



Quality certifications



As ever watchful for quality, since 1998, Comepi is qualified ISO 9002 thus offering its domestic and foreign interlocutors a deeper warranty of its ability to adequately answer the ever increasing need of effective and fruitful relationship.

The update to ISO 9001:2008, made in 2009, confirms the Comepi quality politics. The control of full application of ISO 9000 norms and its timely updating is guaranteed by well tested procedures ranging from control of the process up to the use of statistic techniques.

Comepi personnel, at any given level, is involved in this process in order to achieve the highest end-user satisfaction besides growth of image, competitiveness and profits for the firm.

Limit Switches

Specifications, Directives and Standards	4
Terminology	6
Travel and operating diagrams	7
Description, Symbols and Technical Data - Plastic Casing IP 65	8
Description, Symbols and Technical Data - Metal Casing IP 66	10
Description, Symbols and Technical Data - Plastic and Metal Casing IP 67	12
Implementation	14
Utilization Precautions	15
Accessories and Special Versions	16

Selection Table

AP_T Series (30 mm. Plastic Casing - EN 50047)	18
DP_T Series (50 mm. Plastic Casing)	25
AM_F / AM_T Series Series (30 mm. Metal Casing - EN 50047)	30
DM_F / DM_T Series (50 mm. Metal Casing)	35
BP_H Series (40 mm. Plastic Casing - EN 50041)	40
BM_P / BM_M / BM_E Series (40 mm. Metal Casing – EN50041)	45
CM_P / CM_M / CM_E Series (60 mm. Metal Casing)	54
EP1G Series (30 mm. Plastic Casing)	64
EP2G Series (35 mm. Plastic Casing)	68
EM1G Series (30 mm. Metal Casing)	72
EM2G Series (35 mm. Metal Casing)	76
Limit switches for special applications	80

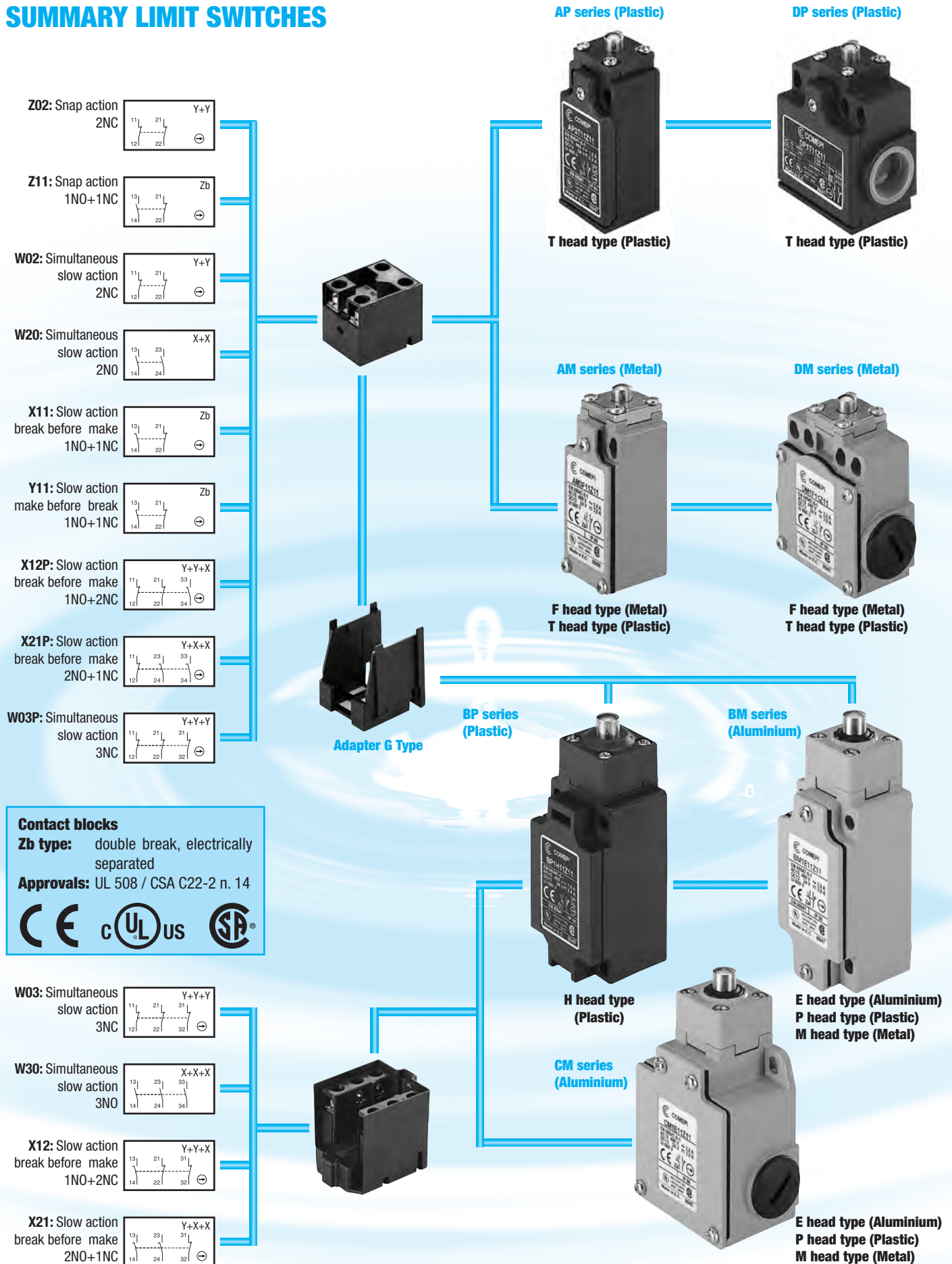
Safety Limit Switches

Summary of available lines	82
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Foot Switches

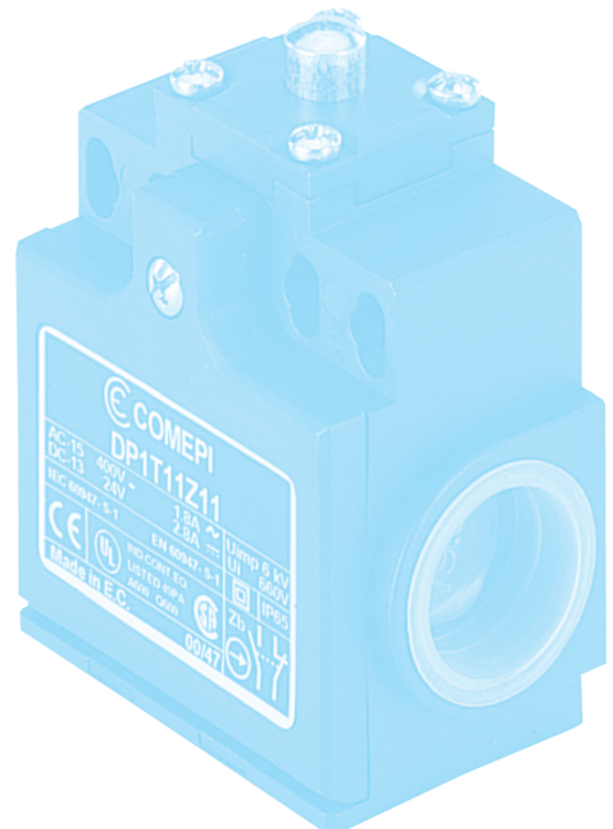
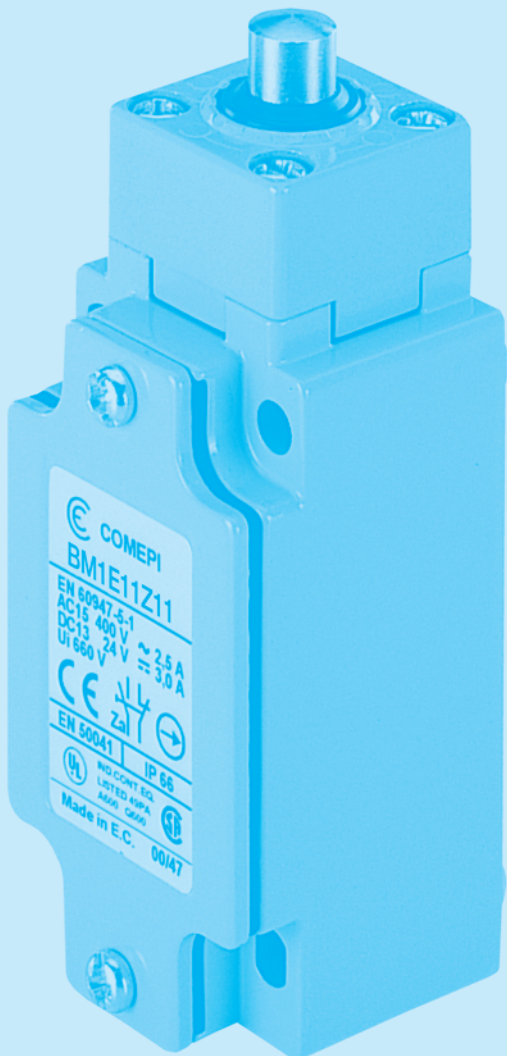
Description PS... / PD... Series	92
Accessories	94
Description MP_ Series	95
Technical Data	96

SUMMARY LIMIT SWITCHES





LIMIT SWITCHES



The **Cometpi** products listed in this catalogue are developed and manufactured according to the rules set out in IEC international publications and EN European standard.

Specifications

- **International Specifications**

The International Electrotechnical Commission, IEC, which is part of the International Standards Organization, ISO, publishes IEC publications which act as a basis for the world market.

- **European Specifications**

The European Committee for Electrotechnical Standardisation (CENELEC) publishes EN standards for low voltage industrial apparatus.

These European standards differ very little from IEC international standards and use a similar numbering system. The same is true of national standards. Contradicting national standards are withdrawn.

- **Harmonised European Specifications**

The European Committees for Standardisation (CEN and CENELEC) publish EN standards relating to safety of machinery.

- **Specifications in Canada and the USA**

These are equivalent, but differ markedly from IEC, UTE, VDE and BS specifications.

UL Underwriters Laboratories (USA)

CSA Canadian Standards Association (Canada)

Remark concerning the label issued by the UL (USA). Two levels of acceptance between devices must be distinguished.

“Recognized” Authorised to be included in equipment, if the equipment in question has been entirely mounted and wired by qualified personnel. They are not valid for use as “General purpose products” as their possibilities are limited.

They bear the mark: 

“Listed” Authorised to be included in equipment and for separate sale are “General purpose products” components in the USA.

They bear the mark: 

European Directives

The guarantee of free movement of goods within the European Community assumes elimination of any regulatory differences between the member states. European Directives set up common rules that are included in the legislation of each state while contradictory regulations are cancelled.

There are three main directives:

- **Low Voltage Directive 2014/35/UE** concerning electrical equipment from 50 to 1000 V a.c. and from 75 to 1500 V d.c.

This specifies that compliance with the requirements that it sets out **is acquired** once the equipment conforms to the standards harmonised at European level: EN 60947-1 and EN-60947-5-1 for **limit switches**.

- **Machines Directives - 2006/42/CE** defining main safety and health requirements concerning design and manufacture of the machines and other equipment including safety components in European Union countries.

- **Electromagnetic Compatibility Directive 2014/30/UE** concerning all electrical devices likely to create electromagnetic disturbances.

Signification of CE marking:

CE marking must not be confused with a quality label.

CE marking placed on a product is proof of conformity with the European Directives concerning the product.

CE marking is part of an administrative procedure and guarantees free movement of the product within the European Community.

Standards

- **International Standards**

IEC 60947-1 Low-voltage switchgear and controlgear - Part 1: General Rules (CEI EN 60947-1).

IEC 60947-5-1 Low-voltage switchgear and controlgear - Part 5: Control circuit devices and switching elements - Section 1: Electromechanical control circuit devices (CEI EN 60947-5-1) - Chapter 3: Special requirements for control switches with positive opening operation.

IEC 60204-1 Electrical equipment on industrial machines - Part 1: General requirements (CEI EN 60204-1).

IEC 60204-2 Electrical equipment on industrial machines - Part 2: Item designation and examples of drawings, diagrams, tables and instructions.

IEC 60529 Degrees of protection provided by enclosure (IP code) (CEI EN 60529).

- **European Standards**

- EN 50041** Low-voltage switchgear and controlgear for industrial use - Control switches - Position switches 42,5 x 80 - Dimensions and characteristics.
- EN 50047** Low-voltage switchgear and controlgear for industrial use - Control switches - Position switches 30 x 55 - Dimensions and characteristics.
- EN 60947-1** Low-voltage switchgear and controlgear for industrial use - Part 1: General rules.
- EN 60947-5-1** Low-voltage switchgear and controlgear for industrial use - Part 5: Control circuit devices and switching elements - Section 1: Electromechanical control circuit devices - Chapter 3: Special requirements for control switches with positive opening operation.
- EN 60529** Degrees of protection provided by enclosures (IP code).
- EN 61058-1** Switches for appliances. Part. 1: general requirements.
- EN 60947-5-5** Low-voltage switchgear and controlgear - Part 5-5: Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function.

- **American Standards**

- UL 508** Standard for Industrial Control Equipment.
- CSA - C22.2 No. 14-13** Industrial Control Equipment.

Double Insulation

Class II materials, according to IEC 536, are designed with double insulation. This measure consists in doubling the functional insulation with an additional layer of insulation so as to eliminate the risk of electric shock and thus not having to protect elsewhere. No conductive part of "double insulated" material should be connected to a protective conductor.

Positive Opening Operation

A control switch, with one or more break-contact elements, has a positive opening operation when the switch actuator ensures full contact opening of the break-contact. For the part of travel that separates the contacts, there must be a positive drive, with no resilient member (e.g. springs), between the moving contacts and the point of the actuator to which the actuating force is applied.

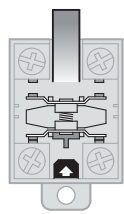
The positive opening operation does not deal with N.O. contacts.

Control switches with positive opening operation may be provided with either snap action or slow action contact elements. To use several contacts on the same control switch with positive opening operation, they must be electrically separated from each other, if not, only one may be used.

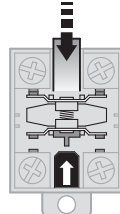
Every control switch with positive opening operation must be indelibly marked on the outside with the symbol:

Snap Action

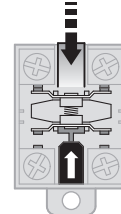
Snap action contacts are characterised by a release position that is distinct from the operating position (differential travel). Snap breaking of moving contacts is independent of the switch actuator's speed and contributes to regular electric performance even for slow switch actuator speeds.



State of rest



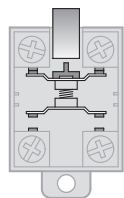
Contact change



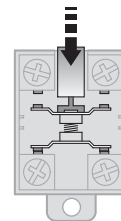
Positive opening

Slow Action

Slow action contacts are characterised by a release position that is the same as the operating position. The switch actuator's speed directly conditions the travel speed of contacts.



State of rest



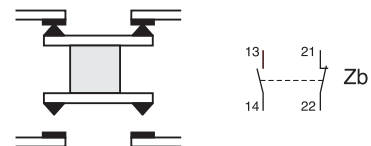
Completely closed

Contact shape according to IEC 947-5-1.

Change-over contact elements with 4 terminals must be indelibly marked with the corresponding Za or Zb symbol as in the diagrams below.



Contacts with the same polarity



The 2 moving contacts are electrically separated

Utilization Category

AC-15: switching of electromagnetic loads of electromagnets using an alternating current (>72 VA).

DC-13: switching of electromagnets using a direct current.

Terminals

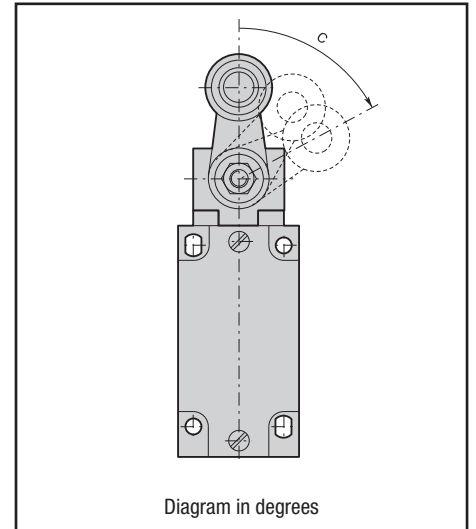
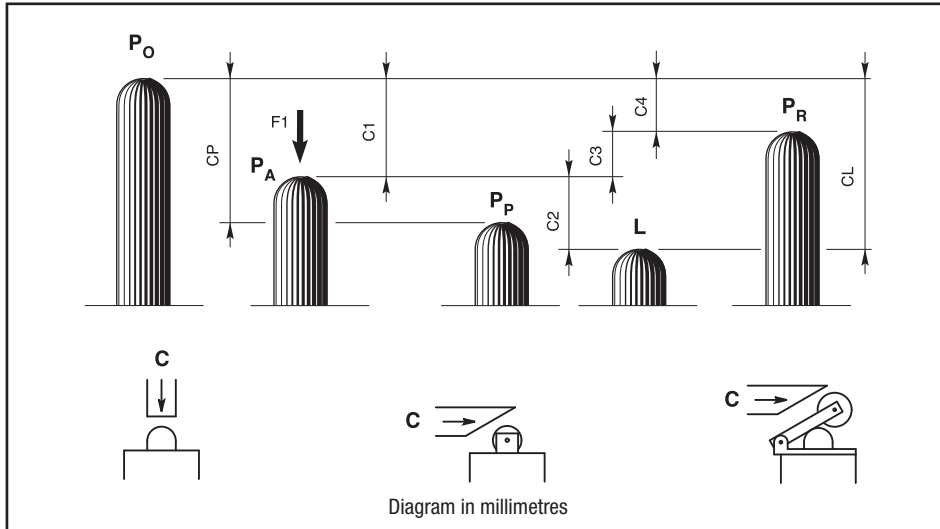
Limit switches with metal casings must have a terminal, for a protective conductor, that is placed inside the casing very close to the cable inlet and must be indelibly marked.

Minimum Actuation Force/Torque

The minimum amount of force/torque that is to be applied to the switch actuator to produce a change in contact position.

Minimum Force/Torque to achieve Positive Opening Operation

The minimum amount of force/torque that is to be applied to the switch actuator to ensure positive opening operation of the N.C. contact.



P₀ Free position:

position of the switch actuator when no external force is exerted on it.

P_A Operating position:

position of the switch actuator, under the effect of force F1, when the contacts leave their initial free position.

P_P Positive opening position:

position of the switch actuator from which positive opening is ensured.

L Max. travel position:

maximum acceptable travel position of the switch actuator under the effect of a force F1.

P_R Release position:

position of the switch actuator when the contacts return to their initial free position.

C₁ Pre-travel:

distance between the free position P₀ and the operating position P_A.

C_P Positive opening travel:

minimum travel of the switch actuator, from the free position, to ensure positive opening operation of the normally closed contact.

C₂ Over-travel:

distance between the operating position P_A and the max. travel position L.

C_L Max. travel:

distance between the free position P₀ and the max. travel position L.

C₃ Differential travel (C1-C4):

travel difference of the switch actuator between the operating position P_A and the release position P_R.

C₄ Release travel:

distance between the release position P_R and the free position P₀.

Diagram for snap action contacts:

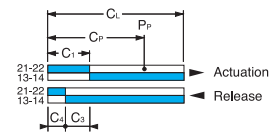
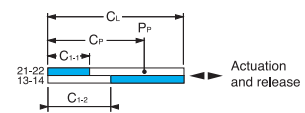


Diagram for non-overlapping slow action contacts:



Note: for slow action contacts, C₃ = 0, C₁₋₁ = pre-travel of contact 21-22, C₁₋₂ = pre-travel of contact 13-14

Examples:

BM1E13Z11

(snap action contacts)

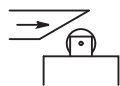
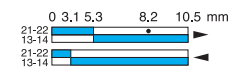


Diagram in millimetres/cam travel



BM1E41Z11

(snap action contacts)

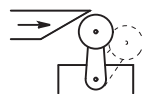
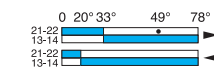


Diagram in degrees/lever rotation



BM1E11X11

(non-overlapping slow action contacts)

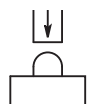
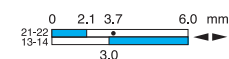


Diagram in millimetres/plunger travel



Applications

Easy to use, electromechanical limit switches offer specific qualities:

- Visible operation.
- Able to switch strong currents (10 A conventional thermal current).
- Electrically separated contacts.
- Precise operating points (consistency).
- Immune to electromagnetic disturbances.

They are purpose-built detection devices thanks to these characteristics:

- Presence/absence.
- Positioning and travel limit.
- Objects passing/counting.

Description

Limit switches, which are made of reinforced UL-V0 thermoplastic fiber-glass, offer double insulation and a degree of protection of IP65.

The casing come in 3 dimension: – AP... 30 mm. width – BP... 40 mm. width – DP... 50 mm. width

Casing

- 30 mm. width with standardized dimensions acc. to EN 50047
- 40 mm. width with standardized dimensions acc. to EN 50041
- 50 mm. width

Mounting the casing

- 2 x M4 screws on top part for 30 mm. width
- 2 or 4 x M5 screws for 40 mm. width
- 2 or 4 x M4 screws on top part for 50 mm. width

Contact Block:

- Contact configuration: NO + NC, 2 NO, 2 NC, 2NO + 1NC, 1NO + 2NC, 3NC, 3NO (only for BP series)
- Positive opening operation
- Snap action or slow action
- Contacts are electrically separated

Connecting terminals:

- Block of 2 contacts: M3.5 (+, -) pozidriv 2 screw
- Block of 3 contacts: M3 (+, -) screw
- Screw head with captive cable clamp
- Markings conform with IEC 60947-1, IEC 60947-5-1 standards

A variety of operating heads:

- Plain plunger
- Roller plunger
- Roller lever, adjustable or not, etc.

Assembled using 4 x ø 3 screws for 30 and 50 mm width.
Assembled using 4 x ø 4 screws for 40 mm width.

Cover:

- Closed using ø 3 screw for 30 and 50 mm width.
- Self clipping closure for 40 mm width.

One piece sealing gasket to ensure tightness.

Electrical connection:

- 1 x cable gland for AP series
- 1 x cable gland for BP series
- 2 x cable gland for DP series

Symbols

Example:

A	P	1	T	41	Z	1	1
---	---	---	---	----	---	---	---

Structure:

	P						
--	---	--	--	--	--	--	--

Casing width: A = 30 mm width + 1 cable inlet B = 40 mm width + 1 cable inlet D = 50 mm width + 2 cable inlets	Contact block
Plastic casing	11: 1 NO + 1 NC contacts 20: 2 NO contacts 02: 2 NC contacts 12P: 1 NO + 2 NC contacts 21P: 2 NO + 1 NC contacts 03P: 3 NC contacts
Electrical connection 1: cable inlets for PG13.5 cable gland 2: cable inlets for 1/2 NPT cable gland * 3: cable inlets for PG11 cable gland (only for AP and DP series) 4: cable inlets for M16 x 1,5 cable gland (only for AP and DP series) 5: cable inlets for M20 x 1,5 cable gland	Only for BP series: 12: 1 NO + 2NC contacts 21: 2 NO + 1 NC contacts 03: 3 NC contacts 30: 3 NO contacts
Plastic heads T: for AP and DP series H: for BP series only	Z: Snap action W: Slow action (contact dependent) X: Slow action non-overlapping late make Y: Slow action overlapping early make
Operating heads: codes 10 - 9999	

* In AP... and DP... series, the 1/2" NPT thread is obtained by the use of a plastic adapter (delivered not mounted).

General Technical Data

Standards		Plastic Casing	
		Devices conform with international IEC 60947-5-1 and European EN 60947-5-1 standards	
Certifications - Approvals		UL - CSA - IMQ - EAC	
Air temperature near the device			
- during operation	°C	- 25 ... + 70	
- for storage	°C	- 30 ... + 80	
Climatic withstand		According to IEC 60068-2-3 and salty mist according to IEC 60068-2-11	
Mounting positions		All positions are authorised	
Shock withstand (according to IEC 60068-2-27 and EN 60068-2-27)		50g* (1/2 sinusoidal shock for 11 ms) no change in contact position	
Resistance to vibrations (acc. to IEC 60068-2-6 and EN 60068-2-6)		25g (10 ... 500 Hz) no change in position of contacts greater than 100 µs	
Protection against electrical shocks (acc. to IEC 60536)		Class II	
Degree of protection (according to IEC 60529 and EN 60529)		IP 65	
Consistency (measured over 1 million operations)		0.1 mm (upon closing point)	
Minimum actuation speed		m/s	
		Slow action contacts 0.060 / Snap action contacts 0.001	

Electrical Data

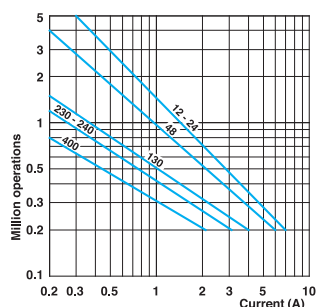
Rated insulation voltage U_i		500 V (degree of pollution 3) (400 V for contacts type Z02, X12P, X21P, W03P)												
- according to IEC 60947-1 and EN 60947-1		A 600, Q 600 (A 300, Q 300 for contacts type X12P, X21P, W03P)												
- according to UL 508 and CSA C22-2 n° 14														
Rated impulse withstand voltage U_{imp}		6 (4kV for contacts type X12P, X21P, W03P)												
(according to IEC 60947-1 and EN 60947-1)														
Conventional free air thermal current I_{th}		10												
(according to IEC 60947-5-1) $\theta < 40$ °C														
Short-circuit protection		10												
$U_e < 500$ V a.c. - gG (gl) type fuses														
Rated operational current														
I_e / AC-15 (according to IEC 60947-5-1)	24 V - 50/60 Hz	A	10											
	120 V - 50/60 Hz	A	6											
	400 V - 50/60 Hz	A	4											
I_e / DC-13 (according to IEC 60947-5-1)	24 V - d.c.	A	6											
	125 V - d.c.	A	0.55											
	250 V - d.c.	A	0.4											
Switching frequency		Cycles/h	3600											
Load factor			0.5											
Resistance between contacts		mΩ	25											
Connecting terminals		M3.5 (+, -) pozidriv 2 screw with cable clamp (M3 for 3 poles contacts type)												
Terminal for protective conductor		-												
Connecting capacity		1 or 2 x mm ²	0.75 ... 2.5 (0.34... 1.5 for 3 poles contacts type)											
Terminal marking		According to IEC 60947-5-1												
Mechanical durability		Millions of operations	<table border="0"> <tr> <td>15</td> <td rowspan="3">} AP•T {</td> <td>10...12; 30...34; 38</td> <td rowspan="3">} BP•H {</td> <td>11...13; 31...33</td> </tr> <tr> <td>10</td> <td>13; 41...48; 51...55; 61...75</td> <td>41...44; 51...54; 61...75</td> </tr> <tr> <td>>5</td> <td>14; 35; 36; 39; 91...93; 98</td> <td>14; 19; 35...37; 91...93</td> </tr> </table>	15	} AP•T {	10...12; 30...34; 38	} BP•H {	11...13; 31...33	10	13; 41...48; 51...55; 61...75	41...44; 51...54; 61...75	>5	14; 35; 36; 39; 91...93; 98	14; 19; 35...37; 91...93
15	} AP•T {	10...12; 30...34; 38	} BP•H {	11...13; 31...33										
10		13; 41...48; 51...55; 61...75		41...44; 51...54; 61...75										
>5		14; 35; 36; 39; 91...93; 98		14; 19; 35...37; 91...93										
Electrical durability (according to IEC 60947-5-1)		Utilization categories AC-15 and DC-13 (Load factor of 0.5 according to curves below)												

* except for AP/DP•T42, T52, T5200, T55 and T5500: 25 g.

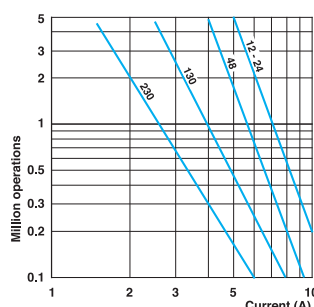
IMQ listed values

For the complete list of approved products, contact our technical department

AC-15 - Snap action



AC-15 - Slow action



DC-13	Snap action	Slow action
	Power breaking for a durability of 5 million operating cycles	
Voltage 24 V	9.5 W	12 W
Voltage 48 V	6.8 W	9 W
Voltage 110 V	3.6 W	6 W

Applications

Easy to use, electromechanical limit switches offer specific qualities:

- Visible operation.
- Able to switch strong currents (10 A conventional thermal current).
- Electrically separated contacts.
- Precise operating points (consistency).
- Immune to electromagnetic disturbances.

They are purpose-built detection devices thanks to these characteristics:

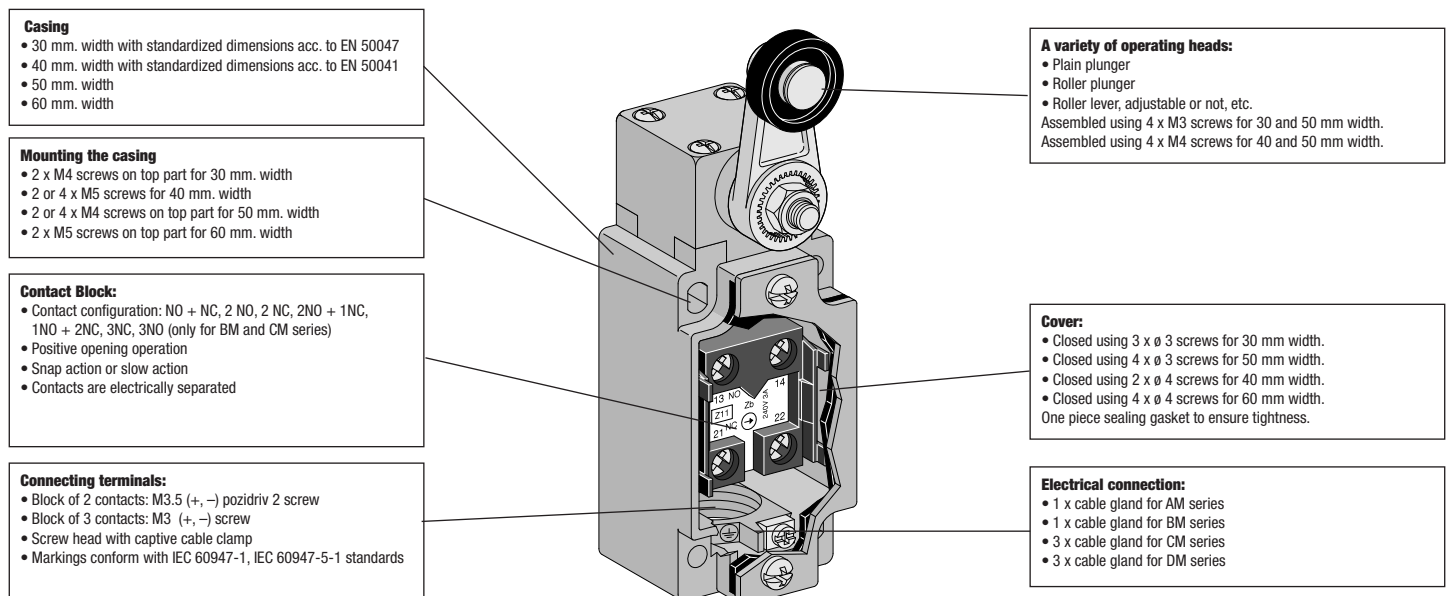
- Presence/absence.
- Positioning and travel limit.
- Objects passing/counting.

Description

The AM... and DM... series are made of zinc alloy (Zamak). The limit switches BM... and CM... series are realized in aluminium material, therefore they are mechanically more resistant and three times lighter than the ones in zinc alloy. All metal limit switches have a degree protection of IP 66.

The casing come in 4 dimension:

- AM... 30 mm. width
- DM... 50 mm. width
- BM... 40 mm. width
- CM... 60 mm. width



Symbols



Casing width:

A = 30 mm width + 1 cable inlet

B = 40 mm width + 1 cable inlet

D = 50 mm width + 3 cable inlets

C = 60 mm width + 3 cable inlets

Metal casing

Electrical connection

1: cable inlets for PG13.5 cable gland

2: cable inlets for 1/2 NPT cable gland

3: cable inlets for PG11 cable gland (only for AM and DM series)

4: cable inlets for M16 x 1,5 cable gland (only for AM and DM series)

5: cable inlets for M20 x 1,5 cable gland

Operating heads

T: plastic heads **F:** metal heads ... (AM and DM series)

P: plastic heads **E:** metal heads ... (BM and CM series)

Operating heads: codes 10 - 99

Contact block

11: 1 NO + 1 NC contacts

20: 2 NO contacts

02: 2 NC contacts

12P: 1 NO + 2 NC contacts

21P: 2 NO + 1 NC contacts

03P: 3 NC contacts

Only for BM and CM series:

12: 1 NO + 2NC contacts

21: 2 NO + 1 NC contacts

03: 3 NC contacts

30: 3 NO contacts

Z: Snap action

W: Slow action (contact dependent)

X: Slow action non-overlapping late make

Y: Slow action overlapping early make

General Technical Data

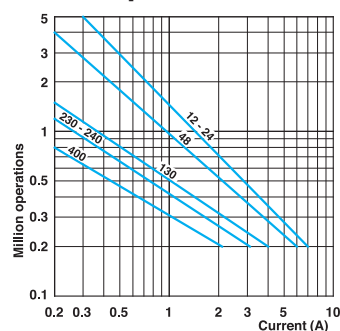
Standards		Metal Casing	
		Devices conform with international IEC 60947-5-1 and European EN 60947-5-1 standards	
Certifications - Approvals			
Air temperature near the device			
- during operation	°C	- 25 ... + 70	
- for storage	°C	- 30 ... + 80	
Climatic withstand		According to IEC 60068-2-3 and salty mist according to IEC 60068-2-11	
Mounting positions		All positions are authorised	
Shock withstand (according to IEC 60068-2-27 and EN 60068-2-27)		50g* (1/2 sinusoidal shock for 11 ms) no change in contact position	
Resistance to vibrations (acc. to IEC 60068-2-6 and EN 60068-2-6)		25g (10 ... 500 Hz) no change in position of contacts greater than 100 µs	
Protection against electrical shocks (acc. to IEC 60536)		Class I	
Degree of protection (according to IEC 60529 and EN 60529)		IP 66**	
Consistency (measured over 1 million operations)		0.05 mm (upon closing point)	
Minimum actuation speed		m/s	
		Slow action contacts 0.060 / Snap action contacts 0.001	

Electrical Data

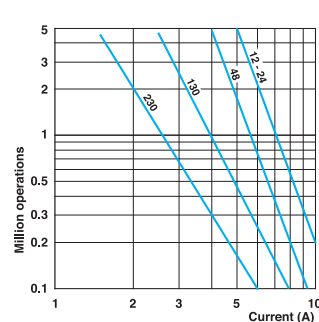
Rated insulation voltage U_i		500 V (degree of pollution 3) (400 V for contacts type Z02, X12P, X21P, W03P)																					
- according to IEC 60947-1 and EN 60947-1		A 600, Q 600 (A 300, Q 300 for AM... and DM... series and contacts type X12P, X21P, W03P)																					
Rated impulse withstand voltage U_{imp}		6 (4kV for contacts type X12P, X21P, W03P)																					
(according to IEC 60947-1 and EN 60947-1)																							
Conventional free air thermal current I_{th}		10																					
(according to IEC 60947-5-1) $\theta < 40$ °C																							
Short-circuit protection		10																					
$U_e < 500$ V a.c. - gG (gl) type fuses																							
Rated operational current																							
I_e / AC-15 (according to IEC 60947-5-1)	24 V - 50/60 Hz	A	10																				
	120 V - 50/60 Hz	A	6																				
	400 V - 50/60 Hz	A	4																				
I_e / DC-13 (according to IEC 60947-5-1)	24 V - d.c.	A	6																				
	125 V - d.c.	A	0.55																				
	250 V - d.c.	A	0.4																				
Switching frequency		Cycles/h																					
		3600																					
Load factor		0.5																					
Resistance between contacts		mΩ																					
		25																					
Connecting terminals		M3.5 (+, -) pozidriv 2 screw with cable clamp (M3 for 3 poles contacts type)																					
Terminal for protective conductor		M3.5 (+, -) pozidriv 2 screw with cable clamp																					
Connecting capacity		1 or 2 x mm ²																					
		0.75 ... 2.5 (0.34... 1.5 for 3 poles contact type)																					
Terminal marking		According to IEC 60947-5-1																					
Mechanical durability		Millions of operations																					
		<table border="0"> <tr> <td>15</td> <td rowspan="3">} AM•F/T</td> <td rowspan="3">{</td> <td>11; 12; 30...34; 38</td> <td rowspan="3">} 30</td> <td rowspan="3">BM•E</td> <td rowspan="3">{</td> <td>11...13; 21...23; 31...33</td> </tr> <tr> <td>10</td> <td>DM•F/T</td> <td>41...46; 51...55; 61...75</td> <td>25</td> <td>CM•E</td> <td>41...44; 51...54; 61...75</td> </tr> <tr> <td>>5</td> <td></td> <td>14; 35; 36; 39; 91...93; 98</td> <td>10</td> <td></td> <td>91...93; 99</td> </tr> </table>		15	} AM•F/T	{	11; 12; 30...34; 38	} 30	BM•E	{	11...13; 21...23; 31...33	10	DM•F/T	41...46; 51...55; 61...75	25	CM•E	41...44; 51...54; 61...75	>5		14; 35; 36; 39; 91...93; 98	10		91...93; 99
15	} AM•F/T	{	11; 12; 30...34; 38	} 30			BM•E				{	11...13; 21...23; 31...33											
10			DM•F/T									41...46; 51...55; 61...75	25	CM•E	41...44; 51...54; 61...75								
>5					14; 35; 36; 39; 91...93; 98	10			91...93; 99														
Electrical durability (according to IEC 60947-5-1)		Utilization categories AC-15 and DC-13 (Load factor of 0.5 according to curves below)																					

* except for AM/DM•F42, F52, F55: 25 g. - ** except for AM/DM•F52, F55, F73, F74, T92, T93 and BM/CM•E54, P92, P93, E92, E93, P92, P93: the degree of protection is IP65 IMQ listed values
For the complete list of approved products, contact our technical department

AC-15 - Snap action



AC-15 - Slow action



DC-13	Snap action	Slow action
	Power breaking for a durability of 5 million operating cycles	
Voltage 24 V	9.5 W	12 W
Voltage 48 V	6.8 W	9 W
Voltage 110 V	3.6 W	6 W

Applications

Easy to use, electromechanical limit switches offer specific qualities:

- Visible operation.
- Able to switch strong currents (up to 10 A conventional thermal current).
- Electrically separated contacts.
- Precise operating points (consistency).
- Immune to electromagnetic disturbances.

They are purpose-built detection devices thanks to these characteristics:

- Presence/absence.
- Positioning and travel limit.
- Objects passing/counting.

Description

These limit switches, made in thermoplastic material (EP... series) or diecast zinc alloy (EM... series), sealed with epoxy resin at the base on the box, offer a degree of protection IP67

The casing come in 2 dimensions: – EP1... / EM1... 30 mm. width


– EP2... / EM2... 35 mm. width

Casing
• 30 or 35 mm. width casings

Mounting the casing
• 2 x M4 screws on top part

Contact block
• Contact configuration: 1NO + 1NC
• Positive opening operation
• Snap action or slow action
• Contacts are electrically separated

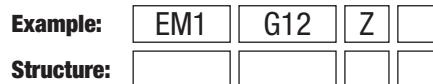
• Epoxy resin for IP67 protection degree



A variety of operating heads:
• Plain plunger
• Roller plunger
• Roller lever, adjustable or not, etc.
Assembled using 2 x ø 3 screws (EP series) or 2 x M3 screws (EM series)

Electrical connection:
• cable: PVC 4 x 0,75 mm² (EP...) / 5 x 0,75 mm² (EM...)
• length: 1 m (different cables or lengths page 13)
• optional: M12 connector - AMP connector

Symbols



Casing:
EP1 = plastic casing 30 mm width
EP2 = plastic casing 35 mm width
EM1 = metal casing 30 mm width
EM2 = metal casing 35 mm width

Operating heads: codes G11 - G9999

Electrical connection
U : Standard with UL cable
M: M12 connector
A: AMP connector

Contact block
Z: Snap action 1NO + 1NC
X: Slow action non-overlapping late make 1NO + 1NC

General Technical Data

Standards	Plastic Casing	Metal Casing
	Devices conform with international IEC 60947-5-1 and European EN 60947-5-1 standards	
Certifications - Approvals	IMQ - UL - EAC	
Air temperature near the device		
- during operation	°C	- 25 ... + 70
- for storage	°C	- 40 ... + 70
Mounting positions	All positions are authorised	
Protection against electrical shocks (acc. to IEC 60536)	Class II	Class I
Degree of protection (according to IEC 60529 and EN 60529)	IP 67	
Degree of protection (according to UL50)	Type 1 enclosure ("indoor use only")	Type 4 - 4X - 6 enclosure ("outdoor use - raintight - watertight corrosion resistant")

Electrical Data

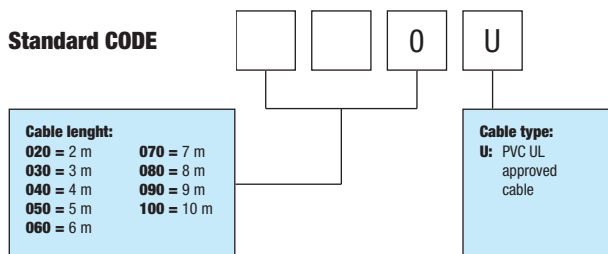
Rated insulation voltage U_i - according to IEC 60947-1 and EN 60947-1 - according to UL 508 and CSA C22-2 n° 14	400 V (degree of pollution 3) (250 V for M12 and AMP connectors) B 300, R 300		
Conventional free air thermal current I_{th} (according to IEC 60947-5-1) $\theta < 40$ °C	A	10 (4 A for M12 and AMP connectors)	
Short-circuit protection $U_e < 500$ V a.c. - gG (gl) type fuses	A	10	
Rated operational current I_e / AC-15 (according to IEC 60947-5-1)	24 V - 50/60 Hz A 120 V - 50/60 Hz A 240 V - 50/60 Hz A	10 (4 A for M12 and AMP connectors) 6 (4 A for M12 and AMP connectors)	
I_e / DC-13 (according to IEC 60947-5-1)	24 V - d.c. A	2.8	
	125 V - d.c. A	0.55	
	250 V - d.c. A	0.27	
		3	
Switching frequency	Cycles/h	3600	
Load factor		0.5	
Resistance between contacts	mΩ	25	
Mechanical durability		10 Millions of operations	

IMQ listed values

Electrical connection:

Standard: 1 m. UL PVC cable 4 x 0,75 mm² (EP... series)
1 m. UL PVC cable 5 x 0,75 mm² (EM... series)

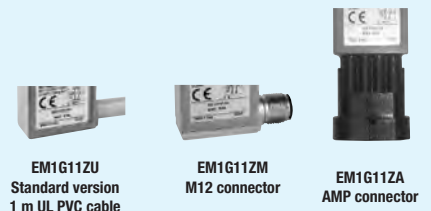
On request: All EP.../EM... limit switches can be supplied with different cable types and lengths according to the following ordering details



EP/EM series with connectors

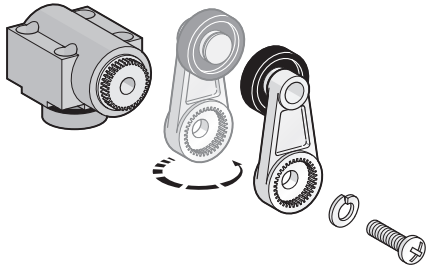
All the models can be supplied with M12 connector by adding "M" suffix to the ordering code, and with AMP connector by adding suffix "A".

