

TEKNIC EUCHNER



Single 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.



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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 60529, DIN 40050 are the guarantees for a trouble free and reliable operation under the most arduous conditions.

Lever arm or plunger actuation, 12 different actuator designs, which can be set at 4 X 90° 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 5 different types. The stainless steel hardened plunger with telescopic action is precisely guided within anodised 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°.

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° steps
- b) Adjustment of the lever arm in positively fixed positions is possible in 90° steps.
- c) Infinite adjustment of the lever arm within 360°.
- 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 anodised 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 TEKNIC EUCHNER Cable glands (Pg 13.5).

The Cable connections.

Each TEKNIC EUCHNER Limit switch to EN 50041 is tested before dispatch to the customer. It must comply with protection class IP 67. In order to meet this protection class, only high quality TEKNIC EUCHNER cable connectors with captive sealing rings should be used.

Switching elements.

Switching element type ES510.

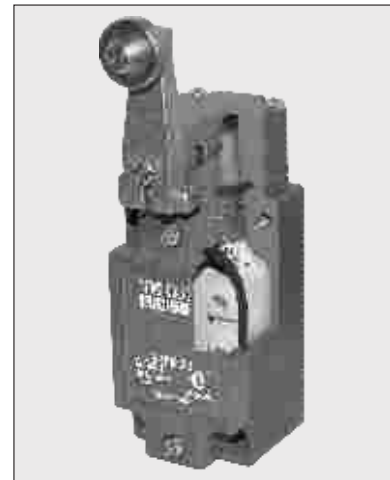
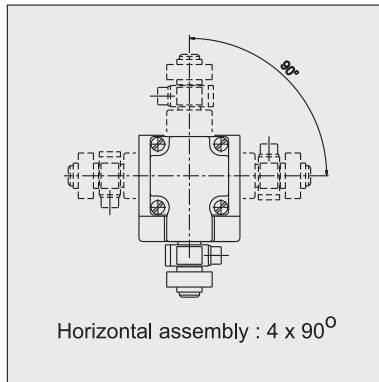
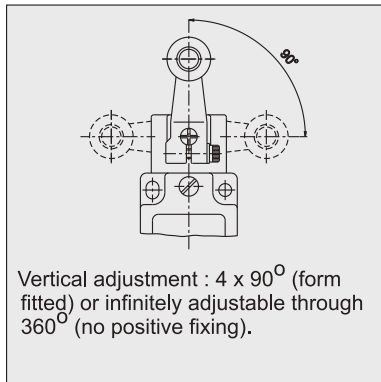
Snap action double gap switching element with one NO contact and one NC contact . Contact gaps 2 x 0.6 mm.

Limit switch with Indicator Lamps.

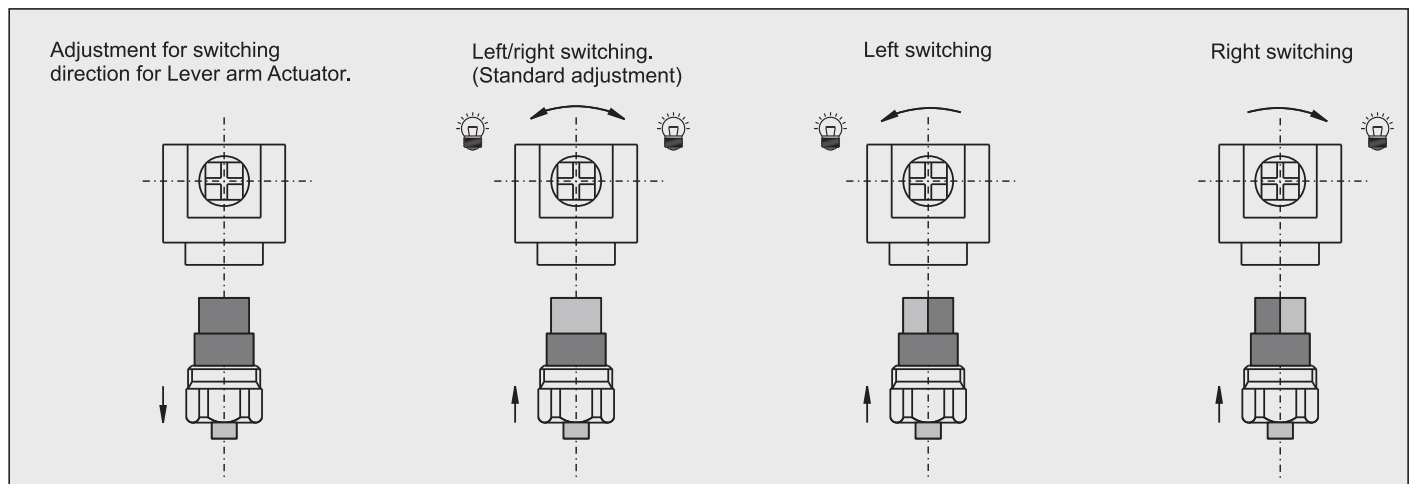
All limit switches can be fitted with indicator lamps at operating voltages of 24 VDC or 220 VAC. The ordering code for limit switches with Indicator Lamps can be found against the ordering codes of individual types.

Adjustment Options

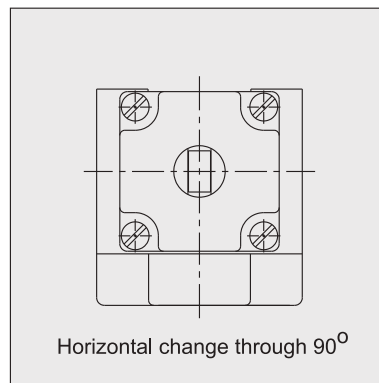
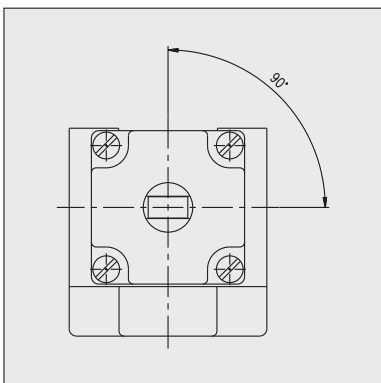
Adjustment Variations for Lever arm switches



Adjustment of Switching Direction



Assembly Variations for Plunger type switches

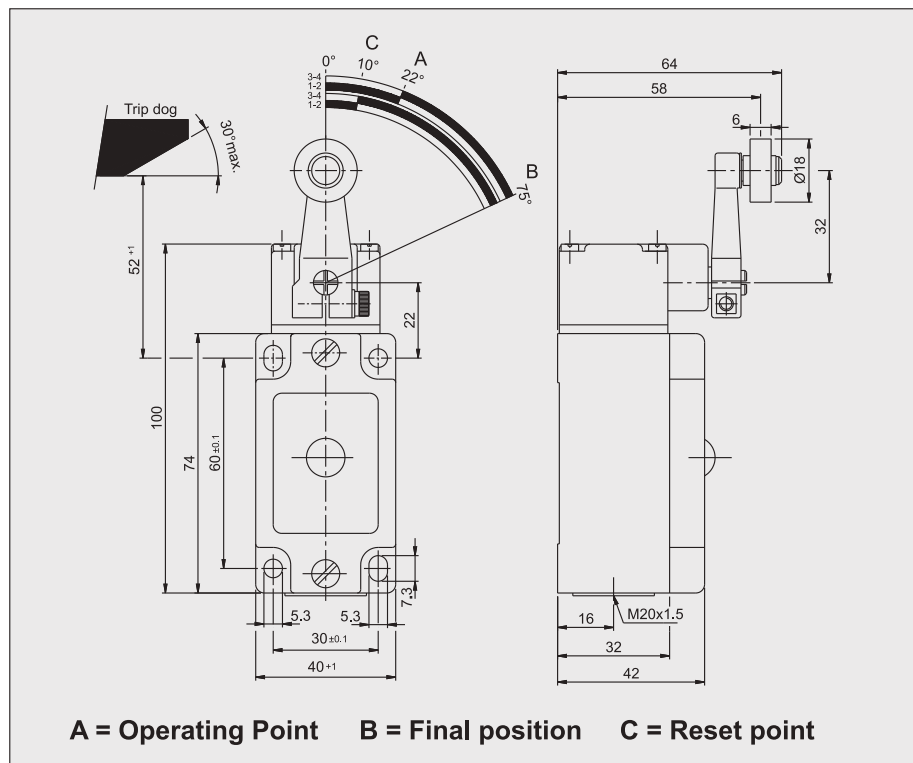


Limit switch with Lever Arm Actuation.
 HB (Plastic Roller)
 HS (Steel Roller)

Approvals :



Dimensional Details



Parameters	Value		Unit
Housing Material	Anodised die-cast alloy		
Degree of protection according to IEC 60529	IP67		
Installation position	Optional		
Mechanical service life	30x10 ⁶ switching cycles		
Ambient temperature	-25 to +80		°C
Switching Element	ES 510	SK 3131 H	
Contact Element	1NO + 1NC	2NO + 2NC	
Switching Principle	Snap action	Slow action	
Contact gap according to VDE 0660	2 x 0,5	2 x 2	mm
Contact material	Silver alloy AgNi10, gold flashed		
Connection type	Captive screw terminals with self lifting clamping discs		
Cable cross section , maximum	2 x 1,5		mm ²
Utilization category according to IEC 60947-5-1	AC-15 Ue 230V Ie 6A , DC-13 Ue 24V Ie 6A	AC-15 Ue 230V Ie 4A , DC-13 Ue 24V Ie 4A	
Rated Insulation Voltage Ui	250		V
Rated Impulse Withstand Voltage Uimp	2,5		KV
Switching Voltage , minimum	12		VDC
Switching current min at 12 VDC	10		mA
Contact closing time	<4		ms
Contact bounce time	<3		ms
Short Circuit Protection (fuse)	10	4	A
Actuator	HB	HS	
Approach speed , max.	300	60	m/min
Approach speed , min.	0.1		m/min
Pretravel before switch point	22		°
Operating Point reproducibility	±0.25		°
Movement Differential	12		°
Operating Force	10		N
Switching Frequency max	600		min ⁻¹

Ordering Table :

