INO
Position limit switch

Position limit switches designed to control the movement of overhead travellling cranes, hoists and industrial machine tools.
Limit switches INO are used in building and industrial lifting 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: Standard INO limit switches are classified IP65, IP66 or IP67 depending on the version; 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; Safety INO limit switches are classified IP65, IP66.
- 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

- 11 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, slow action switches with 2NC staggered 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 26).
- Wired Ino (page 29).
- Safety Ino (page 34).

CERTIFICATIONS

- CE marking, UKCA marking and UL marking.

Fill in the "request form" (page 48, 49, 50) for accurate product configuration.

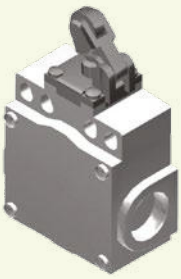
* Not available on all versions.

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
Conformity to UKCA Directives	UK Statutory Instruments 2016 No. 1101 - Electrical Equipment (Safety) Regulations 2016
	UK Statutory Instruments 2012 No. 3032 - The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012
Conformity to UKCA Standards	IEC 60947-1:2020 Low-voltage switchgear and controlgear – Part 1: general rules
	IEC 60947-5-1:2016 Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices
	IEC 63000:2016 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances
Markings and homologations	CE UL UKCA

GENERAL TECHNICAL SPECIFICATIONS - STANDARD INO

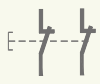
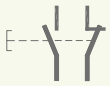
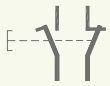
Ambient temperature	Storage -30°C/+80°C
	Operational -25°C/+70°C (-40°C/+70°C on request)
IP protection degree	Technopolymer series C01 and C05 IP65
	Technopolymer series C03 IP65 - IP67
	Metal and aluminum series IP66*
Insulation category	Technopolymer series Class II
	Metal and aluminum series Class 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 mm (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

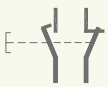
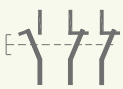
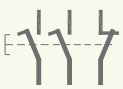
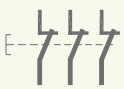
* Not available on all versions.

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
	0.4 A / 250 Vdc / DC13 - 0.27 A (for three-pole switches for Standard Ino with 40 mm and 60 mm casing)
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 θ < 40°C	10 A
Short-circuit protection U_e < 500 Vac - fuse type gG (gI)	10 A
Switching frequency	3600 cycles/hour
Load factor	0.5
Contact resistance	25 mΩ
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

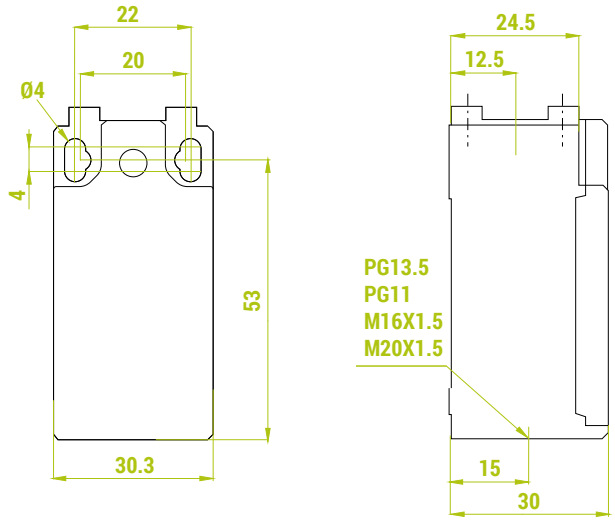
Switch type	Snap action	Snap action	Slow action Simultaneous	Slow action Simultaneous	Slow action Staggered contacts	Slow action Break before make
Contacts	2NC (All NC contacts are of the positive opening operation type ⊖)*	1NO+1NC (All NC contacts are of the positive opening operation type ⊖)*	2 NC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

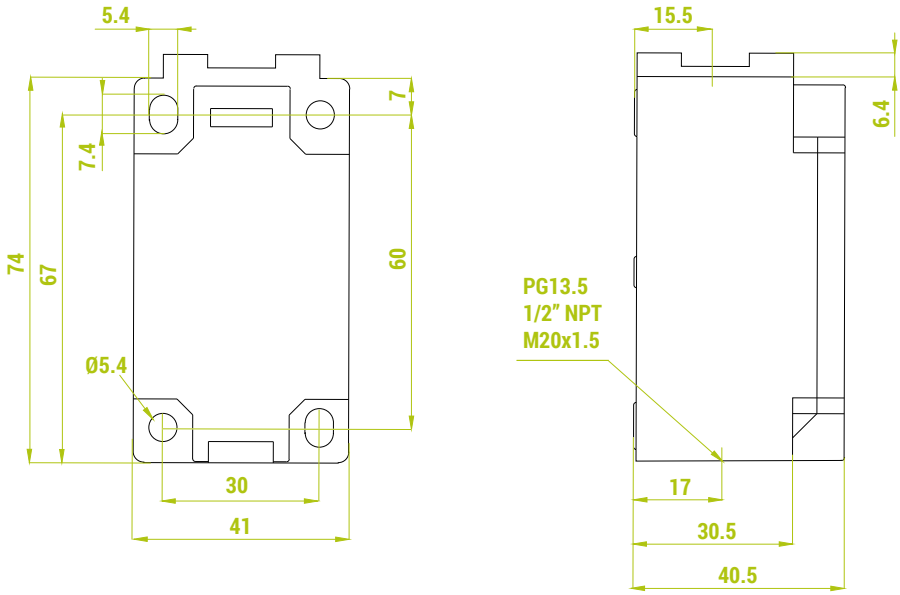
*Not available for all operating heads.

OVERALL DIMENSIONS (mm) - STANDARD INO IN TECHNOPOLYMER

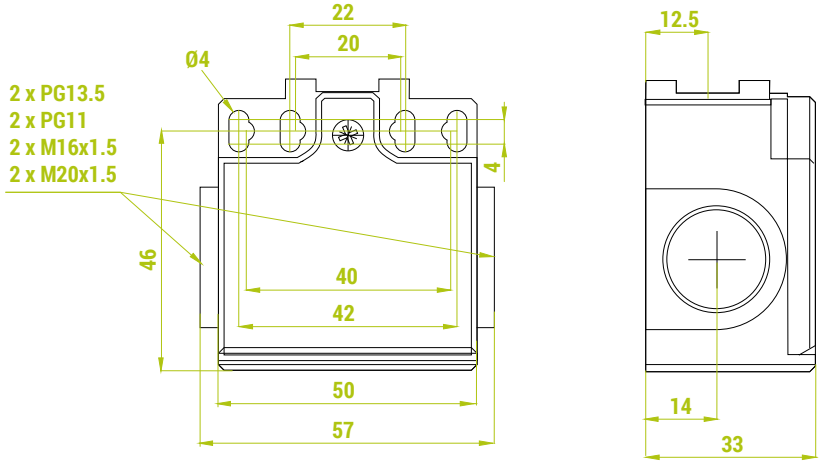
Series C01 with 30 mm casing



Series C03 with 40 mm casing

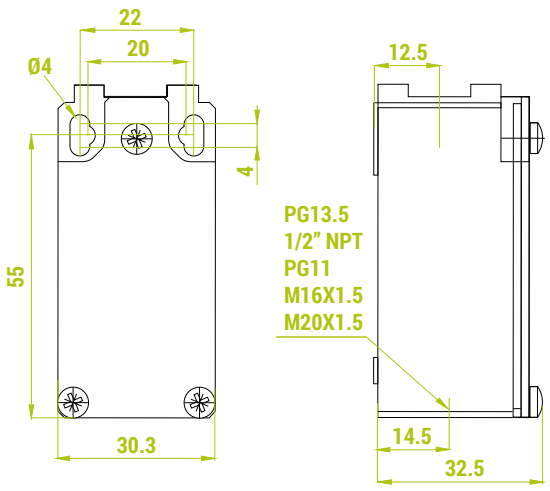


Series C05 with 50 mm casing

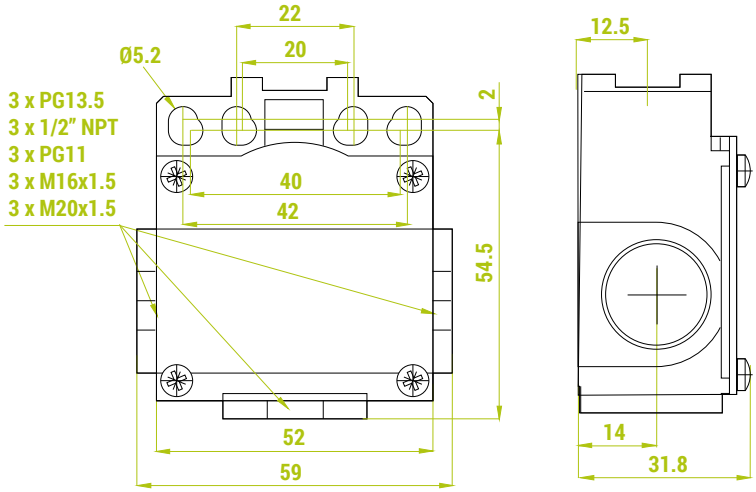


OVERALL DIMENSIONS (mm) - STANDARD INO IN METAL

Series C02 with 30 mm casing

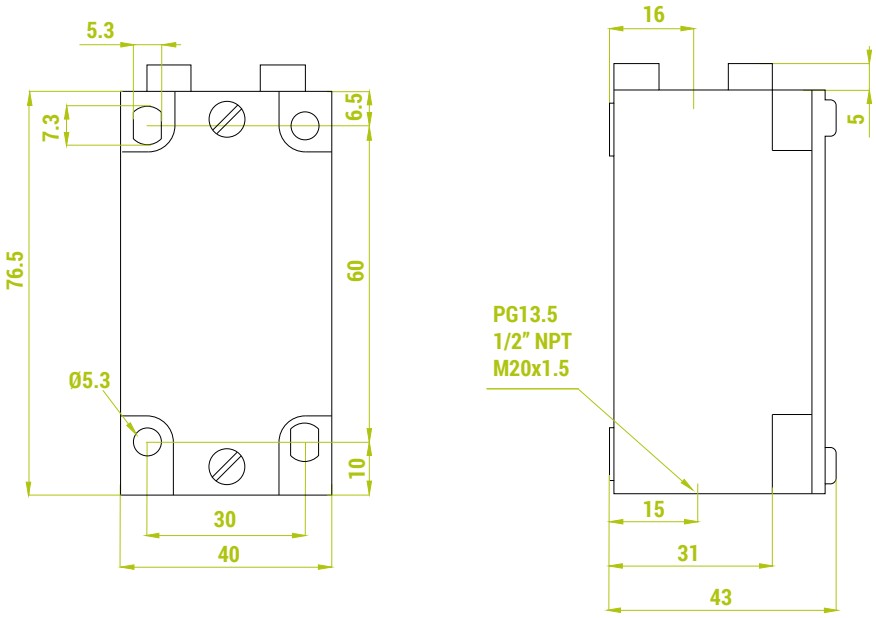


Series C06 with 50 mm casing

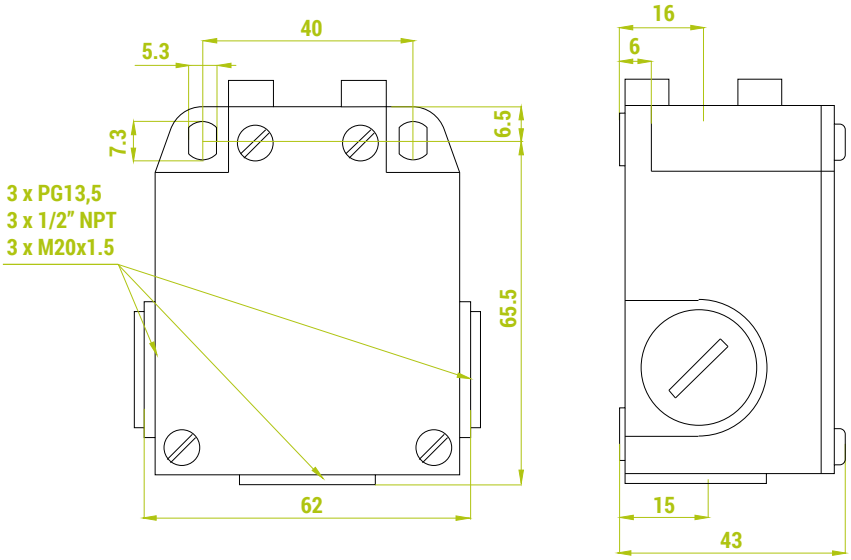


OVERALL DIMENSIONS (mm) - STANDARD INO IN ALUMINUM

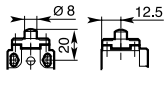
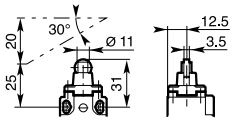
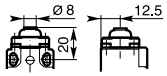
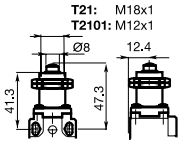
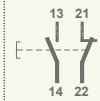
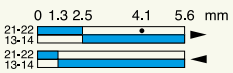
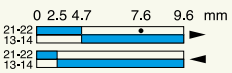
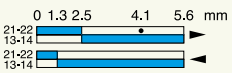
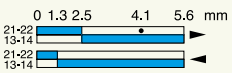
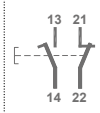
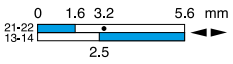
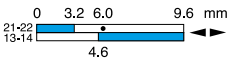
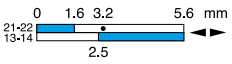
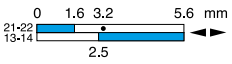
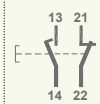
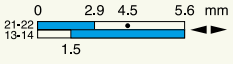
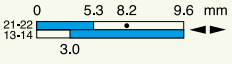
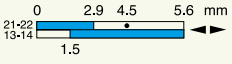
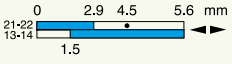
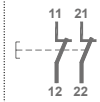
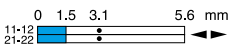
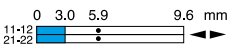
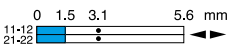
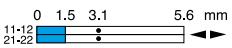
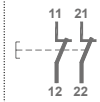
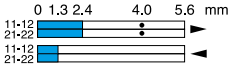
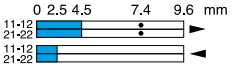
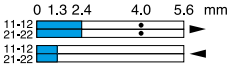
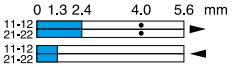
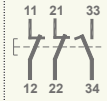
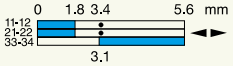
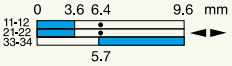
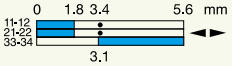
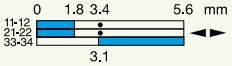
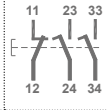
Series C04 with 40 mm casing

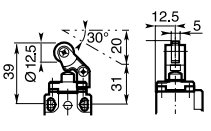
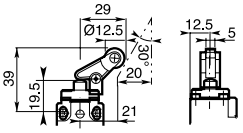
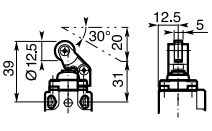
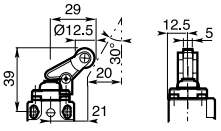
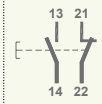
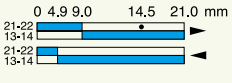
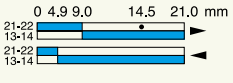
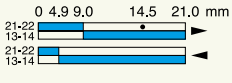
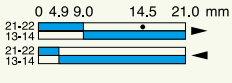
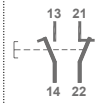
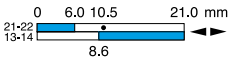
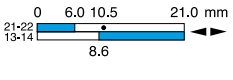
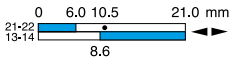
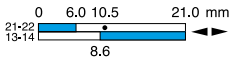
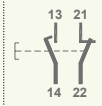
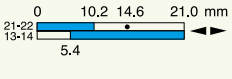
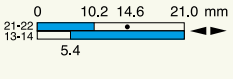
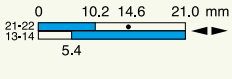
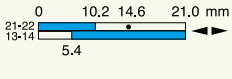
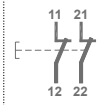
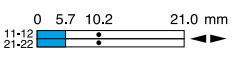
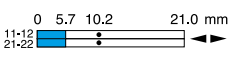
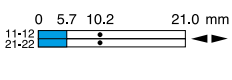
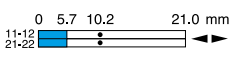
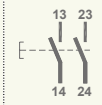
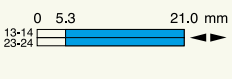
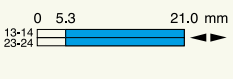
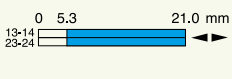
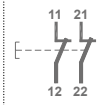
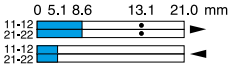
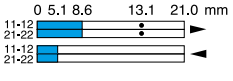
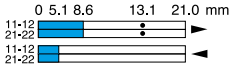
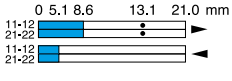
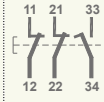
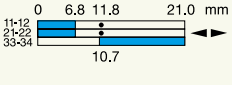
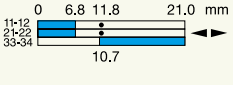
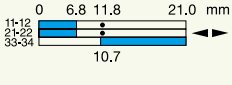
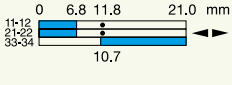