EXAMPLE

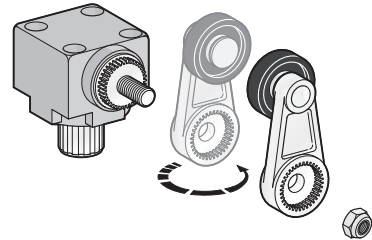


Examples

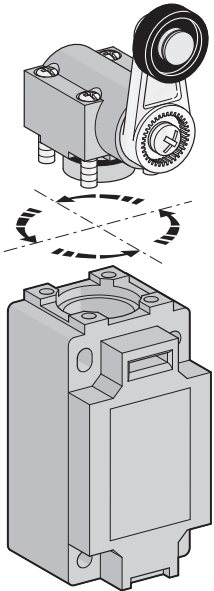
- EM1G11ZU:** 30 mm. limit switch - plain plunger - snap action contact block - 1 m. UL standard cable.
- EM1G11Z040U:** 30 mm. width limit switch - plain plunger - snap action contact block - 4 m. UL standard cable.
- EM1G11ZM:** 30 mm. width limit switch - plain plunger - snap action contact block - M12 connector
- EM1G11ZA:** 30 mm. width limit switch - plain plunger - snap action contact block - AMP connector



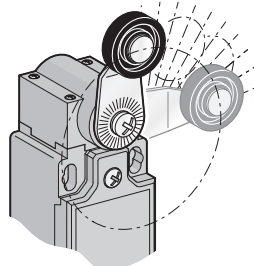
Lever round turning: AP...; BP...; DP...; AM...; DM...; EP...; EM...



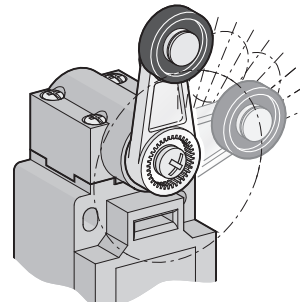
Lever round turning: BM...; CM...



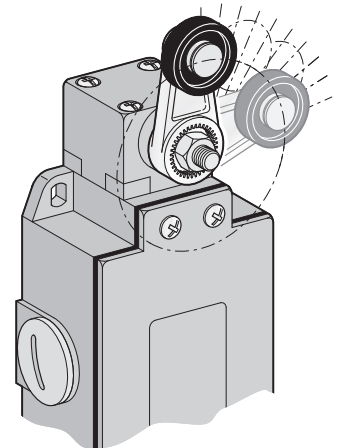
Head orientation: all series
(EP and EM series: 180° only)



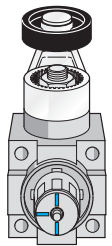
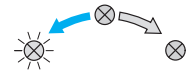
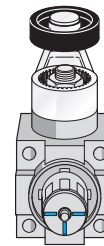
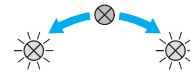
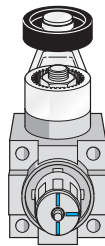
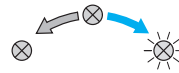
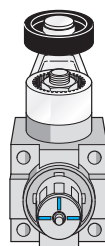
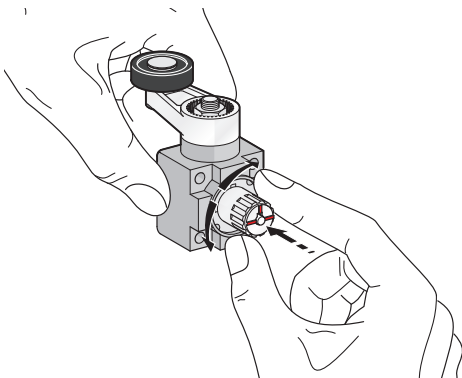
Free position adjustment 10 in 10° of lever:
AP...; DP...; AM...; DM...; EP...; EM...



Free position adjustment 9 in 9° of lever:
BP...

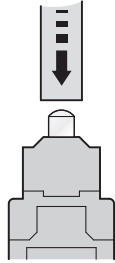


Free position adjustment 9 in 9° of lever:
BM...; CM...

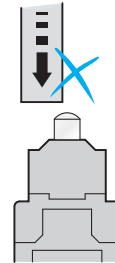


BP...; BM...; CM... operating mode selection only

Plain Plunger

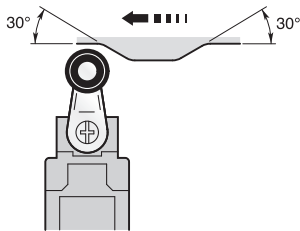


Correct

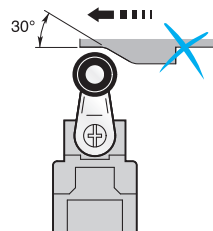


Incorrect

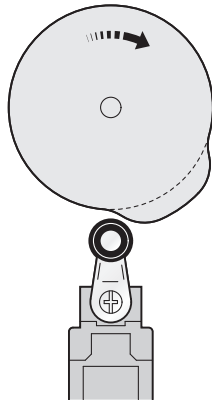
Roller Plunger or Roller Lever



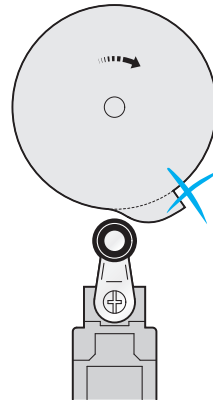
Correct



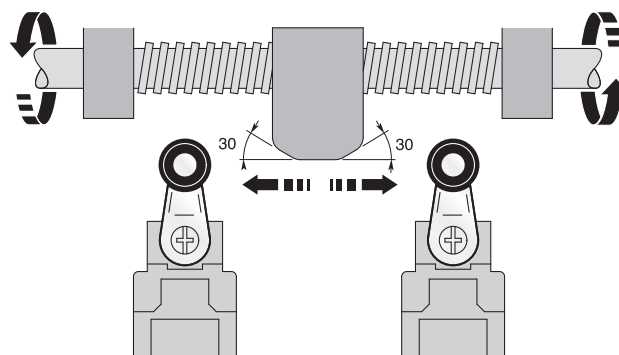
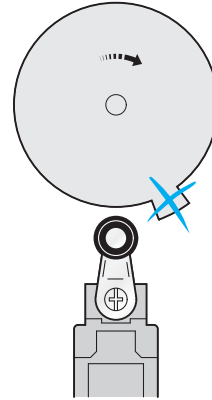
Incorrect



Correct



Incorrect



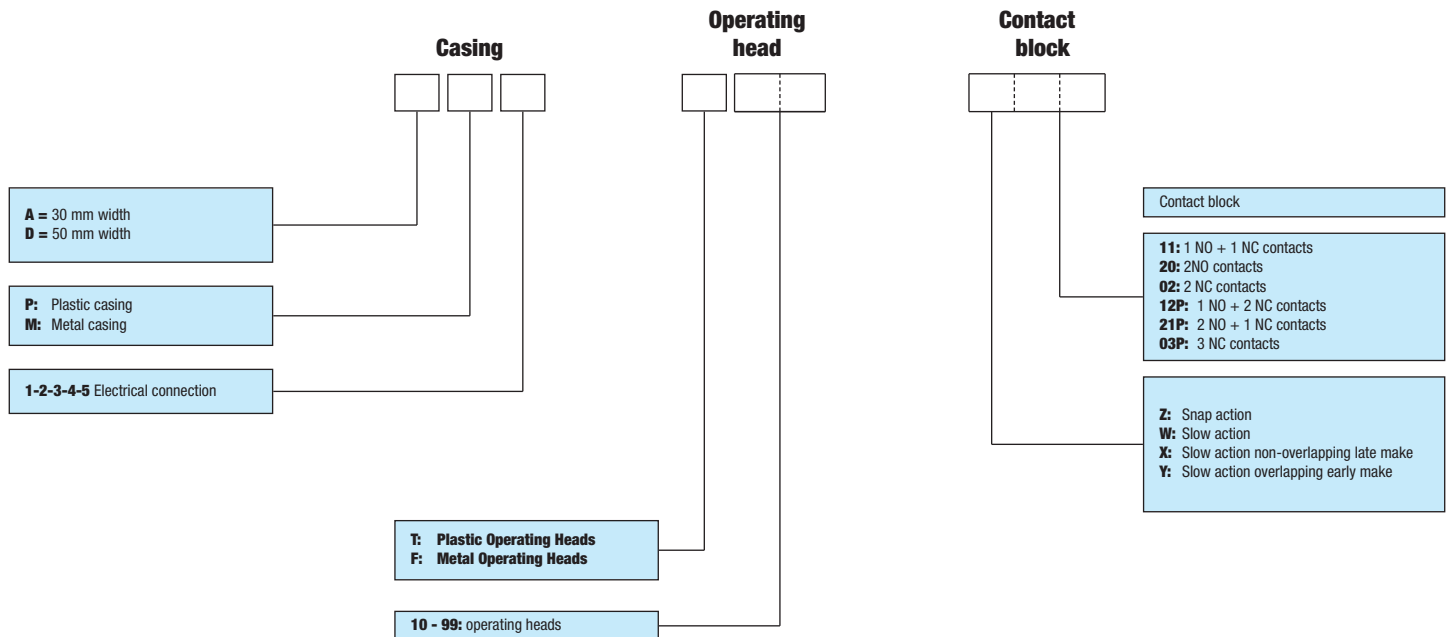
For a relatively slow movement of the switch actuator, a limit switch with a snap action contact block is preferred.

AP... / AM... / DP... / DM... special versions

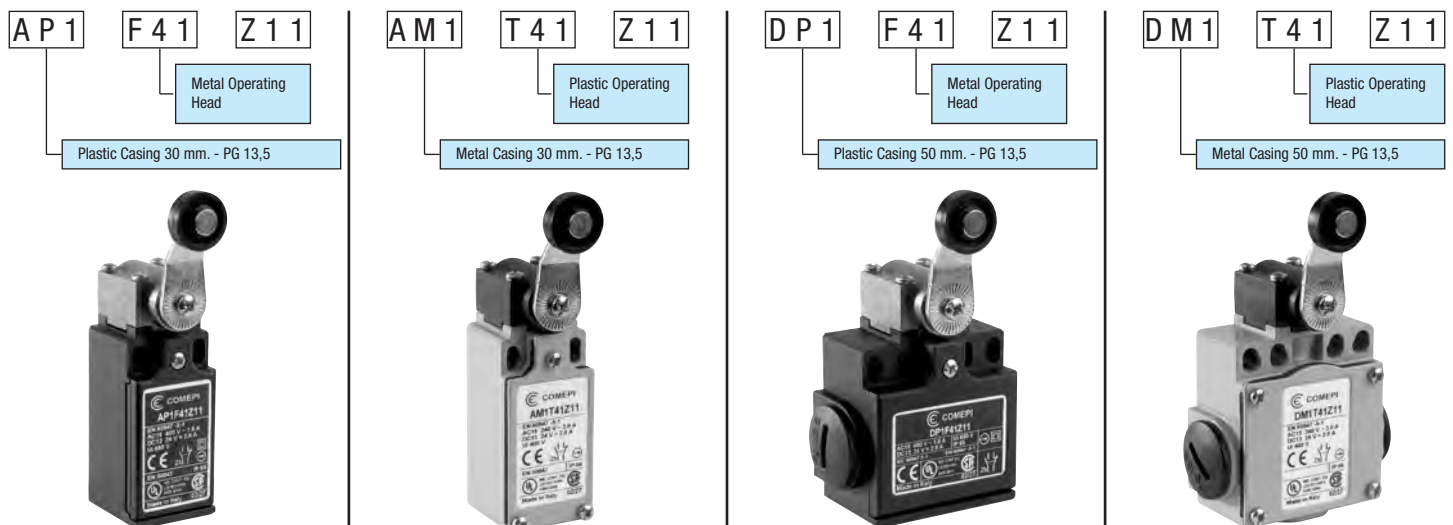
The operating heads used in plastic limit switches AP and DP series have the same dimensions of the ones used in the corresponding metal AM and DM series. It is therefore possible to supply "mixed" versions, that is:

- plastic operating head on metal casing
- metal operating head on plastic casing

These "mixed" versions can be demanded as follows



Examples:




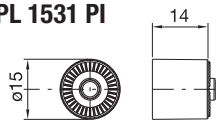

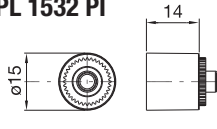
For further information, please contact our technical department.

Spare parts

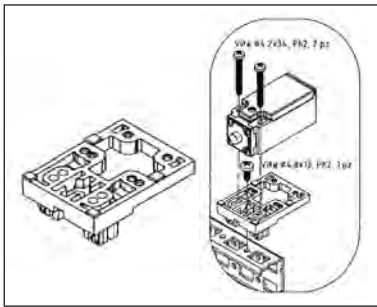
Spare components can be supplied upon request.

Spacers

This accessory, made of polymer glass-reinforced resin, allows the lever to operate with a different offset.

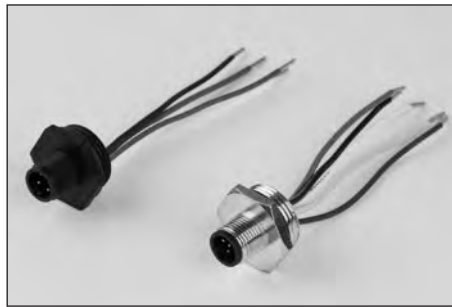
	Order Code	Compatible Heads
	PL 1531 PI 	T41 ÷ T46 F41 ÷ F46 G41 ÷ G45
	PL 1532 PI 	T51 ÷ T75 F51 ÷ F75 G51 ÷ G75

Accessories for electric panels



Code	Description
GR2116	Fixing kit including screws

Connectors



Code	Description
XX1036C0	4 poles plastic connector PG13,5 - M12
XX1037C0	5 poles metal connector PG13,5 - M12


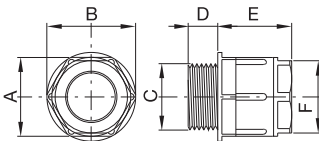

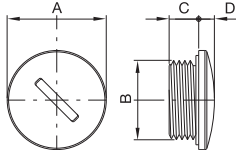

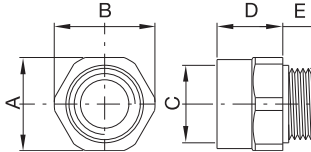
Cables with M12 female connector



Code	Description
XX4D030SM	4 poles PVC cable - 3m with M12 straight connector
XX4D050SM	4 poles PVC cable - 5m with M12 straight connector
XX5D030SM	5 poles PVC cable - 3m with M12 straight connector
XX5D050SM	5 poles PVC cable - 5m with M12 straight connector
XX8D050SM	8 poles PVC cable - 5m with M12 straight connector

Cable glands - Blanking plugs - Thread adapters

The use of correct cable gland (or blanking plug in case of unused cable inlets) is recommended if the product is installed in an environmental place in which a protection degree against water or dust is needed. Comepi's cable glands and blanking plugs are realized to guarantee protection degree of IP 66. Thread adapters are available in order to reach the customers' request. The adapters must always be used in case a conduit connection directly on the limit switch is needed. Different adapters can be supplied upon request.

	Order Code	Description	Dimensions					
			A	B	C	D	E	F
Cable Gland  	XX 1029 C0	PG 13.5 Plastic Cable Gland	24	-	PG 13.5	10	24-29	ø 7-12
	XX 1028 C0	PG 11 Plastic Cable Gland	22	-	PG 11	10	23-28	ø 5-10
	XX 1032 C0	M 16 x 1,5 Plastic Cable Gland	19	-	M 16 x 1,5	8	23-28	ø 7-10
	XX 1033 C0	M20 x 1,5 Plastic Cable Gland	25	-	M 20 x 1,5	9	24-29	ø 8-13
	XX 1020 C0	PG 16 Plastic Cable Gland	27	-	PG 16	10	26-31	ø 10-14
Blanking Plug  	PL 2029 PI	PG 13.5 Plastic Blanking Plug	25	PG 13.5	6	3,5	-	-
	XT 007	PG 11 Plastic Blanking Plug	22	PG 11	6	3	-	-
	XX 1030 C0	M 16 x 1,5 Plastic Blanking Plug	20	M 16 x 1,5	6	3	-	-
	XX 1031 C0	M 20 x 1,5 Plastic Blanking Plug	24	M 20 x 1,5	6	3,5	-	-
	XX 1019 C0	PG 16 Plastic Blanking Plug	27	PG 16	6	3,5	-	-
Thread Adapters  	PL 2000 PI	PG 11 1/2" NPT Plastic Adapter	24	26	1/2" NPT	17	8	PG 11
	TO 2000 PE	Brass Intermediary Connection 1/2" NPT - 1/2" NPT	24	26	1/2" NPT	17	6	1/2" NPT

Electrical Connection

- AP1:** one cable inlet for PG 13,5 Cable Gland
- AP2:** one cable inlet by 1/2" NPT Plastic Adapter
- AP3:** one cable inlet for PG11 Cable Gland
- AP4:** one cable inlet for M16 x 1,5 Cable Gland
- AP5:** one cable inlet for M20 x 1,5 Cable Gland



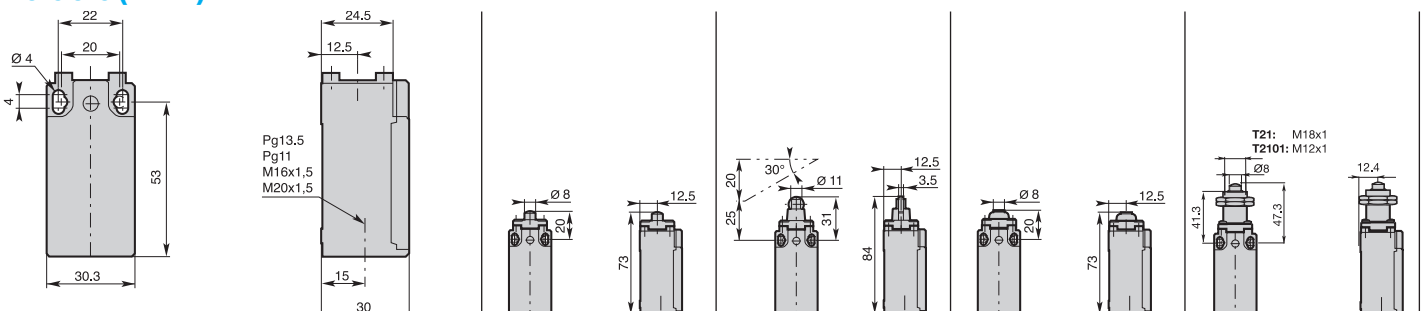
Operating Head Type

	T1• - Plain plunger T10: nylon plunger T11: metal plunger	T1• - Roller plunger T12: metal roller T13: nylon roller	T14 - Metal plunger with dust protection cup	T21 - Plain plunger with M18x1 fixing nuts T2101 - Plain plunger with M12x1 fixing nuts
Conformity / (N.C. contact with positive opening operation)	EN 50047	EN 50047	EN 50047	
Max actuation speed [m/s]	0,5	0,3	0,5	0,5
Min. force [N] or torque [Nm]: actuation / positive opening operation	15 / 30	12 / 30	15 / 30	15 / 30

Additional Technical Datas

	AP•T1•Z11	AP•T1•Z11	AP•T14Z11	AP•T21Z11
Z11 Snap Action Contacts (1NO + 1NC)				
X11 Non overlapping Slow Action Contacts (1NO + 1NC)				
Y11 Overlapping Slow Action Contacts (1NO + 1NC)				
W02 Slow Action Contacts (2NC)				
W20 Slow Action Contacts (2NO)				
Z02 Snap Action Contacts (2NC)				
X12P Non overlapping Slow Action Contacts (1NO + 2NC)				
X21P Non overlapping Slow Action Contacts (2NO + 1NC)				
W03P Slow Action Contacts (3NC)				
Weight (packing per unit) [kg]	0,070	0,075	0,070	0,080

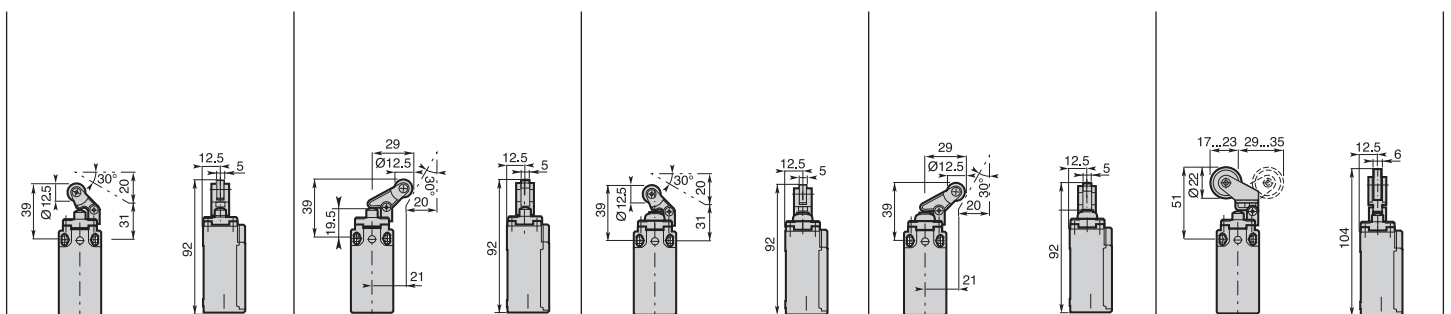
Dimensions (in mm)





T30 - Plastic roller lever T30: on plastic plunger T31: on metal plunger	T32 - Plastic roller lever T32: on metal plunger T34: on plastic plunger	T35 - Plastic roller lever on metal plunger with dust protection cup	T36 - Plastic roller lever on metal plunger with dust protection cup	T38 - Adjustable plastic roller lever on metal plunger T39 - Same as above with dust protection cup
EN 50047 1,0 7 / 24	EN 50047 1,0 7 / 24	EN 50047 1,0 7 / 24	EN 50047 1,0 7 / 24	EN 50047 1,0 7 / 24

AP•T3•Z11 0 4.9 9.0 14.5 21.0 mm 21-22 13-14 21-22 13-14	AP•T3•Z11 0 4.9 9.0 14.5 21.0 mm 21-22 13-14 21-22 13-14	AP•T35Z11 0 4.9 9.0 14.5 21.0 mm 21-22 13-14 21-22 13-14	AP•T36Z11 0 4.9 9.0 14.5 21.0 mm 21-22 13-14 21-22 13-14	AP•T3•Z11 0 8.8 15.0 23.2 32.0 mm 21-22 13-14 21-22 13-14
AP•T3•X11 0 6.0 10.5 21.0 mm 21-22 13-14 8.6	AP•T3•X11 0 6.0 10.5 21.0 mm 21-22 13-14 8.6	AP•T35X11 0 6.0 10.5 21.0 mm 21-22 13-14 8.6	AP•T36X11 0 6.0 10.5 21.0 mm 21-22 13-14 8.6	AP•T3•X11 0 10.6 18.5 32.0 mm 21-22 13-14 15.1
AP•T3•Y11 0 10.2 14.6 21.0 mm 21-22 13-14 5.4	AP•T3•Y11 0 10.2 14.6 21.0 mm 21-22 13-14 5.4	AP•T35Y11 0 10.2 14.6 21.0 mm 21-22 13-14 5.4	AP•T36Y11 0 10.2 14.6 21.0 mm 21-22 13-14 5.4	AP•T3•Y11 0 16.8 25.1 32.0 mm 21-22 13-14 9.4
AP•T3•W02 0 5.7 10.2 21.0 mm 11-12 21-22	AP•T3•W02 0 5.7 10.2 21.0 mm 11-12 21-22	AP•T35W02 0 5.7 10.2 21.0 mm 11-12 21-22	AP•T36W02 0 5.7 10.2 21.0 mm 11-12 21-22	AP•T3•W02 0 9.6 17.8 32.0 mm 11-12 21-22
AP•T3•W20 0 5.3 21.0 mm 13-14 23-24	AP•T3•W20 0 5.3 21.0 mm 13-14 23-24	AP•T35W20 0 5.3 21.0 mm 13-14 23-24	AP•T36W20 0 5.3 21.0 mm 13-14 23-24	AP•T3•W20 0 9.2 32.0 mm 13-14 23-24
AP•T3•Z02 0 5.1 8.6 13.1 21.0 mm 11-12 21-22 11-12 21-22	AP•T3•Z02 0 5.1 8.6 13.1 21.0 mm 11-12 21-22 11-12 21-22	AP•T35Z02 0 5.1 8.6 13.1 21.0 mm 11-12 21-22 11-12 21-22	AP•T36Z02 0 5.1 8.6 13.1 21.0 mm 11-12 21-22 11-12 21-22	AP•T3•Z02 0 8.8 14.6 22.8 32.0 mm 11-12 21-22 11-12 21-22
AP•T3•X12P 0 6.8 11.8 21.0 mm 11-12 21-22 11-12 21-22	AP•T3•X12P 0 6.8 11.8 21.0 mm 11-12 21-22 11-12 21-22	AP•T35X12P 0 6.8 11.8 21.0 mm 11-12 21-22 11-12 21-22	AP•T36X12P 0 6.8 11.8 21.0 mm 11-12 21-22 11-12 21-22	AP•T3•X12P 0 11.9 19.7 32.0 mm 11-12 21-22 11-12 21-22
AP•T3•X21P 0 6.8 11.8 21.0 mm 11-12 21-22 11-12 21-22	AP•T3•X21P 0 6.8 11.8 21.0 mm 11-12 21-22 11-12 21-22	AP•T35X21P 0 6.8 11.8 21.0 mm 11-12 21-22 11-12 21-22	AP•T36X21P 0 6.8 11.8 21.0 mm 11-12 21-22 11-12 21-22	AP•T3•X21P 0 11.9 19.7 32.0 mm 11-12 21-22 11-12 21-22
AP•T3•W03P 0 6.8 11.8 21.0 mm 11-12 21-22 11-12 21-22	AP•T3•W03P 0 6.8 11.8 21.0 mm 11-12 21-22 11-12 21-22	AP•T35W03P 0 6.8 11.8 21.0 mm 11-12 21-22 11-12 21-22	AP•T36W03P 0 6.8 11.8 21.0 mm 11-12 21-22 11-12 21-22	AP•T3•W03P 0 11.9 19.7 32.0 mm 11-12 21-22 11-12 21-22
0,075	0,080	0,075	0,080	0,080



Electrical Connection

- AP1:** one cable inlet for PG 13,5 Cable Gland
- AP2:** one cable inlet by 1/2" NPT Plastic Adapter
- AP3:** one cable inlet for PG11 Cable Gland
- AP4:** one cable inlet for M16 x 1,5 Cable Gland
- AP5:** one cable inlet for M20 x 1,5 Cable Gland



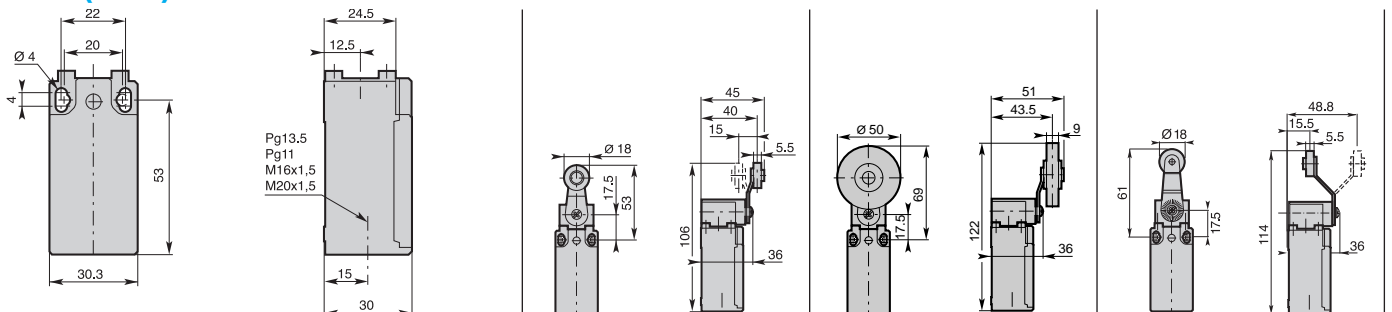
Operating Head Type

	T4• - Ø 18 roller lever T41: nylon roller T43: metal roller	T42 - Ø 50 rubber roller lever	T4• - Ø 18 roller lever T45: nylon roller T46: metal roller
Conformity / (N.C. contact with positive opening operation)	EN 50047		
Max actuation speed [m/s]	1,5	1,5	1,5
Min. force [N] or torque [Nm]: actuation / positive opening operation	0,10 / 0,32	0,10 / 0,32	0,10 / 0,32

Additional Technical Datas

		AP•T4•Z11	AP•T4Z211	AP•T4•Z11
Z11 Snap Action Contacts (1NO + 1NC)				
X11 Non overlapping Slow Action Contacts (1NO + 1NC)				
Y11 Overlapping Slow Action Contacts (1NO + 1NC)				
W02 Slow Action Contacts (2NC)				
W20 Slow Action Contacts (2NO)				
Z02 Snap Action Contacts (2NC)				
X12P Non overlapping Slow Action Contacts (1NO + 2NC)				
X21P Non overlapping Slow Action Contacts (2NO + 1NC)				
W03P Slow Action Contacts (3NC)				
Weight (packing per unit)	[kg]	0,095	0,115	0,095

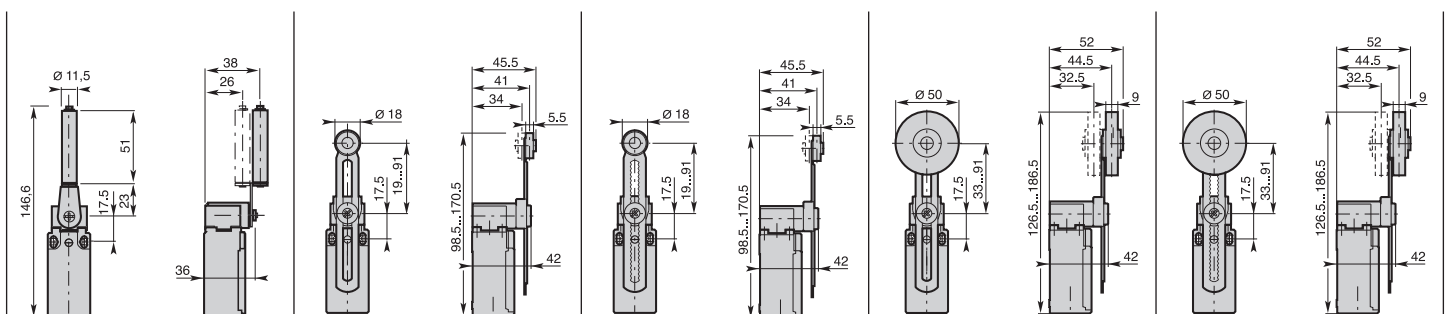
Dimensions (in mm)





T48 - Ceramic rod lever	T5 - Adjustable lever with Ø 18 roller T51: nylon roller T53: metal roller	T5100 - Adjustable toothed lever (step 2 mm) with Ø 18 nylon roller	T52 - Adjustable lever with Ø 50 rubber roller	T5200 - Adjustable toothed lever (step 2 mm) with Ø 50 rubber roller
1,5 0,10 / 0,32	1,5 0,10 / 0,32	1,5 0,10 / 0,32	1,5 0,10 / 0,32	1,5 0,10 / 0,32

AP•T48Z11 0 10° 22° 38° 74° 21-22 13-14	AP•T5•Z11 0 17° 31° 47° 74° 21-22 13-14	AP•T5100Z11 0 17° 31° 47° 74° 21-22 13-14	AP•T52Z11 0 17° 31° 47° 74° 21-22 13-14	AP•T5200Z11 0 17° 31° 47° 74° 21-22 13-14
AP•T48X11 0 14° 28° 74° 21-22 13-14 21°	AP•T5•X11 0 21° 37° 74° 21-22 13-14 30°	AP•T5100X11 0 21° 37° 74° 21-22 13-14 30°	AP•T52X11 0 21° 37° 74° 21-22 13-14 30°	AP•T5200X11 0 21° 37° 74° 21-22 13-14 30°
AP•T48Y11 0 26° 42° 74° 21-22 13-14 11°	AP•T5•Y11 0 35° 51° 74° 21-22 13-14 18°	AP•T5100Y11 0 35° 51° 74° 21-22 13-14 18°	AP•T52Y11 0 35° 51° 74° 21-22 13-14 18°	AP•T5200Y11 0 35° 51° 74° 21-22 13-14 18°
AP•T48W02 0 12° 28° 74° 11-12 21-22	AP•T5•W02 0 19° 37° 74° 11-12 21-22	AP•T5100W02 0 19° 37° 74° 11-12 21-22	AP•T52W02 0 19° 37° 74° 11-12 21-22	AP•T5200W02 0 19° 37° 74° 11-12 21-22
AP•T48W20 0 11° 74° 13-14 23-24	AP•T5•W20 0 18° 74° 13-14 23-24	AP•T5100W20 0 18° 74° 13-14 23-24	AP•T52W20 0 18° 74° 13-14 23-24	AP•T5200W20 0 18° 74° 13-14 23-24
AP•T48Z02 0 10° 31° 37° 74° 11-12 21-22 11-12 21-22	AP•T5•Z02 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22	AP•T5100Z02 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22	AP•T52Z02 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22	AP•T5200Z02 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22
AP•T48X12P 0 17° 31° 74° 11-12 21-22 33-34 29°	AP•T5•X12P 0 24° 40° 74° 11-12 21-22 33-34 38°	AP•T5100X12P 0 24° 40° 74° 11-12 21-22 33-34 38°	AP•T52X12P 0 24° 40° 74° 11-12 21-22 33-34 38°	AP•T5200X12P 0 24° 40° 74° 11-12 21-22 33-34 38°
AP•T48X21P 0 17° 31° 74° 11-12 21-22 33-34 29°	AP•T5•X21P 0 24° 40° 74° 11-12 21-22 33-34 38°	AP•T5100X21P 0 24° 40° 74° 11-12 21-22 33-34 38°	AP•T52X21P 0 24° 40° 74° 11-12 21-22 33-34 38°	AP•T5200X21P 0 24° 40° 74° 11-12 21-22 33-34 38°
AP•T48W03P 0 17° 31° 74° 11-12 21-22 33-34	AP•T5•W03P 0 24° 40° 74° 11-12 21-22 33-34	AP•T5100W03P 0 24° 40° 74° 11-12 21-22 33-34	AP•T52W03P 0 24° 40° 74° 11-12 21-22 33-34	AP•T5200W03P 0 24° 40° 74° 11-12 21-22 33-34
0,100	0,105	0,105	0,125	0,125



Electrical Connection

- AP1:** one cable inlet for PG 13,5 Cable Gland
- AP2:** one cable inlet by 1/2" NPT Plastic Adapter
- AP3:** one cable inlet for PG11 Cable Gland
- AP4:** one cable inlet for M16 x 1,5 Cable Gland
- AP5:** one cable inlet for M20 x 1,5 Cable Gland



Operating Head Type

T55 - Adjustable lever with adjustable Ø 50 Rubber roller

T5500 - Adjustable toothed lever (step 2 mm) with adjustable Ø 50 Rubber roller

T61 - Nylon actuator with stainless steel spring

Conformity / (N.C. contact with positive opening operation)
 Max actuation speed [m/s]
 Min. force [N] or torque [Nm]: actuation / positive opening operation

1,5
0,10 / 0,32

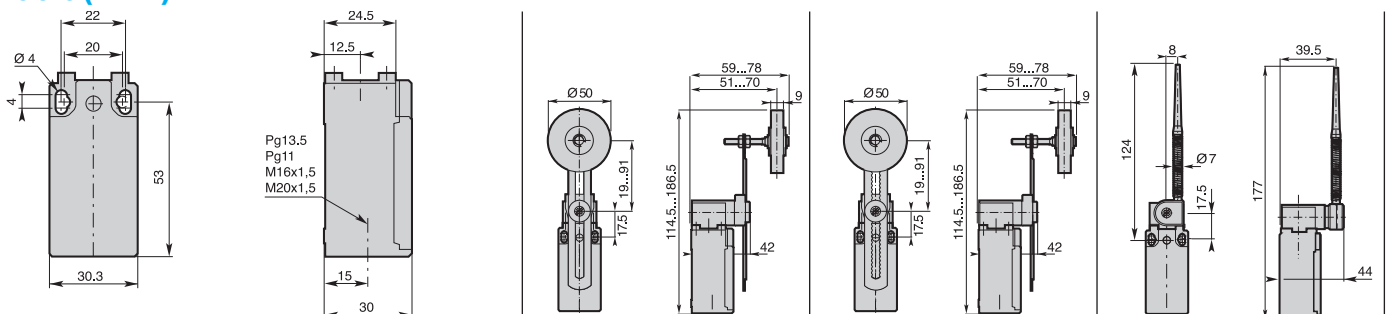
1,5
0,10 / 0,32

1,5
0,10 / -

Additional Technical Datas

		Order Code	AP•T55Z11	AP•T5500Z11	AP•T61Z11
Z11 Snap Action Contacts (1NO + 1NC)					
X11 Non overlapping Slow Action Contacts (1NO + 1NC)					
Y11 Overlapping Slow Action Contacts (1NO + 1NC)					
W02 Slow Action Contacts (2NC)					
W20 Slow Action Contacts (2NO)					
Z02 Snap Action Contacts (2NC)					
X12P Non overlapping Slow Action Contacts (1NO + 2NC)					
X21P Non overlapping Slow Action Contacts (2NO + 1NC)					
W03P Slow Action Contacts (3NC)					
Weight (packing per unit)	[kg]		0,130	0,130	0,105

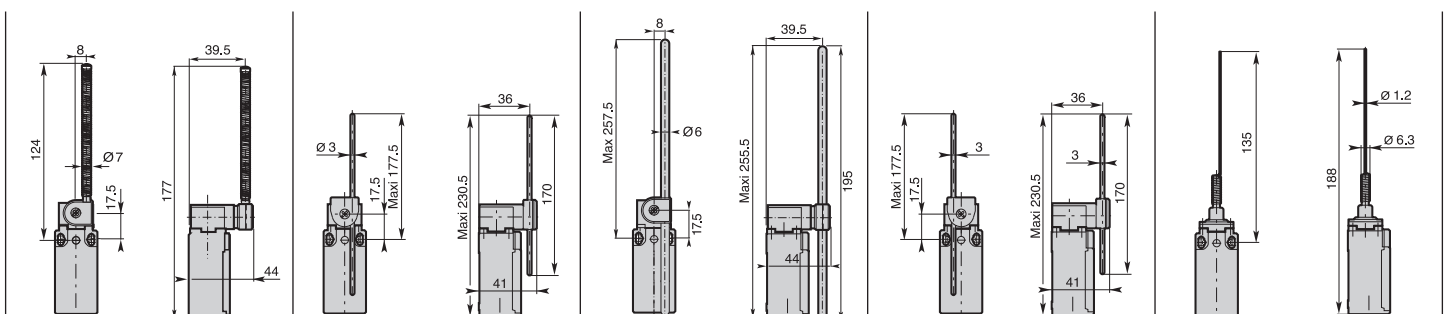
Dimensions (in mm)





T62 - Stainless steel spring actuator	T7• - Adjustable Ø 3 rod lever T71: stainless steel rod T72: fiberglass rod	T7• - Adjustable Ø 6 rod lever T73: nylon rod T74: fiberglass rod	T75 - Adjustable square steel rod lever	T91: Stainless steel spring multidirectional actuator
1,5 0,10 / -	1,5 0,10 / 0,32	1,5 0,10 / 0,32	1,5 0,10 / 0,32	1,0 0,12 / -

