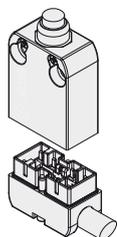


## Description



In line with the objectives of design and innovation, Pizzato Elettrica has developed the three modular NA-NB-NF series of prewired switches that are characterized by innovative and unique features. This product range implements new solutions required by the market and contains decades of company experience in the position switch sector.

## Switches with connectors



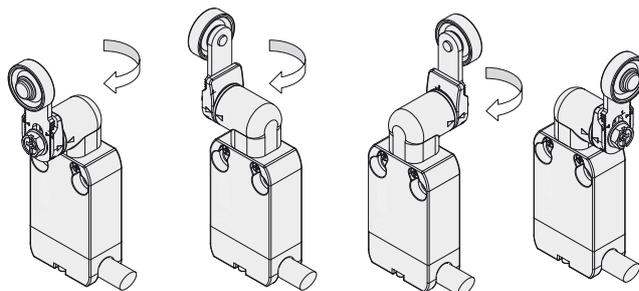
The new fundamental characteristic of these prewired switch series is the separation between the switch body and the wired connector.

The connector allows the user to change a product in the field without having to completely remove the wires.

Moreover this way it's easier to assemble products with different cable types and lengths.

## Orientable heads

All heads can be turned in 90° steps. The new head for revolving lever has been designed with dimensions contained inside the switch profile. This way it's possible to install switches by the wall.



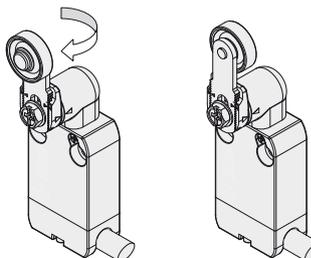
## Protection degrees IP67 and IP69K

**IP69K**  
**IP67**

These devices are designed to be used in the toughest environmental conditions and they pass the IP67 immersion test according to IEC 60529. They can therefore be used in all environments where the maximum protection of the housing is required. Special

measures also allow devices to be used even in machines which are subjected to washing with high pressure warm water jets. In fact these devices pass the IP69K test according to ISO 20653, using jets of water to 100 atmospheres at a temperature of 80°C.

## Overturning levers



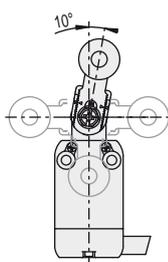
For switches with swivelling lever the lever can be fastened straight or reversed, maintaining the positive coupling.

This makes it possible to have two different work plans of the lever.

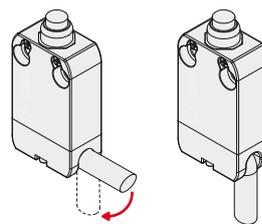
## Adjustable levers

For switches with swivelling lever the lever can be adjusted in 10° steps over the entire 360° range.

The positive movement transmission is always guaranteed thanks to the particular geometrical coupling between the lever and the revolving shaft as prescribed for safety applications by the German standard BG-GS-ET-15.



## Orientable cable output



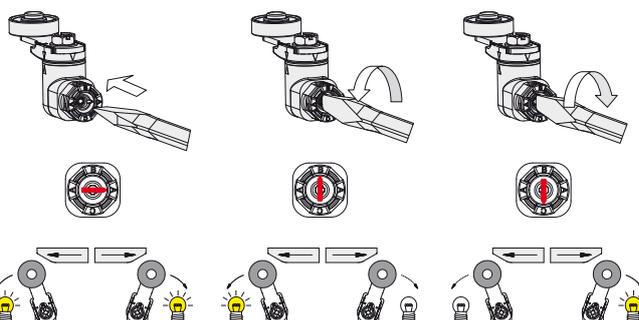
The wired connector is provided with a notch to allow the cable bending up to 90°.

Therefore it's possible to install it at the wall and it's easier to adjust the cable to the supporting flange.

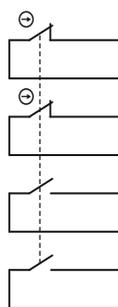
## Unidirectional heads

All switches with swivelling lever are supplied with a selector which allows to choose the lever operating direction.

The following operations are possible: right-left (industrial standard set up), only from right or only from left. You can select the operating direction by revolving a special ring nut inside this type of heads.



## Positive opening contact blocks with 1-2-3-4 poles

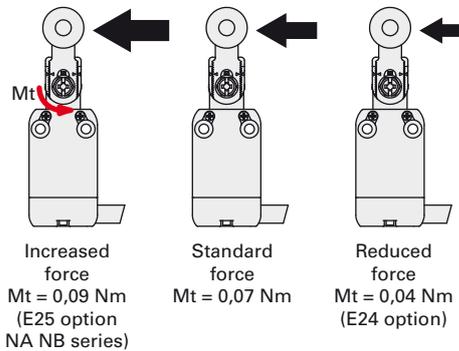


These series contact blocks are versatile and compact. In the same space of the previous versions now it's possible to have up to 4 different contacts, galvanically separated and provided with positive opening (NC contacts). The allowed standard combinations are 1NO+1NC, 2NC, 1NO+2NC, 2NO+2NC. Other combinations available on request.

Contact blocks have been studied so that they maintain the same connections position in the connector independently of the type of action (slow, snap) and the number of contacts. This allows use of the same cable with connector both for slow action and snap action units.

### Increased or reduced actuating force

For actuators with swivelling levers, versions with increased or reduced actuating force are available on request. This feature allows selection of a switch perfectly tailored for the application. For further information contact the Technical Department.

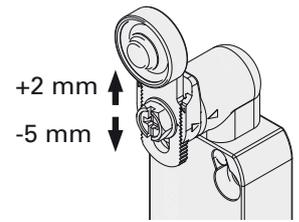


### Adjustable levers with anti-unscrewing washer

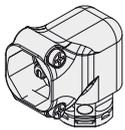
Some applications present a problem due to fixing variations and carpentry laps.

In other cases small final adjustments are needed owing to the application. The majority of revolving levers for NA, NB, NF series can be adjusted for extension at 1mm intervals.

This feature, in conjunction with the radial adjusting actuator provides unique flexibility of alignment whilst still maintaining the geometrical coupling between the lever and the revolving shaft as prescribed for safety applications.



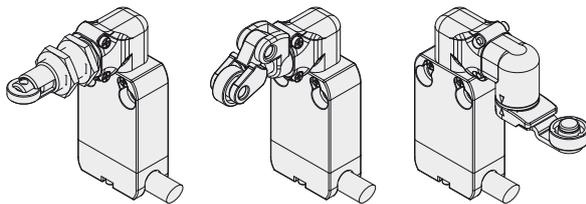
### 90° transmission block for actuators



This component largely increases the application possibilities of this product range.

Actuators that can be attached directly to the switch body can also be fitted via the Transmission Block, increasing the positioning options and therefore the application possibilities.

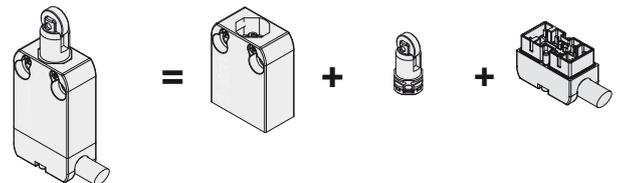
The transmission block can be used also with swivelling lever heads. Even though it is possible with some actuators, it is not advisable to connect more than one transmission block to the same switch.



### Switch components available separately

This product series is designed in a modular format, so that its single pieces can be purchased separately. This is advantageous to distributors of electrical material for stock flexibility and final customers for spare parts or new combinations.

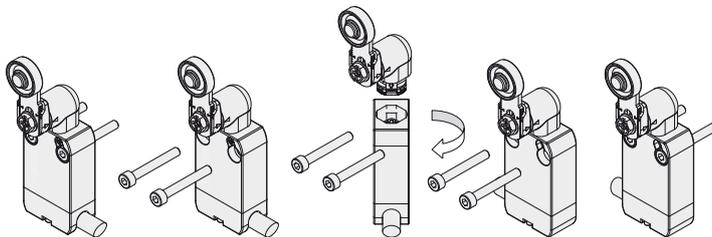
**NA B110BB-DN2**    **NA B11000**    **VN AA0BB**    **VN CM11DN2**



### Reversible housing

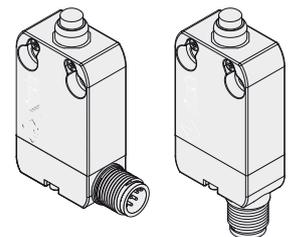
The fixing holes and switch body shapes, added to the possibility of rotating the head, make this switch perfectly symmetrical.

If it's necessary to have the switch with cable output from left (the connector cannot be rotated), then it's possible to rotate completely the device maintaining the final actuator position unchanged.



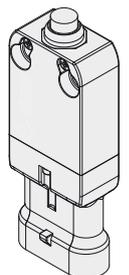
### M12 connectors

The long experience of Pizzato Elettrica has led to the realization of the first 4-5-pin M12 connector integrated in a safety switch complying with the requirements of EN 60947-5-1. Its high insulation voltage  $U_i$  250 Vac allows to mark it as suitable for safety applications.



### AMP connectors

The AMP connectors for 2-contact versions are also available. These connectors, especially developed for the automotive sector, are exempt from vibrations thanks to rapid coupling.



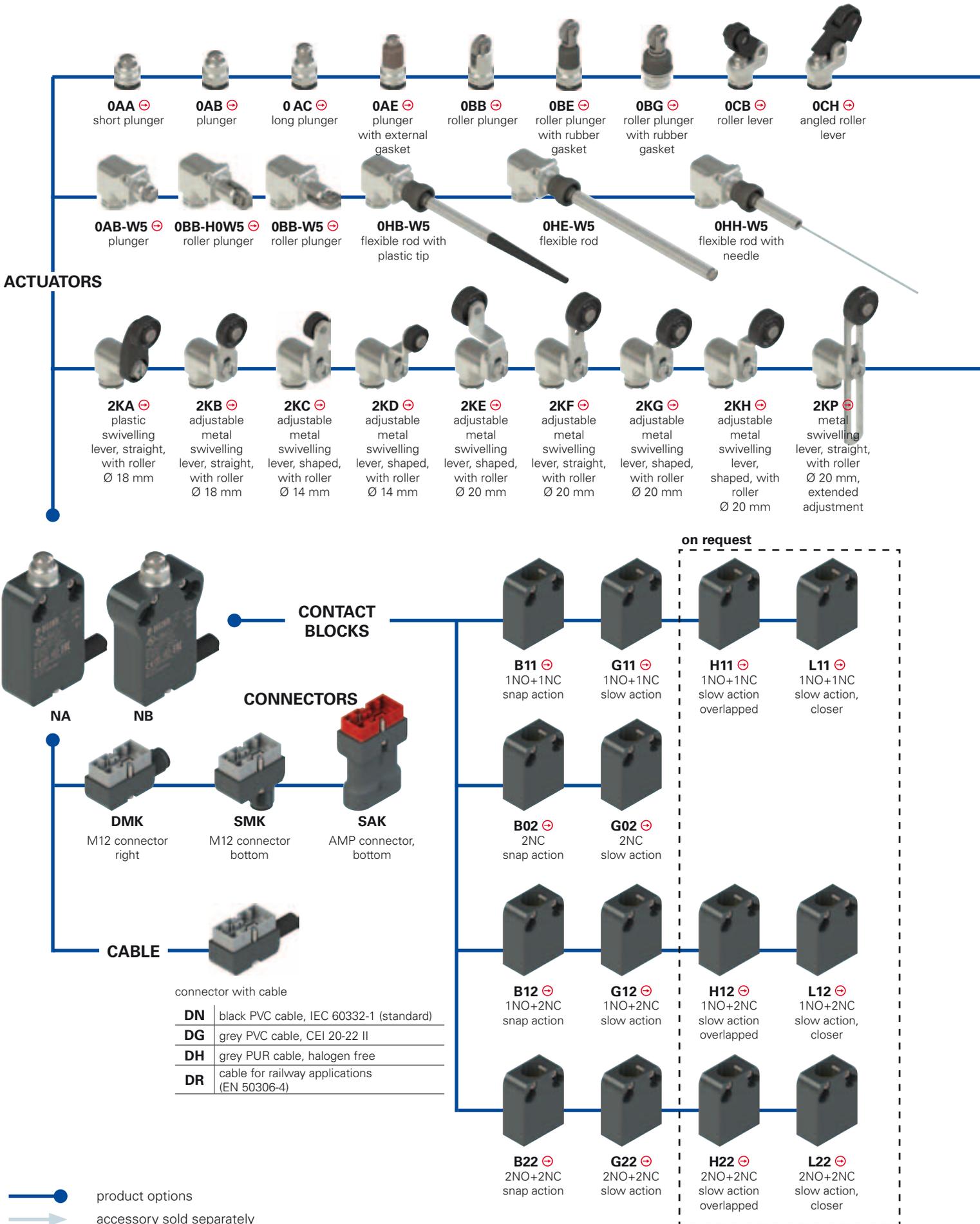
### Extended temperature range

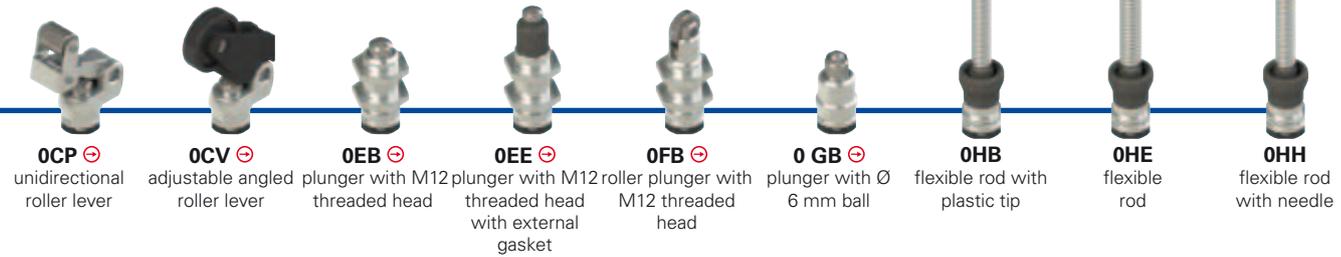
**-40°C**

This range of switches is also available in a special version with an ambient operating temperature range of -40°C to +80°C.

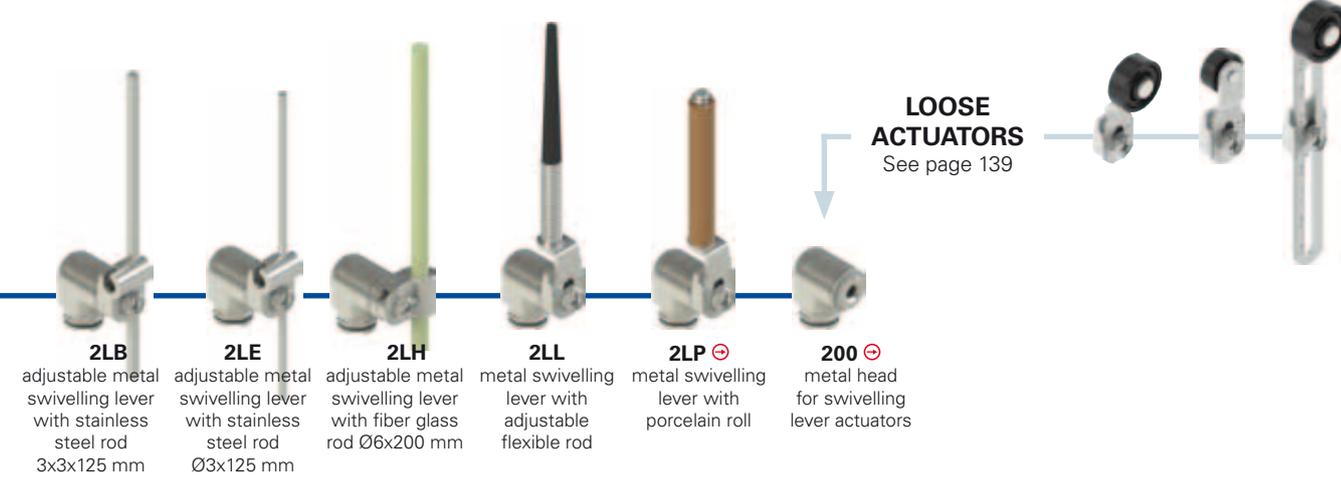
They can be used for applications in cold stores, sterilisers and other devices with low temperature environments. Special materials that have been used to realize these versions, maintain unchanged their features also in these conditions, widening the installation possibilities.