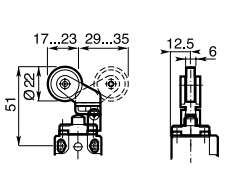
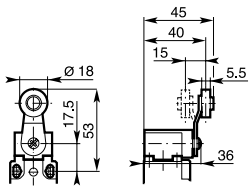
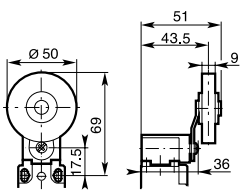
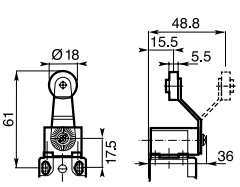
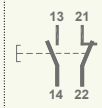
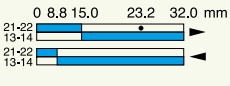
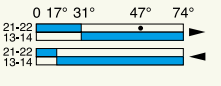
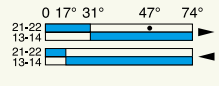
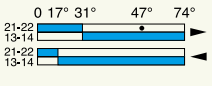
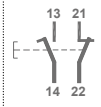
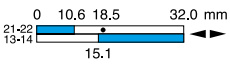
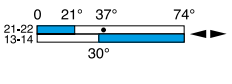
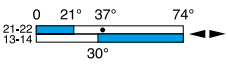
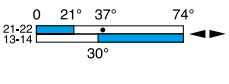
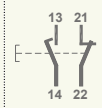
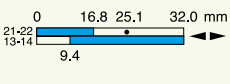
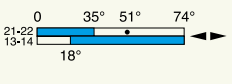
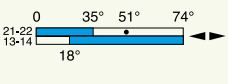
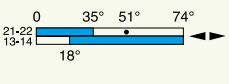
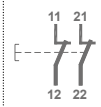
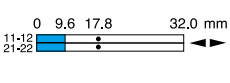
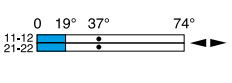
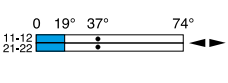
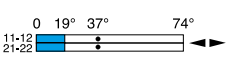
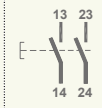
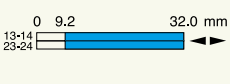
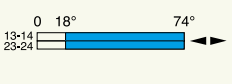
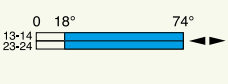
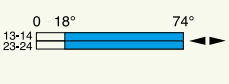
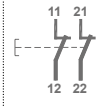
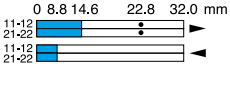
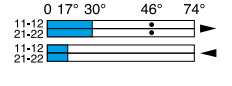
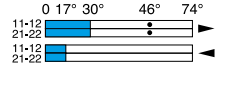
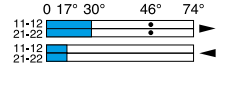
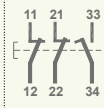
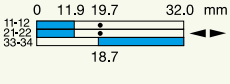
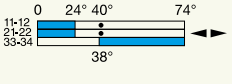
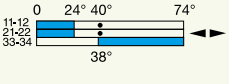
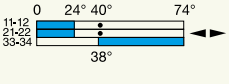
Series C07 with 60 mm casing

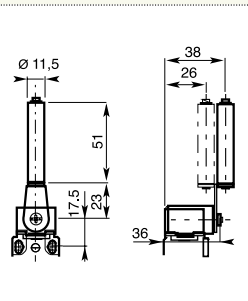
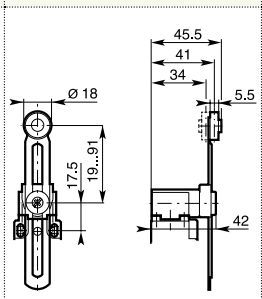
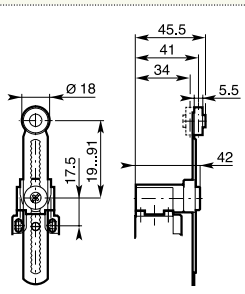
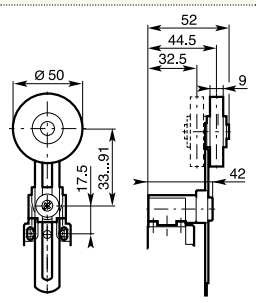
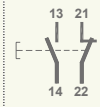
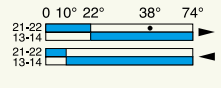
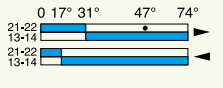
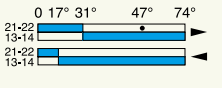
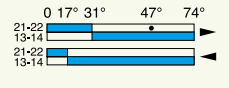
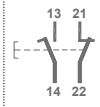
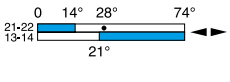
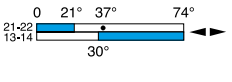
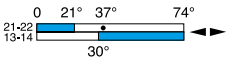
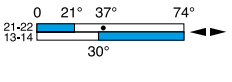
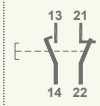
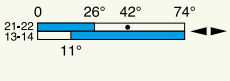
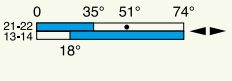
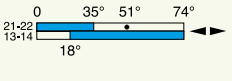
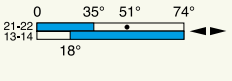
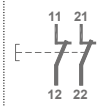
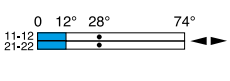
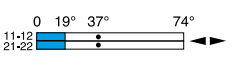
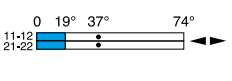
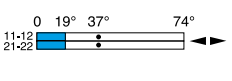
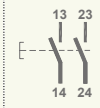
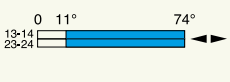
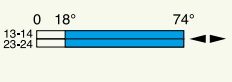
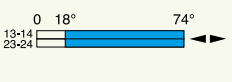
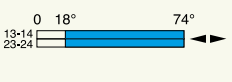
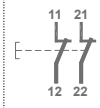
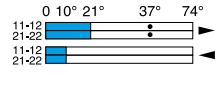
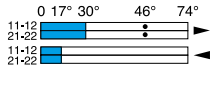
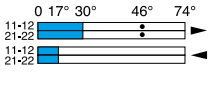
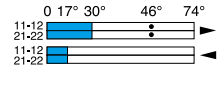
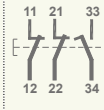
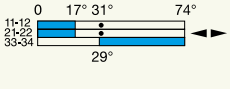
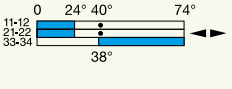
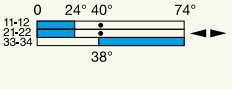
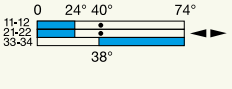
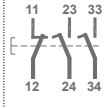


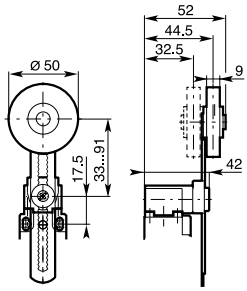
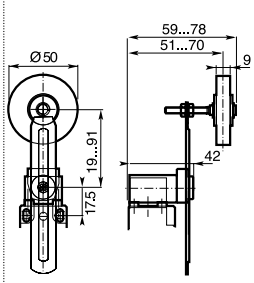
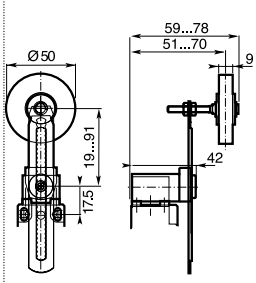
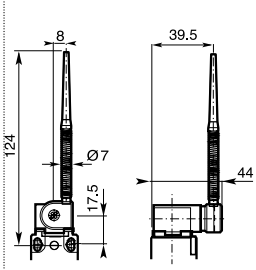
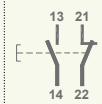
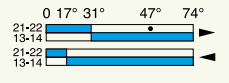
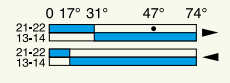
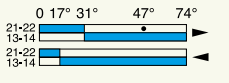
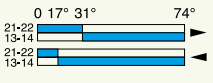
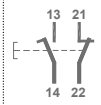
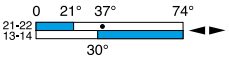
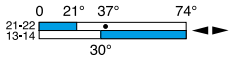
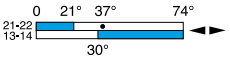
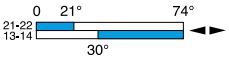
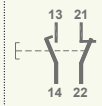
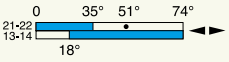
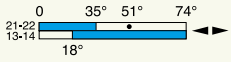
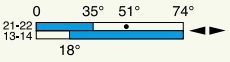
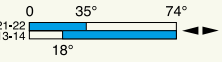
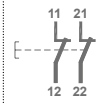
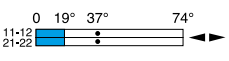
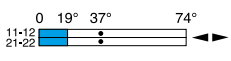
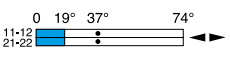
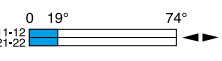
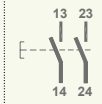
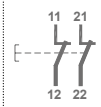
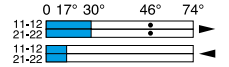
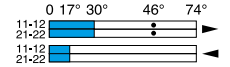
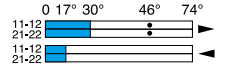
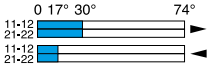
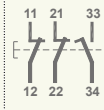
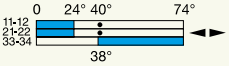
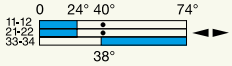
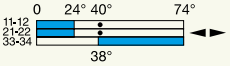
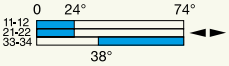
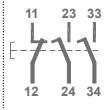
HEADS FOR LIMIT SWITCHES STANDARD INO IN TECHNOPOLYMER WITH 30 mm CASING (SERIES C01), 50 mm CASING (SERIES C05) AND IN METAL WITH 30 mm CASING (SERIES C02) AND 50 mm CASING (SERIES C06)

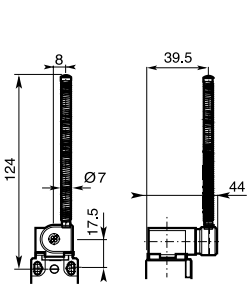
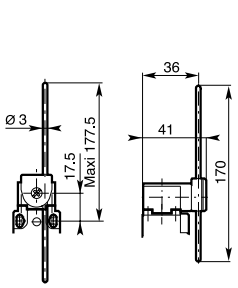
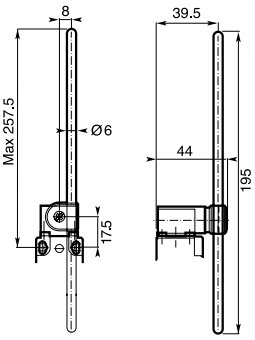
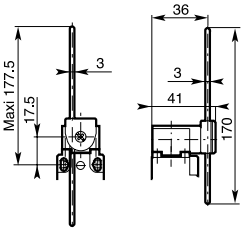
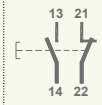
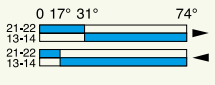
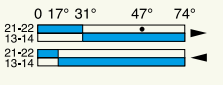
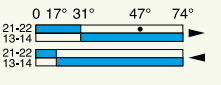
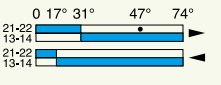
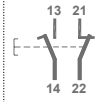
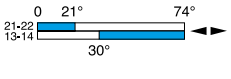
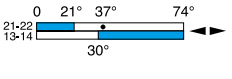
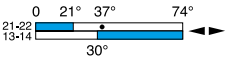
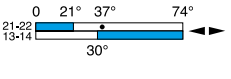
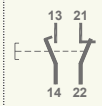
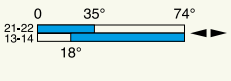
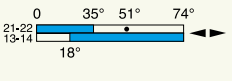
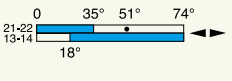
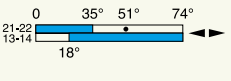
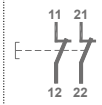
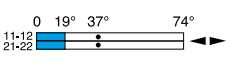
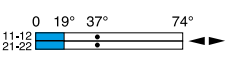
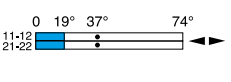
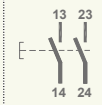
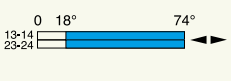
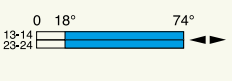
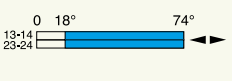
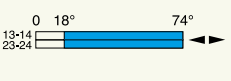
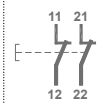
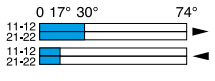
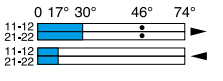
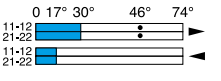
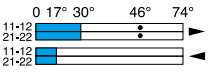
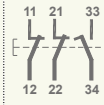
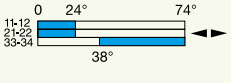
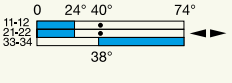
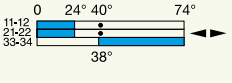
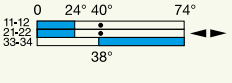
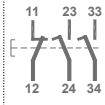
		Plain plunger	Roller plunger	Plunger with dust protective cap	Plunger with fixing nuts
					
Code of technopolymer head		**010**: nylon plunger **011**: steel plunger For series C01, C05	**012**: steel roller **013**: nylon roller For series C01, C05	**014** For series C01, C02, C05, C06	**021**: nuts 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					

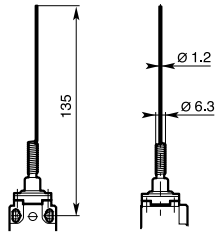
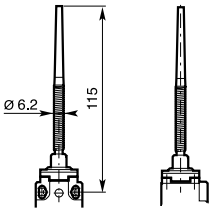
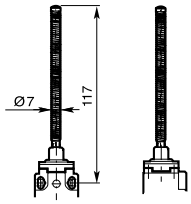
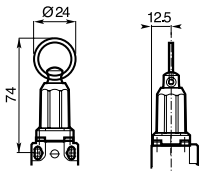
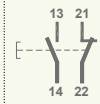
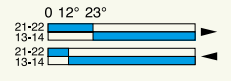
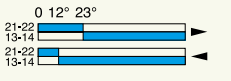
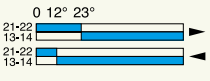
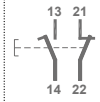
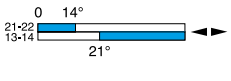
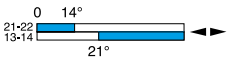
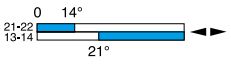
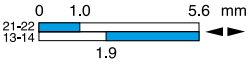
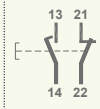
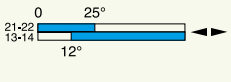
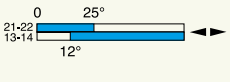
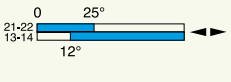
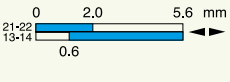
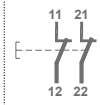
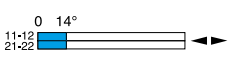
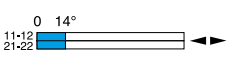
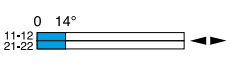
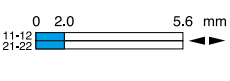
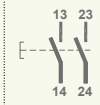
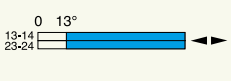
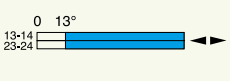
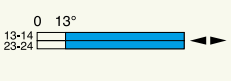
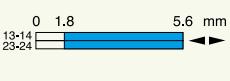
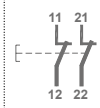
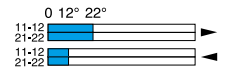
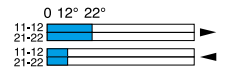
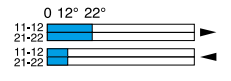
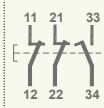
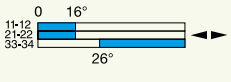
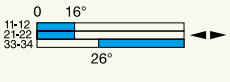
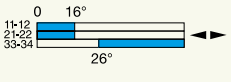
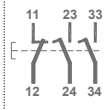
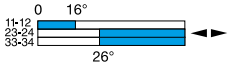
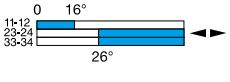
		Nylon roller lever	Nylon roller lever	Nylon roller lever on steel plunger with dust protective cap	Nylon roller lever on steel plunger with dust protective cap
					