AP•T62Z11 0 17° 31° 74° 21-22 13-14 21-22 13-14	AP•T7•Z11 0 17° 31° 47° 74° 21-22 13-14 21-22 13-14	AP•T7•Z11 0 17° 31° 47° 74° 21-22 13-14 21-22 13-14	AP•T75Z11 0 17° 31° 47° 74° 21-22 13-14 21-22 13-14	AP•T91Z11 0 12° 23° 21-22 13-14 21-22 13-14
AP•T62X11 0 21° 74° 21-22 13-14 30°	AP•T7•X11 0 21° 37° 74° 21-22 13-14 30°	AP•T7•X11 0 21° 37° 74° 21-22 13-14 30°	AP•T75X11 0 21° 37° 74° 21-22 13-14 30°	AP•T91X11 0 14° 21° 21-22 13-14
AP•T62Y11 0 35° 74° 21-22 13-14 18°	AP•T7•Y11 0 35° 51° 74° 21-22 13-14 18°	AP•T7•Y11 0 35° 51° 74° 21-22 13-14 18°	AP•T75Y11 0 35° 51° 74° 21-22 13-14 18°	AP•T91Y11 0 25° 12° 21-22 13-14
AP•T62W02 0 19° 74° 11-12 21-22	AP•T7•W02 0 19° 37° 74° 11-12 21-22	AP•T7•W02 0 19° 37° 74° 11-12 21-22	AP•T75W02 0 19° 37° 74° 11-12 21-22	AP•T91W02 0 14° 11-12 21-22
AP•T62W20 0 18° 74° 13-14 23-24	AP•T7•W20 0 18° 74° 13-14 23-24	AP•T7•W20 0 18° 74° 13-14 23-24	AP•T75W20 0 18° 74° 13-14 23-24	AP•T91W20 0 13° 13-14 23-24
AP•T62Z02 0 17° 30° 74° 11-12 21-22 11-12 21-22	AP•T7•Z02 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22	AP•T7•Z02 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22	AP•T75Z02 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22	AP•T91Z02 0 12° 22° 11-12 21-22 11-12 21-22
AP•T62•X12P 0 24° 74° 13-14 23-24 38°	AP•T7•X12P 0 24° 40° 74° 13-14 23-24 38°	AP•T7•X12P 0 24° 40° 74° 13-14 23-24 38°	AP•T75X12P 0 24° 40° 74° 13-14 23-24 38°	AP•T91X12P 0 16° 26° 13-14 23-24
AP•T62•X21P 0 24° 74° 13-14 23-24 38°	AP•T7•X21P 0 24° 40° 74° 13-14 23-24 38°	AP•T7•X21P 0 24° 40° 74° 13-14 23-24 38°	AP•T75X21P 0 24° 40° 74° 13-14 23-24 38°	AP•T91X21P 0 16° 26° 13-14 23-24
AP•T62•W03P 0 24° 74° 11-12 21-22 38°	AP•T7•W03P 0 24° 40° 74° 11-12 21-22 38°	AP•T7•W03P 0 24° 40° 74° 11-12 21-22 38°	AP•T75W03P 0 24° 40° 74° 11-12 21-22 38°	AP•T91W03P 0 16° 11-12 21-22
0,105	0,105	0,115	0,105	0,080



Electrical Connection

- AP1:** one cable inlet for PG 13,5 Cable Gland
- AP2:** one cable inlet by 1/2" NPT Plastic Adapter
- AP3:** one cable inlet for PG11 Cable Gland
- AP4:** one cable inlet for M16 x 1,5 Cable Gland
- AP5:** one cable inlet for M20 x 1,5 Cable Gland



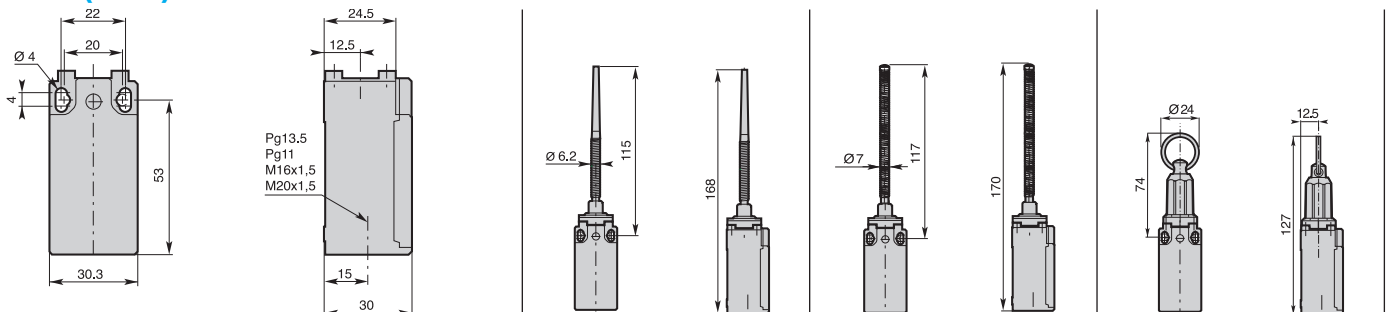
Operating Head Type

	T92: Multidirectional nylon actuator with stainless steel spring	T93: Stainless steel spring multidirectional actuator	T98: Pull action with ring
Conformity / (N.C. contact with positive opening operation)			
Max actuation speed [m/s]	1,0	1,0	0,5
Min. force [N] or torque [Nm]: actuation / positive opening operation	0,12 / -	0,12 / -	30 / -

Additional Technical Datas

Order Code	AP•T92Z11	AP•T93Z11	AP•T98Z11A
Z11 Snap Action Contacts (1NO + 1NC)			
X11 Non overlapping Slow Action Contacts (1NO + 1NC)			
Y11 Overlapping Slow Action Contacts (1NO + 1NC)			
W02 Slow Action Contacts (2NC)			
W20 Slow Action Contacts (2NO)			
Z02 Snap Action Contacts (2NC)			
X12P Non overlapping Slow Action Contacts (1NO + 2NC)			
X21P Non overlapping Slow Action Contacts (2NO + 1NC)			
W03P Slow Action Contacts (3NC)			
Weight (packing per unit) [kg]	0,085	0,090	0,115

Dimensions (in mm)



Electrical Connection

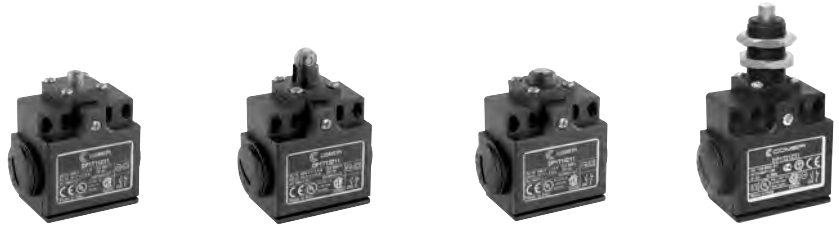
DP1: two cable inlets for PG 13,5 Cable Gland

DP2: two cable inlets for PG11 Cable Gland with one plastic adapter PG11 - 1/2" NPT

DP3: two cable inlets for PG11 Cable Gland

DP4: two cable inlets for M16 x 1,5 Cable Gland

DP5: two cable inlets for M20 x 1,5 Cable Gland



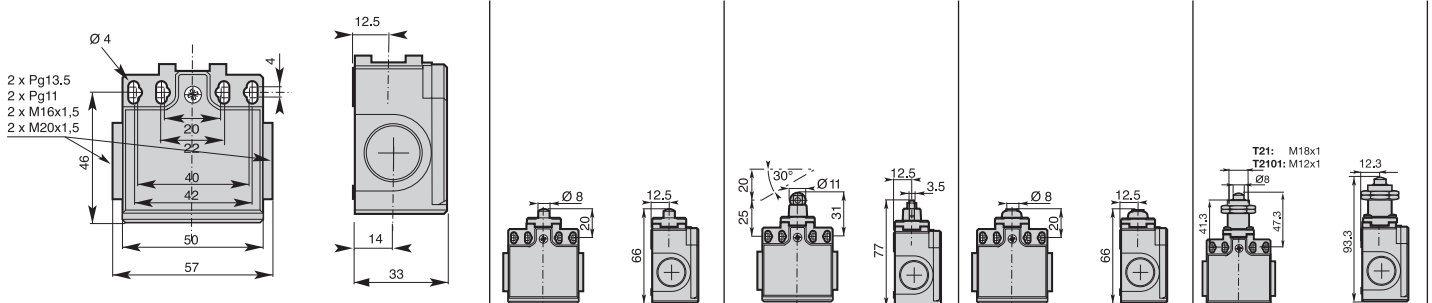
Operating Head Type

	T1• - Plain plunger T10: nylon plunger T11: metal plunger	T1• - Roller plunger T12: metal roller T13: nylon roller	T14 - Metal plunger with dust protection cup	T21 - Plain plunger with M18x1 fixing nuts T2101 - Plain plunger with M12x1 fixing nuts
Conformity / (N.C. contact with positive opening operation)				
Max actuation speed [m/s]	0,5	0,3	0,5	0,5
Min. force [N] or torque [Nm]: actuation / positive opening operation	15 / 30	12 / 30	15 / 30	15 / 30

Additional Technical Datas

	DP•T1•Z11	DP•T1•Z11	DP•T14Z11	DP•T21Z11
Z11 Snap Action Contacts (1NO + 1NC)				
X11 Non overlapping Slow Action Contacts (1NO + 1NC)				
Y11 Overlapping Slow Action Contacts (1NO + 1NC)				
W02 Slow Action Contacts (2NC)				
W20 Slow Action Contacts (2NO)				
Z02 Snap Action Contacts (2NC)				
X12P Non overlapping Slow Action Contacts (1NO + 2NC)				
X21P Non overlapping Slow Action Contacts (2NO + 1NC)				
W03P Slow Action Contacts (3NC)				
Weight (packing per unit) [kg]	0,100	0,105	0,100	0,110

Dimensions (in mm)



Electrical Connection

DP1: two cable inlets for PG 13,5 Cable Gland

DP2: two cable inlets for PG11 Cable Gland with one plastic adapter PG11 - 1/2" NPT

DP3: two cable inlets for PG11 Cable Gland

DP4: two cable inlets for M16 x 1,5 Cable Gland

DP5: two cable inlets for M20 x 1,5 Cable Gland



Operating Head Type

T30 - Plastic roller lever
T30: on plastic plunger
T31: on metal plunger

T35 - Plastic roller lever on metal plunger with dust protection cup

T38 - Adjustable plastic roller lever on metal plunger
T39 - Same as above with dust protection cup

Conformity / (N.C. contact with positive opening operation)
Max actuation speed [m/s]
Min. force [N] or torque [Nm]: actuation / positive opening operation

1,0
7 / 24

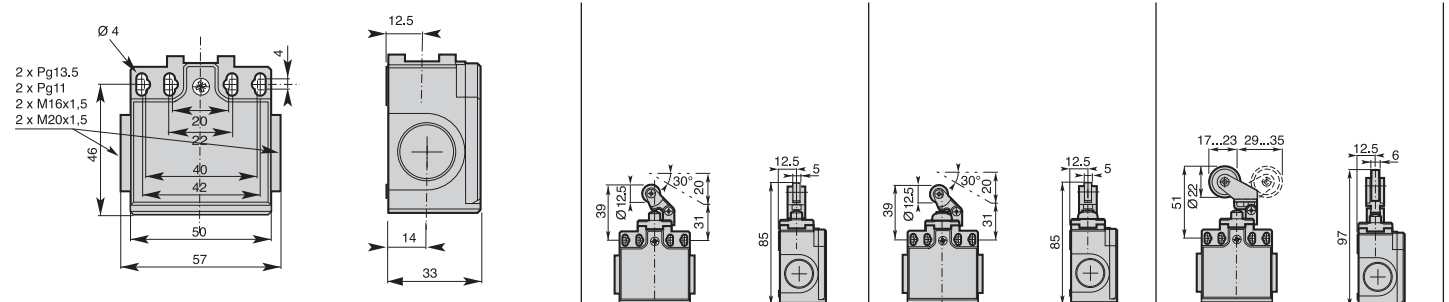
1,0
7 / 24

1,0
7 / 24

Additional Technical Datas

Order Code	Operation Diagram	DP•T3•Z11	DP•T35Z11	DP•T3•Z11
Z11 Snap Action Contacts (1NO + 1NC)				
X11 Non overlapping Slow Action Contacts (1NO + 1NC)				
Y11 Overlapping Slow Action Contacts (1NO + 1NC)				
W02 Slow Action Contacts (2NC)				
W20 Slow Action Contacts (2NO)				
Z02 Snap Action Contacts (2NC)				
X12P Non overlapping Slow Action Contacts (1NO + 2NC)				
X21P Non overlapping Slow Action Contacts (2NO + 1NC)				
W03P Slow Action Contacts (3NC)				
Weight (packing per unit)	[kg]	0,105	0,105	0,110

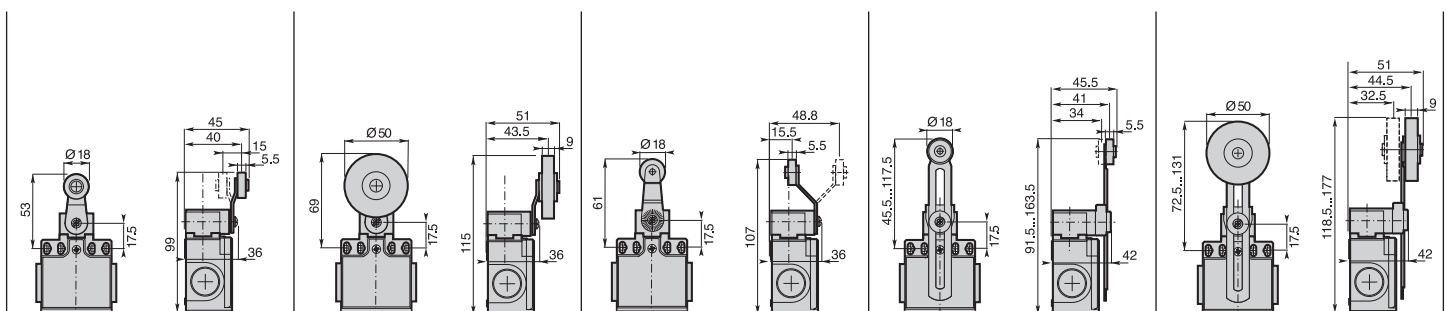
Dimensions (in mm)





T4• - Ø 18 roller lever T41: nylon roller T43: metal roller	T42 - Ø 50 rubber roller lever	T4• - Ø 18 roller lever T45: nylon roller T46: metal roller	T5• - Adjustable lever with Ø 18 roller T51: nylon roller T53: metal roller	T52 - Adjustable Ø 50 rubber roller lever
1,5 0,10 / 0,32	1,5 0,10 / 0,32	1,5 0,10 / 0,32	1,5 0,10 / 0,32	1,5 0,10 / 0,32

DP•T4•Z11 	DP•T42Z11 	DP•T4•Z11 	DP•T5•Z11 	DP•T52Z11
DP•T4•X11 	DP•T42X11 	DP•T4•X11 	DP•T5•X11 	DP•T52X11
DP•T4•Y11 	DP•T42Y11 	DP•T4•Y11 	DP•T5•Y11 	DP•T52Y11
DP•T4•W02 	DP•T42W02 	DP•T4•W02 	DP•T5•W02 	DP•T52W02
DP•T4•W20 	DP•T42W20 	DP•T4•W20 	DP•T5•W20 	DP•T52W20
DP•T4•Z02 	DP•T42Z02 	DP•T4•Z02 	DP•T5•Z02 	DP•T52Z02
DP•T4•X12P 	DP•T42X12P 	DP•T4•X12P 	DP•T5•X12P 	DP•T52X12P
DP•T4•X21P 	DP•T42X21P 	DP•T4•X21P 	DP•T5•X21P 	DP•T52X21P
DP•T4•W03P 	DP•T42W03P 	DP•T4•W03P 	DP•T5•W03P 	DP•T52W03P
0,125	0,145	0,125	0,135	0,155



Electrical Connection

DP1: two cable inlets for PG 13,5 Cable Gland

DP2: two cable inlets for PG11 Cable Gland with one plastic adapter PG11 - 1/2" NPT

DP3: two cable inlets for PG11 Cable Gland

DP4: two cable inlets for M16 x 1,5 Cable Gland

DP5: two cable inlets for M20 x 1,5 Cable Gland



Operating Head Type

T55 - Adjustable lever with adjustable Ø 50 rubber roller

T61 - Nylon actuator with stainless steel spring

T62 - Stainless steel spring actuator

Conformity / (N.C. contact with positive opening operation)
 Max actuation speed [m/s]
 Min. force [N] or torque [Nm]: actuation / positive opening operation

1,5
0,10 / 0,32

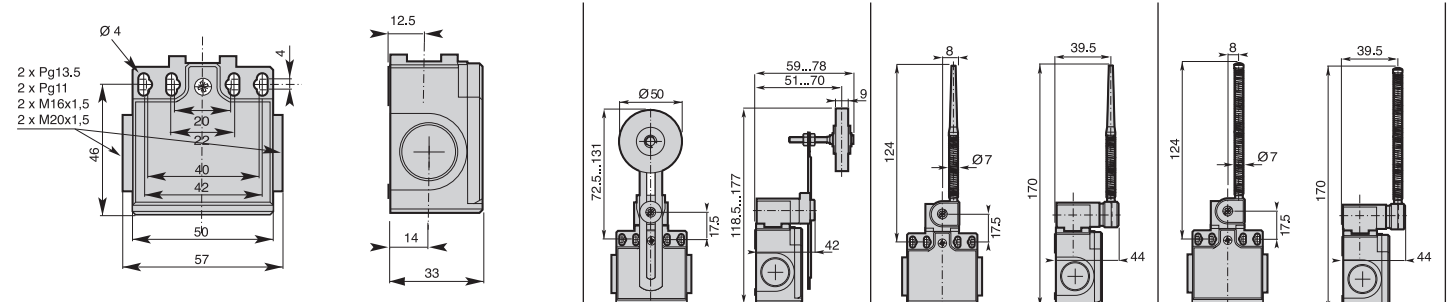
1,5
0,10 / -

1,5
0,10 / -

Additional Technical Datas

			DP•T55Z11	DP•T61Z11	DP•T62Z11
Z11 Snap Action Contacts (1NO + 1NC)		Order Code			
X11 Non overlapping Slow Action Contacts (1NO + 1NC)		Order Code			
Y11 Overlapping Slow Action Contacts (1NO + 1NC)		Order Code			
W02 Slow Action Contacts (2NC)		Order Code			
W20 Slow Action Contacts (2NO)		Order Code			
Z02 Snap Action Contacts (2NC)		Order Code			
X12P Non overlapping Slow Action Contacts (1NO + 2NC)		Order Code			
X21P Non overlapping Slow Action Contacts (2NO + 1NC)		Order Code			
W03P Slow Action Contacts (3NC)		Order Code			
Weight (packing per unit)	[kg]		0,155	0,135	0,135

Dimensions (in mm)





T7 - Adjustable rod lever

T71: stainless steel rod Ø3
T72: fiberglass rod Ø3
T75: square steel rod 3x3

T7 - Adjustable 6 rod lever

T73: nylon rod
T74: fiberglass rod

T91: Stainless steel spring multidirectional actuator

T92: Multidirectional nylon actuator with stainless steel spring

T98: Pull action with ring

1,5
0,10 / 0,32



1,5
0,10 / 0,32

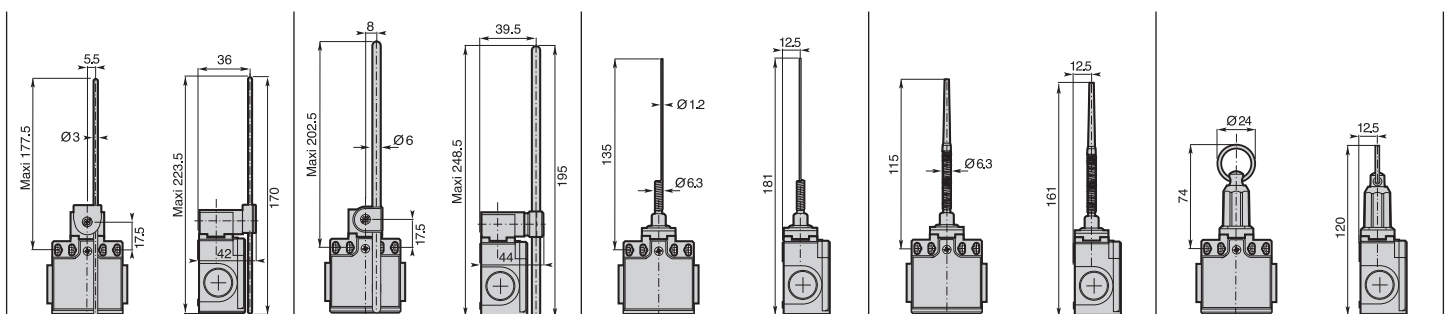


1,0
0,12 / -

1,0
0,12 / -

0,5
30 / -

<p>DP-T7-Z11 0 17° 31° 47° 74° 21-22 13-14 21-22 13-14</p>	<p>DP-T7-Z11 0 17° 31° 47° 74° 21-22 13-14 21-22 13-14</p>	<p>DP-T91Z11 0 12° 23° 21-22 13-14 21-22 13-14</p>	<p>DP-T92Z11 0 12° 23° 21-22 13-14 21-22 13-14</p>	<p>DP-T98Z11A 0 0,9 2,0 5,6 mm 21-22 13-14 21-22 13-14</p>
<p>DP-T7-X11 0 21° 37° 74° 21-22 13-14 30°</p>	<p>DP-T7-X11 0 21° 37° 74° 21-22 13-14 30°</p>	<p>DP-T91X11 0 14° 21-22 13-14 21°</p>	<p>DP-T92X11 0 14° 21-22 13-14 21°</p>	<p>DP-T98X11A 0 1,0 5,6 mm 21-22 13-14 1,9</p>
<p>DP-T7-Y11 0 35° 51° 74° 21-22 13-14 18°</p>	<p>DP-T7-Y11 0 35° 51° 74° 21-22 13-14 18°</p>	<p>DP-T91Y11 0 25° 21-22 13-14 12°</p>	<p>DP-T92Y11 0 25° 21-22 13-14 12°</p>	<p>DP-T98Y11A 0 2,0 5,6 mm 21-22 13-14 0,6</p>
<p>DP-T7-W02 0 19° 37° 74° 11-12 21-22</p>	<p>DP-T7-W02 0 19° 37° 74° 11-12 21-22</p>	<p>DP-T91W02 0 14° 11-12 21-22</p>	<p>DP-T92W02 0 14° 11-12 21-22</p>	<p>DP-T98W02A 0 2,0 5,6 mm 11-12 21-22</p>
<p>DP-T7-W20 0 18° 74° 13-14 23-24</p>	<p>DP-T7-W20 0 18° 74° 13-14 23-24</p>	<p>DP-T91W20 0 13° 13-14 23-24</p>	<p>DP-T92W20 0 13° 13-14 23-24</p>	<p>DP-T98W20A 0 1,8 5,6 mm 13-14 23-24</p>
<p>DP-T7-Z02 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22</p>	<p>DP-T7-Z02 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22</p>	<p>DP-T91Z02 0 12° 22° 11-12 21-22 11-12 21-22</p>	<p>DP-T92Z02 0 12° 22° 11-12 21-22 11-12 21-22</p>	
<p>DP-T7-X12P 0 24° 40° 74° 11-12 21-22 33-34 38°</p>	<p>DP-T7-X12P 0 24° 40° 74° 11-12 21-22 33-34 38°</p>	<p>DP-T91X12P 0 16° 11-12 21-22 33-34 26°</p>	<p>DP-T92X12P 0 16° 11-12 21-22 33-34 26°</p>	
<p>DP-T7-X21P 0 24° 40° 74° 11-12 21-22 33-34 38°</p>	<p>DP-T7-X21P 0 24° 40° 74° 11-12 21-22 33-34 38°</p>	<p>DP-T91X21P 0 16° 11-12 21-22 33-34 26°</p>	<p>DP-T92X21P 0 16° 11-12 21-22 33-34 26°</p>	
<p>DP-T7-W03P 0 24° 40° 74° 11-12 21-22 33-34</p>	<p>DP-T7-W03P 0 24° 40° 74° 11-12 21-22 33-34</p>	<p>DP-T91W03P 0 16° 11-12 21-22 33-34</p>	<p>DP-T92W03P 0 16° 11-12 21-22 33-34</p>	
0,130	0,145	0,110	0,115	0,145



Electrical Connection

AM1: one cable inlet for PG 13,5 Cable Gland

AM2: one cable inlet for 1/2" NPT Cable Gland

AM3: one cable inlet for PG11 Cable Gland

AM4: one cable inlet for M16 x 1,5 Cable Gland

AM5: one cable inlet for M20 x 1,5 Cable Gland



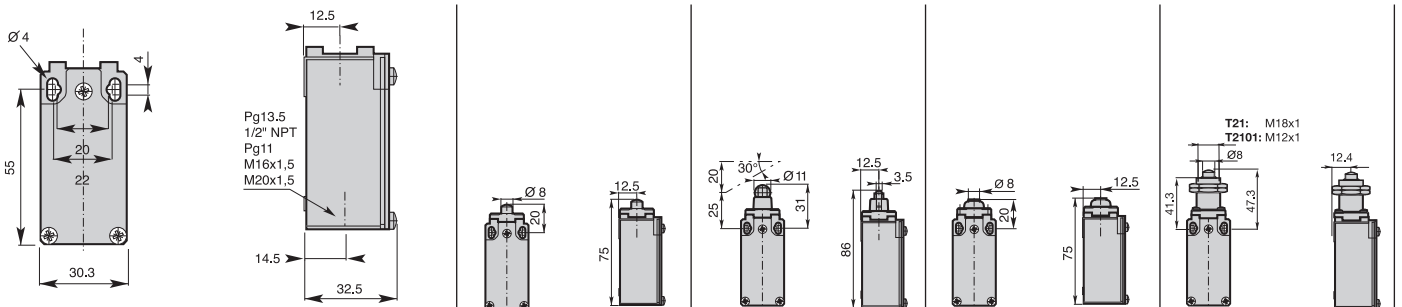
Operating Head Type

	F11 - Plain Metal plunger	F12 - Metal roller plunger	T14 - Metal plunger with dust protection cup	T21 - Plain plunger with M18x1 fixing nuts T2101 - Plain plunger with M12x1 fixing nuts
Conformity / (N.C. contact with positive opening operation)	EN 50047	EN 50047	EN 50047	
Max actuation speed [m/s]	0,5	0,3	0,5	0,5
Min. force [N] or torque [Nm]: actuation / positive opening operation	15 / 30	12 / 30	15 / 30	15 / 30

Additional Technical Datas

Order Code	AM•F11Z11	AM•F12Z11	AM•T14Z11	AM•T21Z11
Z11 Snap Action Contacts (1NO + 1NC)				
X11 Non overlapping Slow Action Contacts (1NO + 1NC)				
Y11 Overlapping Slow Action Contacts (1NO + 1NC)				
W02 Slow Action Contacts (2NC)				
W20 Slow Action Contacts (2NO)				
Z02 Snap Action Contacts (2NC)				
X12P Non overlapping Slow Action Contacts (1NO + 2NC)				
X21P Non overlapping Slow Action Contacts (2NO + 1NC)				
W03P Slow Action Contacts (3NC)				
Weight (packing per unit) [kg]	0,180	0,190	0,165	0,175

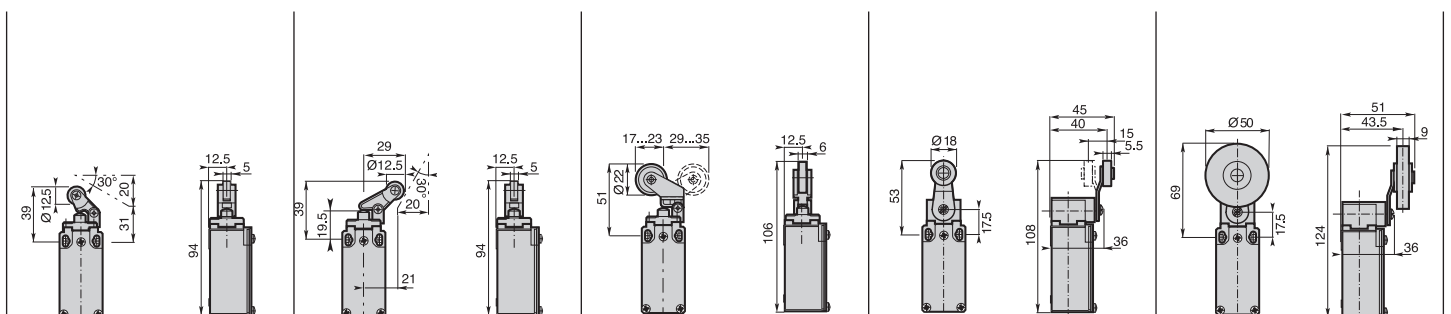
Dimensions (in mm)





T30 - Plastic roller lever T30: on plastic plunger T31: on metal plunger	T32 - Plastic roller lever T32: on metal plunger T34: on plastic plunger	T38 - Adjustable plastic roller lever on metal plunger T39 - Same as above with dust protection cup	F40 - Ø 18 roller lever F41: nylon roller F43: metal roller	F42 - Ø 50 rubber roller lever
EN 50047 1,0 7 / 24	EN 50047 1,0 7, / 24	EN 50047 1,0 7 / 24	EN 50047 1,5 0,10 / 0,32	EN 50047 1,5 0,10 / 0,32

AM•T3•Z11 0 4.9 9.0 14.5 21.0 mm 21-22 13-14 21-22 13-14	AM•T3•Z11 0 4.9 9.0 14.5 21.0 mm 21-22 13-14 21-22 13-14	AM•T3•Z11 0 8.8 15.0 23.2 32.0 mm 21-22 13-14 21-22 13-14	AM•F4•Z11 0 17° 31° 47° 74° 21-22 13-14 21-22 13-14	AM•F42Z11 0 17° 31° 47° 74° 21-22 13-14 21-22 13-14
AM•T3•X11 0 6.0 10.5 21.0 mm 21-22 13-14 8.6	AM•T3•X11 0 6.0 10.5 21.0 mm 21-22 13-14 8.6	AM•T3•X11 0 6.0 10.5 21.0 mm 21-22 13-14 15.1	AM•F4•X11 0 21° 37° 74° 21-22 13-14 30°	AM•F42X11 0 21° 37° 74° 21-22 13-14 30°
AM•T3•Y11 0 10.2 14.6 21.0 mm 21-22 13-14 5.4	AM•T3•Y11 0 10.2 14.6 21.0 mm 21-22 13-14 5.4	AM•T3•Y11 0 16.8 25.1 32.0 mm 21-22 13-14 9.4	AM•F4•Y11 0 35° 51° 74° 21-22 13-14 18°	AM•F42Y11 0 35° 51° 74° 21-22 13-14 18°
AM•T3•W02 0 5.7 10.2 21.0 mm 11-12 21-22	AM•T3•W02 0 5.7 10.2 21.0 mm 11-12 21-22	AM•T3•W02 0 9.6 17.8 32.0 mm 11-12 21-22	AM•F4•W02 0 19° 37° 74° 11-12 21-22	AM•F42W02 0 19° 37° 74° 11-12 21-22
AM•T3•W20 0 5.3 21.0 mm 13-14 23-24	AM•T3•W20 0 5.3 21.0 mm 13-14 23-24	AM•T3•W20 0 9.2 32.0 mm 13-14 23-24	AM•F4•W20 0 18° 74° 13-14 23-24	AM•F42W20 0 18° 74° 13-14 23-24
AM•T3•Z02 0 5.1 8.6 13.1 21.0 mm 11-12 21-22 11-12 21-22	AM•T3•Z02 0 5.1 8.6 13.1 21.0 mm 11-12 21-22 11-12 21-22	AM•T3•Z02 0 8.8 14.6 22.8 32.0 mm 11-12 21-22 11-12 21-22	AM•F4•Z02 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22	AM•F42Z02 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22
AM•T3•X12P 0 6.8 11.8 21.0 mm 11-12 21-22 11-12 21-22	AM•T3•X12P 0 6.8 11.8 21.0 mm 11-12 21-22 11-12 21-22	AM•T3•X12P 0 11.9 19.7 32.0 mm 11-12 21-22 11-12 21-22	AM•F4•X12P 0 24° 40° 74° 11-12 21-22 11-12 21-22	AM•F42X12P 0 24° 40° 74° 11-12 21-22 11-12 21-22
AM•T3•X21P 0 6.8 11.8 21.0 mm 11-12 21-22 11-12 21-22	AM•T3•X21P 0 6.8 11.8 21.0 mm 11-12 21-22 11-12 21-22	AM•T3•X21P 0 11.9 19.7 32.0 mm 11-12 21-22 11-12 21-22	AM•F4•X21P 0 24° 40° 74° 11-12 21-22 11-12 21-22	AM•F42X21P 0 24° 40° 74° 11-12 21-22 11-12 21-22
AM•T3•W03P 0 6.8 11.8 21.0 mm 11-12 21-22 11-12 21-22	AM•T3•W03P 0 6.8 11.8 21.0 mm 11-12 21-22 11-12 21-22	AM•T3•W03P 0 11.9 19.7 32.0 mm 11-12 21-22 11-12 21-22	AM•F4•W03P 0 24° 40° 74° 11-12 21-22 11-12 21-22	AM•F42W03P 0 24° 40° 74° 11-12 21-22 11-12 21-22
0,170	0,175	0,175	0,235	0,255



Electrical Connection

AM1: one cable inlet for PG 13,5 Cable Gland

AM2: one cable inlet for 1/2" NPT Cable Gland

AM3: one cable inlet for PG11 Cable Gland

AM4: one cable inlet for M16 x 1,5 Cable Gland

AM5: one cable inlet for M20 x 1,5 Cable Gland



Operating Head Type

F4• - Ø 18 roller lever

F45: nylon roller
F46: metal roller

F5• - Adjustable lever with Ø 18 roller

F51: nylon roller
F53: metal roller

F52 - Adjustable Ø 50 rubber roller lever

Conformity / (N.C. contact with positive opening operation)
Max actuation speed [m/s]
Min. force [N] or torque [Nm]: actuation / positive opening operation

1,5
0,10 / 0,32

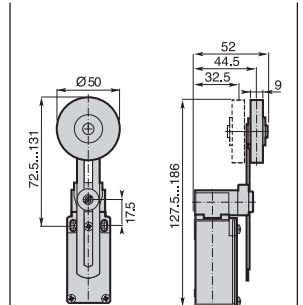
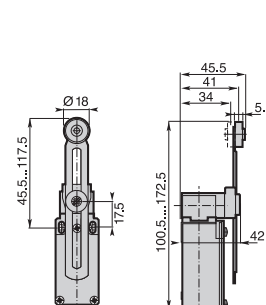
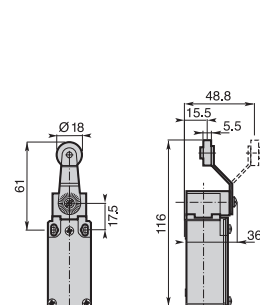
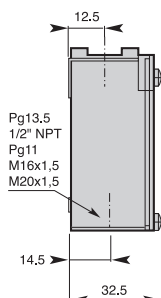
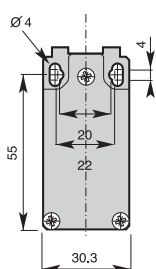
1,5
0,10 / 0,32

1,5
0,10 / 0,32

Additional Technical Datas

Order Code	AM•F4•Z11	AM•F5•Z11	AM•F52Z11
Z11 Snap Action Contacts (1NO + 1NC)			
X11 Non overlapping Slow Action Contacts (1NO + 1NC)			
Y11 Overlapping Slow Action Contacts (1NO + 1NC)			
W02 Slow Action Contacts (2NC)			
W20 Slow Action Contacts (2NO)			
Z02 Snap Action Contacts (2NC)			
X12P Non overlapping Slow Action Contacts (1NO + 2NC)			
X21P Non overlapping Slow Action Contacts (2NO + 1NC)			
W03P Slow Action Contacts (3NC)			
Weight (packing per unit) [kg]	0,250	0,250	0,265

Dimensions (in mm)





F55 - Adjustable lever with adjustable Ø 50 rubber roller

1,5
0,10 / 0,32



F61 - Nylon actuator with stainless steel spring

1,5
0,10 / -



F7• - Adjustable rod lever
F71: stainless steel rod Ø3
F72: fiberglass rod Ø3
F75: square steel rod 3x3

1,5
0,10 / 0,32



F7• - Adjustable Ø 6 rod lever
F73: nylon rod
F74: fiberglass rod

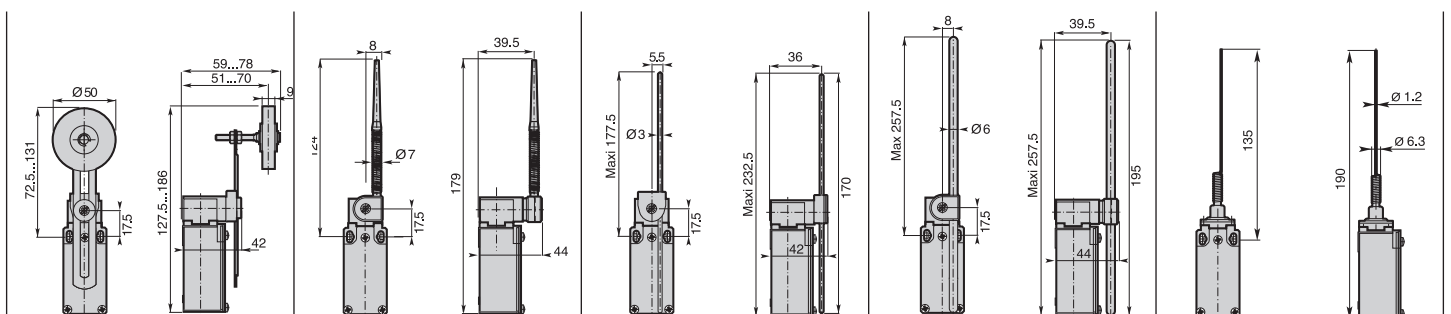
1,5
0,10 / 0,32



T91: Stainless steel spring multidirectional actuator

1,0
0,12 / -

 AM-F55Z11 0 17° 31° 47° 74° 21-22 13-14 21-22 13-14 21-22 13-14	 AM-F61Z11 0 17° 31° 74° 21-22 13-14 21-22 13-14 21-22 13-14	 AM-F7•Z11 0 17° 31° 47° 74° 21-22 13-14 21-22 13-14 21-22 13-14	 AM-F7•Z11 0 17° 31° 47° 74° 21-22 13-14 21-22 13-14 21-22 13-14	 AM-F91Z11 0 12° 23° 21-22 13-14 21-22 13-14 21-22 13-14
 AM-F55X11 0 21° 37° 74° 21-22 13-14 30°	 AM-F61X11 0 21° 74° 21-22 13-14 30°	 AM-F7•X11 0 21° 37° 74° 21-22 13-14 30°	 AM-F7•X11 0 21° 37° 74° 21-22 13-14 30°	 AM-F91X11 0 14° 21-22 13-14 21°
 AM-F55Y11 0 35° 51° 74° 21-22 13-14 18°	 AM-F61Y11 0 35° 74° 21-22 13-14 18°	 AM-F7•Y11 0 35° 51° 74° 21-22 13-14 18°	 AM-F7•Y11 0 35° 51° 74° 21-22 13-14 18°	 AM-F91Y11 0 25° 21-22 13-14 12°
 AM-F55W02 0 19° 37° 74° 11-12 21-22 21-22	 AM-F61W02 0 19° 74° 11-12 21-22 21-22	 AM-F7•W02 0 19° 37° 74° 11-12 21-22 21-22	 AM-F7•W02 0 19° 37° 74° 11-12 21-22 21-22	 AM-F91W02 0 14° 11-12 21-22 21-22
 AM-F55W20 0 18° 74° 13-14 23-24 23-24	 AM-F61W20 0 18° 74° 13-14 23-24 23-24	 AM-F7•W20 0 18° 74° 13-14 23-24 23-24	 AM-F7•W20 0 18° 74° 13-14 23-24 23-24	 AM-F91W20 0 13° 13-14 23-24 23-24
 AM-F55Z02 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22 11-12 21-22	 AM-F61Z02 0 17° 30° 74° 11-12 21-22 11-12 21-22 11-12 21-22	 AM-F7•Z02 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22 11-12 21-22	 AM-F7•Z02 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22 11-12 21-22	 AM-F91Z02 0 12° 22° 11-12 21-22 11-12 21-22 11-12 21-22
 AM-F55X12P 0 24° 40° 74° 11-12 21-22 11-12 21-22 11-12 21-22 38°	 AM-F61X12P 0 24° 74° 11-12 21-22 11-12 21-22 11-12 21-22 38°	 AM-F7•X12P 0 24° 40° 74° 11-12 21-22 11-12 21-22 11-12 21-22 38°	 AM-F7•X12P 0 24° 40° 74° 11-12 21-22 11-12 21-22 11-12 21-22 38°	 AM-F91X12P 0 16° 11-12 21-22 11-12 21-22 11-12 21-22 26°
 AM-F55X21P 0 24° 40° 74° 11-12 21-22 11-12 21-22 11-12 21-22 38°	 AM-F61X21P 0 24° 74° 11-12 21-22 11-12 21-22 11-12 21-22 38°	 AM-F7•X21P 0 24° 40° 74° 11-12 21-22 11-12 21-22 11-12 21-22 38°	 AM-F7•X21P 0 24° 40° 74° 11-12 21-22 11-12 21-22 11-12 21-22 38°	 AM-F91X21P 0 16° 11-12 21-22 11-12 21-22 11-12 21-22 26°
 AM-F55W03P 0 24° 40° 74° 11-12 21-22 11-12 21-22 11-12 21-22 38°	 AM-F61W03P 0 24° 74° 11-12 21-22 11-12 21-22 11-12 21-22 38°	 AM-F7•W03P 0 24° 40° 74° 11-12 21-22 11-12 21-22 11-12 21-22 38°	 AM-F7•W03P 0 24° 40° 74° 11-12 21-22 11-12 21-22 11-12 21-22 38°	 AM-F91W03P 0 16° 11-12 21-22 11-12 21-22 11-12 21-22 26°
0,265	0,245	0,245	0,255	0,175



