

INO

Position limit switch



Position limit switches designed to control the movement of overhead travelling cranes, hoists and complex machine tools. Limit switches INO are used in building and industrial hoisting applications, in automation and in the entertainment industry.

FEATURES

- Casing made of fiber-glass reinforced UL-VO thermoplastic, zinc alloy (zama) or aluminum, featuring 2 or 4 fixing holes.
- Casing available in different width and with different cable entries: 30 mm with 1 cable entry, 35 mm wired, 40 mm with 1 cable entry, 50 mm with 2 or 3 cable entries and 60 mm with 3 cable entries.
- Electrically separated contacts and positive opening NC contacts for safety functions*.
- Mechanical life of switches: up to 30 million operations.
- Operation frequency: 3600 operations/hour max.
- IP protection degree: INO limit switches are classified IP65, IP66; only Wired INO limit switches with thermoplastic material or die-cast metal casings, sealed with epoxy plastic at the base where cable entries are, are classified IP67.
- Extreme temperature resistance: from -40°C to +70°C*.
- Equipped with metal, technopolymer or aluminum heads.
- All materials and components used are wear resistant and guarantee protection of the units against water and dust.

OPTIONS

- 10 different switches: snap action switches with 2NC or 1NO+1NC contacts, slow action simultaneous switches with 2NC or 2NO contacts, slow action break before make switches with 1NO+1NC, 1NO+2NC or 2NO+1NC contacts, slow action make before break switches with 1NO+1NC contacts, and slow action simultaneous switches with 3NC and 3NO contacts.
- Heads in technopolymer, metal or aluminum featuring up to 39 different types of actuators for a variety of applications.

PRODUCT FAMILIES

- Standard Ino (page 2).
- Double lever Ino (page 24).
- Wired Ino (page 27).
- Safety Ino (page 32).

CERTIFICATIONS

- CE marking, UL marking (pending).

Fill in the "request form" (page 44, 45, 46) for accurate product configuration.

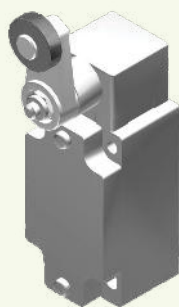
* Not available on all versions.

POSSIBLE CONFIGURATIONS - STANDARD INO

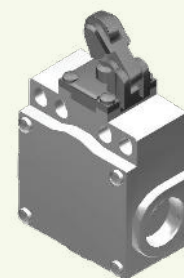
Series C01 30 mm - technopolymer



Series C04 40 mm - aluminum



Series C06 50 mm - metal



CERTIFICATIONS - STANDARD INO

Conformity to CE Standards	EN 60947-5-1 Low-voltage switchgear and controlgear - Control circuit devices and switching elements - Electromechanical control circuit devices
	EN 60947-1 Low-voltage switchgear and controlgear
	EN 60529 Degrees of protection provided by enclosures
	IEC 60068-2-78 Environmental Testing - Part 2-78: Tests - Test Cab: Damp heat, steady state
	IEC 60068-2-11 Environmental Testing - Part 2: Tests - Test Ka: Salt Mist
	IEC 60068-2-27 Environmental Testing - Part 2: Tests - Test Ea & guidance: Shock
	IEC 60068-2-6 Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)
	IEC 60536 Classification of Electrical and Electronic Equipment with Regard to Protection Against Electric Shock
Markings and homologations	CE (U _L) (pending)

GENERAL TECHNICAL SPECIFICATIONS - STANDARD INO

Ambient temperature	Storage -30°C/+80°C
	Operational -25°C/+70°C (-40°C/+70°C on request)
IP protection degree	Technopolymer series IP65
	Metal and aluminum series IP66*
Insulation category	Technopolymer series Class II
	Metal and aluminum series Class I
Shock resistance	50 g* (1/2 sinusoidal shock for 11 msec) without contact switching
Vibration resistance	25 g (10 ... 500 Hz) without contact switching > 100 µsec
Accuracy (after 1x10 ⁶ operations)	Technopolymer series 0.1 mm (at closing point)
	Metal and aluminum series 0.05 (at closing point)
Max. actuating speed	Slow action 0.06 m/s
	Snap action 0.001 m/s
Operating position	Any position
Casing	Series C01: width 30 mm in technopolymer with 1 cable entry
	Series C02: width 30 mm in metal with 1 cable entry
	Series C03: width 40 mm in technopolymer with 1 cable entry
	Series C04: width 40 mm in aluminum with 1 cable entry
	Series C05: width 50 mm in technopolymer with 2 cable entries
	Series C06: width 50 mm in metal with 3 cable entries
	Series C07: width 60 mm in aluminum with 3 cable entries
Cable entry	PG 13.5
	1/2" NPT
	PG 11*
	M16 x 1.5*
	M20 x 1.5

* Not available on all versions.

ELECTRICAL SPECIFICATIONS - STANDARD INO

Utilisation category	AC15 - DC13
Rated operational current	10 A / 24 Vac / 50/60 Hz / AC15
	6 A / 120 Vac / 50/60 Hz / AC15
	4 A / 400 Vac / 50/60 Hz / AC15 - 1.8 A (for three-pole switches for Standard Ino with 40 mm and 60 mm casing)
	6 A / 24 Vdc / DC13 - 2.8 A (for three-pole switches for Standard Ino with 40 mm and 60 mm casing)
	0.55 A / 125 Vdc / DC13
Rated insulation voltage	500 V (pollution degree 3), A600 Q600
	400 V, A300 Q300 (for three-pole switches for Standard Ino with 30 mm and 50 mm casing)
Rated voltage impulse	6 kV
Conventional free air thermal current $\theta < 40^{\circ}\text{C}$	10 A
Short-circuit protection $U_n < 500 \text{ Vac}$ - fuse type gG (gl)	10 A
Switching frequency	3600 cycles/hour
Load factor	0.5
Contact resistance	25 m Ω
Mechanical life	Up to 30x10 ⁶ operations, depending on configuration
Connections	Screws with cable clamp M3.5 (+,-) pozidriv 2 (M3 for three-pole contacts)
Terminal for protective conductor	Screws with cable clamp M3.5 (+,-) pozidriv 2 (only for Standard Ino with metal or aluminum casing)
Wires	1 or 2 x 0.75 ... 2.5 mm ² (two-pole contacts), 1 or 2 x 0.34 ... 1,5 (three-pole contacts)

SWITCHES - STANDARD INO

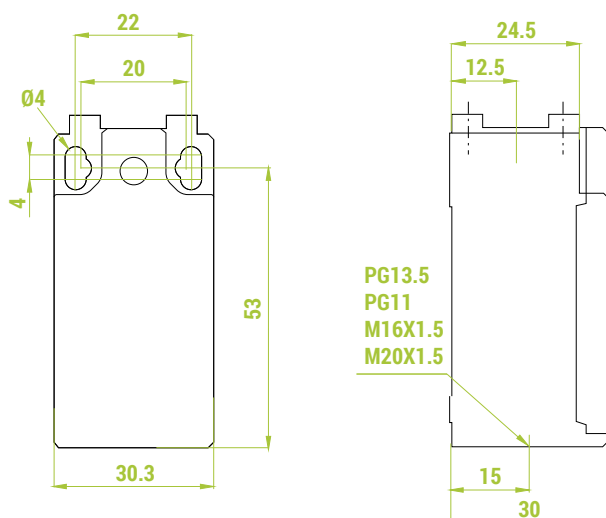
Switch type	Snap action	Snap action	Slow action Simultaneous	Slow action Simultaneous	Slow action Break before make
Contacts	2NC (All NC contacts are of the positive opening operation type )*	1NO+1NC (All NC contacts are of the positive opening operation type )*	2 NC (All NC contacts are of the positive opening operation type )*	2 NO	1NO+1NC (All NC contacts are of the positive opening operation type )*
Scheme					

Switch type	Slow action Make before break	Slow action Break before make	Slow action Break before make	Slow action Simultaneous	Slow action Simultaneous
Contacts	1NO+1NC (All NC contacts are of the positive opening operation type )*	1NO+2NC (All NC contacts are of the positive opening operation type )*	2NO+1NC (All NC contacts are of the positive opening operation type )*	3 NC (All NC contacts are of the positive opening operation type )*	3NO
Scheme					

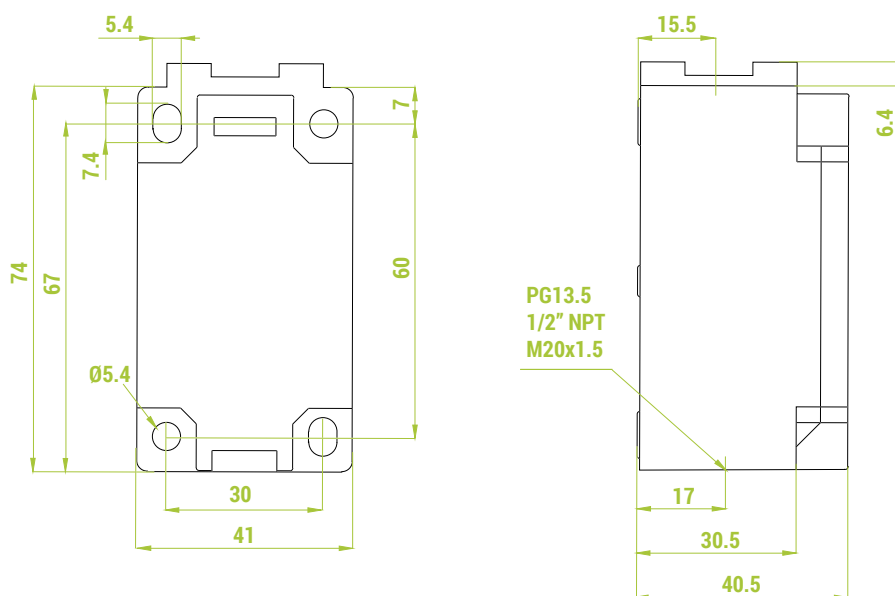
*Not available for all operating heads.