Code of technopolymer head		**030**: on nylon plunger **031**: on steel plunger For series C01, C02, C05, C06	**032**: on steel plunger **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					

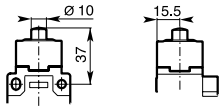
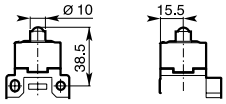
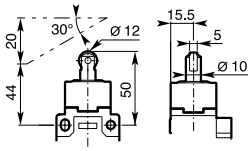
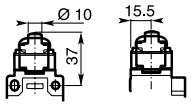
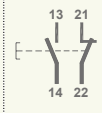
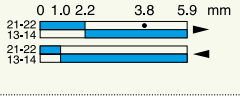
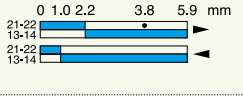
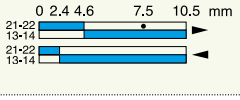
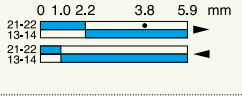
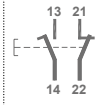
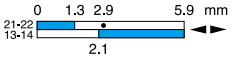
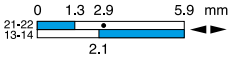
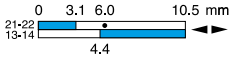
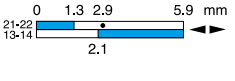
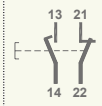
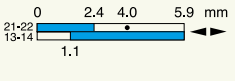
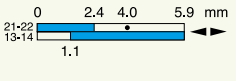
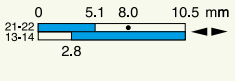
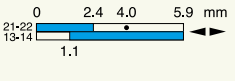
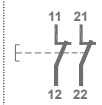
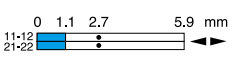
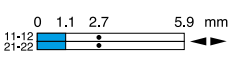
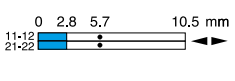
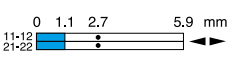
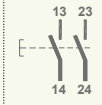
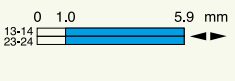
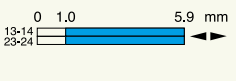
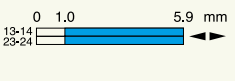
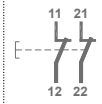
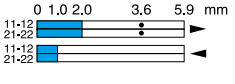
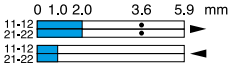
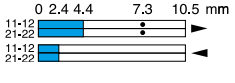
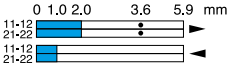
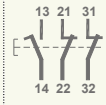
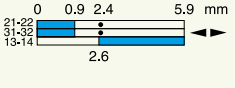
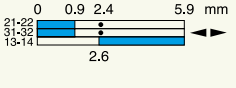
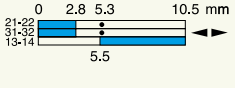
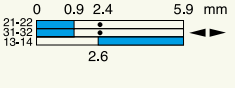
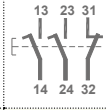
		Ceramic rod lever	Adjustable lever with Ø18 mm roller	Adjustable toothed lever (step 2 mm) with Ø18 mm nylon roller	Adjustable lever with Ø50 mm rubber roller
					
Code of technopolymer head		**048** For series C01, C05	**051**: nylon roller **053**: steel roller For series C01, C05	**05100** For series C01, C05	**052** For series C01, C05
Code of metal head		/	**151**: nylon roller **153**: steel roller For series C02, C06	/	**151** 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 / 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					

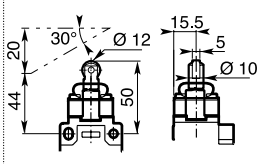
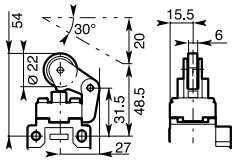
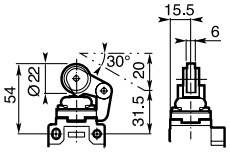
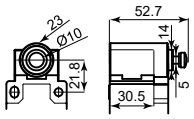
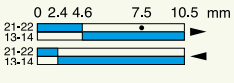
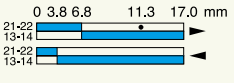
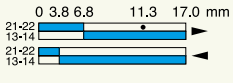
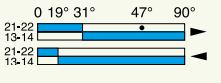
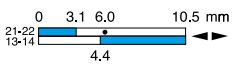
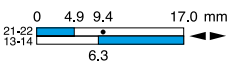
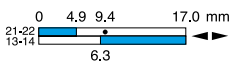
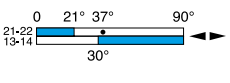
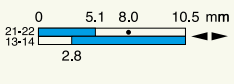
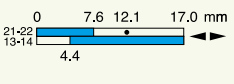
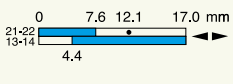
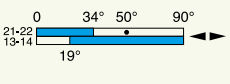
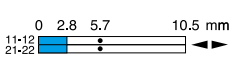
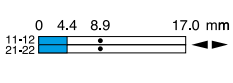
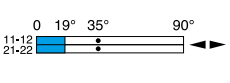
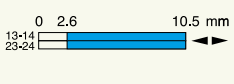
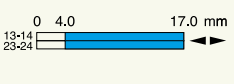
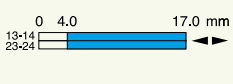
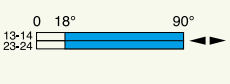
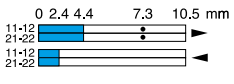
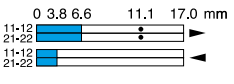
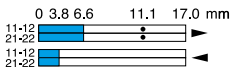
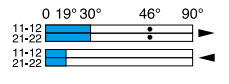
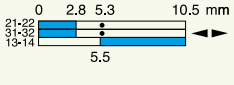
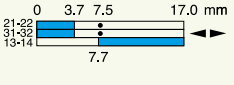
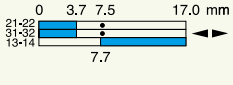
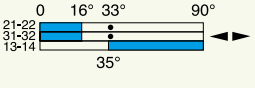
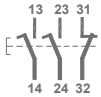
		Adjustable toothed lever (step 2 mm) with Ø50 mm rubber roller	Adjustable lever with adjustable Ø50 mm rubber roller	Adjustable toothed lever (step 2 mm) with adjustable Ø50 mm rubber roller	Nylon actuator with stainless steel spring
					
Code of technopolymer head		**05200** For series C01, C05	**055** 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					

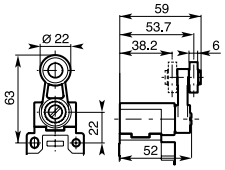
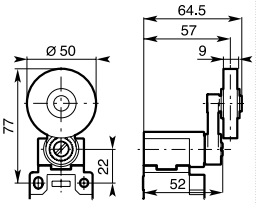
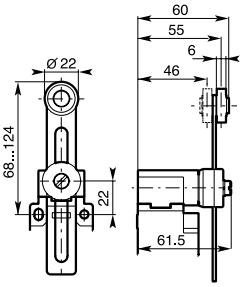
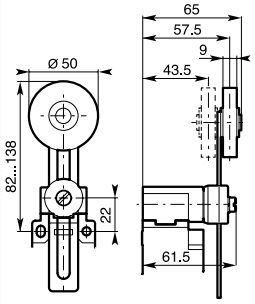
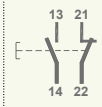
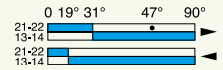
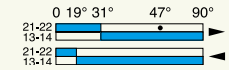
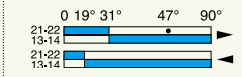
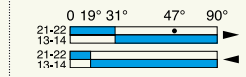
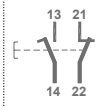
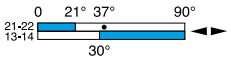
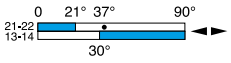
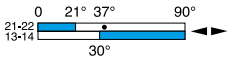
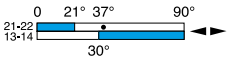
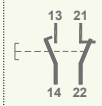
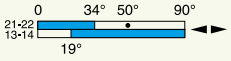
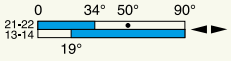
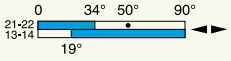
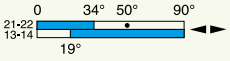
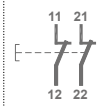
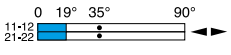
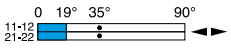
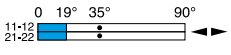
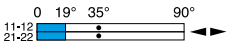
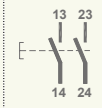
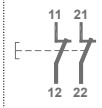
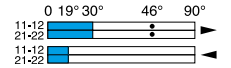
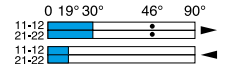
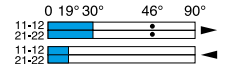
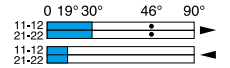
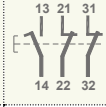
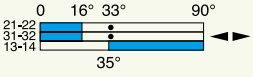
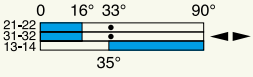
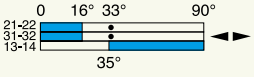
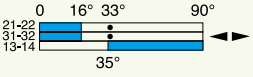
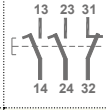
		Stainless steel spring actuator	Adjustable Ø3 mm rod	Adjustable Ø6 mm rod	Adjustable 3x3 square steel rod
					
Code of technopolymer head		**062** For series C01, C05	**071**: stainless steel rod **072**: fiber-glass rod For series C01, C05	**073**: nylon rod **074**: fiber-glass rod For series C01, 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					

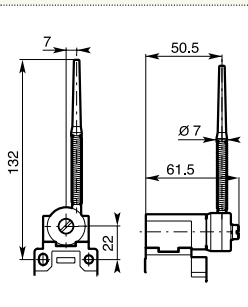
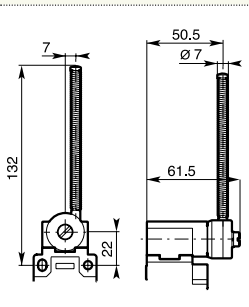
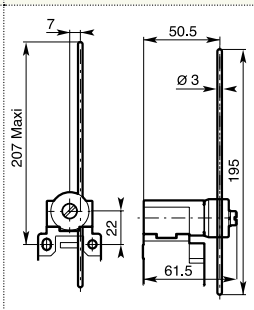
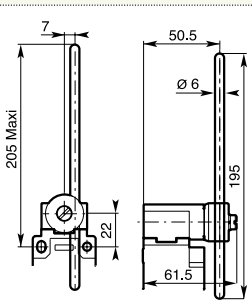
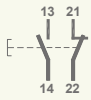
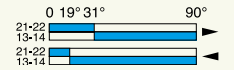
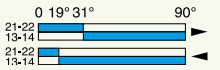
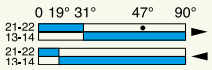
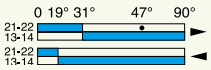
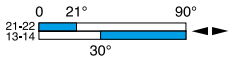
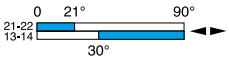
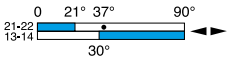
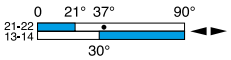
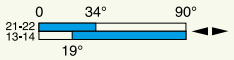
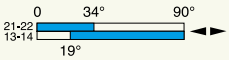
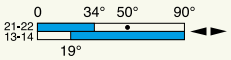
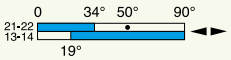
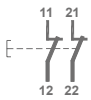
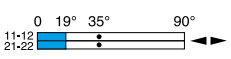
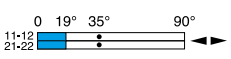
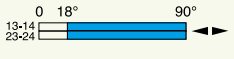
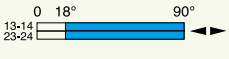
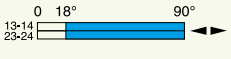
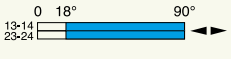
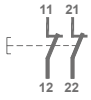
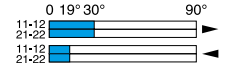
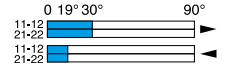
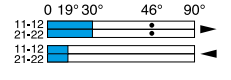
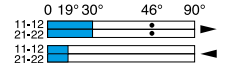
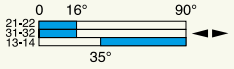
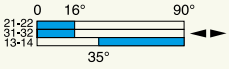
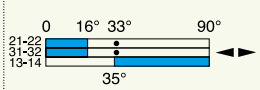
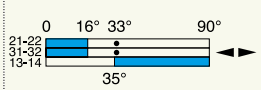
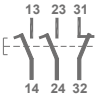
		Stainless steel spring multidirectional actuator	Multidirectional nylon actuator with stainless steel spring	Stainless steel spring multidirectional actuator	Pull action with ring
					
Code of technopolymer head		**091** For series C01, C02, C05, C06	**092** For series C01, C02, C05, C06	**093** For 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					/

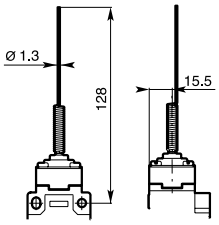
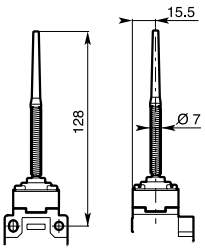
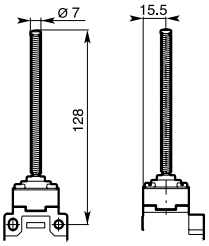
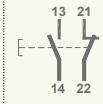
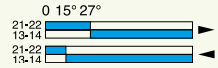
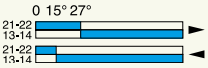
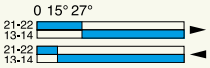
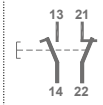
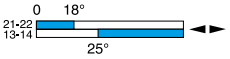
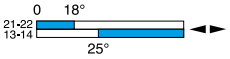
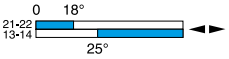
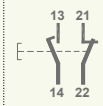
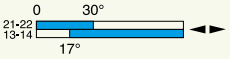
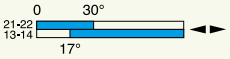
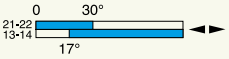
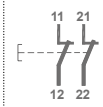
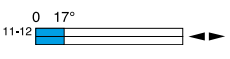
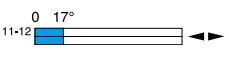
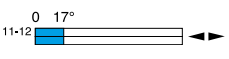
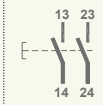
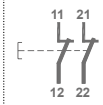
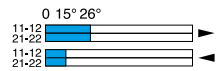
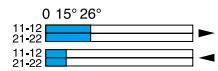
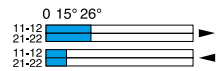
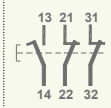
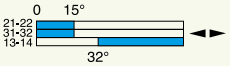
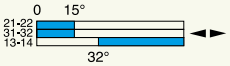
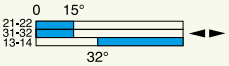
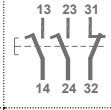
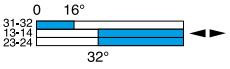
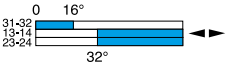
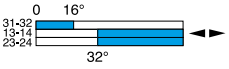
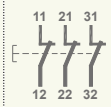
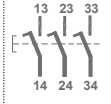
HEADS FOR LIMIT SWITCHES STANDARD INO IN TECHNOPOLYMER WITH 40 mm CASING (SERIES C03)