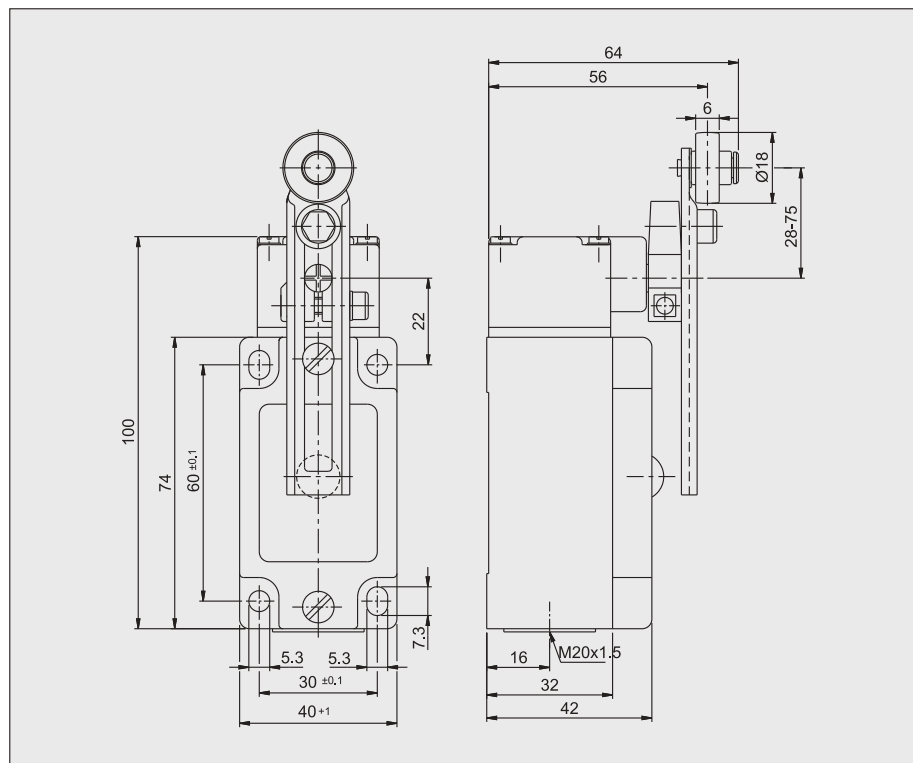
			Without LED	With LED 24 V DC	With LED 220 V AC
NG1	HB	ES-510	NG1HB-510-M	NG1HB-510L024-M	NG1HB-510L220-M
NZ1		SK-3131	NZ1HB-3131-M	-	-
NG1	HS	ES-510	NG1HS-510-M	NG1HS-510L024-M	NG1HS-510L220-M
NZ1		SK-3131	NZ1HS-3131-M	-	-

Limit switch with Adjustable Lever Arm Actuation.
 VB (Plastic Roller)
 VS (Steel Roller)

Approvals :



Dimensional Details



Parameters	Value		Unit
Housing Material	Anodised die-cast alloy		
Degree of protection according to IEC 60529	IP67		
Installation position	Optional		
Mechanical service life	30x10 ⁶ switching cycles		
Ambient temperature	-25 to +80		°C
Switching Element	ES 510	SK 3131 H	
Contact Element	1NO + 1NC	2NO + 2NC	
Switching Principle	Snap action	Slow action	
Contact gap according to VDE 0660	2 x 0.5	2 x 2	mm
Contact material	Silver alloy AgNi10, gold flashed		
Connection type	Captive screw terminals with self lifting clamping discs		
Cable cross section , maximum	2 x 1.5		mm ²
Utilization category according to IEC 60947-5-1	AC-15 Ue 230V Ie 6A , DC-13 Ue 24V Ie 6A	AC-15 Ue 230V Ie 4A , DC-13 Ue 24V Ie 4A	
Rated Insulation Voltage Ui	250		V
Rated Impulse Withstand Voltage Uimp	2.5		KV
Switching Voltage , minimum	12		VDC
Switching current min at 12 VDC	10		mA
Contact closing time	<4		ms
Contact bounce time	<3		ms
Short Circuit Protection (fuse)	10	4	A
Actuator	VB	VS	
Approach speed , max.	120	30	m/min
Approach speed , min.	0.5		m/min
Pretravel before switch point	22		°
Operating Point reproducibility	±0.25		°
Movement Differential	12		°
Operating Force	-		N
Switching Frequency max	300		min ⁻¹

Ordering Table :

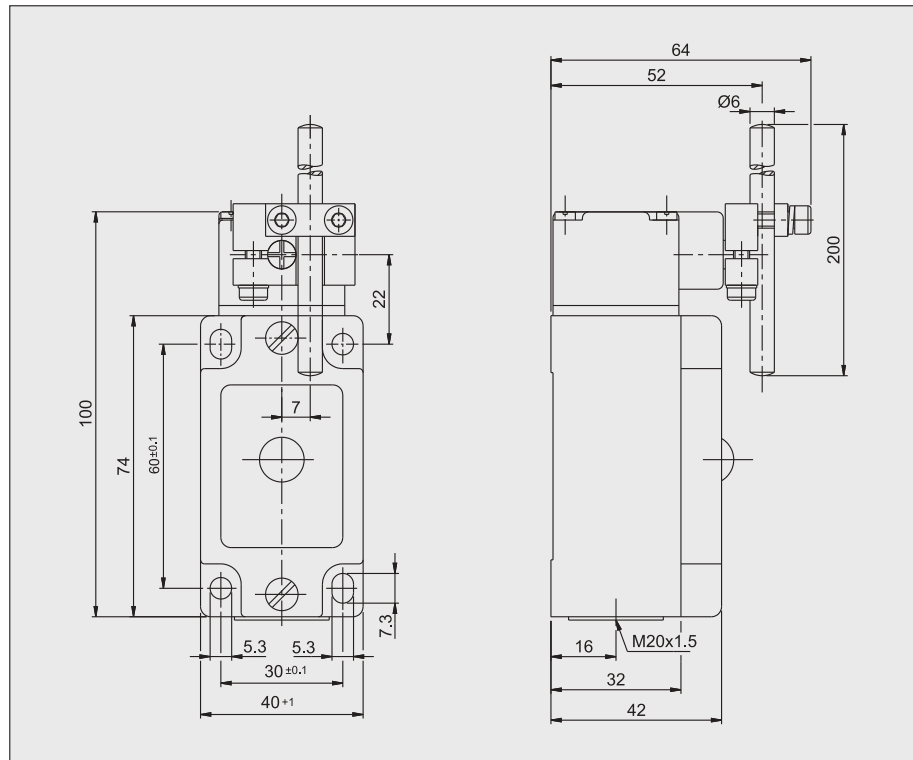
			Without LED	With LED 24 V DC	With LED 220 V AC
NG1	VB	ES-510	NG1VB-510-M	NG1VB-510L024-M	NG1VB-510L220-M
NZ1		SK-3131	NZ1VB-3131-M	-	-
NG1	VS	ES-510	NG1VS-510-M	NG1VS-510L024-M	NG1VS-510L220-M
NZ1		SK-3131	NZ1VS-3131-M	-	-

Limit switch with Pivot Arm Actuation.
SM (Aluminium Rod)

Approvals :



Dimensional Details



Parameters	Value	Unit
Housing Material	Anodised die-cast alloy	
Degree of protection according to IEC 60529	IP67	
Installation position	Optional	
Mechanical service life	30x10 ⁶ switching cycles	
Ambient temperature	-25 to +80	°C
Switching Element	ES 510	
Contact Element	1NO + 1NC	
Switching Principle	Snap action	
Contact gap according to VDE 0660	2 x 0.5	mm
Contact material	Silver alloy AgNi10, gold flashed	
Connection type	Captive screw terminals with self lifting clamping discs	
Cable cross section , maximum	2 x 1.5	mm ²
Utilization category according to IEC 60947-5-1	AC-15 Ue 230V Ie 6A , DC-13 Ue 24V Ie 6A	
Rated Insulation Voltage Ui	250	V
Rated Impulse Withstand Voltage Uimp	2.5	KV
Switching Voltage , minimum	12	VDC
Switching current min at 12 VDC	10	mA
Contact closing time	<4	ms
Contact bounce time	<3	ms
Short Circuit Protection (fuse)	10	A
Actuator	SM	
Approach speed , max.	60	m/min
Approach speed , min.	0.5	m/min
Pretravel before switch point	22	°
Operating Point reproducibility	±1.0	°
Movement Differential	12	°
Operating Force	-	N
Switching Frequency max	300	min ⁻¹

Ordering Table :

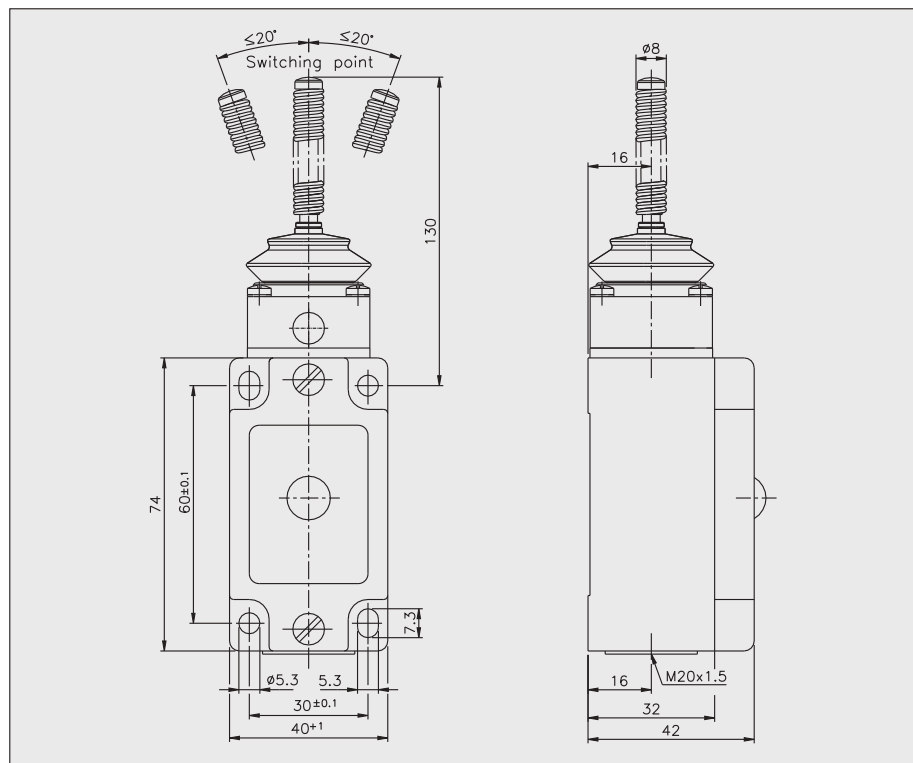
			Without LED	With LED 24 V DC	With LED 220 V AC
NG1	SM	ES-510	NG1SM-510-M	NG1SM-510L024-M	NG1SM-510L220-M

Limit switch with Pivot Arm Actuation.
FO (Spring Rod)

Approvals :



Dimensional Details



Parameters	Value	Unit
Housing Material	Anodised die-cast alloy	
Degree of protection according to IEC 60529	IP67	
Installation position	Optional	
Mechanical service life	30x10 ⁶ switching cycles	
Ambient temperature	-25 to +80	°C
Switching Element	ES 510	
Contact Element	1NO + 1NC	
Switching Principle	Snap action	
Contact gap according to VDE 0660	2 x 0.5	mm
Contact material	Silver alloy AgNi10, gold flashed	
Connection type	Captive screw terminals with self lifting clamping discs	
Cable cross section , maximum	2 x 1.5	mm ²
Utilization category according to IEC 60947-5-1	AC-15 Ue 230V Ie 6A , DC-13 Ue 24V Ie 6A	
Rated Insulation Voltage Ui	250	V
Rated Impulse Withstand Voltage Uimp	2.5	KV
Switching Voltage , minimum	12	VDC
Switching current min at 12 VDC	10	mA
Contact closing time	<4	ms
Contact bounce time	<3	ms
Short Circuit Protection (fuse)	10	A
Actuator	FO	
Approach speed , max.	20	m/min
Approach speed , min.	0.5	m/min
Pretravel before switch point	22	°
Operating Point reproducibility	-	°
Movement Differential	12	°
Operating Force	5	N
Switching Frequency max	100	min ⁻¹

Ordering Table :