OVERALL DIMENSIONS (mm) - STANDARD INO IN TECHNOPOLYMER

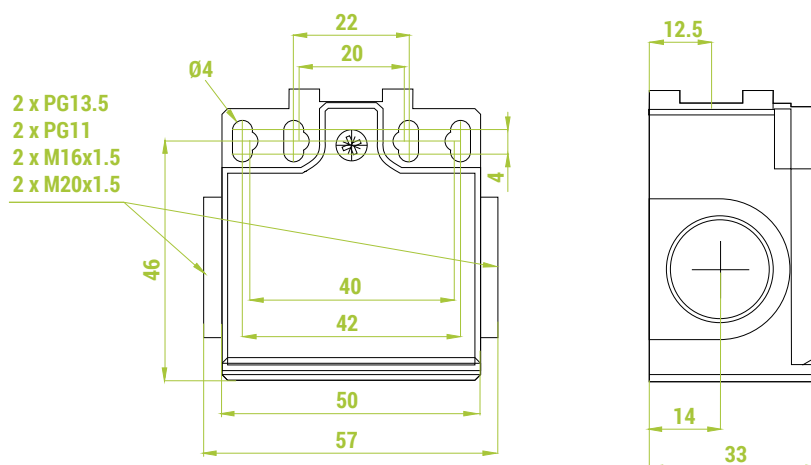
Series C01 with 30 mm casing



Series C03 with 40 mm casing

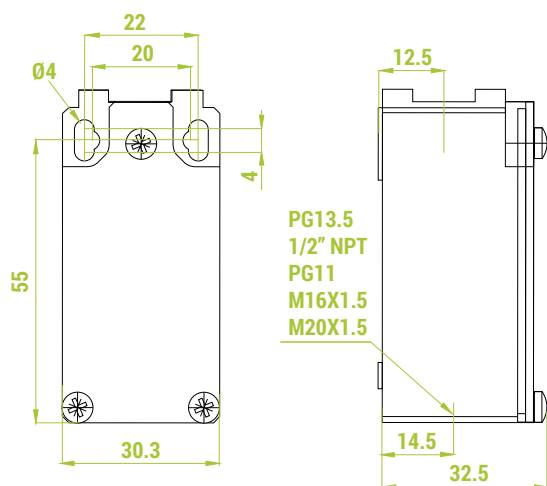


Series C05 with 50 mm casing

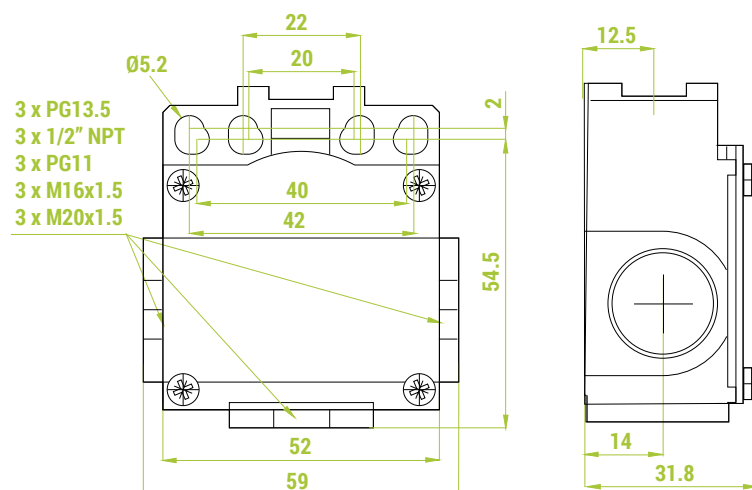


OVERALL DIMENSIONS (mm) - STANDARD INO IN METAL

Series C02 with 30 mm casing

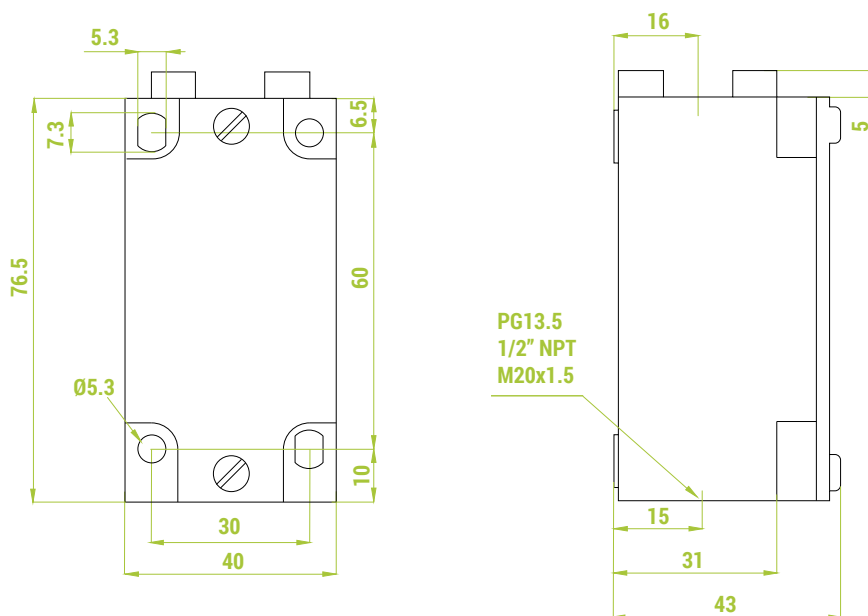


Series C06 with 50 mm casing

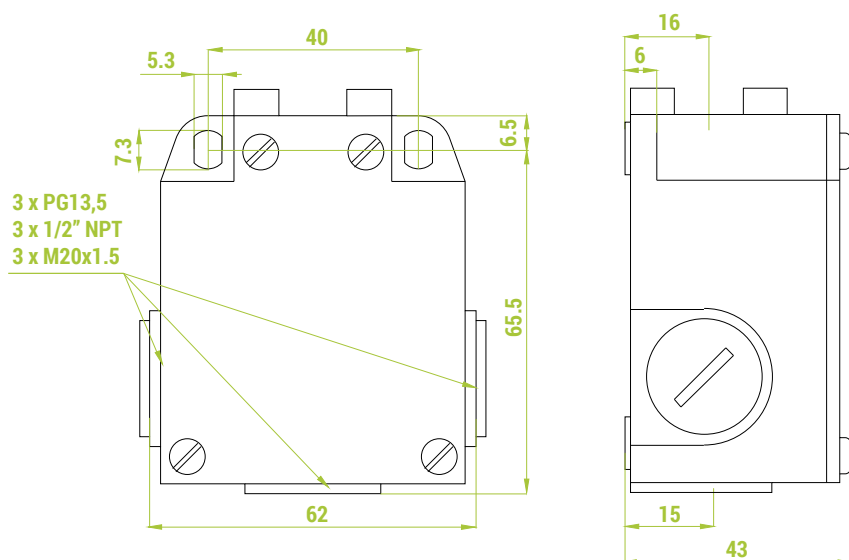


OVERALL DIMENSIONS (mm) - STANDARD INO IN ALUMINUM

Series C04 with 40 mm casing



Series C07 with 60 mm casing



HEADS FOR LIMIT SWITCHES STANDARD INO IN TECHNOPOLYMER WITH 30 mm CASING (SERIES C01), 50 mm CASING (SERIES C05) AND IN METAL WITH 30 mm CASING (SERIES C02) AND 50 mm CASING (SERIES C06)

	Plain plunger	Roller plunger	Plunger with dust protective cap	Plunger with fixing nuts
Code of technopolymer head	010: nylon plunger 011: steel plunger For series C01, C05	012: steel roller 013: nylon roller For series C01, C05	014 For series C01, C02, C05, C06	021: nuts M18x1 02101: nuts M12x1 For series C01, C02, C05, C06
Code of metal head	111: steel plunger For series C02, C06	112: steel roller For series C02, C06	/	/
Max. actuating speed (m/s)	0.5	0.3	0.5	0.5
Min. actuating force (N) or torque (Nm) / for positive opening	15 / 30	12 / 30	15 / 30	15 / 30
Switch code A0 snap action 1NO+1NC	 	 	 	
Switch code C0 slow action break before make 1NO+1NC	 	 	 	
Switch code D0 slow action make before break 1NO+1NC	 	 	 	
Switch code B2 slow action simultaneous 2NC	 	 	 	
Switch code B1 slow action simultaneous 2NO	 	 	 	
Switch code A2 snap action 2NC	 	 	 	
Switch code C3 slow action break before make 1NO+2NC	 	 	 	
Switch code C5 slow action break before make 2NO+1NC	 	 	 	
Switch code B7 slow action simultaneous 3NC	 	 	 	

	Nylon roller lever	Nylon roller lever	Nylon roller lever on steel plunger with dust protective cap	Nylon roller lever on steel plunger with dust protective cap
Code of technopolymer head	030: on nylon plunger 031: on steel plunger For series C01, C02, C05, C06	032: on steel plunger 034: on nylon plunger For series C01, C02	035 For series C01, C02, C05, C06	036 For series C01, C02
Code of metal head	/	/	/	/
Max. actuating speed (m/s)	1.0	1.0	1.0	1.0
Min. actuating force (N) or torque (Nm) / for positive opening	7 / 24	7 / 24	7 / 24	7 / 24
Switch code A0 snap action 1NO+1NC				
Switch code C0 slow action break before make 1NO+1NC				
Switch code D0 slow action make before break 1NO+1NC				
Switch code B2 slow action simultaneous 2NC				
Switch code B1 slow action simultaneous 2NO				
Switch code A2 snap action 2NC				
Switch code C3 slow action break before make 1NO+2NC				
Switch code C5 slow action break before make 2NO+1NC				
Switch code B7 slow action simultaneous 3NC				

		Adjustable nylon roller lever on steel plunger	Ø18 mm roller lever	Ø50 mm rubber roller lever	Ø18 mm roller lever
Code of technopolymer head		038: without dust protective cap 039: with dust protective cap For series C01, C02, C05, C06	041: nylon roller 043: steel roller For series C01, C05	042 For series C01, C05	045: nylon roller 046: steel roller For series C01, C05
Code of metal head		/	141: nylon roller 143: steel roller For series C02, C06	142 For series C02, C06	145: nylon roller 146: steel roller For series C02, C06
Max. actuating speed (m/s)		1.0	1.5	1.5	1.5
Min. actuating force (N) or torque (Nm) / for positive opening		7 / 24	0.10 / 0.32	0.10 / 0.32	0.10 / 0.32
Switch code A0 snap action 1NO+1NC					
Switch code C0 slow action break before make 1NO+1NC					
Switch code D0 slow action make before break 1NO+1NC					
Switch code B2 slow action simultaneous 2NC					
Switch code B1 slow action simultaneous 2NO					
Switch code A2 snap action 2NC					
Switch code C3 slow action break before make 1NO+2NC					
Switch code C5 slow action break before make 2NO+1NC					
Switch code B7 slow action simultaneous 3NC					

		Ceramic rod lever	Adjustable lever with Ø18 mm roller	Adjustable toothed lever (step 2 mm) with Ø18 mm nylon roller	Adjustable lever with Ø50 mm rubber roller
Code of technopolymer head	048	For series C01, C05	051: nylon roller 053: steel roller	05100	052
			For series C01, C05		
Code of metal head	/	/	151: nylon roller 153: steel roller	/	151
			For series C02, C06		
Max. actuating speed (m/s)	1.5	1.5	1.5	1.5	1.5
Min. actuating force (N) or torque (Nm) / for positive opening	0.10 / 0.32 ➡	0.10 / 0.32 ➡	0.10 / 0.32 ➡	0.10 / 0.32 ➡	0.10 / 0.32 ➡
Switch code A0 snap action 1NO+1NC					
Switch code C0 slow action break before make 1NO+1NC					
Switch code D0 slow action make before break 1NO+1NC					
Switch code B2 slow action simultaneous 2NC					
Switch code B1 slow action simultaneous 2NO					
Switch code A2 snap action 2NC					
Switch code C3 slow action break before make 1NO+2NC					
Switch code C5 slow action break before make 2NO+1NC					
Switch code B7 slow action simultaneous 3NC					

	Adjustable toothed lever (step 2 mm) with Ø50 mm rubber roller	Adjustable lever with adjustable Ø50 mm rubber roller	Adjustable toothed lever (step 2 mm) with adjustable Ø50 mm rubber roller	Nylon actuator with stainless steel spring
Code of technopolymer head	05200 For series C01, C05	055 For series C01, C05	05500 For series C01, C05	061 For series C01, C05
Code of metal head	/	155 For series C02, C06	/	161 For series C02, C06
Max. actuating speed (m/s)	1.5	1.5	1.5	1.5
Min. actuating force (N) or torque (Nm) / for positive opening	0.10 / 0.32 ⊕	0.10 / 0.32 ⊕	0.10 / 0.32 ⊕	0.10 / -
Switch code A0 snap action 1NO+1NC				
Switch code C0 slow action break before make 1NO+1NC				
Switch code D0 slow action make before break 1NO+1NC				
Switch code B2 slow action simultaneous 2NC				
Switch code B1 slow action simultaneous 2NO				
Switch code A2 snap action 2NC				
Switch code C3 slow action break before make 1NO+2NC				
Switch code C5 slow action break before make 2NO+1NC				
Switch code B7 slow action simultaneous 3NC				