		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					

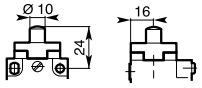
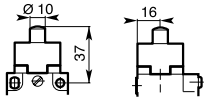
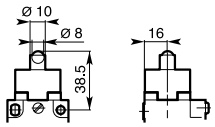
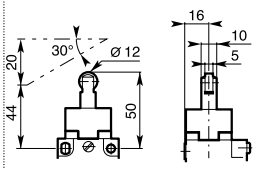
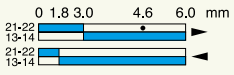
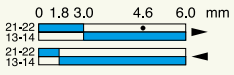
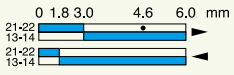
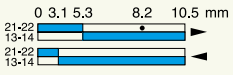
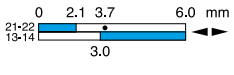
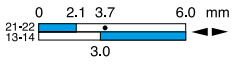
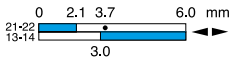
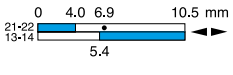
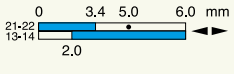
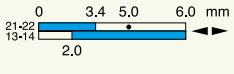
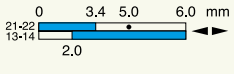
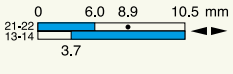
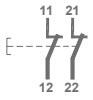
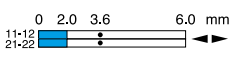
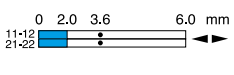
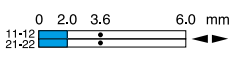
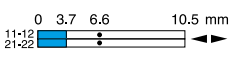
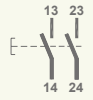
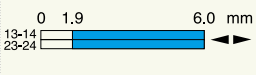
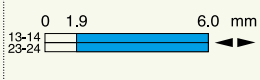
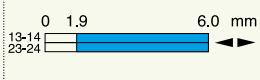
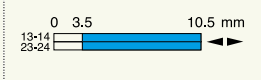
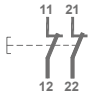
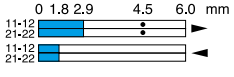
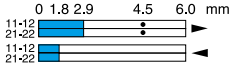
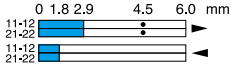
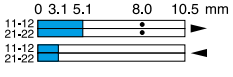
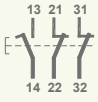
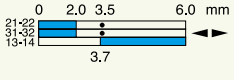
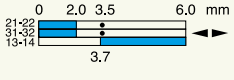
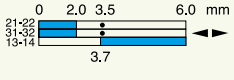
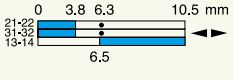
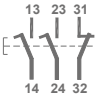
		Steel roller plunger with dust protective cap	One-way roller lever	One-way lever with dust protective cap	Angular actuation without lever
					
Code of technopolymer head		**219** For series C03	**231**: Ø22 mm nylon roller **232**: Ø22 mm stainless steel roller **233**: Ø22 mm steel bearing For series C03	**235**: Ø22 mm nylon roller **236**: Ø22 mm stainless steel roller **237**: Ø22 mm steel bearing For series C03	**240** 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					

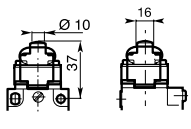
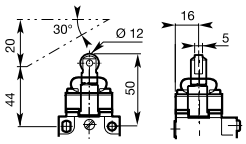
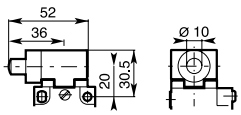
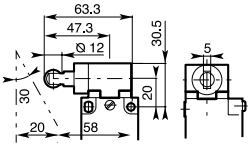
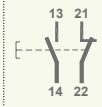
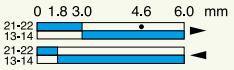
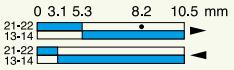
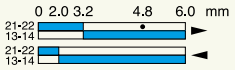
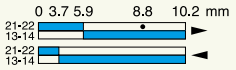
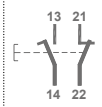
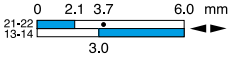
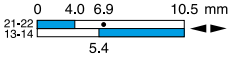
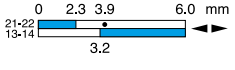
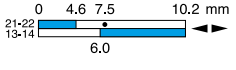
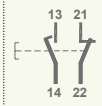
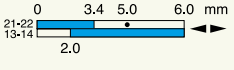
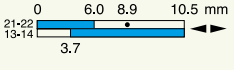
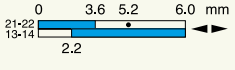
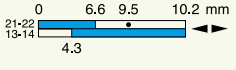
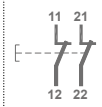
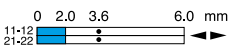
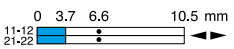
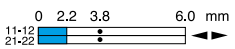
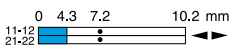
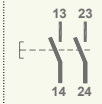
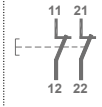
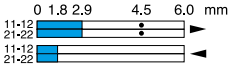
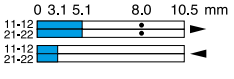
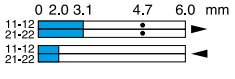
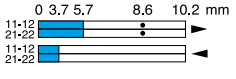
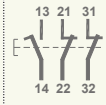
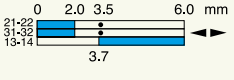
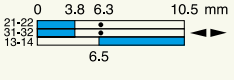
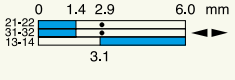
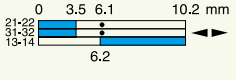
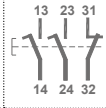
		Ø22 mm roller lever	Lever with Ø50 mm rubber roller	Adjustable lever with Ø22 mm roller	Adjustable lever with Ø50 mm rubber roller
					
Code of technopolymer head		**241**: nylon roller **242**: stainless steel roller **243**: steel bearing For series C03	**244** For series C03	**251**: nylon roller **252**: stainless steel roller **253**: steel bearing For series C03	**254** 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 / 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					

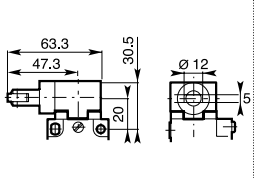
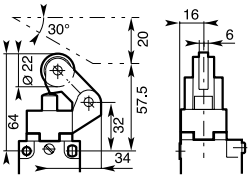
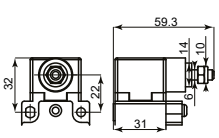
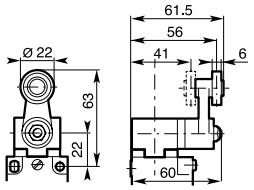
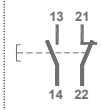
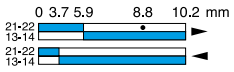
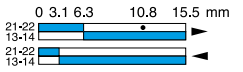
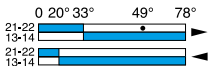
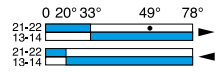
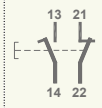
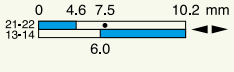
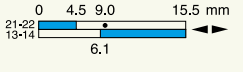
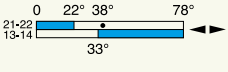
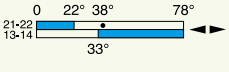
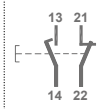
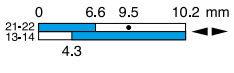
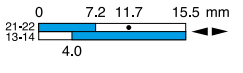
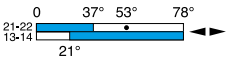
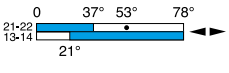
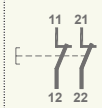
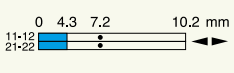
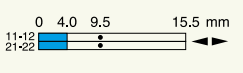
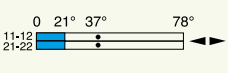
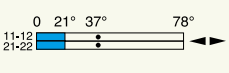
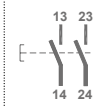
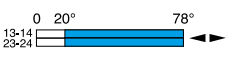
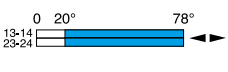
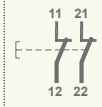
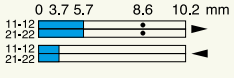
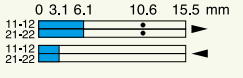
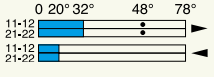
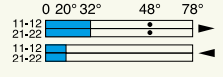
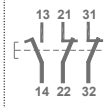
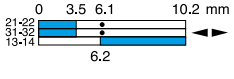
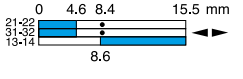
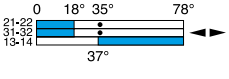
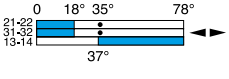
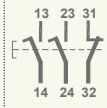
		Nylon actuator with stainless steel spring	Stainless steel spring actuator	Adjustable rod	Adjustable Ø6 mm rod
					
Code of technopolymer head		**261** For series C03	**262** For series C03	**271**: Ø3 mm stainless steel rod **273**: Ø3 mm fiber-glass rod **275**: 3x3 mm metal rod For series C03	**272**: nylon rod **274**: fiber-glass rod For series C03
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 / -	0.15 / -	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					

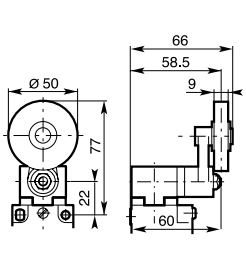
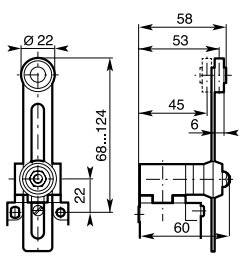
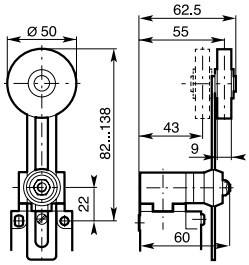
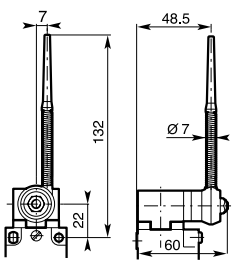
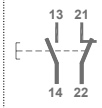
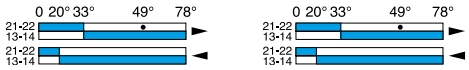
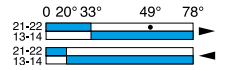
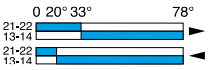
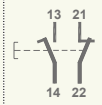
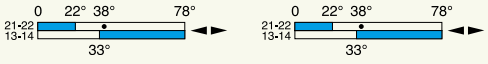
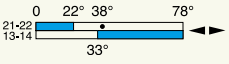
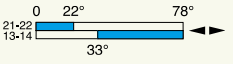
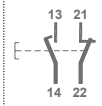
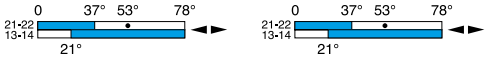
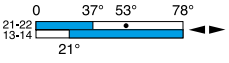
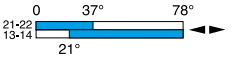
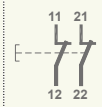
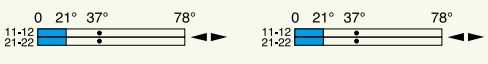
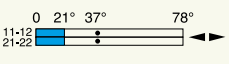
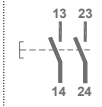
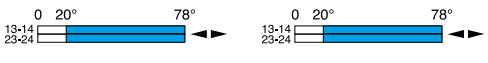
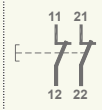
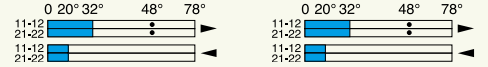
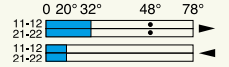
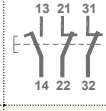
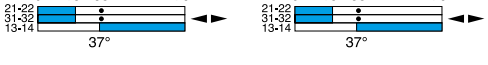
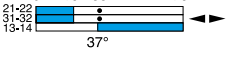
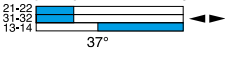
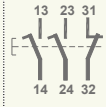
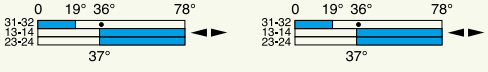
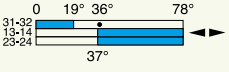
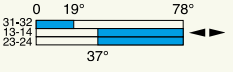
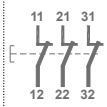
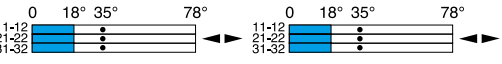
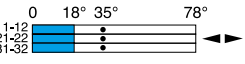
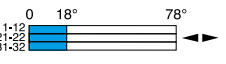
		Stainless steel spring multidirectional actuator	Multidirectional nylon actuator with stainless steel spring	Stainless steel spring multidirectional actuator
				
Code of technopolymer head		**291** For series C03	**292** For series C03	**293** For series C03
Max. actuating speed (m/s)		1.0	1.0	1.0
Min. actuating force (N) or torque (Nm) / for positive opening		0.18 / -	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				

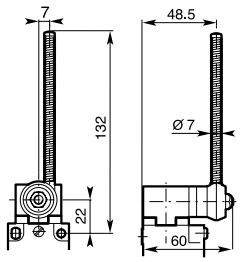
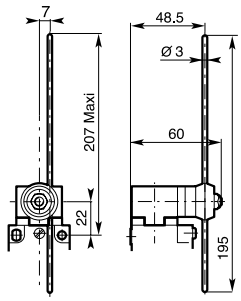
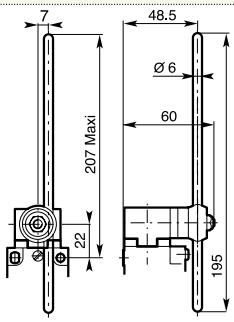
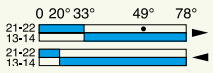
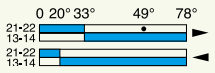
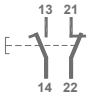
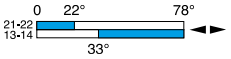
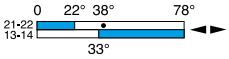
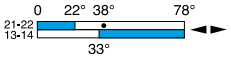
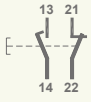
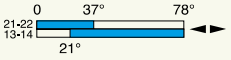
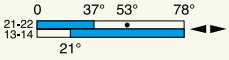
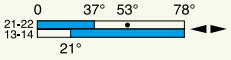
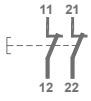
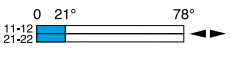
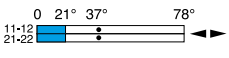
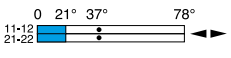
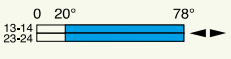
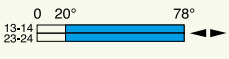
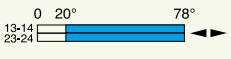
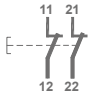
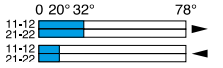
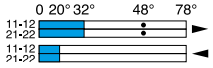
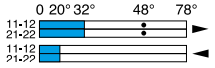
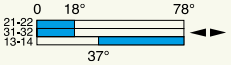
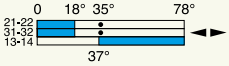
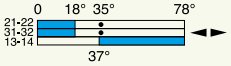
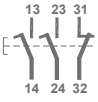
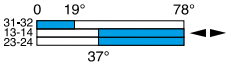
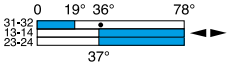
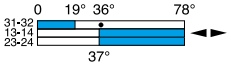
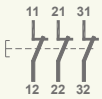
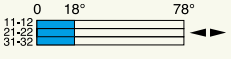
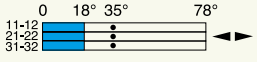
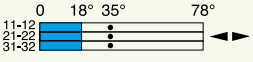
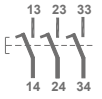
HEADS FOR LIMIT SWITCHES STANDARD INO IN ALUMINUM WITH 40 mm CASING (SERIES C04) AND 60 mm CASING (SERIES C07)