Electrical Connection

AM1: one cable inlet for PG 13,5 Cable Gland

AM2: one cable inlet for 1/2" NPT Cable Gland

AM3: one cable inlet for PG11 Cable Gland

AM4: one cable inlet for M16 x 1,5 Cable Gland

AM5: one cable inlet for M20 x 1,5 Cable Gland



Operating Head Type

T92: Multidirectional nylon actuator with stainless steel spring

T93: Stainless steel spring multidirectional actuator

T98: Pull action with ring

Conformity / (N.C. contact with positive opening operation)
 Max actuation speed [m/s]
 Min. force [N] or torque [Nm]: actuation / positive opening operation

1,0
0,12 / -

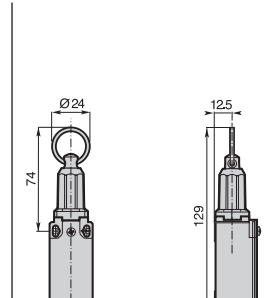
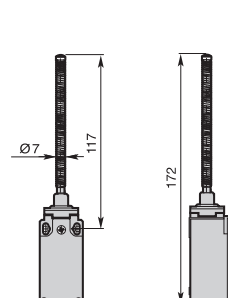
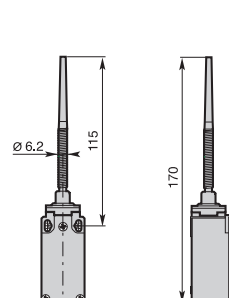
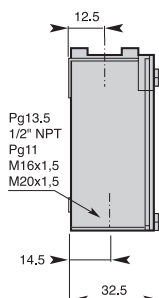
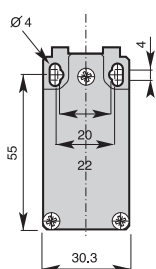
1,0
0,12 / -

0,5
30 / -

Additional Technical Datas

Order Code	Operation Diagram	AM-T92Z11	AM-T93Z11	AM-T98Z11A
Z11 Snap Action Contacts (1NO + 1NC)				
X11 Non overlapping Slow Action Contacts (1NO + 1NC)				
Y11 Overlapping Slow Action Contacts (1NO + 1NC)				
W02 Slow Action Contacts (2NC)				
W20 Slow Action Contacts (2NO)				
Z02 Snap Action Contacts (2NC)				
X12P Non overlapping Slow Action Contacts (1NO + 2NC)				
X21P Non overlapping Slow Action Contacts (2NO + 1NC)				
W03P Slow Action Contacts (3NC)				
Weight (packing per unit)	[kg]	0,180	0,185	0,210

Dimensions (in mm)



Electrical Connection

- DM1:** three cable inlets for PG 13,5 Cable Gland
- DM2:** three cable inlets for 1/2" NPT Cable Gland
- DM3:** three cable inlets for PG11 Cable Gland
- DM4:** three cable inlets for M16 x 1,5 Cable Gland
- DM5:** three cable inlets for M20 x 1,5 Cable Gland



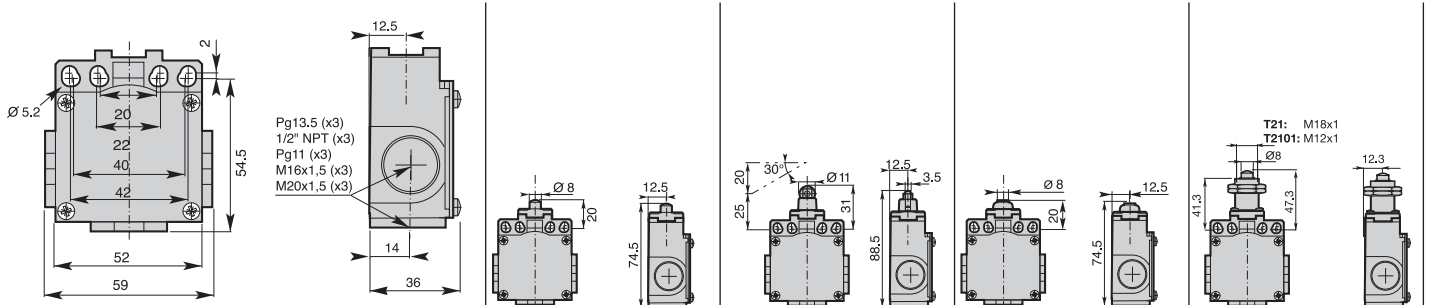
Operating Head Type

	F11 - Plain Metal plunger	F12 - Metal roller plunger	T14 - Metal plunger with dust protection cup	T21 - Plain plunger with M18x1 fixing nuts T2101 - Plain plunger with M12x1 fixing nuts
Conformity / (N.C. contact with positive opening operation)				
Max actuation speed [m/s]	0,5	0,3	0,5	0,5
Min. force [N] or torque [Nm]: actuation / positive opening operation	15 / 30	12 / 30	15 / 30	15 / 30

Additional Technical Datas

Order Code	DM-F11Z11	DM-F12Z11	DM-T14Z11	DM-T21Z11
Z11 Snap Action Contacts (1NO + 1NC)				
X11 Non overlapping Slow Action Contacts (1NO + 1NC)				
Y11 Overlapping Slow Action Contacts (1NO + 1NC)				
W02 Slow Action Contacts (2NC)				
W20 Slow Action Contacts (2NO)				
Z02 Snap Action Contacts (2NC)				
X12P Non overlapping Slow Action Contacts (1NO + 2NC)				
X21P Non overlapping Slow Action Contacts (2NO + 1NC)				
W03P Slow Action Contacts (3NC)				
Weight (packing per unit) [kg]	0,270	0,280	0,255	0,265

Dimensions (in mm)



Electrical Connection

- DM1:** three cable inlets for PG 13,5 Cable Gland
- DM2:** three cable inlets for 1/2" NPT Cable Gland
- DM3:** three cable inlets for PG11 Cable Gland
- DM4:** three cable inlets for M16 x 1,5 Cable Gland
- DM5:** three cable inlets for M20 x 1,5 Cable Gland



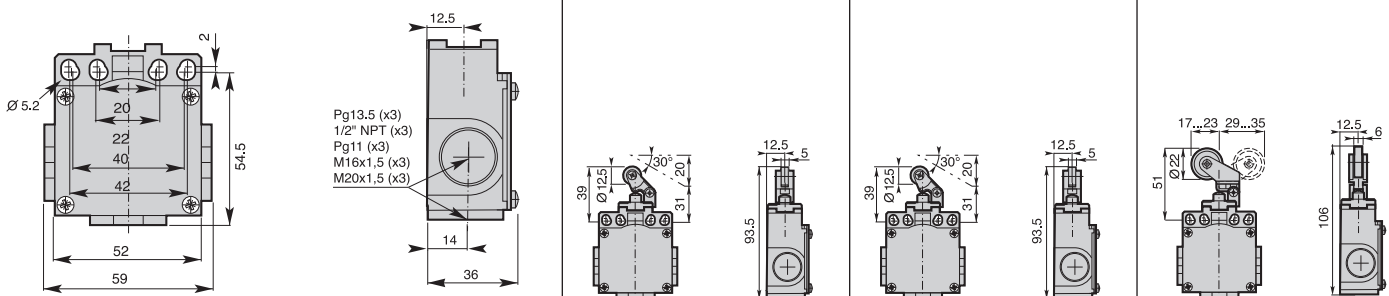
Operating Head Type

	T3• - Plastic roller lever T30: on plastic plunger T31: on metal plunger	T35 - Plastic roller lever on metal plunger with dust protection cup	T38 - Adjustable plastic roller lever on metal plunger T39 - Same as above with dust protection cup
Conformity / (N.C. contact with positive opening operation)			
Max actuation speed [m/s]	1,0	1,0	1,0
Min. force [N] or torque [Nm]: actuation / positive opening operation	7 / 24	7 / 24	7 / 24

Additional Technical Datas

		DM•T3•Z11	DM•T35Z11	DM•T3•Z11
Z11 Snap Action Contacts (1NO + 1NC)				
X11 Non overlapping Slow Action Contacts (1NO + 1NC)				
Y11 Overlapping Slow Action Contacts (1NO + 1NC)				
W02 Slow Action Contacts (2NC)				
W20 Slow Action Contacts (2NO)				
Z02 Snap Action Contacts (2NC)				
X12P Non overlapping Slow Action Contacts (1NO + 2NC)				
X21P Non overlapping Slow Action Contacts (2NO + 1NC)				
W03P Slow Action Contacts (3NC)				
Weight (packing per unit)	[kg]	0,260	0,260	0,265

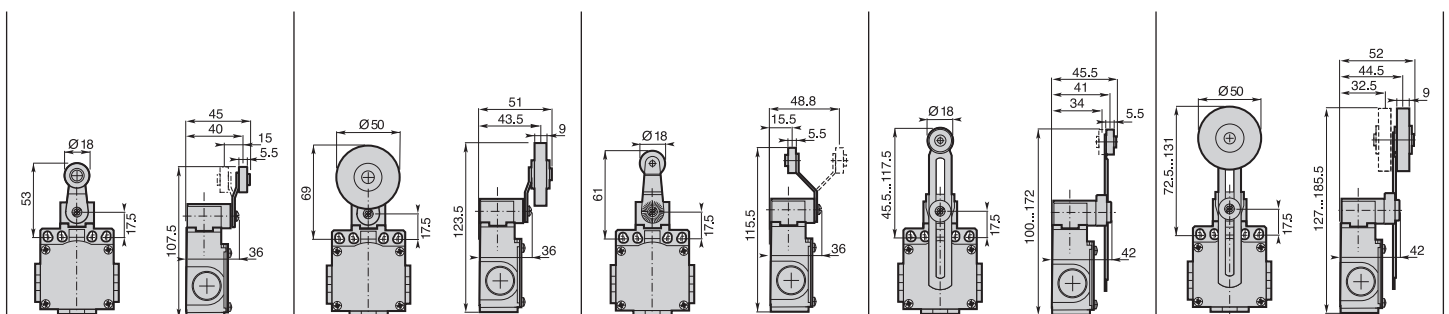
Dimensions (in mm)





F4• - Ø 18 roller lever F41: nylon roller F43: metal roller	F42 - Ø 50 rubber roller lever	F4• - Ø 18 roller lever F45: nylon roller F46: metal roller	F5• - Adjustable lever with Ø 18 roller F51: nylon roller F53: metal roller	F52 - Adjustable lever with Ø 50 rubber roller
1,5 0,10 / 0,32	1,5 0,10 / 0,32	1,5 0,10 / 0,32	1,5 0,10 / 0,32	1,5 0,10 / 0,32

DM•F4•Z11 0 17° 31° 47° 74° 21-22 13-14 21-22 13-14	DM•F4Z211 0 17° 31° 47° 74° 21-22 13-14 21-22 13-14	DM•F4•Z11 0 17° 31° 47° 74° 21-22 13-14 21-22 13-14	DM•F5•Z11 0 17° 31° 47° 74° 21-22 13-14 21-22 13-14	DM•F5Z211 0 17° 31° 47° 74° 21-22 13-14 21-22 13-14
DM•F4•X11 0 21° 37° 74° 21-22 13-14 30°	DM•F4X211 0 21° 37° 74° 21-22 13-14 30°	DM•F4•X11 0 21° 37° 74° 21-22 13-14 30°	DM•F5•X11 0 21° 37° 74° 21-22 13-14 30°	DM•F5X211 0 21° 37° 74° 21-22 13-14 30°
DM•F4•Y11 0 35° 51° 74° 21-22 13-14 18°	DM•F4Y211 0 35° 51° 74° 21-22 13-14 18°	DM•F4•Y11 0 35° 51° 74° 21-22 13-14 18°	DM•F5•Y11 0 35° 51° 74° 21-22 13-14 18°	DM•F5Y211 0 35° 51° 74° 21-22 13-14 18°
DM•F4•W02 0 19° 37° 74° 11-12 21-22	DM•F4W02 0 19° 37° 74° 11-12 21-22	DM•F4•W02 0 19° 37° 74° 11-12 21-22	DM•F5•W02 0 19° 37° 74° 11-12 21-22	DM•F5W02 0 19° 37° 74° 11-12 21-22
DM•F4•W20 0 18° 74° 13-14 23-24	DM•F4W20 0 18° 74° 13-14 23-24	DM•F4•W20 0 18° 74° 13-14 23-24	DM•F5•W20 0 18° 74° 13-14 23-24	DM•F5W20 0 18° 74° 13-14 23-24
DM•F4•Z02 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22	DM•F4Z202 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22	DM•F4•Z02 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22	DM•F5•Z02 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22	DM•F5Z202 0 17° 30° 46° 74° 11-12 21-22 11-12 21-22
DM•F4•X12P 0 24° 40° 74° 11-12 21-22 33-34 38°	DM•F4X212P 0 24° 40° 74° 11-12 21-22 33-34 38°	DM•F4•X12P 0 24° 40° 74° 11-12 21-22 33-34 38°	DM•F5•X12P 0 24° 40° 74° 11-12 21-22 33-34 38°	DM•F5X212P 0 24° 40° 74° 11-12 21-22 33-34 38°
DM•F4•X21P 0 24° 40° 74° 11-12 21-22 33-34 38°	DM•F4X21P 0 24° 40° 74° 11-12 21-22 33-34 38°	DM•F4•X21P 0 24° 40° 74° 11-12 21-22 33-34 38°	DM•F5•X21P 0 24° 40° 74° 11-12 21-22 33-34 38°	DM•F5X21P 0 24° 40° 74° 11-12 21-22 33-34 38°
DM•F4•W03P 0 24° 40° 74° 11-12 21-22 33-34	DM•F4W03P 0 24° 40° 74° 11-12 21-22 33-34	DM•F4•W03P 0 24° 40° 74° 11-12 21-22 33-34	DM•F5•W03P 0 24° 40° 74° 11-12 21-22 33-34	DM•F5W03P 0 24° 40° 74° 11-12 21-22 33-34
0,325	0,345	0,340	0,335	0,355



Electrical Connection

- DM1:** three cable inlets for PG 13,5 Cable Gland
- DM2:** three cable inlets for 1/2" NPT Cable Gland
- DM3:** three cable inlets for PG11 Cable Gland
- DM4:** three cable inlets for M16 x 1,5 Cable Gland
- DM5:** three cable inlets for M20 x 1,5 Cable Gland



Operating Head Type

F55 - Adjustable lever with adjustable Ø 50 rubber roller

F61 - Nylon actuator with stainless steel spring

F7 - Adjustable rod lever
 F71: stainless steel rod Ø3
 F72: fiberglass rod Ø3
 F75: square steel rod 3x3

Conformity / (N.C. contact with positive opening operation)
 Max actuation speed [m/s]
 Min. force [N] or torque [Nm]: actuation / positive opening operation

1,5
0,10 / 0,32

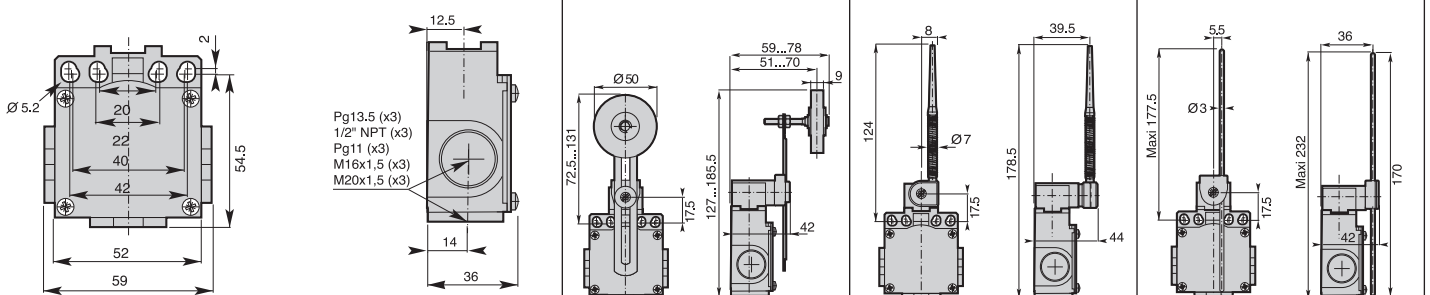
1,5
0,10 / -

1,5
0,10 / 0,32

Additional Technical Datas

Order Code	Operation Diagram	DM-F55Z11	DM-F61Z11	DM-F7-Z11
Z11 Snap Action Contacts (1NO + 1NC)				
X11 Non overlapping Slow Action Contacts (1NO + 1NC)				
Y11 Overlapping Slow Action Contacts (1NO + 1NC)				
W02 Slow Action Contacts (2NC)				
W20 Slow Action Contacts (2NO)				
Z02 Snap Action Contacts (2NC)				
X12P Non overlapping Slow Action Contacts (1NO + 2NC)				
X21P Non overlapping Slow Action Contacts (2NO + 1NC)				
W03P Slow Action Contacts (3NC)				
Weight (packing per unit) [kg]		0,355	0,305	0,380

Dimensions (in mm)





**F7• - Adjustable
Ø 6 rod lever**

F73: nylon rod
F74: fiberglass rod



T91: Stainless steel spring multidirectional actuator



T92: Multidirectional nylon actuator with stainless steel spring



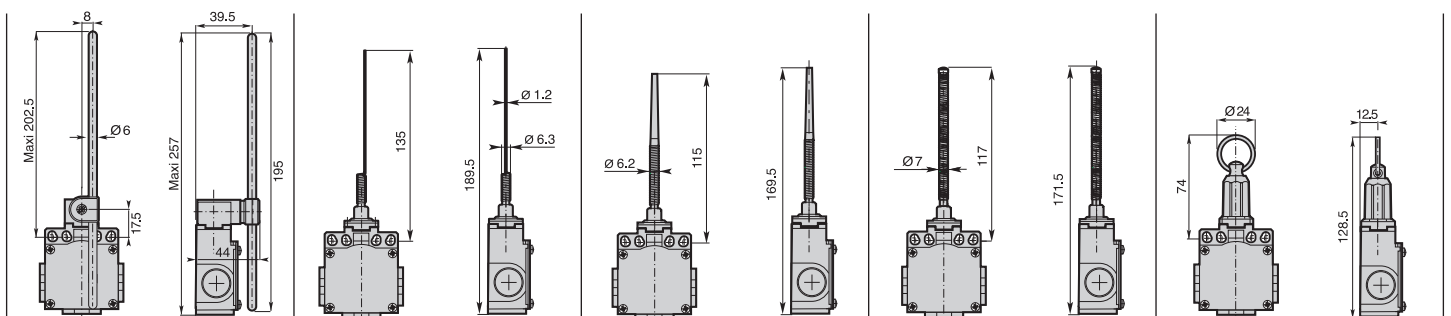
T93: Stainless steel spring multidirectional actuator



T98: Pull action with ring

1,5 0,10 / 0,32	1,0 0,12 / -	1,0 0,12 / -	1,0 0,12 / -	0,5 30 / -
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<p>DM•F7•Z11</p>	<p>DM•T91Z11</p>	<p>DM•T92Z11</p>	<p>DM•T93Z11</p>	<p>DM•T98Z11A</p>
<p>DM•F7•X11</p>	<p>DM•T91X11</p>	<p>DM•T92X11</p>	<p>DM•T93X11</p>	<p>DM•T98X11A</p>
<p>DM•F7•Y11</p>	<p>DM•T91Y11</p>	<p>DM•T92Y11</p>	<p>DM•T93Y11</p>	<p>DM•T98Y11A</p>
<p>DM•F7•W02</p>	<p>DM•T91W02</p>	<p>DM•T92W02</p>	<p>DM•T93W02</p>	<p>DM•T98W02A</p>
<p>DM•F7•W20</p>	<p>DM•T91W20</p>	<p>DM•T92W20</p>	<p>DM•T93W20</p>	<p>DM•T98W20A</p>
<p>DM•F7•Z02</p>	<p>DM•T91Z02</p>	<p>DM•T92Z02</p>	<p>DM•T93Z02</p>	
<p>DM•F7•X12P</p>	<p>DM•T91X12P</p>	<p>DM•T92X12P</p>	<p>DM•T93X12P</p>	
<p>DM•F7•X21P</p>	<p>DM•T91X21P</p>	<p>DM•T92X21P</p>	<p>DM•T93X21P</p>	
<p>DM•F7•W03P</p>	<p>DM•T91W03P</p>	<p>DM•T92W03P</p>	<p>DM•T93W03P</p>	
0,390	0,265	0,270	0,275	0,300



Electrical Connection

BP1: one cable inlet for PG 13,5 Cable Gland

BP2: one cable inlet for 1/2" NPT Cable Gland

BP5: one cable inlet for M20 x 1,5 Cable Gland



Operating Head Type

H11 - Plain steel plunger

H12 - Steel ball plunger

H13 - Steel roller plunger

Conformity / \rightarrow (N.C. contact with positive opening operation)
 Max actuation speed [m/s]
 Min. force [N] or torque [Nm]: actuation / positive opening operation

EN 50041

0,5
14 / 40



EN 50041

0,5
14 / 40



EN 50041

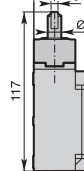
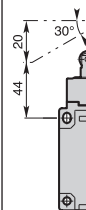
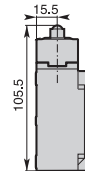
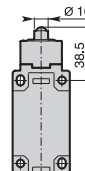
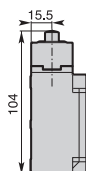
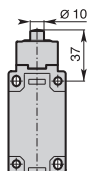
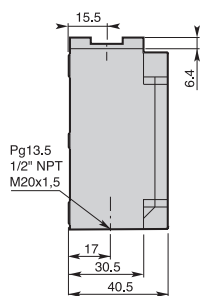
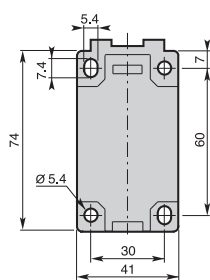
0,5
14 / 40



Additional Technical Datas

			H11 - Plain steel plunger	H12 - Steel ball plunger	H13 - Steel roller plunger
Z11 Snap Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BP•H11Z11 	BP•H12Z11 	BP•H13Z11
X11 Non overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BP•H11X11 	BP•H12X11 	BP•H13X11
Y11 Overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BP•H11Y11 	BP•H12Y11 	BP•H13Y11
W02 Slow Action Contacts (2NC)		Order Code Operation Diagram	BP•H11W02 	BP•H12W02 	BP•H13W02
W20 Slow Action Contacts (2NO)		Order Code Operation Diagram	BP•H11W20 	BP•H12W20 	BP•H13W20
Z02 Snap Action Contacts (2NC)		Order Code Operation Diagram	BP•H11Z02 	BP•H12Z02 	BP•H13Z02
X12 Non overlapping Slow Action Contacts (1NO + 2NC)		Order Code Operation Diagram	BP•H11X12 	BP•H12X12 	BP•H13X12
X21 Non overlapping Slow Action Contacts (2NO + 1NC)		Order Code Operation Diagram	BP•H11X21 	BP•H12X21 	BP•H13X21
W03 Simultaneous Slow Action Contacts (3NC)		Order Code Operation Diagram	BP•H11W03 	BP•H12W03 	BP•H13W03
W30 Simultaneous Slow Action Contacts (3NO)		Order Code Operation Diagram	BP•H11W30 	BP•H12W30 	BP•H13W30
Weight (packing per unit)		[kg]	0,145	0,145	0,150

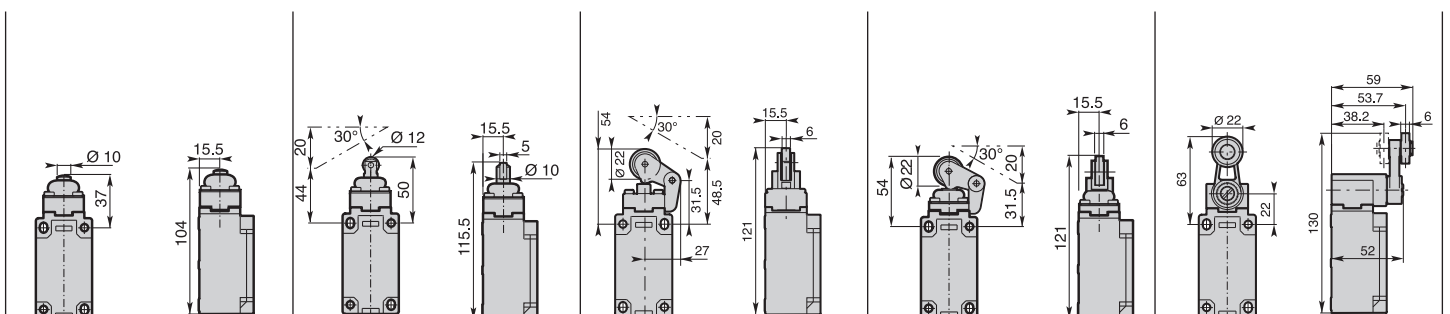
Dimensions (in mm)





H14 - Plain steel plunger with dust protection cup	H19 - Steel roller plunger with dust protection cup	H3• - One way lever	H3• - One way lever with dust protection cup	H4• - Ø 22 roller lever
EN 50041 0,5 14 / 40	EN 50041 0,5 14 / 40	H31: Ø22 nylon roller H32: Ø22 stainless steel roller H33: Ø22 steel ball bearing	H35: Ø22 nylon roller H36: Ø22 stainless steel roller H37: Ø22 steel ball bearing	H41: nylon roller H42: stainless steel roller H43: steel ball bearing
⊕	⊕	⊕	⊕	⊕

BP•H14Z11 0 1,0 2,2 3,8 5,9 mm 21-22 13-14 21-22 13-14	BP•H19Z11 0 2,4 4,6 7,5 10,5 mm 21-22 13-14 21-22 13-14	BP•H3•Z11 0 3,8 6,8 11,3 17,0 mm 21-22 13-14 21-22 13-14	BP•H3•Z11 0 3,8 6,8 11,3 17,0 mm 21-22 13-14 21-22 13-14	BP•H4•Z11 0 19° 31° 47° 90° 21-22 13-14 21-22 13-14
BP•H14X11 0 1,3 2,9 5,9 mm 21-22 13-14 2,1	BP•H19X11 0 3,1 6,0 10,5 mm 21-22 13-14 4,4	BP•H3•X11 0 4,9 9,4 17,0 mm 21-22 13-14 6,3	BP•H3•X11 0 4,9 9,4 17,0 mm 21-22 13-14 6,3	BP•H4•X11 0 21° 37° 90° 21-22 13-14 30°
BP•H14Y11 0 2,4 4,0 5,9 mm 21-22 13-14 1,1	BP•H19Y11 0 5,1 8,0 10,5 mm 21-22 13-14 2,8	BP•H3•Y11 0 7,6 12,1 17,0 mm 21-22 13-14 4,4	BP•H3•Y11 0 7,6 12,1 17,0 mm 21-22 13-14 4,4	BP•H4•Y11 0 34° 50° 90° 21-22 13-14 19°
BP•H14W02 0 1,1 2,7 5,9 mm 11-12 21-22	BP•H19W02 0 2,8 5,7 10,5 mm 11-12 21-22	BP•H3•W02 0 4,4 8,9 17,0 mm 11-12 21-22	BP•H3•W02 0 4,4 8,9 17,0 mm 11-12 21-22	BP•H4•W02 0 19° 35° 90° 11-12 21-22
BP•H14W20 0 1,0 5,9 mm 13-14 23-24	BP•H19W20 0 2,6 10,5 mm 13-14 23-24	BP•H3•W20 0 4,0 17,0 mm 13-14 23-24	BP•H3•W20 0 4,0 17,0 mm 13-14 23-24	BP•H4•W20 0 18° 90° 13-14 23-24
BP•H14Z02 0 1,0 2,0 3,6 5,9 mm 11-12 21-22 21-25	BP•H19Z02 0 2,4 4,4 7,3 10,5 mm 11-12 21-22 21-25	BP•H3•Z02 0 3,8 6,6 11,1 17,0 mm 11-12 21-22 21-25	BP•H3•Z02 0 3,8 6,6 11,1 17,0 mm 11-12 21-22 21-25	BP•H4•Z02 0 19° 30° 46° 90° 11-12 21-22 21-25
BP•H14X12 0 0,9 2,4 5,9 mm 21-22 13-14 2,6	BP•H19X12 0 2,8 5,3 10,5 mm 21-22 13-14 5,5	BP•H3•X12 0 3,7 7,5 17,0 mm 21-22 13-14 7,7	BP•H3•X12 0 3,7 7,5 17,0 mm 21-22 13-14 7,7	BP•H4•X12 0 16° 33° 90° 21-22 13-14 35°
BP•H14X21 0 1,0 2,5 5,9 mm 31-32 13-14 2,6	BP•H19X21 0 2,9 5,4 10,5 mm 31-32 13-14 5,5	BP•H3•X21 0 4,0 7,6 17,0 mm 31-32 13-14 7,7	BP•H3•X21 0 4,0 7,6 17,0 mm 31-32 13-14 7,7	BP•H4•X21 0 17° 34° 90° 31-32 13-14 35°
BP•H14W03 0 0,9 2,4 5,9 mm 31-32 13-14 2,6	BP•H19W03 0 2,8 5,3 10,5 mm 31-32 13-14 5,5	BP•H3•W03 0 3,7 7,5 17,0 mm 31-32 13-14 7,7	BP•H3•W03 0 3,7 7,5 17,0 mm 31-32 13-14 7,7	BP•H4•W03 0 16° 33° 90° 31-32 13-14 35°
BP•H14W30 0 1,3 5,9 mm 33-34 23-24	BP•H19W30 0 3,3 10,5 mm 33-34 23-24	BP•H3•W30 0 4,8 17,0 mm 33-34 23-24	BP•H3•W30 0 4,8 17,0 mm 33-34 23-24	BP•H4•W30 0 21° 90° 33-34 23-24
0,145	0,150	0,185	0,180	0,200



Electrical Connection

BP1: one cable inlet for PG 13,5 Cable Gland

BP2: one cable inlet for 1/2" NPT Cable Gland

BP5: one cable inlet for M20 x 1,5 Cable Gland



Operating Head Type

H44 - Ø 50 rubber roller lever

H5 - Adjustable Ø 22 roller lever

H54 - Adjustable Ø 50 rubber roller lever

H51: nylon roller
H52: stainless steel roller
H53: steel ball bearing

Conformity / (N.C. contact with positive opening operation)
Max actuation speed [m/s]
Min. force [N] or torque [Nm]: actuation / positive opening operation

1,5
0,15 / 0,30

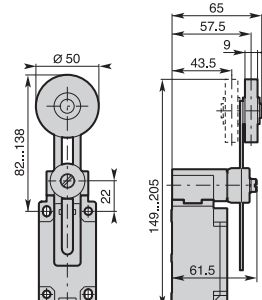
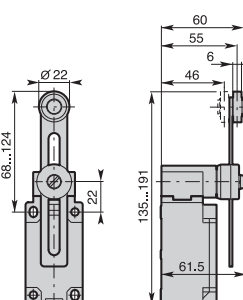
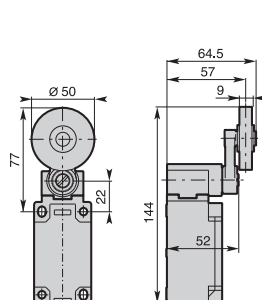
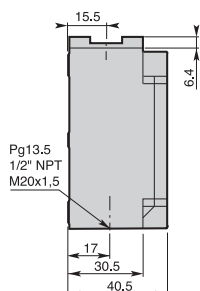
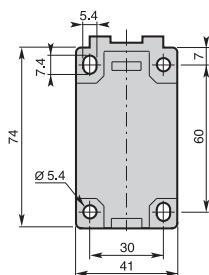
1,5
0,15 / 0,30

1,5
0,15 / 0,30

Additional Technical Datas

Order Code	Operation Diagram	BP•H44Z11	BP•H5•Z11	BP•H54Z11
Z11 Snap Action Contacts (1NO + 1NC)				
X11 Non overlapping Slow Action Contacts (1NO + 1NC)				
Y11 Overlapping Slow Action Contacts (1NO + 1NC)				
W02 Slow Action Contacts (2NC)				
W20 Slow Action Contacts (2NO)				
Z02 Snap Action Contacts (2NC)				
X12 Non overlapping Slow Action Contacts (1NO + 2NC)				
X21 Non overlapping Slow Action Contacts (2NO + 1NC)				
W03 Simultaneous Slow Action Contacts (3NC)				
W30 Simultaneous Slow Action Contacts (3NO)				
Weight (packing per unit)	[kg]	0,205	0,195	0,205

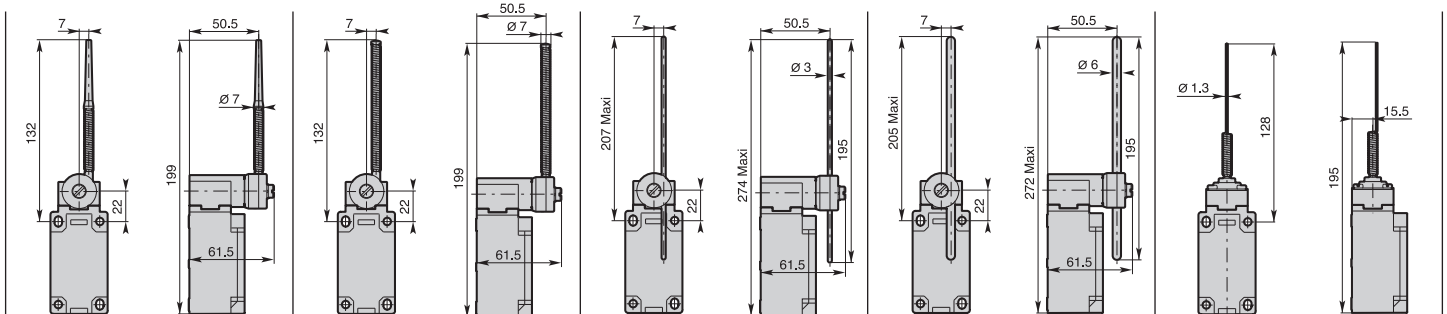
Dimensions (in mm)





H61 - Nylon actuator with stainless steel spring	H62 - Stainless steel spring actuator	H7 - Adjustable rod lever H71: stainless steel rod Ø3 H73: fiberglass rod Ø3 H75: square steel rod 3x3	H7 - Adjustable Ø 6 rod lever H72: nylon rod H74: fiberglass rod	H91 - Stainless steel spring multidirectional actuator
1,5 0,15 / -	1,5 0,15 / -	EN 50041 1,5 0,15 / 0,30	EN 50041 1,5 0,15 / 0,30	1,0 0,18 / -

BP•H61Z11 0 19° 31° 90°	BP•H62Z11 0 19° 31° 90°	BP•H7•Z11 0 19° 31° 47° 90°	BP•H7•Z11 0 19° 31° 47° 90°	BP•H91Z11 0 15° 27°
BP•H61X11 0 21° 90° 30°	BP•H62X11 0 21° 90° 30°	BP•H7•X11 0 21° 37° 90° 30°	BP•H7•X11 0 21° 37° 90° 30°	BP•H91X11 0 18° 25°
BP•H61Y11 0 34° 90° 19°	BP•H62Y11 0 34° 90° 19°	BP•H7•Y11 0 34° 50° 90° 19°	BP•H7•Y11 0 34° 50° 90° 19°	BP•H91Y11 0 30° 17°
BP•H61W02 0 19° 90°	BP•H62W02 0 19° 90°	BP•H7•W02 0 19° 35° 90°	BP•H7•W02 0 19° 35° 90°	BP•H91W02 0 17°
BP•H61W20 13-14 18° 90° 23-24	BP•H62W20 13-14 18° 90° 23-24	BP•H7•W20 13-14 18° 90° 23-24	BP•H7•W20 13-14 18° 90° 23-24	BP•H91W20 13-14 16° 90° 23-24
BP•H61Z02 11-12 0 19° 30° 90° 21-22	BP•H62Z02 11-12 0 19° 30° 90° 21-22	BP•H7•Z02 11-12 0 19° 30° 46° 90° 21-22	BP•H7•Z02 11-12 0 19° 30° 46° 90° 21-22	BP•H91Z02 11-12 0 15° 26° 21-22
BP•H61X12 21-22 0 16° 90° 31-32 13-14 35°	BP•H62X12 21-22 0 16° 90° 31-32 13-14 35°	BP•H7•X12 21-22 0 16° 33° 90° 31-32 13-14 35°	BP•H7•X12 21-22 0 16° 33° 90° 31-32 13-14 35°	BP•H91X12 21-22 0 15° 90° 31-32 13-14 32°
BP•H61X21 31-32 0 17° 90° 13-14 23-24 35°	BP•H62X21 31-32 0 17° 90° 13-14 23-24 35°	BP•H7•X21 31-32 0 17° 34° 90° 23-24 35°	BP•H7•X21 31-32 0 17° 34° 90° 23-24 35°	BP•H91X21 13-14 0 16° 90° 23-24 32°
BP•H61W03 31-32 0 16° 90° 13-14 23-24	BP•H62W03 11-12 0 16° 90° 31-32	BP•H7•W03 11-12 0 16° 33° 90° 31-32	BP•H7•W03 11-12 0 16° 33° 90° 31-32	BP•H91W03 11-12 0 15° 90° 21-22 31-32
BP•H61W30 13-14 0 21° 90° 23-24	BP•H62W30 13-14 0 21° 90° 23-24	BP•H7•W30 13-14 0 21° 90° 23-24	BP•H7•W30 13-14 0 21° 90° 23-24	BP•H91W30 13-14 0 19° 90° 23-24
0,190	0,195	0,185	0,185	0,150



Electrical Connection

BP1: one cable inlet for PG 13,5 Cable Gland

BP2: one cable inlet for 1/2" NPT Cable Gland

BP5: one cable inlet for M20 x 1,5 Cable Gland

Operating Head Type



H92 - Multidirectional nylon actuator with stainless steel spring



H93 - Stainless steel spring multidirectional actuator

Conformity / (N.C. contact with positive opening operation)
 Max actuation speed [m/s]
 Min. force [N] or torque [Nm]: actuation / positive opening operation

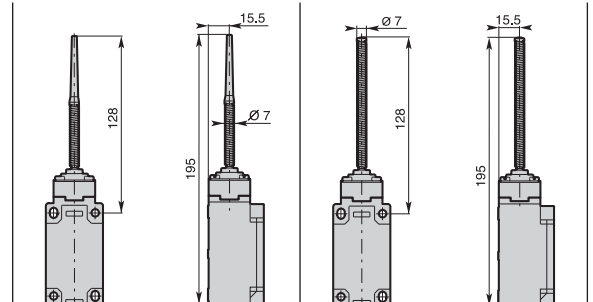
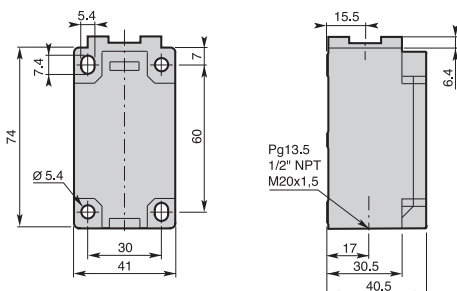
1,0
0,18 / -

1,0
0,18 / -

Additional Technical Datas

Z11 Snap Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BP•H92Z11 	BP•H93Z11
X11 Non overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BP•H92X11 	BP•H93X11
Y11 Overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BP•H92Y11 	BP•H93Y11
W02 Slow Action Contacts (2NC)		Order Code Operation Diagram	BP•H92W02 	BP•H93W02
W20 Slow Action Contacts (2NO)		Order Code Operation Diagram	BP•H92W20 	BP•H93W20
Z02 Snap Action Contacts (2NC)		Order Code Operation Diagram	BP•H92Z02 	BP•H93Z02
X12 Non overlapping Slow Action Contacts (1NO + 2NC)		Order Code Operation Diagram	BP•H92X12 	BP•H93X12
X21 Non overlapping Slow Action Contacts (2NO + 1NC)		Order Code Operation Diagram	P•H92X21 	BP•H93X21
W03 Simultaneous Slow Action Contacts (3NC)		Order Code Operation Diagram	BP•H92W03 	BP•H93W03
W30 Simultaneous Slow Action Contacts (3NO)		Order Code Operation Diagram	BP•H92W30 	BP•H93W30
Weight (packing per unit)		[kg]	0,155	0,160

Dimensions (in mm)



Electrical Connection

BM1: one cable inlet for PG 13,5 Cable Gland

BM2: one cable inlet for 1/2" NPT Cable Gland

BM5: one cable inlet for M20 x 1,5 Cable Gland



Operating Head Type

P11 - Plain plunger

P92 - Multidirectional nylon actuator with stainless steel spring

P93 - Stainless steel spring multidirectional actuator

Conformity / (N.C. contact with positive opening operation)
 Max actuation speed [m/s]
 Min. force [N] or torque [Nm]: actuation / positive opening operation