**Selection diagram for NA-NB series items sold assembled**





**OCP** ⊕ unidirectional roller lever  
**OCV** ⊕ adjustable angled roller lever  
**OEB** ⊕ plunger with M12 threaded head  
**OEE** ⊕ plunger with M12 threaded head with external gasket  
**OFB** ⊕ roller plunger with M12 threaded head  
**OGB** ⊕ plunger with Ø 6 mm ball  
**OHB** flexible rod with plastic tip  
**OHE** flexible rod  
**OHH** flexible rod with needle



**2LB** adjustable metal swivelling lever with stainless steel rod 3x3x125 mm  
**2LE** adjustable metal swivelling lever with stainless steel rod Ø3x125 mm  
**2LH** adjustable metal swivelling lever with fiber glass rod Ø6x200 mm  
**2LL** metal swivelling lever with adjustable flexible rod  
**2LP** ⊕ metal swivelling lever with porcelain roll  
**200** ⊕ metal head for swivelling lever actuators

**LOOSE ACTUATORS**  
See page 139

**Code structure** **Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

article options

**NA B110AB-DN2 GR7T6W5**

<b>Housing</b>		<b>Transmission block</b>	
<b>NA</b> metal, hole spacing 20 mm			without transmission block
<b>NB</b> metal, hole spacing 25 mm		<b>W5</b> 90° transmission block	
<b>Contact blocks</b>		<b>Ambient temperature</b>	
<b>B11</b> 1NO+1NC, snap action			-25°C ... +80°C
<b>B02</b> 2NC, snap action		<b>T6</b>	-40°C ... +80°C
<b>B12</b> 1NO+2NC, snap action		<b>Rollers</b>	
<b>B22</b> 2NO+2NC, snap action			standard roller
<b>BA1</b> 1NO+1NC, snap action in deviation (available only with M connector)		<b>R30</b>	stainless steel Ø 10.6 mm
<b>G11</b> 1NO+1NC, slow action		<b>R29</b>	stainless steel, Ø 13 mm
<b>G02</b> 2NC, slow action		<b>R18</b>	technopolymer, Ø 14 mm
<b>G12</b> 1NO+2NC, slow action		<b>R23</b>	stainless steel, Ø 14 mm
<b>G22</b> 2NO+2NC, slow action		<b>R7</b>	technopolymer, Ø 18 mm
<b>H11</b> 1NO+1NC, slow action, overlapped		<b>R22</b>	technopolymer, Ø 20 mm
<b>H12</b> 1NO+2NC, slow action, overlapped		<b>R24</b>	stainless steel, Ø 20 mm
<b>H22</b> 2NO+2NC, slow action, overlapped		<b>R19</b>	technopolymer, Ø 22 mm
<b>L11</b> 1NO+1NC, slow action closer		<b>R25</b>	technopolymer, Ø 35 mm
<b>L12</b> 1NO+2NC, slow action closer		<b>Contact type</b>	
<b>L22</b> 2NO+2NC, slow action closer			silver contacts (standard)
Other contact blocks on request.		<b>G</b>	silver contacts with 1 µm gold coating
<b>Actuator heads</b>		<b>Connection type</b>	
<b>0</b>	without head	<b>2</b>	cable, length 2 m (standard)
<b>2</b>	head for swivelling lever actuators	<b>5</b>	cable, length 5 m
<b>Actuators</b>		<b>K</b>	connector
<b>00</b>	without actuator	Other cable lengths on request.	
<b>AA</b>	short plunger	<b>Cable or connector type</b>	
<b>AB</b>	plunger	<b>N</b>	black PVC cable, IEC 60332-1 (standard)
...	.....	<b>G</b>	grey PVC cable, CEI 20-22 II
<b>Output direction</b>		<b>H</b>	grey PUR cable, halogen free
<b>D</b>	cable or connector to the right	<b>R</b>	cable for railway applications (EN 50306-4)
<b>S</b>	connector at bottom	<b>M</b>	M12 connector
		<b>A</b>	AMP superseal 1.5 connector

Check feasibility using table on page 122.



### Main features

- Metal housing, right or bottom cable output
- Protection degrees IP67 and IP69K
- 4 types of integrated cable available
- Versions with M12 connector for safety applications ⊕
- Versions with AMP connector
- 14 contact blocks available
- 36 actuators available

### Markings and quality marks:



IMQ approval:	CA02.04562
UL approval:	E131787
CCC approval:	2013010305653520
EAC approval:	RU C-IT DM94.B.01024

### ⚠ Installation for safety applications:

Use only switches marked with the symbol ⊕ aside the product code. Always connect the safety circuit to the **NC contacts** (normally closed contacts: see "internal connections" on page 122) as stated in **EN 60947-5-1, encl. K, par. 2**. Actuate the switch **at least up to the positive opening travel** shown in the travel diagrams on page 244. Operate the switch **at least with the positive opening force**, indicated between brackets below each article, aside the minimum force value. All applicable standards must be respected.

⚠ **If not expressly indicated in this chapter, for correct installation and utilization of all articles see chapter utilization requirements from page 235 to page 246.**

⚠ **Important: Switch off the circuit voltage before disconnecting the connector from the switch. The connector is not suitable for separation of electrical loads. According to EN 60204-1, 2NO+2NC versions with 8-pin M12 and AMP connector can be used only in PELV circuits.**

### Technical data

#### Housing

Metal housing, baked powder coating, UV resistant  
Version with integrated cable, standard length 2 m. Other lengths and special cables on request.  
Versions with integrated M12 connector, 5 or 8 poles  
Protection degree:

IP67 according to EN 60529  
IP69K according to ISO 20653  
(Protect the cables from direct high-pressure and high-temperature jets)

Corrosion resistance in saline mist:

≥300 hours in NSS according to ISO 9227

#### General data

Ambient temperature: See table on page 122  
Max. actuation frequency: 3600 operating cycles<sup>1</sup>/hour  
Mechanical endurance: 20 million operating cycles<sup>1</sup>  
Mounting position: any  
Safety parameters:  
B<sub>10d</sub>: 40,000,00 for NC contacts  
Mechanical interlock, not coded: type 1 according to EN ISO 14119  
Vibration resistance (actuators 0BB, 2KB, 2KC, 2KD): 5 ... 150 Hz (7.9 m/s<sup>2</sup>) according to EN 61373 cl.9

Tightening torques for installation:

see pages 235-246

(1) One operation cycle means two movements, one to close and one to open contacts, as defined in EN 60947-5-1.

#### Electrical data

Rated impulse withstand voltage (U<sub>imp</sub>): 4 kV  
Conditional short circuit current: 1000 A according to EN 60947-5-1  
Pollution degree: 3

#### In conformity with standards:

IEC 60947-5-1, EN 60947-5-1, IEC 60204-1, EN 60204-1, EN ISO 14119, EN ISO 12100, IEC 60529, EN 60529, ISO 20653, UL 508, CSA 22.2 No.14.

#### In conformity with the requirements of:

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC.

#### Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1.

### Characteristics approved by IMQ

Rated insulation voltage (Ui):	250 Vac
Conventional free air thermal current (Ith):	10 A (1-2 contacts) / 6 A (2-3 contacts) 4 A (4 contacts or 5-pin M12 connector)
Protection against short circuits (fuse):	10 A (1-2 contacts) / 6 A (2-3 contacts) / 4 A (4 contacts or 5-pin M12 connector), gG type
Rated impulse withstand voltage (U <sub>imp</sub> ):	4 kV
Protection degree of the housing:	IP67
MA terminals (saddle clamps)	
Pollution degree:	3
Utilization category:	AC15 / DC13 (with connector)
Operating voltage (Ue):	250 Vac (50 Hz) / 24 Vdc (with connector)
Operating current (Ie):	3 A / 2 A (with connector)
Forms of the contact element:	X, Y, X+Y, X+X, Y+Y, Y+Y+X, X+X+Y, X+X+Y+Y, Zb
Positive opening of contacts on contact blocks	B01, B11, B02, B12, B21, B22, G01, G11, G02, G12, G21, G22, L01, L11, L02, L12, L21, L22, H01, H11, H02 H12, H21, H22
In conformity with standards:	EN 60947-1, EN 60947-5-1 + A1:2009, fundamental requirements of the Low Voltage Directive 2006/95/EC.

Please contact our technical service for the list of approved products.

### Characteristics approved by UL

Utilization categories	R300 pilot duty (28 VA, 125-250 Vdc) B300 pilot duty (360 VA, 120-240 Vac) (1-2-3 cont.) C300 pilot duty (180 VA, 120-240 Vac) (4 cont.)
Data of housing type 1, 4X "indoor use only"; 12.	
Housing data for versions with 1-2 contacts and type N cable type 1, 4X "indoor use only"	
In conformity with standard:	UL 508, CSA 22.2 No.14

Please contact our technical service for the list of approved products.

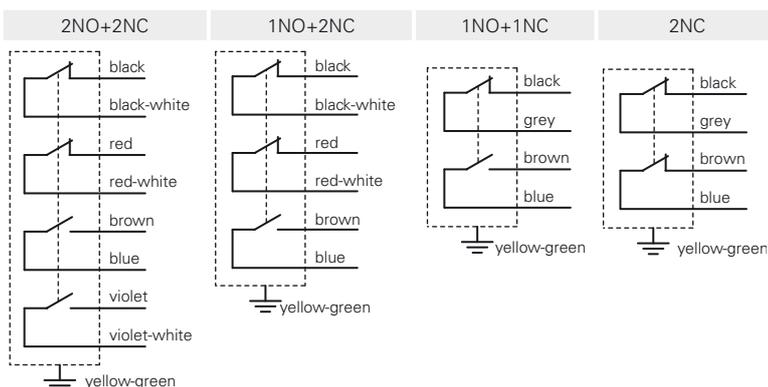


## Utilization temperatures and electrical data

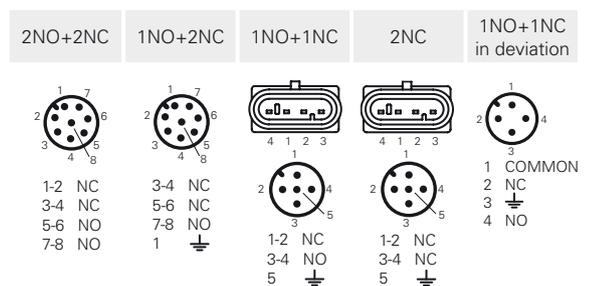
Output with cable								Output with M12 connector		Output with AMP connector
Versions with 2 contacts				Versions with 3 contacts		Versions with 4 contacts		Versions with 2 contacts	Versions with 3/4 contacts	Versions with 2 contacts
Cable type N 5x0.75 mm <sup>2</sup> ,	Cable type G 5x0.75 mm <sup>2</sup> ,	Cable type H 5x0.75 mm <sup>2</sup> ,	Cable type R 5x0.5 mm <sup>2</sup>	Cable type N 7x0.5 mm <sup>2</sup>	Cable type H 7x0.5 mm <sup>2</sup> ,	Cable type N 9x0.34 mm <sup>2</sup>	Cable type R 9x0.5 mm <sup>2</sup>	M12 connector 5 poles	M12 connector 8 poles	AMP super-seal 1.5 connector
Sheath PVC 05VV-F, Self-extinguishing: IEC 60332-1-2 IEC 60332-1-3	Sheath PVC S05VV-F, Self-extinguishing: IEC 60332-1-2 IEC 60332-1-3 IEC 60332-3 CEI 20-22 II	Max. speed 100 m/min Max. acceleration 2 m/s <sup>2</sup> PUR sheath HALOGEN FREE self-extinguishing: IEC 60332-1-2 IEC 60332-1-3	Cable for railway applications EN50306-4 1E-300V-5x0.5 mm <sup>2</sup> MM-90 Cable in conformity with standards: EN 50306-4 EN 45555 Self-extinguishing: IEC 60332-1 EN 50305 EN 50306-1	Sheath PVC 03VV-F, self-extinguishing: IEC 60332-1-2 IEC 60332-1-3	Max. speed 300 m/min Max. acceleration 25 m/s <sup>2</sup> PUR sheath HALOGEN FREE self-extinguishing: IEC 60332-1-2 IEC 60332-1-3	Sheath PVC 03VV-F, self-extinguishing: IEC 60332-1-2 IEC 60332-1-3	Cable for railway applications EN50306-4 1P-300V-9x0.5 mm <sup>2</sup> MM-90 Cable in conformity with standards: EN 50306-4 EN 45555 Self-extinguishing: IEC 60332-1 EN 50305 EN 50306-1			
Minimum bending radius: 72 mm	Minimum bending radius: 72 mm	Minimum bending radius: 70 mm Without halogen Oil resistant IEC 60811-2-1	Minimum bending radius: 60 mm	Minimum bending radius: 108 mm	Minimum bending radius: 108 mm Without halogen Oil resistant IEC 60811-2-1	Minimum bending radius: 94 mm	Minimum bending radius: 60 mm			
External diameter: 8 mm	External diameter: 8 mm	External diameter: 8 mm	External diameter: 6 mm	External diameter: 7 mm	External diameter: 7 mm	External diameter: 7 mm	External diameter: 6,5 mm			
Stripped end: 80 mm	Stripped end: 80 mm	Stripped end: 80 mm	Stripped end: 80 mm	Stripped end: 80 mm	Stripped end: 80 mm	Stripped end: 80 mm	Stripped end: 80 mm			
Class 5 copper IEC 60228	Class 5 copper IEC 60228	IEC 60228 class 6 copper	Class 5 copper IEC 60228	Class 5 copper IEC 60228	Class 6 copper IEC 60228	Class 5 copper IEC 60228	Class 5 copper IEC 60228			