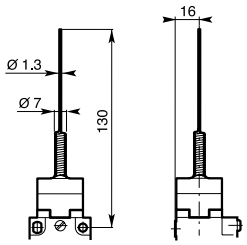
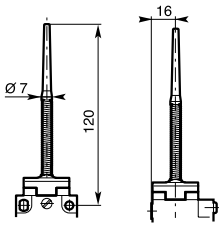
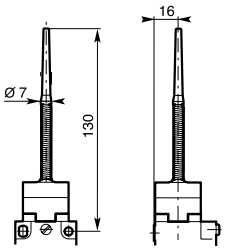
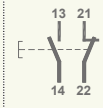
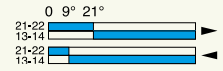
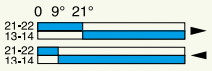
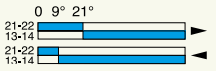
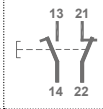
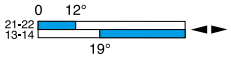
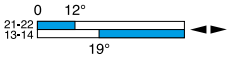
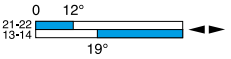
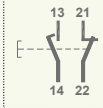
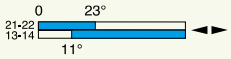
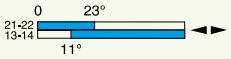
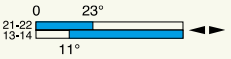
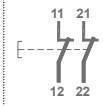
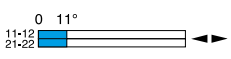
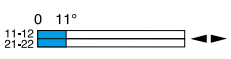
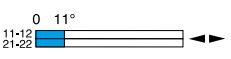
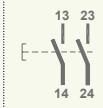
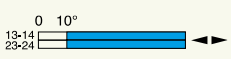
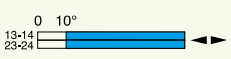
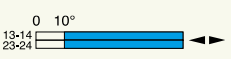
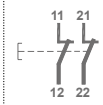
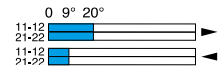
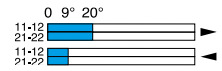
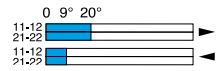
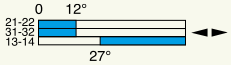
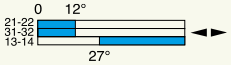
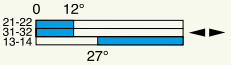
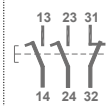
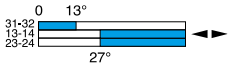
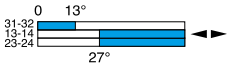
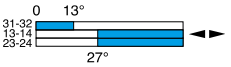
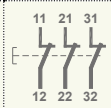
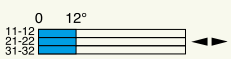
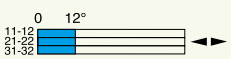
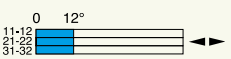
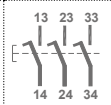
		Plain plunger	Stainless steel plunger	Stainless steel plunger with ball	Stainless steel plunger with Ø12 mm roller
					
Code of technopolymer head		**311** For series C04, C07	/	/	/
Code of metal head		/	/	/	**413** For series C04, C07
Code of aluminum head		/	**511** For series C04, C07	**512** For 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					

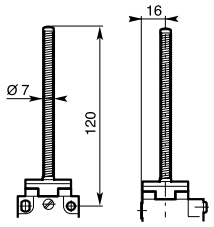
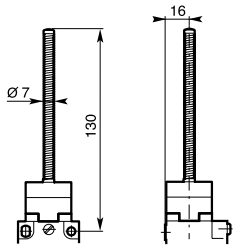
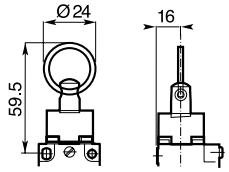
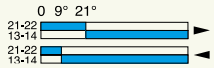
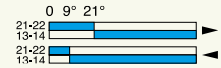
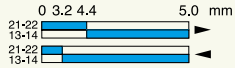
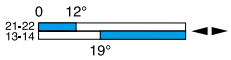
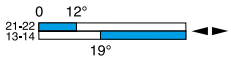
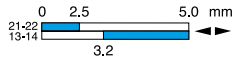
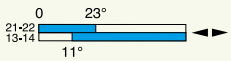
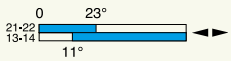
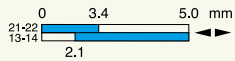
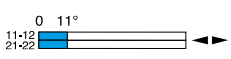
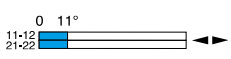
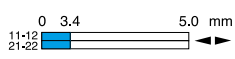
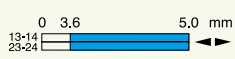
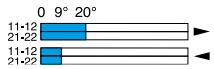
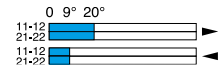
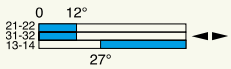
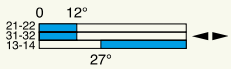
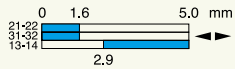
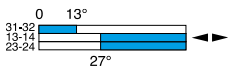
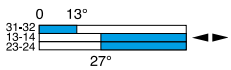
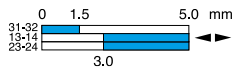
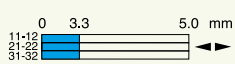
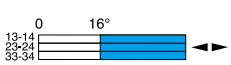
		Plunger with dust protective cap	Plunger with Ø12 mm steel roller and dust protective cap	Stainless steel lateral plunger	Stainless steel lateral plunger with Ø12 mm vertical roller
					
Code of technopolymer head		/	/	/	/
Code of metal head		**414** For series C04, C07	**419** For series C04, C07	/	/
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	Angular actuation without lever	Ø22 mm roller lever
					
Code of technopolymer head		/	/	/	/
Code of metal head		/	/	/	**441**: nylon roller **442**: stainless steel roller **443**: steel bearing 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	**540** For series C04, C07	**541**: nylon roller **542**: stainless steel roller **543**: steel bearing 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					

	Ø50 mm rubber roller lever	Adjustable Ø22 mm roller lever	Adjustable Ø50 mm rubber roller lever	Nylon actuator with stainless steel spring
				
Code of technopolymer head	/	/	/	/
Code of metal head	**444** For series C04, C07	**451**: nylon roller **452**: stainless steel roller **453**: steel bearing For series C04, C07	**454** For series C04, C07	**461** For series C04, C07
Code of aluminum head	**544** For series C04, C07	**551**: nylon roller **552**: stainless steel roller **553**: steel bearing For series C04, C07	**554** For series C04, C07	**561** 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 / 0.30 ⊕	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
				
Code of technopolymer head		/	/	/
Code of metal head		**462** For series C04, C07	**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		**562** For series C04, C07	**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
Max. actuating speed (m/s)		1.5	1.5	1.5
Min. actuating force (N) or torque (Nm) / for positive opening		0.15 / -	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				

		Stainless steel spring multidirectional actuator	Multidirectional nylon actuator with stainless steel spring	Multidirectional nylon actuator with stainless steel spring
				
Code of technopolymer head		/	**392** For series C04, C07	/
Code of metal head		/	/	/
Code of aluminum head		**591** For series C04, C07	/	**592** For series C04, C07
Max. actuating speed (m/s)		1.0	1.0	1.0
Min. actuating force (N) or torque (Nm) / for positive opening		0.18 / -	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				

		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		/	**593** For series C04, C07	**599** For series C04, C07
Max. actuating speed (m/s)		1.0	1.0	0.5
Min. actuating force (N) or torque (Nm) / for positive opening		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				

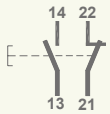
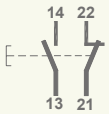
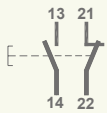
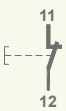
CERTIFICATIONS - DOUBLE LEVER INO

Conformity to Community Directives	2014/35/UE Low Voltage Directive
	2006/42/CE Machinery Directive
Conformity to UKCA Directives	Supply of Machinery (Safety) Regulations 2008
	Electrical Equipment (Safety) Regulations 2016
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 UKCA EAC

GENERAL TECHNICAL SPECIFICATION - DOUBLE LEVER INO

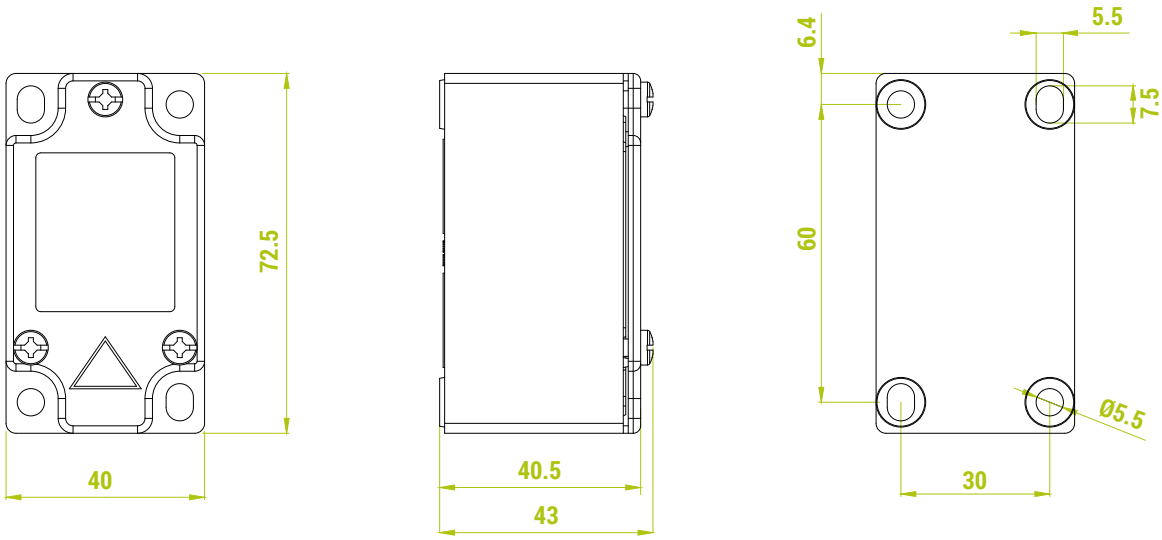
Ambient temperature	Storage -40°C/+70°C
	Operational -25°C/+70°C
IP protection degree	Series in technopolymer IP65 max. with specific cable gland M20
	Series in aluminum IP66 max. with specific cable gland M20
Insulation category	Series in technopolymer Class II
	Series in aluminum Class I
Operation frequency	3600 operations/hour max
Cable entry	Cable gland 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

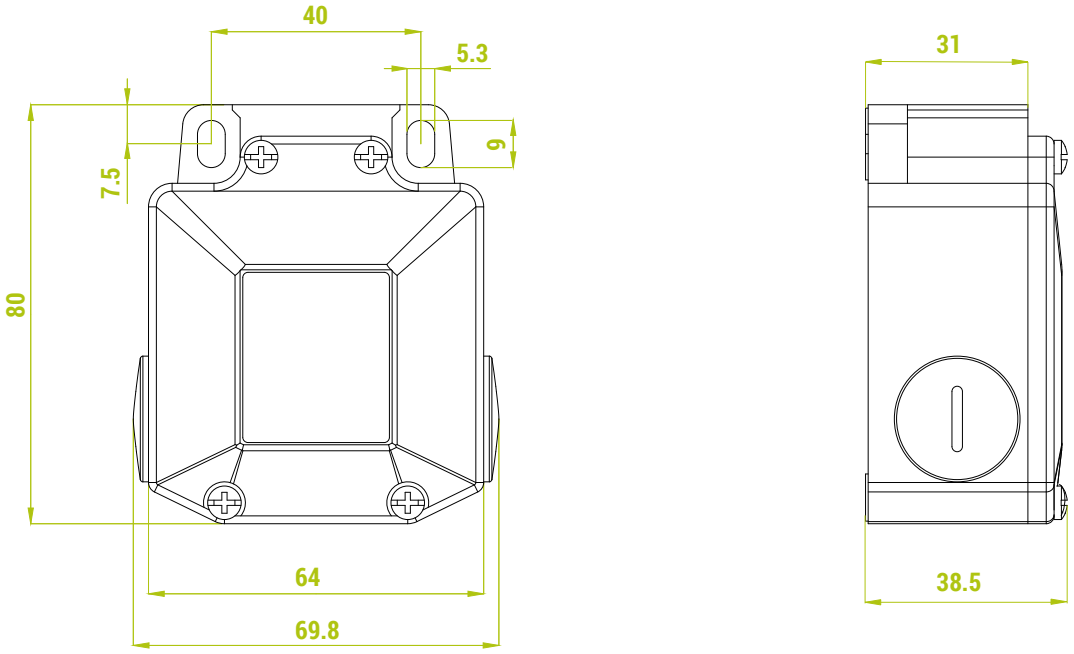
Code	**PRSL0025XX**	**PRSL0031XX**	**PRSL0036XX**	**PRSL0037XX**
Utilisation category	AC 15			
Rated operational current	3 A			
Rated operational voltage	250 Vac			
Rated thermal current	10 A			
Rated insulation voltage	300 Vac			
Mechanical life	$1x10^6$ operations			
Connections	Screw-type terminals			
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 homologatios	CE UKCA EAC		CE cULus UKCA EAC	

OVERALL DIMENSIONS (mm) - DOUBLE LEVER INO

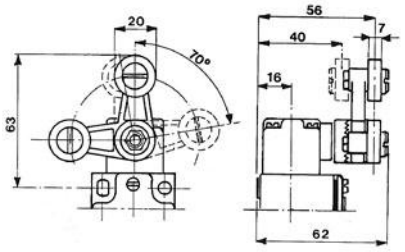
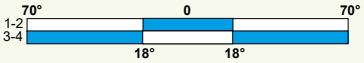
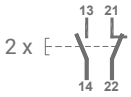
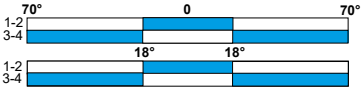
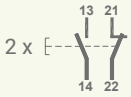
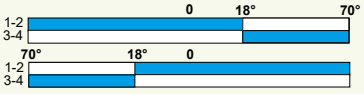
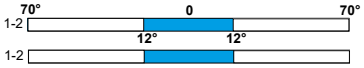
Series PF25 with 40 mm casing



Series PF33 with 64 mm casing

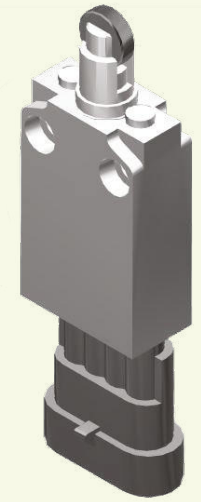


CODES FOR LIMIT SWITCHES - DOUBLE LEVER INO

		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
Conformità alle Direttive UKCA	UK Statutory Instruments 2016 No. 1101 - Electrical Equipment (Safety) Regulations 2016
	UK Statutory Instruments 2012 No. 3032 - The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012
Conformità alle Norme UKCA	IEC 60947-1:2020 Low-voltage switchgear and controlgear – Part 1: general rules
	IEC 60947-5-1:2016 Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices
	IEC 63000:2016 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances
Markings and homologations	CE UKCA UL

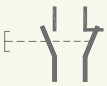
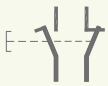
GENERAL TECHNICAL SPECIFICATIONS - WIRED INO

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

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					

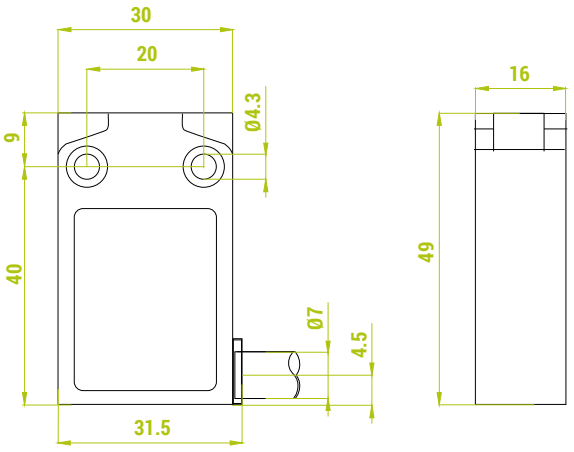
SWITCHES - WIRED INO

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

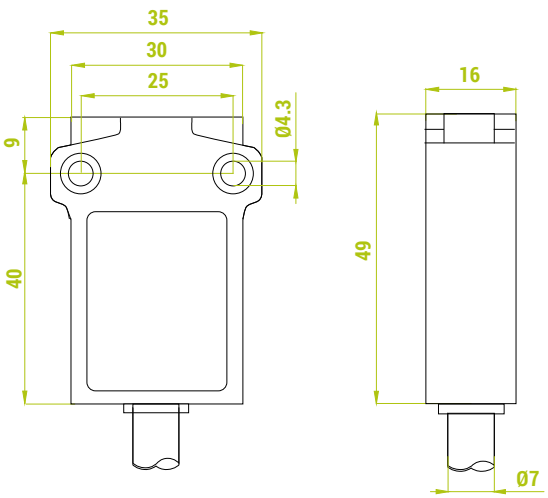
* Nont available for all operating heads.