0,5
30 / 45

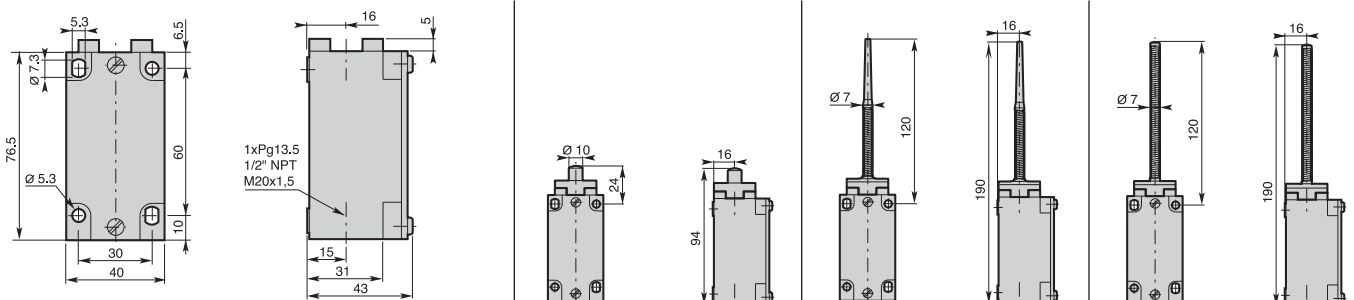
1,0
0,18 / -

1,0
0,18 / -

Additional Technical Datas

Order Code	Operation Diagram	BM-P11Z11	BM-P92Z11	BM-P93Z11
Z11 Snap Action Contacts (1NO + 1NC)				
X11 Non overlapping Slow Action Contacts (1NO + 1NC)				
Y11 Overlapping Slow Action Contacts (1NO + 1NC)				
W02 Slow Action Contacts (2NC)				
W20 Slow Action Contacts (2NO)				
Z02 Snap Action Contacts (2NC)				
X12 Non overlapping Slow Action Contacts (1NO + 2NC)				
X21 Non overlapping Slow Action Contacts (2NO + 1NC)				
W03 Simultaneous Slow Action Contacts (3NC)				
W30 Simultaneous Slow Action Contacts (3NO)				
Weight (packing per unit) [kg]		0,220	0,210	0,215

Dimensions (in mm)



Electrical Connection

- BM1:** one cable inlet for PG 13,5 Cable Gland
- BM2:** one cable inlet for 1/2" NPT Cable Gland
- BM5:** one cable inlet for M20 x 1,5 Cable Gland



Operating Head Type

M13 - Steel roller plunger

M14 - Plain steel plunger with dust protection cup

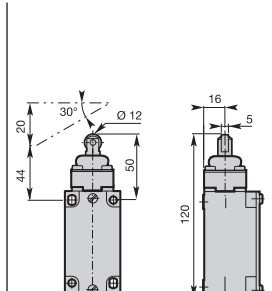
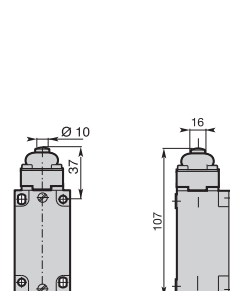
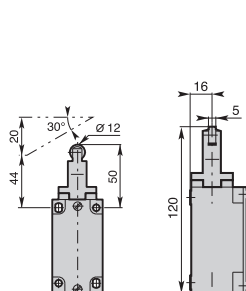
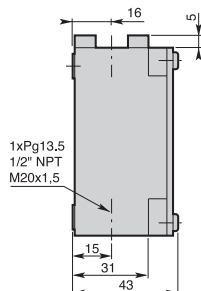
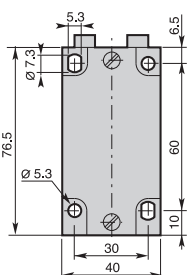
M19 - Steel roller plunger with dust protection cup

Conformity / (N.C. contact with positive opening operation)	EN 50041		EN 50041		EN 50041	
Max actuation speed [m/s]	0,5		0,5		0,5	
Min. force [N] or torque [Nm]: actuation / positive opening operation	22 / 40		30 / 45		22 / 40	

Additional Technical Datas

Action	Contacts	Order Code	Operation Diagram	M13	M14	M19
Z11 Snap Action	1NO + 1NC	BM-M13Z11				
X11 Non overlapping Slow Action	1NO + 1NC	BM-M13X11				
Y11 Overlapping Slow Action	1NO + 1NC	BM-M13Y11				
W02 Slow Action	2NC	BM-M13W02				
W20 Slow Action	2NO	BM-M13W20				
Z02 Snap Action	2NC	BM-M13Z02				
X12 Non overlapping Slow Action	1NO + 2NC	BM-M13X12				
X21 Non overlapping Slow Action	2NO + 1NC	BM-M13X21				
W03 Simultaneous Slow Action	3NC	BM-M13W03				
W30 Simultaneous Slow Action	3NO	BM-M13W30				
Weight (packing per unit)		[kg]		0,265	0,255	0,265

Dimensions (in mm)





M4• - Ø 22 roller lever

M41: nylon roller
M42: stainless steel roller
M43: steel ball bearing

EN 50041

1,5
0,15 / 0,30



M44 - Ø 50 rubber roller lever

M51: nylon roller
M52: stainless steel roller
M53: steel ball bearing

EN 50041

1,5
0,15 / 0,30



M5• - Adjustable Ø 22 roller lever

M51: nylon roller
M52: stainless steel roller
M53: steel ball bearing

EN 50041

1,5
0,15 / 0,30



M54 - Adjustable Ø 50 rubber roller lever

M51: nylon roller
M52: stainless steel roller
M53: steel ball bearing

EN 50041

1,5
0,15 / 0,30



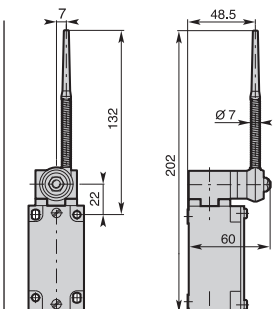
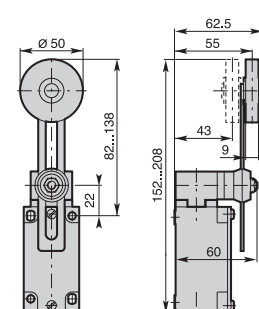
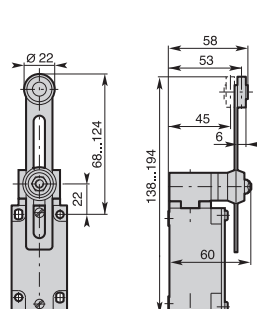
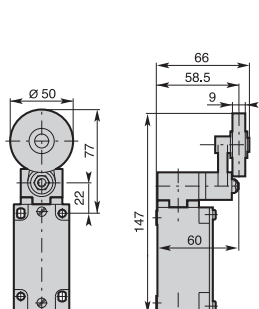
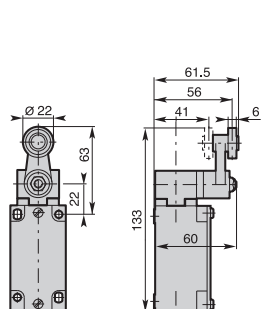
M61 - Nylon actuator with stainless steel spring

M51: nylon roller
M52: stainless steel roller
M53: steel ball bearing

EN 50041

1,5
0,15 / -

BM•M4•Z11 	BM•M44Z11 	BM•M5•Z11 	BM•M54Z11 	BM•M61Z11
BM•M4•X11 	BM•M44X11 	BM•M5•X11 	BM•M54X11 	BM•M61X11
BM•M4•Y11 	BM•M44Y11 	BM•M5•Y11 	BM•M54Y11 	BM•M61Y11
BM•M4•W02 	BM•M44W02 	BM•M5•W02 	BM•M54W02 	BM•M61W02
BM•M4•W20 	BM•M44W20 	BM•M5•W20 	BM•M54W20 	BM•M61W20
BM•M4•Z02 	BM•M44Z02 	BM•M5•Z02 	BM•M54Z02 	BM•M61Z02
BM•M4•X12 	BM•M44X12 	BM•M5•X12 	BM•M54X12 	BM•M61X12
BM•M4•X21 	BM•M44X21 	BM•M5•X21 	BM•M54X21 	BM•M61X21
BM•M4•W03 	BM•M44W03 	BM•M5•W03 	BM•M54W03 	BM•M61W03
BM•M4•W30 	BM•M44W30 	BM•M5•W30 	BM•M54W30 	BM•M61W30
0,300	0,310	0,320	0,325	0,325



Electrical Connection

BM1: one cable inlet for PG 13,5 Cable Gland

BM2: one cable inlet for 1/2" NPT Cable Gland

BM5: one cable inlet for M20 x 1,5 Cable Gland



Operating Head Type

M62 - Stainless steel spring actuator

M7 - Adjustable rod lever

M7 - Adjustable Ø 6 rod lever

M71: stainless steel rod Ø3
M73: fiberglass rod Ø3
M75: square steel rod 3x3

M72: nylon rod
M74: fiberglass rod

Conformity / (N.C. contact with positive opening operation)
Max actuation speed [m/s]
Min. force [N] or torque [Nm]: actuation / positive opening operation

1,5
0,15 / -

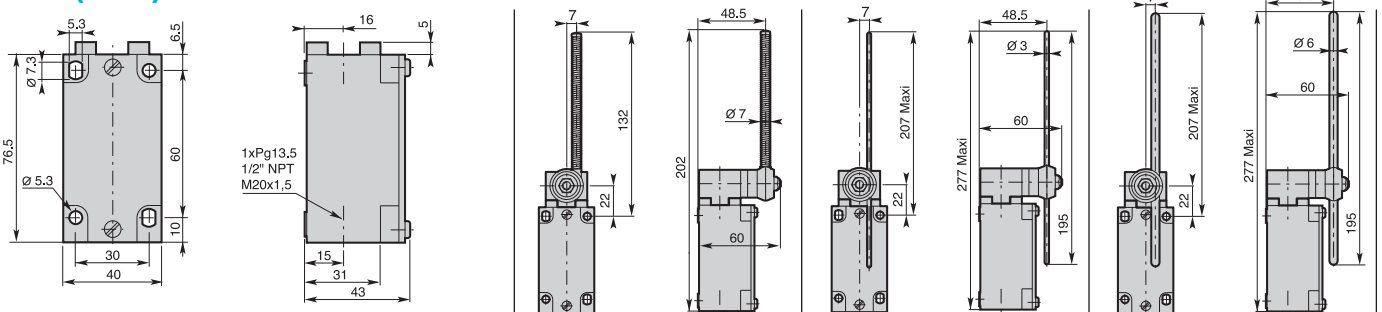
1,5
0,15 / 0,30

1,5
0,15 / 0,30

Additional Technical Datas

Z11 Snap Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BM-M62Z11 	BM-M7-Z11 	BM-M7-Z11 			
X11 Non overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BM-M62X11 	BM-M7-X11 	BM-M7-X11 			
Y11 Overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BM-M62Y11 	BM-M7-Y11 	BM-M7-Y11 			
W02 Slow Action Contacts (2NC)		Order Code Operation Diagram	BM-M62W02 	BM-M7-W02 	BM-M7-W02 			
W20 Slow Action Contacts (2NO)		Order Code Operation Diagram	BM-M62W20 	BM-M7-W20 	BM-M7-W20 			
Z02 Snap Action Contacts (2NC)		Order Code Operation Diagram	BM-M62Z02 	BM-M7-Z02 	BM-M7-Z02 			
X12 Non overlapping Slow Action Contacts (1NO + 2NC)		Order Code Operation Diagram	BM-M62X12 	BM-M7-X12 	BM-M7-X12 			
X21 Non overlapping Slow Action Contacts (2NO + 1NC)		Order Code Operation Diagram	BM-M62X21 	BM-M7-X21 	BM-M7-X21 			
W03 Simultaneous Slow Action Contacts (3NC)		Order Code Operation Diagram	BM-M62W03 	BM-M7-W03 	BM-M7-W03 			
W30 Simultaneous Slow Action Contacts (3NO)		Order Code Operation Diagram	BM-M62W30 	BM-M7-W30 	BM-M7-W30 			
Weight (packing per unit)		[kg]	0,325	0,325	0,325			

Dimensions (in mm)



Electrical Connection

BM1: one cable inlet for PG 13,5 Cable Gland

BM2: one cable inlet for 1/2" NPT Cable Gland

BM5: one cable inlet for M20 x 1,5 Cable Gland



Operating Head Type

E11 - Stainless steel plain plunger

E12 - Stainless steel ball plunger

E13 - Stainless steel Ø 12 roller plunger

Conformity / (N.C. contact with positive opening operation)
 Max actuation speed [m/s]
 Min. force [N] or torque [Nm]: actuation / positive opening operation

EN 50041

0,5
30 / 45



EN 50041

0,5
30 / 45



EN 50041

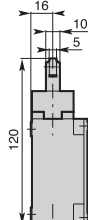
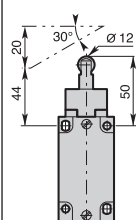
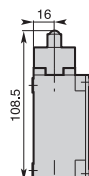
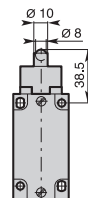
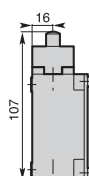
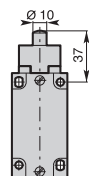
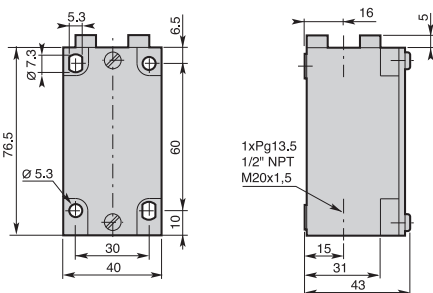
0,5
22 / 40



Additional Technical Datas

Z11 Snap Action Contacts (1NO + 1NC)		Order Code Operation Diagram				BM-E11Z11	BM-E12Z11	BM-E13Z11
X11 Non overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram				BM-E11X11	BM-E12X11	BM-E13X11
Y11 Overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram				BM-E11Y11	BM-E12Y11	BM-E13Y11
W02 Slow Action Contacts (2NC)		Order Code Operation Diagram				BM-E11W02	BM-E12W02	BM-E13W02
W20 Slow Action Contacts (2NO)		Order Code Operation Diagram				BM-E11W20	BM-E12W20	BM-E13W20
Z02 Snap Action Contacts (2NC)		Order Code Operation Diagram				BM-E11Z02	BM-E12Z02	BM-E13Z02
X12 Non overlapping Slow Action Contacts (1NO + 2NC)		Order Code Operation Diagram				BM-E11X12	BM-E12X12	BM-E13X12
X21 Non overlapping Slow Action Contacts (2NO + 1NC)		Order Code Operation Diagram				BM-E11X21	BM-E12X21	BM-E13X21
W03 Simultaneous Slow Action Contacts (3NC)		Order Code Operation Diagram				BM-E11W03	BM-E12W03	BM-E13W03
W30 Simultaneous Slow Action Contacts (3NO)		Order Code Operation Diagram				BM-E11W30	BM-E12W30	BM-E13W30
PWeight (packing per unit)		[kg]	0,240	0,240	0,245			

Dimensions (in mm)



Electrical Connection

BM1: one cable inlet for PG 13,5 Cable Gland

BM2: one cable inlet for 1/2" NPT Cable Gland

BM5: one cable inlet for M20 x 1,5 Cable Gland



Operating Head Type

E21 - Stainless steel lateral plain plunger

E22 - Stainless steel lateral plunger with Ø 12 vertical roller

E23 - Stainless steel lateral plunger with Ø 12 horizontal roller

Conformity / (N.C. contact with positive opening operation)
 Max actuation speed [m/s]
 Min. force [N] or torque [Nm]: actuation / positive opening operation

EN 50041
 0,5
 30 / 50

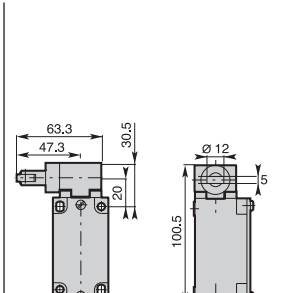
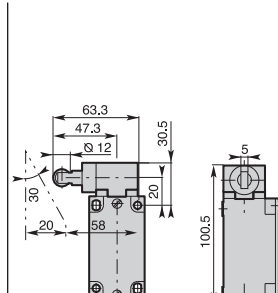
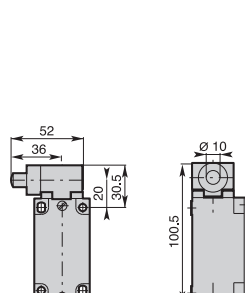
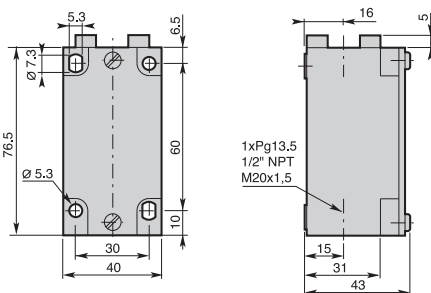
EN 50041
 0,5
 30 / 50

EN 50041
 0,5
 30 / 50

Additional Technical Datas

			E21 - Stainless steel lateral plain plunger	E22 - Stainless steel lateral plunger with Ø 12 vertical roller	E23 - Stainless steel lateral plunger with Ø 12 horizontal roller
Z11 Snap Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BM-E21Z11 	BM-E22Z11 	BM-E23Z11
X11 Non overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BM-E21X11 	BM-E22X11 	BM-E23X11
Y11 Overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram	BM-E21Y11 	BM-E22Y11 	BM-E23Y11
W02 Slow Action Contacts (2NC)		Order Code Operation Diagram	BM-E21W02 	BM-E22W02 	BM-E23W02
W20 Slow Action Contacts (2NO)		Order Code Operation Diagram	BM-E21W20 	BM-E22W20 	BM-E23W20
Z02 Snap Action Contacts (2NC)		Order Code Operation Diagram	BM-E21Z02 	BM-E22Z02 	BM-E23Z02
X12 Non overlapping Slow Action Contacts (1NO + 2NC)		Order Code Operation Diagram	BM-E21X12 	BM-E22X12 	BM-E23X12
X21 Non overlapping Slow Action Contacts (2NO + 1NC)		Order Code Operation Diagram	BM-E21X21 	BM-E22X21 	BM-E23X21
W03 Simultaneous Slow Action Contacts (3NC)		Order Code Operation Diagram	BM-E21W03 	BM-E22W03 	BM-E23W03
W30 Simultaneous Slow Action Contacts (3NO)		Order Code Operation Diagram	BM-E21W30 	BM-E22W30 	BM-E23W30
Weight (packing per unit)		[kg]	0,260	0,265	0,265

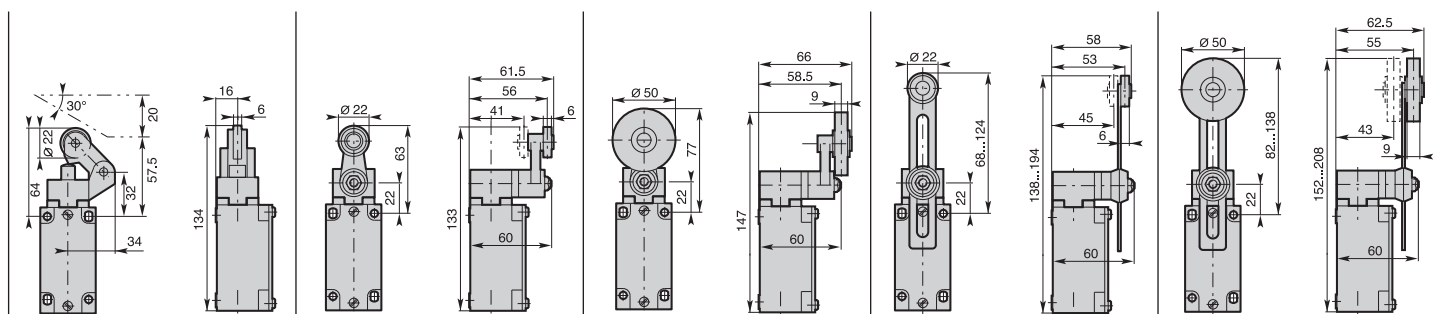
Dimensions (in mm)





<p>E3• - One way lever</p> <p>E31: Ø22 nylon roller E32: Ø22 stainless steel roller E33: Ø22 steel ball bearing</p> <p>1,5 12 / 40</p>	<p>E4• - Ø 22 roller lever</p> <p>E41: nylon roller E42: stainless steel roller E43: steel ball bearing</p> <p>EN 50041</p> <p>1,5 0,15 / 0,30</p>	<p>E44 - Ø 50 rubber roller lever</p> <p>1,5 0,15 / 0,30</p>	<p>E5• - Adjustable Ø 22 roller lever</p> <p>E51: nylon roller E52: stainless steel roller E53: steel ball bearing</p> <p>1,5 0,15 / 0,30</p>	<p>E54 - Adjustable Ø 50 rubber roller lever</p> <p>1,5 0,15 / 0,30</p>
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<p>BM•E3•Z11</p> <p>0 3.1 6.3 10.8 15.5 mm</p> <p>21-22 13-14 13-14</p>	<p>BM•E4•Z11</p> <p>0 20° 33° 49° 78°</p> <p>21-22 13-14 13-14</p>	<p>BM•E44Z11</p> <p>0 20° 33° 49° 78°</p> <p>21-22 13-14 13-14</p>	<p>BM•E5•Z11</p> <p>0 20° 33° 49° 78°</p> <p>21-22 13-14 13-14</p>	<p>BM•E54Z11</p> <p>0 20° 33° 49° 78°</p> <p>21-22 13-14 13-14</p>
<p>BM•E3•X11</p> <p>0 4.5 9.0 15.5 mm</p> <p>21-22 13-14 6.1</p>	<p>BM•E4•X11</p> <p>0 22° 38° 78°</p> <p>21-22 13-14 33°</p>	<p>BM•E44X11</p> <p>0 22° 38° 78°</p> <p>21-22 13-14 33°</p>	<p>BM•E5•X11</p> <p>0 22° 38° 78°</p> <p>21-22 13-14 33°</p>	<p>BM•E54X11</p> <p>0 22° 38° 78°</p> <p>21-22 13-14 33°</p>
<p>BM•E3•Y11</p> <p>0 7.2 11.7 15.5 mm</p> <p>21-22 13-14 4.0</p>	<p>BM•E4•Y11</p> <p>0 37° 53° 78°</p> <p>21-22 13-14 21°</p>	<p>BM•E44Y11</p> <p>0 37° 53° 78°</p> <p>21-22 13-14 21°</p>	<p>BM•E5•Y11</p> <p>0 37° 53° 78°</p> <p>21-22 13-14 21°</p>	<p>BM•E54Y11</p> <p>0 37° 53° 78°</p> <p>21-22 13-14 21°</p>
<p>BM•E3•W02</p> <p>0 4.0 9.5 15.5 mm</p> <p>11-12 21-22 21-22</p>	<p>BM•E4•W02</p> <p>0 21° 37° 78°</p> <p>11-12 21-22 21-22</p>	<p>BM•E44W02</p> <p>0 21° 37° 78°</p> <p>11-12 21-22 21-22</p>	<p>BM•E5•W02</p> <p>0 21° 37° 78°</p> <p>11-12 21-22 21-22</p>	<p>BM•E54W02</p> <p>0 21° 37° 78°</p> <p>11-12 21-22 21-22</p>
<p>BM•E3•W20</p> <p>0 3.6 15.5 mm</p> <p>13-14 23-24 23-24</p>	<p>BM•E4•W20</p> <p>0 20° 78°</p> <p>13-14 23-24 23-24</p>	<p>BM•E44W20</p> <p>0 20° 78°</p> <p>13-14 23-24 23-24</p>	<p>BM•E5•W20</p> <p>0 20° 78°</p> <p>13-14 23-24 23-24</p>	<p>BM•E54W20</p> <p>0 20° 78°</p> <p>13-14 23-24 23-24</p>
<p>BM•E3•Z02</p> <p>0 3.1 6.1 10.6 15.5 mm</p> <p>11-12 21-22 21-22</p>	<p>BM•E4•Z02</p> <p>0 20° 32° 48° 78°</p> <p>11-12 21-22 21-22</p>	<p>BM•E44Z02</p> <p>0 20° 32° 48° 78°</p> <p>11-12 21-22 21-22</p>	<p>BM•E5•Z02</p> <p>0 20° 32° 48° 78°</p> <p>11-12 21-22 21-22</p>	<p>BM•E54Z02</p> <p>0 20° 32° 48° 78°</p> <p>11-12 21-22 21-22</p>
<p>BM•E3•X12</p> <p>0 4.6 8.4 15.5 mm</p> <p>21-22 13-14 8.6</p>	<p>BM•E4•X12</p> <p>0 18° 35° 78°</p> <p>21-22 13-14 37°</p>	<p>BM•E44X12</p> <p>0 18° 35° 78°</p> <p>21-22 13-14 37°</p>	<p>BM•E5•X12</p> <p>0 18° 35° 78°</p> <p>21-22 13-14 37°</p>	<p>BM•E54X12</p> <p>0 18° 35° 78°</p> <p>21-22 13-14 37°</p>
<p>BM•E3•X21</p> <p>0 4.7 8.5 15.5 mm</p> <p>31-32 13-14 8.6</p>	<p>BM•E4•X21</p> <p>0 19° 36° 78°</p> <p>31-32 13-14 37°</p>	<p>BM•E44X21</p> <p>0 19° 36° 78°</p> <p>31-32 13-14 37°</p>	<p>BM•E5•X21</p> <p>0 19° 36° 78°</p> <p>31-32 13-14 37°</p>	<p>BM•E54X21</p> <p>0 19° 36° 78°</p> <p>31-32 13-14 37°</p>
<p>BM•E3•W03</p> <p>0 4.6 8.4 15.5 mm</p> <p>31-32 31-32 31-32</p>	<p>BM•E4•W03</p> <p>0 18° 35° 78°</p> <p>11-12 31-32 31-32</p>	<p>BM•E44W03</p> <p>0 18° 35° 78°</p> <p>11-12 31-32 31-32</p>	<p>BM•E5•W03</p> <p>0 18° 35° 78°</p> <p>11-12 31-32 31-32</p>	<p>BM•E54W03</p> <p>0 18° 35° 78°</p> <p>11-12 31-32 31-32</p>
<p>BM•E3•W30</p> <p>0 4.9 15.5 mm</p> <p>13-14 23-24 23-24</p>	<p>BM•E4•W30</p> <p>0 23° 78°</p> <p>13-14 23-24 23-24</p>	<p>BM•E44W30</p> <p>0 23° 78°</p> <p>13-14 23-24 23-24</p>	<p>BM•E5•W30</p> <p>0 23° 78°</p> <p>13-14 23-24 23-24</p>	<p>BM•E54W30</p> <p>0 23° 78°</p> <p>13-14 23-24 23-24</p>
0,280	0,300	0,315	0,320	0,325



Electrical Connection

BM1: one cable inlet for PG 13,5 Cable Gland

BM2: one cable inlet for 1/2" NPT Cable Gland

BM5: one cable inlet for M20 x 1,5 Cable Gland



Operating Head Type

E61 - Nylon actuator with stainless steel spring

E62 - Stainless steel spring actuator

E7 - Adjustable rod lever

E71: stainless steel rod Ø3
E73: fiberglass rod Ø3
E75: square steel rod 3x3

Conformity / (N.C. contact with positive opening operation)
Max actuation speed [m/s]
Min. force [N] or torque [Nm]: actuation / positive opening operation

1,5
0,15 / -

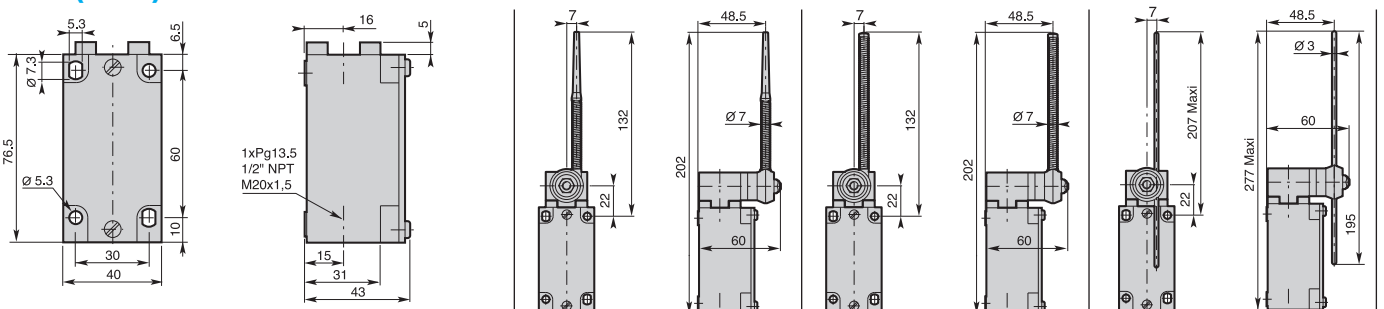
1,5
0,15 / -

EN50041
1,5
0,15 / 0,30

Additional Technical Datas

Order Code	Operation Diagram	BM-E61Z11	BM-E62Z11	BM-E7-Z11
Z11 Snap Action Contacts (1NO + 1NC)				
X11 Non overlapping Slow Action Contacts (1NO + 1NC)				
Y11 Overlapping Slow Action Contacts (1NO + 1NC)				
W02 Slow Action Contacts (2NC)				
W20 Slow Action Contacts (2NO)				
Z02 Snap Action Contacts (2NC)				
X12 Non overlapping Slow Action Contacts (1NO + 2NC)				
X21 Non overlapping Slow Action Contacts (2NO + 1NC)				
W03 Simultaneous Slow Action Contacts (3NC)				
W30 Simultaneous Slow Action Contacts (3NO)				
Weight (packing per unit)	[kg]	0,305	0,310	0,305

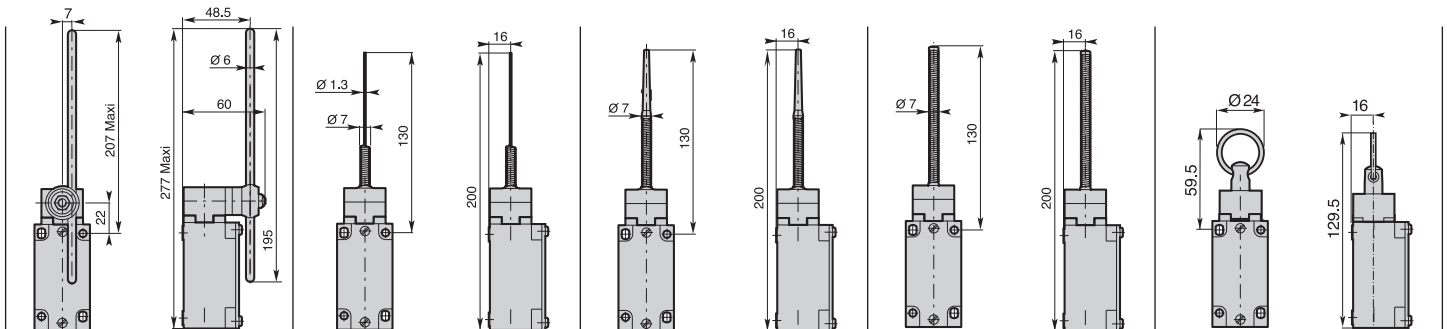
Dimensions (in mm)





<p>E7 - Adjustable rod lever</p> <p>E72: nylon rod E74: fiberglass rod</p>	<p>E91 - Stainless steel spring multidirectional actuator</p>	<p>E92 - Multidirectional nylon actuator with stainless steel spring</p>	<p>E93 - Stainless steel spring multidirectional actuator</p>	<p>E99 - Pull action with ring</p>
EN 50041				
1,5 0,15 / 0,30	1,0 0,18 / -	1,0 0,18 / -	1,0 0,18 / -	0,5 25 / -

<p>BM-E7-Z11</p>	<p>BM-E91Z11</p>	<p>BM-E92Z11</p>	<p>BM-E93Z11</p>	<p>BM-E99Z11A</p>
<p>BM-E7-X11</p>	<p>BM-E91X11</p>	<p>BM-E92X11</p>	<p>BM-E93X11</p>	<p>BM-E99X11A</p>
<p>BM-E7-Y11</p>	<p>BM-E91Y11</p>	<p>BM-E92Y11</p>	<p>BM-E93Y11</p>	<p>BM-E99Y11A</p>
<p>BM-E7-W02</p>	<p>BM-E91W02</p>	<p>BM-E92W02</p>	<p>BM-E93W02</p>	<p>BM-E99W02A</p>
<p>BM-E7-W20</p>	<p>BM-E91W20</p>	<p>BM-E92W20</p>	<p>BM-E93W20</p>	<p>BM-E99W20A</p>
<p>BM-E7-Z02</p>	<p>BM-E91Z02</p>	<p>BM-E92Z02</p>	<p>BM-E93Z02</p>	
<p>BM-E7-X12</p>	<p>BM-E91X12</p>	<p>BM-E92X12</p>	<p>BM-E93X12</p>	<p>BM-E99X12A</p>
<p>BM-E7-X21</p>	<p>BM-E91X21</p>	<p>BM-E92X21</p>	<p>BM-E93X21</p>	<p>BM-E99X21A</p>
<p>BM-E7-W03</p>	<p>BM-E91W03</p>	<p>BM-E92W03</p>	<p>BM-E93W03</p>	<p>BM-E99W03A</p>
<p>BM-E7-W30</p>	<p>BM-E91W30</p>	<p>BM-E92W30</p>	<p>BM-E93W30</p>	<p>BM-E99W30A</p>
0,300	0,230	0,230	0,235	0,245



Electrical Connection

CM1: three cable inlets for PG 13,5 Cable Gland

CM2: three cable inlets for 1/2" NPT Cable Gland

CM5: three cable inlets for M20 x 1,5 Cable Gland



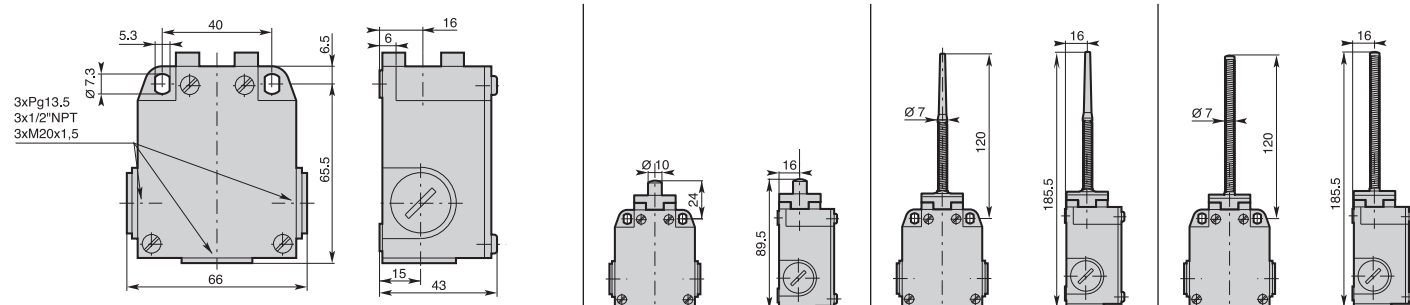
Operating Head Type

	P11 - Plain plunger	P92 - Multidirectional nylon actuator with stainless steel spring	P93 - Stainless steel spring multidirectional actuator
Conformity / \odot (N.C. contact with positive opening operation)			
Max actuation speed [m/s]	0,5	1,0	1,0
Min. force [N] or torque [Nm]: actuation / positive opening operation	30 / 45	0,18 / -	0,18 / -

Additional Technical Datas

Order Code	Operation Diagram	CM-P11Z11	CM-P92Z11	CM-P93Z11
Z11 Snap Action Contacts (1NO + 1NC)				
X11 Non overlapping Slow Action Contacts (1NO + 1NC)				
Y11 Overlapping Slow Action Contacts (1NO + 1NC)				
W02 Slow Action Contacts (2NC)				
W20 Slow Action Contacts (2NO)				
Z02 Snap Action Contacts (2NC)				
X12 Non overlapping Slow Action Contacts (1NO + 2NC)				
X21 Non overlapping Slow Action Contacts (2NO + 1NC)				
W03 Simultaneous Slow Action Contacts (3NC)				
W30 Simultaneous Slow Action Contacts (3NO)				
Weight (packing per unit)	[kg]	0,245	0,245	0,250

Dimensions (in mm)



Electrical Connection

CM1: three cable inlets for PG 13,5 Cable Gland

CM2: three cable inlets for 1/2" NPT Cable Gland

CM5: three cable inlets for M20 x 1,5 Cable Gland



Operating Head Type

M13 - Steel roller plunger

M14 - Plain steel plunger with dust protection cup

M19 - Steel roller plunger with dust protection cup

Conformity / (N.C. contact with positive opening operation)

Max actuation speed [m/s]

Min. force [N] or torque [Nm]: actuation / positive opening operation

0,5
22 / 40

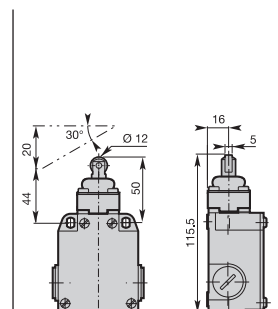
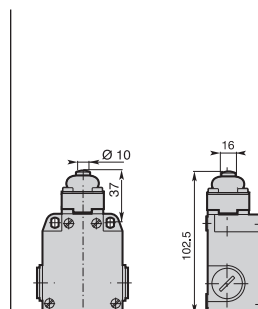
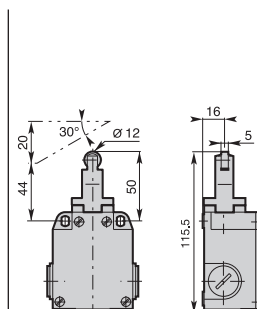
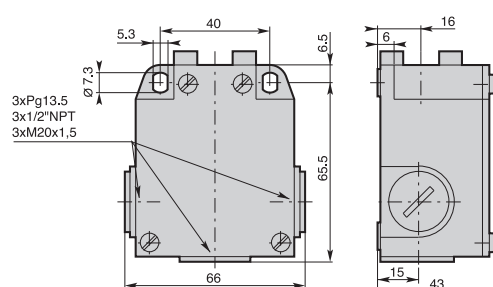
0,5
30 / 45

0,5
22 / 40

Additional Technical Datas

Z11 Snap Action Contacts (1NO + 1NC)		Order Code Operation Diagram	CM-M13Z11 	CM-M14Z11 	CM-M19Z11 			
X11 Non overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram	CM-M13X11 	CM-M14X11 	CM-M19X11 			
Y11 Overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram	CM-M13Y11 	CM-M14Y11 	CM-M19Y11 			
W02 Slow Action Contacts (2NC)		Order Code Operation Diagram	CM-M13W02 	CM-M14W02 	CM-M19W02 			
W20 Slow Action Contacts (2NO)		Order Code Operation Diagram	CM-M13W20 	CM-M14W20 	CM-M19W20 			
Z02 Snap Action Contacts (2NC)		Order Code Operation Diagram	CM-M13Z02 	CM-M14Z02 	CM-M19Z02 			
X12 Non overlapping Slow Action Contacts (1NO + 2NC)		Order Code Operation Diagram	CM-M13X12 	CM-M14X12 	CM-M19X12 			
X21 Non overlapping Slow Action Contacts (2NO + 1NC)		Order Code Operation Diagram	CM-M13X21 	CM-M14X21 	CM-M19X21 			
W03 Simultaneous Slow Action Contacts (3NC)		Order Code Operation Diagram	CM-M13W03 	CM-M14W03 	CM-M19W03 			
W30 Simultaneous Slow Action Contacts (3NO)		Order Code Operation Diagram	CM-M13W30 	CM-M14W30 	CM-M19W30 			
Weight (packing per unit)		[kg]	0,290	0,280	0,290			

Dimensions (in mm)



Electrical Connection

CM1: three cable inlets for PG 13,5 Cable Gland

CM2: three cable inlets for 1/2" NPT Cable Gland

CM5: three cable inlets for M20 x 1,5 Cable Gland



Operating Head Type

M4• - Ø 22 roller lever

M41: nylon roller
M42: stainless steel roller
M43: steel ball bearing

M44 - Ø 50 rubber roller lever

M5• - Adjustable Ø 22 roller lever

M51: nylon roller
M52: stainless steel roller
M53: steel ball bearing

Conformity / (N.C. contact with positive opening operation)

Max actuation speed [m/s]

Min. force [N] or torque [Nm]: actuation / positive opening operation

1,5
0,15 / 0,30

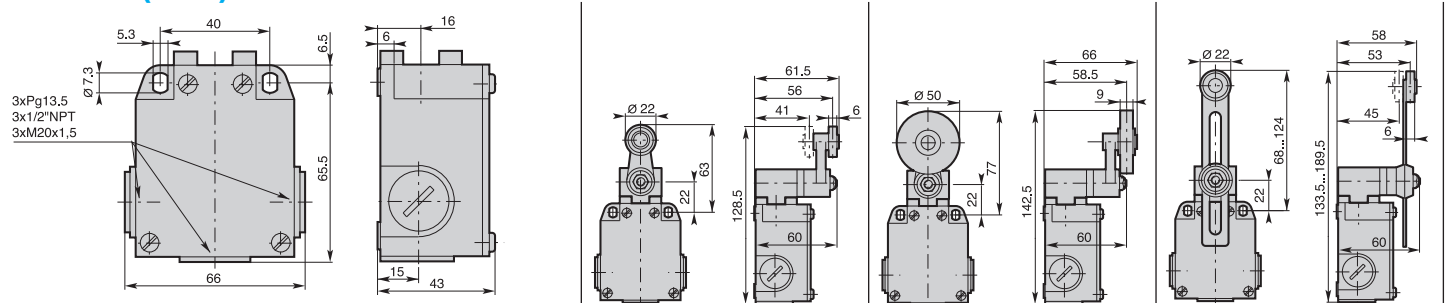
1,5
0,15 / 0,30

1,5
0,15 / 0,30

Additional Technical Datas

Order Code	Operation Diagram	CM-M4-Z11	CM-M44Z11	CM-M5-Z11
Z11 Snap Action Contacts (1NO + 1NC)				
X11 Non overlapping Slow Action Contacts (1NO + 1NC)				
Y11 Overlapping Slow Action Contacts (1NO + 1NC)				
W02 Slow Action Contacts (2NC)				
W20 Slow Action Contacts (2NO)				
Z02 Snap Action Contacts (2NC)				
X12 Non overlapping Slow Action Contacts (1NO + 2NC)				
X21 Non overlapping Slow Action Contacts (2NO + 1NC)				
W03 Simultaneous Slow Action Contacts (3NC)				
W30 Simultaneous Slow Action Contacts (3NO)				
Weight (packing per unit)	[kg]	0,325	0,335	0,345

