross Section max[$mm^2$ ] | 1,5 | | |
| Movement Differential[mm] | 0,8 | | |
| Operating Point [3]) | see drawing | | |
| Closing Time[ms] | <4 | | |
| Bounce Time[ms] | <3 | | |
| Switching Frequency max[$mm^{-1}$ ] | 300 | | |
| Insulating Group to VDE 0110 | C | | |
| Nominal isolating Voltage[V] ≅ | 250 | | |
| Rated Breaking Capacity 250V,40-60Hz | cosϕ 0,7/10A cosϕ 0,4/6A | | |
| Rated Breaking Capacity = | 220V/0,5A 24V/6A | | |
| Switching Voltage min[V] | 12 | | |
| Switching Current (min) at min switching voltage [mA] | 10 | | |
| Short Circuit Protection(Fuse) | 10A time lag - 20A quick action | | |

1) The Operating Point reproduciblity refers to axial operation after approx. 2000 operations.

2) Approach speed refers to a 30° angle of the trip dog. For smaller angles this speed can be exceeded.

3) All plunger travel data applies to axial actuation. When plungers are actuated by our standard trip dogs all travel data doubles on the trip rail.

# TEKNIC EUCHNER

## Multiple Limit Switches. RGBF - AM

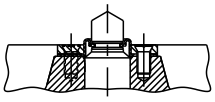
Type : RGBF External Membrane

Design : DIN 43697

Plunger Spacing : 12 mm

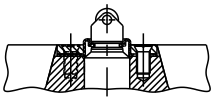
Plunger Forms

**D**

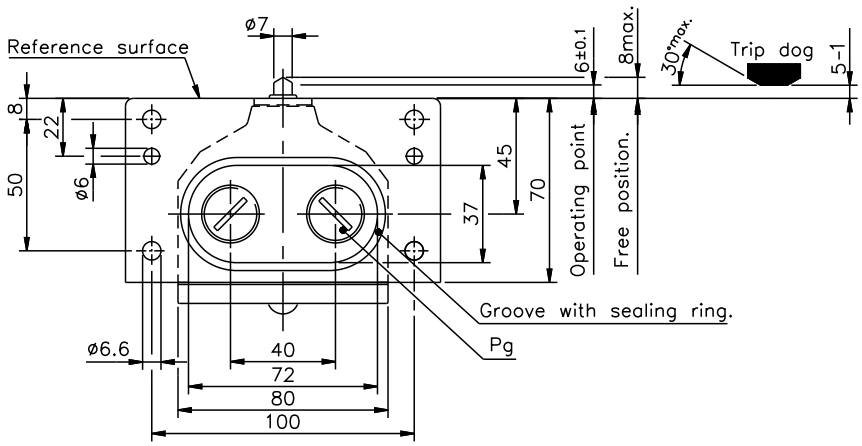


D=Chisel

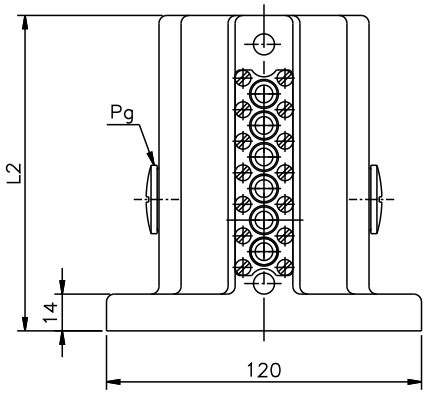
**R**

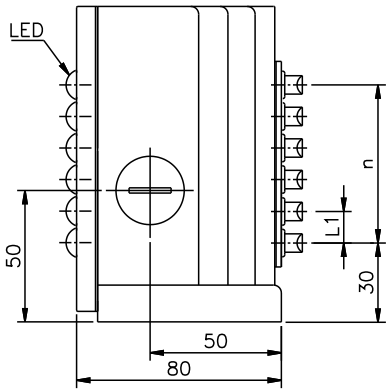


R=Roller




| n Number of Plungers | L1=12 | |
|---|---|---|
| | L2 | Pg |
| 02 | 70 | 16 |
| 03 | 80 | 16 |
| 04 | 90 | 16 |
| 05 | 105 | 16 |
| 06 | 120 | 16 |




Ordering code

| R | G | B | F | | | | | 1 | 2 | - | | | | A | M | L | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Type

Number of plungers (see technical data)

Plunger form (D=Chisel,R=Roller,K=Ball)

Plunger spacing (12mm)

Switching element 502

LED Indication (24-220 V = 024)

Ordering example: Multiple limit switch to DIN 43697 with External Membrane / 04 Chisel plunger / Plunger Spacing 12 mm / Switching element ES 502E - RGBF04D12-502 AM

Note : Please contact us for pre-wired connector models.