OVERALL DIMENSIONS (mm) - WIRED INO

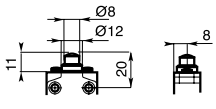
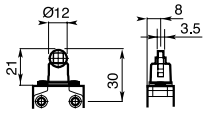
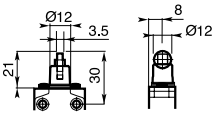
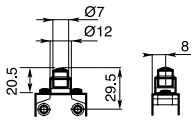
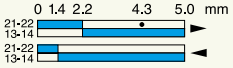
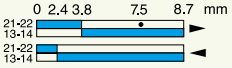
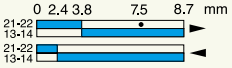
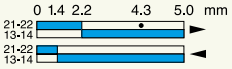
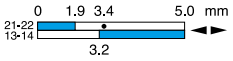
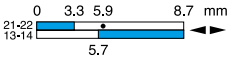
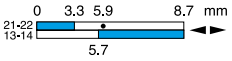
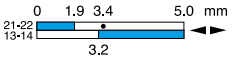
Series C20 with 30 mm technopolymer casing
Series C21 with 30 mm metal casing

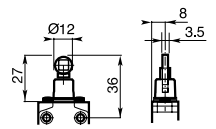
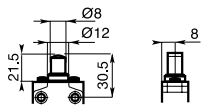
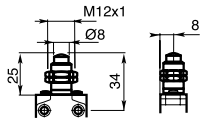
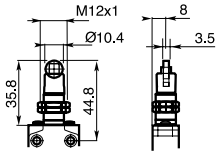
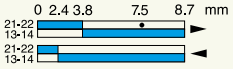
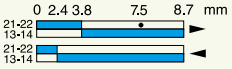
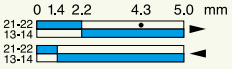
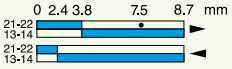
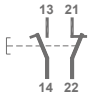
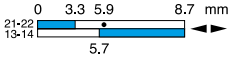
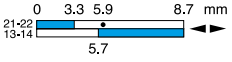
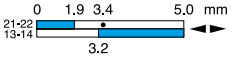
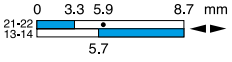


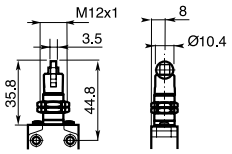
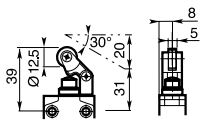
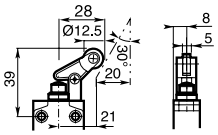
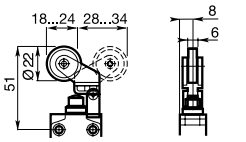
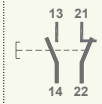
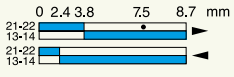
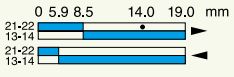
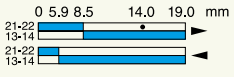
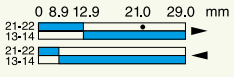
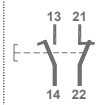
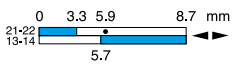
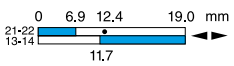
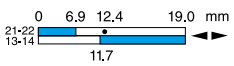
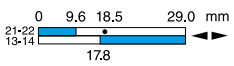
Series C22 with 35 mm technopolymer casing
Series C23 with 35 mm metal casing

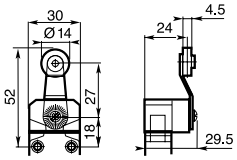
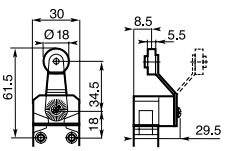
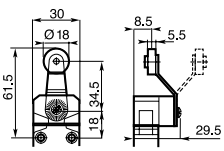
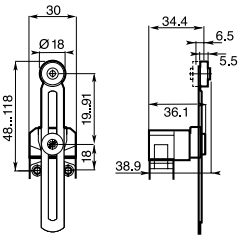
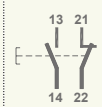
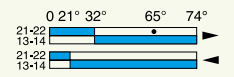
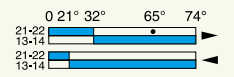
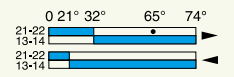
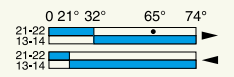
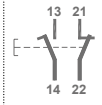
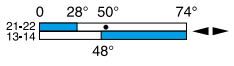
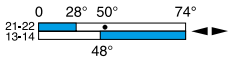
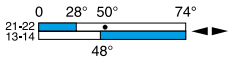
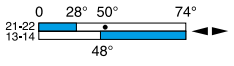


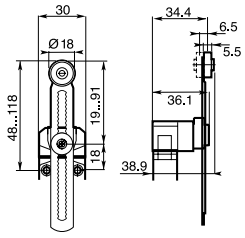
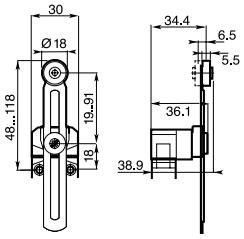
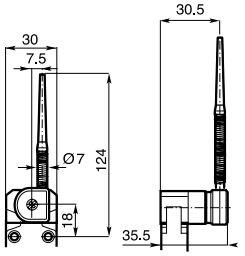
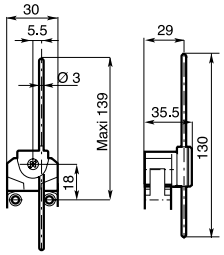
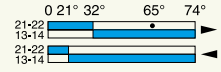
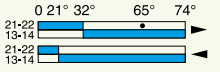
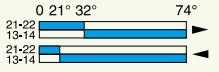
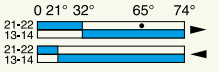
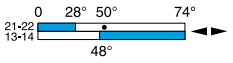
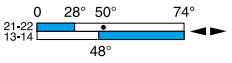
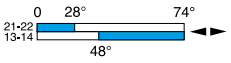
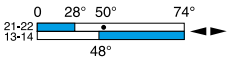
HEADS FOR LIMIT SWITCHES WIRED INO

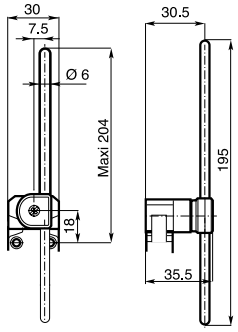
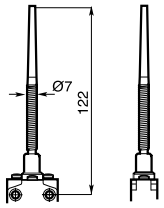
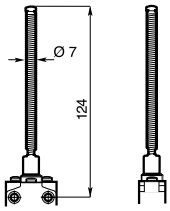
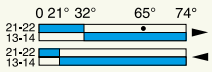
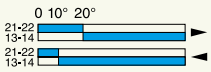
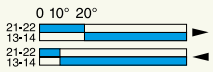
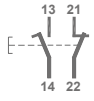
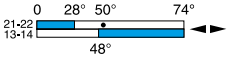
	Plain plunger	Roller plunger	Cross roller plunger	Plunger with dust protective cap
				
Code of head	**611** For series C20, C21, C22, C23	**612**: metal roller **613**: nylon roller For series C20, C21, C22, C23	**614**: metal roller **615**: nylon roller For series C20, C21, C22, C23	**616** For series 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 For series C20, C21, C22, C23	**631** For series C20, C21, C22, C23	**632** For series C20, C22	**638** 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					
Switch code **F0** slow action break before make 1NO+1NC					

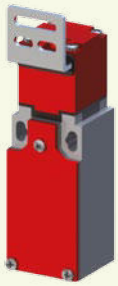
	Ø14 mm roller lever	Ø18 mm nylon roller lever	Ø18 mm metal roller lever	Adjustable lever with Ø18 mm roller
				
Code of head	**641**: nylon roller **642**: metal roller **643**: ball bearing For series C20, C21, C22, C23	**645** For series C20, C21, C22, C23	**646** For series C21, C23	**651** For series 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					
Switch code **F0** slow action break before make 1NO+1NC					

		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					

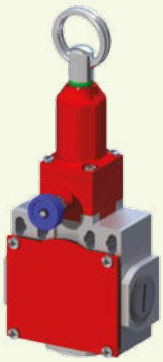
		Adjustable Ø6 mm rod	Multidirectional nylon actuator with stainless steel spring	Multidirectional actuator with stainless steel spring
				
Code of head		**673**: nylon rod **674**: fiber-glass rod For series C20, C21, C22, C23	**692** For series C20, C21, C22, C23	**693** For series C20, C21, C22, C23
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)
	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)
Conformity to UKCA Directives	UK Statutory Instruments 2016 No. 1101 - Electrical Equipment (Safety) Regulations 2016
	UK Statutory Instruments 2012 No. 3032 - The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012
	UK Statutory Instruments2008 No. 1597 - The Supply of Machinery (Safety) Regulations 2008
Conformity to UKCA Standards	IEC 60947-5-1:2016 Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices
	ISO 14119:2013 Interlocking devices associated with guards
	IEC 63000:2016 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances
Markings and homologations	CE UKCA UL

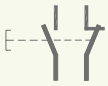
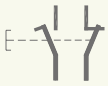
Ambient temperature	Storage -30°C/+80°C
	Operational -25°C/+70°C
IP protection degree	Technopolymer series IP65
	Metal and aluminum series IP66
Insulation category	Technopolymer series Class II
	Metal and aluminum series Class I
Mechanical life	1 x 10^6 operations
	With wire head 500,000 operations
Operating 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
	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
Cable entry	PG 13.5
	1/2" NPT
	PG 11*
	M16 x 1.5*
	M20 x 1.5

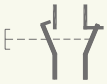
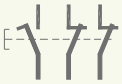
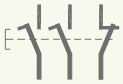
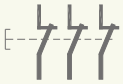
* Not available on all versions.

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
	0.4 A / 250 Vdc / DC13 - 0.27 A (for three-pole switches for Safety Ino with 40 mm and 60 mm casing)
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 θ < 40°C	10 A
Short-circuit protection U_e < 500 Vac - fuse type gG (gl)	10 A
Switching frequency	3600 cycles/hour
Load factor	0.5
Contact resistance	25 mΩ
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 o 2 x 0.75 ... 2.5 mm^2 (two-pole contacts), 1 o 2 x 0.34 ... 1.5 (three-pole contacts)

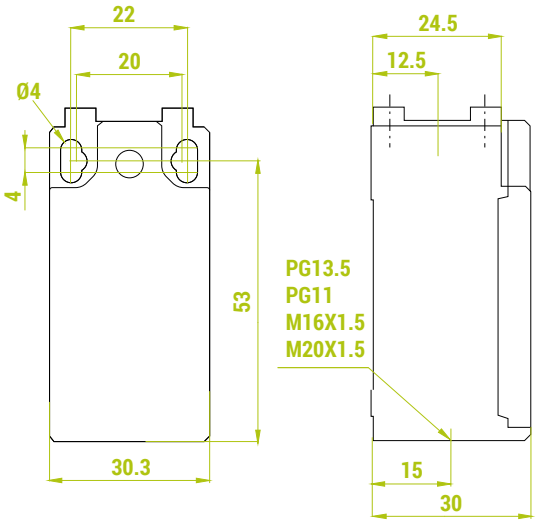
SWITCHES - SAFETY INO

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 ⊖)	1NO+1NC (All NC contacts are of the positive opening operation type ⊖)	2 NC (All NC contacts are of the positive opening operation type ⊖)	1NO+1NC (All NC contacts are of the positive opening operation type ⊖)
Scheme				

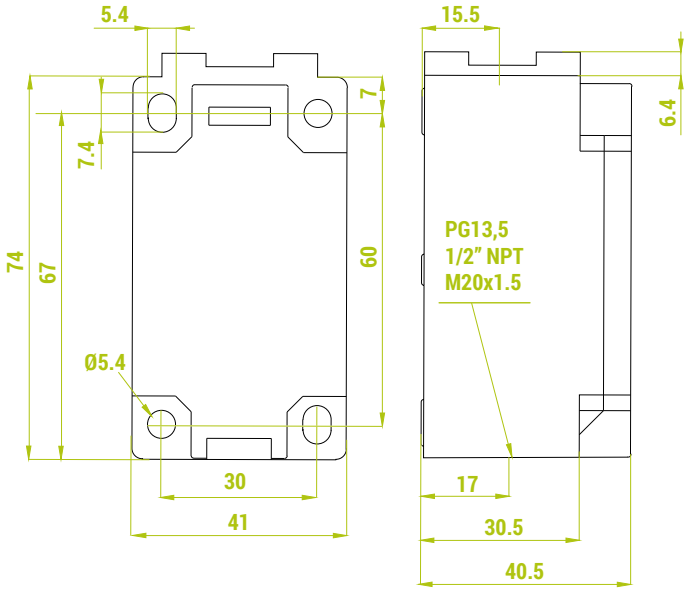
Switch type	Slow action Make before break	Slow action Break before make	Slow action Break before make	Slow action Simultaneous
Contacts	1NO+1NC (All NC contacts are of the positive opening operation type ⊖)	1NO+2NC (All NC contacts are of the positive opening operation type ⊖)	2NO+1NC (All NC contacts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

OVERALL DIMENSIONS (mm) - SAFETY INO IN TECHNOPOLYMER

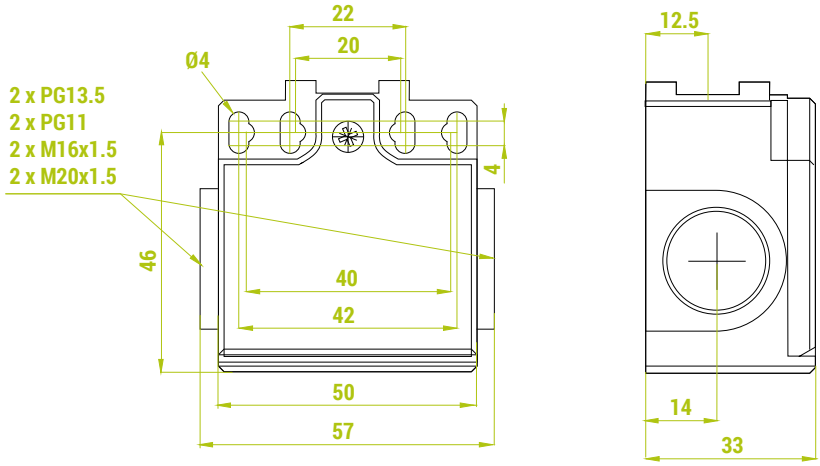
Series C50 with 30 mm casing
Series C01 with manual reset button and 30 mm casing