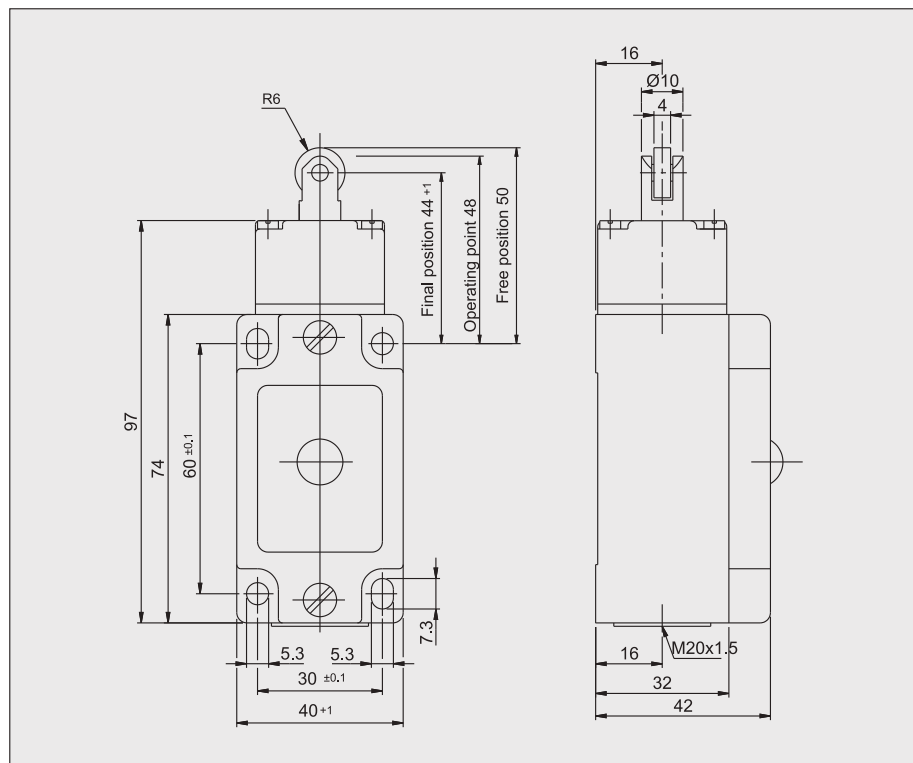
			Without LED	With LED 24 V DC	With LED 220 V AC
NG1	FO	ES-510	NG1FO-510-M	NG1FO-510L024-M	NG1FO-510L220-M

Limit switch with Plunger Actuation.
 RG (Plastic Roller)
 RS (Steel Roller)

Approvals :



Dimensional Details



Parameters	Value		Unit
Housing Material	Anodised die-cast alloy		
Degree of protection according to IEC 60529	IP67		
Installation position	Optional		
Mechanical service life	30x10 ⁶ switching cycles		
Ambient temperature	-25 to +80		°C
Switching Element	ES 510	SK 3131 H	
Contact Element	1NO + 1NC	2NO + 2NC	
Switching Principle	Snap action	Slow action	
Contact gap according to VDE 0660	2 x 0.5	2 x 2	mm
Contact material	Silver alloy AgNi10, gold flashed		
Connection type	Captive screw terminals with self lifting clamping discs		
Cable cross section , maximum	2 x 1.5		mm ²
Utilization category according to IEC 60947-5-1	AC-15 Ue 230V Ie 6A , DC-13 Ue 24V Ie 6A	AC-15 Ue 230V Ie 4A , DC-13 Ue 24V Ie 4A	
Rated Insulation Voltage Ui	250		V
Rated Impulse Withstand Voltage Uimp	2.5		KV
Switching Voltage , minimum	12		VDC
Switching current min at 12 VDC	10		mA
Contact closing time	<4		ms
Contact bounce time	<3		ms
Short Circuit Protection (fuse)	10	4	A
Actuator	RG	RS	
Approach speed , max.	20	20	m/min
Approach speed , min.	0.01		m/min
Pretravel before switch point	2		°
Operating Point reproducibility	±0.1		°
Movement Differential	0.7		°
Operating Force	15		N
Switching Frequency max	300		min ⁻¹

Ordering Table :

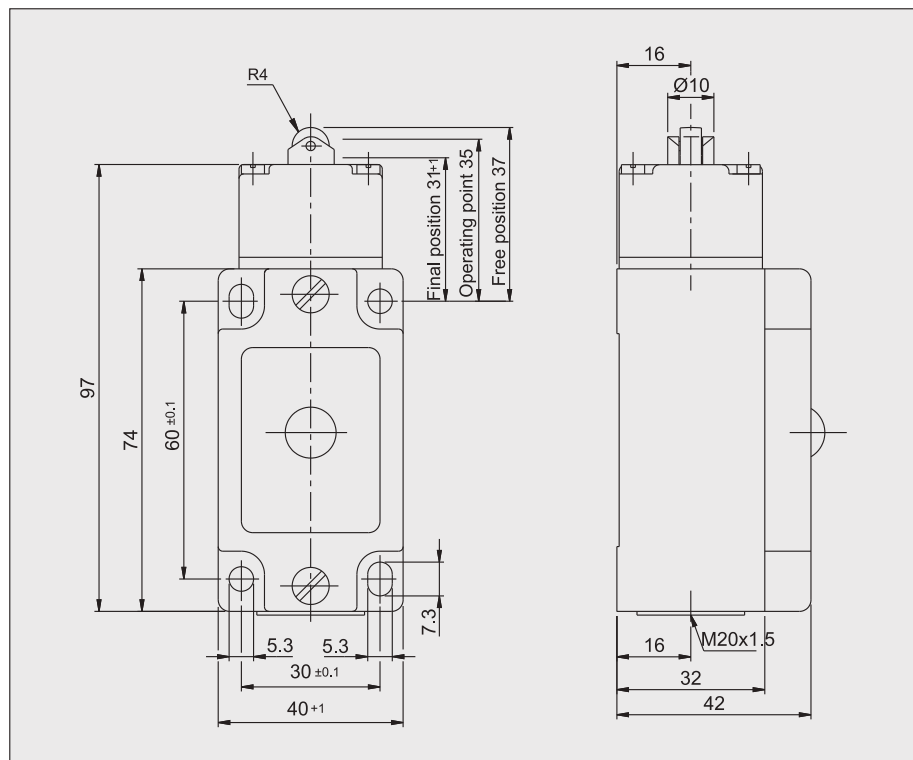
			Without LED	With LED 24 V DC	With LED 220 V AC
NG1	RG	ES-510	NG1RG-510-M	NG1RG-510L024-M	NG1RG-510L220-M
NZ1		SK-3131	NZ1RG-3131-M	-	-
NG1	RS	ES-510	NG1RS-510-M	NG1RS-510L024-M	NG1RS-510L220-M
NZ1		SK-3131	NZ1RS-3131-M	-	-

Limit switch with Plunger Actuation.
RK (Roller Plunger with small Steel roller)

Approvals :



Dimensional Details



Parameters	Value	Unit
Housing Material	Anodised die-cast alloy	
Degree of protection according to IEC 60529	IP67	
Installation position	Optional	
Mechanical service life	30x10 ⁶ switching cycles	
Ambient temperature	-25 to +80	°C
Switching Element	ES 510	
Contact Element	1NO + 1NC	
Switching Principle	Snap action	
Contact gap according to VDE 0660	2 x 0.5	mm
Contact material	Silver alloy AgNi10, gold flashed	
Connection type	Captive screw terminals with self lifting clamping discs	
Cable cross section , maximum	2 x 1.5	mm ²
Utilization category according to IEC 60947-5-1	AC-15 Ue 230V Ie 6A , DC-13 Ue 24V Ie 6A	
Rated Insulation Voltage Ui	250	V
Rated Impulse Withstand Voltage Uimp	2.5	KV
Switching Voltage , minimum	12	VDC
Switching current min at 12 VDC	10	mA
Contact closing time	<4	ms
Contact bounce time	<3	ms
Short Circuit Protection (fuse)	10	A
Actuator	RK	
Approach speed , max.	80	m/min
Approach speed , min.	0.01	m/min
Pretravel before switch point	2	mm
Operating Point reproducibility	±0.01	mm
Movement Differential	0.7	mm
Operating Force	15	N
Switching Frequency max	300	min ⁻¹

Ordering Table :

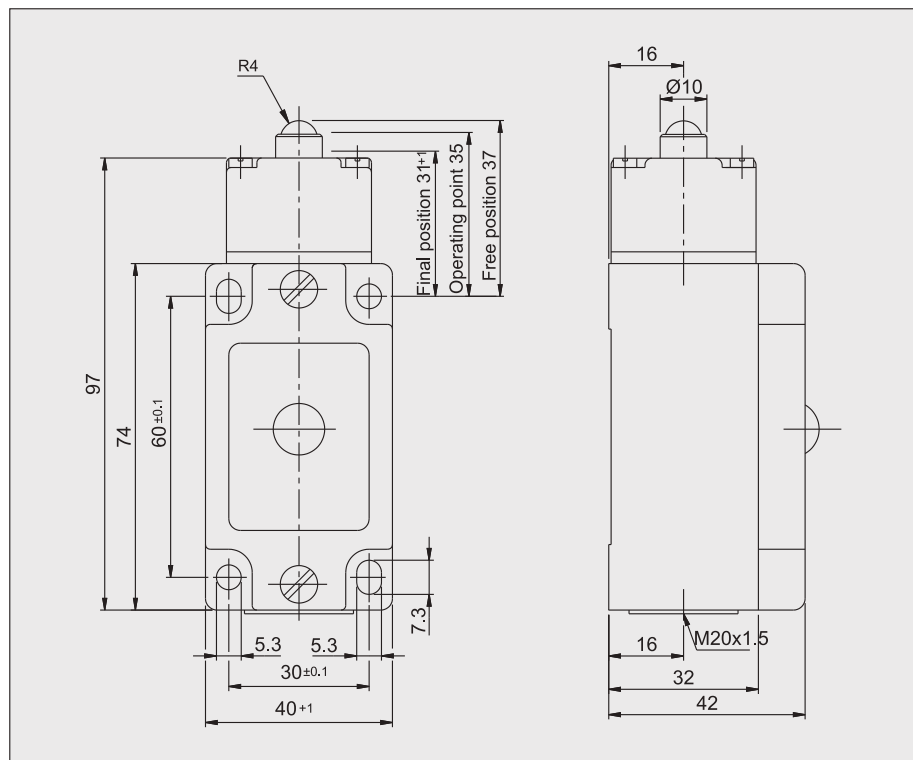
			Without LED	With LED 24 V DC	With LED 220 V AC
NG1	RK	ES-510	NG1RK-510-M	NG1RK-510L024-M	NG1RK-510L220-M

Limit switch with Plunger Actuation.
KO (Ball Plunger)

Approvals :