# Technical Data

| | | | |
|---|---|---|---|
| Enclosure Material | Die Cast Aluminium,anodized | | |
| Environmental Protection to DIN 40050 | IP67 | | |
| Mechanical Operations to VDE 0660 part2 | E 3($3x10^7$ Operations) | | |
| Ambient Temperature [°C] | -5 to +80 | | |
| Mounting Position | Optional | | |
| Plunger Material | Stainless Steel | | |
| Plunger Guide | Maintenance free | | |
| Plunger Spacing [mm] | 12 | | |
| No. of Plungers | 02-06 | | |
| Plunger Form | D=Chisel | R=Roller (Plain Bearing) | |
| Operating Point Reproducibility[mm][1]) | ±0,002 | ±0,01 | |
| Approach Speed max[m/min][2]) | 20 | 50 | |
| Approach Speed min[m/min] | 0,01 | | |
| Plunger Travel [mm] | 6 | | |
| Operating Force [N] | 15 | | |
| Switching Element | ES 502E | | |
| Switching Principle | Snap Action | | |
| Switch Contacts | 1NO+1NC, electrically separated contact bridge | | |
| Contact Material | Silver alloy - AgNi 10 - Gold,electroplated | | |
| Connections | Terminals with captive screws and self-lifting clamping disc | | |
| Cable Cross Section max[$mm^2$ ] | 1,5 | | |
| Movement Differential[mm] | 0,8 | | |
| Operating Point [3]) | see drawing | | |
| Closing Time[ms] | <4 | | |
| Bounce Time[ms] | <3 | | |
| Switching Frequency max[$mm^{-1}$ ] | 300 | | |
| Insulating Group to VDE 0110 | C | | |
| Nominal isolating Voltage[V] ≅ | 250 | | |
| Rated Breaking Capacity 250V,40-60Hz | cosϕ 0,7/10A cosϕ 0,4/6A | | |
| Rated Breaking Capacity = | 220V/0,5A 24V/6A | | |
| Switching Voltage min[V] | 12 | | |
| Switching Current (min) at min switching voltage [mA] | 10 | | |
| Short Circuit Protection(Fuse) | 10A time lag - 20A quick action | | |

1) The Operating Point reproduciblity refers to axial operation after approx. 2000 operations.

2) Approach speed refers to a 30° angle of the trip dog. For smaller angles this speed can be exceeded.

3) All plunger travel data applies to axial actuation. When plungers are actuated by our standard trip dogs all travel data doubles on the trip rail.

# TEKNIC EUCHNER

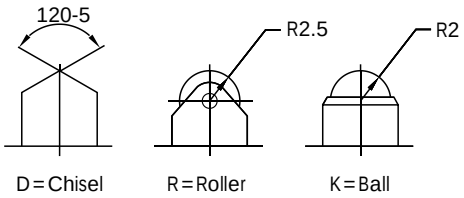
## Multiple Limit Switches. SN

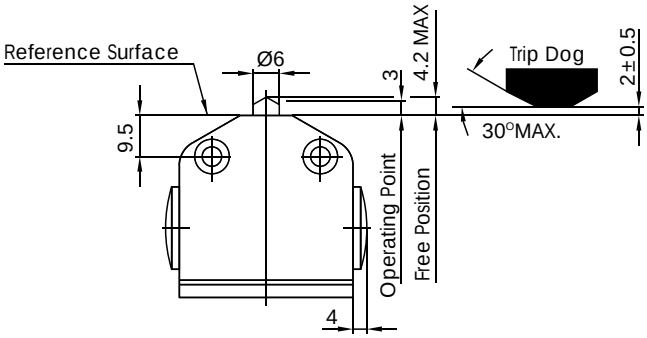
Type : SN

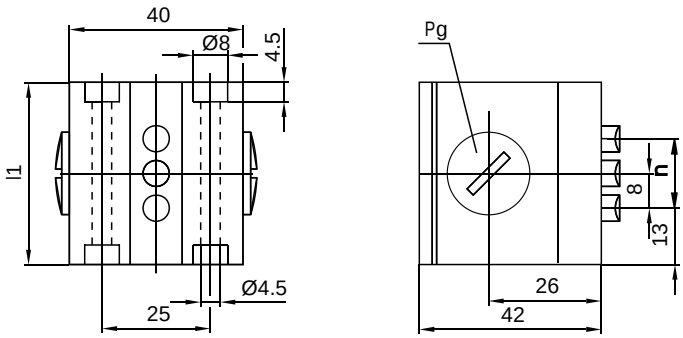
Design : Without Flange

Plunger Spacing : 8mm

Plunger Forms




Switch Element ES552:
Snap action switch with gold plated changeover contacts with screw terminals.

Switch Element ES600 :
Snap action switch with silver changeover contacts with screw terminals.

Switch Element ES610 :
Snap action switch with gold crosspoint changeover contacts with screw terminals.

| n Number of Plungers | l1 | Pg |
|---|---|---|
| 02 | 34 | 9 |
| 03 | 42 | 9 |
| 04 | 50 | 9 |
| 05 | 58 | 9 |
| 06 | 66 | 9 |

Ordering code

| S | N | | | | 0 | 8 | - | | | |
|---|---|---|---|---|---|---|---|---|---|---|

Type

Number of plungers (see technical data)

Plunger form (D=Chisel,R=Roller,K=Ball)

Plunger spacing (8mm)

Switching element (552 / 600 / 610)

Ordering example: Multiple limit switch/03 Roller plunger/Plunger spacing 8mm/
Switching element ES 552 - SN 03 R 08 -552

Note : Please contact us for pre-wired connector models.