Dimensions (in mm)





**M54 - Adjustable
Ø 50 rubber roller lever**

1,5
0,15 / 0,30



**M61 - Nylon actuator
with stainless steel spring**

1,5
0,15 / -



**M62 - Stainless steel
spring actuator**

1,5
0,15 / -



**M7 - Adjustable
rod lever**

M71: stainless steel rod Ø3
M73: fiberglass rod Ø3
M75: square steel rod 3x3

1,5
0,15 / 0,30

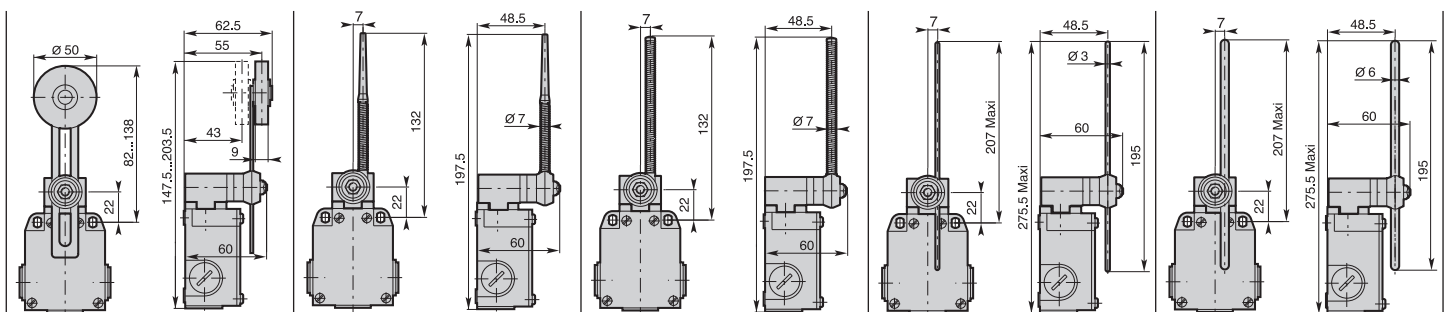


**M7 - Adjustable Ø 6
rod lever**

M72: nylon rod
M74: fiberglass rod

1,5
0,15 / 0,30

<p>CM-M54Z11</p>	<p>CM-M61Z11</p>	<p>CM-M62Z11</p>	<p>CM-M7-Z11</p>	<p>CM-M7-Z11</p>
<p>CM-M54X11</p>	<p>CM-M61X11</p>	<p>CM-M62X11</p>	<p>CM-M7-X11</p>	<p>CM-M7-X11</p>
<p>CM-M54Y11</p>	<p>CM-M61Y11</p>	<p>CM-M62Y11</p>	<p>CM-M7-Y11</p>	<p>CM-M7-Y11</p>
<p>CM-M54W02</p>	<p>CM-M61W02</p>	<p>CM-M62W02</p>	<p>CM-M7-W02</p>	<p>CM-M7-W02</p>
<p>CM-M54W20</p>	<p>CM-M61W20</p>	<p>CM-M62W20</p>	<p>CM-M7-W20</p>	<p>CM-M7-W20</p>
<p>CM-M54Z02</p>	<p>CM-M61Z02</p>	<p>CM-M62Z02</p>	<p>CM-M7-Z02</p>	<p>CM-M7-Z02</p>
<p>CM-M54X12</p>	<p>CM-M61X12</p>	<p>CM-M62X12</p>	<p>CM-M7-X12</p>	<p>CM-M7-X12</p>
<p>CM-M54X21</p>	<p>CM-M61X21</p>	<p>CM-M62X21</p>	<p>CM-M7-X21</p>	<p>CM-M7-X21</p>
<p>CM-M54W03</p>	<p>CM-M61W03</p>	<p>CM-M62W03</p>	<p>CM-M7-W03</p>	<p>CM-M7-W03</p>
<p>CM-M54W30</p>	<p>CM-M61W30</p>	<p>CM-M62W30</p>	<p>CM-M7-W30</p>	<p>CM-M7-W30</p>
0,350	0,350	0,350	0,350	0,350



Electrical Connection

CM1: three cable inlets for PG 13,5 Cable Gland

CM2: three cable inlets for 1/2" NPT Cable Gland

CM5: three cable inlets for M20 x 1,5 Cable Gland



Operating Head Type

E11 - Stainless steel plain plunger

E12 - Stainless steel ball plunger

E13 - Stainless steel Ø 12 roller plunger

Conformity / (N.C. contact with positive opening operation)

Max actuation speed [m/s]

Min. force [N] or torque [Nm]: actuation / positive opening operation

0,5
30 / 45

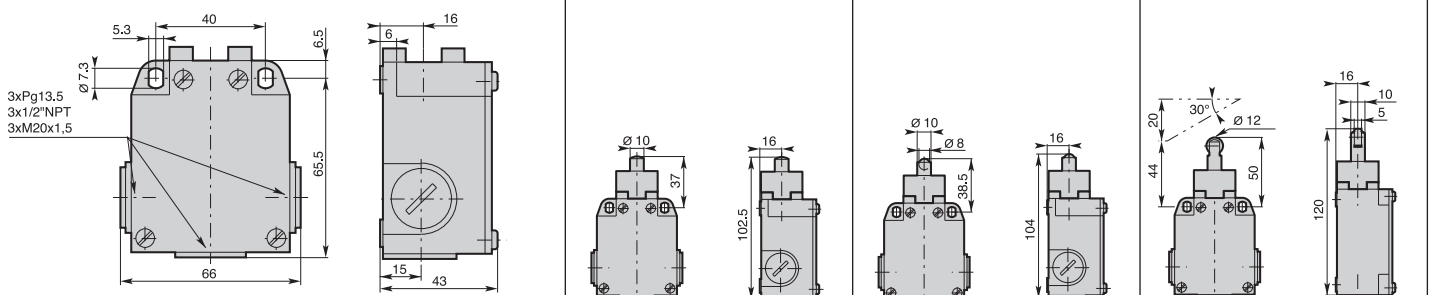
0,5
30 / 45

0,5
22 / 40

Additional Technical Datas

Z11 Snap Action Contacts (1NO + 1NC)		Order Code Operation Diagram						
X11 Non overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram						
Y11 Overlapping Slow Action Contacts (1NO + 1NC)		Order Code Operation Diagram						
W02 Slow Action Contacts (2NC)		Order Code Operation Diagram						
W20 Slow Action Contacts (2NO)		Order Code Operation Diagram						
Z02 Snap Action Contacts (2NC)		Order Code Operation Diagram						
X12 Non overlapping Slow Action Contacts (1NO + 2NC)		Order Code Operation Diagram						
X21 Non overlapping Slow Action Contacts (2NO + 1NC)		Order Code Operation Diagram						
W03 Simultaneous Slow Action Contacts (3NC)		Order Code Operation Diagram						
W30 Simultaneous Slow Action Contacts (3NO)		Order Code Operation Diagram						
Weight (packing per unit)		[kg]	0,265	0,265	0,270			

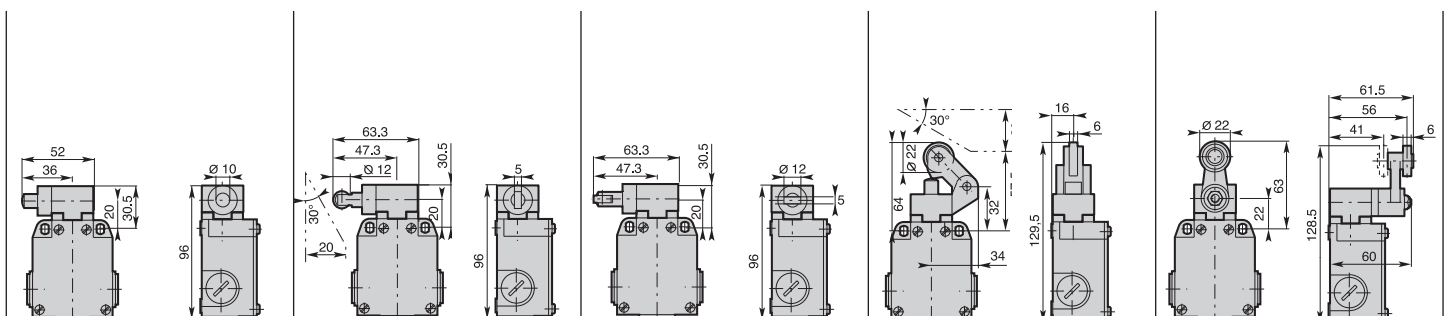
Dimensions (in mm)





E21 - Stainless steel lateral plain plunger	E22 - Stainless steel lateral plunger with Ø 12 vertical roller	E23 - Stainless steel lateral plunger with Ø 12 horizontal roller	E3 - One way lever E31: Ø22 nylon roller E32: Ø22 stainless steel roller E33: Ø22 steel ball bearing	E4 - Ø 22 roller lever E41: nylon roller E42: stainless steel roller E43: steel ball bearing
0,5 30 / 45	0,5 30 / 45	0,5 22 / 40	1,5 12 / 30	1,5 0,15 / 0,30

CM-E21Z11 0 2,0 3,2 4,8 6,0 mm 21-22 13-14 13-14	CM-E22Z11 0 3,7 5,9 8,8 10,2 mm 21-22 13-14 13-14	CM-E23Z11 0 3,7 5,9 8,8 10,2 mm 21-22 13-14 13-14	CM-E3-Z11 0 3,1 6,3 10,8 15,5 mm 21-22 13-14 13-14	CM-E4-Z11 0 20° 33° 49° 78° 21-22 13-14 13-14
CM-E21X11 0 2,3 3,9 6,0 mm 21-22 13-14 3,2	CM-E22X11 0 4,6 7,5 10,2 mm 21-22 13-14 6,0	CM-E23X11 0 4,6 7,5 10,2 mm 21-22 13-14 6,0	CM-E3-X11 0 4,5 9,0 15,5 mm 21-22 13-14 6,1	CM-E4-X11 0 22° 38° 78° 21-22 13-14 33°
CM-E21Y11 0 3,6 5,2 6,0 mm 21-22 13-14 2,2	CM-E22Y11 0 6,6 9,5 10,2 mm 21-22 13-14 4,3	CM-E23Y11 0 6,6 9,5 10,2 mm 21-22 13-14 4,3	CM-E3-Y11 0 7,2 11,7 15,5 mm 21-22 13-14 4,0	CM-E4-Y11 0 37° 53° 78° 21-22 13-14 21°
CM-E21W02 0 2,2 3,8 6,0 mm 11-12 21-22	CM-E22W02 0 4,3 7,2 10,2 mm 11-12 21-22	CM-E23W02 0 4,3 7,2 10,2 mm 11-12 21-22	CM-E3-W02 0 4,0 9,5 15,5 mm 11-12 21-22	CM-E4-W02 0 21° 37° 78° 11-12 21-22
CM-E21W20 0 2,1 6,0 mm 13-14 23-24	CM-E22W20 0 4,1 10,2 mm 13-14 23-24	CM-E23W20 0 4,1 10,2 mm 13-14 23-24	CM-E3-W20 0 3,6 15,5 mm 13-14 23-24	CM-E4-W20 0 20° 78° 13-14 23-24
CM-E21Z02 0 2,0 3,1 4,7 6,0 mm 11-12 21-22 11-12 21-22	CM-E22Z02 0 3,7 5,7 8,6 10,2 mm 11-12 21-22 11-12 21-22	CM-E23Z02 0 3,7 5,7 8,6 10,2 mm 11-12 21-22 11-12 21-22	CM-E3-Z02 0 3,1 6,1 10,6 15,5 mm 11-12 21-22 11-12 21-22	CM-E4-Z02 0 20° 32° 48° 78° 11-12 21-22 11-12 21-22
CM-E21X12 0 1,4 2,9 6,0 mm 21-22 13-14 3,1	CM-E22X12 0 3,5 6,1 10,2 mm 21-22 13-14 6,2	CM-E23X12 0 3,5 6,1 10,2 mm 21-22 13-14 6,2	CM-E3-X12 0 4,6 8,4 15,5 mm 21-22 13-14 8,6	CM-E4-X12 0 18° 35° 78° 21-22 13-14 37°
CM-E21X21 0 1,5 3,0 6,0 mm 31-32 13-14 3,1	CM-E22X21 0 3,6 6,2 10,2 mm 31-32 23-24 6,2	CM-E23X21 0 3,6 6,2 10,2 mm 31-32 23-24 6,2	CM-E3-X21 0 4,7 8,5 15,5 mm 31-32 13-14 8,6	CM-E4-X21 0 18° 36° 78° 31-32 13-14 37°
CM-E21W03 0 1,4 2,9 6,0 mm 21-12 31-32 31-32	CM-E22W03 0 3,5 6,1 10,2 mm 11-12 31-32 31-32	CM-E23W03 0 3,5 6,1 10,2 mm 11-12 31-32 31-32	CM-E3-W03 0 4,6 8,4 15,5 mm 11-12 31-32 31-32	CM-E4-W03 0 18° 35° 78° 11-12 21-12 31-32
CM-E21W30 0 1,9 6,0 mm 23-24 33-34	CM-E22W30 0 4,0 10,2 mm 13-14 23-24 33-34	CM-E23W30 0 4,0 10,2 mm 13-14 23-24 33-34	CM-E3-W30 0 4,9 15,5 mm 13-14 23-24 33-34	CM-E4-W30 0 23° 78° 13-14 23-24 33-34
0,285	0,290	0,290	0,305	0,305



Electrical Connection

CM1: three cable inlets for PG 13,5 Cable Gland

CM2: three cable inlets for 1/2" NPT Cable Gland

CM5: three cable inlets for M20 x 1,5 Cable Gland



Operating Head Type

E44 - Ø 50 rubber roller lever

E5 - Adjustable Ø 22 roller lever

E54 - Adjustable Ø 50 rubber roller lever

Conformity / (N.C. contact with positive opening operation)

Max actuation speed [m/s]

Min. force [N] or torque [Nm]: actuation / positive opening operation

1,5
0,15 / 0,30

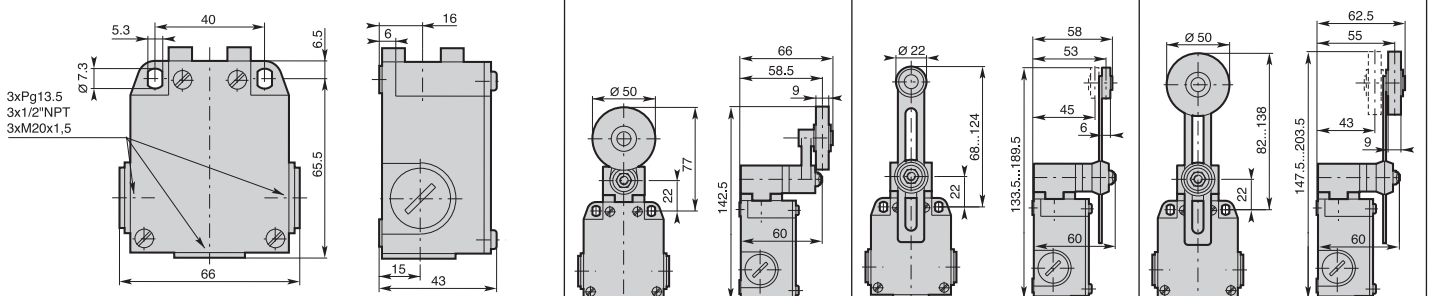
1,5
0,15 / 0,30

1,5
0,15 / 0,30

Additional Technical Datas

Order Code	Operation Diagram	CM-E44Z11	CM-E5-Z11	CM-E54Z11
Z11 Snap Action Contacts (1NO + 1NC)				
X11 Non overlapping Slow Action Contacts (1NO + 1NC)				
Y11 Overlapping Slow Action Contacts (1NO + 1NC)				
W02 Slow Action Contacts (2NC)				
W20 Slow Action Contacts (2NO)				
Z02 Snap Action Contacts (2NC)				
X12 Non overlapping Slow Action Contacts (1NO + 2NC)				
X21 Non overlapping Slow Action Contacts (2NO + 1NC)				
W03 Simultaneous Slow Action Contacts (3NC)				
W30 Simultaneous Slow Action Contacts (3NO)				
Weight (packing per unit)	[kg]	0,315	0,325	0,330

Dimensions (in mm)





E61 - Nylon actuator with stainless steel spring

E62 - Stainless steel spring actuator

E7 - Adjustable rod lever

E7 - Adjustable Ø 6 rod lever

E91 - Stainless steel spring multidirectional actuator

E71: stainless steel rod Ø3
E73: fiberglass rod Ø3
E75: square steel rod 3x3

F72: nylon rod
F74: fiberglass rod

1,5
0,15 / -

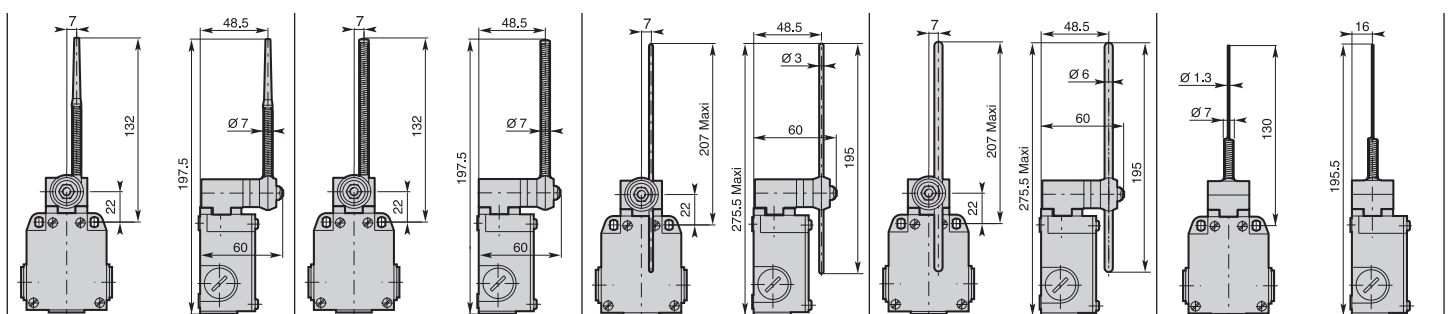
1,5
0,15 / -

1,5
0,15 / 0,30

1,5
0,15 / 0,30

1,0
0,18 / -

<p>CM•E61Z11</p>	<p>CM•E62Z11</p>	<p>CM•E7•Z11</p>	<p>CM•E7•Z11</p>	<p>CM•E91Z11</p>
<p>CM•E61X11</p>	<p>CM•E62X11</p>	<p>CM•E7•X11</p>	<p>CM•E7•X11</p>	<p>CM•E91X11</p>
<p>CM•E61Y11</p>	<p>CM•E62Y11</p>	<p>CM•E7•Y11</p>	<p>CM•E7•Y11</p>	<p>CM•E91Y11</p>
<p>CM•E61W02</p>	<p>CM•E62W02</p>	<p>CM•E7•W02</p>	<p>CM•E7•W02</p>	<p>CM•E91W02</p>
<p>CM•E61W20</p>	<p>CM•E62W20</p>	<p>CM•E7•W20</p>	<p>CM•E7•W20</p>	<p>CM•E91W20</p>
<p>CM•E61Z02</p>	<p>CM•E62Z02</p>	<p>CM•E7•Z02</p>	<p>CM•E7•Z02</p>	<p>CM•E91Z02</p>
<p>CM•E61X12</p>	<p>CM•E62X12</p>	<p>CM•E7•X12</p>	<p>CM•E7•X12</p>	<p>CM•E91X12</p>
<p>CM•E61X21</p>	<p>CM•E62X21</p>	<p>CM•E7•X21</p>	<p>CM•E7•X21</p>	<p>CM•E91X21</p>
<p>CM•E61W03</p>	<p>CM•E62W03</p>	<p>CM•E7•W03</p>	<p>CM•E7•W03</p>	<p>CM•E91W03</p>
<p>CM•E61W30</p>	<p>CM•E62W30</p>	<p>CM•E7•W30</p>	<p>CM•E7•W30</p>	<p>CM•E91W30</p>
0,330	0,330	0,330	0,330	0,265



Electrical Connection

CM1: three cable inlets for PG 13,5 Cable Gland

CM2: three cable inlets for 1/2" NPT Cable Gland

CM5: three cable inlets for M20 x 1,5 Cable Gland



Operating Head Type

E92 - Multidirectional nylon activator with stainless steel spring

E93 - Stainless steel spring multidirectional actuator

E99 - Pull action with ring

Conformity / (N.C. contact with positive opening operation)

Max actuation speed [m/s]

Min. force [N] or torque [Nm]: actuation / positive opening operation

1,0
0,18 / -

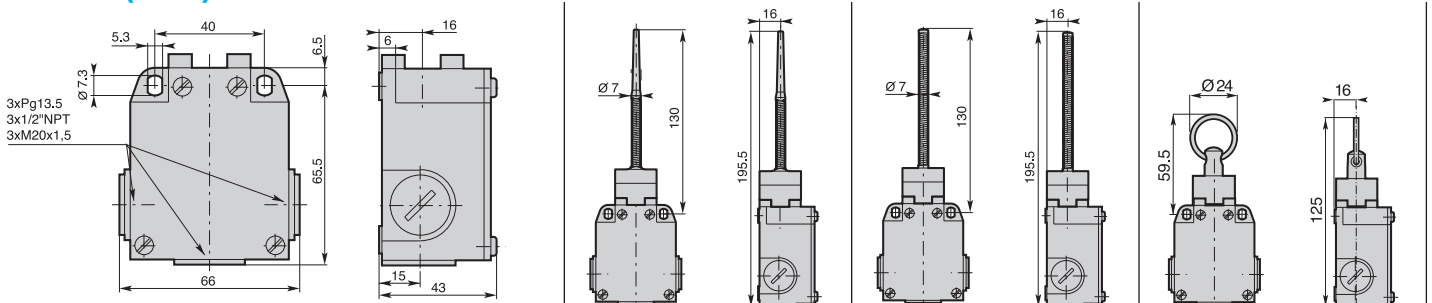
1,0
0,18 / -

0,5
25 / -

Additional Technical Datas

Order Code	Operation Diagram	CM-E92Z11	CM-E93Z11	CM-E99Z11A
Z11 Snap Action Contacts (1NO + 1NC)				
X11 Non overlapping Slow Action Contacts (1NO + 1NC)				
Y11 Overlapping Slow Action Contacts (1NO + 1NC)				
W02 Slow Action Contacts (2NC)				
W20 Slow Action Contacts (2NO)				
Z02 Snap Action Contacts (2NC)				
X12 Non overlapping Slow Action Contacts (1NO + 2NC)				
X21 Non overlapping Slow Action Contacts (2NO + 1NC)				
W03 Simultaneous Slow Action Contacts (3NC)				
W30 Simultaneous Slow Action Contacts (3NO)				
Weight (packing per unit)	[kg]	0,265	0,270	0,270

Dimensions (in mm)



Electrical Connection

Pre-Wired

Cable: PVC 4 x 0,75 mm²

Length: 1 m.

(Different cables or lengths, page 13)



Operating Head Type

	G11 - Plain plunger	G1• - Roller plunger G12: metal roller G13: nylon roller	G1• - Cross roller plunger G14: metal roller G15: nylon roller	G16 - Plain plunger with dust protection cup
Conformity / (N.C. contact with positive opening operation)				
Max actuation speed [m/s]	0,5	0,1	0,1	0,5
Min. force [N] or torque [Nm]: actuation / positive opening operation	15 / 30	10 / 30	10 / 30	15 / 30

Additional Technical Datas

Z	Order Code	EP1G11ZU	EP1G1•ZU	EP1G1•ZU	EP1G16ZU
Snap Action Contacts (1NO + 1NC)					
X	Order Code	EP1G11XU	EP1G1•XU	EP1G1•XU	EP1G16XU
Non overlapping Slow Action Contacts (1NO + 1NC)					

EP1G series with connectors

All the models can be supplied with M12 connector by replacing "U" suffix with "M" suffix to the ordering code, and with AMP connector by using "A" suffix.

EXAMPLE



EP1G11ZU Standard version
1 m PVC cable



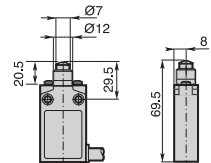
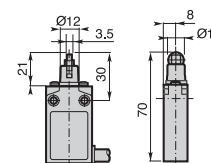
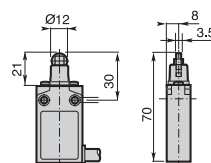
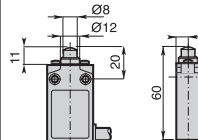
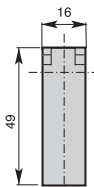
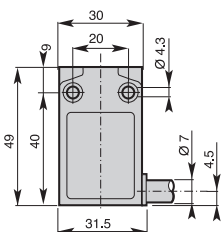
EP1G11ZM
M12 connector



EP1G11ZA
AMP connector

Weight (packing per unit)	[kg]	0,125	0,130	0,130	0,130
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Dimensions (in mm)

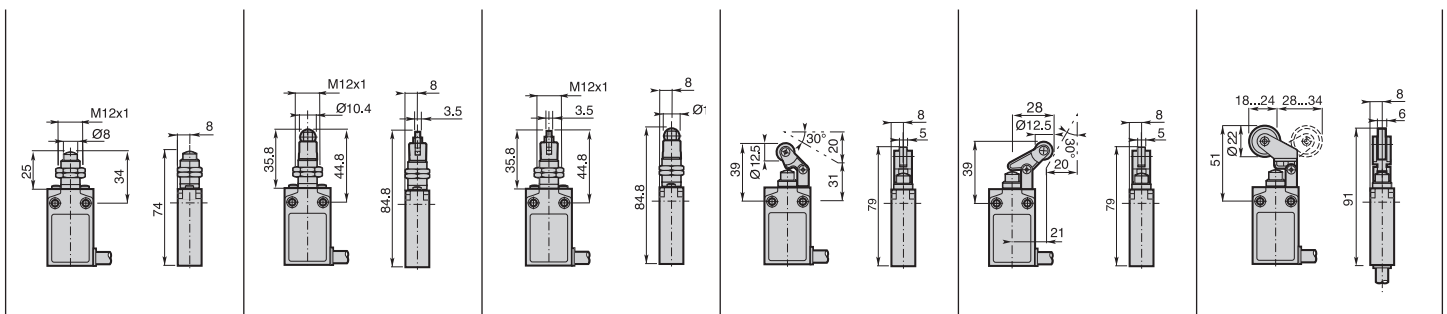




G21 - Plain plunger with fixing nuts	G2• - Roller plunger with fixing nuts G22: Metal roller G23: Nylon roller	G2• - Cross roller plunger with fixing nuts G24: metal roller G25: nylon roller	G31 - Nylon roller lever	G32 - Nylon roller lever	G38 - Adjustable nylon roller lever
0,5 15 / 30	0,1 10 / 30	0,1 10 / 30	1,0 7 / 24	1,0 7 / 24	1,0 7 / 24

EP1G21ZU 0 1.4 2.2 4.3 5.0 mm 21-22 13-14	EP1G2•ZU 0 2.4 3.8 7.5 8.7 mm 21-22 13-14	EP1G2•ZU 0 2.4 3.8 7.5 8.7 mm 21-22 13-14	EP1G31ZU 0 5.9 8.5 14.0 19.0 mm 21-22 13-14	EP1G32ZU 0 5.9 8.5 14.0 19.0 mm 21-22 13-14	EP1G38ZU 0 8.9 12.9 21.0 29.0 mm 21-22 13-14
EP1G21XU 0 1.9 3.4 5.0 mm 21-22 13-14	EP1G2•XU 0 3.3 5.9 8.7 mm 21-22 13-14	EP1G2•XU 0 3.3 5.9 8.7 mm 21-22 13-14	EP1G31XU 0 6.9 12.4 19.0 mm 21-22 13-14	EP1G32XU 0 6.9 12.4 19.0 mm 21-22 13-14	EP1G38XU 0 9.6 18.5 29.0 mm 21-22 13-14

0,140	0,145	0,145	0,130	0,130	0,135
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Electrical Connection

Pre-Wired

Cable: PVC 4 x 0,75 mm²

Length: 1 m.

(Different cables or lengths, page 13)



Operating Head Type

	G4• - Ø 14 roller lever G41: nylon roller G42: metal roller G43: ball bearing	G45 - Ø 18 nylon roller lever	G51 - Adjustable lever with Ø 18 nylon roller	G5100 - Adjustable toothed lever (step 2 mm) with Ø 18 nylon roller
Conformity / (N.C. contact with positive opening operation)				
Max actuation speed [m/s]	1,5	1,5	1,5	1,5
Min. force [N] or torque [Nm]: actuation / positive opening operation	0,08 / 0,28	0,08 / 0,28	0,08 / 0,28	0,08 / 0,28

Additional Technical Datas

Z Snap Action Contacts (1NO + 1NC)	Order Code	EP1G4•ZU	EP1G45ZU	EP1G51ZU	EP1G5100ZU
	Operation Diagram				
X Non overlapping Slow Action Contacts (1NO + 1NC)	Order Code	EP1G4•XU	EP1G45XU	EP1G51XU	EP1G5100XU
	Operation Diagram				

EP1G series with connectors

All the models can be supplied with M12 connector by replacing "U" suffix with "M" suffix to the ordering code, and with AMP connector by using "A" suffix.

EXAMPLE



EP1G11ZU Standard version
1 m PVC cable



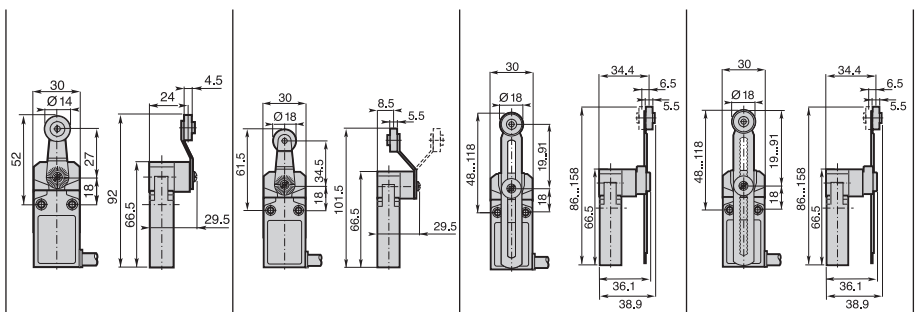
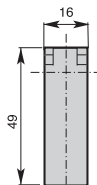
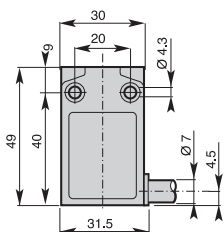
EP1G11ZM
M12 connector



EP1G11ZA
AMP connector

Weight (packing per unit)	[kg]	0,175	0,180	0,190	0,190
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Dimensions (in mm)





G61 - Nylon actuator with stainless steel spring	G7• - Adjustable rod lever G71: stainless steel rod Ø3 G72: fiberglass rod Ø3 G75: square steel rod 3x3	G7• - Adjustable Ø 6 rod lever G73: nylon rod G74: fiberglass rod	G92: Multidirectional nylon actuator with stainless steel spring	G93: Multidirectional actuator with stainless steel spring	
1,5 0,08 / -	1,5 0,08 / 0,28	1,5 0,08 / 0,28	0,1 10 / 30	1,0 0,10 / -	

EP1G61ZU 	EP1G7•ZU 	EP1G7•ZU 	EP1G92ZU 	EP1G93ZU 	
EP1G61XU 	EP1G7•XU 	EP1G7•XU 			

0,190	0,185	0,200	0,195	0,200	

Electrical Connection

Pre-Wired

Cable: PVC 4 x 0,75 mm²

Length: 1 m.

(Different cables or lengths, page 13)



Operating Head Type

	G11 - Plain plunger	G1• - Roller plunger G12: metal roller G13: nylon roller	G1• - Cross roller plunger G14: metal roller G15: nylon roller	G16 - Plain plunger with dust protection cup
Conformity / (N.C. contact with positive opening operation)				
Max actuation speed [m/s]	0,5	0,1	0,1	0,5
Min. force [N] or torque [Nm]: actuation / positive opening operation	15 / 30	10 / 30	10 / 30	15 / 30

Additional Technical Datas

Z	Order Code	EP2G11ZU	EP2G1•ZU	EP2G1•ZU	EP2G16ZU
Snap Action Contacts (1NO + 1NC)					
X	Order Code	EP2G11XU	EP2G1•XU	EP2G1•XU	EP2G16XU
Non overlapping Slow Action Contacts (1NO + 1NC)					

EP2G series with connectors

All the models can be supplied with M12 connector by replacing "U" suffix with "M" suffix to the ordering code, and with AMP connector by using "A" suffix.

EXAMPLE



EP2G11ZU Standard version
1 m PVC cable



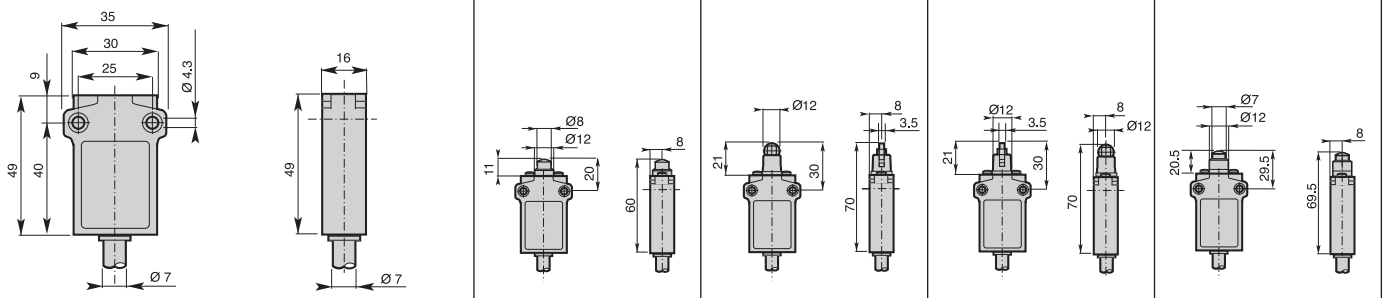
EP2G11ZM
M12 connector



EP2G11ZA
AMP connector

Weight (packing per unit)	[kg]	0,125	0,130	0,130	0,130
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Dimensions (in mm)





G21 - Plain plunger with fixing nuts

G2• - Roller plunger with fixing nuts

G2• - Cross roller plunger with fixing nuts

G31 - Nylon roller lever

G32 - Nylon roller lever

G38 - Adjustable nylon roller lever

G22: Metal roller
G23: Nylon roller

G24: metal roller
G25: nylon roller

0,5
15 / 30

0,1
10 / 30

0,1
10 / 30

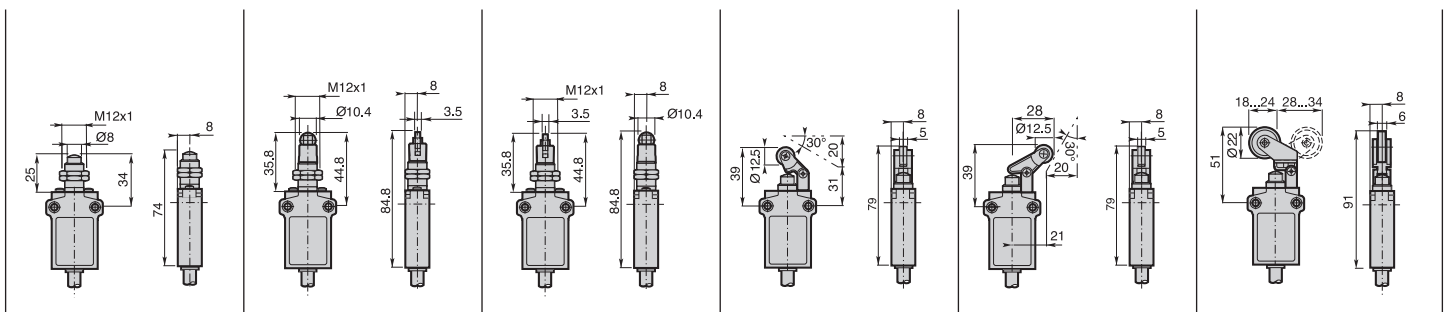
1,0
7 / 24

1,0
7 / 24

1,0
7 / 24

<p>EP2G21ZU</p>	<p>EP2G2•ZU</p>	<p>EP2G2•ZU</p>	<p>EP2G31ZU</p>	<p>EP2G32ZU</p>	<p>EP2G38ZU</p>
<p>EP2G21XU</p>	<p>EP2G2•XU</p>	<p>EP2G2•XU</p>	<p>EP2G31XU</p>	<p>EP2G32XU</p>	<p>EP2G38XU</p>

0,140	0,145	0,145	0,130	0,130	0,135
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Electrical Connection

Pre-Wired

Cable: PVC 4 x 0,75 mm²

Length: 1 m.

(Different cables or lengths, page 13)



Operating Head Type

	G4• - Ø 14 roller lever G41: nylon roller G42: metal roller G43: ball bearing	G45 - Ø 18 nylon roller lever	G51 - Adjustable lever with Ø 18 nylon roller	G5100 - Adjustable toothed lever (step 2 mm) with Ø 18 nylon roller
Conformity / (N.C. contact with positive opening operation)				
Max actuation speed [m/s]	1,5	1,5	1,5	1,5
Min. force [N] or torque [Nm]: actuation / positive opening operation	0,08 / 0,28	0,08 / 0,28	0,08 / 0,28	0,08 / 0,28

Additional Technical Datas

Z	Order Code	EP2G4•ZU	EP2G45ZU	EP2G51ZU	EP2G5100ZU
Snap Action Contacts (1NO + 1NC)					
X	Order Code	EP2G4•XU	EP2G45XU	EP2G51XU	EP2G5100XU
Non overlapping Slow Action Contacts (1NO + 1NC)					

EP2G series with connectors

All the models can be supplied with M12 connector by replacing "U" suffix with "M" suffix to the ordering code, and with AMP connector by using "A" suffix.

EXAMPLE



EP2G11ZU Standard version
1 m PVC cable



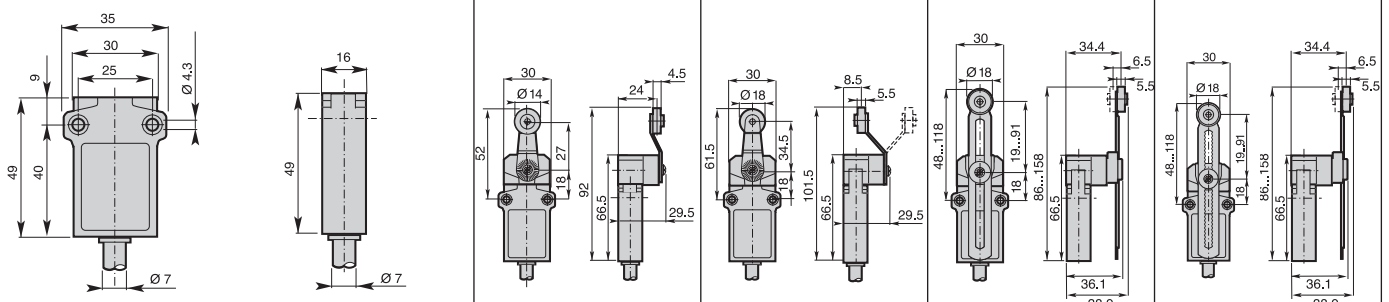
EP2G11ZM
M12 connector



EP2G11ZA
AMP connector

Weight (packing per unit)	[kg]	0,175	0,180	0,190	0,190
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Dimensions (in mm)





G61 - Nylon actuator with stainless steel spring	G7 - Adjustable rod lever G71: stainless steel rod Ø3 G72: fiberglass rod Ø3 G75: square steel rod 3x3	G7 - Adjustable Ø 6 rod lever G73: nylon rod G74: fiberglass rod	G92: Multidirectional nylon actuator with stainless steel spring	G93: Multidirectional actuator with stainless steel spring	
1,5 0,08 / -	1,5 0,08 / 0,28	1,5 0,08 / 0,28	0,1 10 / 30	1,0 0,10 / -	

EP2G61ZU 	EP2G7•ZU 	EP2G7•ZU 	EP2G92ZU 	EP2G93ZU 	
EP2G61XU 	EP2G7•XU 	EP2G7•XU 			

0,190	0,185	0,200	0,195	0,200	

Electrical Connection

Pre-Wired

Cable: PVC 5 x 0,75 mm²

Length: 1 m.

(Different cables or lengths, page 13)



Operating Head Type

	G11 - Plain plunger	G1• - Roller plunger G12: metal roller G13: nylon roller	G1• - Cross roller plunger G14: metal roller G15: nylon roller	G16 - Plain plunger with dust protection cup
Conformity / (N.C. contact with positive opening operation)				
Max actuation speed [m/s]	0,5	0,1	0,1	0,5
Min. force [N] or torque [Nm]: actuation / positive opening operation	15 / 30	10 / 30	10 / 30	15 / 30

Additional Technical Datas

Z	Order Code	EM1G11ZU	EM1G1•ZU	EM1G1•ZU	EM1G16ZU
Snap Action Contacts (1NO + 1NC)					
X	Order Code	EM1G11XU	EM1G1•XU	EM1G1•XU	EM1G16XU
Non overlapping Slow Action Contacts (1NO + 1NC)					

EM1G series with connectors

All the models can be supplied with M12 connector by replacing "U" suffix with "M" suffix to the ordering code, and with AMP connector by using "A" suffix.