		Stainless steel spring actuator	Adjustable Ø3 mm rod	Adjustable Ø6 mm rod	Adjustable 3x3 square steel rod
Code of technopolymer head		062 For series C01, C05	071: stainless steel rod 072: fiber-glass rod For series C01, C05	073: nylon rod 074: fiber-glass rod For series C01, C05	075 For series C01, C05
Code of metal head		/	171: stainless steel rod 172: fiber-glass rod For series C02, C06	173: nylon rod 174: fiber-glass rod For series C02, C06	175 For series C02, C06
Max. actuating speed (m/s)		1.5	1.5	1.5	1.5
Min. actuating force (N) or torque (Nm) / for positive opening		0.10 / -	0.10 / 0.32 ➡	0.10 / 0.32 ➡	0.10 / 0.32 ➡
Switch code A0 snap action 1NO+1NC					
Switch code C0 slow action break before make 1NO+1NC					
Switch code D0 slow action make before break 1NO+1NC					
Switch code B2 slow action simultaneous 2NC					
Switch code B1 slow action simultaneous 2NO					
Switch code A2 snap action 2NC					
Switch code C3 slow action break before make 1NO+2NC					
Switch code C5 slow action break before make 2NO+1NC					
Switch code B7 slow action simultaneous 3NC					

		Stainless steel spring multidirectional actuator	Multidirectional nylon actuator with stainless steel spring	Stainless steel spring multidirectional actuator	Pull action with ring
Code of technopolymer head		091 For series C01, C02, C05, C06	092 For series C01, C02, C05, C06	093 For series C01, C02, C05, C06	098 For series C01, C02, C05, C06
Code of metal head		/	/	/	/
Max. actuating speed (m/s)		1.0	1.0	1.0	0.5
Min. actuating force (N) or torque (Nm) / for positive opening		0.12 / -	0.12 / -	0.12 / -	30 / -
Switch code A0 snap action 1NO+1NC					
Switch code C0 slow action break before make 1NO+1NC					
Switch code D0 slow action make before break 1NO+1NC					
Switch code B2 slow action simultaneous 2NC					
Switch code B1 slow action simultaneous 2NO					
Switch code A2 snap action 2NC					/
Switch code C3 slow action break before make 1NO+2NC					/
Switch code C5 slow action break before make 2NO+1NC					/
Switch code B7 slow action simultaneous 3NC					/

HEADS FOR LIMIT SWITCHES STANDARD INO IN TECHNOPOLYMER WITH 40 mm CASING (SERIES C03)

	Plain plunger	Ball plunger	Roller plunger	Plunger with dust protective cap
Code of technopolymer head	211 For series C03	212 For series C03	213 For series C03	214 For series C03
Max. actuating speed (m/s)	0.5	0.5	0.5	0.5
Min. actuating force (N) or torque (Nm) / for positive opening	14 / 40	14 / 40	14 / 40	14 / 40
Switch code A0 snap action 1NO+1NC	 	 	 	
Switch code C0 slow action break before make 1NO+1NC	 	 	 	
Switch code D0 slow action make before break 1NO+1NC	 	 	 	
Switch code B2 slow action simultaneous 2NC	 	 	 	
Switch code B1 slow action simultaneous 2NO	 	 	 	
Switch code A2 snap action 2NC	 	 	 	
Switch code C4 slow action break before make 1NO+2NC	 	 	 	
Switch code C6 slow action break before make 2NO+1NC	 	 	 	
Switch code B8 slow action simultaneous 3NC	 	 	 	
Switch code B9 slow action simultaneous 3NO	 	 	 	

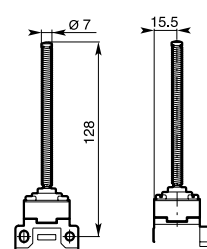
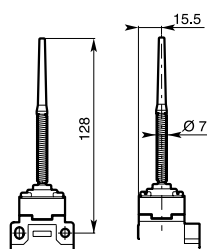
	Steel roller plunger with dust protective cap	One-way roller lever	One-way lever with dust protective cap	Ø22 mm roller lever
Code of technopolymer head	219 For series C03	231: Ø22 mm nylon roller 232: Ø22 mm stainless steel roller 233: Ø22 mm steel bearing For series C03	235: Ø22 mm nylon roller 236: Ø22 mm stainless steel roller 237: Ø22 mm steel bearing For series C03	241: nylon roller 242: stainless steel roller 243: steel bearing For series C03
Max. actuating speed (m/s)	0.5	1.0	1.0	1.5
Min. actuating force (N) or torque (Nm) / for positive opening	14 / 40	8 / 30	8 / 30	0.15 / 0.30
Switch code A0 snap action 1NO+1NC	 	 	 	
Switch code C0 slow action break before make 1NO+1NC	 	 	 	
Switch code D0 slow action make before break 1NO+1NC	 	 	 	
Switch code B2 slow action simultaneous 2NC	 	 	 	
Switch code B1 slow action simultaneous 2NO	 	 	 	
Switch code A2 snap action 2NC	 	 	 	
Switch code C4 slow action break before make 1NO+2NC	 	 	 	
Switch code C6 slow action break before make 2NO+1NC	 	 	 	
Switch code B8 slow action simultaneous 3NC	 	 	 	
Switch code B9 slow action simultaneous 3NO	 	 	 	

	Lever with Ø50 mm rubber roller	Adjustable lever with Ø22 mm roller	Adjustable lever with Ø50 mm rubber roller	Nylon actuator with stainless steel spring
Code of technopolymer head	244 For series C03	251: nylon roller 252: stainless steel roller 253: steel bearing For series C03	254 For series C03	261 For series C03
Max. actuating speed (m/s)	1.5	1.5	1.5	1.5
Min. actuating force (N) or torque (Nm) / for positive opening	0.15 / 0.30	0.15 / 0.30	0.15 / 0.30	0.15 / -
Switch code A0 snap action 1NO+1NC				
Switch code C0 slow action break before make 1NO+1NC				
Switch code D0 slow action make before break 1NO+1NC				
Switch code B2 slow action simultaneous 2NC				
Switch code B1 slow action simultaneous 2NO				
Switch code A2 snap action 2NC				
Switch code C4 slow action break before make 1NO+2NC				
Switch code C6 slow action break before make 2NO+1NC				
Switch code B8 slow action simultaneous 3NC				
Switch code B9 slow action simultaneous 3NO				

	Stainless steel spring actuator	Adjustable rod	Adjustable Ø6 mm rod	Stainless steel spring multidirectional actuator
Code of technopolymer head	262 For series C03	271: Ø3 mm stainless steel rod 273: Ø3 mm fiber-glass rod 275: 3x3 mm metal rod For series C03	272: nylon rod 274: fiber-glass rod For series C03	291 For series C03
Max. actuating speed (m/s)	1.5	1.5	1.5	1.0
Min. actuating force (N) or torque (Nm) / for positive opening	0.15 / -	0.15 / 0.30	0.15 / 0.30	0.18 / -
Switch code A0 snap action 1NO+1NC				
Switch code C0 slow action break before make 1NO+1NC				
Switch code D0 slow action make before break 1NO+1NC				
Switch code B2 slow action simultaneous 2NC				
Switch code B1 slow action simultaneous 2NO				
Switch code A2 snap action 2NC				
Switch code C4 slow action break before make 1NO+2NC				
Switch code C6 slow action break before make 2NO+1NC				
Switch code B8 slow action simultaneous 3NC				
Switch code B9 slow action simultaneous 3NO				

Multidirectional nylon actuator with stainless steel spring

Stainless steel spring multidirectional actuator



292

293

Code of technopolymer head

For series C03

For series C03

Max. actuating speed (m/s)

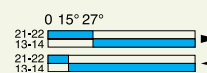
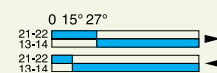
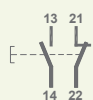
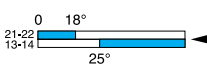
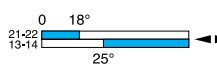
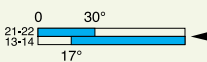
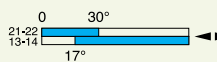
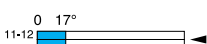
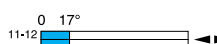
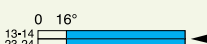
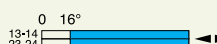
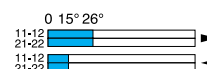
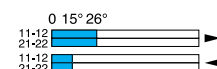
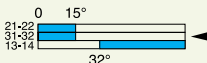
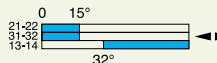
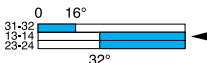
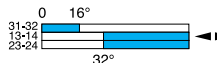
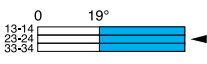
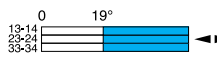
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1.0

Min. actuating force (N) or torque (Nm) / for positive opening

0.18 / -

0.18 / -

Switch code A0
snap action
1NO+1NCSwitch code C0
slow action
break before make
1NO+1NCSwitch code D0
slow action
make before break
1NO+1NCSwitch code B2
slow action
simultaneous
2NCSwitch code B1
slow action
simultaneous
2NOSwitch code A2
snap action
2NCSwitch code C4
slow action
break before make
1NO+2NCSwitch code C6
slow action
break before make
2NO+1NCSwitch code B8
slow action
simultaneous
3NCSwitch code B9
slow action
simultaneous
3NO

HEADS FOR LIMIT SWITCHES STANDARD INO IN ALUMINUM WITH 40 mm CASING (SERIES C04) AND 60 mm CASING (SERIES C07)

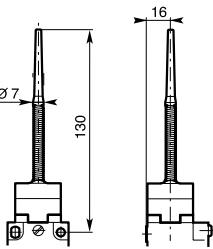
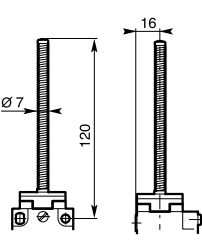
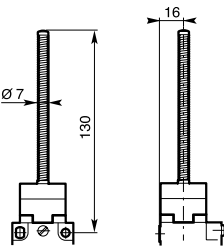
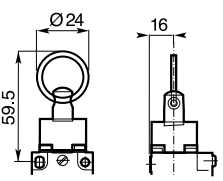
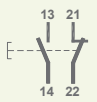
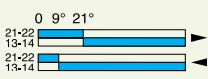
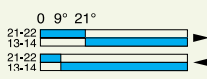
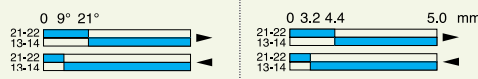
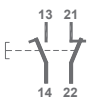
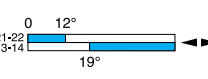
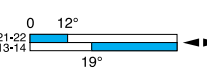
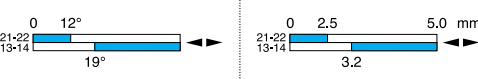
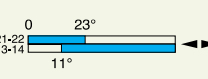
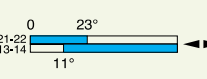
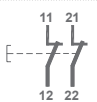
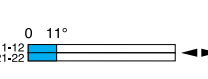
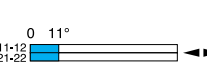
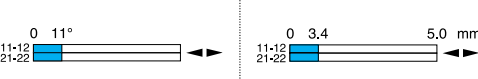
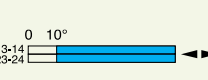
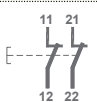
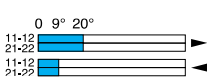
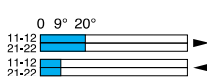
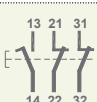
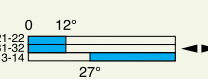
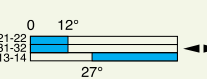
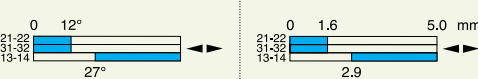
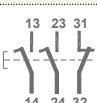
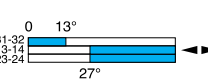
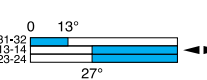
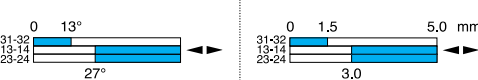
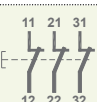
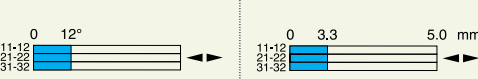
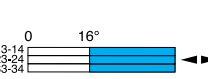
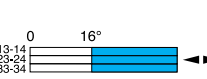
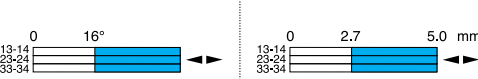
		Plain plunger	Stainless steel plunger	Stainless steel plunger with ball	Stainless steel plunger with Ø12 mm roller
Code of technopolymer head		311 For series C04, C07	/	/	/
Code of metal head		/	/	/	413 For series C04, C07
Code of aluminum head		/	511 For series C04, C07	512 For series C04, C07	513 For series C04, C07
Max. actuating speed (m/s)		0.5	0.5	0.5	0.5
Min. actuating force (N) or torque (Nm) / for positive opening		30 / 45 ➡	30 / 45 ➡	30 / 45 ➡	22 / 40 ➡
Switch code A0 snap action 1NO+1NC					
Switch code C0 slow action break before make 1NO+1NC					
Switch code D0 slow action make before break 1NO+1NC					
Switch code B2 slow action simultaneous 2NC					
Switch code B1 slow action simultaneous 2NO					
Switch code A2 snap action 2NC					
Switch code C4 slow action break before make 1NO+2NC					
Switch code C6 slow action break before make 2NO+1NC					
Switch code B8 slow action simultaneous 3NC					
Switch code B9 slow action simultaneous 3NO					