Dimensional Details



Parameters	Value	Unit
Housing Material	Anodised die-cast alloy	
Degree of protection according to IEC 60529	IP67	
Installation position	Optional	
Mechanical service life	30x10 ⁶ switching cycles	
Ambient temperature	-25 to +80	°C
Switching Element	ES 510	
Contact Element	1NO + 1NC	
Switching Principle	Snap action	
Contact gap according to VDE 0660	2 x 0.5	mm
Contact material	Silver alloy AgNi10, gold flashed	
Connection type	Captive screw terminals with self lifting clamping discs	
Cable cross section , maximum	2 x 1.5	mm ²
Utilization category according to IEC 60947-5-1	AC-15 Ue 230V Ie 6A , DC-13 Ue 24V Ie 6A	
Rated Insulation Voltage Ui	250	V
Rated Impulse Withstand Voltage Uimp	2.5	KV
Switching Voltage , minimum	12	VDC
Switching current min at 12 VDC	10	mA
Contact closing time	<4	ms
Contact bounce time	<3	ms
Short Circuit Protection (fuse)	10	A
Actuator	KO	
Approach speed , max.	10	m/min
Approach speed , min.	0.01	m/min
Pretravel before switch point	2	mm
Operating Point reproducibility	±0.01	mm
Movement Differential	0.7	mm
Operating Force	15	N
Switching Frequency max	300	min ⁻¹

Ordering Table :

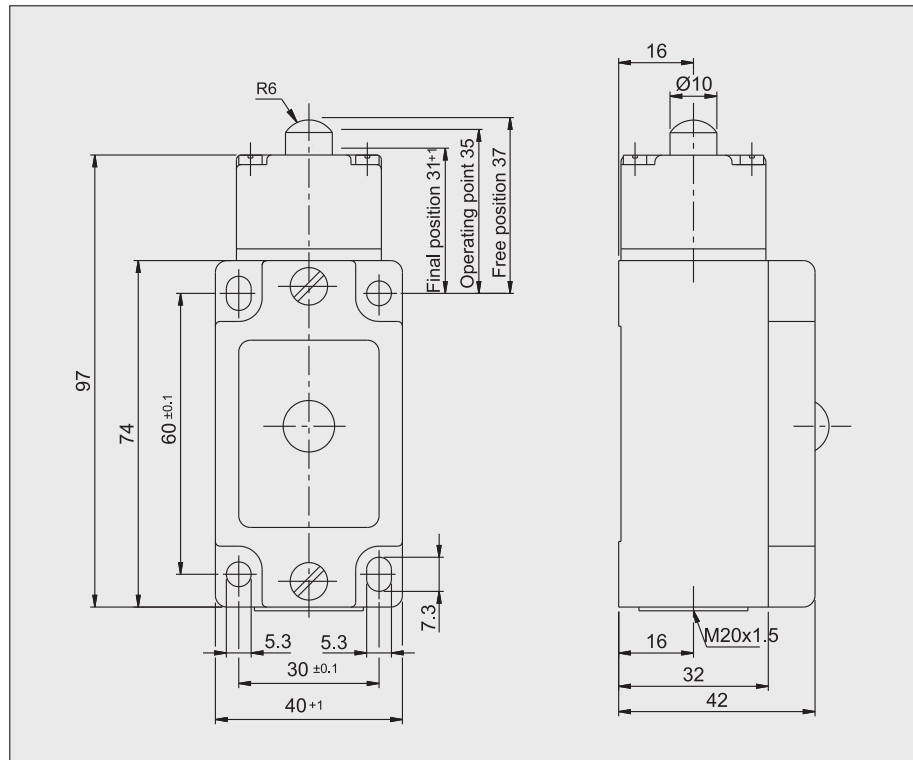
			Without LED	With LED 24 V DC	With LED 220 V AC
NG1	KO	ES-510	NG1KO-510-M	NG1KO-510L024-M	NG1KO-510L220-M

Limit switch with Plunger Actuation.
WO (Dome Plunger)

Approvals :



Dimensional Details



Parameters	Value	Unit
Housing Material	Anodised die-cast alloy	
Degree of protection according to IEC 60529	IP67	
Installation position	Optional	
Mechanical service life	30x10 ⁶ switching cycles	
Ambient temperature	-25 to +80	°C
Switching Element	ES 510	
Contact Element	1NO + 1NC	
Switching Principle	Snap action	
Contact gap according to VDE 0660	2 x 0.5	mm
Contact material	Silver alloy AgNi10, gold flashed	
Connection type	Captive screw terminals with self lifting clamping discs	
Cable cross section , maximum	2 x 1.5	mm ²
Utilization category according to IEC 60947-5-1	AC-15 Ue 230V Ie 6A , DC-13 Ue 24V Ie 6A	
Rated Insulation Voltage Ui	250	V
Rated Impulse Withstand Voltage Uimp	2.5	KV
Switching Voltage , minimum	12	VDC
Switching current min at 12 VDC	10	mA
Contact closing time	<4	ms
Contact bounce time	<3	ms
Short Circuit Protection (fuse)	10	A
Actuator	WO	
Approach speed , max.	10	m/min
Approach speed , min.	0.01	m/min
Pretravel before switch point	2	mm
Operating Point reproducibility	±0.002	mm
Movement Differential	0.7	mm
Operating Force	15	N
Switching Frequency max	300	min ⁻¹

Ordering Table :

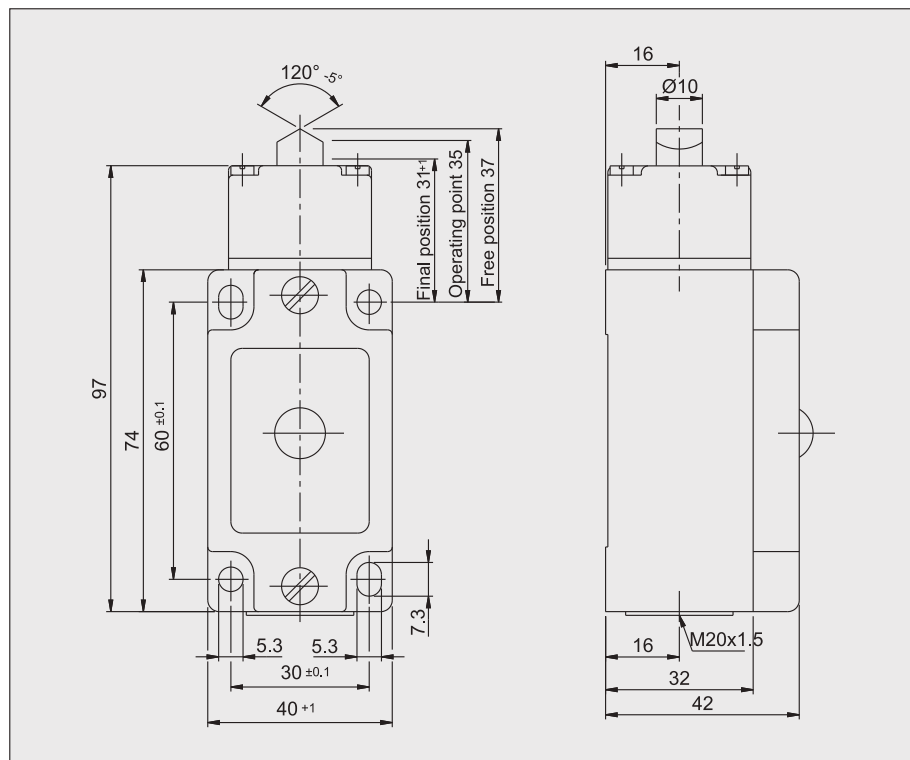
			Without LED	With LED 24 V DC	With LED 220 V AC
NG1	WO	ES-510	NG1WO-510-M	NG1WO-510L024-M	NG1WO-510L220-M

Limit switch with Plunger Actuation.
DO (Chisel Plunger)

Approvals :



Dimensional Details



Parameters	Value	Unit
Housing Material	Anodised die-cast alloy	
Degree of protection according to IEC 60529	IP67	
Installation position	Optional	
Mechanical service life	30x10 ⁶ switching cycles	
Ambient temperature	-25 to +80	°C
Switching Element	ES 510	
Contact Element	1NO + 1NC	
Switching Principle	Snap action	
Contact gap according to VDE 0660	2 x 0.5	mm
Contact material	Silver alloy AgNi10, gold flashed	
Connection type	Captive screw terminals with self lifting clamping discs	
Cable cross section , maximum	2 x 1.5	mm ²
Utilization category according to IEC 60947-5-1	AC-15 Ue 230V Ie 6A , DC-13 Ue 24V Ie 6A	
Rated Insulation Voltage Ui	250	V
Rated Impulse Withstand Voltage Uimp	2.5	KV
Switching Voltage , minimum	12	VDC
Switching current min at 12 VDC	10	mA
Contact closing time	<4	ms
Contact bounce time	<3	ms
Short Circuit Protection (fuse)	10	A
Actuator	DO	
Approach speed , max.	10	m/min
Approach speed , min.	0.01	m/min
Pretravel before switch point	2	mm
Operating Point reproducibility	±0.002	mm
Movement Differential	0.7	mm
Operating Force	15	N
Switching Frequency max	300	min ⁻¹

Ordering Table :

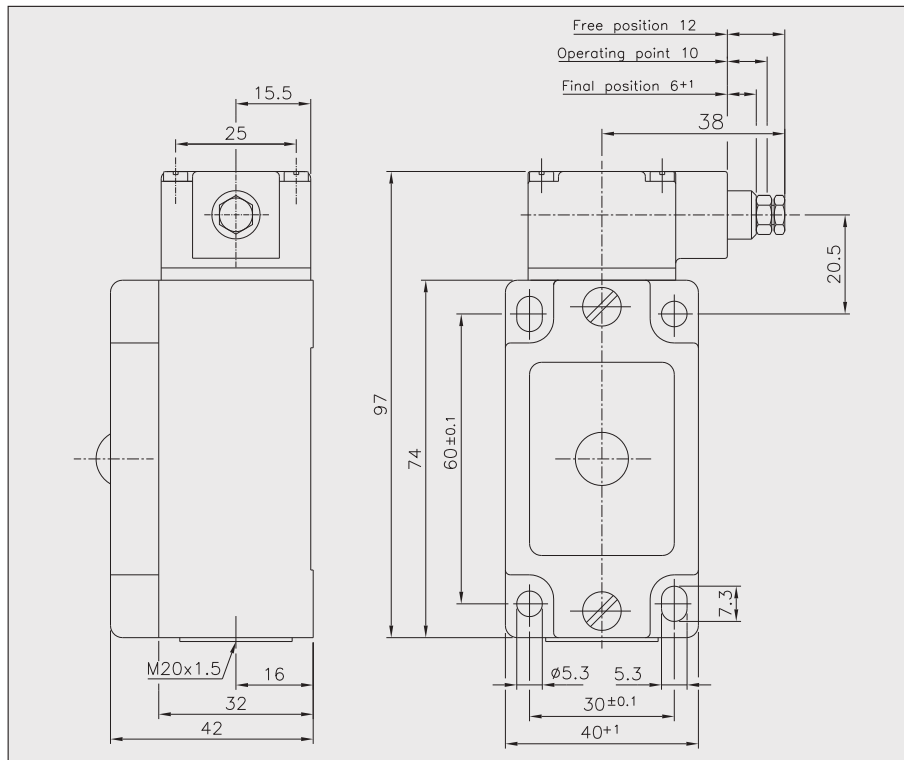
			Without LED	With LED 24 V DC	With LED 220 V AC
NG1	DO	ES-510	NG1DO-510-M	NG1DO-510L024-M	NG1DO-510L220-M

Limit switch with Side Plunger Actuation.
SQ (Adjustable Screw Plunger Side Actuation)

Approvals :