EXAMPLE



EM1G11ZU Standard version
1 m PVC cable



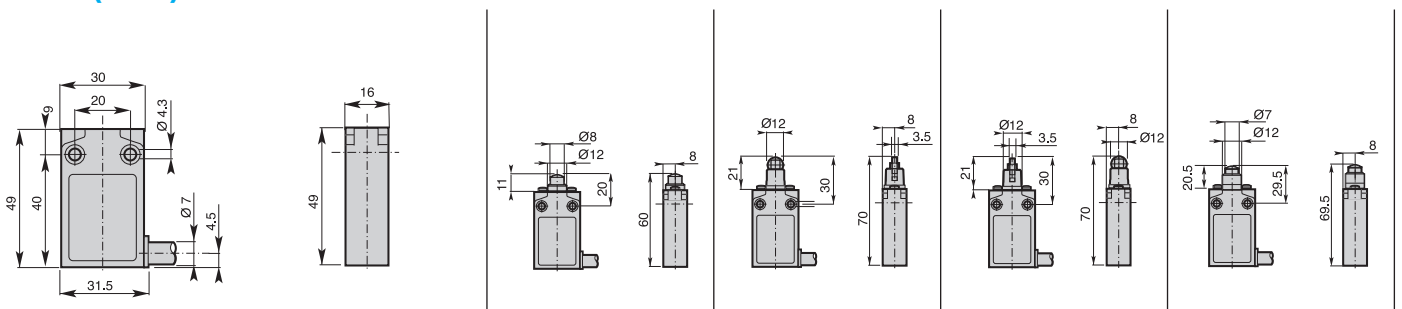
EM1G11ZM
M12 connector



EM1G11ZA
AMP connector

Weight (packing per unit)	[kg]	0,175	0,180	0,180	0,180
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Dimensions (in mm)

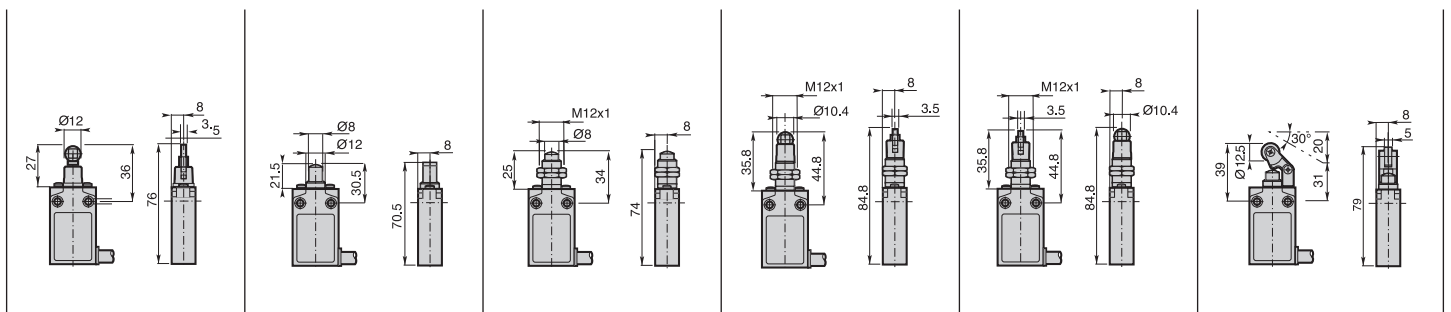




G17 - Metal roller plunger with dust protection cup	G18 - Bevel plunger	G21 - Plain plunger with fixing nuts	G22 - Roller plunger with fixing nuts G22: Metal roller G23: Nylon roller	G25 - Cross roller plunger with fixing nuts G24: metal roller G25: nylon roller	G31 - Nylon roller lever
0,1 10 / 30	0,5 10 / 30	0,5 15 / 30	0,1 10 / 30	0,1 10 / 30	1,0 7 / 24

EM1G17ZU 	EM1G18ZU 	EM1G21ZU 	EM1G22ZU 	EM1G25ZU 	EM1G31ZU
EM1G17XU 	EM1G18XU 	EM1G21XU 	EM1G22XU 	EM1G25XU 	EM1G31XU

0,190	0,185	0,190	0,195	0,195	0,180
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Electrical Connection

Pre-Wired

Cable: PVC 5 x 0,75 mm²

Length: 1 m.

(Different cables or lengths, page 13)



Operating Head Type

G38 - Adjustable nylon roller lever

G4 - Ø 14 roller lever

G41: nylon roller
G42: metal roller
G43: ball bearing

G4 - Ø 18 roller lever

G45: nylon roller
G46: metal roller

G5 - Adjustable lever with Ø 18 roller

G51: nylon roller
G53: metal roller

Conformity / (N.C. contact with positive opening operation)

Max actuation speed [m/s]

Min. force [N] or torque [Nm]: actuation / positive opening operation

	1,0 7 / 24	1,5 0,08 / 0,28	1,5 0,08 / 0,28	1,5 0,08 / 0,28
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Additional Technical Datas

Z	Order Code	EM1G38ZU	EM1G4•ZU	EM1G4•ZU	EM1G5•ZU
Snap Action Contacts (1NO + 1NC)					
X	Order Code	EM1G38XU	EM1G4•XU	EM1G4•XU	EM1G5•XU
Non overlapping Slow Action Contacts (1NO + 1NC)					

EM1G series with connectors

All the models can be supplied with M12 connector by replacing "U" suffix with "M" suffix to the ordering code, and with AMP connector by using "A" suffix.

EXAMPLE



EM1G11ZU Standard version
1 m PVC cable



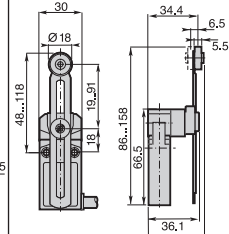
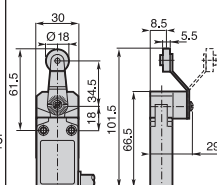
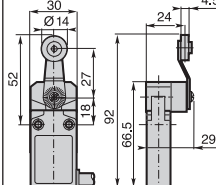
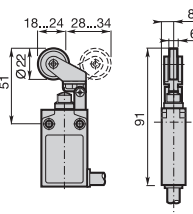
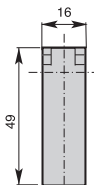
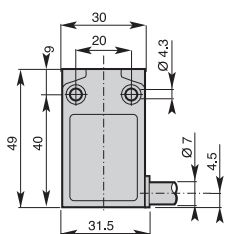
EM1G11ZM
M12 connector



EM1G11ZA
AMP connector

Weight (packing per unit)	[kg]	0,185	0,225	0,230	0,240
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Dimensions (in mm)





G5100 - Adjustable toothed lever (step 2 mm) with Ø 18 nylon roller	G61 - Nylon actuator with stainless steel spring	G7• - Adjustable rod lever G71: stainless steel rod Ø3 G72: fiberglass rod Ø3 G75: square steel rod 3x3	G7• - Adjustable Ø 6 rod lever G73: nylon rod G74: fiberglass rod	G92: Multidirectional nylon actuator with stainless steel spring	G93: Multidirectional actuator with stainless steel spring
1,5 0,08 / 0,28	1,5 0,08 / -	1,5 0,08 / 0,28	1,5 0,08 / 0,28	0,1 10 / 30	1,0 0,10 / -

EM1G5100ZU 	EM1G61ZU 	EM1G7•ZU 	EM1G7•ZU 	EM1G92ZU 	EM1G93ZU
EM1G5100XU 	EM1G61XU 	EM1G7•XU 	EM1G7•XU 		

0,240	0,240	0,235	0,250	0,245	0,250

Electrical Connection

Pre-Wired

Cable: PVC 5 x 0,75 mm²

Length: 1 m.

(Different cables or lengths, page 13)



Operating Head Type

	G11 - Plain plunger	G1• - Roller plunger G12: metal roller G13: nylon roller	G1• - Cross roller plunger G14: metal roller G15: nylon roller	G16 - Plain plunger with dust protection cup
Conformity / (N.C. contact with positive opening operation)				
Max actuation speed [m/s]	0,5	0,1	0,1	0,5
Min. force [N] or torque [Nm]: actuation / positive opening operation	15 / 30	10 / 30	10 / 30	15 / 30

Additional Technical Datas

Z	Order Code	EM2G11ZU	EM2G1•ZU	EM2G1•ZU	EM2G16ZU
Snap Action Contacts (1NO + 1NC)					
X	Order Code	EM2G11XU	EM2G1•XU	EM2G1•XU	EM2G16XU
Non overlapping Slow Action Contacts (1NO + 1NC)					

EM2G series with connectors

All the models can be supplied with M12 connector by replacing "U" suffix with "M" suffix to the ordering code, and with AMP connector by using "A" suffix.

EXAMPLE



EM2G11ZU Standard version
1 m PVC cable



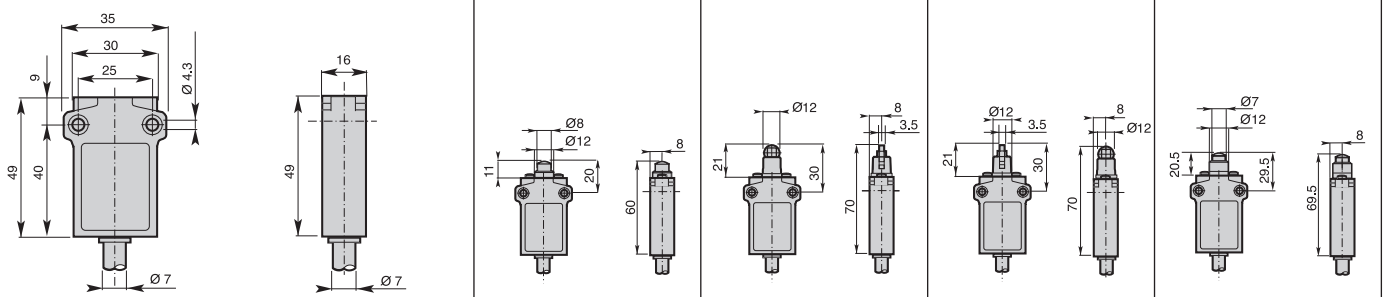
EM2G11ZM
M12 connector



EM2G11ZA
AMP connector

Weight (packing per unit)	[kg]	0,180	0,185	0,185	0,185
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Dimensions (in mm)





G17 - Metal roller plunger with dust protection cup

G18 - Bevel plunger

G21 - Plain plunger with fixing nuts

G2• - Roller plunger with fixing nuts

G22: Metal roller
G23: Nylon roller

G2• - Cross roller plunger with fixing nuts

G24: metal roller
G25: nylon roller

G31 - Nylon roller lever

0,1
10 / 30

0,5
10 / 30

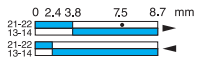
0,5
15 / 30

0,1
10 / 30

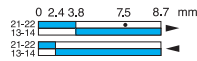
0,1
10 / 30

1,0
7 / 24

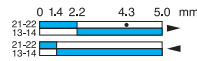
EM2G17ZU



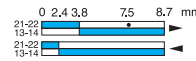
EM2G18ZU



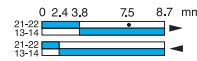
EM2G21ZU



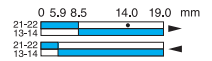
EM2G2•ZU



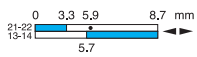
EM2G2•ZU



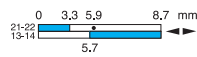
EM2G31ZU



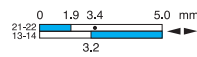
EM2G17XU



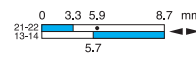
EM2G18XU



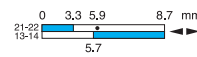
EM2G21XU



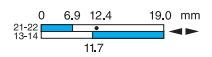
EM2G2•XU



EM2G2•XU



EM2G31XU



0,195

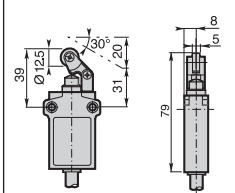
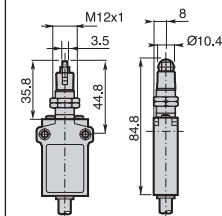
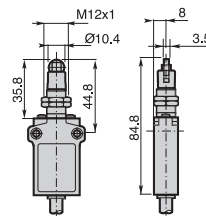
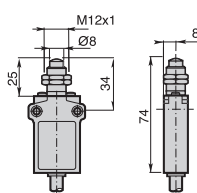
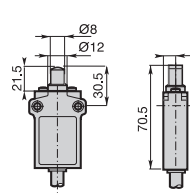
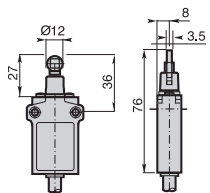
0,190

0,195

0,200

0,200

0,185



Electrical Connection

Pre-Wired

Cable: PVC 5 x 0,75 mm²

Length: 1 m.

(Different cables or lengths, page 13)



Operating Head Type

G38 - Adjustable nylon roller lever

G4• - Ø 14 roller lever

G41: nylon roller
G42: metal roller
G43: ball bearing

G4• - Ø 18 roller lever

G45: metal roller
G46: nylon roller

G5• - Adjustable lever with Ø 18 roller

G51: nylon roller
G53: metal roller

Conformity / (N.C. contact with positive opening operation)

Max actuation speed [m/s]

Min. force [N] or torque [Nm]: actuation / positive opening operation

	1,0 7 / 24	1,5 0,08 / 0,28	1,5 0,08 / 0,28	1,5 0,08 / 0,28
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Additional Technical Datas

Z	Order Code	EM2G38ZU	EM2G4•ZU	EM2G4•ZU	EM2G5•ZU
Snap Action Contacts (1NO + 1NC)					
X	Order Code	EM2G38XU	EM2G4•XU	EM2G4•XU	EM2G5•XU
Non overlapping Slow Action Contacts (1NO + 1NC)					

EM2G series with connectors

All the models can be supplied with M12 connector by replacing "U" suffix with "M" suffix to the ordering code, and with AMP connector by using "A" suffix.

EXAMPLE



EM2G11ZU Standard version
1 m PVC cable



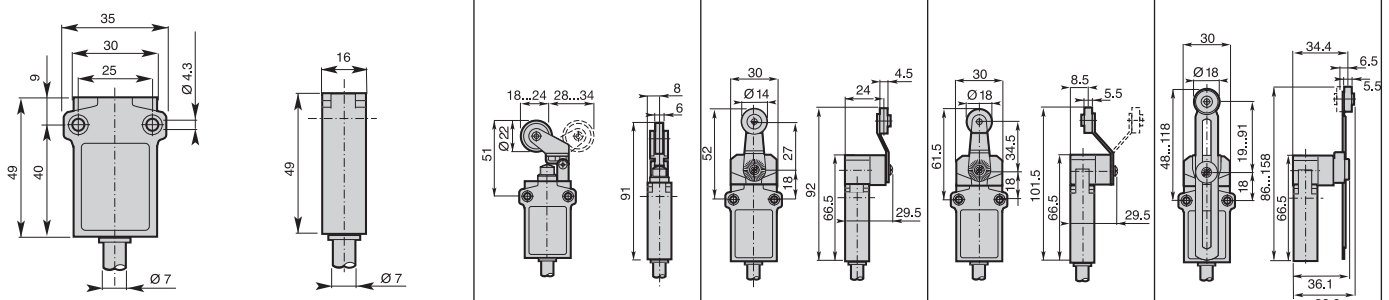
EM2G11ZM
M12 connector



EM2G11ZA
AMP connector

Weight (packing per unit)	[kg]	0,190	0,225	0,230	0,240
----------------------------------	-------------	--------------	--------------	--------------	--------------

Dimensions (in mm)



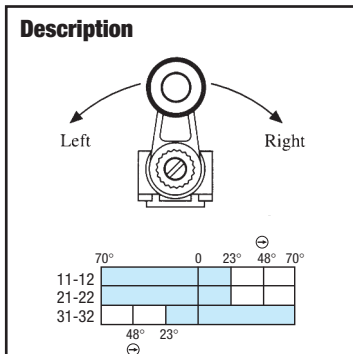


G5100 - Adjustable toothed lever (step 2 mm) with Ø 18 nylon roller	G61 - Nylon actuator with stainless steel spring	G7• - Adjustable rod lever G71: stainless steel rod Ø3 G72: fiberglass rod Ø3 G75: square steel rod 3x3	G7• - Adjustable Ø 6 rod lever G73: nylon rod G74: fiberglass rod	G92: Multidirectional nylon actuator with stainless steel spring	G93: Multidirectional actuator with stainless steel spring
1,5 0,08 / 0,28	1,5 0,08 / -	1,5 0,08 / 0,28	1,5 0,08 / 0,28	0,1 10 / 30	1,0 0,10 / -

EM2G5100ZU 	EM2G61ZU 	EM2G7•ZU 	EM2G7•ZU 	EM2G92ZU 	EM2G93ZU
EM2G5100XU 	EM2G61XU 	EM2G7•XU 	EM2G7•XU 		

0,245	0,245	0,240	0,255	0,250	0,255

BP•U series 40 mm. polymeric limit switches - IP 65 □ - EN 50041 - 1 cables entry



- The lever on the right open contacts 11-12 and 21-22
- The lever on the left open contacts 31-32
- Positive opening of the contacts on both the directions
- Other levers available

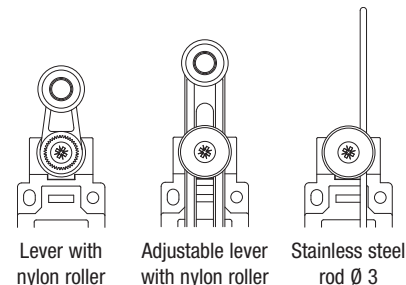
Cable inlets

Replace the symbol • with the number of the required thread

BP1: PG 13.5

BP2: 1/2" NPT

BP5: M 20 x 1,5



Contacts elements

J03 (3NC)

	↻ U41	↻ U51	↻ U71
	BP•U41J03	BP•U51J03	BP•U71J03

AP• series 30 mm. polymeric limit switches - IP 65 □ - EN 50047 - 1 cables entry

Cable inlets: Replace the symbol • with the number of the required thread

AP1: PG 13.5

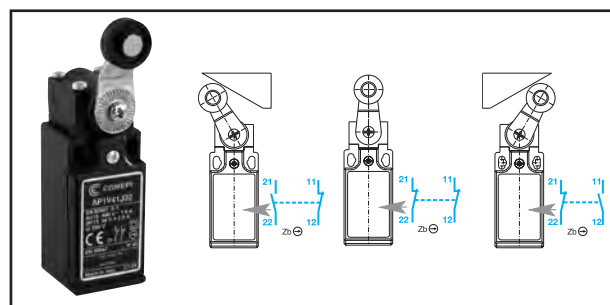
AP2: 1/2" NPT (with adapter)

AP3: PG 11

AP4: M 16 x 1,5

AP5: M 20 x 1,5

AP•V41J02 series

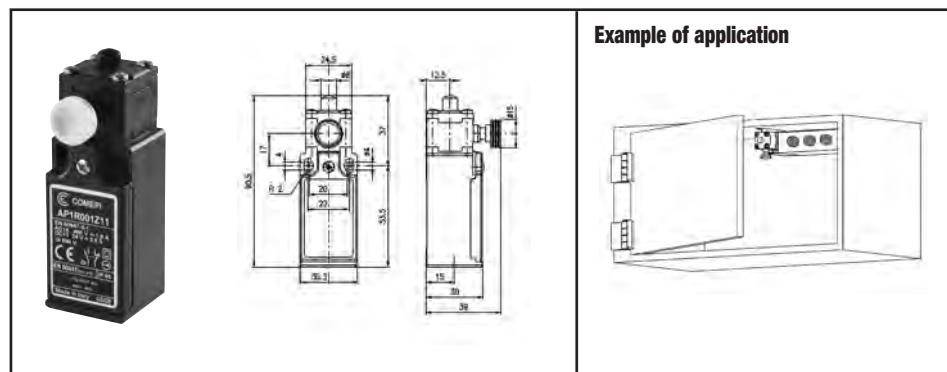


Description

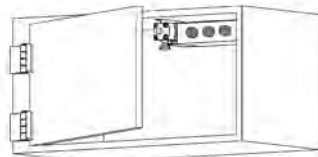
The Switch is settled with 2NC contacts in free position.

The actuation of the lever causes the opening of the contact related to the actuating direction, leaving unchanged the status of the second contact. Both contacts have positive opening operation according to IEC/EN 60947-5-1 standards.

AP•R001Z11 series



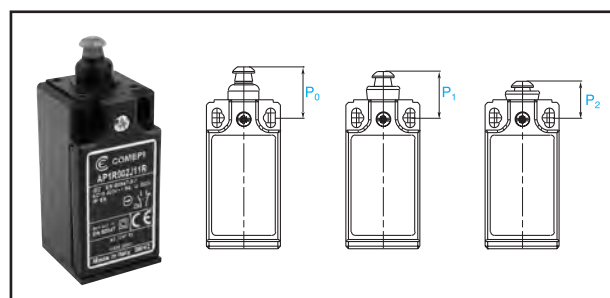
Example of application



Description

This particular limit switch has been developed in order to fulfill all the requests coming from applications in which there is the necessity to simulate the change over in contacts position without acting directly, on the plunger of the switch. The use of this device is particularly useful in the realization of electrical boards in order to simulate the closing of the door simply by pushing the yellow button on the limit switch; the assigned staff will then be able to work on the internal circuit to make modifications, maintenance, etc... The conditions of normal operation are automatically restored once the door of the electric board is closed.

AP•R002J11R series

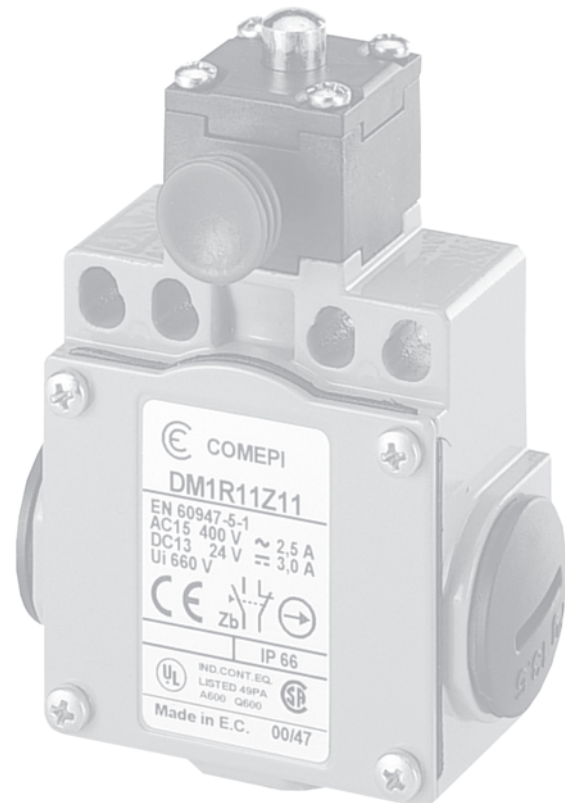


Description

The switch has been designed specifically for applications on over-speed devices; by actuating the plunger until the operating position P1, the electrical contacts switch and simultaneously the plunger reaches position P2 automatically. The device is restored by pulling the blue plunger until the free position P0. The switch can be supplied with 1NO+1NC contacts (AP•R002J11R) or with 2NC contacts (AP•R002J02R); all the NC contacts have positive opening operation..



SAFETY LIMIT SWITCHES



Application

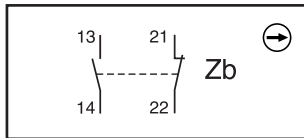
The Comepi limit switches are developed and manufactured according to the rules set out in IEC international publications and EN european standards.

Easy to use, electromechanical limit switches offer specific qualities:

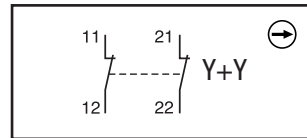
- Visible operation.
- Able to switch strong currents (10 A conventional thermal current).
- Precise operating points (consistency).
- Immune to electromagnetic disturbances.
- Electrically separated contacts.
- N.C. contacts with positive opening operation (⊖).

Contact Blocks

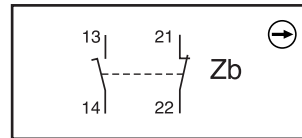
Z11 Snap action
1NO+1NC



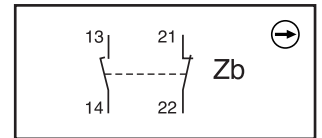
Z02 Snap action
2NC



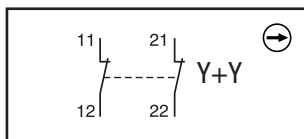
X11 Slow action break before
make 1NO+1NC



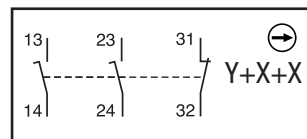
Y11 Slow action make before
break 1NO+1NC



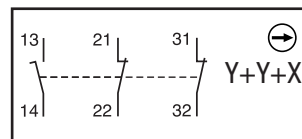
W02 Simultaneous slow action
2NC



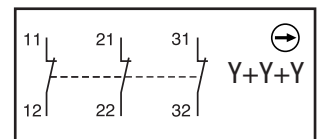
X21/X21P Slow action break
before make 2NO+1NC



X12/X12P Slow action break
before make 1NO+2NC



W03/W03P Simultaneous slow
action 3NC



Main Technical Data

	SP, SBP, SDP series	SM, SBM, SCM, SDM series
Standards	IEC 60947-5-1, EN 60947-5-1, UL 508, CSA C22-2 No 14	
Operating temperature range	-25°C... +70°C	
Protection against electrical shocks (acc. to IEC 60536)	Class II	Class I
Protection degree (acc. to IEC 60529)	IP65	IP 66
Rated insulation voltage (acc. to IEC 60947-1)	$U_i = 690V$ (SM, SDM series and contacts type Z02, X12P, X21P, W03P series: $U_i = 400V$)	
Rated impuled withstand voltage (acc. to IEC 60947-1)	$U_{imp} = 6kV$ (4kV for contacts type X12P, X21P, W03P)	
Short-circuit protection	Fuse 10A type gG (gl)	
Power category	A600 - Q600 (SM, SDM series and contacts type X12P, X21P, W03P: A300 - Q300)	
Rated operational current (acc. to IEC 60947-5-1)	AC-15: 24V - 10A; 400V - 4A DC-13: 24V - 6A; 250V - 0,4A	

Electrical connection

Replace the symbol with the number of the required thread

- 1: PG 13.5
- 2: 1/2" NPT (Through adapter on SP and SDP series)
- 3: PG 11 (Available on SP, SM, SDP and SDM series)
- 4: M16x1,5 (Available on SP, SM, SDP and SDM series)
- 5: M20x1,5



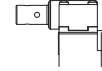
K10

90° Adjustable head
(replaces K20)



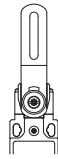
K80

Fully turnable head
(replaces K120)



K71

Zinc plated steel shaft



K61

Zinc plated steel lever

K72

Stainless steel shaft

SP_K Series

30 mm
polymeric casing.
1 cable inlet. IP 65



Contact blocks

	K10	K80	K71	K72	K61
Z11 (1NO+1NC)	SP•K10Z11	SP•K80Z11	SP•K71Z11	SP•K72Z11	SP•K61Z11
Z02 (2NC)	SP•K10Z02	SP•K80Z02	SP•K71Z02	SP•K72Z02	SP•K61Z02
X11 (1NO+1NC)	SP•K10X11	SP•K80X11	SP•K71X11	SP•K72X11	SP•K61X11
Y11 (1NO+1NC)	SP•K10Y11	SP•K80Y11	SP•K71Y11	SP•K72Y11	SP•K61Y11
W02 (2NC)	SP•K10W02	SP•K80W02	SP•K71W02	SP•K72W02	SP•K61W02
X21P (2NO+1NC)	SP•K10X21P	SP•K80X21P	SP•K71X21P	SP•K72X21P	SP•K61X21P
X12P (1NO+2NC)	SP•K10X12P	SP•K80X12P	SP•K71X12P	SP•K72X12P	SP•K61X12P
W03P (3NC)	SP•K10W03P	SP•K80W03P	SP•K71W03P	SP•K72W03P	SP•K61W03P

SM_K Series

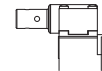
30 mm metal casing.
1 cable inlet. IP 66



K10

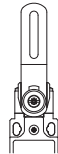


K80



K71

K72



K61

Contact blocks

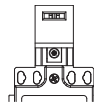
	K10	K80	K71	K72	K61
Z11 (1NO+1NC)	SM•K10Z11	SM•K80Z11	SM•K71Z11	SM•K72Z11	SM•K61Z11
Z02 (2NC)	SM•K10Z02	SM•K80Z02	SM•K71Z02	SM•K72Z02	SM•K61Z02
X11 (1NO+1NC)	SM•K10X11	SM•K80X11	SM•K71X11	SM•K72X11	SM•K61X11
Y11 (1NO+1NC)	SM•K10Y11	SM•K80Y11	SM•K71Y11	SM•K72Y11	SM•K61Y11
W02 (2NC)	SM•K10W02	SM•K80W02	SM•K71W02	SM•K72W02	SM•K61W02
X21P (2NO+1NC)	SM•K10X21P	SM•K80X21P	SM•K71X21P	SM•K72X21P	SM•K61X21P
X12P (1NO+2NC)	SM•K10X12P	SM•K80X12P	SM•K71X12P	SM•K72X12P	SM•K61X12P
W03P (3NC)	SM•K10W03P	SM•K80W03P	SM•K71W03P	SM•K72W03P	SM•K61W03P

SDP_K Series

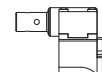
50 mm polymeric casing.
2 cable inlets. IP 65



K10

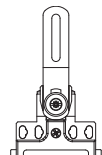


K80



K71

K72



K61

Contact blocks

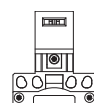
	K10	K80	K71	K72	K61
Z11 (1NO+1NC)	SDP•K10Z11	SDP•K80Z11	SDP•K71Z11	SDP•K72Z11	SDP•K61Z11
Z02 (2NC)	SDP•K10Z02	SDP•K80Z02	SDP•K71Z02	SDP•K72Z02	SDP•K61Z02
X11 (1NO+1NC)	SDP•K10X11	SDP•K80X11	SDP•K71X11	SDP•K72X11	SDP•K61X11
Y11 (1NO+1NC)	SDP•K10Y11	SDP•K80Y11	SDP•K71Y11	SDP•K72Y11	SDP•K61Y11
W02 (2NC)	SDP•K10W02	SDP•K80W02	SDP•K71W02	SDP•K72W02	SDP•K61W02
X21P (2NO+1NC)	SDP•K10X21P	SDP•K80X21P	SDP•K71X21P	SDP•K72X21P	SDP•K61X21P
X12P (1NO+2NC)	SDP•K10X12P	SDP•K80X12P	SDP•K71X12P	SDP•K72X12P	SDP•K61X12P
W03P (3NC)	SDP•K10W03P	SDP•K80W03P	SDP•K71W03P	SDP•K72W03P	SDP•K61W03P

SDM_K Series

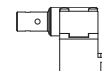
50 mm metal casing.
3 cable inlets. IP 66



K10

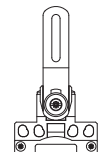


K80



K71

K72



K61

Contact blocks

	K10	K80	K71	K72	K61
Z11 (1NO+1NC)	SDM•K10Z11	SDM•K80Z11	SDM•K71Z11	SDM•K72Z11	SDM•K61Z11
Z02 (2NC)	SDM•K10Z02	SDM•K80Z02	SDM•K71Z02	SDM•K72Z02	SDM•K61Z02
X11 (1NO+1NC)	SDM•K10X11	SDM•K80X11	SDM•K71X11	SDM•K72X11	SDM•K61X11
Y11 (1NO+1NC)	SDM•K10Y11	SDM•K80Y11	SDM•K71Y11	SDM•K72Y11	SDM•K61Y11
W02 (2NC)	SDM•K10W02	SDM•K80W02	SDM•K71W02	SDM•K72W02	SDM•K61W02
X21P (2NO+1NC)	SDM•K10X21P	SDM•K80X21P	SDM•K71X21P	SDM•K72X21P	SDM•K61X21P
X12P (1NO+2NC)	SDM•K10X12P	SDM•K80X12P	SDM•K71X12P	SDM•K72X12P	SDM•K61X12P
W03P (3NC)	SDM•K10W03P	SDM•K80W03P	SDM•K71W03P	SDM•K72W03P	SDM•K61W03P

SBM_K Series

40 mm aluminium casing.
1 cable inlet. IP 66



K4000

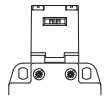
Key operated
90° adjustable head
(replaces K40)

Contact blocks

		K4000
Z11	(1NO+1NC)	SBM•K4000Z11
Z02	(2NC)	SBM•K4000Z02
X11	(1NO+1NC)	SBM•K4000X11
Y11	(1NO+1NC)	SBM•K4000Y11
W02	(2NC)	SBM•K4000W02
X21	(2NO+1NC)	SBM•K4000X21
X12	(1NO+2NC)	SBM•K4000X12
W03	(3NC)	SBM•K4000W03

SCM_K Series

60 mm aluminium casing.
3 cable inlets. IP 66



K4000

Key operated
90° adjustable head
(replaces K40)

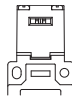


Contact blocks

		K4000
Z11	(1NO+1NC)	SCM•K4000Z11
Z02	(2NC)	SCM•K4000Z02
X11	(1NO+1NC)	SCM•K4000X11
Y11	(1NO+1NC)	SCM•K4000Y11
W02	(2NC)	SCM•K4000W02
X21	(2NO+1NC)	SCM•K4000X21
X12	(1NO+2NC)	SCM•K4000X12
W03	(3NC)	SCM•K4000W03

SBP_K Series

40 mm polymeric casing.
1 cable inlet. IP 65



K3000

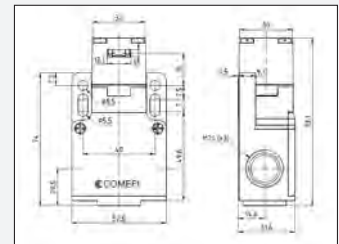
Key operated
90° adjustable head
(replaces K30)

Contact blocks

		K3000
Z11	(1NO+1NC)	SBP•K3000Z11
Z02	(2NC)	SBP•K3000Z02
X11	(1NO+1NC)	SBP•K3000X11
Y11	(1NO+1NC)	SBP•K3000Y11
W02	(2NC)	SBP•K3000W02
X21	(2NO+1NC)	SBP•K3000X21
X12	(1NO+2NC)	SBP•K3000X12
W03	(3NC)	SBP•K3000W03

SFP_K Series

50 mm polymeric casing.
3 Cable inlets.
IP 65



Contact blocks

		K5000
X11	(1NO+1NC)	SFP5K5000X11
W02	(2NC)	SFP5K5000W02
X12P	(1NO+2NC)	SFP5K5000X12P

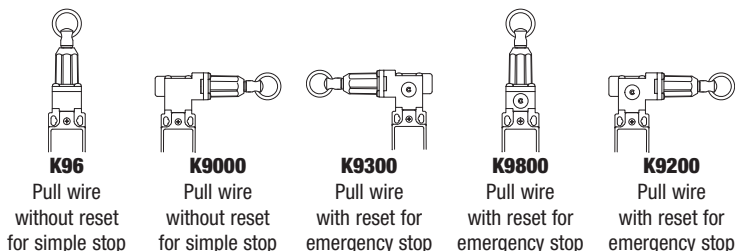
Operating keys (to be ordered separately)

Description	Bent key	Flat key	Bent key	Flat key	Shock absorbing bent key	Shock absorbing flat key	Adjustable joint key
Centre distance fixing holes (mm)	22	22	13	13	15	15	40
	Code	Code	Code	Code	Code	Code	Code
For operating heads K10 and K80	3	4	5	6	7	8	9
			Code	Code			Code
For operating heads K3000, K4000 and K5000			45	46			49



SM_K series

Metal casing. 30 mm width.
1 cable inlet - IP66

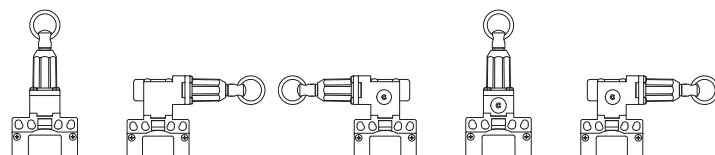


Contact elements		↻ K96	↻ K9000	↻ K9300	↻ K9800	↻ K9200
X11	(1NO+1NC)	SM•K96X11	SM•K9000X11	SM•K9300X11	SM•K9800X11	SM•K9200X11
W02	(2NC)	SM•K96W02	SM•K9000W02	SM•K9300W02	SM•K9800W02	SM•K9200W02
X12P	(1NO+2NC)	SM•K96X21P	SM•K9000X21P	SM•K9300X21P	SM•K9800X21P	SM•K9200X21P
X21P	(2NO+1NC)	SM•K96X12P	SM•K9000X12P	SM•K9300X12P	SM•K9800X12P	SM•K9200X12P
W03P	(3NC)	SM•K96W03P	SM•K9000W03P	SM•K9300W03P	SM•K9800W03P	SM•K9200W03P



SDM_K series

Metal casing. 50 mm width.
3 cable inlets - IP66

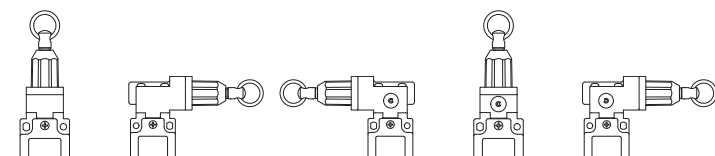


Contact elements		↻ K96	↻ K9000	↻ K9300	↻ K9800	↻ K9200
X11	(1NO+1NC)	SDM•K96X11	SDM•K9000X11	SDM•K9300X11	SDM•K9800X11	SDM•K9200X11
W02	(2NC)	SDM•K96W02	SDM•K9000W02	SDM•K9300W02	SDM•K9800W02	SDM•K9200W02
X12P	(1NO+2NC)	SDM•K96X21P	SDM•K9000X21P	SDM•K9300X21P	SDM•K9800X21P	SDM•K9200X21P
X21P	(2NO+1NC)	SDM•K96X12P	SDM•K9000X12P	SDM•K9300X12P	SDM•K9800X12P	SDM•K9200X12P
W03P	(3NC)	SDM•K96W03P	SDM•K9000W03P	SDM•K9300W03P	SDM•K9800W03P	SDM•K9200W03P



SBM_K series

Aluminium casing. 40 mm width.
1 cable inlet - IP66

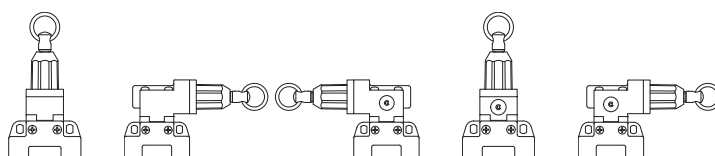


Contact elements		↻ K97	↻ K9100	↻ K9500	↻ K9900	↻ K9400
X11	(1NO+1NC)	SBM•K97X11	SBM•K9100X11	SBM•K9500X11	SBM•K9900X11	SBM•K9400X11
W02	(2NC)	SBM•K97W02	SBM•K9100W02	SBM•K9500W02	SBM•K9900W02	SBM•K9400W02
X12P	(1NO+2NC)	SBM•K97X21	SBM•K9100X21	SBM•K9500X21	SBM•K9900X21	SBM•K9400X21
X21P	(2NO+1NC)	SBM•K97X12	SBM•K9100X12	SBM•K9500X12	SBM•K9900X12	SBM•K9400X12
W03P	(3NC)	SBM•K97W03	SBM•K9100W03	SBM•K9500W03	SBM•K9900W03	SBM•K9400W03

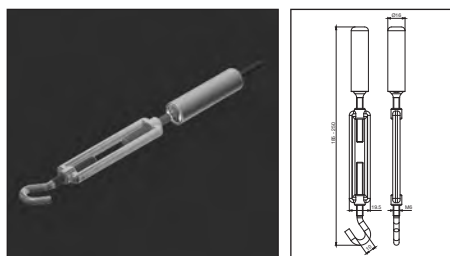
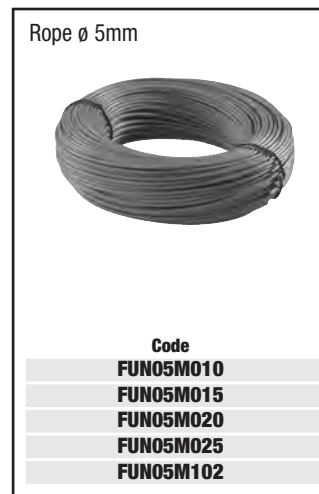
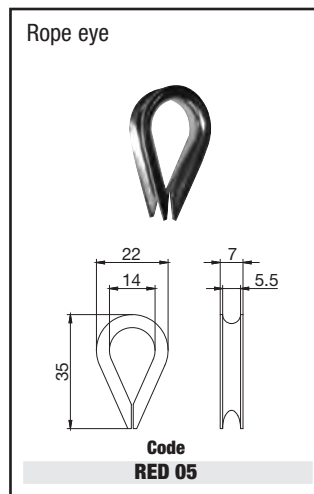
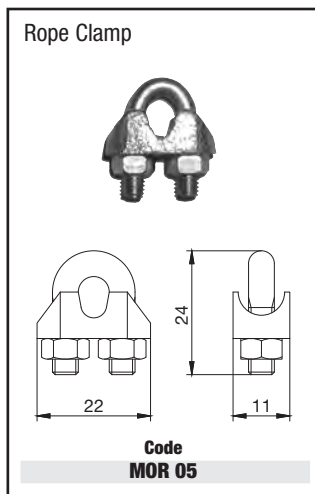
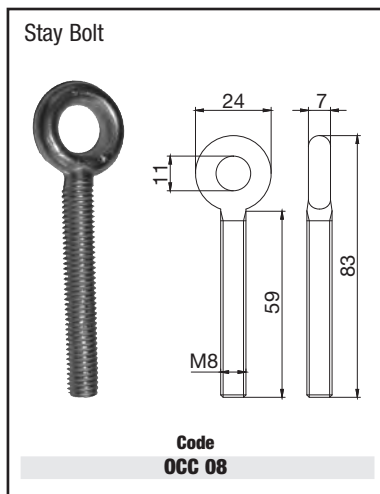