# Technical Data

| | | | |
|---|---|---|---|
| Enclosure Material | Die Cast Aluminium,anodized | | |
| Environmental Protection to DIN 40050 | IP67 | | |
| Mechanical Operations to VDE 0660 part2 | E 3($3x10^7$ Operations) | | |
| Ambient Temperature [°C] | -5 to +80 | | |
| Mounting Position | Optional | | |
| Plunger Material | Stainless Steel | | |
| Plunger Guide | Maintenance free | | |
| Plunger Spacing [mm] | 8 | | |
| No. of Plungers | 02-06 | | |
| Plunger Form | D=Chisel | R=Roller (Plain Bearing) | K=Ball |
| Operating Point Reproducibility[mm][1]) | ±0,02 | ±0,05 | ±0,03 |
| Approach Speed max[m/min][2]) | 20 | 50 | 8 |
| Approach Speed min[m/min] | 0,01 | | |
| Plunger Travel [mm] | 3 | | |
| Operating Force [N] | 15 | | |
| Switching Element | ES 552 | ES 600 | ES 610 |
| Switching Principle | Snap Action | | |
| Switch Contacts | 1CO | | |
| Contact Material | Silver, Gold electroplated | Silver | Gold Crosspoint |
| Connections | Screw Terminals | | |
| Cable Cross Section max[$mm^2$ ] | 1 | | |
| Movement Differential[mm] | 0,2 | 0,1 | |
| Operating Point [3]) | see drawing | | |
| Closing Time[ms] | <5 | | |
| Bounce Time[ms] | <3 | | |
| Switching Frequency max[$mm^{-1}$ ] | 200 | | |
| Insulating Group to VDE 0110 | B | | |
| Nominal isolating Voltage[V] ≅ | 250 | | |
| Rated Breaking Capacity 250V,40-60Hz | cosϕ 0,7/4A cosϕ 0,4/2,5A | | cosϕ 0,7/0,1A |
| Rated Breaking Capacity = | 220V/0,025A 24V/2A | | 30V/100mA |
| Switching Voltage min[V] | 12 | | 4 |
| Switching Current (min) at min switching voltage [mA] | 10 | | 4 |
| Short Circuit Protection(Fuse) | 6A time lag - 10A quick action | | |

1) The Operating Point reproduciblity refers to axial operation after approx. 2000 operations.

2) Approach speed refers to a 30° angle of the trip dog. For smaller angles this speed can be exceeded.

3) All plunger travel data applies to axial actuation. When plungers are actuated by our standard trip dogs all travel data doubles on the trip rail.

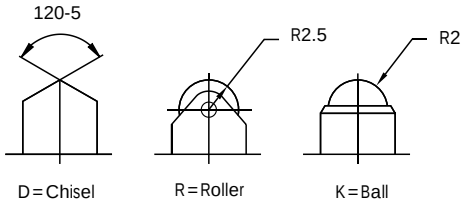
# TEKNIC EUCHNER

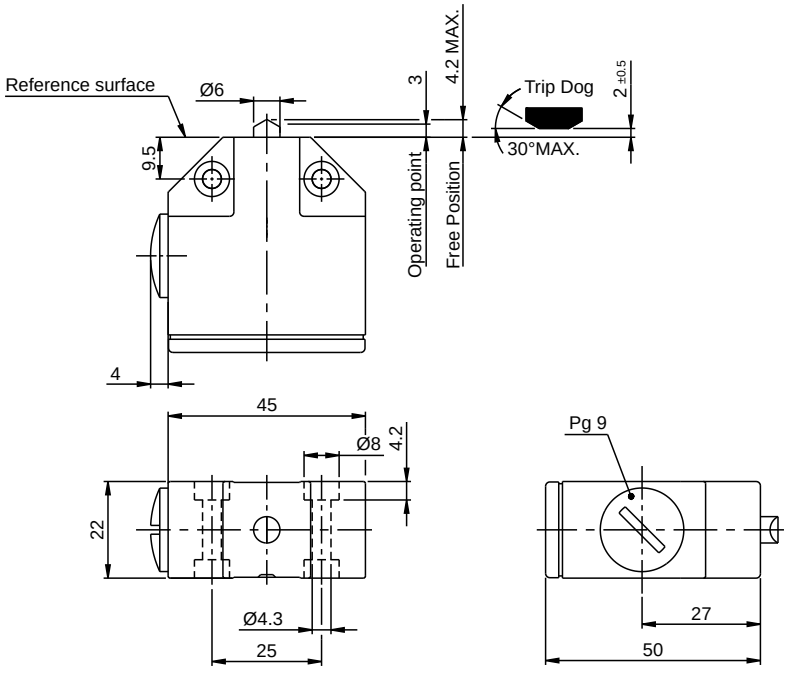
## Limit Switch SN 01

Type : SN 01

Design : With Flange

Plunger Forms




Switch Element ES553:
Snap action switch with pure silver changeover contacts with screw terminals.

Ordering code

| S | N | 0 | 1 | | - | 5 | 5 | 3 |
|---|---|---|---|---|---|---|---|---|

Type

Plunger form (D=Chisel,R=Roller,K=Ball)

Switching element (553)

Ordering example: Limit switch/Roller plunger/Switching element ES 553
SN01 R -553

Note : Please contact us for pre-wired connector models.