Dimensional Details



Parameters	Value	Unit
Housing Material	Anodised die-cast alloy	
Degree of protection according to IEC 60529	IP67	
Installation position	Optional	
Mechanical service life	30x10 ⁶ switching cycles	
Ambient temperature	-25 to +80	°C
Switching Element	ES 510	
Contact Element	1NO + 1NC	
Switching Principle	Snap action	
Contact gap according to VDE 0660	2 x 0.5	mm
Contact material	Silver alloy AgNi10, gold flashed	
Connection type	Captive screw terminals with self lifting clamping discs	
Cable cross section , maximum	2 x 1.5	mm ²
Utilization category according to IEC 60947-5-1	AC-15 Ue 230V Ie 6A , DC-13 Ue 24V Ie 6A	
Rated Insulation Voltage Ui	250	V
Rated Impulse Withstand Voltage Uimp	2.5	KV
Switching Voltage , minimum	12	VDC
Switching current min at 12 VDC	10	mA
Contact closing time	<4	ms
Contact bounce time	<3	ms
Short Circuit Protection (fuse)	10	A
Actuator	SQ	
Approach speed , max.	5	m/min
Approach speed , min.	0.01	m/min
Pretravel before switch point	2	mm
Operating Point reproducibility	±0.1	mm
Movement Differential	0.7	mm
Operating Force	15	N
Switching Frequency max	100	min ⁻¹

Ordering Table :

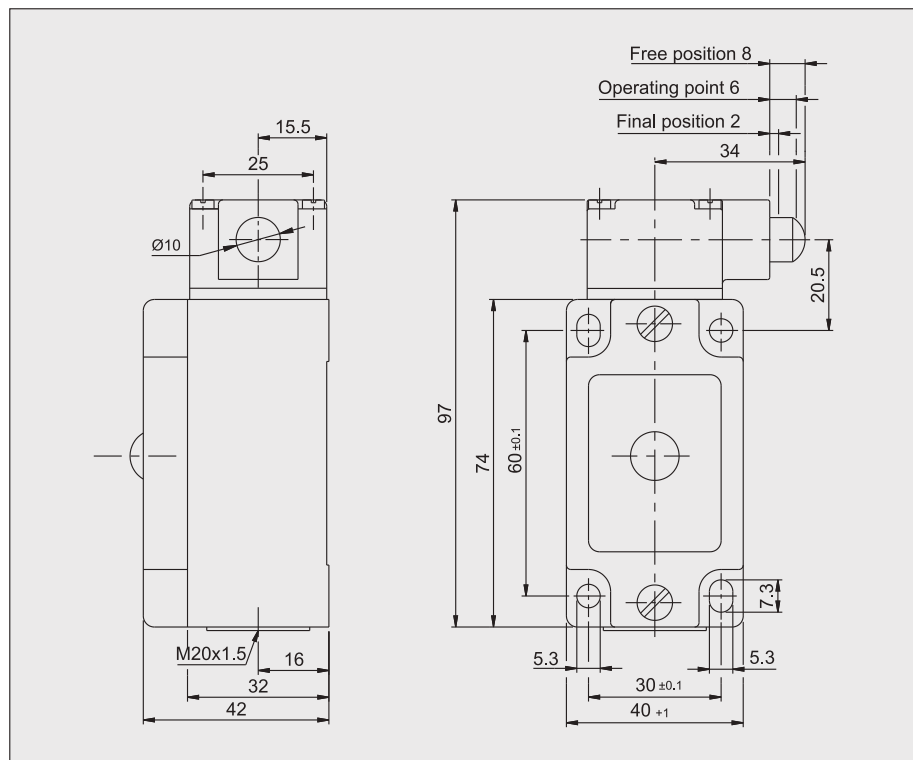
			Without LED	With LED 24 V DC	With LED 220 V AC
NG1	SQ	ES-510	NG1SQ-510-M	NG1SQ-510L024-M	NG1SQ-510L220-M

Limit switch with Side Plunger Actuation.
WOQ (Dome Plunger Side Actuation)

Approvals :



Dimensional Details



Parameters	Value	Unit
Housing Material	Anodised die-cast alloy	
Degree of protection according to IEC 60529	IP67	
Installation position	Optional	
Mechanical service life	30x10 ⁶ switching cycles	
Ambient temperature	-25 to +80	°C
Switching Element	ES 510	
Contact Element	1NO + 1NC	
Switching Principle	Snap action	
Contact gap according to VDE 0660	2 x 0.5	mm
Contact material	Silver alloy AgNi10, gold flashed	
Connection type	Captive screw terminals with self lifting clamping discs	
Cable cross section , maximum	2 x 1.5	mm ²
Utilization category according to IEC 60947-5-1	AC-15 Ue 230V Ie 6A , DC-13 Ue 24V Ie 6A	
Rated Insulation Voltage Ui	250	V
Rated Impulse Withstand Voltage Uimp	2.5	KV
Switching Voltage , minimum	12	VDC
Switching current min at 12 VDC	10	mA
Contact closing time	<4	ms
Contact bounce time	<3	ms
Short Circuit Protection (fuse)	10	A
Actuator	WOQ	
Approach speed , max.	10	m/min
Approach speed , min.	0.01	m/min
Pretravel before switch point	2	mm
Operating Point reproducibility	±0.1	mm
Movement Differential	0.7	mm
Operating Force	15	N
Switching Frequency max	300	min ⁻¹

Ordering Table :

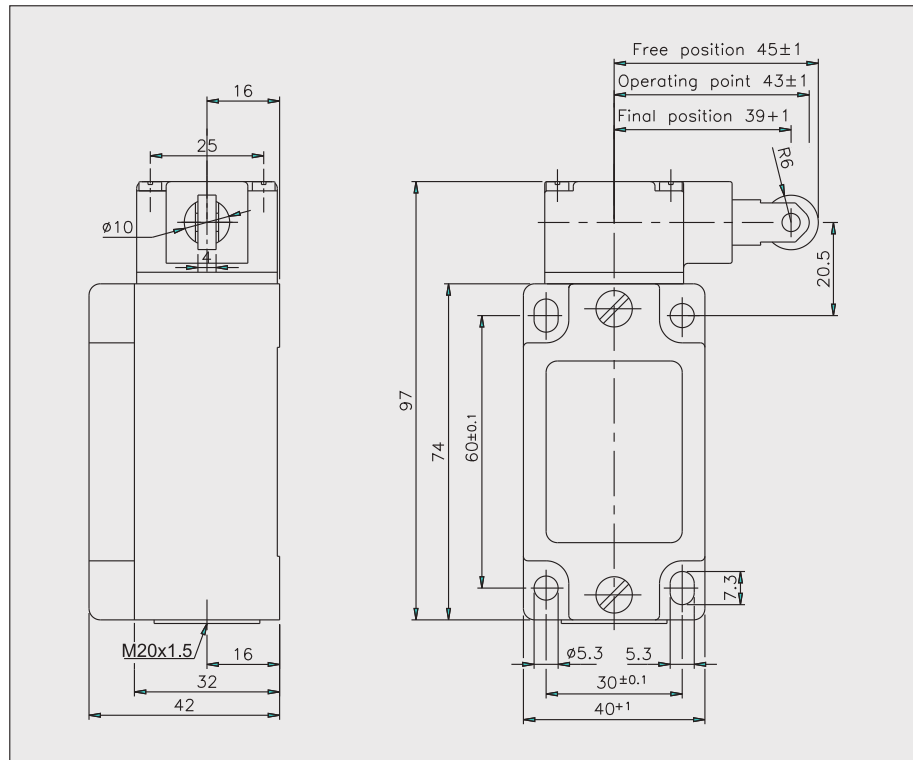
			Without LED	With LED 24 V DC	With LED 220 V AC
NG1	WOQ	ES-510	NG1WOQ-510-M	NG1WOQ-510L024-M	NG1WOQ-510L220-M

Limit switch with Side Roller Plunger Actuation.
RSQ (Roller Plunger Side Actuation)

Approvals :



Dimensional Details



Parameters	Value	Unit
Housing Material	Anodised die-cast alloy	
Degree of protection according to IEC 60529	IP67	
Installation position	Optional	
Mechanical service life	30x10 ⁶ switching cycles	
Ambient temperature	-25 to +80	°C
Switching Element	ES 510	
Contact Element	1NO + 1NC	
Switching Principle	Snap action	
Contact gap according to VDE 0660	2 x 0.5	mm
Contact material	Silver alloy AgNi10, gold flashed	
Connection type	Captive screw terminals with self lifting clamping discs	
Cable cross section , maximum	2 x 1.5	mm ²
Utilization category according to IEC 60947-5-1	AC-15 Ue 230V Ie 6A , DC-13 Ue 24V Ie 6A	
Rated Insulation Voltage Ui	250	V
Rated Impulse Withstand Voltage Uimp	2.5	KV
Switching Voltage , minimum	12	VDC
Switching current min at 12 VDC	10	mA
Contact closing time	<4	ms
Contact bounce time	<3	ms
Short Circuit Protection (fuse)	10	A
Actuator	RSQ	
Approach speed , max.	10	m/min
Approach speed , min.	0.01	m/min
Pretravel before switch point	2	mm
Operating Point reproducibility	±0.1	mm
Movement Differential	0.7	mm
Operating Force	15	N
Switching Frequency max	300	min ⁻¹

Ordering Table :

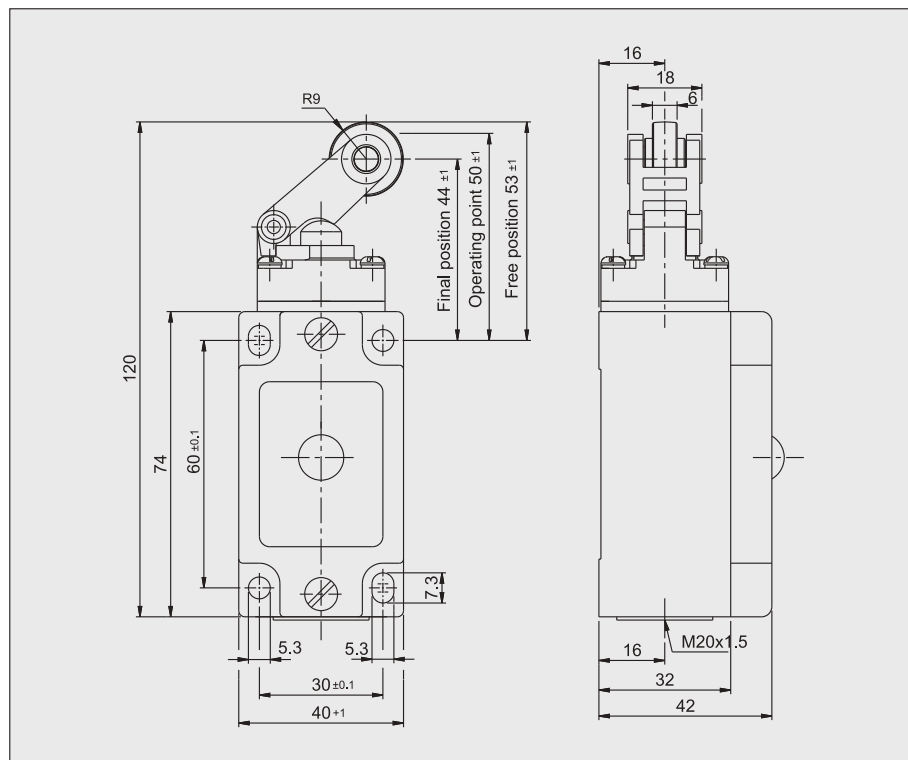
			Without LED	With LED 24 V DC	With LED 220 V AC
NG1	RSQ	ES-510	NG1RSQ-510-M	NG1RSQ-510L024-M	NG1RSQ-510L220-M