Ambient temperature standard extended (-T <sub>6</sub> )	Cable fixed installation	-25 °C ... +70 °C -25 °C ... +70 °C -25 °C ... +80 °C -25 °C +80 °C -25 °C ... +80 °C -25 °C ... +80 °C -25 °C ... +80 °C -25 °C +80 °C											
	Cable flexible installation	+5 °C ... +70 °C +5 °C ... +70 °C -25 °C ... +80 °C -25 °C +80 °C -5 °C ... +80 °C -25 °C ... +80 °C -5 °C ... +80 °C -25 °C +80 °C								-25 °C ... +80 °C			
	Cable mobile installation	/	/	-25 °C ... +80 °C	/	/	-25 °C ... +80 °C	/	/				
	Cable fixed installation	/	/	-40 °C ... +80 °C	-40 °C ... +80 °C	/	-40 °C ... +80 °C	/	-40 °C +80 °C				
	Cable flexible installation	/	/	-40 °C ... +80 °C	-40 °C ... +80 °C	/	-30 °C ... +80 °C	/	-40 °C +80 °C	-40 °C ... +80 °C			
	Cable mobile installation	/	/	-40 °C ... +80 °C	/	/	-30 °C ... +80 °C	/	/				
Electrical data	Thermal current I <sub>th</sub>	10 A	10 A	10 A	6 A	6 A	6 A	3 A	4 A	4 A	2 A	10 A	
	Rated insulation voltage U <sub>i</sub>	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac	300 Vdc	30 Vac	250 Vac
	Protection against short circuits (fuse)	10 A 500 V type gG	10 A 500 V type gG	10 A 500 V type gG	6 A 500 V type gG	6 A 500 V type gG	6 A 500 V type gG	3 A 500 V type gG	4 A 500 V type gG	4 A 500 V type gG	2 A 500 V type gG	10 A 500 V type gG	10 A 500 V type gG
	Utilization category DC13	24 V	2 A	2 A	2 A	2 A	2 A	2 A	2 A	2 A	2 A	2 A	2 A
		125 V	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	/	0.4 A
		250 V	0.3 A	0.3 A	0.3 A	0.3 A	0.3 A	0.3 A	0.3 A	0.3 A	0.3 A	/	0.3 A
Utilization category AC15	24 V	4 A	4 A	4 A	4 A	4 A	4 A	3 A	4 A	4 A	2 A	4 A	
	120 V	4 A	4 A	4 A	4 A	4 A	4 A	3 A	4 A	4 A	/	4 A	
	250 V	4 A	4 A	4 A	4 A	4 A	4 A	3 A	4 A	4 A	/	4 A	
Approvals	CE cULus IMQ EAC CCC	CE EAC CCC	CE cULus IMQ EAC CCC	CE IMQ EAC CCC	CE cULus IMQ EAC CCC	CE cULus IMQ EAC CCC	CE cULus IMQ EAC CCC	CE cULus IMQ EAC CCC	CE IMQ EAC CCC	CE cULus IMQ EAC CCC	CE cULus EAC CCC	CE cULus EAC CCC	

### Internal connections of the cable



### Internal connections of the connector



Female connectors See page 226

Contact type:

- R** = snap action
- L** = slow action

Contact blocks				
B11 <b>R</b>	NA B110AA-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+1NC	NA B110AB-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+1NC	NA B110AC-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+1NC	NA B110AE-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+1NC
B02 <b>R</b>	NA B020AA-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NC	NA B020AB-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NC	NA B020AC-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NC	NA B020AE-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NC
B12 <b>R</b>	NA B120AA-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+2NC	NA B120AB-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+2NC	NA B120AC-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+2NC	NA B120AE-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+2NC
B22 <b>R</b>	NA B220AA-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NO+2NC	NA B220AB-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NO+2NC	NA B220AC-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NO+2NC	NA B220AE-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NO+2NC
G11 <b>L</b>	NA G110AA-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+1NC	NA G110AB-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+1NC	NA G110AC-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+1NC	NA G110AE-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+1NC
G02 <b>L</b>	NA G020AA-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NC	NA G020AB-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NC	NA G020AC-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NC	NA G020AE-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NC
G12 <b>L</b>	NA G120AA-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+2NC	NA G120AB-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+2NC	NA G120AC-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+2NC	NA G120AE-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+2NC
G22 <b>L</b>	NA G220AA-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NO+2NC	NA G220AB-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NO+2NC	NA G220AC-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NO+2NC	NA G220AE-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NO+2NC
Max. speed	page 243 - type 4		page 243 - type 4	
Min. force	7 N (25 N <span style="background-color: #e0ffe0;">↻</span> )		7 N (25 N <span style="background-color: #e0ffe0;">↻</span> )	
Travel diagrams	page 244 - group 1		page 244 - group 1	

Contact blocks				
B11 <b>R</b>	NA B110BB-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+1NC	NA B110BE-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+1NC	NA B110BG-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+1NC	NA B110CB-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+1NC
B02 <b>R</b>	NA B020BB-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NC	NA B020BE-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NC	NA B020BG-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NC	NA B020CB-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NC
B12 <b>R</b>	NA B120BB-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+2NC	NA B120BE-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+2NC	NA B120BG-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+2NC	NA B120CB-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+2NC
B22 <b>R</b>	NA B220BB-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NO+2NC	NA B220BE-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NO+2NC	NA B220BG-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NO+2NC	NA B220CB-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NO+2NC
G11 <b>L</b>	NA G110BB-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+1NC	NA G110BE-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+1NC	NA G110BG-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+1NC	NA G110CB-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+1NC
G02 <b>L</b>	NA G020BB-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NC	NA G020BE-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NC	NA G020BG-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NC	NA G020CB-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NC
G12 <b>L</b>	NA G120BB-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+2NC	NA G120BE-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+2NC	NA G120BG-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+2NC	NA G120CB-DN2 <span style="background-color: #e0ffe0;">↻</span> 1NO+2NC
G22 <b>L</b>	NA G220BB-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NO+2NC	NA G220BE-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NO+2NC	NA G220BG-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NO+2NC	NA G220CB-DN2 <span style="background-color: #e0ffe0;">↻</span> 2NO+2NC
Max. speed	page 243 - type 2	page 243 - type 5	page 243 - type 5	page 243 - type 3
Min. force	7 N (25 N <span style="background-color: #e0ffe0;">↻</span> )	7 N (25 N <span style="background-color: #e0ffe0;">↻</span> )	7 N (25 N <span style="background-color: #e0ffe0;">↻</span> )	5 N (25 N <span style="background-color: #e0ffe0;">↻</span> )
Travel diagrams	page 244 - group 1	page 244 - group 1	page 244 - group 1	page 244 - group 2

NB series housing	M12 connector, right	M12 connector, bottom	AMP superseal 1.5 connector
<b>To purchase a NB series product:</b> replace NA with NB in the codes shown above. Example: NA B110AA-DN2 → NB B110AA-DN2	<b>To purchase a product with M12 connector from the right</b> replace DN2 with DMK in the codes shown above. Example: NA B110AA-DN2 → NA B110AA-DMK	<b>To purchase a product with M12 connector from below</b> replace DN2 with SMK in the codes shown above. Example: NA B110AA-DN2 → NA B110AA-SMK	<b>To purchase a product with AMP connector</b> replace DN2 with SAK in the codes shown above. Example: NA B110AA-DN2 → NA B110AA-SAK

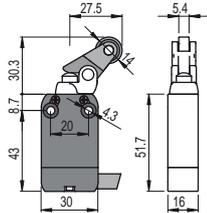
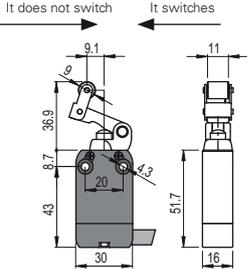
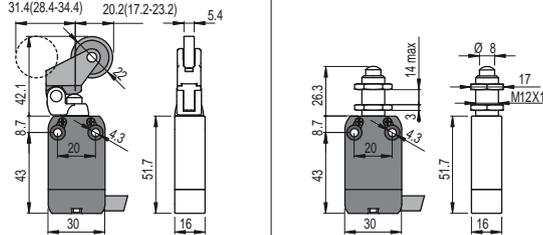
All measures in the drawings are in mm

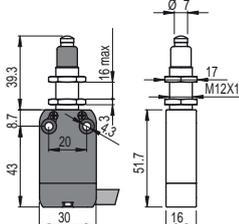
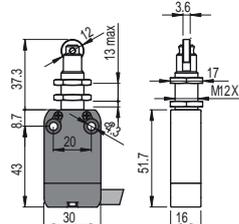
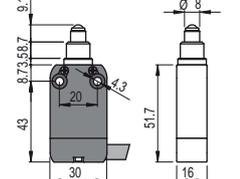
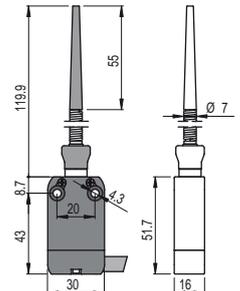
Items with code on green background are stock items

Accessories See page 225

→ The 2D/3D files are available at [www.pizzato.com](http://www.pizzato.com)



Contact type:	With stainless steel roller on request		Operation in one direction		Fixed only by threaded head	
						
<b>R</b> = snap action <b>L</b> = slow action						
Contact blocks						
B11	<b>R</b> NA B110CH-DN2	⊕ 1NO+1NC	<b>R</b> NA B110CP-DN2	⊕ 1NO+1NC	<b>R</b> NA B110CV-DN2	⊕ 1NO+1NC
B02	<b>R</b> NA B020CH-DN2	⊕ 2NC	<b>R</b> NA B020CP-DN2	⊕ 2NC	<b>R</b> NA B020CV-DN2	⊕ 2NC
B12	<b>R</b> NA B120CH-DN2	⊕ 1NO+2NC	<b>R</b> NA B120CP-DN2	⊕ 1NO+2NC	<b>R</b> NA B120CV-DN2	⊕ 1NO+2NC
B22	<b>R</b> NA B220CH-DN2	⊕ 2NO+2NC	<b>R</b> NA B220CP-DN2	⊕ 2NO+2NC	<b>R</b> NA B220CV-DN2	⊕ 2NO+2NC
G11	<b>L</b> NA G110CH-DN2	⊕ 1NO+1NC	<b>L</b> NA G110CP-DN2	⊕ 1NO+1NC	<b>L</b> NA G110CV-DN2	⊕ 1NO+1NC
G02	<b>L</b> NA G020CH-DN2	⊕ 2NC	<b>L</b> NA G020CP-DN2	⊕ 2NC	<b>L</b> NA G020CV-DN2	⊕ 2NC
G12	<b>L</b> NA G120CH-DN2	⊕ 1NO+2NC	<b>L</b> NA G120CP-DN2	⊕ 1NO+2NC	<b>L</b> NA G120CV-DN2	⊕ 1NO+2NC
G22	<b>L</b> NA G220CH-DN2	⊕ 2NO+2NC	<b>L</b> NA G220CP-DN2	⊕ 2NO+2NC	<b>L</b> NA G220CV-DN2	⊕ 2NO+2NC
Max. speed	page 243 - type 3		page 243 - type 3		page 243 - type 3	
Min. force	5 N (25 N ⊕)		3 N (25 N ⊕)		3 N (25 N ⊕)	
Travel diagrams	page 244 - group 2		page 244 - group 6		page 244 - group 3	

Contact blocks	Fixed only by threaded head With external rubber gasket		Fixed only by threaded head		Plunger with Ø 6 mm ball		With external rubber gasket	
								
B11	<b>R</b> NA B110EE-DN2	⊕ 1NO+1NC	<b>R</b> NA B110FB-DN2	⊕ 1NO+1NC	<b>R</b> NA B110GB-DN2	⊕ 1NO+1NC	<b>R</b> NA B110HB-DN2	1NO+1NC
B02	<b>R</b> NA B020EE-DN2	⊕ 2NC	<b>R</b> NA B020FB-DN2	⊕ 2NC	<b>R</b> NA B020GB-DN2	⊕ 2NC	<b>R</b> NA B020HB-DN2	2NC
B12	<b>R</b> NA B120EE-DN2	⊕ 1NO+2NC	<b>R</b> NA B120FB-DN2	⊕ 1NO+2NC	<b>R</b> NA B120GB-DN2	⊕ 1NO+2NC	<b>R</b> NA B120HB-DN2	1NO+2NC
B22	<b>R</b> NA B220EE-DN2	⊕ 2NO+2NC	<b>R</b> NA B220FB-DN2	⊕ 2NO+2NC	<b>R</b> NA B220GB-DN2	⊕ 2NO+2NC	<b>R</b> NA B220HB-DN2	2NO+2NC
G11	<b>L</b> NA G110EE-DN2	⊕ 1NO+1NC	<b>L</b> NA G110FB-DN2	⊕ 1NO+1NC	<b>L</b> NA G110GB-DN2	⊕ 1NO+1NC		
G02	<b>L</b> NA G020EE-DN2	⊕ 2NC	<b>L</b> NA G020FB-DN2	⊕ 2NC	<b>L</b> NA G020GB-DN2	⊕ 2NC	<b>L</b> NA G020HB-DN2	2NC
G12	<b>L</b> NA G120EE-DN2	⊕ 1NO+2NC	<b>L</b> NA G120FB-DN2	⊕ 1NO+2NC	<b>L</b> NA G120GB-DN2	⊕ 1NO+2NC		
G22	<b>L</b> NA G220EE-DN2	⊕ 2NO+2NC	<b>L</b> NA G220FB-DN2	⊕ 2NO+2NC	<b>L</b> NA G220GB-DN2	⊕ 2NO+2NC		
Max. speed	page 243 - type 4		page 243 - type 2		page 243 - type 2		1 m/s	
Min. force	7 N (25 N ⊕)		7 N (25 N ⊕)		7 N (25 N ⊕)		0.03 Nm	
Travel diagrams	page 244 - group 1		page 244 - group 1		page 244 - group 1		page 244 - group 4	

All measures in the drawings are in mm

Contact type:  
**R** = snap action  
**L** = slow action

	With external rubber gasket		With external rubber gasket		With stainless steel roller on request		With stainless steel roller on request	
Contact blocks								
B11	<b>R</b>	NA B110HE-DN2 1NO+1NC	NA B110HH-DN2 1NO+1NC	NA B112KA-DN2	⊕ 1NO+1NC	NA B112KB-DN2	⊕ 1NO+1NC	
B02	<b>R</b>	NA B020HE-DN2 2NC	NA B020HH-DN2 2NC	NA B022KA-DN2	⊕ 2NC	NA B022KB-DN2	⊕ 2NC	
B12	<b>R</b>	NA B120HE-DN2 1NO+2NC	NA B120HH-DN2 1NO+2NC	NA B122KA-DN2	⊕ 1NO+2NC	NA B122KB-DN2	⊕ 1NO+2NC	
B22	<b>R</b>	NA B220HE-DN2 2NO+2NC	NA B220HH-DN2 2NO+2NC	NA B222KA-DN2	⊕ 2NO+2NC	NA B222KB-DN2	⊕ 2NO+2NC	
G11	<b>L</b>			NA G112KA-DN2	⊕ 1NO+1NC	NA G112KB-DN2	⊕ 1NO+1NC	
G02	<b>L</b>	NA G020HE-DN2 2NC	NA G020HH-DN2 2NC	NA G022KA-DN2	⊕ 2NC	NA G022KB-DN2	⊕ 2NC	
G12	<b>L</b>			NA G122KA-DN2	⊕ 1NO+2NC	NA G122KB-DN2	⊕ 1NO+2NC	
G22	<b>L</b>			NA G222KA-DN2	⊕ 2NO+2NC	NA G222KB-DN2	⊕ 2NO+2NC	
Max. speed	1 m/s		1 m/s		page 243 - type 1		page 243 - type 1	
Min. force	0.07 Nm		0.03 Nm		0.07 Nm (0.25 Nm ⊕)		0.07 Nm (0.25 Nm ⊕)	
Travel diagrams	page 244 - group 4		page 244 - group 4		page 244 - group 5		page 244 - group 5	