# Technical Data

| | | | |
|---|---|---|---|
| Enclosure Material | Die Cast Aluminium,anodized | | |
| Environmental Protection to DIN 40050 | IP67 | | |
| Mechanical Operations to VDE 0660 part2 | E 3($3x10^7$ Operations) | | |
| Ambient Temperature [$^oC$] | -5 to +80 | | |
| Mounting Position | Optional | | |
| Plunger Material | Stainless Steel | | |
| Plunger Guide | Maintenance free | | |
| Number of Plungers | 01 | | |
| Plunger Form | D=Chisel | R=Roller (Plain Bearing) | K=Ball |
| Operating Point Reproducibility[$mm]^{-1}$) | ±0.02 | ±0,05 | ±0,03 |
| Approach Speed max[m/min][2]) | 20 | 50 | 8 |
| Approach Speed min[m/min] | 0,01 | | |
| Plunger Travel [mm] | 3 | | |
| Operating Force [N] | 15 | | |
| Switching Element | ES 553 | | |
| Switching Principle | Snap Action | | |
| Switch Contacts | 1CO | | |
| Contact Material | Pure Silver | | |
| Connections | Screw Terminals | | |
| Cable Cross Section max[$mm^2$] | 1 | | |
| Movement Differential[mm] | 0,2 | | |
| Operating Point[3]) | see drawing | | |
| Closing Time[ms] | <5 | | |
| Bounce Time[ms] | <3 | | |
| Switching Frequency max[$mm^{-1}$] | 200 | | |
| Insulating Group to VDE 0110 | B | | |
| Nominal isolating Voltage[V] ≙ | 250 | | |
| Rated Breaking Capacity 250V,40-60Hz | $\cos\phi$0,7/4A $\cos\phi$0,4/2,5A | | |
| Rated Breaking Capacity = | 220V/0,025A 24V/2A | | |
| Switching Voltage min[V] | 12 | | |
| Switching Current min at 12V[mA] | 10 | | |
| Short Circuit Protection(Fuse) | 6A time lag - 10A quick action | | |

1) The Operating Point reproduciblity refers to axial operation after approx. 2000 operations.

2) Approach speed refers to a 30° angle of the trip dog. For smaller angles this speed can be exceeded.

3) All plunger travel data applies to axial actuation. When plungers are actuated by our standard trip dogs all travel data doubles on the trip rail.

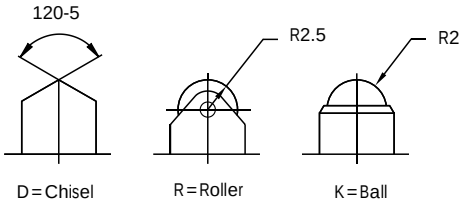
# TEKNIC EUCHNER

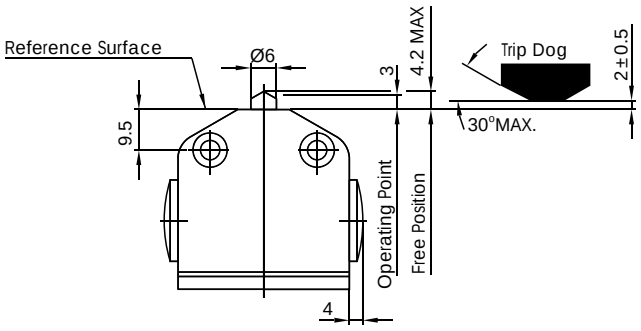
## Limit Switch SG 01

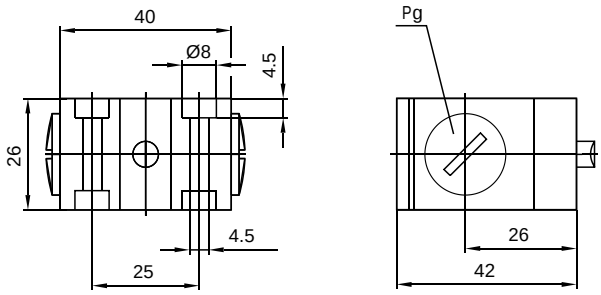
Type : SG 01

Design : With Flange

Plunger Forms




Switch Element ES552:
Snap action switch with gold plated changeover contacts with screw terminals.

Switch Element ES600 :
Snap action switch with silver changeover contacts with screw terminals.

Switch Element ES610 :
Snap action switch with gold crosspoint changeover contacts with screw terminals.

Ordering code

| S | G | 0 | 1 | | - | 5 | 5 | 2 |
|---|---|---|---|---|---|---|---|---|

Type

Plunger form (D=Chisel,R=Roller,K=Ball)

Switching element (552/600/610)

Ordering example: Limit switch/Roller plunger/Switching element ES 552
SG01 R -552

Note : Please contact us for pre-wired connector models.