Limit switch with Roller Arm.
KB (Plastic Roller Arm)

Approvals :



Dimensional Details



Parameters	Value	Unit
Housing Material	Anodised die-cast alloy	
Degree of protection according to IEC 60529	IP67	
Installation position	Optional	
Mechanical service life	30x10 ⁶ switching cycles	
Ambient temperature	-25 to +80	°C
Switching Element	ES 510	
Contact Element	1NO + 1NC	
Switching Principle	Snap action	
Contact gap according to VDE 0660	2 x 0.5	mm
Contact material	Silver alloy AgNi10, gold flashed	
Connection type	Captive screw terminals with self lifting clamping discs	
Cable cross section , maximum	2 x 1.5	mm ²
Utilization category according to IEC 60947-5-1	AC-15 Ue 230V Ie 6A , DC-13 Ue 24V Ie 6A	
Rated Insulation Voltage Ui	250	V
Rated Impulse Withstand Voltage Uimp	2.5	KV
Switching Voltage , minimum	12	VDC
Switching current min at 12 VDC	10	mA
Contact closing time	<4	ms
Contact bounce time	<3	ms
Short Circuit Protection (fuse)	10	A
Actuator	KB	
Actuator Material	Glass reinforced Nylon 66	
Approach speed , max.	20	m/min
Approach speed , min.	0.01	m/min
Pretravel before switch point	3	mm
Operating Point reproducibility	±0.1	mm
Movement Differential	0.7	mm
Operating Force	15	N
Switching Frequency max	300	min ⁻¹

Ordering Table :

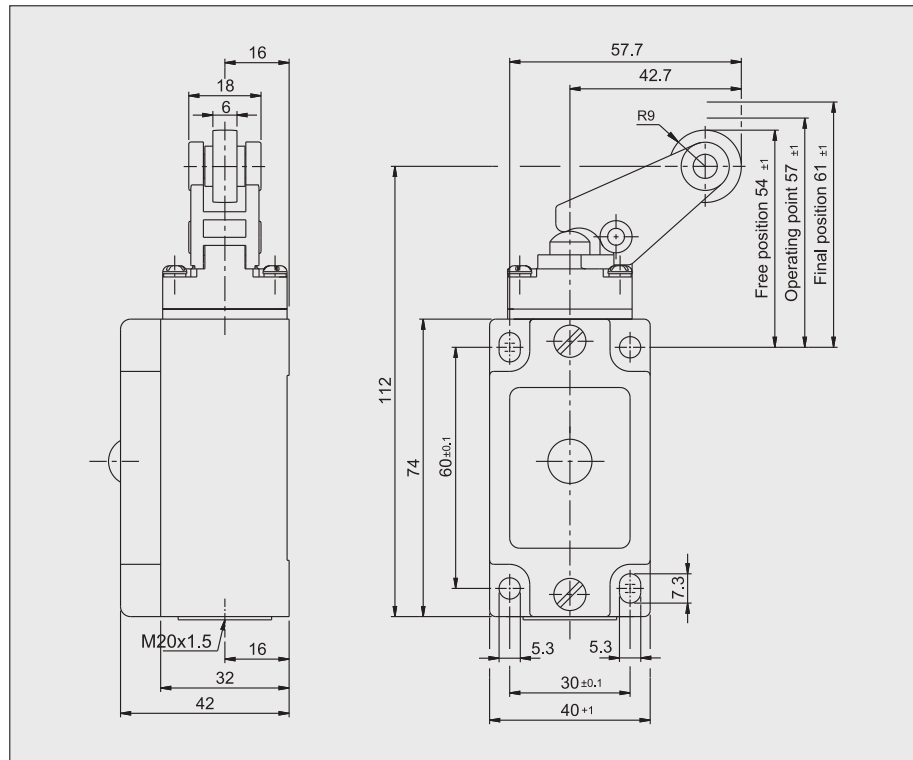
			Without LED	With LED 24 V DC	With LED 220 V AC
NG1	KB	ES-510	NG1KB-510-M	NG1KB-510L024-M	NG1KB-510L220-M

Limit switch with Angular Roller Arm.
KBQ (Angular Plastic Roller Arm)

Approvals :



Dimensional Details



Parameters	Value	Unit
Housing Material	Anodised die-cast alloy	
Degree of protection according to IEC 60529	IP67	
Installation position	Optional	
Mechanical service life	30x10 ⁶ switching cycles	
Ambient temperature	-25 to +80	°C
Switching Element	ES 510	
Contact Element	1NO + 1NC	
Switching Principle	Snap action	
Contact gap according to VDE 0660	2 x 0.5	mm
Contact material	Silver alloy AgNi10, gold flashed	
Connection type	Captive screw terminals with self lifting clamping discs	
Cable cross section , maximum	2 x 1.5	mm ²
Utilization category according to IEC 60947-5-1	AC-15 Ue 230V Ie 6A , DC-13 Ue 24V Ie 6A	
Rated Insulation Voltage Ui	250	V
Rated Impulse Withstand Voltage Uimp	2.5	KV
Switching Voltage , minimum	12	VDC
Switching current min at 12 VDC	10	mA
Contact closing time	<4	ms
Contact bounce time	<3	ms
Short Circuit Protection (fuse)	10	A
Actuator	KBQ	
Actuator Material	Glass reinforced Nylon 66	
Approach speed , max.	20	m/min
Approach speed , min.	0.01	m/min
Pretravel before switch point	3	mm
Operating Point reproducibility	±0.1	mm
Movement Differential	0.7	mm
Operating Force	15	N
Switching Frequency max	300	min ⁻¹

Ordering Table :

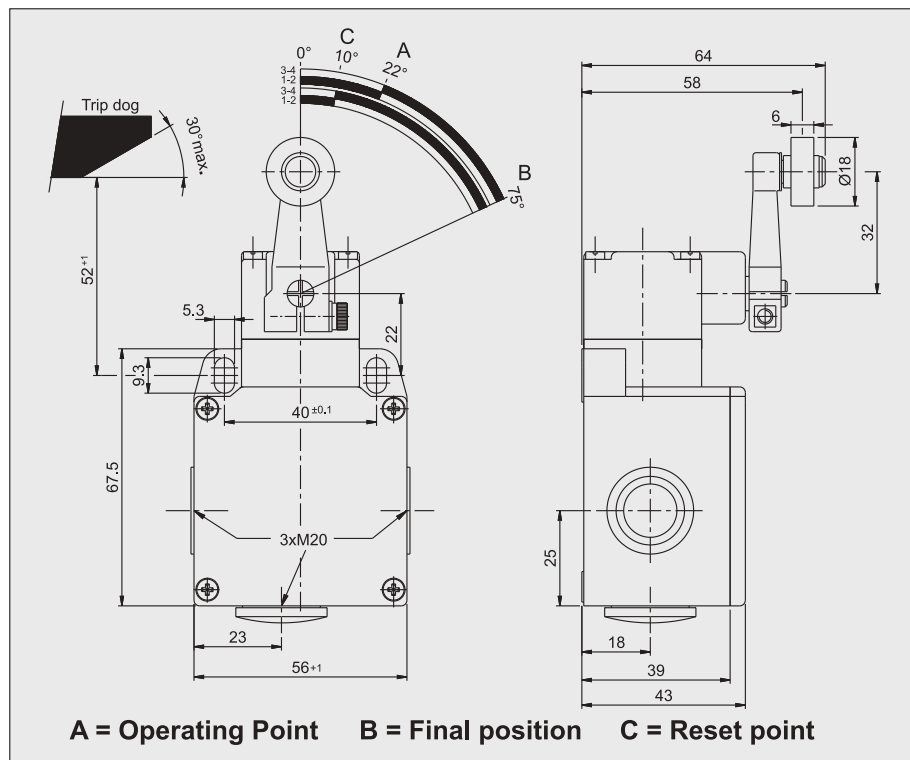
			Without LED	With LED 24 V DC	With LED 220 V AC
NG1	KBQ	ES-510	NG1KBQ-510-M	NG1KBQ-510L024-M	NG1KBQ-510L220-M

Limit switch with Wide Housing & Lever Arm Actuation.

HB (Plastic Roller)

HS (Steel Roller)

Dimensional Details



Parameters	Value	Unit	
Housing Material	Anodised die-cast alloy		
Degree of protection according to IEC 60529	IP67		
Installation position	Optional		
Mechanical service life	30x10 ⁶ switching cycles		
Ambient temperature	-25 to +80	°C	
Switching Element	ES 510		
Contact Element	1NO + 1NC		
Switching Principle	Snap action		
Contact gap according to VDE 0660	2 x 0.5	mm	
Contact material	Silver alloy AgNi10, gold flashed		
Connection type	Captive screw terminals with self lifting clamping discs		
Cable cross section , maximum	2 x 1.5	mm ²	
Utilization category according to IEC 60947-5-1	AC-15 Ue 230V Ie 6A , DC-13 Ue 24V Ie 6A		
Rated Insulation Voltage Ui	250	V	
Rated Impulse Withstand Voltage Uimp	2.5	KV	
Switching Voltage , minimum	12	VDC	
Switching current min at 12 VDC	10	mA	
Contact closing time	<4	ms	
Contact bounce time	<3	ms	
Short Circuit Protection (fuse)	10	A	
Actuator	HB	HS	
Approach speed , max.	300	60	m/min
Approach speed , min.	0.1		m/min
Pretravel before switch point	22		°
Operating Point reproducibility	±0.25		°
Movement Differential	12		°
Operating Force	10		N
Switching Frequency max	600		min ⁻¹

Ordering Table :

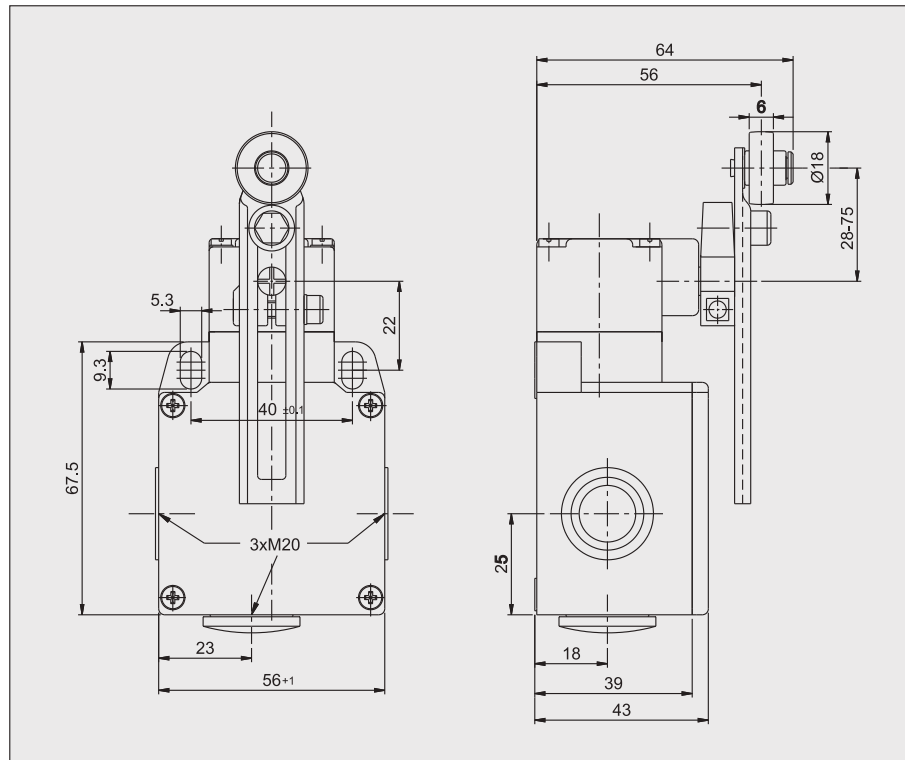
		Without LED	With LED 24 V DC	With LED 220 V AC
NG3	HB	NG3HB-510-M	-	-
	HS	NG3HS-510-M	-	-

Limit switch with Wide Housing & Adjustable Lever Arm Actuation.