	With stainless steel roller on request		With stainless steel roller on request		With stainless steel roller on request		With stainless steel roller on request	
Contact blocks								
B11	<b>R</b>	NA B112KC-DN2 ⊕ 1NO+1NC	NA B112KD-DN2 ⊕ 1NO+1NC	NA B112KE-DN2	⊕ 1NO+1NC	NA B112KF-DN2	⊕ 1NO+1NC	
B02	<b>R</b>	NA B022KC-DN2 ⊕ 2NC	NA B022KD-DN2 ⊕ 2NC	NA B022KE-DN2	⊕ 2NC	NA B022KF-DN2	⊕ 2NC	
B12	<b>R</b>	NA B122KC-DN2 ⊕ 1NO+2NC	NA B122KD-DN2 ⊕ 1NO+2NC	NA B122KE-DN2	⊕ 1NO+2NC	NA B122KF-DN2	⊕ 1NO+2NC	
B22	<b>R</b>	NA B222KC-DN2 ⊕ 2NO+2NC	NA B222KD-DN2 ⊕ 2NO+2NC	NA B222KE-DN2	⊕ 2NO+2NC	NA B222KF-DN2	⊕ 2NO+2NC	
G11	<b>L</b>	NA G112KC-DN2 ⊕ 1NO+1NC	NA G112KD-DN2 ⊕ 1NO+1NC	NA G112KE-DN2	⊕ 1NO+1NC	NA G112KF-DN2	⊕ 1NO+1NC	
G02	<b>L</b>	NA G022KC-DN2 ⊕ 2NC	NA G022KD-DN2 ⊕ 2NC	NA G022KE-DN2	⊕ 2NC	NA G022KF-DN2	⊕ 2NC	
G12	<b>L</b>	NA G122KC-DN2 ⊕ 1NO+2NC	NA G122KD-DN2 ⊕ 1NO+2NC	NA G122KE-DN2	⊕ 1NO+2NC	NA G122KF-DN2	⊕ 1NO+2NC	
G22	<b>L</b>	NA G222KC-DN2 ⊕ 2NO+2NC	NA G222KD-DN2 ⊕ 2NO+2NC	NA G222KE-DN2	⊕ 2NO+2NC	NA G222KF-DN2	⊕ 2NO+2NC	
Max. speed	page 243 - type 1		page 243 - type 1		page 243 - type 1		page 243 - type 1	
Min. force	0.07 Nm (0.25 Nm ⊕)		0.07 Nm (0.25 Nm ⊕)		0.07 Nm (0.25 Nm ⊕)		0.07 Nm (0.25 Nm ⊕)	
Travel diagrams	page 244 - group 5		page 244 - group 5		page 244 - group 5		page 244 - group 5	

NB series housing	M12 connector, right	M12 connector, bottom	AMP superseal 1.5 connector
<b>To purchase a NB series product:</b> replace NA with NB in the codes shown above. Example: NA B110AA-DN2 → NB B110AA-DN2	<b>To purchase a product with M12 connector from the right</b> replace DN2 with DMK in the codes shown above. Example: NA B110AA-DN2 → NA B110AA-DMK	<b>To purchase a product with M12 connector from below</b> replace DN2 with SMK in the codes shown above. Example: NA B110AA-DN2 → NA B110AA-SMK	<b>To purchase a product with AMP connector</b> replace DN2 with SAK in the codes shown above. Example: NA B110AA-DN2 → NA B110AA-SAK

All measures in the drawings are in mm

Items with code on green background are stock items

Accessories See page 225

→ The 2D/3D files are available at [www.pizzato.com](http://www.pizzato.com)



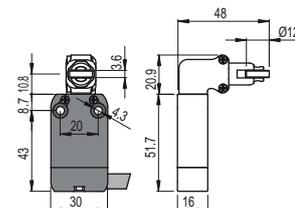
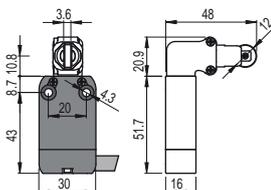
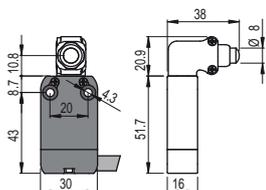
Contact type:	With stainless steel roller on request	With stainless steel roller on request	With stainless steel roller on request	Square rod, 3x3 mm, stainless steel
<b>R</b> = snap action <b>L</b> = slow action				
Contact blocks				
B11 <b>R</b>	NA B112KG-DN2 (1NO+1NC)	NA B112KH-DN2 (1NO+1NC)	NA B112KP-DN2 (1NO+1NC)	NA B112LB-DN2 (1NO+1NC)
B02 <b>R</b>	NA B022KG-DN2 (2NC)	NA B022KH-DN2 (2NC)	NA B022KP-DN2 (2NC)	NA B022LB-DN2 (2NC)
B12 <b>R</b>	NA B122KG-DN2 (1NO+2NC)	NA B122KH-DN2 (1NO+2NC)	NA B122KP-DN2 (1NO+2NC)	NA B122LB-DN2 (1NO+2NC)
B22 <b>R</b>	NA B222KG-DN2 (2NO+2NC)	NA B222KH-DN2 (2NO+2NC)	NA B222KP-DN2 (2NO+2NC)	NA B222LB-DN2 (2NO+2NC)
G11 <b>L</b>	NA G112KG-DN2 (1NO+1NC)	NA G112KH-DN2 (1NO+1NC)	NA G112KP-DN2 (1NO+1NC)	NA G112LB-DN2 (1NO+1NC)
G02 <b>L</b>	NA G022KG-DN2 (2NC)	NA G022KH-DN2 (2NC)	NA G022KP-DN2 (2NC)	NA G022LB-DN2 (2NC)
G12 <b>L</b>	NA G122KG-DN2 (1NO+2NC)	NA G122KH-DN2 (1NO+2NC)	NA G122KP-DN2 (1NO+2NC)	NA G122LB-DN2 (1NO+2NC)
G22 <b>L</b>	NA G222KG-DN2 (2NO+2NC)	NA G222KH-DN2 (2NO+2NC)	NA G222KP-DN2 (2NO+2NC)	NA G222LB-DN2 (2NO+2NC)
Max. speed	page 243 - type 1	page 243 - type 1	page 243 - type 1	1.5 m/s
Min. force	0.07 Nm (0.25 Nm ⊕)	0.07 Nm (0.25 Nm ⊕)	0.07 Nm (0.25 Nm ⊕)	0.07 Nm
Travel diagrams	page 244 - group 5	page 244 - group 5	page 244 - group 5	page 244 - group 5

Contact blocks	Round rod, Ø 3 mm, stainless steel	Fiber glass rod		Porcelain roller
B11 <b>R</b>	NA B112LE-DN2 (1NO+1NC)	NA B112LH-DN2 (1NO+1NC)	NA B112LL-DN2 (1NO+1NC)	NA B112LP-DN2E24 (1NO+1NC)
B02 <b>R</b>	NA B022LE-DN2 (2NC)	NA B022LH-DN2 (2NC)	NA B022LL-DN2 (2NC)	NA B022LP-DN2E24 (2NC)
B12 <b>R</b>	NA B122LE-DN2 (1NO+2NC)	NA B122LH-DN2 (1NO+2NC)	NA B122LL-DN2 (1NO+2NC)	NA B122LP-DN2E24 (1NO+2NC)
B22 <b>R</b>	NA B222LE-DN2 (2NO+2NC)	NA B222LH-DN2 (2NO+2NC)	NA B222LL-DN2 (2NO+2NC)	NA B222LP-DN2E24 (2NO+2NC)
G11 <b>L</b>	NA G112LE-DN2 (1NO+1NC)	NA G112LH-DN2 (1NO+1NC)	NA G112LL-DN2 (1NO+1NC)	NA G112LP-DN2E24 (1NO+1NC)
G02 <b>L</b>	NA G022LE-DN2 (2NC)	NA G022LH-DN2 (2NC)	NA G022LL-DN2 (2NC)	NA G022LP-DN2E24 (2NC)
G12 <b>L</b>	NA G122LE-DN2 (1NO+2NC)	NA G122LH-DN2 (1NO+2NC)	NA G122LL-DN2 (1NO+2NC)	NA G122LP-DN2E24 (1NO+2NC)
G22 <b>L</b>	NA G222LE-DN2 (2NO+2NC)	NA G222LH-DN2 (2NO+2NC)	NA G222LL-DN2 (2NO+2NC)	NA G222LP-DN2E24 (2NO+2NC)
Max. speed	1.5 m/s	1.5 m/s	1.5 m/s	0.5 m/s
Min. force	0.07 Nm	0.07 Nm	0.07 Nm	0.04 Nm
Travel diagrams	page 244 - group 5	page 244 - group 5	page 244 - group 5	page 244 - group 5

All measures in the drawings are in mm

Contact type:

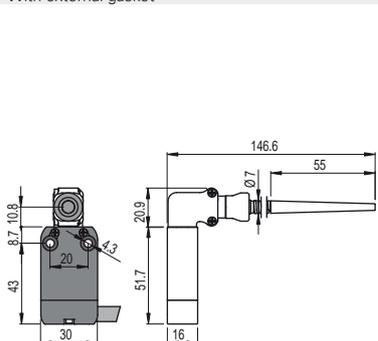
- R** = snap action
- L** = slow action



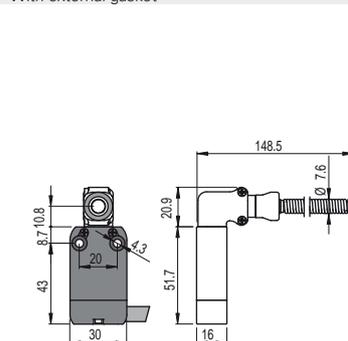
Contact blocks

B11	<b>R</b>	NA B110AB-DN2W5	⊕ 1NO+1NC	NA B110BB-DN2H0W5	⊕ 1NO+1NC	NA B110BB-DN2W5	⊕ 1NO+1NC
B02	<b>R</b>	NA B020AB-DN2W5	⊕ 2NC	NA B020BB-DN2H0W5	⊕ 2NC	NA B020BB-DN2W5	⊕ 2NC
B12	<b>R</b>	NA B120AB-DN2W5	⊕ 1NO+2NC	NA B120BB-DN2H0W5	⊕ 1NO+2NC	NA B120BB-DN2W5	⊕ 1NO+2NC
B22	<b>R</b>	NA B220AB-DN2W5	⊕ 2NO+2NC	NA B220BB-DN2H0W5	⊕ 2NO+2NC	NA B220BB-DN2W5	⊕ 2NO+2NC
G11	<b>L</b>	NA G110AB-DN2W5	⊕ 1NO+1NC	NA G110BB-DN2H0W5	⊕ 1NO+1NC	NA G110BB-DN2W5	⊕ 1NO+1NC
G02	<b>L</b>	NA G020AB-DN2W5	⊕ 2NC	NA G020BB-DN2H0W5	⊕ 2NC	NA G020BB-DN2W5	⊕ 2NC
G12	<b>L</b>	NA G120AB-DN2W5	⊕ 1NO+2NC	NA G120BB-DN2H0W5	⊕ 1NO+2NC	NA G120BB-DN2W5	⊕ 1NO+2NC
G22	<b>L</b>	NA G220AB-DN2W5	⊕ 2NO+2NC	NA G220BB-DN2H0W5	⊕ 2NO+2NC	NA G220BB-DN2W5	⊕ 2NO+2NC
Max. speed		page 243 - type 4		page 243 - type 2		page 243 - type 2	
Min. force		9.5 N (25 N ⊕)		9.5 N (25 N ⊕)		9.5 N (25 N ⊕)	
Travel diagrams		page 244 - group 1		page 244 - group 1		page 244 - group 1	

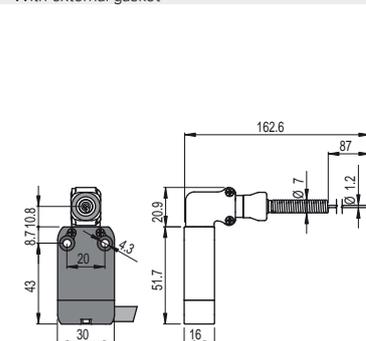
With external gasket



With external gasket



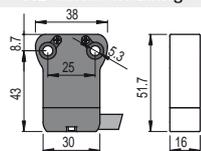
With external gasket



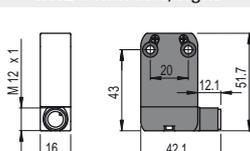
Contact blocks

B11	<b>R</b>	NA B110HB-DN2W5	1NO+1NC	NA B110HE-DN2W5	1NO+1NC	NA B110HH-DN2W5	1NO+1NC
B02	<b>R</b>	NA B020HB-DN2W5	2NC	NA B020HE-DN2W5	2NC	NA B020HH-DN2W5	2NC
B12	<b>R</b>	NA B120HB-DN2W5	1NO+2NC	NA B120HE-DN2W5	1NO+2NC	NA B120HH-DN2W5	1NO+2NC
B22	<b>R</b>	NA B220HB-DN2W5	2NO+2NC	NA B220HE-DN2W5	2NO+2NC	NA B220HH-DN2W5	2NO+2NC
G11	<b>L</b>						
G02	<b>L</b>	NA G020HB-DN2W5	2NC	NA G020HE-DN2W5	2NC	NA G020HH-DN2W5	2NC
G12	<b>L</b>						
G22	<b>L</b>						
Max. speed		1 m/s		1 m/s		1 m/s	
Min. force		0.08 Nm		0.12 Nm		0.08 Nm	
Travel diagrams		page 244 - group 4		page 244 - group 4		page 244 - group 4	

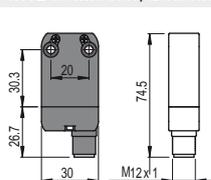
NB series housing



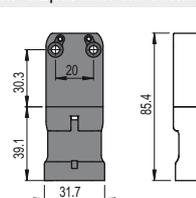
M12 connector, right



M12 connector, bottom



AMP superseal 1.5 connector



**To purchase a NB series product:**  
replace NA with NB in the codes shown above. Example:  
NA B110AA-DN2 → NB B110AA-DN2

**To purchase a product with M12 connector from the right** replace DN2 with DMK in the codes shown above. Example:  
NA B110AA-DN2 → NA B110AA-DMK

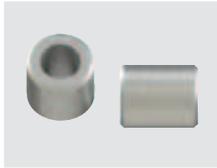
**To purchase a product with M12 connector from below** replace DN2 with SMK in the codes shown above. Example:  
NA B110AA-DN2 → NA B110AA-SMK

**To purchase a product with AMP connector** replace DN2 with SAK in the codes shown above. Example:  
NA B110AA-DN2 → NA B110AA-SAK

All measures in the drawings are in mm

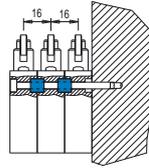
## Accessories

Article	Description
VN DT1F	Spacer for NA-NF series
VF D16B	Spacer for NB series



By interposing the spacers between one switch and the next, it is possible to have 2 or more prewired switches, preventing them from moving in relation to one another.