# Technical Data

| | | | |
|---|---|---|---|
| Enclosure Material | Die Cast Aluminium,anodized | | |
| Environmental Protection to DIN 40050 | IP67 | | |
| Mechanical Operations to VDE 0660 part2 | E 3($3x10^7$ Operations) | | |
| Ambient Temperature [$^oC$] | -5 to +80 | | |
| Mounting Position | Optional | | |
| Plunger Material | Stainless Steel | | |
| Plunger Guide | Maintenance free | | |
| Number of Plungers | 01 | | |
| Plunger Form | D=Chisel | R=Roller (Plain Bearing) | K=Ball |
| Operating Point Reproducibility[$mm]^{-1}$) | ±0.02 | ±0,05 | ±0,03 |
| Approach Speed max[m/min][2]) | 20 | 50 | 8 |
| Approach Speed min[m/min] | 0,01 | | |
| Plunger Travel [mm] | 3 | | |
| Operating Force [N] | 15 | | |
| Switching Element | ES 552 | ES 600 | ES 610 |
| Switching Principle | Snap Action | | |
| Switch Contacts | 1CO | | |
| Contact Material | Silver, Gold electroplated | Silver | Gold Crosspoint |
| Connections | Screw Terminals | | |
| Cable Cross Section max[$mm^2$] | 1 | | |
| Movement Differential[mm] | 0,2 | 0,1 | |
| Operating Point[3]) | see drawing | | |
| Closing Time[ms] | <5 | | |
| Bounce Time[ms] | <3 | | |
| Switching Frequency max[$mm^{-1}$] | 200 | | |
| Insulating Group to VDE 0110 | B | | |
| Nominal isolating Voltage[V] ≙ | 250 | | |
| Rated Breaking Capacity 250V,40-60Hz | cosϕ 0,7/4A cosϕ 0,4/2,5A | | cosϕ 0,7/0,1A |
| Rated Breaking Capacity = | 220V/0,025A 24V/2A | | 30V/100mA |
| Switching Voltage min[V] | 12 | | 4 |
| Switching Current min at 12V[mA] | 10 | | 4 |
| Short Circuit Protection(Fuse) | 6A time lag - 10A quick action | | |

1) The Operating Point reproduciblity refers to axial operation after approx. 2000 operations.

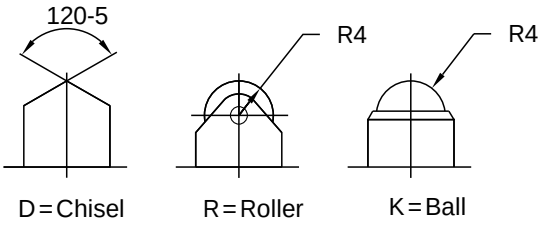
2) Approach speed refers to a 30° angle of the trip dog. For smaller angles this speed can be exceeded.

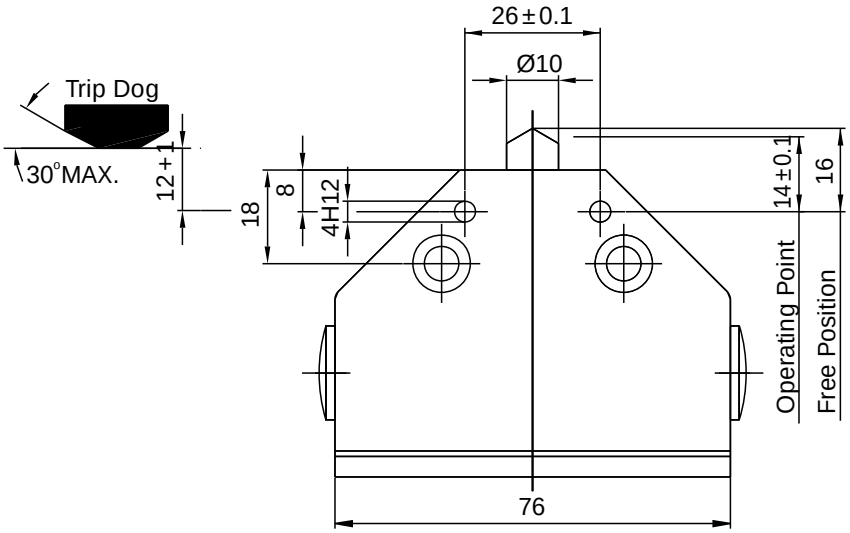
3) All plunger travel data applies to axial actuation. When plungers are actuated by our standard trip dogs all travel data doubles on the trip rail.

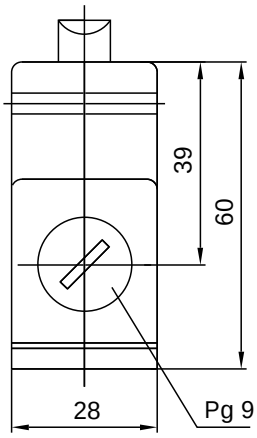
# TEKNIC EUCHNER

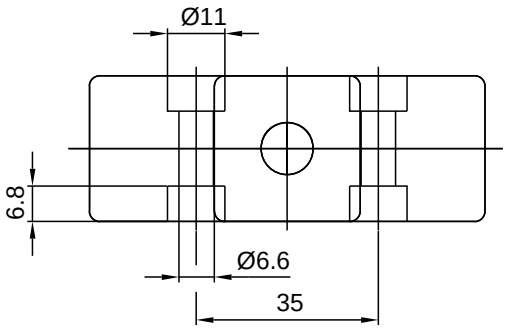
## Single Plunger Limit Switch N1A

### Plunger Forms

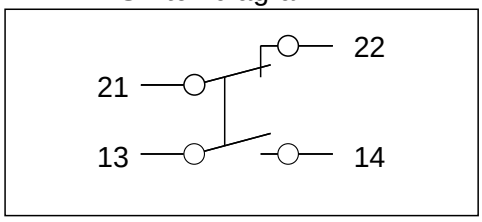



Switch diagram




Ordering code

| N | 1 | A | | - | 5 | 0 | 2 |
|---|---|---|---|---|---|---|---|

Type

Plunger form (D = Chisel, R = Roller, K = Ball)