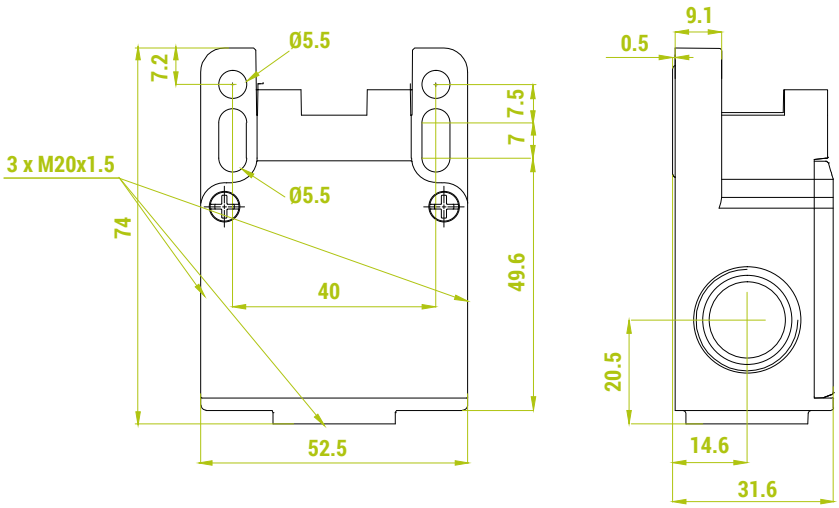
Series C52 with 40 mm casing



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

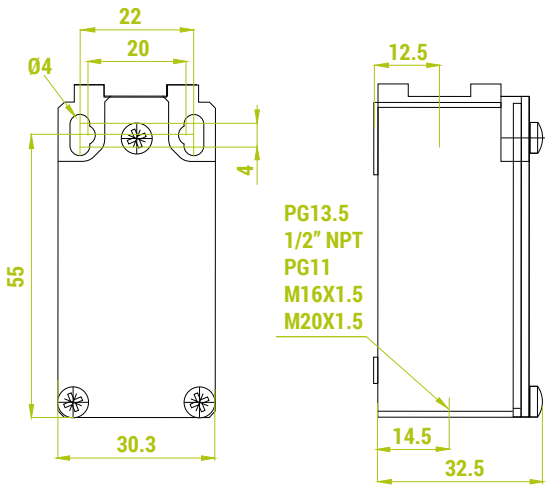


Series C56 with 50 mm casing and three cable entries

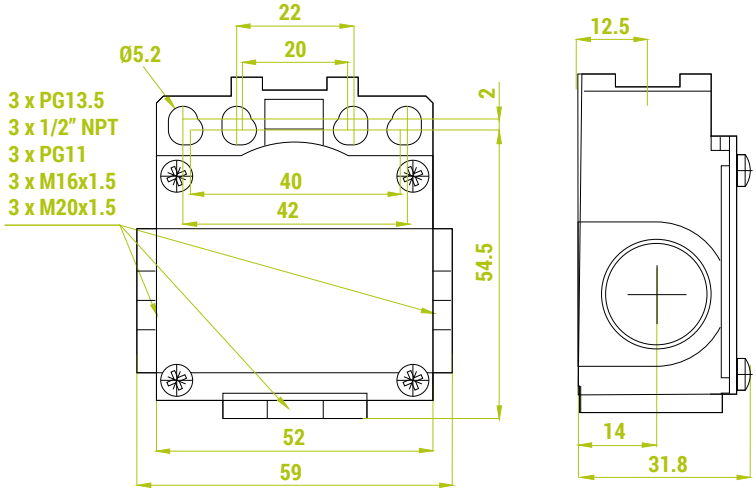


OVERALL DIMENSIONS (mm) - SAFETY INO IN METAL

Series C51 with 30 mm casing
Series C02 with manual reset button and 30 mm casing

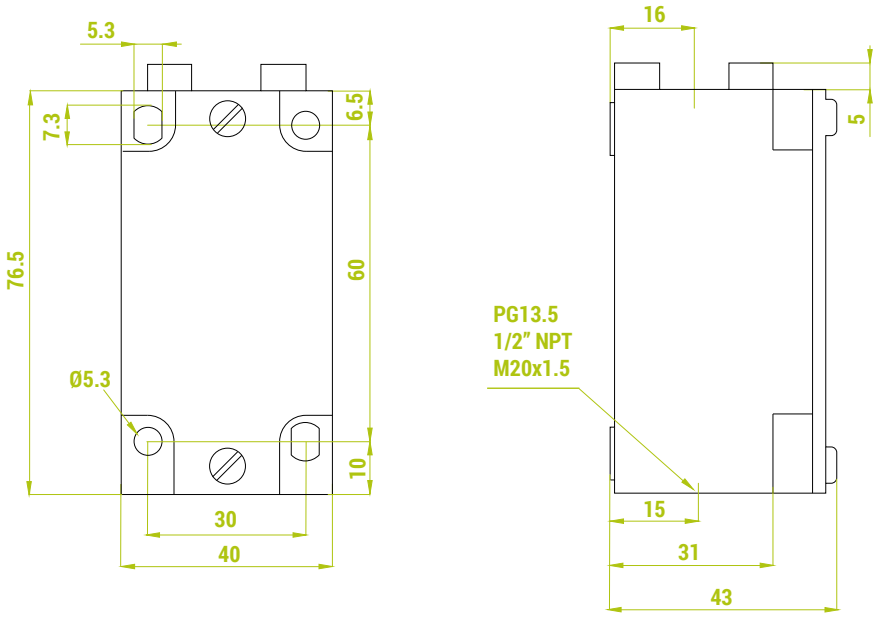


Series C55 with 50 mm casing
Series C06 with manual reset button and 50 mm casing

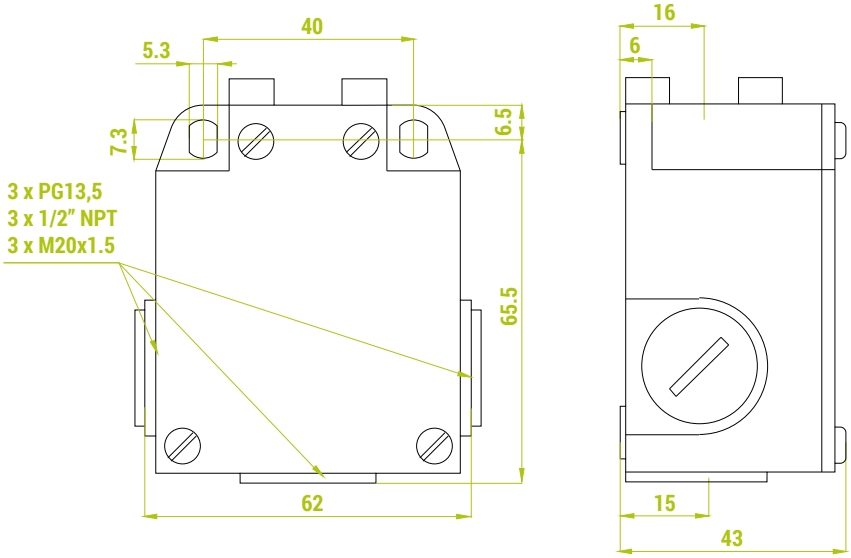


OVERALL DIMENSIONS (mm) - SAFETY INO IN ALUMINUM

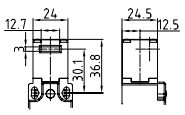
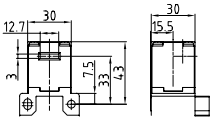
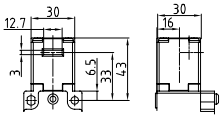
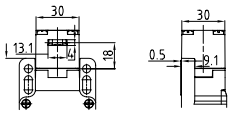
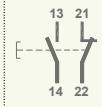
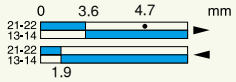
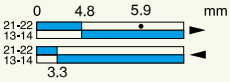
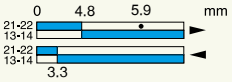
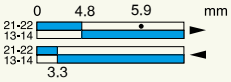
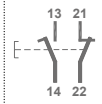
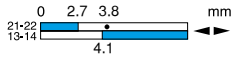
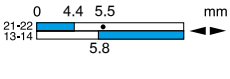
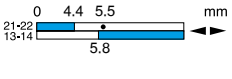
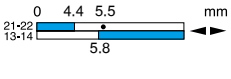
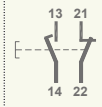
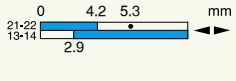
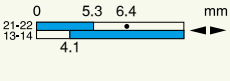
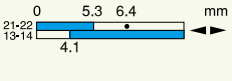
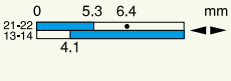
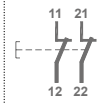
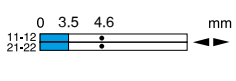
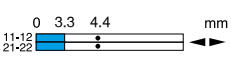
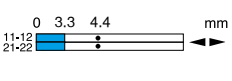
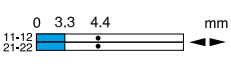
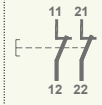
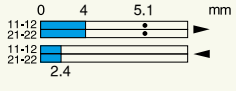
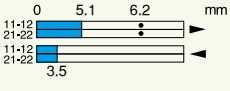
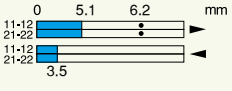
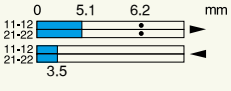
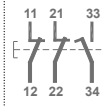
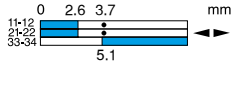
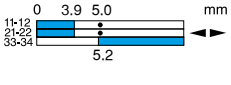
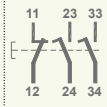
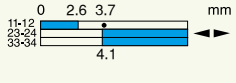
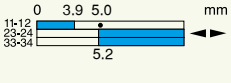
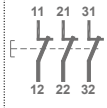
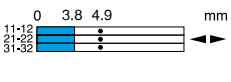
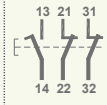
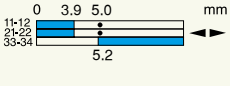
Series C53 with 40 mm casing

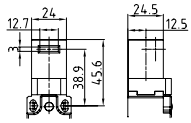
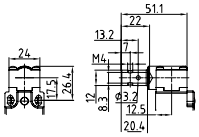
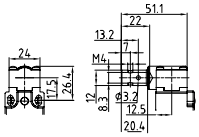
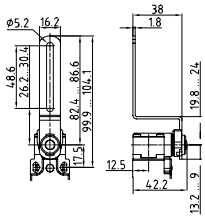
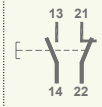
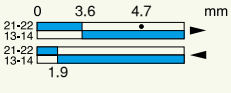
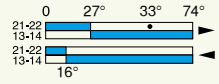
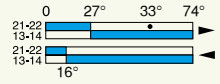
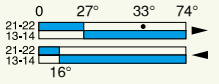
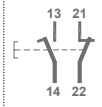
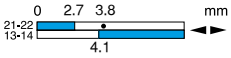
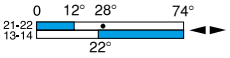
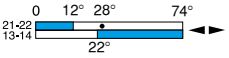
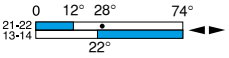
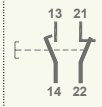
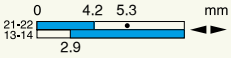
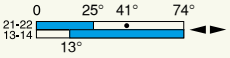
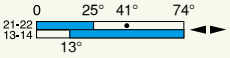
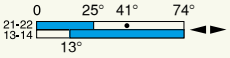
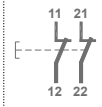
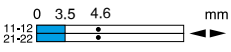
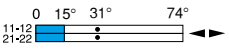
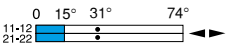
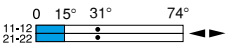
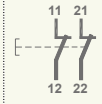
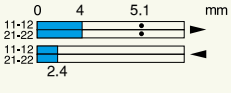
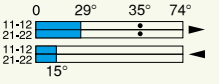
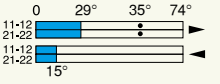
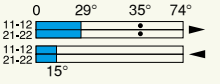
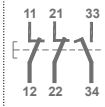
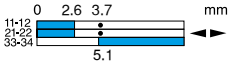
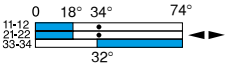
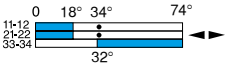
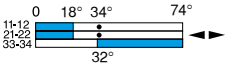
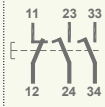
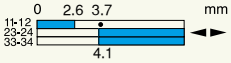
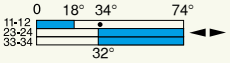
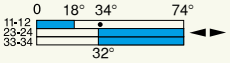
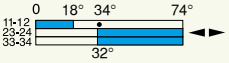
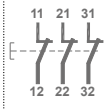


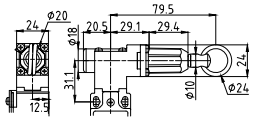
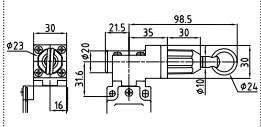
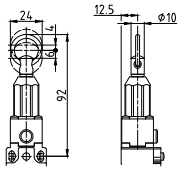
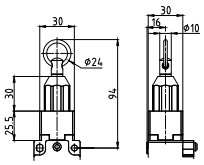
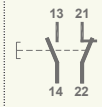
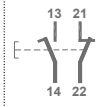
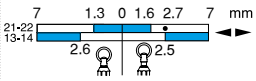
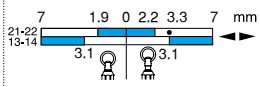
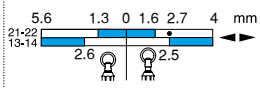
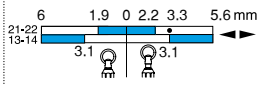
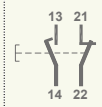
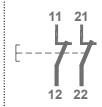
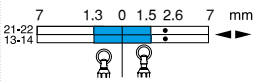
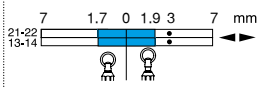
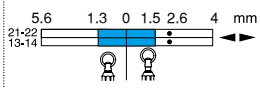
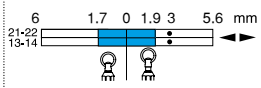
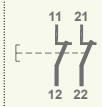
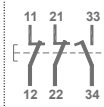
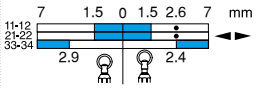
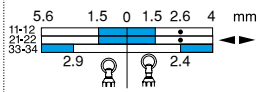
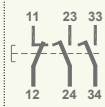
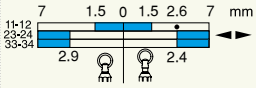
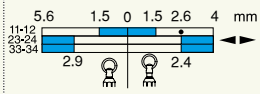
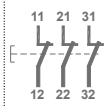
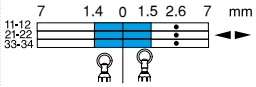
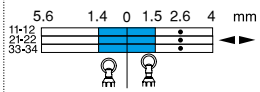
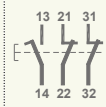
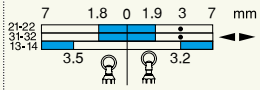
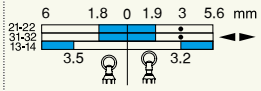
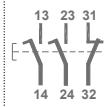
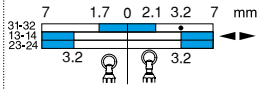
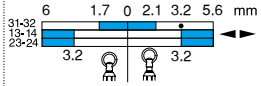
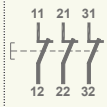
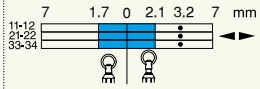
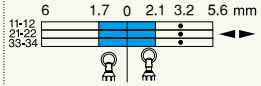
Series C57 with 60 mm casing

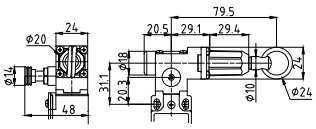
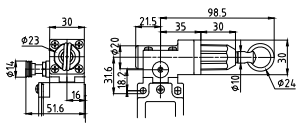
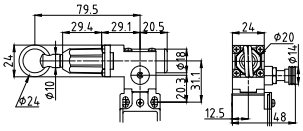
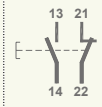
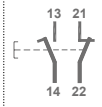
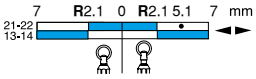
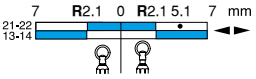
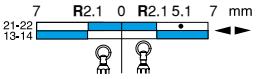
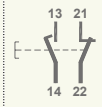
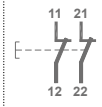
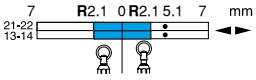
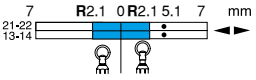
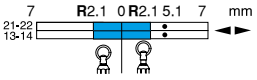
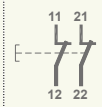
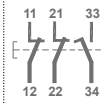
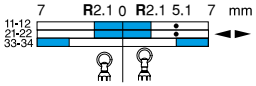
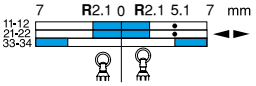
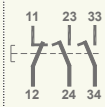
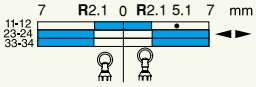
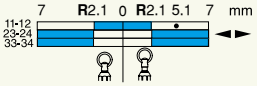
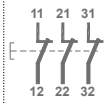
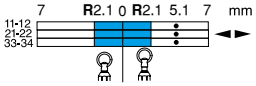
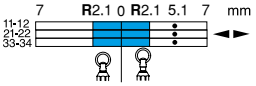
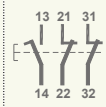
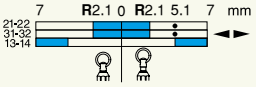
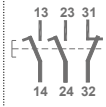
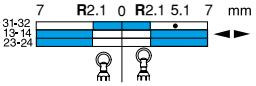
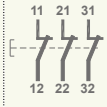
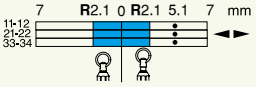