**10 pcs.** packs



## M12 connectors with cable

for details see page 225



### Technical data:

- Polyurethane connector body (4/5/8 poles)
- Polypropylene connector body (12 poles)
- Class 6 rated copper of the wires according to IEC 60228 for mobile installation (4/5/8 poles)
- Class 5 rated copper of the wires according to IEC 60228 for fixed installation (12 poles)
- Gold-plated contacts (resistance < 5 mΩ)
- Self locking ring nut
- High flexibility wire suitable to be used in movable chains, with PVC sheath conforming to IEC 60332-3 and CEI 20-22II standards. With polyurethane sheath on request (4/5/8 poles)
- PVC cable, fixed installation (12 poles)

## Code structure

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

# VF CA4PD3M

No. of poles	
<b>4</b>	4 poles
<b>5</b>	5 poles
<b>8</b>	8 poles
<b>12</b>	12 poles

Sheath coating	
<b>P</b>	PVC (standard)
<b>U</b>	PUR

Connector type	
<b>D</b>	straight (standard)
<b>G</b>	angled

Connection type		No. of poles			
<b>M</b>	M12x1				
Cable length (L)		4	5	8	12
<b>1</b>	1 metre				
<b>2</b>	2 metres				
<b>3</b>	3 metres (standard)	•	•		
<b>4</b>	4 metres				
<b>5</b>	5 metres (standard)	•	•	•	•
...					
<b>0</b>	10 metres (standard)	•	•	•	•

Other lengths on request

### Stock items

VF CA4PD3M  
VF CA4PD5M  
VF CA4PD0M  
VF CA5PD3M  
VF CA5PD5M  
VF CA5PD0M  
VF CA8PD5M  
VF CA8PD0M  
VF CA12PD5M  
VF CA12PD0M

**Attention!** No stock item, minimum order quantity 100 pcs.

## M12 sockets, field wireable



### General data

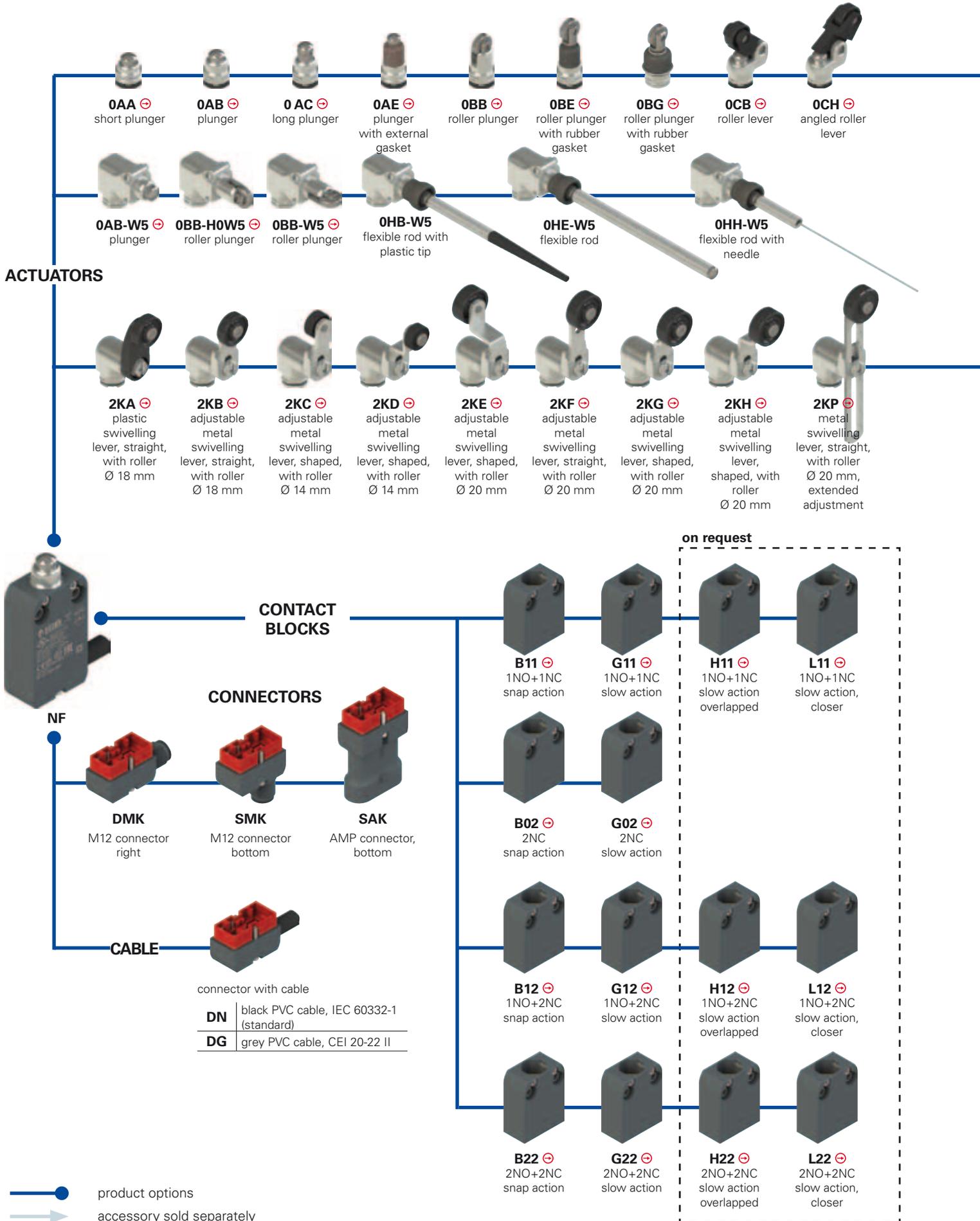
Technopolymer connector body  
Gold-plated contacts  
Screw terminals for wiring  
Max. operating voltages 250 Vac/dc (4 and 5 poles)  
30 Vac/dc (8 poles)  
Maximum current 4 A  
Protection degree IP67 according to EN 60529  
Ambient temperature -25°C ... +85°C  
Wire cross-section from 0.25 mm<sup>2</sup> (24 AWG) to 0.5 mm<sup>2</sup> (20 AWG)

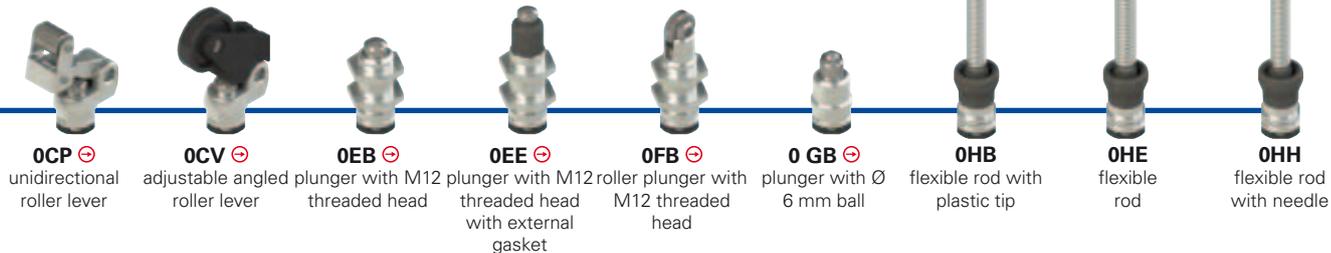
Article	Description	no. of poles
VF CBMP4DM04	Field wireable M12 socket, straight, for multipolar cables from Ø 4 to Ø 6.5 mm	4
VF CBMP5DM04	Field wireable M12 socket, straight, for multipolar cables from Ø 4 to Ø 6.5 mm	5
VF CBMP8DM04	Field wireable M12 socket, straight, for multipolar cables from Ø 4 to Ø 7 mm	8

Items with code on **green** background are stock items

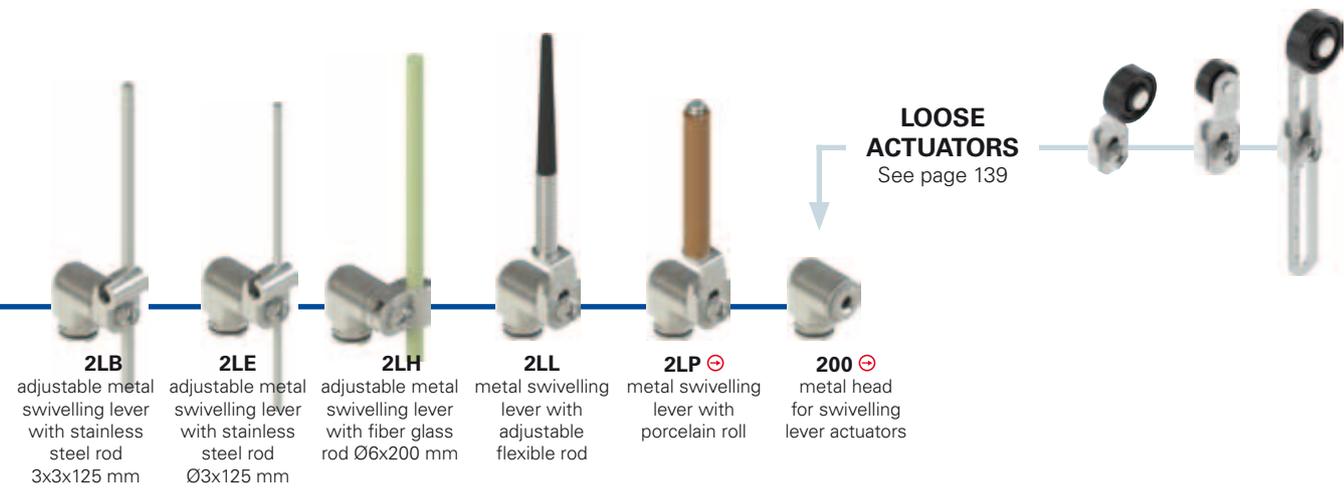
→ The 2D/3D files are available at [www.pizzato.com](http://www.pizzato.com)

Selection diagram for NF series items sold assembled





**OCP** ⊕ unidirectional roller lever  
**OCV** ⊕ adjustable angled roller lever  
**OEB** ⊕ adjustable plunger with M12 threaded head  
**OEE** ⊕ plunger with M12 threaded head with external gasket  
**OFB** ⊕ roller plunger with M12 threaded head  
**OGB** ⊕ plunger with Ø 6 mm ball  
**OHB** flexible rod with plastic tip  
**OHE** flexible rod  
**OHH** flexible rod with needle



**2LB** adjustable metal swivelling lever with stainless steel rod 3x3x125 mm  
**2LE** adjustable metal swivelling lever with stainless steel rod Ø3x125 mm  
**2LH** adjustable metal swivelling lever with fiber glass rod Ø6x200 mm  
**2LL** metal swivelling lever with adjustable flexible rod  
**2LP** ⊕ metal swivelling lever with porcelain roll  
**200** ⊕ metal head for swivelling lever actuators

**LOOSE ACTUATORS**  
See page 139

**Code structure**

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

article options  
**NF B110AB-DN2 GR7T6W5**

<p><b>Housing</b></p> <p><b>NF</b> technopolymer, hole spacing 20 mm</p> <p><b>Contact blocks</b></p> <p><b>B11</b> 1NO+1NC, snap action  <b>B02</b> 2NC, snap action  <b>B12</b> 1NO+2NC, snap action  <b>B22</b> 2NO+2NC, snap action  <b>G11</b> 1NO+1NC, slow action  <b>G02</b> 2NC, slow action  <b>G12</b> 1NO+2NC, slow action  <b>G22</b> 2NO+2NC, slow action  <b>H11</b> 1NO+1NC, slow action, overlapped  <b>H12</b> 1NO+2NC, slow action, overlapped  <b>H22</b> 2NO+2NC, slow action, overlapped  <b>L11</b> 1NO+1NC, slow action closer  <b>L12</b> 1NO+2NC, slow action closer  <b>L22</b> 2NO+2NC, slow action closer</p> <p>Other contact blocks on request.</p> <p><b>Actuator heads</b></p> <p><b>0</b> without head  <b>2</b> head for swivelling lever actuators</p> <p><b>Actuators</b></p> <p><b>AA</b> short plunger  <b>AB</b> plunger          ... ..</p> <p><b>Output direction</b></p> <p><b>D</b> cable or connector to the right  <b>S</b> connector at bottom</p>	<p><b>Transmission block</b></p> <p>without transmission block  <b>W5</b> 90° transmission block</p> <p><b>Ambient temperature</b></p> <p>-25°C ... +80°C (standard)  <b>T6</b> -40°C ... +80°C</p> <p><b>Rollers</b></p> <p>standard roller  <b>R30</b> stainless steel Ø 10.6 mm  <b>R29</b> stainless steel, Ø 13 mm  <b>R18</b> technopolymer, Ø 14 mm  <b>R23</b> stainless steel, Ø 14 mm  <b>R7</b> technopolymer, Ø 18 mm  <b>R22</b> technopolymer, Ø 20 mm  <b>R24</b> stainless steel, Ø 20 mm  <b>R19</b> technopolymer, Ø 22 mm  <b>R25</b> technopolymer, Ø 35 mm</p> <p><b>Contact type</b></p> <p>silver contacts (standard)  <b>G</b> silver contacts with 1 µm gold coating</p> <p><b>Connection type</b></p> <p><b>2</b> cable, length 2 m (standard)  <b>5</b> cable, length 5 m  <b>K</b> connector</p> <p>Other cable lengths on request.</p> <p><b>Cable or connector type</b></p> <p><b>N</b> black PVC cable, IEC 60332-1 (standard)  <b>G</b> grey PVC cable, CEI 20-22 II  <b>M</b> M12 connector  <b>A</b> AMP superseal 1.5 connector</p>
---	--

Check feasibility using table on page 132.



### Main features

- Technopolymer housing, right or bottom cable output
- Protection degrees IP67 and IP69K
- 2 types of integrated cable available
- Versions with M12 connector for safety applications ☹
- Versions with AMP connector
- 14 contact blocks available
- 37 actuators available

### Markings and quality marks:



IMQ approval:	CA02.04562
UL approval:	E131787
CCC approval:	2013010305653520
EAC approval:	RU C-IT ДМ94.В.01024

### Technical data

#### Housing

Housing made of fiber glass reinforced technopolymer, self-extinguishing, shock-proof and with double insulation ☐.

Version with integrated cable, standard length 2 m. Other lengths and special cables on request.

Versions with integrated M12 connector, 4 or 8 poles

Protection degree:

IP67 according to EN 60529

IP69K according to ISO 20653

(Protect the cables from direct high-pressure and high-temperature jets)

Corrosion resistance in saline mist:

≥ 300 hours in NSS according to ISO 9227

#### General data

Ambient temperature:

See table on page 132

Max actuation frequency:

3600 operating cycles<sup>1</sup>/hour

Mechanical endurance:

20 million operating cycles<sup>1</sup>

Mounting position:

any

Safety parameters:

B<sub>10d</sub>:

40,000,00 for NC contacts

Mechanical interlock, not coded:

type 1 according to EN ISO 14119

Tightening torques for installation:

see pages 235-246

(1) One operation cycle means two movements, one to close and one to open contacts, as defined in EN 60947-5-1.

#### Electrical data

Rated impulse withstand voltage (U<sub>imp</sub>):

4 kV

Conditional short circuit current:

1000 A according to EN 60947-5-1

Pollution degree:

3

#### In conformity with standards:

IEC 60947-5-1, EN 60947-5-1, IEC 60204-1, EN 60204-1, EN ISO 14119, EN ISO 12100, EN 60529, ISO 20653, UL 508, CSA 22.2 No.14.

#### In conformity with the requirements of:

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC.

#### Positive contact opening in conformity with standards:

IEC 60947-5-1, EN 60947-5-1.

### ⚠ Installation for safety applications:

Use only switches marked with the symbol ☹ aside the product code. Always connect the safety circuit to the **NC contacts** (normally closed contacts: see "internal connections" on page 132) as stated in **EN 60947-5-1, encl. K, par. 2**. Actuate the switch **at least up to the positive opening travel** shown in the travel diagrams on page 244. Operate the switch **at least with the positive opening force**, indicated between brackets below each article, aside the minimum force value. All applicable standards must be respected.

⚠ **If not expressly indicated in this chapter, for correct installation and utilization of all articles see chapter utilization requirements from page 235 to page 246.**

⚠ **Important: Switch off the circuit voltage before disconnecting the connector from the switch. The connector is not suitable for separation of electrical loads.**

### Characteristics approved by IMQ

Rated insulation voltage (Ui):	250 Vac
Conventional free air thermal current (I <sub>th</sub> ):	10 A (1-2 contacts) / 6 A (2-3 contacts) / 4 A (4 contacts or 4-pin M12 connector)
Protection against short circuits (fuse):	10 A (1-2 contacts) / 6 A (2-3 contacts) / 4 A (4 contacts or 4-pin M12 connector), gG type
Rated impulse withstand voltage (U <sub>imp</sub> ):	4 kV
Protection degree of the housing:	IP67
MA terminals (saddle clamps)	
Pollution degree:	3
Utilization category:	AC15 / DC13 (with connector)
Operating voltage (U <sub>e</sub> ):	250 Vac (50 Hz) / 24 Vdc (with connector)
Operating current (I <sub>e</sub> ):	3 A / 2 A (with connector)
Forms of the contact element:	X, Y, X+Y, X+X, Y+Y, Y+Y+X, X+X+Y, X+X+Y+Y, Zb
Positive opening of contacts on contact blocks	B01, B11, B02, B12, B21, B22, G01, G11, G02, G12, G21, G22, L01, L11, L02, L12, L21, L22, H01, H11, H02, H12, H21, H22
In conformity with standards:	EN 60947-1, EN 60947-5-1 + A1:2009, fundamental requirements of the Low Voltage Directive 2006/95/EC.