Switching element (502)

Ordering example: Single plunger limit switch with roller plunger and switching element ES 502E - N1A R 502

Note : Please contact us for pre-wired connector models.

# Technical Data

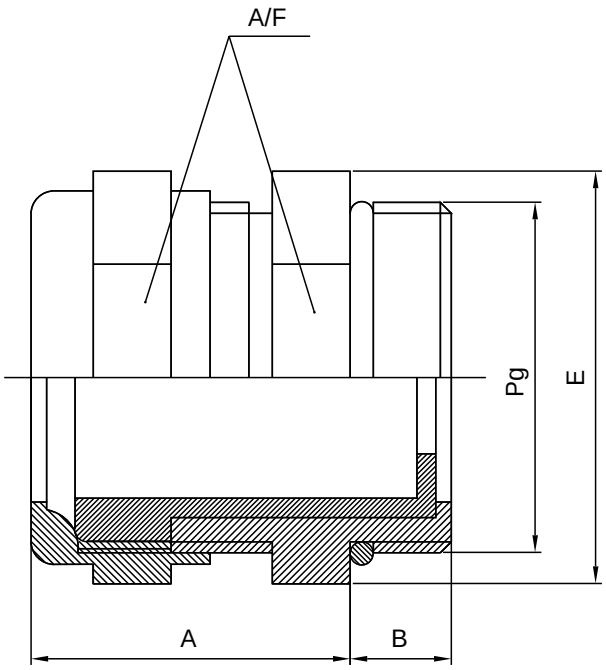
| | | | |
|---|---|---|---|
| Enclosure Material | Die Cast Aluminium,anodized | | |
| Environmental Protection to DIN 40050 | IP67 | | |
| Mechanical Operations to VDE 0660 part 2 | E 3($3x10^7$ Operations) | | |
| Ambient Temperature (Deg.C) | -5 to +80 | | |
| Mounting Position | Optional | | |
| Plunger Material | Stainless Steel | | |
| Plunger Guide | Maintenance free | | |
| Plunger Form | D=Chisel | R=Roller (Plain Bearing) | K=Ball |
| Operating Point Reproducibility(mm)[1]) | ±0.002 | ±0,01 | ±0,01 |
| Approach Speed max (m/min) [2]) | 40 | 80 | 10 |
| Approach Speed min (m/min) | 0,01 | | |
| Plunger Travel (mm) | 6 | | |
| Operating Force (N) | 15 | | |
| Switching Element | ES 502 E | | |
| Switching Principle | Snap Action | | |
| Switch Contacts | 1NO+1NC, electrically separated contact bridge | | |
| Contact Material | Silver alloy - AgNi 10 - Gold, electroplated | | |
| Connections | Terminals with captive screw and self-fitting clamping disc | | |
| Cable Cross Section max (mm) [2]) | 1.5 | | |
| Movement Differential (mm) | 0,8 | | |
| Operating Point [3]) | see drawing | | |
| Closing Time (ms) | <4 | | |
| Bounce Time (ms) | <3 | | |
| Switching Frequency max ($mm^{-1}$) | 300 | | |
| Insulating Group to VDE 0110 | C | | |
| Nominal Isolating Voltage (V) | 250 | | |
| Rated Breaking Capacity 250V,40-60Hz | cosφ0,7/10A cosφ0,4/6A | | |
| Rated Breaking Capacity = | 220V/0,5A 24V/6A | | |
| Switching Voltage min (V) | 12 | | |
| Switching Current min at 12V(mA) | 10 | | |
| Short Circuit Protection (Fuse) | 10A time lag - 20A quick action | | |

1) The Operating Point reproduciblity refers to axial operation after approx. 2000 operations.

2) Approach speed refers to a 30° angle of the trip dog. For smaller angles this speed can be exceeded.

3) All plunger travel data applies to axial actuation. When plungers are actuated by our standard trip dogs all travel data doubles on the trip rail.