	Plunger with dust protective cap	Plunger with Ø12 mm steel roller and dust protective cap	Stainless steel lateral plunger	Stainless steel lateral plunger with Ø12 mm vertical roller
Code of technopolymer head	/	/	/	/
Code of metal head	414 For series C04, C07	419 For series C04, C07	/	/
Code of aluminum head	/	/	521 For series C04, C07	522 For series C04, C07
Max. actuating speed (m/s)	0.5	0.5	0.5	0.5
Min. actuating force (N) or torque (Nm) / for positive opening	30 / 45 ➡	22 / 40 ➡	30 / 50 ➡	30 / 50 ➡
Switch code A0 snap action 1NO+1NC				
Switch code C0 slow action break before make 1NO+1NC				
Switch code D0 slow action make before break 1NO+1NC				
Switch code B2 slow action simultaneous 2NC				
Switch code B1 slow action simultaneous 2NO				
Switch code A2 snap action 2NC				
Switch code C4 slow action break before make 1NO+2NC				
Switch code C6 slow action break before make 2NO+1NC				
Switch code B8 slow action simultaneous 3NC				
Switch code B9 slow action simultaneous 3NO				

		Stainless steel lateral plunger with Ø12 mm horizontal roller	One way lever	Ø22 mm roller lever	Ø50 mm rubber roller lever
Code of technopolymer head		/	/	/	/
Code of metal head		/	/	441: nylon roller 442: stainless steel roller 443: steel bearing For series C04, C07	444 For series C04, C07
Code of aluminum head		523 For series C04, C07	531: Ø22 mm nylon roller 532: Ø22 mm stainless steel roller 533: Ø22 mm steel bearing For series C04, C07	541: nylon roller 542: stainless steel roller 543: steel bearing For series C04, C07	544 For series C04, C07
Max. actuating speed (m/s)		0.5	1.5	1.5	1.5
Min. actuating force (N) or torque (Nm) / for positive opening		30 / 50 ➡	12 / 40 ➡	0.15 / 0.30 ➡	0.15 / 0.30 ➡
Switch code A0 snap action 1NO+1NC					
Switch code C0 slow action break before make 1NO+1NC					
Switch code D0 slow action make before break 1NO+1NC					
Switch code B2 slow action simultaneous 2NC					
Switch code B1 slow action simultaneous 2NO					
Switch code A2 snap action 2NC					
Switch code C4 slow action break before make 1NO+2NC					
Switch code C6 slow action break before make 2NO+1NC					
Switch code B8 slow action simultaneous 3NC					
Switch code B9 slow action simultaneous 3NO					

		Adjustable Ø22 mm roller lever	Adjustable Ø50 mm rubber roller lever	Nylon actuator with stainless steel spring	Stainless steel spring actuator
Code of technopolymer head		/	/	/	/
Code of metal head		451: nylon roller 452: stainless steel roller 453: steel bearing For series C04, C07	454 For series C04, C07	461 For series C04, C07	462 For series C04, C07
Code of aluminum head		551: nylon roller 552: stainless steel roller 553: steel bearing For series C04, C07	554 For series C04, C07	561 For series C04, C07	562 For series C04, C07
Max. actuating speed (m/s)		1.5	1.5	1.5	1.5
Min. actuating force (N) or torque (Nm) / for positive opening		0.15 / 0.30	0.15 / 0.30	0.15 / -	0.15 / -
Switch code A0 snap action 1NO+1NC					
Switch code C0 slow action break before make 1NO+1NC					
Switch code D0 slow action make before break 1NO+1NC					
Switch code B2 slow action simultaneous 2NC					
Switch code B1 slow action simultaneous 2NO					
Switch code A2 snap action 2NC					
Switch code C4 slow action break before make 1NO+2NC					
Switch code C6 slow action break before make 2NO+1NC					
Switch code B8 slow action simultaneous 3NC					
Switch code B9 slow action simultaneous 3NO					

	Adjustable rod	Adjustable Ø6 mm rod	Stainless steel spring multidirectional actuator	Multidirectional nylon actuator with stainless steel spring
Code of technopolymer head	/	/	/	392 For series C04, C07
Code of metal head	471: Ø3 mm stainless steel rod 473: Ø3 mm fiber-glass rod 475: 3x3 mm metal rod For series C04, C07	472: nylon rod 474: fiber-glass rod For series C04, C07	/	/
Code of aluminum head	571: Ø3 mm stainless steel rod 573: Ø3 mm fiber-glass rod 575: 3x3 mm metal rod For series C04, C07	572: nylon rod 574: fiber-glass rod For series C04, C07	591 For series C04, C07	/
Max. actuating speed (m/s)	1.5	1.5	1.0	1.0
Min. actuating force (N) or torque (Nm) / for positive opening	0.15 / 0.30 ➡	0.15 / 0.30 ➡	0.18 / -	0.18 / -
Switch code A0 snap action 1NO+1NC				
Switch code C0 slow action break before make 1NO+1NC				
Switch code D0 slow action make before break 1NO+1NC				
Switch code B2 slow action simultaneous 2NC				
Switch code B1 slow action simultaneous 2NO				
Switch code A2 snap action 2NC				
Switch code C4 slow action break before make 1NO+2NC				
Switch code C6 slow action break before make 2NO+1NC				
Switch code B8 slow action simultaneous 3NC				
Switch code B9 slow action simultaneous 3NO				

	Multidirectional nylon actuator with stainless steel spring	Stainless steel spring multidirectional actuator	Stainless steel spring multidirectional actuator	Pull action with ring
				
Code of technopolymer head	/	393 For series C04, C07	/	/
Code of metal head	/	/	/	/
Code of aluminum head	592 For series C04, C07	/	593 For series C04, C07	599 For series C04, C07
Max. actuating speed (m/s)	1.0	1.0	1.0	0.5
Min. actuating force (N) or torque (Nm) / for positive opening	0.18 / -	0.18 / -	0.18 / -	25 / -
Switch code A0 snap action 1NO+1NC				
Switch code C0 slow action break before make 1NO+1NC				
Switch code D0 slow action make before break 1NO+1NC				
Switch code B2 slow action simultaneous 2NC				
Switch code B1 slow action simultaneous 2NO				
Switch code A2 snap action 2NC				/
Switch code C4 slow action break before make 1NO+2NC				
Switch code C6 slow action break before make 2NO+1NC				
Switch code B8 slow action simultaneous 3NC				
Switch code B9 slow action simultaneous 3NO				

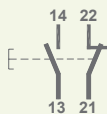
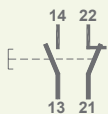
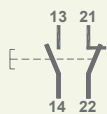
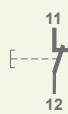
CERTIFICATIONS - DOUBLE LEVER INO

Conformity to Community Directives	2014/35/UE Low Voltage Directive
	2006/42/CE Machinery Directive
Conformity to CE Standards	EN 60204-1 Safety of machinery - Electrical equipment of machines
	EN 60947-1 Low-voltage switchgear and controlgear
	EN 60947-5-1 Low-voltage switchgear and controlgear - Control circuit devices and switching elements - Electromechanical control circuit devices
	EN 60529 Degrees of protection provided by enclosures
Markings and homologations	CE ENEC

GENERAL TECHNICAL SPECIFICATION - DOUBLE LEVER INO

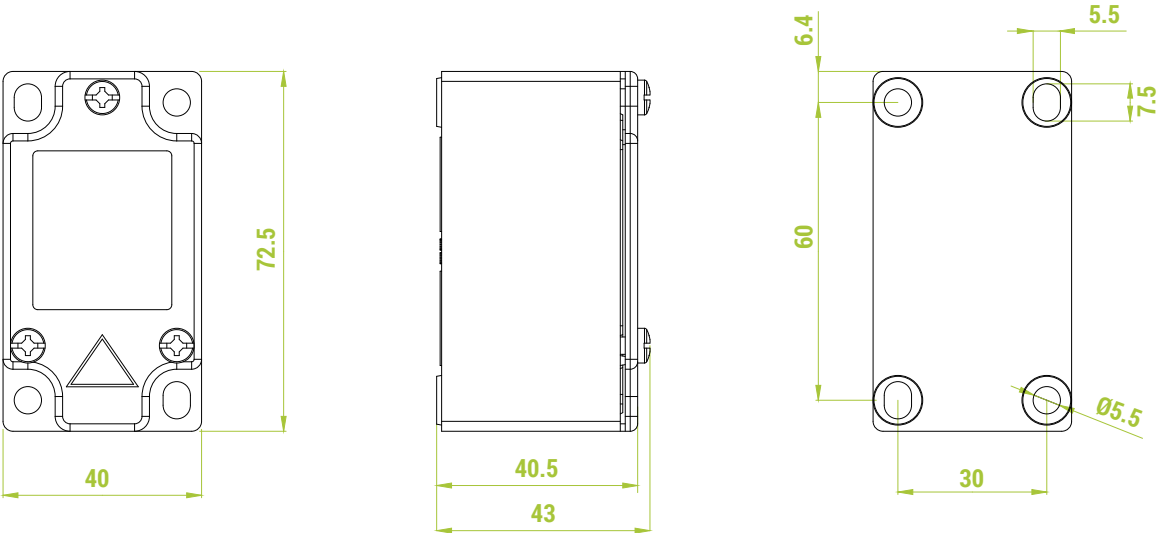
Ambient temperature	Storage -40°C/+70°C
	Operational -25°C/+70°C
IP protection degree	Series in technopolymer IP65 max. with specific cable clamp M20
	Series in aluminum IP66 max. with specific cable clamp M20
Insulation category	Series in technopolymer Class II
	Series in aluminum Class I
Operation frequency	3600 operations/hour max
Cable entry	Cable clamp M20
Operating position	Any position
Casing	Series PF25: width 40 mm in aluminum with 1 cable entry
	Series PF33: width 64 mm in technopolymer with 3 cable entries