Please contact our technical service for the list of approved products.

### Characteristics approved by UL

Utilization categories	R300 pilot duty (28 VA, 125-250 Vdc) B300 pilot duty (360 VA, 120-240 Vac) (1-2-3 cont.) C300 pilot duty (180 VA, 120-240 Vac) (4 cont.)
Data of housing type 1, 4X "indoor use only"; 12.	
Housing data for versions with 1-2 contacts and type N cable type 1, 4X "indoor use only"	
In conformity with standard:	UL 508, CSA 22.2 No.14

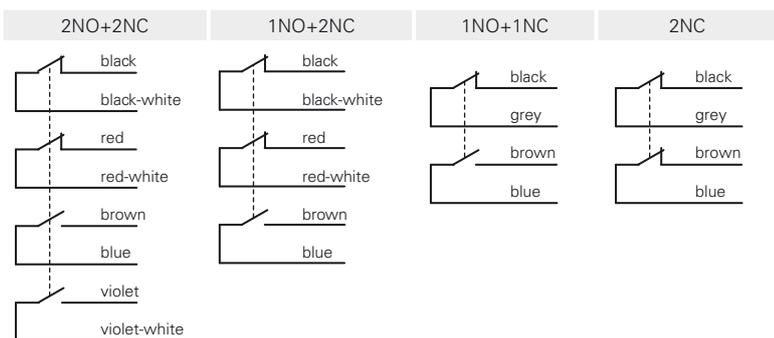
Please contact our technical service for the list of approved products.



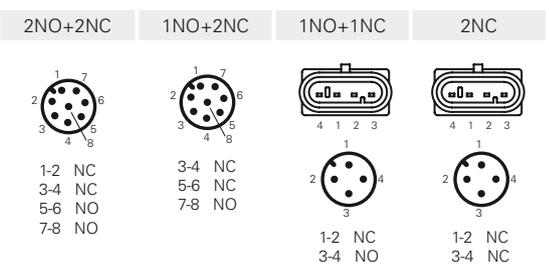
## Utilization temperatures and electrical data

		Output with cable				Output with M12 connector		Output with AMP connector	
		Versions with 2 contacts		Versions with 3 contacts	Versions with 4 contacts	Versions with 2 contacts	Versions with 3/4 contacts	Versions with 2 contacts	
		Cable type N 5x0.75 mm <sup>2</sup> ,	Cable type G 5x0.75 mm <sup>2</sup> ,	Cable type N 7x0.5 mm <sup>2</sup>	Cable type N 9x0.34 mm <sup>2</sup>	M12 connector 5 poles	M12 connector 8 poles	AMP superseal 1.5 connector	
		Sheath PVC 05VV-F, Self-extinguishing: IEC 60332-1-2 IEC 60332-1-3	Sheath PVC S05VV-F, Self-extinguishing: IEC 60332-1-2 IEC 60332-1-3 IEC 60332-3 CEI 20-22 II	Sheath PVC 03VV-F, Self-extinguishing IEC 60332-1-2 IEC 60332-1-3	Sheath PVC 03VV-F, Self-extinguishing: IEC 60332-1-2 IEC 60332-1-3				
		Minimum bending radius: 72 mm	Minimum bending radius: 72 mm	Minimum bending radius: 108 mm	Minimum bending radius: 94 mm				
		External diameter: 8 mm	External diameter: 8 mm	External diameter: 7 mm	External diameter: 7 mm				
		Stripped end: 80 mm	Stripped end: 80 mm	Stripped end: 80 mm	Stripped end: 80 mm				
		Class 5 copper IEC 60228	Class 5 copper IEC 60228	Class 5 copper IEC 60228	Class 5 copper IEC 60228				
Ambient temperature standard extended (-T <sub>6</sub> )	Cable fixed installation	-25 °C ... +70 °C	-25 °C ... +70 °C	-25°C ... +80°C	-25°C ... +80°C				
	Cable flexible installation	+5 °C ... +70 °C	+5 °C ... +70 °C	-5 °C ... +80 °C	-5 °C ... +80 °C		-25°C ... +80°C		
	Cable mobile installation	/	/	/	/				
	Cable fixed installation	/	/	/	/				
	Cable flexible installation	/	/	/	/		-40°C ... +80°C		
	Cable mobile installation	/	/	/	/				
Electrical data	Thermal current I <sub>th</sub>	10 A	10 A	6 A	3 A	4 A	2 A	10 A	
	Rated insulation voltage U <sub>i</sub>	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac 300 Vdc	30 Vac 36 Vdc	250 Vac 300 Vdc	
	Protection against short circuits (fuse)	10 A 500 V type gG	10 A 500 V type gG	6 A 500 V type gG	3 A 500 V type gG	4 A 500 V type gG	2 A 500 V type gG	10 A 500 V type gG	
	Utilization category DC13	24 V	2 A	2 A	2 A	2 A	2 A	2 A	2 A
		125 V	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	/	0.4 A
		250 V	0.3 A	0.3 A	0.3 A	0.3 A	0.3 A	/	0.3 A
	Utilization category AC15	24 V	4 A	4 A	4 A	3 A	4 A	2 A	4 A
120 V		4 A	4 A	4 A	3 A	4 A	/	4 A	
250 V		4 A	4 A	4 A	3 A	4 A	/	4 A	
Approvals	CE cULus IMQ EAC CCC	CE EAC CCC	CE cULus IMQ EAC CCC	CE cULus IMQ EAC CCC	CE cULus IMQ EAC CCC	CE cULus IMQ EAC CCC	CE cULus EAC CCC	CE cULus EAC CCC	

### Internal connections of the cable



### Internal connections of the connector



Female connectors See page 226

Contact type:

**R** = snap action  
**L** = slow action

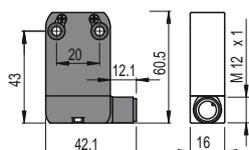
Contact blocks

				With external rubber gasket
B11	<b>R</b> NF B110AA-DN2 → 1NO+1NC	NF B110AB-DN2 → 1NO+1NC	NF B110AC-DN2 → 1NO+1NC	NF B110AE-DN2 → 1NO+1NC
B02	<b>R</b> NF B020AA-DN2 → 2NC	NF B020AB-DN2 → 2NC	NF B020AC-DN2 → 2NC	NF B020AE-DN2 → 2NC
B12	<b>R</b> NF B120AA-DN2 → 1NO+2NC	NF B120AB-DN2 → 1NO+2NC	NF B120AC-DN2 → 1NO+2NC	NF B120AE-DN2 → 1NO+2NC
B22	<b>R</b> NF B220AA-DN2 → 2NO+2NC	NF B220AB-DN2 → 2NO+2NC	NF B220AC-DN2 → 2NO+2NC	NF B220AE-DN2 → 2NO+2NC
G11	<b>L</b> NF G110AA-DN2 → 1NO+1NC	NF G110AB-DN2 → 1NO+1NC	NF G110AC-DN2 → 1NO+1NC	NF G110AE-DN2 → 1NO+1NC
G02	<b>L</b> NF G020AA-DN2 → 2NC	NF G020AB-DN2 → 2NC	NF G020AC-DN2 → 2NC	NF G020AE-DN2 → 2NC
G12	<b>L</b> NF G120AA-DN2 → 1NO+2NC	NF G120AB-DN2 → 1NO+2NC	NF G120AC-DN2 → 1NO+2NC	NF G120AE-DN2 → 1NO+2NC
G22	<b>L</b> NF G220AA-DN2 → 2NO+2NC	NF G220AB-DN2 → 2NO+2NC	NF G220AC-DN2 → 2NO+2NC	NF G220AE-DN2 → 2NO+2NC
Max. speed	page 243 - type 4	page 243 - type 4	page 243 - type 4	page 243 - type 4
Min. force	7 N (25 N →)	7 N (25 N →)	7 N (25 N →)	7 N (25 N →)
Travel diagrams	page 244 - group 1	page 244 - group 1	page 244 - group 1	page 244 - group 1

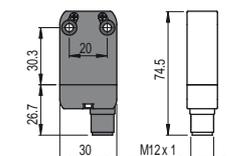
Contact blocks

		With external rubber gasket	With external rubber gasket	With stainless steel roller on request
B11	<b>R</b> NF B110BB-DN2 → 1NO+1NC	NF B110BE-DN2 → 1NO+1NC	NF B110BG-DN2 → 1NO+1NC	NF B110CB-DN2 → 1NO+1NC
B02	<b>R</b> NF B020BB-DN2 → 2NC	NF B020BE-DN2 → 2NC	NF B020BG-DN2 → 2NC	NF B020CB-DN2 → 2NC
B12	<b>R</b> NF B120BB-DN2 → 1NO+2NC	NF B120BE-DN2 → 1NO+2NC	NF B120BG-DN2 → 1NO+2NC	NF B120CB-DN2 → 1NO+2NC
B22	<b>R</b> NF B220BB-DN2 → 2NO+2NC	NF B220BE-DN2 → 2NO+2NC	NF B220BG-DN2 → 2NO+2NC	NF B220CB-DN2 → 2NO+2NC
G11	<b>L</b> NF G110BB-DN2 → 1NO+1NC	NF G110BE-DN2 → 1NO+1NC	NF G110BG-DN2 → 1NO+1NC	NF G110CB-DN2 → 1NO+1NC
G02	<b>L</b> NF G020BB-DN2 → 2NC	NF G020BE-DN2 → 2NC	NF G020BG-DN2 → 2NC	NF G020CB-DN2 → 2NC
G12	<b>L</b> NF G120BB-DN2 → 1NO+2NC	NF G120BE-DN2 → 1NO+2NC	NF G120BG-DN2 → 1NO+2NC	NF G120CB-DN2 → 1NO+2NC
G22	<b>L</b> NF G220BB-DN2 → 2NO+2NC	NF G220BE-DN2 → 2NO+2NC	NF G220BG-DN2 → 2NO+2NC	NF G220CB-DN2 → 2NO+2NC
Max. speed	page 243 - type 2	page 243 - type 5	page 243 - type 5	page 243 - type 3
Min. force	7 N (25 N →)	7 N (25 N →)	7 N (25 N →)	5 N (25 N →)
Travel diagrams	page 244 - group 1	page 244 - group 1	page 244 - group 1	page 244 - group 2

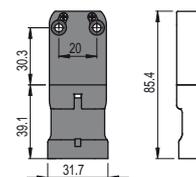
M12 connector, right



M12 connector, bottom



AMP superseal 1.5 connector



To purchase a product with M12 connector from the right replace DN2 with DMK in the codes shown above. Example:  
 NF B110AA-DN2 → NF B110AA-DMK

To purchase a product with M12 connector from below replace DN2 with SMK in the codes shown above. Example:  
 NF B110AA-DN2 → NF B110AA-SMK

To purchase a product with AMP connector replace DN2 with SAK in the codes shown above. Example:  
 NF B110AA-DN2 → NF B110AA-SAK

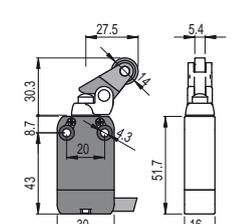
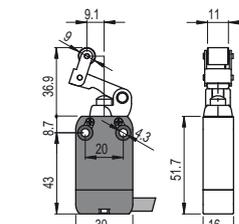
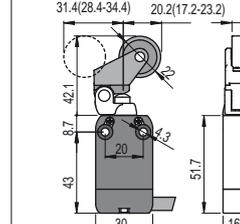
All measures in the drawings are in mm

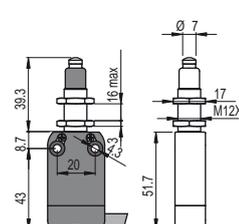
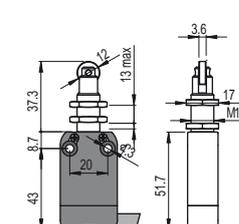
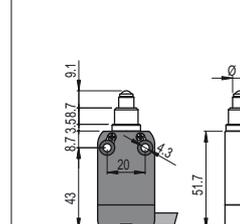
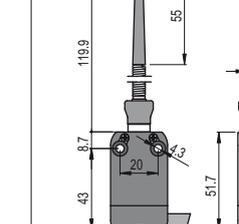
Items with code on green background are stock items

Accessories See page 225

→ The 2D/3D files are available at [www.pizzato.com](http://www.pizzato.com)



Contact type:	With stainless steel roller on request		Operation in one direction		Fixed only by threaded head				
									
<b>R</b> = snap action <b>L</b> = slow action									
Contact blocks									
B11	<b>R</b>	NF B110CH-DN2	⊕ 1NO+1NC	NF B110CP-DN2	⊕ 1NO+1NC	NF B110CV-DN2	⊕ 1NO+1NC	NF B110EB-DN2	⊕ 1NO+1NC
B02	<b>R</b>	NF B020CH-DN2	⊕ 2NC	NF B020CP-DN2	⊕ 2NC	NF B020CV-DN2	⊕ 2NC	NF B020EB-DN2	⊕ 2NC
B12	<b>R</b>	NF B120CH-DN2	⊕ 1NO+2NC	NF B120CP-DN2	⊕ 1NO+2NC	NF B120CV-DN2	⊕ 1NO+2NC	NF B120EB-DN2	⊕ 1NO+2NC
B22	<b>R</b>	NF B220CH-DN2	⊕ 2NO+2NC	NF B220CP-DN2	⊕ 2NO+2NC	NF B220CV-DN2	⊕ 2NO+2NC	NF B220EB-DN2	⊕ 2NO+2NC
G11	<b>L</b>	NF G110CH-DN2	⊕ 1NO+1NC	NF G110CP-DN2	⊕ 1NO+1NC	NF G110CV-DN2	⊕ 1NO+1NC	NF G110EB-DN2	⊕ 1NO+1NC
G02	<b>L</b>	NF G020CH-DN2	⊕ 2NC	NF G020CP-DN2	⊕ 2NC	NF G020CV-DN2	⊕ 2NC	NF G020EB-DN2	⊕ 2NC
G12	<b>L</b>	NF G120CH-DN2	⊕ 1NO+2NC	NF G120CP-DN2	⊕ 1NO+2NC	NF G120CV-DN2	⊕ 1NO+2NC	NF G120EB-DN2	⊕ 1NO+2NC
G22	<b>L</b>	NF G220CH-DN2	⊕ 2NO+2NC	NF G220CP-DN2	⊕ 2NO+2NC	NF G220CV-DN2	⊕ 2NO+2NC	NF G220EB-DN2	⊕ 2NO+2NC
Max. speed	page 243 - type 3		page 243 - type 3		page 243 - type 3		page 243 - type 4		
Min. force	5 N (25 N ⊕)		3 N (25 N ⊕)		3 N (25 N ⊕)		7 N (25 N ⊕)		
Travel diagrams	page 244 - group 2		page 244 - group 6		page 244 - group 3		page 244 - group 1		

Contact blocks	Fixed only by threaded head With external rubber gasket		Fixed only by threaded head		Plunger with Ø 6 mm ball		With external rubber gasket		
									