SCM_K series

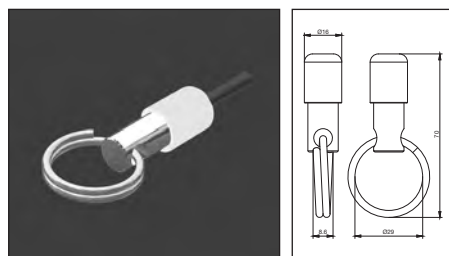
Aluminium casing. 60 mm width.
3 cable inlets - IP66



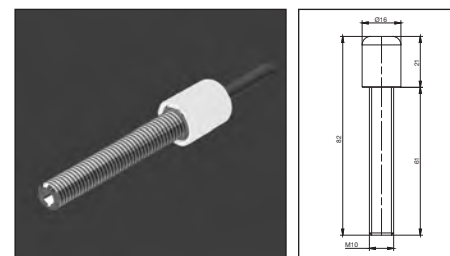
Contact elements		↻ K97	↻ K9100	↻ K9500	↻ K9900	↻ K9400
X11	(1NO+1NC)	SCM•K97X11	SCM•K9100X11	SCM•K9500X11	SCM•K9900X11	SCM•K9400X11
W02	(2NC)	SCM•K97W02	SCM•K9100W02	SCM•K9500W02	SCM•K9900W02	SCM•K9400W02
X12P	(1NO+2NC)	SCM•K97X21	SCM•K9100X21	SCM•K9500X21	SCM•K9900X21	SCM•K9400X21
X21P	(2NO+1NC)	SCM•K97X12	SCM•K9100X12	SCM•K9500X12	SCM•K9900X12	SCM•K9400X12
W03P	(3NC)	SCM•K97W03	SCM•K9100W03	SCM•K9500W03	SCM•K9900W03	SCM•K9400W03



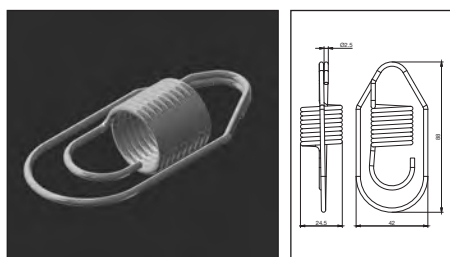
Code
SLS-FX1 **Description**
Hook stay bolt



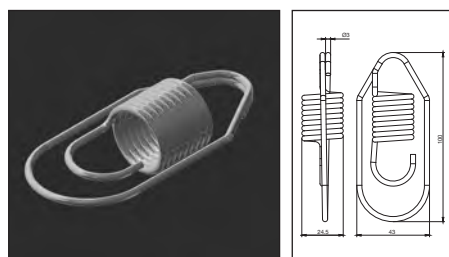
Code
SLS-FX2 **Description**
Fixing clamp



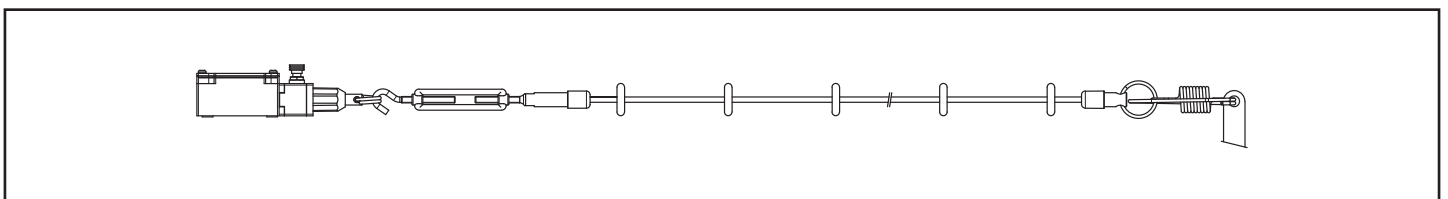
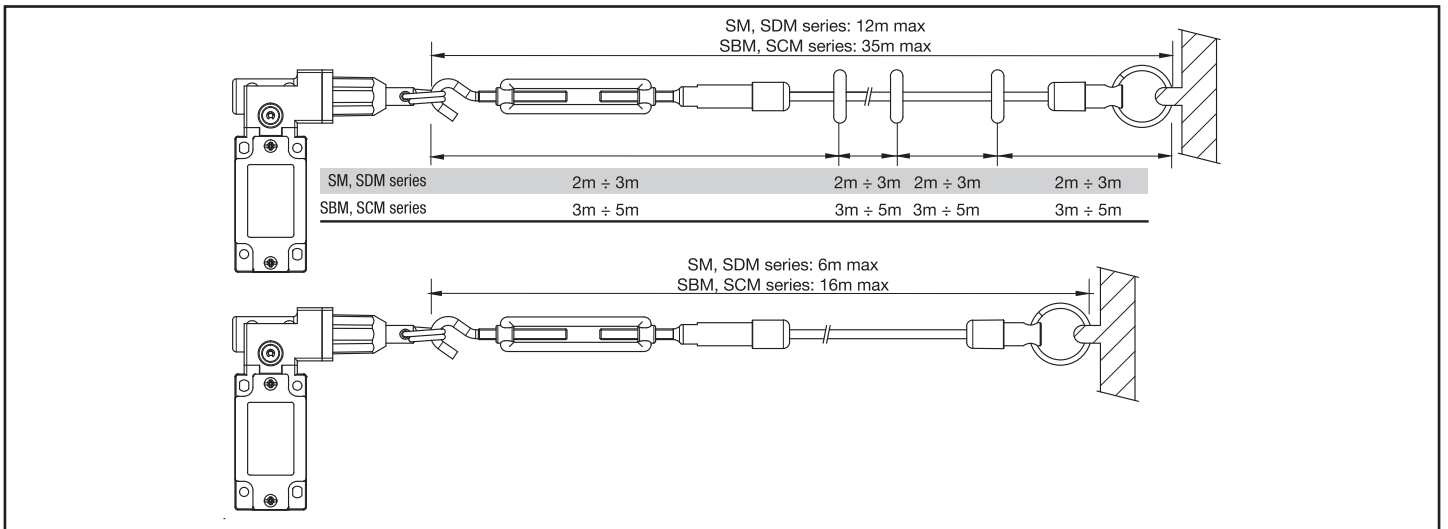
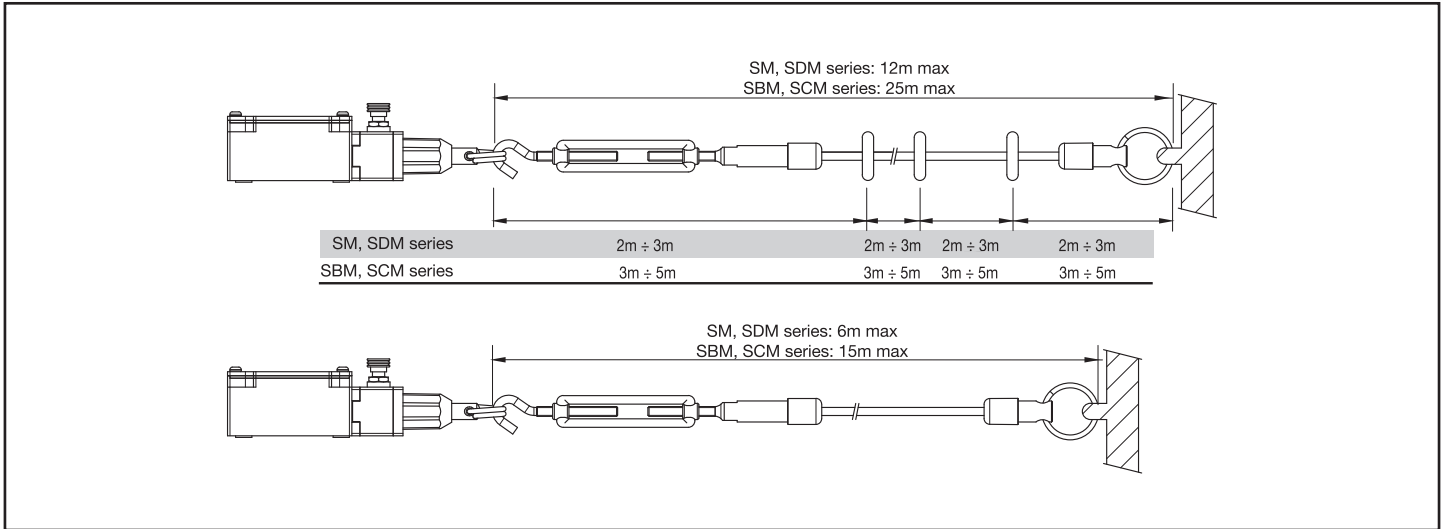
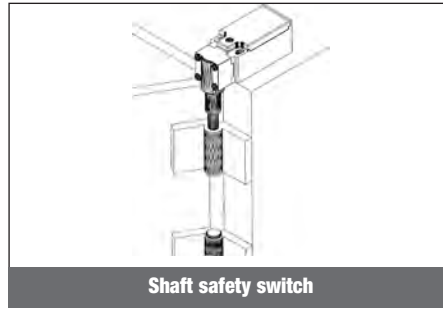
Code
SLS-FX3 **Description**
Stay bolt



Code
SLS-M1 **Description**
Spring for SM, SDM series



Code
SLS-M2 **Description**
Spring for SBM, SCM series



AP_R series 30 mm. polymeric limit switches - IP 65
EN 50047 - 1 cables entry



Cable inlets

AP1: PG 13.5

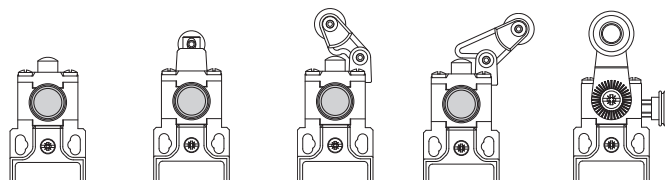
AP2: 1/2" NPT

(with adapter)

AP3: PG 11

AP4: M 16 x 1,5

AP5: M 20 x 1,5



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

Lever with nylon roller with reset

Contact blocks

	R11	R13	R31	R32	R41
Z11 (1NA+1NC)	AP•R11Z11	AP•R13Z11	AP•R31Z11	AP•R32Z11	AP•R41Z11
Z02 (2NC)	AP•R11Z02	AP•R13Z02	AP•R31Z02	AP•R32Z02	AP•R41Z02
X11 (1NA+1NC)	AP•R11X11	AP•R13X11	AP•R31X11	AP•R32X11	AP•R41X11
W02 (2NC)	AP•R11W02	AP•R13W02	AP•R31W02	AP•R32W02	AP•R41W02
X21P (2NA+1NC)	AP•R11X21P	AP•R13X21P	AP•R31X21P	AP•R32X21P	AP•R41X21P
X12P (1NA+2NC)	AP•R11X12P	AP•R13X12P	AP•R31X12P	AP•R32X12P	AP•R41X12P
W03P (3NC)	AP•R11W03P	AP•R13W03P	AP•R31W03P	AP•R32W03P	AP•R41W03P

Other versions available on request

AM_R series 30 mm. metal limit switches - with polymeric working heads - IP 66
1 cables entry



Cable inlets

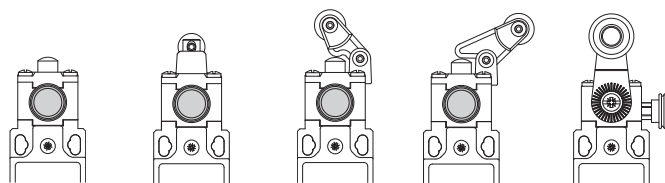
AM1: PG 13.5

AM2: 1/2" NPT

AM3: PG 11

AM4: M 16 x 1,5

AM5: M 20 x 1,5



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

Lever with nylon roller with reset

Contact blocks

	R11	R13	R31	R32	R41
Z11 (1NA+1NC)	AM•R11Z11	AM•R13Z11	AM•R31Z11	AM•R32Z11	AM•R41Z11
Z02 (2NC)	AM•R11Z02	AM•R13Z02	AM•R31Z02	AM•R32Z02	AM•R41Z02
X11 (1NA+1NC)	AM•R11X11	AM•R13X11	AM•R31X11	AM•R32X11	AM•R41X11
W02 (2NC)	AM•R11W02	AM•R13W02	AM•R31W02	AM•R32W02	AM•R41W02
X21P (2NA+1NC)	AM•R11X21P	AM•R13X21P	AM•R31X21P	AM•R32X21P	AM•R41X21P
X12P (1NA+2NC)	AM•R11X12P	AM•R13X12P	AM•R31X12P	AM•R32X12P	AM•R41X12P
W03P (3NC)	AM•R11W03P	AM•R13W03P	AM•R31W03P	AM•R32W03P	AM•R41W03P

Other versions available on request

DP_R series 50 mm. polymeric limit switches - IP 65
2 cables entries



Cable inlets

DP1: PG 13.5

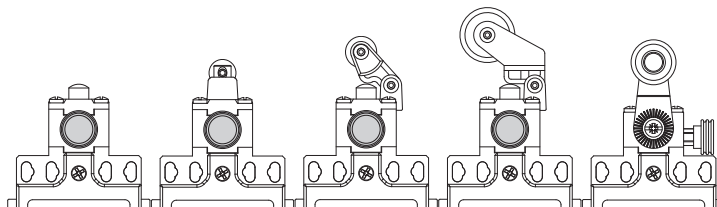
DP2: 1/2" NPT

(with adapter)

DP3: PG 11

DP4: M 16 x 1,5

DP5: M 20 x 1,5



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

Lever with nylon roller with reset

Contact blocks

	R11	R13	R31	R38	R41
Z11 (1NA+1NC)	DP•R11Z11	DP•R13Z11	DP•R31Z11	DP•R38Z11	DP•R41Z11
Z02 (2NC)	DP•R11Z02	DP•R13Z02	DP•R31Z02	DP•R38Z02	DP•R41Z02
X11 (1NA+1NC)	DP•R11X11	DP•R13X11	DP•R31X11	DP•R38X11	DP•R41X11
W02 (2NC)	DP•R11W02	DP•R13W02	DP•R31W02	DP•R38W02	DP•R41W02
X21P (2NA+1NC)	DP•R11X21P	DP•R13X21P	DP•R31X21P	DP•R38X21P	DP•R41X21P
X12P (1NA+2NC)	DP•R11X12P	DP•R13X12P	DP•R31X12P	DP•R38X12P	DP•R41X12P
W03P (3NC)	DP•R11W03P	DP•R13W03P	DP•R31W03P	DP•R38W03P	DP•R41W03P

Other versions available on request

DM_R series 50 mm. metal limit switches - with polymeric working heads - IP 66
3 cables entries



Cable inlets

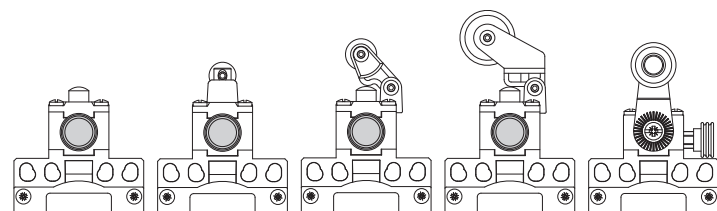
DM1: PG 13.5

DM2: 1/2" NPT

DM3: PG 11

DM4: M 16 x 1,5

DM5: M 20 x 1,5



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

Lever with nylon roller with reset

Contact blocks

	R11	R13	R31	R38	R41
Z11 (1NA+1NC)	DM•R11Z11	DM•R13Z11	DM•R31Z11	DM•R38Z11	DM•R41Z11
Z02 (2NC)	DM•R11Z02	DM•R13Z02	DM•R31Z02	DM•R38Z02	DM•R41Z02
X11 (1NA+1NC)	DM•R11X11	DM•R13X11	DM•R31X11	DM•R38X11	DM•R41X11
W02 (2NC)	DM•R11W02	DM•R13W02	DM•R31W02	DM•R38W02	DM•R41W02
X21P (2NA+1NC)	DM•R11X21P	DM•R13X21P	DM•R31X21P	DM•R38X21P	DM•R41X21P
X12P (1NA+2NC)	DM•R11X12P	DM•R13X12P	DM•R31X12P	DM•R38X12P	DM•R41X12P
W03P (3NC)	DM•R11W03P	DM•R13W03P	DM•R31W03P	DM•R38W03P	DM•R41W03P

Other versions available on request

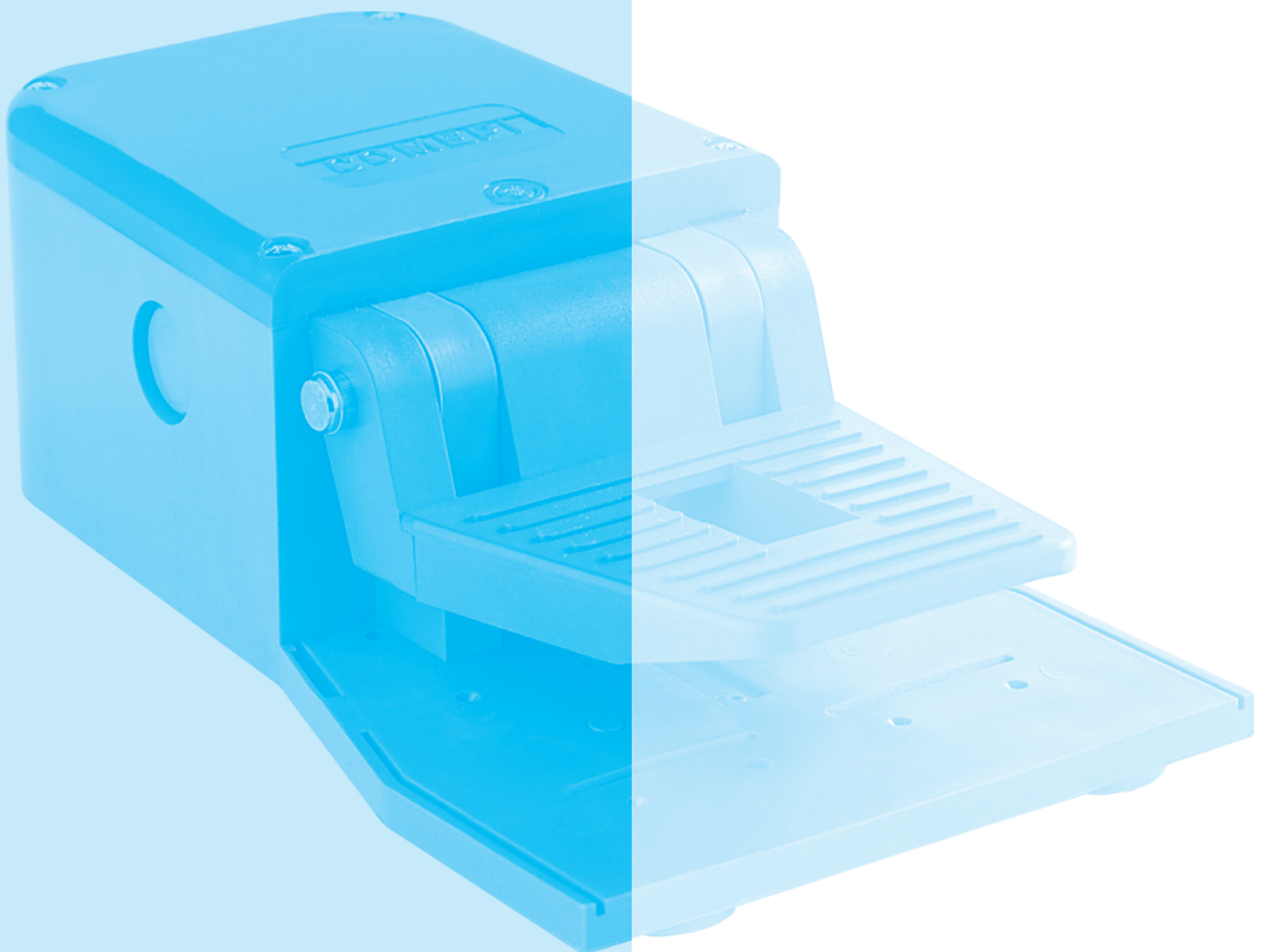


NOTES

A large rectangular area filled with a light blue grid pattern, intended for writing notes. The grid lines are thin and evenly spaced.



FOOT SWITCHES



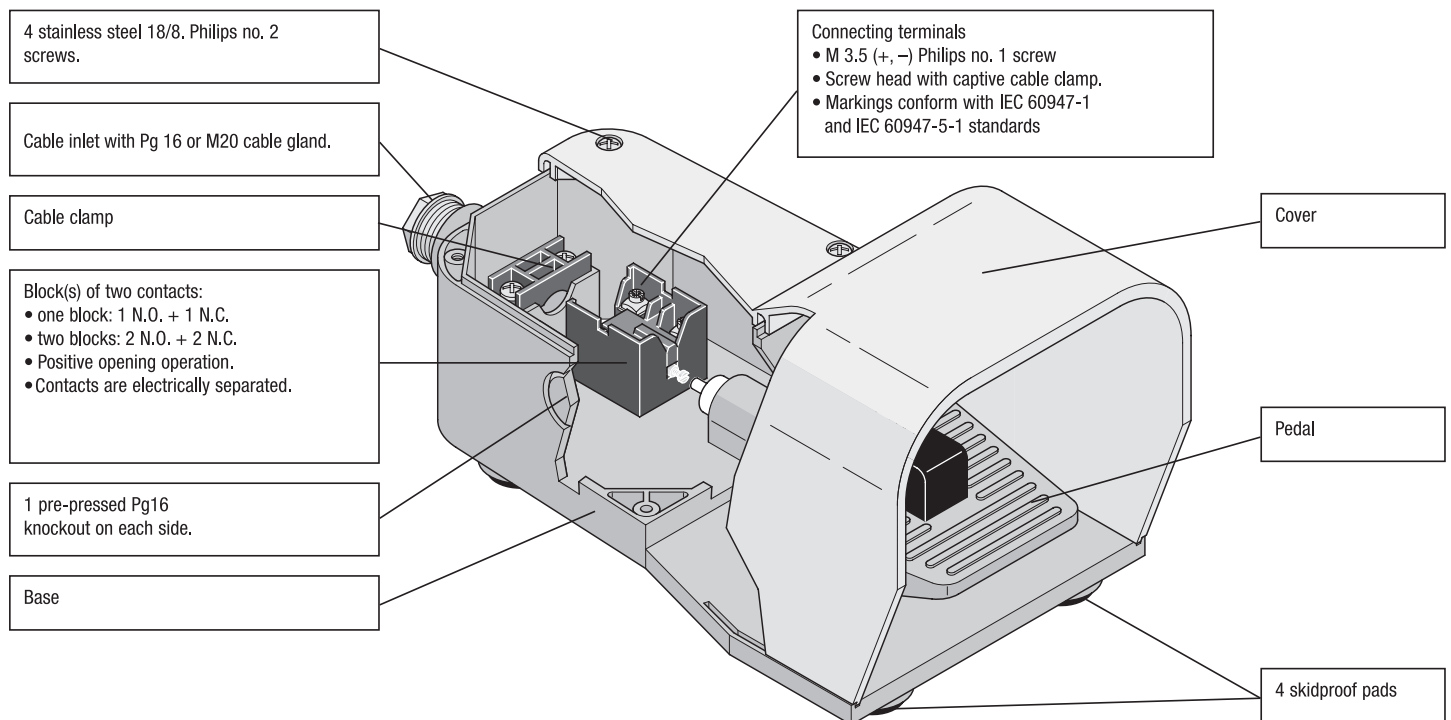
Applications

Foot switch operated machines such as: shearing machines, spinning machines, spinning lathers, machine tools, wrapping machines, riveting presses, etc. Foot switches come in five operation formats:

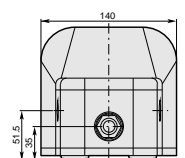
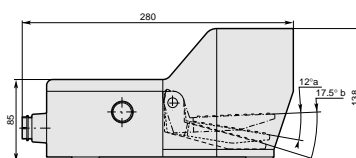
- **Free movement:** contact position follows pedal movement: actuated when the pedal is pushed down, released when pedal is in state of rest.
- **Foot switch locked in neutral position:** same operation as above, after unlocking the pedal with the end of the foot.
- **Foot switch latched in low position:** same operation as free movement, excepted that a state of rest is obtained only after having unlatched the pedal with the end of the foot.
- **Free movement with two-stage actuating force:** two different contact blocks are actuated with a different force on the lever.
- **Foot switch locked in neutral position with two-stage actuating force:** same operation as above, after unlocking the pedal with the end of the foot

Description of the switch

- **Dimensions:** 280 x 140 x 138mm.
- **Materials: Standard version (IMQ approved):** Base, cover and pedal made of shock resistant ABS material.
Self-extinguishing / VO (IMQ, UL, CSA approved): Base, cover and pedal made of Polycarbonate/ABS-VO.
Metal version / VO-M (IMQ, UL, CSA approved): Cover made in die cast aluminium, base and pedal made of Polycarbonate/ABS-VO.
- **Colour choice:** Grey base; grey, yellow or red cover.
- **Variations:** Grey base, half-red cover. Especially used for emergency stop function.



Dimensions (in mm)



Symbols

Example: P S 1 2 1 1 / V0

Structure: P [] [] [] [] [] / []

Type

S = Simple Foot Switch
D = Double Foot Switch

Electrical connection

1 = Pg 16 cable gland
2 = M20 cable gland

Devices

1 = Free movement of the lever
2 = Movement of the lever dependent of the safety device notch
3 = Device to maintain the lever in lowered position
4 = Free movement with two-stage actuating force
5 = With safety device notch and two-stage actuating force

Contact blocks

1 - One (NO+NC) snap action contact
2 - One (NO+NC) slow action contact
3 - Two (NO+NC) snap action contacts
4 - Two (NO+NC) slow action contacts

Cover material

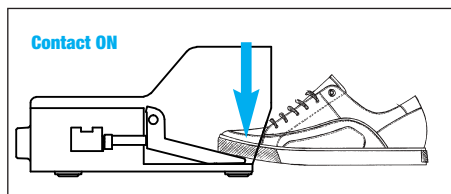
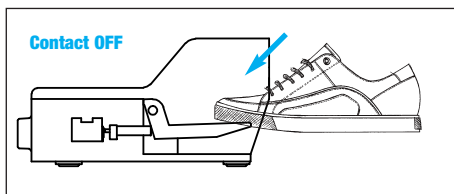
- = Shock resistant ABS (standard)
VO = UL approved self-extinguishing
VO-M = UL approved with aluminium cover

Cover colour

1 = Yellow / 2 = Grey / 3 = Yellow + Grey (PD series)
4 = Red / 5 = Half red cover / 7 = Half yellow cover / 8 = Half grey cover

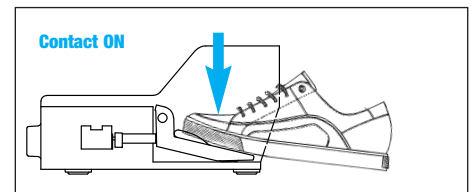
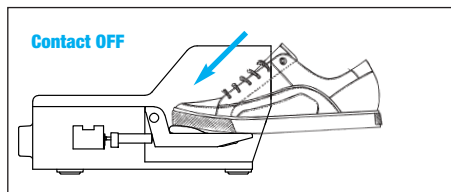
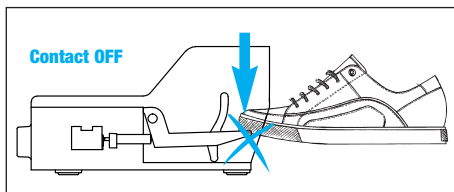
Devices

1: Free movement of the lever



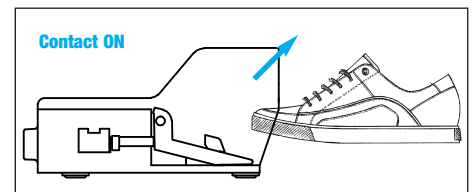
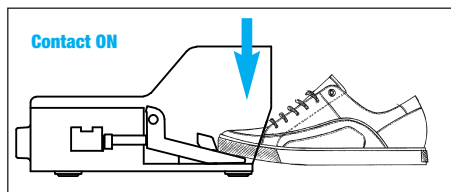
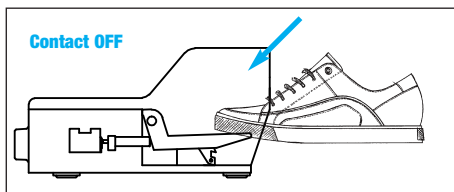
The lever can be actuated without any particular device.

2: Movement of the lever dependent of the safety device notch

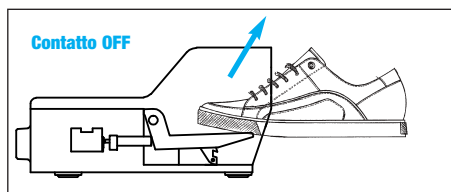
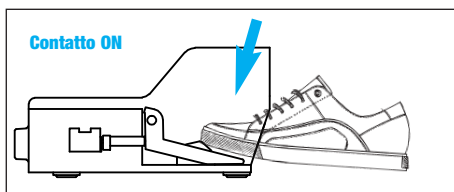


The pedal can be actuated only by lowering the safety lever fully inserting the foot, thus preventing any accidental actuation.

3: Device to maintain the lever in lowered position

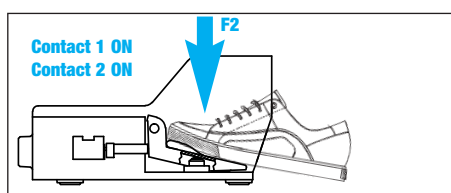
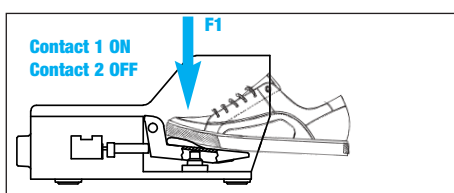


By pushing the lever the contact switches and the lever remains locked in lowered position.



Push the locking device in order to unlock the pedal actuator. Once you release the lever the contacts return to their initial position.

4: Free movement with two-stage actuating force



By applying a light pressure F1 on the lever, the first contact block will be actuated while the second keeps in state. An higher pressure F2 on the lever will switch also the second contact block.

5: With safety device notch and two-stage actuating force

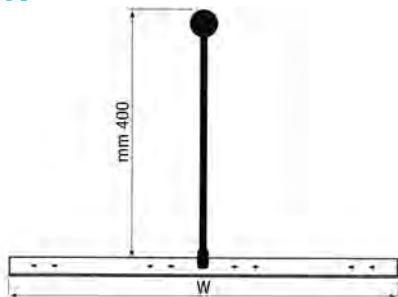
Same as above but the pedal can be actuated only by completely inserting the foot in the device.

Carrying Rod Kits

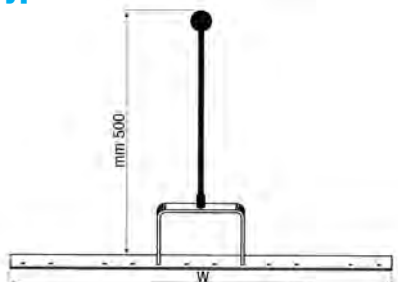
Example of application



Type A



Type B

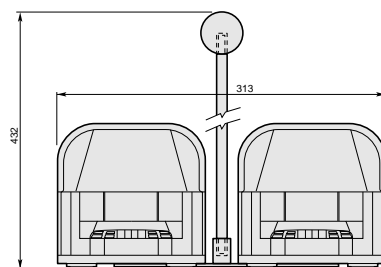


Order Code	Description	W (mm)	Type
PD1000	Max 2 Foot Switches*	350	A
PD1001	Max 3 Foot Switches*	520	B
PD1002	Max 4 Foot Switches*	700	A
PD1003	Max 5 Foot Switches*	850	B

* Foot Switches not included

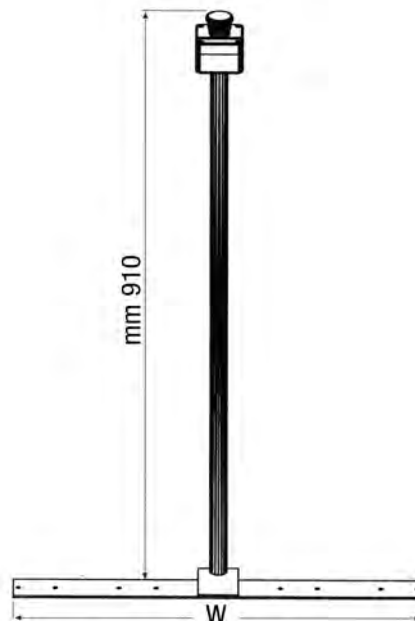
Note: Each carrying rod kit includes necessary fixing screws and cable glands for the specified number of foot switches.

Example of double foot switch application



Metal Steel Frame

Example of application



Order Code	Description	W (mm)
GR2025	For 1 Foot Switch only*	230
GR2026	Max 2 Foot Switches*	350
GR2027	Max 3 Foot Switches*	530
GR2028	Max 4 Foot Switches*	700

* Foot Switches not included

Attention!
Push button and plastic box not included:
please consult our "Control Units 022" catalog.

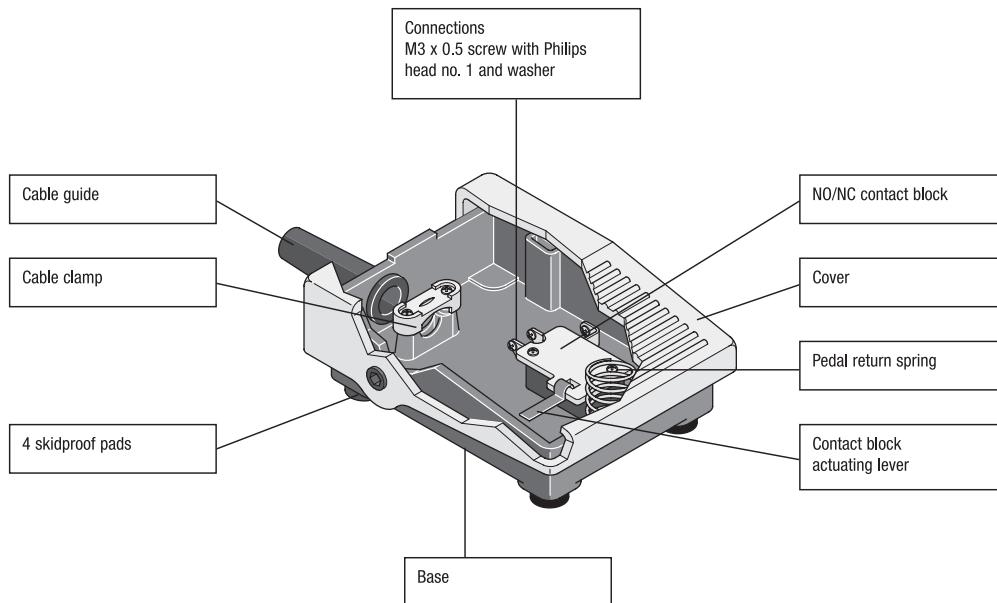
Note: Each carrying rod kit includes necessary fixing screws and cable glands for the specified number of foot switches.

Applications

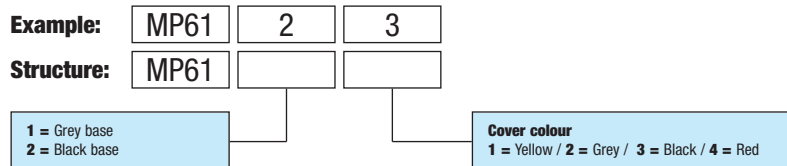
Comepi foot switches of the MP series are plastic foot switches in mini design that besides their robust form and technical versatility are specially convincing for their functionality and ergonomic design. They can be applied on foot switch operated machines such as: shearing machines, spinning lathers, machine tools, wrapping machines, riveting presses, etc.

Description of MP6... Mini Foot Switches

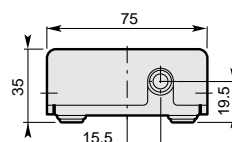
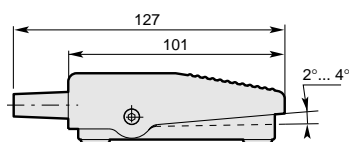
- **Dimensions:** 100 x 75 x 34 mm.
- **Materials:** cover and base made of self-extinguishing ABS.
- **Colour choice:** black or grey base; black, grey, yellow or red cover.



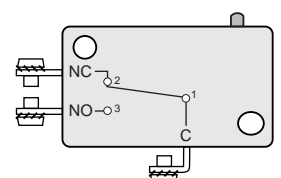
Symbols



Dimensions (in mm)



NO / NC Contact Block



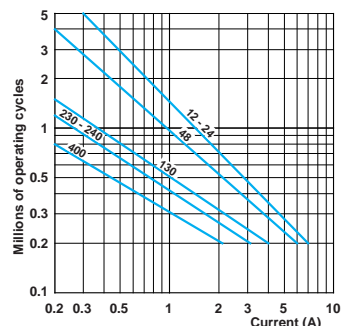
General Technical Data

Standards	Mini Foot Switch	Foot Switch with Cover
	IEC 1058-1	IEC 60947-5-1
Certifications - Approvals	–	IMQ - UL and CSA (upon request) - EAC
Air temperature near the device		
– during operation	°C	– 25 ... + 70
– for storage	°C	– 30 ... + 80
Climatic withstand	–	according to IEC 60068-2-3 and salty mist according to IEC 60068-2-11
Shock withstand (according to IEC 60068-2-27 and EN 60068-2-27)	g	50g (1/2 sinusoidal shock for 11 ms) no change in contact position
Degree of protection (according to IEC 60529 and EN 60529)	IP 40	IP 65
Operating Torque	N.m	0,25
Operating angle	Degree	15
Cable inlet	Cable guide ø 6 mm; ø max. 8.5	Pg 16

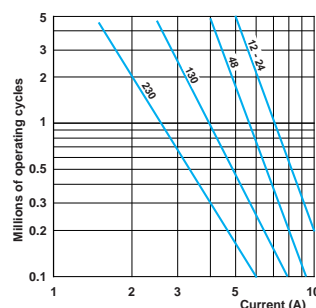
Electrical Data

Rated insulation voltage U_i	V	250	690 (according to IEC 60947-1 and EN 60947-1) Degree of pollution 3
Rated impulse withstand voltage U_{imp} (according to IEC 60947-1 and EN 60947-1)	kV	1	6
Conventional free air thermal current I_{th} $\theta < 40$ °C		15	10 (according to IEC 60947-1)
Short-circuit protection $U_p < 500$ V a.c. - gG (gl) type fuses	A	10	10
Rated operational current	A	3 (250 V a.c.)	A 600 (according to UL 508 and CSA C22-2 n° 14)
	A	0.06 (230 V d.c.)	Q 600 (according to UL 508 and CSA C22-2 n° 14)
AC-15 (according to IEC 60947-5-1)	24 V A	–	10
	120 V A	–	6
	400 V A	–	4
DC-13 (according to IEC 60947-5-1)	24 V A	–	6
	125 V A	–	0.55
	250 V A	–	0.4
Resistance between contacts	mΩ	30	25
Connecting terminals		M3 x 0.5 screw with Philips head no. 1 and washer	M3.5 (+, –) pozidriv with cable clamp
Positive opening operation (according to IEC 947-5-1)		–	⊖
Connecting capacity	1 or 2 x mm ²	–	0.75 ... 2.5
Terminal marking		(Refer to contact block page 95)	According to IEC 60947-5-1
Mechanical durability	Millions of operations	10	30
Electrical durability	Operations	100 000	utilization categories AC-15 and DC-13 (Load factor of 0.5 according to curves below)

AC-15 - Snap action



AC-15 - Slow action



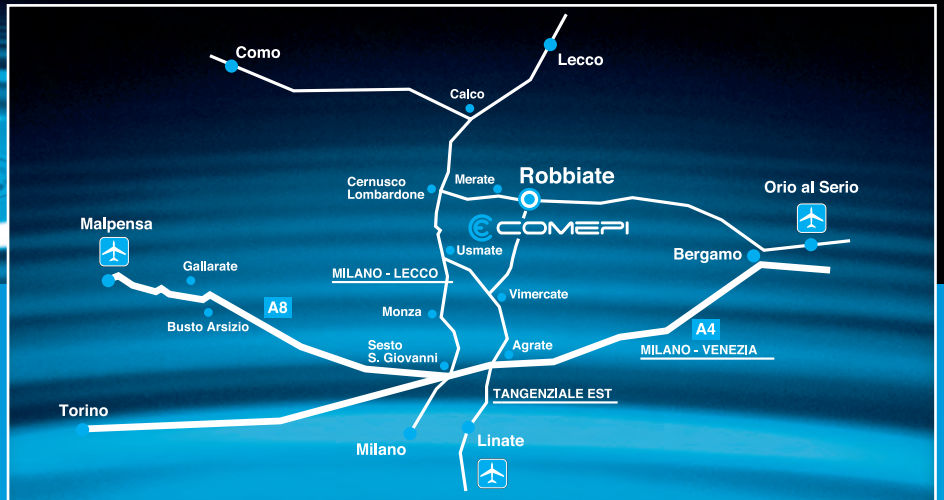
DC-13	Snap action	Slow action
	Power breaking for a durability of 5 million operating cycles	
Voltage 24 V	9.5 W	12 W
Voltage 48 V	6.8 W	9 W
Voltage 110 V	3.6 W	6 W

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