# CABLE GLAND

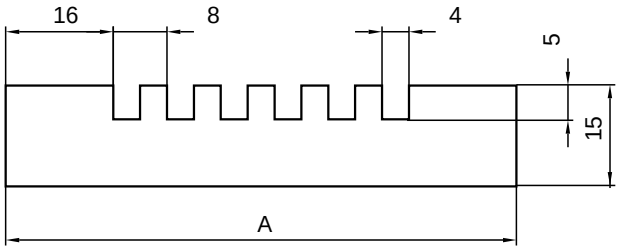



| TYPE | LIMIT SWITCH MODEL | Pg | E | A/F | A | B | CABLE O.D |
|---|---|---|---|---|---|---|---|
| KV 09/04 | SG<br>SN<br>N1A | Pg 9 | 19 | 17 | 20 | 6 | 4-6.5 |
| KV 09/06 | SG<br>SN<br>N1A | Pg 9 | 19 | 17 | 20 | 6 | 6.5-9.5 |
| KV 16/06 | RGBF | Pg 16 | 26.7 | 24 | 21 | 6.5 | 6.5-9.5 |
| KV 16/06 | RGBF | Pg 16 | 26.7 | 24 | 21 | 6.5 | 9-13 |
| KV 16/011 | RGBF | Pg 16 | 26.7 | 24 | 21 | 6.5 | 11.5-15.5 |

# Trip Rail System - U

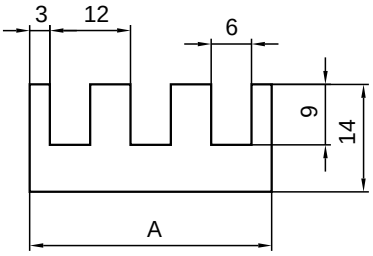
Type UF8

| | | | | | |
|---|---|---|---|---|---|
| Dimension A (mm) | | 60 | | | 76 |
| Number of slots. | | 4 | | | 6 |

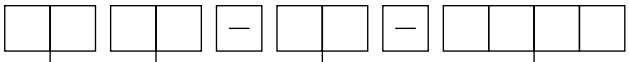



Type UF12

| | | | | | |
|---|---|---|---|---|---|
| Dimension A (mm) | 24 | 36 | 48 | 72 | |
| Number of slots. | 2 | 3 | 4 | 6 | |




Ordering code



Type

Number of slots (See table above)

Slot spacing (8 & 12mm)

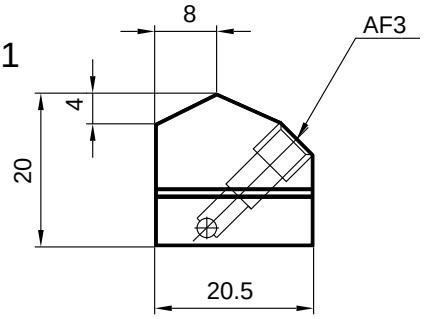
Length (mm)

Ordering example: Trip rail with 4 slots, slot spacing 8mm, Length 500
UF04-08-0500

Note : Trip Rails are available in multiples of 500 mm. lengths.

# Trip Dogs System Type U1216

Fig. 1



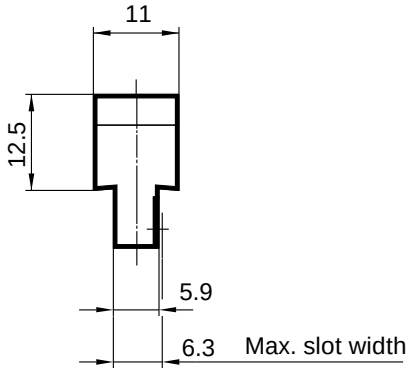




Fig. 2

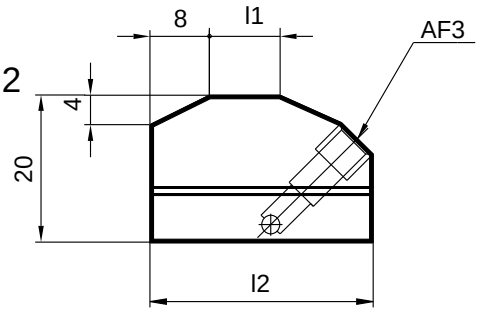
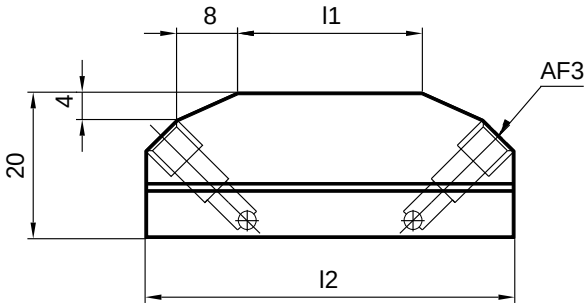



Fig. 3




| l1 | l2 | Fig | DIN/form |
|---|---|---|---|
| 0 | 20.5 | 1 | UA |
| 4 | 24.5 | 2 | UA |
| 6.3 | 26.8 | 2 | - |
| 10 | 30.5 | 2 | UA |
| 16 | 41 | 3 | UB |
| 25 | 50 | 3 | UB |
| 40 | 65 | 3 | UB |
| 63 | 88 | 3 | UB |
| 100 | 125 | 3 | UB |
| 125 | 150 | 3 | UB |

Ordering Code

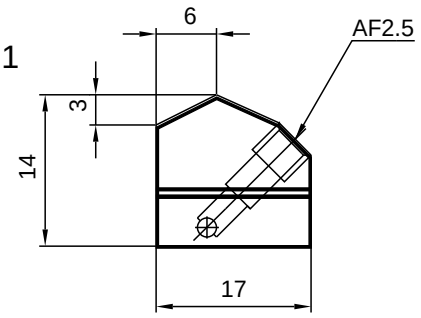
| U | 1 | 2 | 1 | 6 | – | | | |
|---|---|---|---|---|---|---|---|---|