VB (Plastic Roller)

VS (Steel Roller)

Dimensional Details



Parameters	Value	Unit	
Housing Material	Anodised die-cast alloy		
Degree of protection according to IEC 60529	IP67		
Installation position	Optional		
Mechanical service life	30x10 ⁶ switching cycles		
Ambient temperature	-25 to +80	°C	
Switching Element	ES 510		
Contact Element	1NO + 1NC		
Switching Principle	Snap action		
Contact gap according to VDE 0660	2 x 0.5	mm	
Contact material	Silver alloy AgNi10, gold flashed		
Connection type	Captive screw terminals with self lifting clamping discs		
Cable cross section , maximum	2 x 1.5	mm ²	
Utilization category according to IEC 60947-5-1	AC-15 Ue 230V Ie 6A , DC-13 Ue 24V Ie 6A		
Rated Insulation Voltage Ui	250	V	
Rated Impulse Withstand Voltage Uimp	2.5	KV	
Switching Voltage , minimum	12	VDC	
Switching current min at 12 VDC	10	mA	
Contact closing time	<4	ms	
Contact bounce time	<3	ms	
Short Circuit Protection (fuse)	10	A	
Actuator	VB	VS	
Approach speed , max.	120	30	m/min
Approach speed , min.	0.5		m/min
Pretravel before switch point	22		°
Operating Point reproducibility	±0.25		°
Movement Differential	12		°
Operating Force	-		N
Switching Frequency max	300		min ⁻¹

Ordering Table :

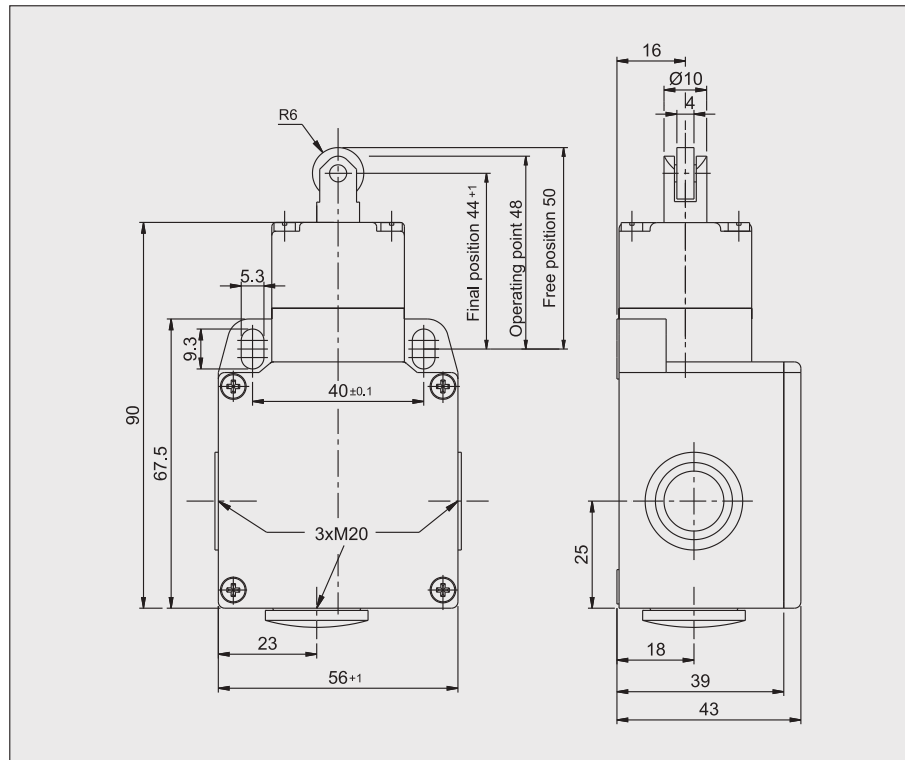
		Without LED	With LED 24 V DC	With LED 220 V AC
NG3	VB	NG3VB-510-M	-	-
	VS	NG3VS-510-M	-	-

Limit switch with wide housing & Plunger Actuation.

RG (Plastic Roller)

RS (Steel Roller)

Dimensional Details



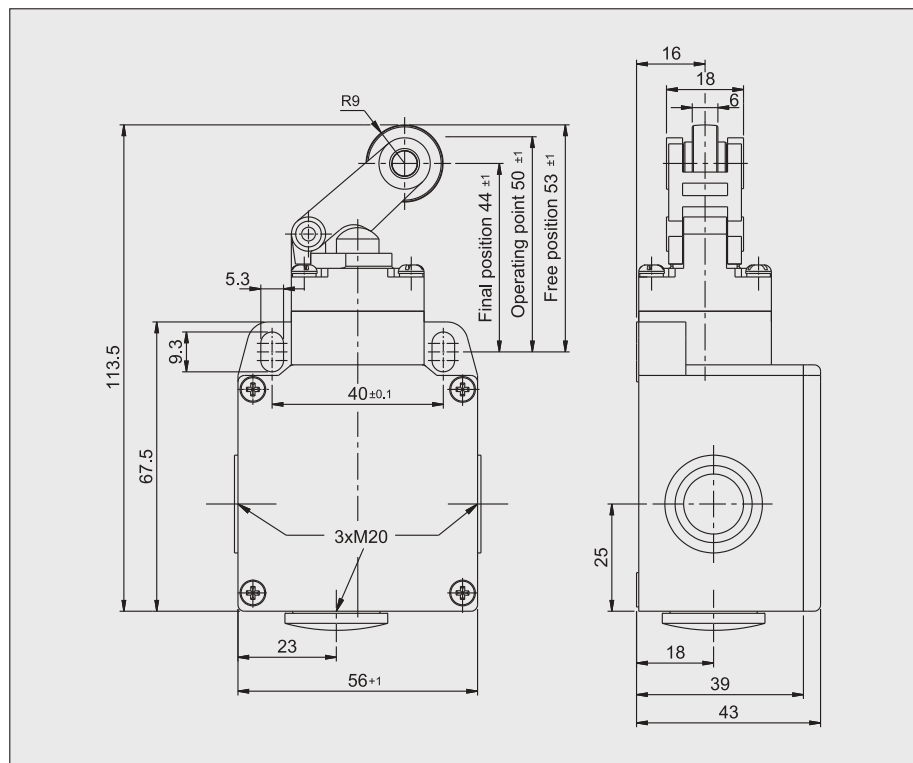
Parameters	Value		Unit
Housing Material	Anodised die-cast alloy		
Degree of protection according to IEC 60529	IP67		
Installation position	Optional		
Mechanical service life	30x10 ⁶ switching cycles		
Ambient temperature	-25 to +80		°C
Switching Element	ES 510		
Contact Element	1NO + 1NC		
Switching Principle	Snap action		
Contact gap according to VDE 0660	2 x 0.5		mm
Contact material	Silver alloy AgNi10, gold flashed		
Connection type	Captive screw terminals with self lifting clamping discs		
Cable cross section , maximum	2 x 1.5		mm ²
Utilization category according to IEC 60947-5-1	AC-15 Ue 230V Ie 6A , DC-13 Ue 24V Ie 6A		
Rated Insulation Voltage Ui	250		V
Rated Impulse Withstand Voltage Uimp	2.5		KV
Switching Voltage , minimum	12		VDC
Switching current min at 12 VDC	10		mA
Contact closing time	<4		ms
Contact bounce time	<3		ms
Short Circuit Protection (fuse)	10		A
Actuator	RG	RS	
Approach speed , max.	20	20	m/min
Approach speed , min.	0.01		m/min
Pretravel before switch point	2		mm
Operating Point reproducibility	± 0.1		mm
Movement Differential	0.7		mm
Operating Force	15		N
Switching Frequency max	300		min ⁻¹

Ordering Table :

			Without LED	With LED 24 V DC	With LED 220 V AC
NG3	RG	ES-510	NG3RG-510-M	-	-
	RS		NG3RS-510-M	-	-

Limit switch with wide housing & Roller Arm.
KB (Plastic Roller Arm)

Dimensional Details



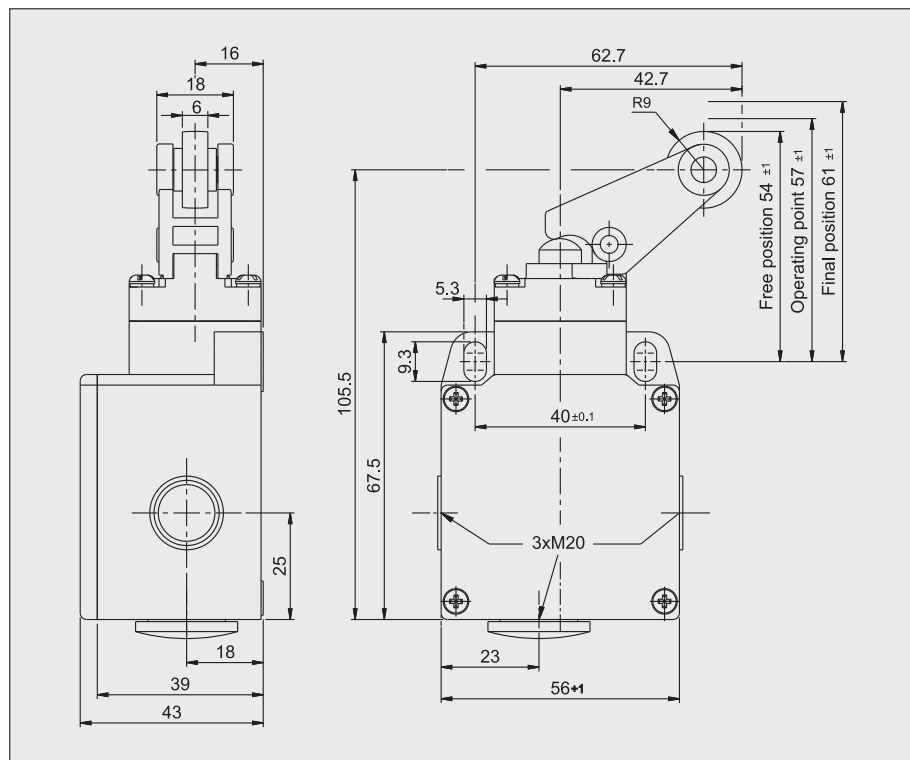
Parameters	Value	Unit
Housing Material	Anodised die-cast alloy	
Degree of protection according to IEC 60529	IP67	
Installation position	Optional	
Mechanical service life	30x10 ⁶ switching cycles	
Ambient temperature	-25 to +80	°C
Switching Element	ES 510	
Contact Element	1NO + 1NC	
Switching Principle	Snap action	
Contact gap according to VDE 0660	2 x 0.5	mm
Contact material	Silver alloy AgNi10, gold flashed	
Connection type	Captive screw terminals with self lifting clamping discs	
Cable cross section , maximum	2 x 1.5	mm ²
Utilization category according to IEC 60947-5-1	AC-15 Ue 230V Ie 6A , DC-13 Ue 24V Ie 6A	
Rated Insulation Voltage Ui	250	V
Rated Impulse Withstand Voltage Uimp	2.5	KV
Switching Voltage , minimum	12	VDC
Switching current min at 12 VDC	10	mA
Contact closing time	<4	ms
Contact bounce time	<3	ms
Short Circuit Protection (fuse)	10	A
Actuator	KB	
Actuator Material	Glass reinforced Nylon 66	
Approach speed , max.	20	m/min
Approach speed , min.	0.01	m/min
Pretravel before switch point	3	mm
Operating Point reproducibility	±0.1	mm
Movement Differential	0.7	mm
Operating Force	15	N
Switching Frequency max	300	min ⁻¹