TECHNICAL SPECIFICATIONS OF THE SWITCHES - DOUBLE LEVER INO

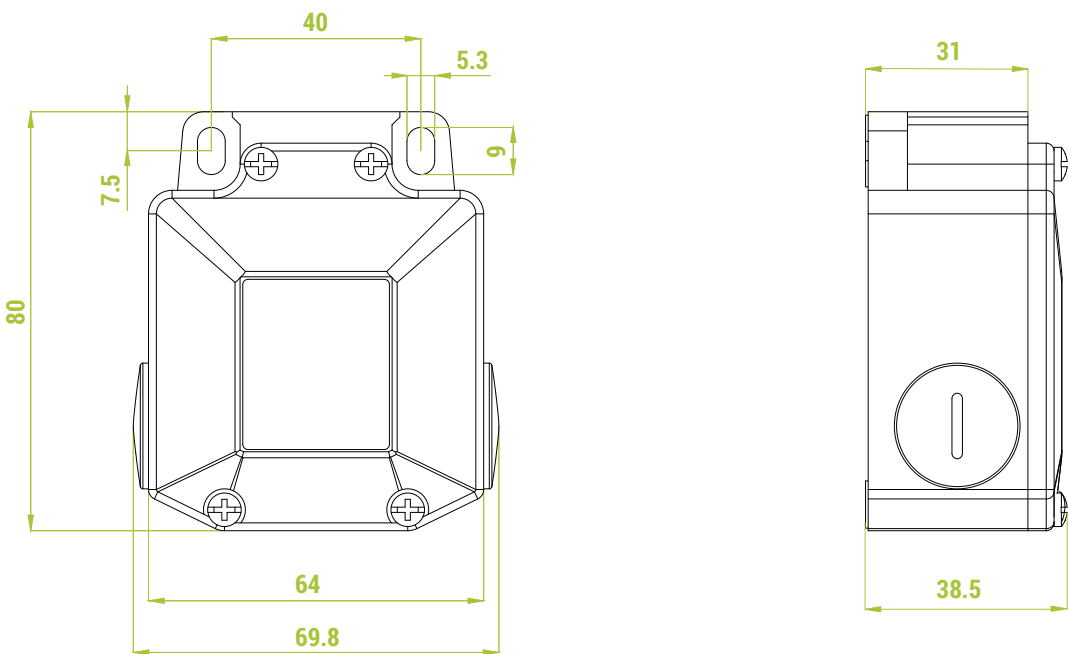
Code	PRSL0025XX	PRSL0031XX	PRSL0036XX	PRSL0037XX
Utilisation category	AC 15			
Rated operational current	3 A			
Rated operational voltage	250 Vac			
Rated thermal current	10 A			
Rated insulation voltage	300 Vac			
Mechanical life	1x10 ⁶ operations			
Connections	Screw-type terminals			
Wires	1x2.5 mm ² , 2x1.5 mm ²		1x2.5 mm ² , 2x1.5 mm ² (UL - (c)UL: use 60°C or 75°C copper (CU) conductor and wire 16-18 AWG)	
Tightening torque	0.8 Nm			
Switch type	Double break, snap action	Double break, slow action	Double break, snap action	Double break, slow action
Contacts	1NO+1NC	1NO+1NC	1NO+1NC (All NC contacts are of the positive opening operation type ➞)	1NC (All NC contacts are of the positive opening operation type ➞)
Scheme				
Markings and homologations	CE ENEC		CE cULus ENEC	

OVERALL DIMENSIONS (mm) - DOUBLE LEVER INO

Series PF25 with 40 mm casing



Series PF33 with 64 mm casing

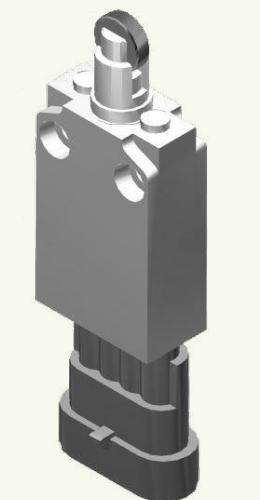


CODES FOR LIMIT SWITCHES - DOUBLE LEVER INO

		Double lever		Limit switch code
1 switch PRSL0025XX snap action 1NO+1NC				Series PF25 Code PF25768100
1 switch PRSL0031XX slow action 1NO+1NC				Series PF25 Code PF25768300
1 switch PRSL0036XX snap action 1NO+1NC				Series PF33 Code PF33787100
2 switches PRSL0036XX snap action 1NO+1NC				Series PF33 Code PF33787200
2 switches PRSL0036XX snap action 1NO+1NC				Series PF33 Code PF33787400
2 switches PRSL0037XX slow action 1NC				Series PF33 Code PF33787700

POSSIBLE ASSEMBLIES - WIRED INO

Series C21 30 mm - metal - with connector AMP



Series C22 35 mm - technopolymer - with connector M12



CERTIFICATIONS - WIRED INO

Conformity to CE Standards	EN 60947-5-1 Low-voltage switchgear and controlgear - Control circuit devices and switching elements - Electromechanical control circuit devices
	EN 60529 Degrees of protection provided by enclosures
	IEC 60536 Classification of Electrical and Electronic Equipment with Regard to Protection Against Electric Shock
Markings and homologations	CE (pending)

GENERAL TECHNICAL SPECIFICATIONS - WIRED INO

Ambient temperature	Storage -40°C/+70°C
	Operational -25°C/+70°C
IP protection degree	IP67
Insulation category	Technopolymer series Class II
	Metal series Class I
Switching frequency	3600 cycles/hour
Mechanical life	10 x 10 ⁶ operations
Casing	Series C20: width 30 mm in technopolymer
	Series C21: width 30 mm in metal
	Series C22: width 35 mm in technopolymer
	Series C23: width 35 mm in metal
Wires	Series C20 and C22: 4 x 0.75 mm ² PVC
	Series C21 and C23: 5 x 0.75 mm ² PVC
Options	Cable length from 1 m (standard) to 12 m
	Halogen free PUR cable from 1 m to 12 m
	Dynamic PUR cable from 1 m to 12 m
	Connector M12
	Connector AMP

* not available on all versions.

ELECTRICAL SPECIFICATIONS - WIRED INO

Series	C20, C22 with PCV cable	C21, C23 with PCV cable	C20, C22 with PUR cable	C21, C23 with PUR cable	C20, C21, C22, C23 with connector M12	C20, C21, C22, C23 with connector AMP
Cable specifications	Cable 4xAWG18 PVC style 2517	Cable 5xAWG18 PVC style 2517	Cable 4xAWG18 PUR style 20668	Cable 5xAWG18 PUR style 20668	-	-
Min. bend radius	49 mm	57 mm	49 mm	57 mm	-	-
Rated insulation voltage	400 V		300 V		250 V	
Rated voltage impulse	4 kV				2,5 kV	
Thermal current	10 A				4 A	10 A
Short-circuit protection	10 A 500 V type gG				4 A 500 V type gG	10 A 500 V type gG
Rated operational current	10 A / 24 V / AC15				4 A / 24 V / AC15	10 A / 24 V / AC15
	6 A / 120 V / AC15				4 A / 120 V / AC15	6 A / 120 V / AC15
	3 A / 240 V / AC15					
	2.8 A / 24 V / DC13					
	0.55 A / 125V / DC13					
	0.27A / 250V / DC13					

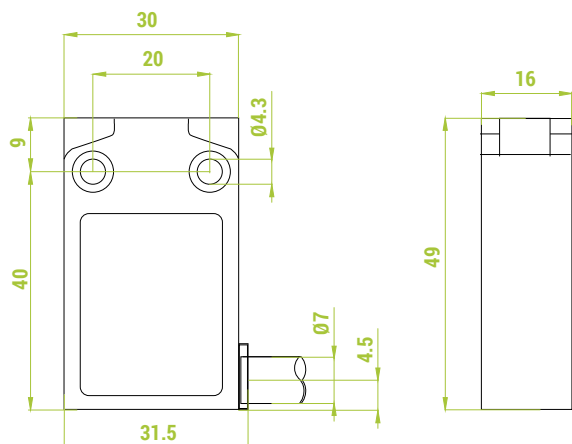
SWITCHES - WIRED INO

Switch type	Snap action	Slow action Break before make
Contacts	1NO+1NC (All NC contacts are of the positive opening operation type $\ominus$)*	1NO+1NC (All NC contacts are of the positive opening operation type $\ominus$)*
Scheme		

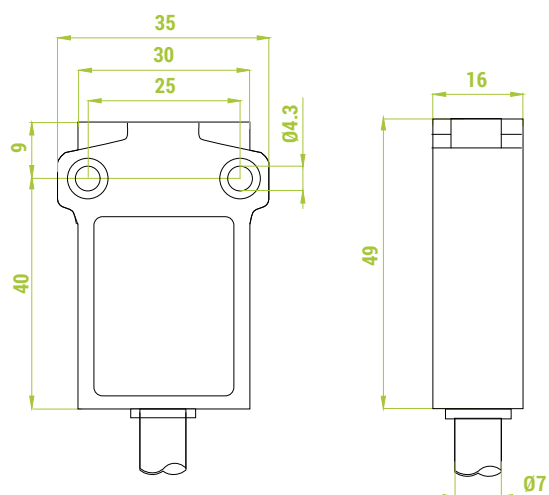
* Nont available for all operating heads.

OVERALL DIMENSIONS (mm) - WIRED INO

Series C20 with 30 mm technopolymer casing
Series C21 with 30 mm metal casing



Series C22 with 35 mm technopolymer casing
Series C23 with 35 mm metal casing



HEADS FOR LIMIT SWITCHES WIRED INO

	Plain plunger	Roller plunger	Cross roller plunger	Plunger with dust protective cap
Code of head	611 For series C20, C21, C22, C23	612: metal roller 613: nylon roller For series C20, C21, C22, C23	614: metal roller 615: nylon roller For series C20, C21, C22, C23	616 For series C20, C21, C22, C23
Max. actuating speed (m/s)	0.5	0.1	0.1	0.5
Min. actuating force (N) or torque (Nm) / for positive opening	15 / 30 ➡	10 / 30 ➡	10 / 30 ➡	15 / 30 ➡
Switch code E0 snap action 1NO+1NC				
Switch code F0 slow action break before make 1NO+1NC				

	Roller plunger with dust protective cap	Bevel plunger	Plain plunger with fixing nuts	Roller plunger with fixing nuts
Code of head	617 For series C21, C23	618 For series C21, C23	621 For series C20, C21, C22, C23	622: metal roller 623: nylon roller For series C20, C21, C22, C23
Max. actuating speed (m/s)	0.1	0.5	0.5	0.1
Min. actuating force (N) or torque (Nm) / for positive opening	10 / 30 ➡	10 / 30 ➡	15 / 30 ➡	10 / 30 ➡
Switch code E0 snap action 1NO+1NC				
Switch code F0 slow action break before make 1NO+1NC				

	Cross roller plunger with fixing nuts	Nylon roller lever	Nylon roller lever	Adjustable nylon roller lever
Code of head	624: metal roller 625: nylon roller	631	632	638
	For series C20, C21, C22, C23	For series C20, C21, C22, C23	For series C20, C22	For series C20, C21, C22, C23
Max. actuating speed (m/s)	0.1	1.0	1.0	1.0
Min. actuating force (N) or torque (Nm) / for positive opening	10 / 30 →	7 / 24 →	7 / 24 →	7 / 24 →
Switch code E0 snap action 1NO+1NC	 0 2.4 3.8 7.5 8.7 mm 21-22 13-14 21-22 13-14	 0 5.9 8.5 14.0 19.0 mm 21-22 13-14 21-22 13-14	 0 5.9 8.5 14.0 19.0 mm 21-22 13-14 21-22 13-14	 0 8.9 12.9 21.0 29.0 mm 21-22 13-14 21-22 13-14
Switch code F0 slow action break before make 1NO+1NC	 0 3.3 5.9 8.7 mm 21-22 13-14 5.7	 0 6.9 12.4 19.0 mm 21-22 13-14 11.7	 0 6.9 12.4 19.0 mm 21-22 13-14 11.7	 0 9.6 18.5 29.0 mm 21-22 13-14 17.8