B11	<b>R</b>	NF B110EE-DN2	⊕ 1NO+1NC	NF B110FB-DN2	⊕ 1NO+1NC	NF B110GB-DN2	⊕ 1NO+1NC	NF B110HB-DN2	1NO+1NC
B02	<b>R</b>	NF B020EE-DN2	⊕ 2NC	NF B020FB-DN2	⊕ 2NC	NF B020GB-DN2	⊕ 2NC	NF B020HB-DN2	2NC
B12	<b>R</b>	NF B120EE-DN2	⊕ 1NO+2NC	NF B120FB-DN2	⊕ 1NO+2NC	NF B120GB-DN2	⊕ 1NO+2NC	NF B120HB-DN2	1NO+2NC
B22	<b>R</b>	NF B220EE-DN2	⊕ 2NO+2NC	NF B220FB-DN2	⊕ 2NO+2NC	NF B220GB-DN2	⊕ 2NO+2NC	NF B220HB-DN2	2NO+2NC
G11	<b>L</b>	NF G110EE-DN2	⊕ 1NO+1NC	NF G110FB-DN2	⊕ 1NO+1NC	NF G110GB-DN2	⊕ 1NO+1NC		
G02	<b>L</b>	NF G020EE-DN2	⊕ 2NC	NF G020FB-DN2	⊕ 2NC	NF G020GB-DN2	⊕ 2NC	NF G020HB-DN2	2NC
G12	<b>L</b>	NF G120EE-DN2	⊕ 1NO+2NC	NF G120FB-DN2	⊕ 1NO+2NC	NF G120GB-DN2	⊕ 1NO+2NC		
G22	<b>L</b>	NF G220EE-DN2	⊕ 2NO+2NC	NF G220FB-DN2	⊕ 2NO+2NC	NF G220GB-DN2	⊕ 2NO+2NC		
Max. speed	page 243 - type 4		page 243 - type 2		page 243 - type 2		1 m/s		
Min. force	7 N (25 N ⊕)		7 N (25 N ⊕)		7 N (25 N ⊕)		0.03 Nm		
Travel diagrams	page 244 - group 1		page 244 - group 1		page 244 - group 1		page 244 - group 4		

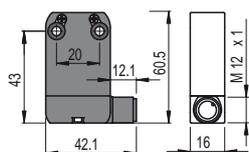
All measures in the drawings are in mm

Contact type:  
**R** = snap action  
**L** = slow action

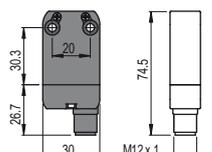
	With external rubber gasket		With external rubber gasket		With stainless steel roller on request		With stainless steel roller on request	
Contact blocks								
B11	<b>R</b>	NF B110HE-DN2 1NO+1NC	NF B110HH-DN2 1NO+1NC	NF B112KA-DN2 ⊕ 1NO+1NC	NF B112KB-DN2 ⊕ 1NO+1NC			
B02	<b>R</b>	NF B020HE-DN2 2NC	NF B020HH-DN2 2NC	NF B022KA-DN2 ⊕ 2NC	NF B022KB-DN2 ⊕ 2NC			
B12	<b>R</b>	NF B120HE-DN2 1NO+2NC	NF B120HH-DN2 1NO+2NC	NF B122KA-DN2 ⊕ 1NO+2NC	NF B122KB-DN2 ⊕ 1NO+2NC			
B22	<b>R</b>	NF B220HE-DN2 2NO+2NC	NF B220HH-DN2 2NO+2NC	NF B222KA-DN2 ⊕ 2NO+2NC	NF B222KB-DN2 ⊕ 2NO+2NC			
G11	<b>L</b>			NF G112KA-DN2 ⊕ 1NO+1NC	NF G112KB-DN2 ⊕ 1NO+1NC			
G02	<b>L</b>	NF G020HE-DN2 2NC	NF G020HH-DN2 2NC	NF G022KA-DN2 ⊕ 2NC	NF G022KB-DN2 ⊕ 2NC			
G12	<b>L</b>			NF G122KA-DN2 ⊕ 1NO+2NC	NF G122KB-DN2 ⊕ 1NO+2NC			
G22	<b>L</b>			NF G222KA-DN2 ⊕ 2NO+2NC	NF G222KB-DN2 ⊕ 2NO+2NC			
Max. speed	1 m/s		1 m/s		page 243 - type 1		page 243 - type 1	
Min. force	0.07 Nm		0.03 Nm		0.07 Nm (0.25 Nm ⊕)		0.07 Nm (0.25 Nm ⊕)	
Travel diagrams	page 244 - group 4		page 244 - group 4		page 244 - group 5		page 244 - group 5	

	With stainless steel roller on request		With stainless steel roller on request		With stainless steel roller on request		With stainless steel roller on request	
Contact blocks								
B11	<b>R</b>	NF B112KC-DN2 ⊕ 1NO+1NC	NF B112KD-DN2 ⊕ 1NO+1NC	NF B112KE-DN2 ⊕ 1NO+1NC	NF B112KF-DN2 ⊕ 1NO+1NC			
B02	<b>R</b>	NF B022KC-DN2 ⊕ 2NC	NF B022KD-DN2 ⊕ 2NC	NF B022KE-DN2 ⊕ 2NC	NF B022KF-DN2 ⊕ 2NC			
B12	<b>R</b>	NF B122KC-DN2 ⊕ 1NO+2NC	NF B122KD-DN2 ⊕ 1NO+2NC	NF B122KE-DN2 ⊕ 1NO+2NC	NF B122KF-DN2 ⊕ 1NO+2NC			
B22	<b>R</b>	NF B222KC-DN2 ⊕ 2NO+2NC	NF B222KD-DN2 ⊕ 2NO+2NC	NF B222KE-DN2 ⊕ 2NO+2NC	NF B222KF-DN2 ⊕ 2NO+2NC			
G11	<b>L</b>	NF G112KC-DN2 ⊕ 1NO+1NC	NF G112KD-DN2 ⊕ 1NO+1NC	NF G112KE-DN2 ⊕ 1NO+1NC	NF G112KF-DN2 ⊕ 1NO+1NC			
G02	<b>L</b>	NF G022KC-DN2 ⊕ 2NC	NF G022KD-DN2 ⊕ 2NC	NF G022KE-DN2 ⊕ 2NC	NF G022KF-DN2 ⊕ 2NC			
G12	<b>L</b>	NF G122KC-DN2 ⊕ 1NO+2NC	NF G122KD-DN2 ⊕ 1NO+2NC	NF G122KE-DN2 ⊕ 1NO+2NC	NF G122KF-DN2 ⊕ 1NO+2NC			
G22	<b>L</b>	NF G222KC-DN2 ⊕ 2NO+2NC	NF G222KD-DN2 ⊕ 2NO+2NC	NF G222KE-DN2 ⊕ 2NO+2NC	NF G222KF-DN2 ⊕ 2NO+2NC			
Max. speed	page 243 - type 1		page 243 - type 1		page 243 - type 1		page 243 - type 1	
Min. force	0.07 Nm (0.25 Nm ⊕)		0.07 Nm (0.25 Nm ⊕)		0.07 Nm (0.25 Nm ⊕)		0.07 Nm (0.25 Nm ⊕)	
Travel diagrams	page 244 - group 5		page 244 - group 5		page 244 - group 5		page 244 - group 5	

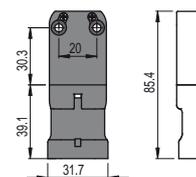
M12 connector, right



M12 connector, bottom



AMP superseal 1.5 connector



To purchase a product with M12 connector from the right replace DN2 with DMK in the codes shown above. Example:  
 NF B110AA-DN2 → NF B110AA-DMK

To purchase a product with M12 connector from below replace DN2 with SMK in the codes shown above. Example:  
 NF B110AA-DN2 → NF B110AA-SMK

To purchase a product with AMP connector replace DN2 with SAK in the codes shown above. Example:  
 NF B110AA-DN2 → NF B110AA-SAK

All measures in the drawings are in mm



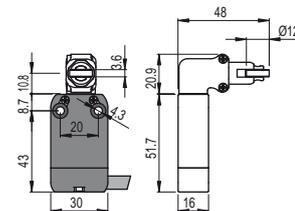
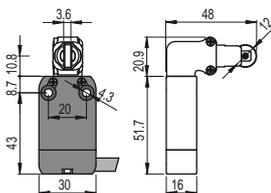
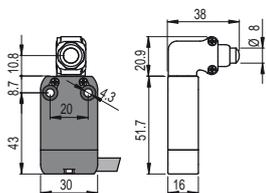
With stainless steel roller on request	With stainless steel roller on request	With stainless steel roller on request	Square rod, 3x3 mm, stainless steel	
Contact type: <b>R</b> = snap action <b>L</b> = slow action				
Contact blocks B11 <b>R</b> NF B112KG-DN2 → 1NO+1NC B02 <b>R</b> NF B022KG-DN2 → 2NC B12 <b>R</b> NF B122KG-DN2 → 1NO+2NC B22 <b>R</b> NF B222KG-DN2 → 2NO+2NC G11 <b>L</b> NF G112KG-DN2 → 1NO+1NC G02 <b>L</b> NF G022KG-DN2 → 2NC G12 <b>L</b> NF G122KG-DN2 → 1NO+2NC G22 <b>L</b> NF G222KG-DN2 → 2NO+2NC	Contact blocks NF B112KH-DN2 → 1NO+1NC NF B022KH-DN2 → 2NC NF B122KH-DN2 → 1NO+2NC NF B222KH-DN2 → 2NO+2NC NF G112KH-DN2 → 1NO+1NC NF G022KH-DN2 → 2NC NF G122KH-DN2 → 1NO+2NC NF G222KH-DN2 → 2NO+2NC	Contact blocks NF B112KP-DN2 → 1NO+1NC NF B022KP-DN2 → 2NC NF B122KP-DN2 → 1NO+2NC NF B222KP-DN2 → 2NO+2NC NF G112KP-DN2 → 1NO+1NC NF G022KP-DN2 → 2NC NF G122KP-DN2 → 1NO+2NC NF G222KP-DN2 → 2NO+2NC	Contact blocks NF B112LB-DN2 1NO+1NC NF B022LB-DN2 2NC NF B122LB-DN2 1NO+2NC NF B222LB-DN2 2NO+2NC NF G112LB-DN2 1NO+1NC NF G022LB-DN2 2NC NF G122LB-DN2 1NO+2NC NF G222LB-DN2 2NO+2NC	
Max. speed	page 243 - type 1	page 243 - type 1	page 243 - type 1	1.5 m/s
Min. force	0.07 Nm (0.25 Nm →)	0.07 Nm (0.25 Nm →)	0.07 Nm (0.25 Nm →)	0.07 Nm
Travel diagrams	page 244 - group 5	page 244 - group 5	page 244 - group 5	page 244 - group 5

Round rod, Ø 3 mm, stainless steel	Fiber glass rod		Porcelain roller	
Contact blocks B11 <b>R</b> NF B112LE-DN2 1NO+1NC B02 <b>R</b> NF B022LE-DN2 2NC B12 <b>R</b> NF B122LE-DN2 1NO+2NC B22 <b>R</b> NF B222LE-DN2 2NO+2NC G11 <b>L</b> NF G112LE-DN2 1NO+1NC G02 <b>L</b> NF G022LE-DN2 2NC G12 <b>L</b> NF G122LE-DN2 1NO+2NC G22 <b>L</b> NF G222LE-DN2 2NO+2NC	Contact blocks NF B112LH-DN2 1NO+1NC NF B022LH-DN2 2NC NF B122LH-DN2 1NO+2NC NF B222LH-DN2 2NO+2NC NF G112LH-DN2 1NO+1NC NF G022LH-DN2 2NC NF G122LH-DN2 1NO+2NC NF G222LH-DN2 2NO+2NC	Contact blocks NF B112LL-DN2 1NO+1NC NF B022LL-DN2 2NC NF B122LL-DN2 1NO+2NC NF B222LL-DN2 2NO+2NC NF G112LL-DN2 1NO+1NC NF G022LL-DN2 2NC NF G122LL-DN2 1NO+2NC NF G222LL-DN2 2NO+2NC	Contact blocks NF B112LP-DN2E24 → 1NO+1NC NF B022LP-DN2E24 → 2NC NF B122LP-DN2E24 → 1NO+2NC NF B222LP-DN2E24 → 2NO+2NC NF G112LP-DN2E24 → 1NO+1NC NF G022LP-DN2E24 → 2NC NF G122LP-DN2E24 → 1NO+2NC NF G222LP-DN2E24 → 2NO+2NC	
Max. speed	1.5 m/s	1.5 m/s	1.5 m/s	0.5 m/s
Min. force	0.07 Nm	0.07 Nm	0.07 Nm	0.04 Nm
Travel diagrams	page 244 - group 5	page 244 - group 5	page 244 - group 5	page 244 - group 5

All measures in the drawings are in mm

Contact type:

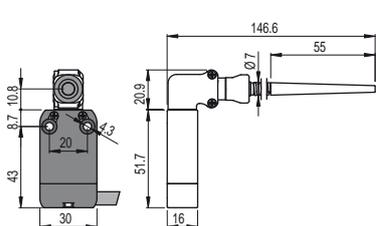
- R = snap action
- L = slow action



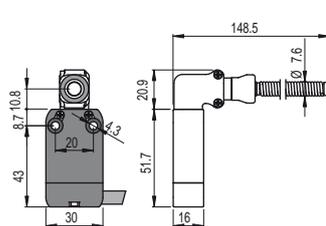
Contact blocks

B11	<span style="border: 1px solid black; padding: 0 2px;">R</span>	NF B110AB-DN2W5	⊕ 1NO+1NC	NF B110BB-DN2H0W5	⊕ 1NO+1NC	NF B110BB-DN2W5	⊕ 1NO+1NC
B02	<span style="border: 1px solid black; padding: 0 2px;">R</span>	NF B020AB-DN2W5	⊕ 2NC	NF B020BB-DN2H0W5	⊕ 2NC	NF B020BB-DN2W5	⊕ 2NC
B12	<span style="border: 1px solid black; padding: 0 2px;">R</span>	NF B120AB-DN2W5	⊕ 1NO+2NC	NF B120BB-DN2H0W5	⊕ 1NO+2NC	NF B120BB-DN2W5	⊕ 1NO+2NC
B22	<span style="border: 1px solid black; padding: 0 2px;">R</span>	NF B220AB-DN2W5	⊕ 2NO+2NC	NF B220BB-DN2H0W5	⊕ 2NO+2NC	NF B220BB-DN2W5	⊕ 2NO+2NC
G11	<span style="border: 1px solid black; padding: 0 2px;">L</span>	NF G110AB-DN2W5	⊕ 1NO+1NC	NF G110BB-DN2H0W5	⊕ 1NO+1NC	NF G110BB-DN2W5	⊕ 1NO+1NC
G02	<span style="border: 1px solid black; padding: 0 2px;">L</span>	NF G020AB-DN2W5	⊕ 2NC	NF G020BB-DN2H0W5	⊕ 2NC	NF G020BB-DN2W5	⊕ 2NC
G12	<span style="border: 1px solid black; padding: 0 2px;">L</span>	NF G120AB-DN2W5	⊕ 1NO+2NC	NF G120BB-DN2H0W5	⊕ 1NO+2NC	NF G120BB-DN2W5	⊕ 1NO+2NC
G22	<span style="border: 1px solid black; padding: 0 2px;">L</span>	NF G220AB-DN2W5	⊕ 2NO+2NC	NF G220BB-DN2H0W5	⊕ 2NO+2NC	NF G220BB-DN2W5	⊕ 2NO+2NC
Max. speed		page 243 - type 4		page 243 - type 2		page 243 - type 2	
Min. force		9.5 N (25 N ⊕)		9.5 N (25 N ⊕)		9.5 N (25 N ⊕)	
Travel diagrams		page 244 - group 1		page 244 - group 1		page 244 - group 1	