Ordering Table :

			Without LED	With LED 24 V DC	With LED 220 V AC
NG3	KB	ES-510	NG3KB-510-M	-	-

Limit switch with wide housing & Angular Roller Arm.
KBQ (Angular Plastic Roller Arm)

Dimensional Details

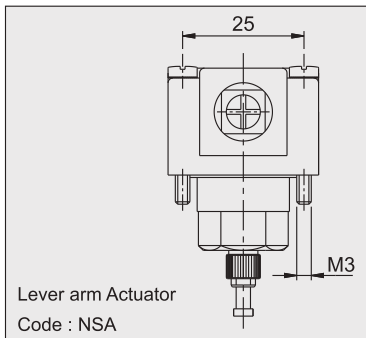


Parameters	Value	Unit
Housing Material	Anodised die-cast alloy	
Degree of protection according to IEC 60529	IP67	
Installation position	Optional	
Mechanical service life	30x10 ⁶ switching cycles	
Ambient temperature	-25 to +80	°C
Switching Element	ES 510	
Contact Element	1NO + 1NC	
Switching Principle	Snap action	
Contact gap according to VDE 0660	2 x 0.5	mm
Contact material	Silver alloy AgNi10, gold flashed	
Connection type	Captive screw terminals with self lifting clamping discs	
Cable cross section , maximum	2 x 1.5	mm ²
Utilization category according to IEC 60947-5-1	AC-15 Ue 230V Ie 6A , DC-13 Ue 24V Ie 6A	
Rated Insulation Voltage Ui	250	V
Rated Impulse Withstand Voltage Uimp	2.5	KV
Switching Voltage , minimum	12	VDC
Switching current min at 12 VDC	10	mA
Contact closing time	<4	ms
Contact bounce time	<3	ms
Short Circuit Protection (fuse)	10	A
Actuator	KBQ	
Actuator Material	Glass reinforced Nylon 66	
Approach speed , max.	20	m/min
Approach speed , min.	0.01	m/min
Pretravel before switch point	3	mm
Operating Point reproducibility	±0.1	mm
Movement Differential	0.7	mm
Operating Force	15	N
Switching Frequency max	300	min ⁻¹

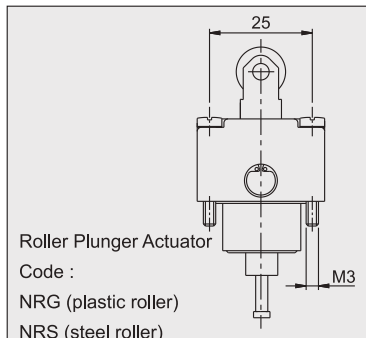
Ordering Table :

			Without LED	With LED 24 V DC	With LED 220 V AC
NG3	KBQ	ES-510	NG3KBQ-510-M	-	-

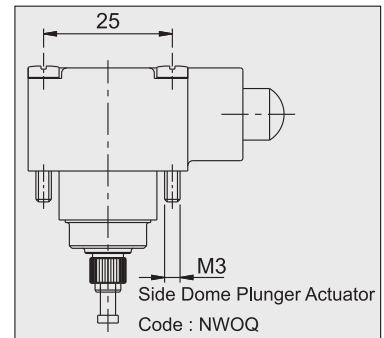
Accessories



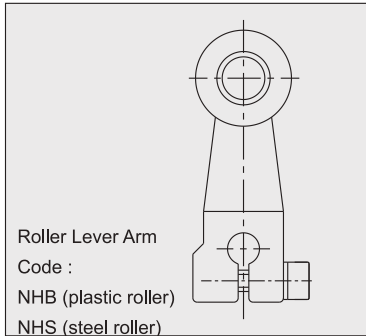
Lever arm Actuator
Code : NSA



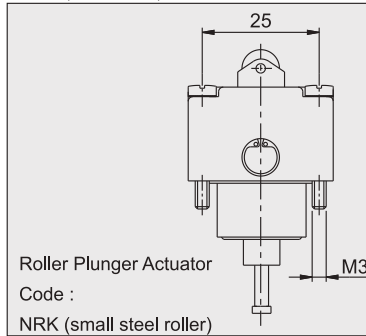
Roller Plunger Actuator
Code :
NRG (plastic roller)
NRS (steel roller)



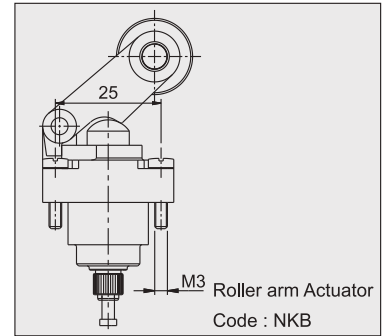
Side Dome Plunger Actuator
Code : NWOQ



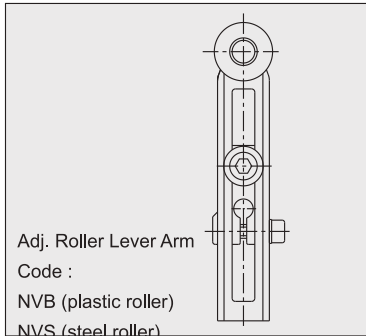
Roller Lever Arm
Code :
NHB (plastic roller)
NHS (steel roller)



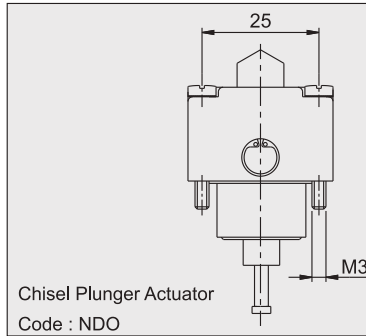
Roller Plunger Actuator
Code :
NRK (small steel roller)



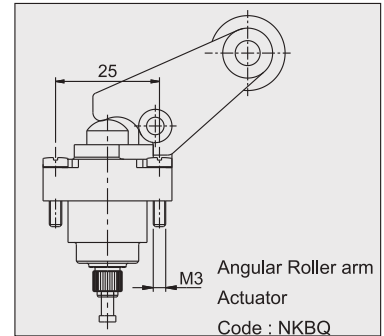
Roller arm Actuator
Code : NKB



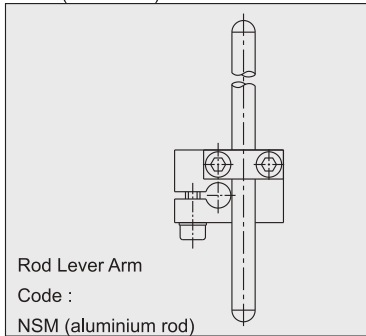
Adj. Roller Lever Arm
Code :
NVB (plastic roller)
NVS (steel roller)



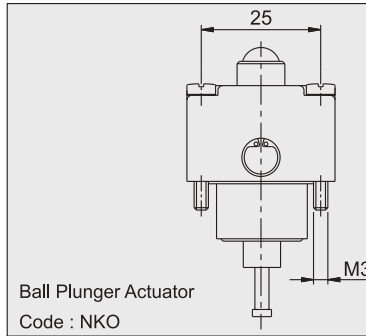
Chisel Plunger Actuator
Code : NDO



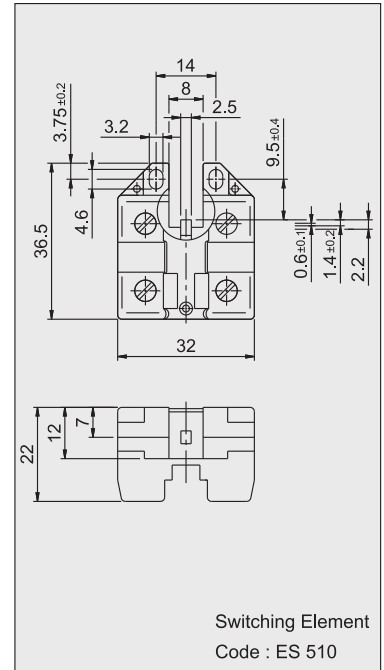
Angular Roller arm Actuator
Code : NKBQ



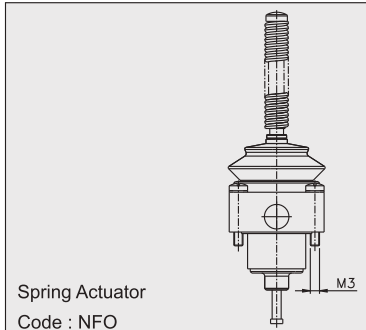
Rod Lever Arm
Code :
NSM (aluminium rod)



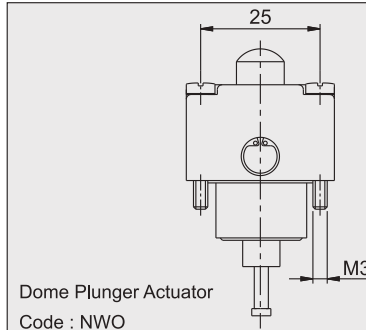
Ball Plunger Actuator
Code : NKO



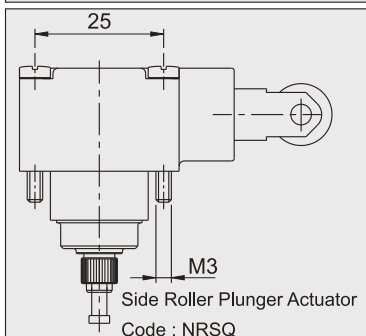
Switching Element
Code : ES 510



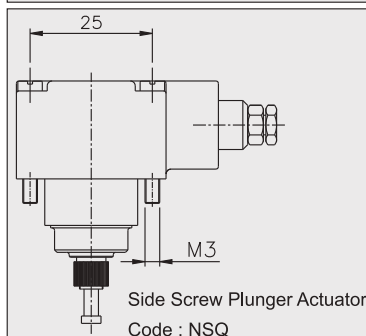
Spring Actuator
Code : NFO



Dome Plunger Actuator
Code : NWO



Side Roller Plunger Actuator
Code : NRSQ



Side Screw Plunger Actuator
Code : NSQ

Products from TEKNIC EUCHNER, INDIA



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