Type

Length ( l1 )

# Trip Dogs System Type U8

Fig. 1



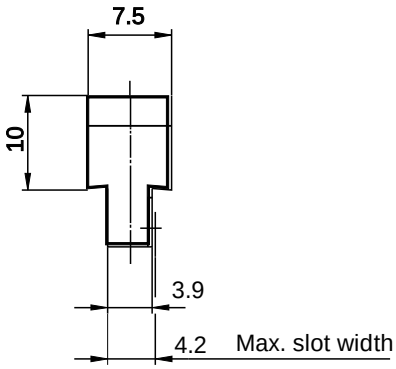




Fig. 2

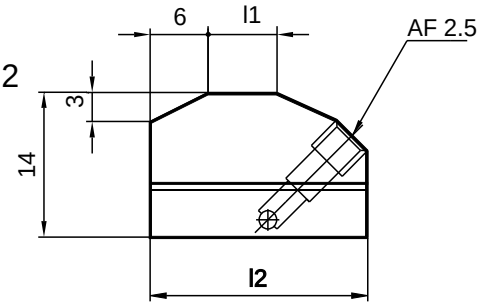
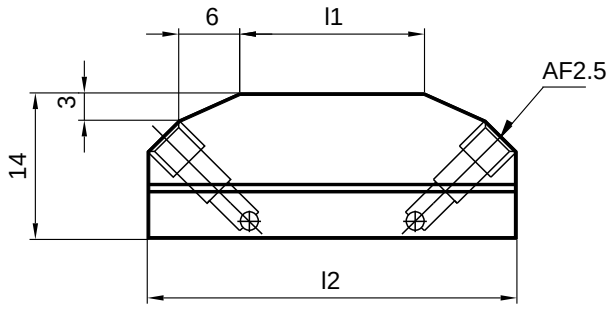



Fig. 3




| l1 | l2 | Fig |
|---|---|---|
| 0 | 17 | 1 |
| 4 | 21 | 2 |
| 6.3 | 23.30 | 2 |
| 10 | 27 | 2 |
| 16 | 36 | 3 |
| 25 | 45 | 3 |
| 40 | 60 | 3 |
| 63 | 83 | 3 |
| 100 | 120 | 3 |
| 125 | 145 | 3 |

Ordering Code

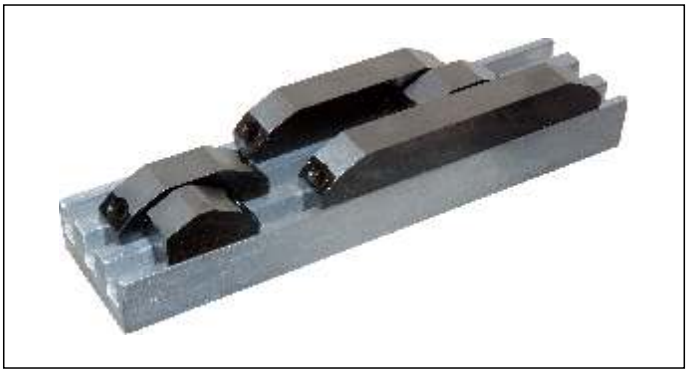
| U | 8 | – | | | |
|---|---|---|---|---|---|

Type

Length ( l1 )

# Accessories - Spare Parts

**Trip Rails - Trip Dogs**



**TEKNIC EUCHNER** offers a large range of trip dogs and trip rails as operating elements for their multiple limit switches, described in this catalogue. Detailed information is given in this catalogue under section Trip Dogs - Trip Rails.

**Switching Elements**
**ES 502 E**

Switching elements
ES 502 E can be supplied for multiple limit switches with 12 mm plunger spacing and single limit switches N1A.

**ES 552**


ES 552 for multiple limit switches with 8mm plunger spacing, and single limit switches SG01.

**Cable Connectors**

TEKNIC EUCHNER multiple limit switches are manufactured and supplied inaccordance with DIN 40050 and enviromental protection IP 67. In order to maintain this high environmental protection only high quality connectors must be used. Different types can be selected depending on the conduit thread cable entries. Please refer to section on cable gland in this catalogue.

**LED Display**


Status Indicators in RED colour are available for multiple limit switches with 12 mm plunger spacing and switching element ES502E with an operating voltage of 20-230 V AC/DC. An electronic control ensures the same luminous power is retained , irrespective of the voltage applied.

For further details please contact .
**TEKNIC EUCHNER ELECTRONICS PVT. LTD.**
64, ELECTRONICS CITY, HOSUR ROAD, BANGALORE 560080.
TEL . 080-28520713, 28522717; FAX . 080-28520900.
EL77, TTC INDUSTRIAL AREA, MIDC, MAHAPE, NAVI MUMBAI 400710. TEL . 022-45767712; FAX . 022-45767715.
EMAIL : marketing@teknic-euchner.co.in
WEBSITE : www.teknic-euchner.co.in

FM:MT:20
Rev:B

January 2025