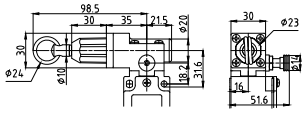
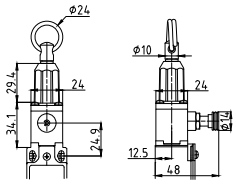
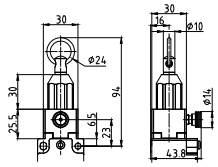
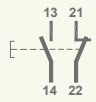
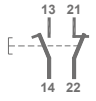
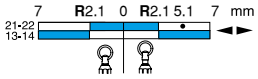
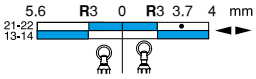
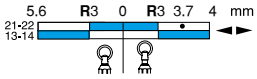
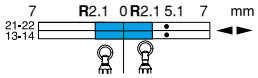
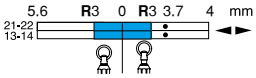
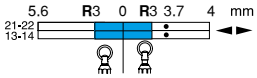
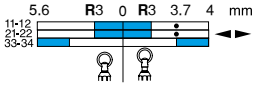
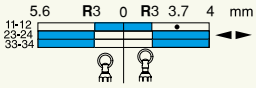
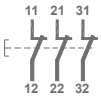
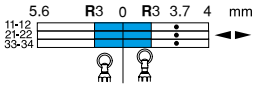
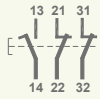
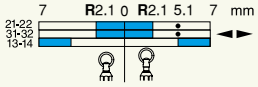
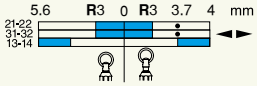
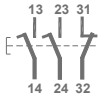
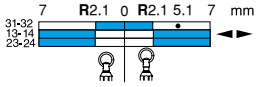
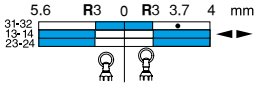
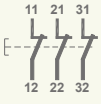
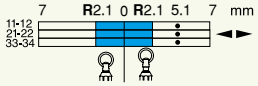
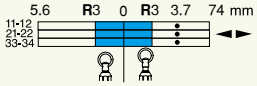
HEADS FOR LIMIT SWITCHES SAFETY INO

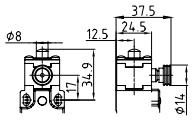
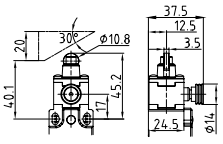
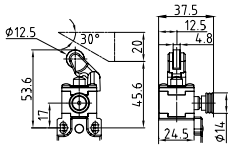
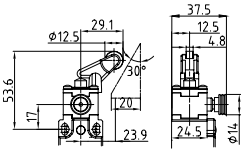
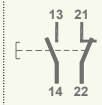
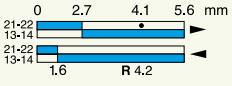
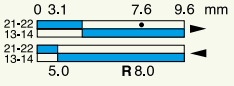
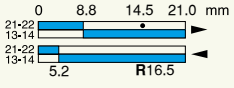
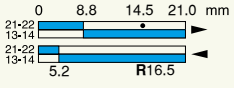
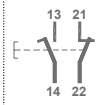
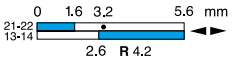
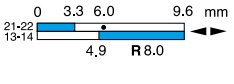
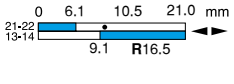
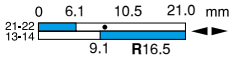
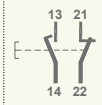
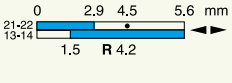
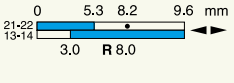
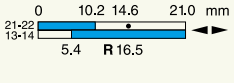
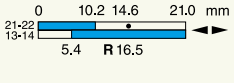
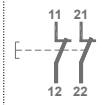
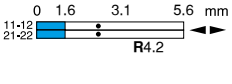
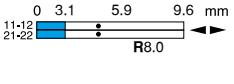
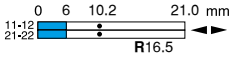
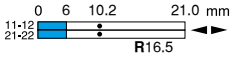
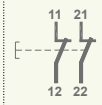
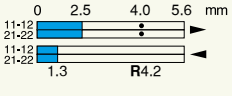
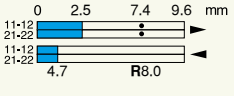
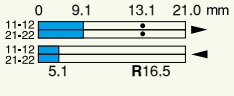
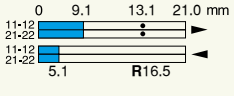
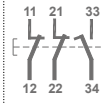
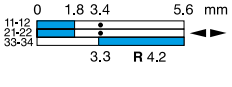
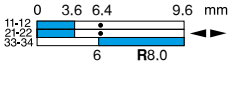
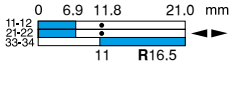
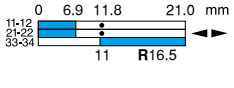
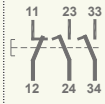
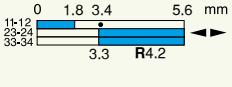
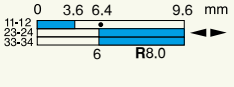
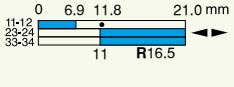
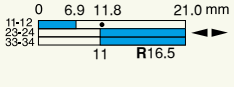
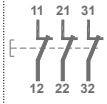
		Adjustable head 90° with separate actuator	Adjustable head 90° with separate actuator	Adjustable head 90° with separate actuator	Adjustable head 90° with separate actuator
					
Code of head		**710** For series C50, C51, C54, C55	**73000** For series C52	**74000** For series C53, C57	**75000** For series 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		/			/

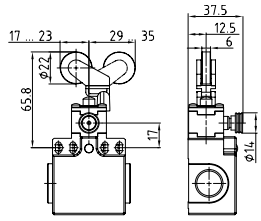
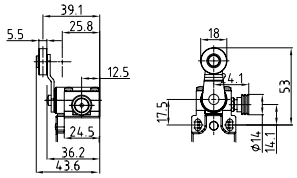
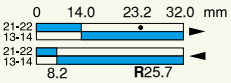
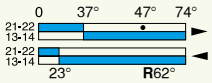
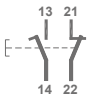
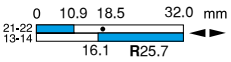
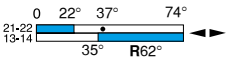
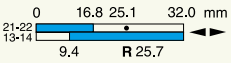
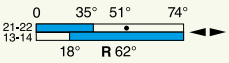
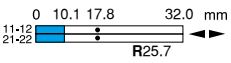
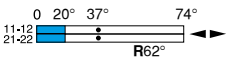
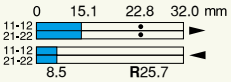
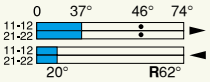
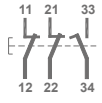
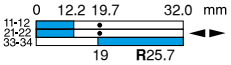
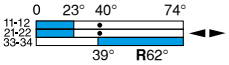
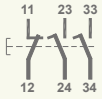
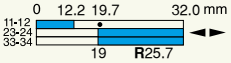
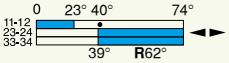
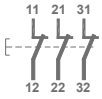
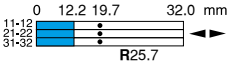
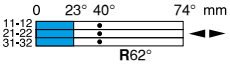
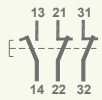
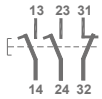
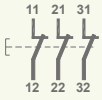
		Fully turnable head with separate actuator	Zinc plated steel shaft for hinge mount	Stainless steel shaft for hinge mount	Zinc plated steel lever for hinge mount
					
Code of head		**780** For series C50, C51, C54, C55	**771** For series C50, C51, C54, C55	**772** For series C50, C51, C54, C55	**761** For series C50, C51, C54, C55
Min. actuating force (N) or torque (Nm) / for positive opening		15 N / 30 N ⊕	0.12 Nm / 0.60 Nm ⊕	0.12 Nm / 0.60 Nm ⊕	0.12 Nm / 0.60 Nm ⊕
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 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 ⇔	Initial 150 N, final 215 N / 230 N ⇔	Initial 60 N, final 80 N / 90 N ⇔	Initial 120 N, final 160 N / 170 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		/		/	

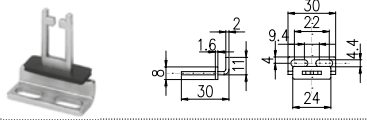
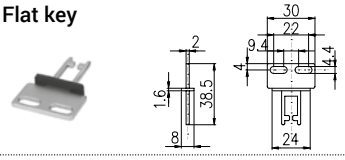
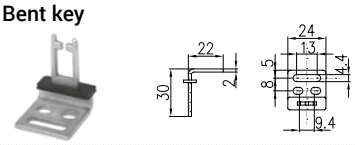
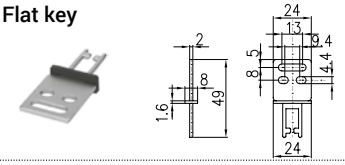
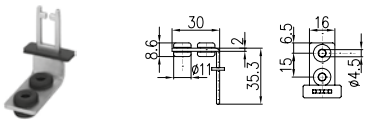
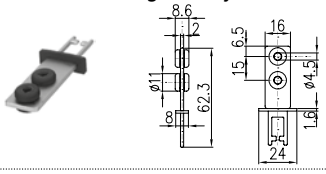
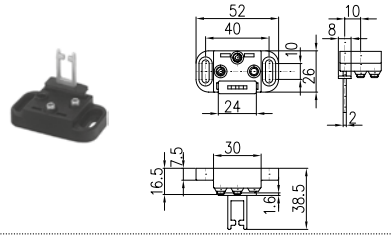
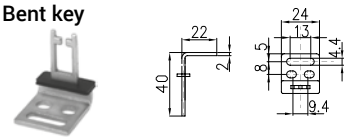
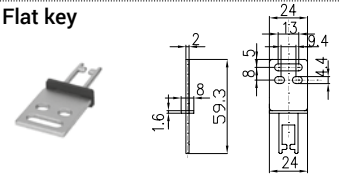
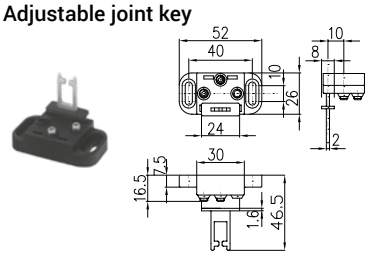
		Pull wire with reset for emergency stop	Pull wire with reset for emergency stop	Pull wire with reset for emergency stop
				
Code of head		**79200** For series C51, C55	**79400** For series C53, C57	**79300** For series C51, C55
Min. actuating force (N) or torque (Nm) / for positive opening		Initial 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		/		/

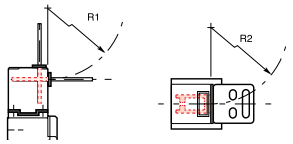
		Pull wire with reset for emergency stop	Pull wire with reset for emergency stop	Pull wire with reset for emergency stop
				
Code of head		**79500** For series C53, C57	**79800** For series C51, C55	**79900** For series C53, C57
Min. actuating force (N) or torque (Nm) / for positive opening		Initial 150 N, final 215 N / 230 N ⊖	Initial 60 N, final 80 N / 90 N ⊖	Initial 120 N, final 160 N / 170 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 ⊖	12 N / 30 N ⊖	7 N / 24 N ⊖	7 N / 24 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 nylon roller with reset	Lever with nylon roller with reset
			
Code of head		**838** For series C05, C06	**841** For series C01, C02, C05, C06
Min. actuating force (N) or torque (Nm) / for positive opening		7 N / 24 N ⊖	0.10 Nm / 0.32 Nm ⊖
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		/	/

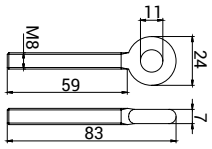
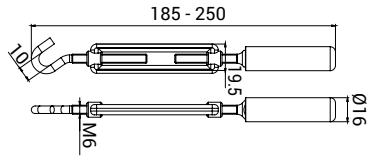
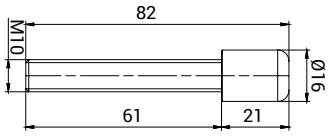
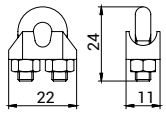
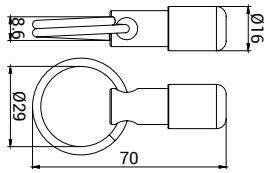
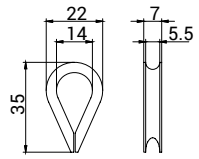
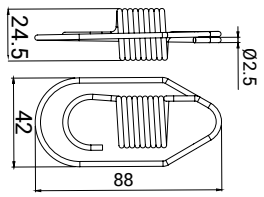
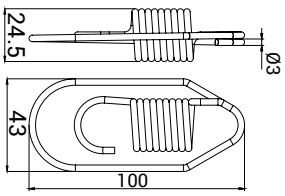
OPERATING KEYS FOR LIMIT SWITCHES SAFETY INO WITH SEPARATE ACTUATOR

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

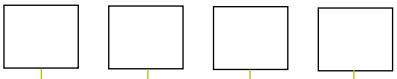
Legend 

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

ACCESSORIES FOR INO SAFETY ROPE LIMIT SWITCHES

Dimensions (mm)	Description	Code
 	Pull rod	TERCOCC08
 	Pull rod	TERCSLSFX1
 	Pull rod	TERCSLSFX3
 	Clamp	TERCMOR05
 	Clamp	TERCSLSFX2
 	Thimble	TERCRED05
	Rope diameter 5 mm – Length 10 m	TERCFUN05M010
	Rope diameter 5 mm – Length 15 m	TERCFUN05M015
	Rope diameter 5 mm – Length 20 m	TERCFUN05M020
	Rope diameter 5 mm – Length 25 m	TERCFUN05M025
	Rope diameter 5 mm – Length 102 m	TERCFUN05M102
 	Spring for series C51, C55	TERCSLSM1
 	Spring for series C53, C57	TERCSLSM2

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

Switches
A0 = snap action 1NO+1NC.
C0 = slow action - break before make 1NO+1NC.
D0 = slow action - make befor 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.
C4 = slow action - break before make 1NO+2NC.
C5 = slow action - break before make 2NO+1NC.
C6 = slow action - break before make 2NO+1NC.
B7 = slow action - simultaneous 3NC.
B8 = slow action - simultaneous 3NC.
B9 = slow action simultaneous 3NO.
B10 = slow action 2NC staggered contacts.

Operating heads
010 - 599 = operating heads
For series **C01**, **C02**, **C05** and **C06** refer to tables from page to page 13.
For series **C03** refer to tables from page 14 to page 18.
For series **C04** and **C07** refer to tables from page 19 to page 24.

For limit switch Standard Ino for operational temperature -40°C/+70°C (also available on request), tick the box below.

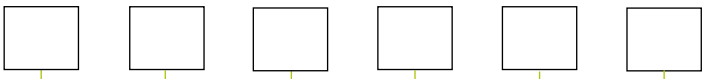
☐

Instructions

Fill in the boxes with the numbers/letters 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

Connections
U = standard with PVC cable.
W = connector M12.
X = connector AMP.
(Not available for all versions).
Y = dynamic PUR cable.
Z = halogen free PUR cable.

Operating heads
611 - 693 = operating heads
Refer to tables from page 31 to page 33.

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

With AMP connector, the central one is the only available position (**C**).

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.

00 = with connector.

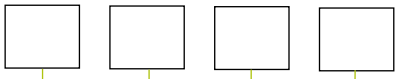
Switches
E0 = snap action 1NO+1NC.
F0 = slow action - break before make 1NO+1NC.

Instructions

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

C20	U	612	E0	01	R

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

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.
C4 = slow action - break before make 1NO+2NC.
C5 = slow action - break before make 2NO+1NC.
C6 = slow action - break before make 2NO+1NC.
B7 = slow action - simultaneous 3NC.
B8 = slow action - simultaneous 3NC.

Type of cable entry
1 = for cable gland thread PG13.5.
(Not available for series C56).
2 = for cable gland 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 gland thread PG11.
(Available only for series C50, C51, C54, C55, C01, C02, C05, C06).
4 = for cable gland thread M16 x 1.5.
(Available only for series C50, C51, C54, C55, C01, C02, C05, C06).
5 = for cable gland thread M20 x 1.5.

Operating heads
710 - 841 = operating heads
For series from **C50** to **C57** refer to tables from page 39 to page 43.
For manual reset series **C01**, **C02**, **C05** and **C06** refer to tables from page 44 to page 45.

Instructions

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

C50	5	771	B7