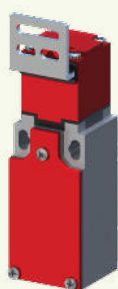
	Ø14 mm roller lever	Ø18 mm nylon roller lever	Ø18 mm metal roller lever	Adjustable lever with Ø18 mm roller
Code of head	641: nylon roller 642: metal roller 643: ball bearing	645	646	651
	For series C20, C21, C22, C23	For series C20, C21, C22, C23	For series C21, C23	For series C20, C21, C22, C23
Max. actuating speed (m/s)	1.5	1.5	1.5	1.5
Min. actuating force (N) or torque (Nm) / for positive opening	0.08 / 0.28 →	0.08 / 0.28 →	0.08 / 0.28 →	0.08 / 0.28 →
Switch code E0 snap action 1NO+1NC	 0 21° 32° 65° 74° 21-22 13-14 21-22 13-14	 0 21° 32° 65° 74° 21-22 13-14 21-22 13-14	 0 21° 32° 65° 74° 21-22 13-14 21-22 13-14	 0 21° 32° 65° 74° 21-22 13-14 21-22 13-14
Switch code F0 slow action break before make 1NO+1NC	 0 28° 50° 74° 21-22 13-14 48°	 0 28° 50° 74° 21-22 13-14 48°	 0 28° 50° 74° 21-22 13-14 48°	 0 28° 50° 74° 21-22 13-14 48°

	Adjustable toothed lever (step 2 mm) with Ø18 mm nylon roller	Adjustable lever with Ø18 mm metal roller	Nylon actuator with stainless steel spring	Adjustable rod
Code of head	65100 For series C20, C21, C22, C23	653 For series C21, C23	661 For series C20, C21, C22, C23	671: Ø3 mm stainless steel rod 672: Ø3 mm fiber-glass rod 675: 3x3 mm metal rod For series C20, C21, C22, C23
Max. actuating speed (m/s)	1.5	1.5	1.5	1.5
Min. actuating force (N) or torque (Nm) / for positive opening	0.08 / 0.28 ➡	0.08 / 0.28 ➡	0.08 / -	0.08 / 0.28 ➡
Switch code E0 snap action 1NO+1NC				
Switch code F0 slow action break before make 1NO+1NC				

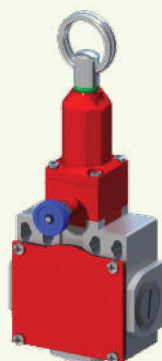
	Adjustable Ø6 mm rod	Multidirectional nylon actuator with stainless steel spring	Multidirectional actuator with stainless steel spring
Code of head	673: nylon rod 674: fiber-glass rod For series C20, C21, C22, C23	692 For series C20, C21, C22, C23	693 For series C20, C21, C22, C23
Max. actuating speed (m/s)	1.5	0.1	1.0
Min. actuating force (N) or torque (Nm) / for positive opening	0.08 / 0.28 ➡	10 / 30 ➡	0.10 / -
Switch code E0 snap action 1NO+1NC			
Switch code F0 slow action break before make 1NO+1NC		/	/

POSSIBLE CONFIGURATIONS - SAFETY INO

Series C51 - with separate actuator



Series C55 - with rope



Series C01 - with reset button



CERTIFICATIONS - SAFETY INO

Conformity to CE Standards	EN 60947-5-1 Low-voltage switchgear and controlgear - Control circuit devices and switching elements - Electromechanical control circuit devices
	EN 60947-1 Low-voltage switchgear and controlgear
	EN 60529 Degrees of protection provided by enclosures
	IEC 61140 Protection against electric shock - Common aspects for installation and equipment
	EN ISO 14119 Safety of machinery - Interlocking devices associated with guards - Principles for design and selection (Available only for separate actuator and hinge mount limit switches)
Markings and homologations	EN 60947-5-5 Low-voltage switchgear and controlgear - Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function (Available only for limit switches with rope and reset)
	CE (UL) (pending)

GENERAL TECHNICAL SPECIFICATIONS - SAFETY INO

Ambient temperature	Storage -30°C/+80°C
	Operational -25°C/+70°C
IP protection degree	Technopolymer series IP65
	Metal and aluminum series IP66
Insulation category	Technopolymer series Class II
	Metal and aluminum series Class I
Mechanical life	1 x 10 ⁶ operations
	With wire head 500,000 operations
Operating position	Any position
Involucro	Series C50: width 30 mm in technopolymer with 1 cable entry
	Series C51: width 30 mm in metal with 1 cable entry
	Series C52: width 40 mm in technopolymer with 1 cable entry
	Series C53: width 40 mm in aluminum with 1 cable entry
	Series C54: width 50 mm in technopolymer with 2 cable entries
	Series C55: width 50 mm in metal with 3 cable entries
	Series C56: width 50 mm in technopolymer with 3 cable entries
	Series C57: width 60 mm in aluminum with 3 cable entries
	Series C01: with manual reset button, width 30 mm in technopolymer with 1 cable entry
	Series C02: with manual reset button, width 30 mm in metal with 1 cable entry
Cable entry	Series C05: with manual reset button, width 50 mm in technopolymer with 2 cable entries
	Series C06: with manual reset button, width 50 mm in metal with 3 cable entries
	PG 13.5
	1/2" NPT
	PG 11*
	M16 x 1.5*
	M20 x 1.5

* Not available on all versions.

ELECTRICAL SPECIFICATION - SAFETY INO

Utilisation category	AC15 - DC13
Rated operational current	10 A / 24 Vac / 50/60 Hz / AC15
	6 A / 120 Vac / 50/60 Hz / AC15
	4 A / 400 Vac / 50/60 Hz / AC15 - 1.8 A (for three-pole switches for Safety Ino with 40 mm and 60 mm casing)
	6 A / 24 Vdc / DC13 - 2.8 A (for three-pole switches for Safety Ino with 40 mm and 60 mm casing)
	0.55 A / 125 Vdc / DC13
Rated insulation voltage	500 V (pollution degree 3), A600 Q600
	400 V, A300 Q300 (for three-pole switches for Safety Ino with 30 mm and 50 mm casing)
Rated voltage impulse	6 kV
Conventional free air thermal current $\theta < 40^{\circ}\text{C}$	10 A
Short-circuit protection $U_e < 500 \text{ Vac}$ - fuse type gG (gl)	10 A
Switching frequency	3600 cycles/hour
Load factor	0.5
Contact resistance	25 m Ω
Connections	Screw with cable clamp M3.5 (+,-) pozidriv 2 (M3 for three-pole contacts)
Terminal for protective conductor	Screw with cable clamp M3.5 (+,-) pozidriv 2 (only for Safety Ino with metal or aluminum casing)
Wires	1 ϕ 2 x 0.75 ... 2.5 mm ² (two-pole contacts), 1 ϕ 2 x 0.34 ... 1.5 (three-pole contacts)

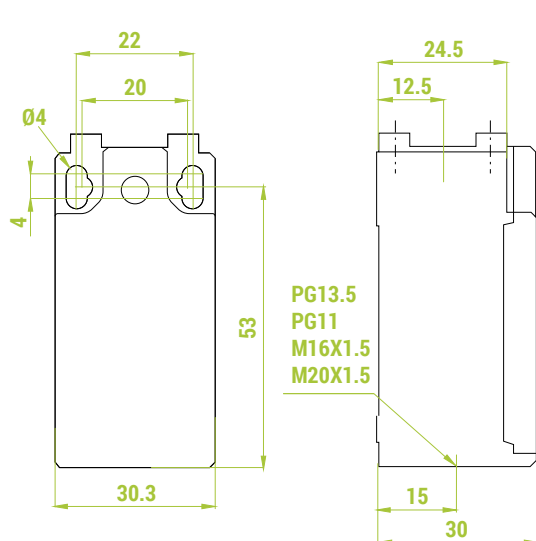
SWITCHES - SAFETY INO

Switch type	Snap action	Snap action	Slow action Simultaneous	Slow action Break before make
Contacts	2NC (All NC contacts are of the positive opening operation type $\ominus$)	1NO+1NC (All NC contacts are of the positive opening operation type $\ominus$)	2 NC (All NC contacts are of the positive opening operation type $\ominus$)	1NO+1NC (All NC contacts are of the positive opening operation type $\ominus$)
Scheme				

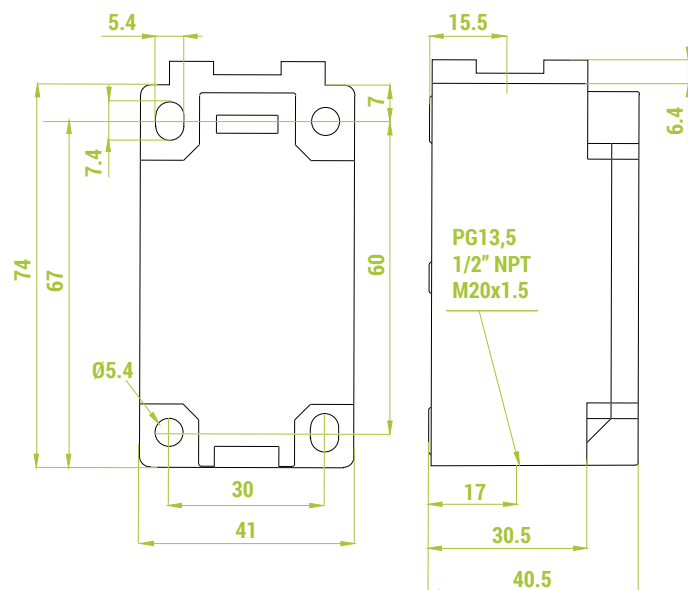
Switch type	Slow action Make before break	Slow action Break before make	Slow action Break before make	Slow action Simultaneous
Contacts	1NO+1NC (All NC contacts are of the positive opening operation type $\ominus$)	1NO+2NC (All NC contacts are of the positive opening operation type $\ominus$)	2NO+1NC (All NC contacts are of the positive opening operation type $\ominus$)	3 NC (All NC contacts are of the positive opening operation type $\ominus$)
Scheme				

OVERALL DIMENSIONS (mm) - SAFETY INO IN TECHNOPOLYMER

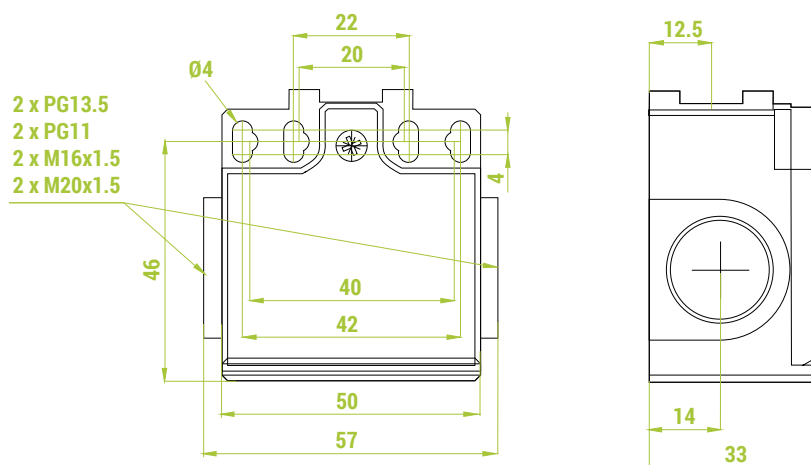
Series C50 with 30 mm casing
Series C01 with manual reset button and 30 mm casing



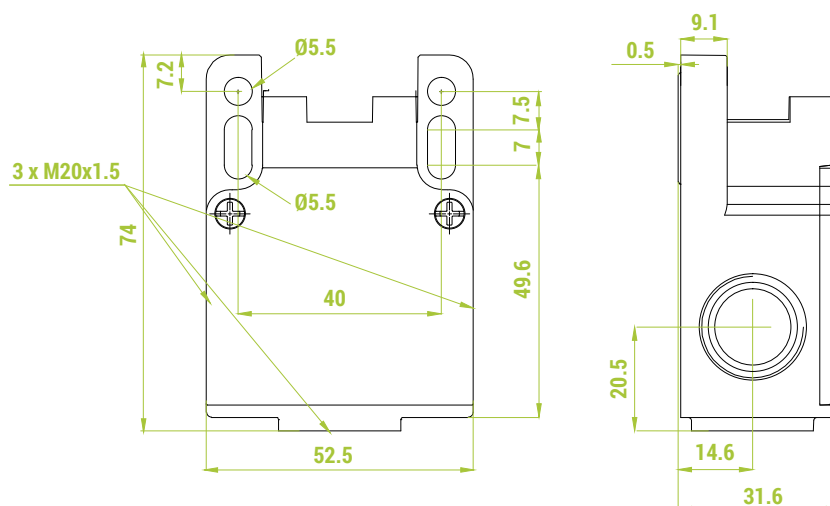
Series C52 with 40 mm casing



Series C54 with 50 mm casing and two cable entries
Series C05 with manual reset button and 50 mm casing



Series C56 with 50 mm casing and three cable entries



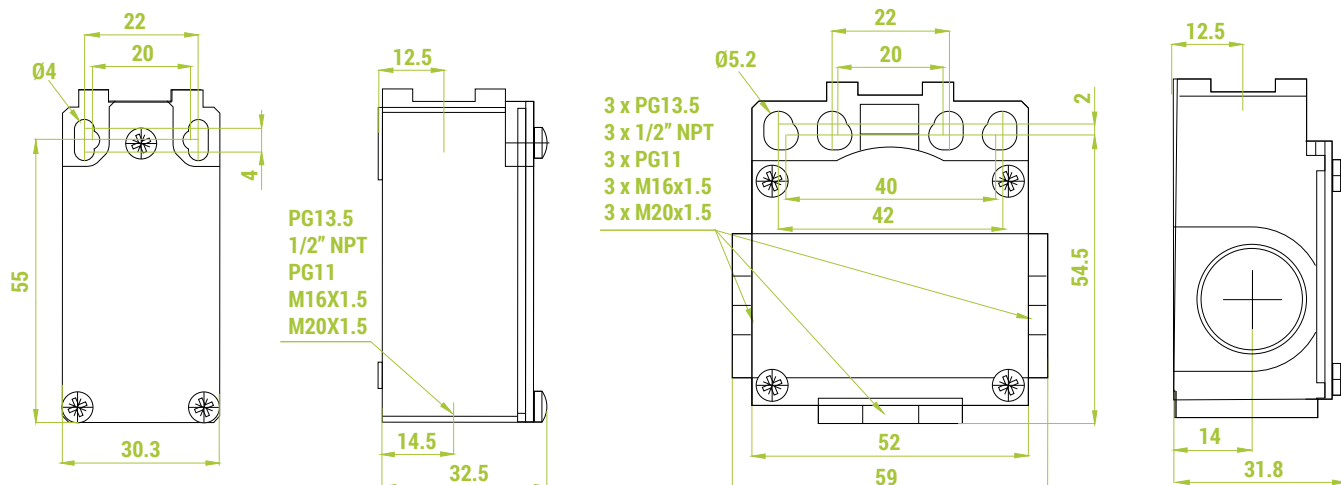
OVERALL DIMENSIONS (mm) - SAFETY INO IN METAL

Series C51 with 30 mm casing

Series C02 with manual reset button and 30 mm casing

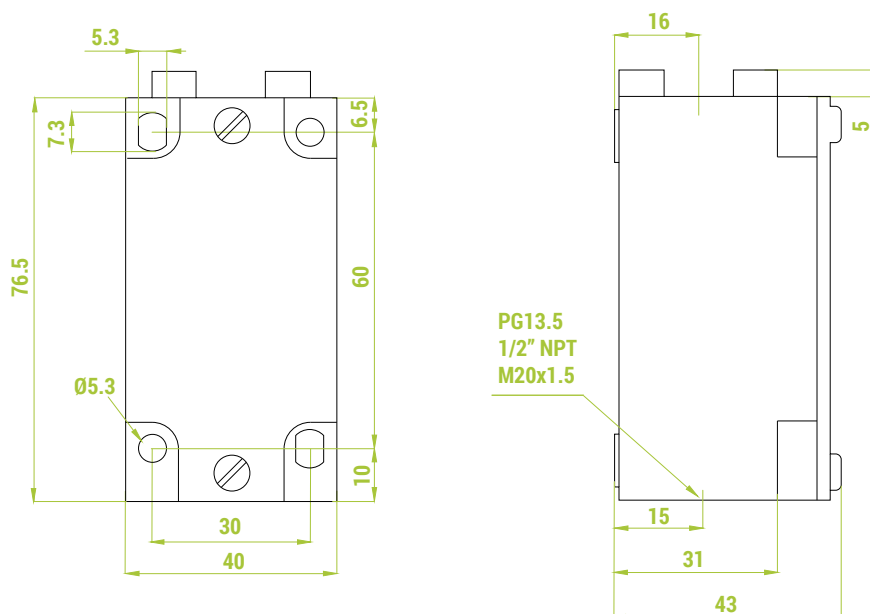
Series C55 with 50 mm casing

Series C06 with manual reset button and 50 mm casing

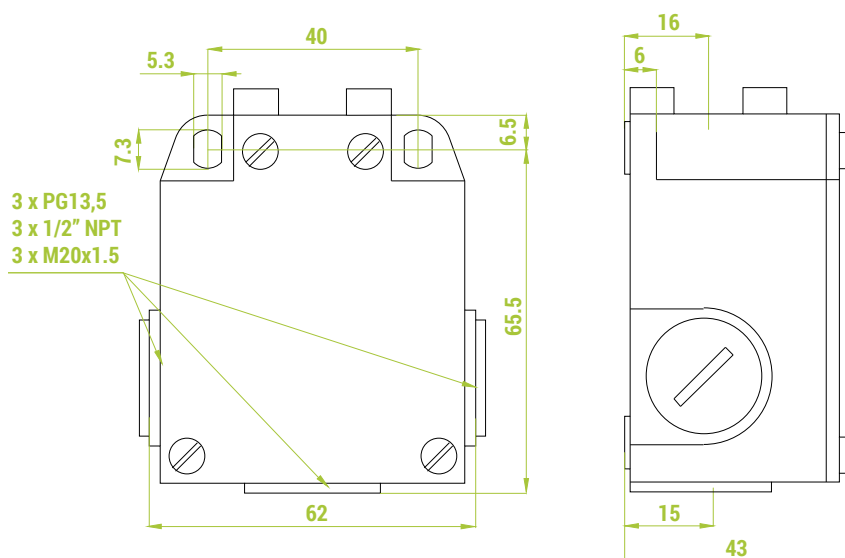


OVERALL DIMENSIONS (mm) - SAFETY INO IN ALUMINUM

Series C53 with 40 mm casing



Series C57 with 60 mm casing



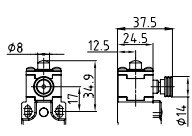
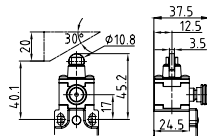
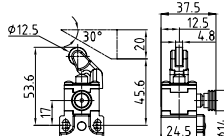
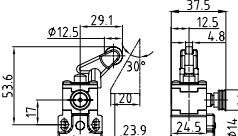
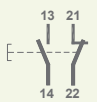
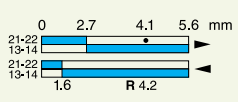
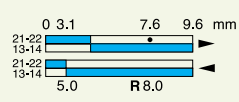
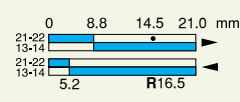
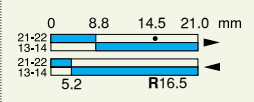
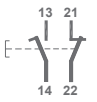
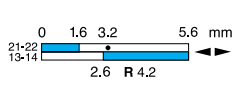
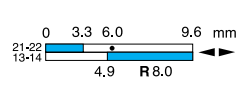
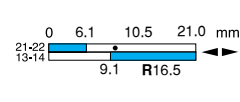
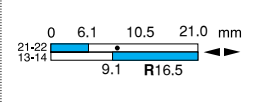
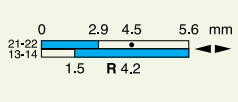
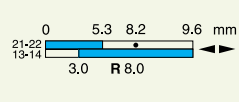
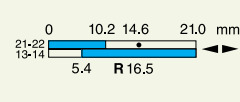
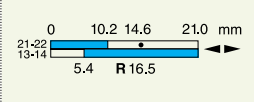
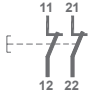
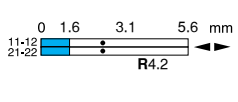
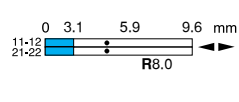
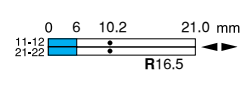
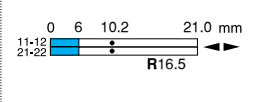
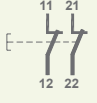
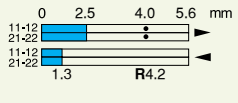
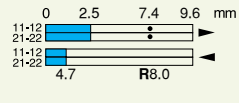
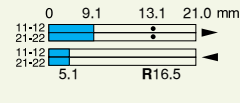
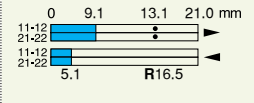
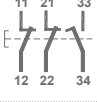
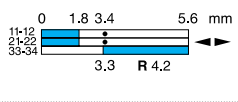
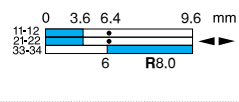
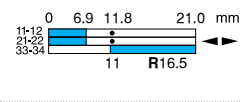
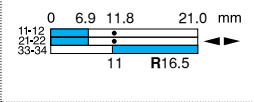
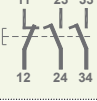
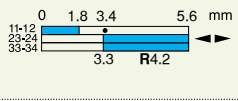
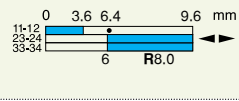
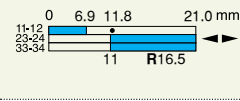
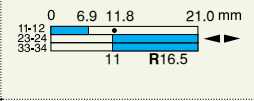
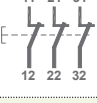
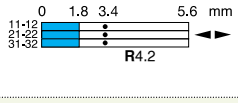
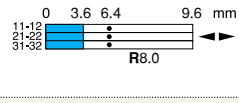
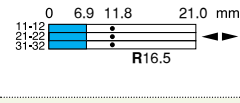
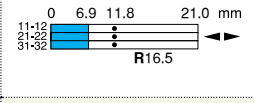
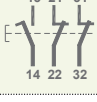
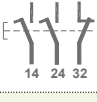
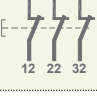
	Adjustable head 90° with separate actuator	Adjustable head 90° with separate actuator	Adjustable head 90° with separate actuator	Adjustable head 90° with separate actuator
Code of head	710 For series C50, C51, C54, C55	73000 For series C52	74000 For series C53, C57	75000 For series C56
Min. actuating force (N) or torque (Nm) min. / for positive opening	15 N / 30 N ⊖	15 N / 30 N ⊕	15 N / 30 N ⊖	60 N / 90 N ⊖
Switch code A0 snap action 1NO+1NC				
Switch code C0 slow action break before make 1NO+1NC				
Switch code D0 slow action make before break 1NO+1NC				
Switch code B2 slow action simultaneous 2NC				
Switch code A2 snap action 2NC				
Switch code C3 slow action break before make 1NO+2NC				
Switch code C5 slow action break before make 2NO+1NC				
Switch code B7 slow action simultaneous 3NC				
Switch code C4 slow action break before make 1NO+2NC				
Switch code C6 slow action break before make 2NO+1NC				
Switch code B8 slow action simultaneous 3NC				

Switch code **B8**
slow action
simultaneous
3NC

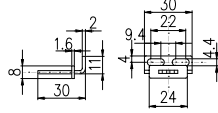
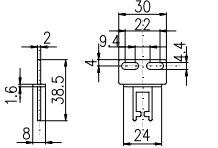
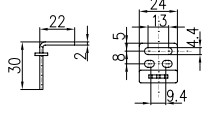
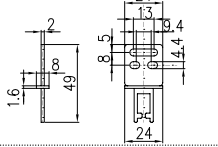
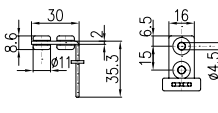
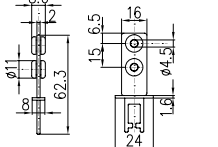
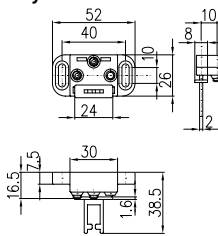
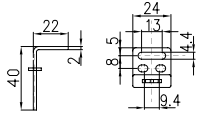
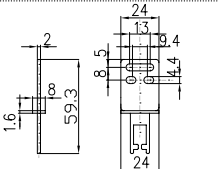
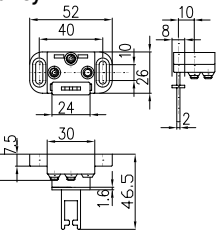
		Pull wire without reset for simple stop	Pull wire without reset for simple stop	Pull wire without reset for simple stop	Pull wire without reset for simple stop
Code of head		79000 For series C51, C55	79100 For series C53, C57	796 For series C51, C55	797 For series C53, C57
Min. actuating force (N) or torque (Nm) / for positive opening		Initial 65 N, final 85 N / 95 N $\ominus$	Initial 150 N, final 215 N / 230 N $\ominus$	Initial 60 N, final 80 N / 90 N $\ominus$	Initial 120 N, final 160 N / 170 N $\ominus$
Switch code A0 snap action 1NO+1NC		/	/	/	/
Switch code C0 slow action break before make 1NO+1NC					
Switch code D0 slow action make before break 1NO+1NC		/	/	/	/
Switch code B2 slow action simultaneous 2NC					
Switch code A2 snap action 2NC		/	/	/	/
Switch code C3 slow action break before make 1NO+2NC			/		/
Switch code C5 slow action break before make 2NO+1NC			/		/
Switch code B7 slow action simultaneous 3NC			/		/
Switch code C4 slow action break before make 1NO+2NC		/		/	
Switch code C6 slow action break before make 2NO+1NC		/		/	
Switch code B8 slow action simultaneous 3NC		/		/	

		Pull wire with reset for emergency stop	Pull wire with reset for emergency stop	Pull wire with reset for emergency stop
Code of head		79200 For series C51, C55	79400 For series C53, C57	79300 For series C51, C55
Min. actuating force (N) or torque (Nm) / for positive opening		Initial 65 N, final 85 N / 95 N ⊖	Initial 150 N, final 215 N / 230 N ⊖	Initial 65 N, final 85 N / 95 N ⊖
Switch code A0 snap action 1NO+1NC		/	/	/
Switch code C0 slow action break before make 1NO+1NC				
Switch code D0 slow action make before break 1NO+1NC		/	/	/
Switch code B2 slow action simultaneous 2NC				
Switch code A2 snap action 2NC		/	/	/
Switch code C3 slow action break before make 1NO+2NC			/	
Switch code C5 slow action break before make 2NO+1NC			/	
Switch code B7 slow action simultaneous 3NC			/	
Switch code C4 slow action break before make 1NO+2NC		/		/
Switch code C6 slow action break before make 2NO+1NC		/		/
Switch code B8 slow action simultaneous 3NC		/		/

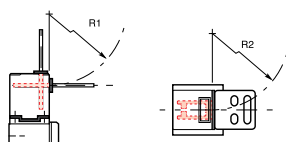


		Steel plunger with reset	Steel plunger with nylon roller with reset	Steel plunger with nylon roller with reset	Steel plunger with nylon roller with reset
					
Code of head		811 For series C01, C02, C05, C06	813 For series C01, C02, C05, C06	831 For series C01, C02, C05, C06	832 For series C01, C02
Min. actuating force (N) or torque (Nm) / for positive opening		15 N / 30 N $\ominus$	12 N / 30 N $\ominus$	7 N / 24 N $\ominus$	7 N / 24 N $\ominus$
Switch code A0 snap action 1NO+1NC					
Switch code C0 slow action break before make 1NO+1NC					
Switch code D0 slow action make before break 1NO+1NC					
Switch code B2 slow action simultaneous 2NC					
Switch code A2 snap action 2NC					
Switch code C3 slow action break before make 1NO+2NC					
Switch code C5 slow action break before make 2NO+1NC					
Switch code B7 slow action simultaneous 3NC					
Switch code C4 slow action break before make 1NO+2NC		/	/	/	/
Switch code C6 slow action break before make 2NO+1NC		/	/	/	/
Switch code B8 slow action simultaneous 3NC		/	/	/	/

OPERATING KEYS FOR LIMIT SWITCHES SAFETY INO WITH SEPARATE ACTUATOR

Dimensions (mm)	Code*	Head	Min. value R1	Min. value R2
Bent key  	H3	For heads 710 and 780	400 mm	400 mm
Flat key  	H4	For heads 710 and 780	400 mm	400 mm
Bent key  	H5	For heads 710 and 780	400 mm	400 mm
Flat key  	H6	For heads 710 and 780	400 mm	400 mm
Shock absorbing bent key  	H7	For heads 710 and 780	250 mm	350 mm
Shock absorbing flat key  	H8	For heads 710 and 780	350 mm	350 mm
Adjustable joint key  	H9	For heads 710 and 780	180 mm	200 mm
Bent key  	J5	For heads 73000, 74000 and 75000	400 mm	400 mm
Flat key  	J6	For heads 73000, 74000 and 75000	400 mm	400 mm
Adjustable joint key  	J9	For heads 73000, 74000 and 75000	180 mm	200 mm

Legend



* Keys are to be ordered separately from the limit switch.

STANDARD INO - REQUEST FORM FOR LIMIT SWITCH

Casing

Series	Material	Width	No. cable entries
C01	Technopolymer	30 mm	1
C02	Metal	30 mm	1
C03	Technopolymer	40 mm	1
C04	Aluminum	40 mm	1
C05	Technopolymer	50 mm	2
C06	Metal	50 mm	3
C07	Aluminum	60 mm	3

Type of cable entry

- 1** = for cable clamp thread PG13.5.
2 = for cable clamp thread 1/2" NPT.
 (On series C01 and C05 the thread results from a plastic adapter).
3 = for cable clamp thread PG11.
 (Available only for series C01, C02, C05, C06).
4 = for cable clamp thread M16 x 1.5.
 (Available only for series C01, C02, C05, C06).
5 = for cable clamp thread M20 x 1.5.

Switches

- A0** = snap action 1NO+1NC.
C0 = slow action - break before make 1NO+1NC.
D0 = slow action - make before break 1NO+1NC.
B2 = slow action - simultaneous 2NC.
B1 = slow action - simultaneous 2NO.
A2 = snap action 2NC.
C3 = slow action - break before make 1NO+2NC.
 (Available for series C01, C02, C05 and C06).
C4 = slow action - break before make 1NO+2NC.
 (Available for series C03, C04 and C07).
C5 = slow action - break before make 2NO+1NC.
 (Available for series C01, C02, C05 and C06).
C6 = slow action - break before make 2NO+1NC.
 (Available for series C03, C04 and C07).
B7 = slow action - simultaneous 3NC.
 (Available for series C01, C02, C05 and C06).
B8 = slow action - simultaneous 3NC.
 (Available for series C03, C04 and C07).
B9 = slow action simultaneous 3NO.
 (Available for series C03, C04 and C07).

Operating heads

- 010 - 599** = operating heads
 For series **C01**, **C02**, **C05** and **C06** refer to tables from page 6 to page 12.
 For series **C03** refer to tables from page 13 to page 17.
 For series **C04** and **C07** refer to tables from page 18 to page 23.

Limit switch Standard Ino is also available for operational temperature -40°C/+70°C on request.

Instructions

Fill in the boxes with the numbers corresponding to the specifications required, thus obtaining the limit switch code, as shown in the example below.

C02**5****038****A0**

WIRED INO - REQUEST FORM FOR LIMIT SWITCH

Casing		
Series	Material	Width
C20	Technopolymer	30 mm
C21	Metal	30 mm
C22	Technopolymer	35 mm
C23	Metal	35 mm

Direction of electric connection	
Series C20 and C21	Series C22 and C23
R = right (standard)	C = center (standard)
C = center	R = right
L = left	L = left

PVC cable length	
01 = standard 1m.	07 = 7 m.
02 = 2 m.	08 = 8 m.
03 = 3 m.	09 = 9 m.
04 = 4 m.	10 = 10 m.
05 = 5 m.	11 = 11 m.
06 = 6 m.	12 = 12 m.

Switches	
E0 = snap action 1NO+1NC.	
F0 = slow action - break before make 1NO+1NC.	

Connections	
U = standard with PVC cable.	
W = connector M12.	
X = connector AMP.	
Y = dynamic PUR cable.	
Z = halogen free PUR cable.	

Operating heads	
611 - 693 = operating heads	
Refer to tables from page 29 to page 31.	

Instructions

Fill in the boxes with the numbers corresponding to the specifications required, thus obtaining the limit switch code, as shown in the example below.

C20	W	612	E0	01	R
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SAFETY INO - REQUEST FORM FOR LIMIT SWITCH

Casing

Series	Material	Width	No. cable entries
C50	Technopolymer	30 mm	1
C51	Metal	30 mm	1
C52	Technopolymer	40 mm	1
C53	Aluminum	40 mm	1
C54	Technopolymer	50 mm	2
C55	Metal	50 mm	3
C56	Technopolymer	50 mm	3
C57	Aluminum	60 mm	3

With manual reset

C01	Technopolymer	30 mm	1
C02	Metal	30 mm	1
C05	Technopolymer	50 mm	2
C06	Metal	50 mm	3

Type of cable entry

- 1** = for cable clamp thread PG13.5.
(Not available for series C56).
- 2** = for cable clamp thread 1/2" NPT.
(Not available for series C56).
(On series C50, C54, C01 and C05 the thread results from a plastic adapter).
- 3** = for cable clamp thread PG11.
(Available only for series C50, C51, C54, C55, C01, C02, C05, C06).
- 4** = for cable clamp thread M16 x 1.5.
(Available only for series C50, C51, C54, C55, C01, C02, C05, C06).
- 5** = for cable clamp thread M20 x 1.5.

Switches

- A0** = snap action 1NO+1NC.
- C0** = slow action - break before make 1NO+1NC.
- D0** = slow action - make before break 1NO+1NC.
- B2** = slow action - simultaneous 2NC.
- A2** = snap action 2NC.
- C3** = slow action - break before make 1NO+2NC.
(Available for series C01, C02, C05 and C06).
- C4** = slow action - break before make 1NO+2NC.
(Available for series C03, C04 and C07).
- C5** = slow action - break before make 2NO+1NC.
(Available for series C01, C02, C05 and C06).
- C6** = slow action - break before make 2NO+1NC.
(Available for series C03, C04 and C07).
- B7** = slow action - simultaneous 3NC.
(Available for series C01, C02, C05 and C06).
- B8** = slow action - simultaneous 3NC.
(Available for series C03, C04 and C07).

Operating heads

- 710 - 841** = operating heads
For series from **C50** to **C57** refer to tables from page 36 to page 40.
For manual reset series **C01**, **C02**, **C05** and **C06** refer to tables from page 41 to page 42.

Instructions

Fill in the boxes with the numbers corresponding to the specifications required, thus obtaining the limit switch code, as shown in the example below.

C50**5****771****B8**