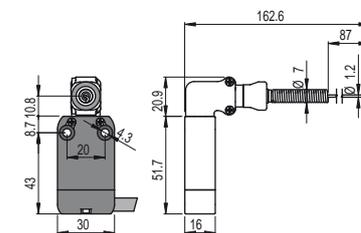
With external gasket



With external gasket



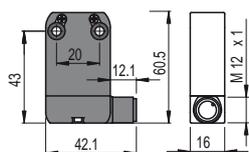
With external gasket



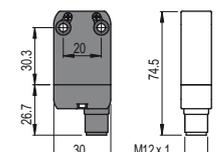
Contact blocks

B11	<span style="border: 1px solid black; padding: 0 2px;">R</span>	NF B110HB-DN2W5	1NO+1NC	NF B110HE-DN2W5	1NO+1NC	NF B110HH-DN2W5	1NO+1NC
B02	<span style="border: 1px solid black; padding: 0 2px;">R</span>	NF B020HB-DN2W5	2NC	NF B020HE-DN2W5	2NC	NF B020HH-DN2W5	2NC
B12	<span style="border: 1px solid black; padding: 0 2px;">R</span>	NF B120HB-DN2W5	1NO+2NC	NF B120HE-DN2W5	1NO+2NC	NF B120HH-DN2W5	1NO+2NC
B22	<span style="border: 1px solid black; padding: 0 2px;">R</span>	NF B220HB-DN2W5	2NO+2NC	NF B220HE-DN2W5	2NO+2NC	NF B220HH-DN2W5	2NO+2NC
G11	<span style="border: 1px solid black; padding: 0 2px;">L</span>						
G02	<span style="border: 1px solid black; padding: 0 2px;">L</span>	NF G020HB-DN2W5	2NC	NF G020HE-DN2W5	2NC	NF G020HH-DN2W5	2NC
G12	<span style="border: 1px solid black; padding: 0 2px;">L</span>						
G22	<span style="border: 1px solid black; padding: 0 2px;">L</span>						
Max. speed		1 m/s		1 m/s		1 m/s	
Min. force		0.08 Nm		0.12 Nm		0.08 Nm	
Travel diagrams		page 244 - group 4		page 244 - group 4		page 244 - group 4	

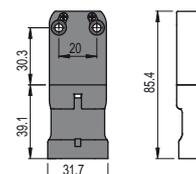
M12 connector, right



M12 connector, bottom



AMP superseal 1.5 connector



To purchase a product with M12 connector from the right replace DN2 with DMK in the codes shown above. Example:  
NF B110AA-DN2 → NF B110AA-DMK

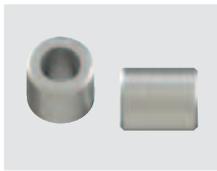
To purchase a product with M12 connector from below replace DN2 with SMK in the codes shown above. Example:  
NF B110AA-DN2 → NF B110AA-SMK

To purchase a product with AMP connector replace DN2 with SAK in the codes shown above. Example:  
NF B110AA-DN2 → NF B110AA-SAK

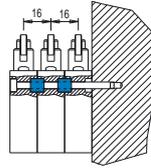
All measures in the drawings are in mm

## Accessories

Article	Description
VN DT1F	Spacer for NA-NF series
VF D16B	Spacer for NB series



By interposing the spacers between one switch and the next, it is possible to have 2 or more prewired switches, preventing them from moving in relation to one another.  
**10 pcs. packs**



## M12 connectors with cable

for details see page 225



### Technical data:

- Polyurethane connector body (4/5/8 poles)
- Polypropylene connector body (12 poles)
- Class 6 rated copper of the wires according to IEC 60228 for mobile installation (4/5/8 poles)
- Class 5 rated copper of the wires according to IEC 60228 for fixed installation (12 poles)
- Gold-plated contacts (resistance < 5 mΩ)
- Self locking ring nut
- High flexibility wire suitable to be used in movable chains, with PVC sheath conforming to IEC 60332-3 and CEI 20-22II standards. With polyurethane sheath on request (4/5/8 poles)
- PVC cable, fixed installation (12 poles)

## Code structure

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

# VF CA4PD3M

No. of poles	
<b>4</b>	4 poles
<b>5</b>	5 poles
<b>8</b>	8 poles
<b>12</b>	12 poles

Sheath coating	
<b>P</b>	PVC (standard)
<b>U</b>	PUR

Connector type	
<b>D</b>	straight (standard)
<b>G</b>	angled

Connection type		No. of poles			
<b>M</b>	M12x1	4	5	8	12
Cable length (L)		4	5	8	12
<b>1</b>	1 metre				
<b>2</b>	2 metres				
<b>3</b>	3 metres (standard)	•	•		
<b>4</b>	4 metres				
<b>5</b>	5 metres (standard)	•	•	•	•
...					
<b>0</b>	10 metres (standard)	•	•	•	•

Other lengths on request

### Stock items

- VF CA4PD3M
- VF CA4PD5M
- VF CA4PD0M
- VF CA5PD3M
- VF CA5PD5M
- VF CA5PD0M
- VF CA8PD5M
- VF CA8PD0M
- VF CA12PD5M
- VF CA12PD0M

**Attention!** No stock item, minimum order quantity 100 pcs.

## M12 sockets, field wireable



### General data

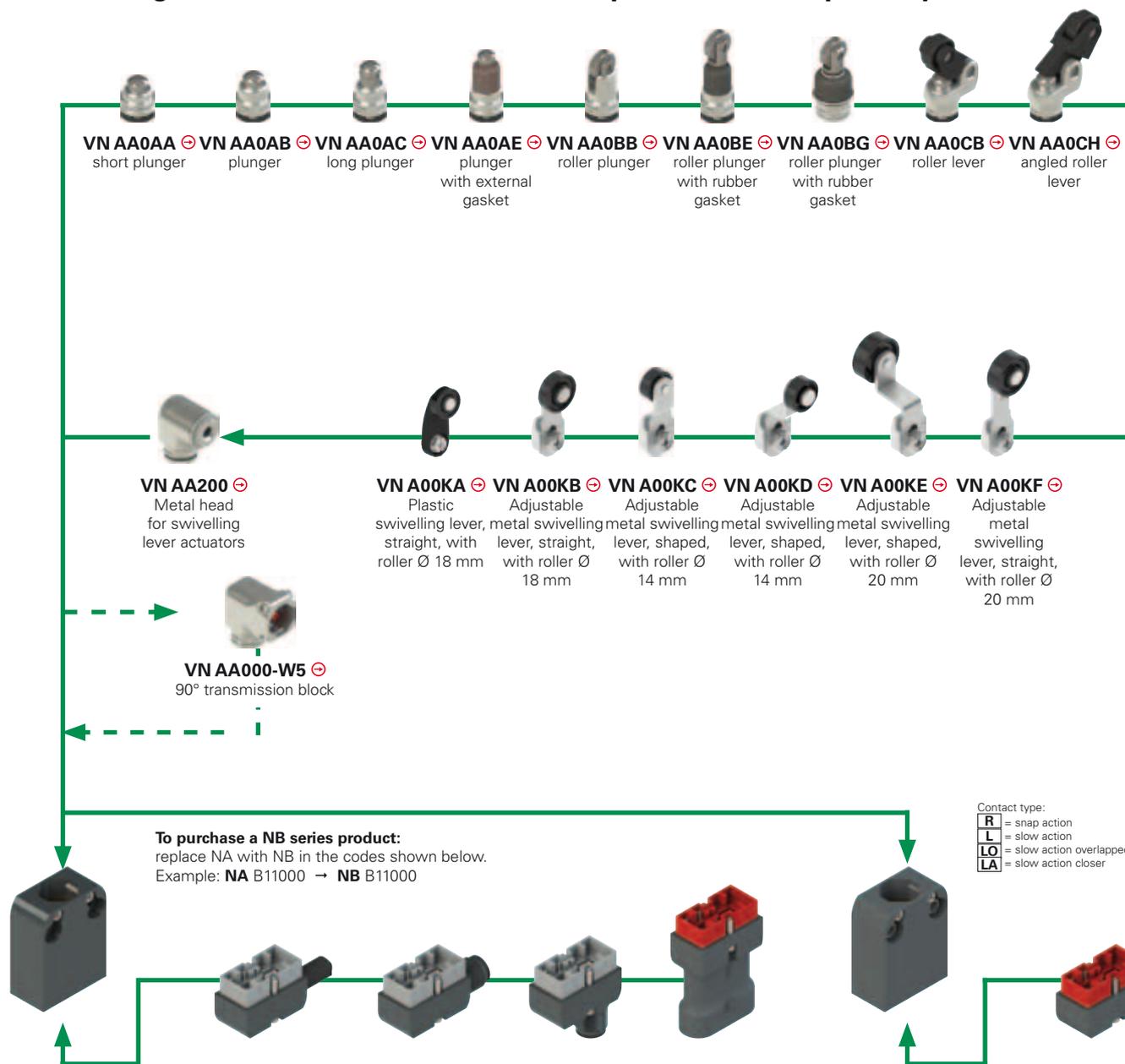
Technopolymer connector body  
Gold-plated contacts  
Screw terminals for wiring  
Max. operating voltages: 250 Vac/dc (4 and 5 poles)  
30 Vac/dc (8 poles)  
Maximum current: 4 A  
Protection degree: IP67 according to EN 60529  
Ambient temperature: -25°C ... +85°C  
Wire cross-section: from 0.25 mm<sup>2</sup> (24 AWG) to 0.5 mm<sup>2</sup> (20 AWG)

Article	Description	no. of poles
VF CBMP4DM04	Field wireable M12 socket, straight, for multipolar cables from Ø 4 to Ø 6.5 mm	4
VF CBMP5DM04	Field wireable M12 socket, straight, for multipolar cables from Ø 4 to Ø 6.5 mm	5
VF CBMP8DM04	Field wireable M12 socket, straight, for multipolar cables from Ø 4 to Ø 7 mm	8

Items with code on **green** background are stock items

→ The 2D/3D files are available at [www.pizzato.com](http://www.pizzato.com)

Selection diagram for NA - NB - NF series components sold separately



NA METAL housing hole spacing 20 mm		
<b>NA B11000</b> ⊕ 1NO+1NC <b>R</b>		
<b>NA G11000</b> ⊕ 1NO+1NC <b>L</b>		
<b>NA L11000</b> ⊕ 1NO+1NC <b>LA</b>		
<b>NA H11000</b> ⊕ 1NO+1NC <b>LO</b>		
<b>NA B02000</b> ⊕ 2NC <b>R</b>		
<b>NA G02000</b> ⊕ 2NC <b>L</b>		
<b>NA B20000</b> ⊕ 2NO <b>R</b>		
<b>NA G20000</b> ⊕ 2NO <b>L</b>		
<b>NA B12000</b> ⊕ 1NO+2NC <b>R</b>		
<b>NA G12000</b> ⊕ 1NO+2NC <b>L</b>		
<b>NA L12000</b> ⊕ 1NO+2NC <b>LA</b>		
<b>NA H12000</b> ⊕ 1NO+2NC <b>LO</b>		
<b>NA B22000</b> ⊕ 2NO+2NC <b>R</b>		
<b>NA G22000</b> ⊕ 2NO+2NC <b>L</b>		
<b>NA L22000</b> ⊕ 2NO+2NC <b>LA</b>		
<b>NA H22000</b> ⊕ 2NO+2NC <b>LO</b>		

Metal connector with cable	cable length (m)
<b>VN CM11DN2</b>	2
<b>VN CM11DN5</b>	5
<b>VN CM02DN2</b>	2
<b>VN CM02DN5</b>	5
/	/
/	/
<b>VN CM12DN2</b>	2
<b>VN CM12DN5</b>	5
<b>VN CM22DN2</b>	2
<b>VN CM22DN5</b>	5

M12 metal connector, right	M12 metal connector, bottom
<b>VN CM11DMK</b>	<b>VN CM11SMK</b>
<b>VN CM02DMK</b>	<b>VN CM02SMK</b>
<b>VN CM20DMK</b>	<b>VN CM20SMK</b>
<b>VN CM12DMK</b>	<b>VN CM12SMK</b>
<b>VN CM22DMK</b>	<b>VN CM22SMK</b>

AMP technopolymer connector, bottom
<b>VN CM11SAK</b>
<b>VN CM02SAK</b>
<b>VN CM20SAK</b>

NFTECHNOPOLYMER housing, 20 mm hole spacing
<b>NF B11000</b> ⊕ 1NO+1NC <b>R</b>
<b>NF G11000</b> ⊕ 1NO+1NC <b>L</b>
<b>NF L11000</b> ⊕ 1NO+1NC <b>LA</b>
<b>NF H11000</b> ⊕ 1NO+1NC <b>LO</b>
<b>NF B02000</b> ⊕ 2NC <b>R</b>
<b>NF G02000</b> ⊕ 2NC <b>L</b>
<b>NF B20000</b> ⊕ 2NO <b>R</b>
<b>NF G20000</b> ⊕ 2NO <b>L</b>
<b>NF B12000</b> ⊕ 1NO+2NC <b>R</b>
<b>NF G12000</b> ⊕ 1NO+2NC <b>L</b>
<b>NF L12000</b> ⊕ 1NO+2NC <b>LA</b>
<b>NF H12000</b> ⊕ 1NO+2NC <b>LO</b>
<b>NF B22000</b> ⊕ 2NO+2NC <b>R</b>
<b>NF G22000</b> ⊕ 2NO+2NC <b>L</b>
<b>NF L22000</b> ⊕ 2NO+2NC <b>LA</b>
<b>NF H22000</b> ⊕ 2NO+2NC <b>LO</b>

Technopolymer connector with cable	cable length (m)
<b>VN CP11DN2</b>	2
<b>VN CP11DN5</b>	5
<b>VN CP02DN2</b>	2
<b>VN CP02DN5</b>	5
/	/
/	/
<b>VN CP12DN2</b>	2
<b>VN CP12DN5</b>	5
<b>VN CP22DN2</b>	2
<b>VN CP22DN5</b>	5

⚠ It is forbidden to install VN CM••••• connectors on technopolymer housings

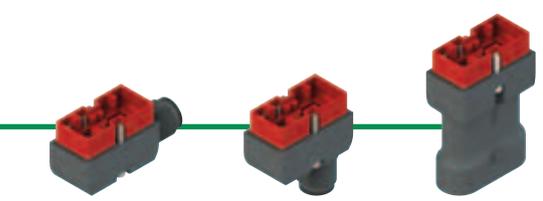
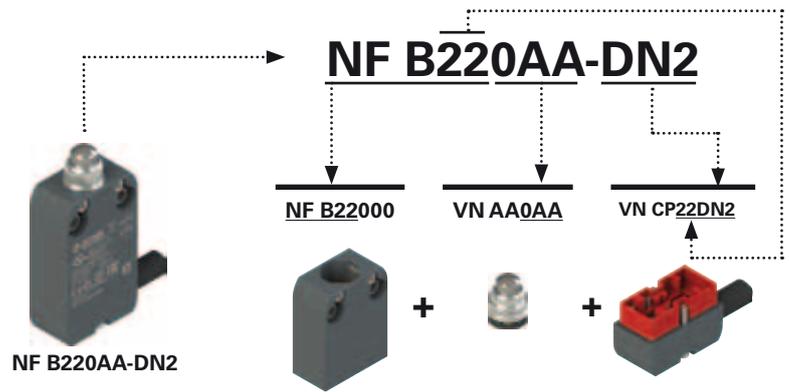
⚠ It is forbidden to install VN CP••••• connectors on metal housings



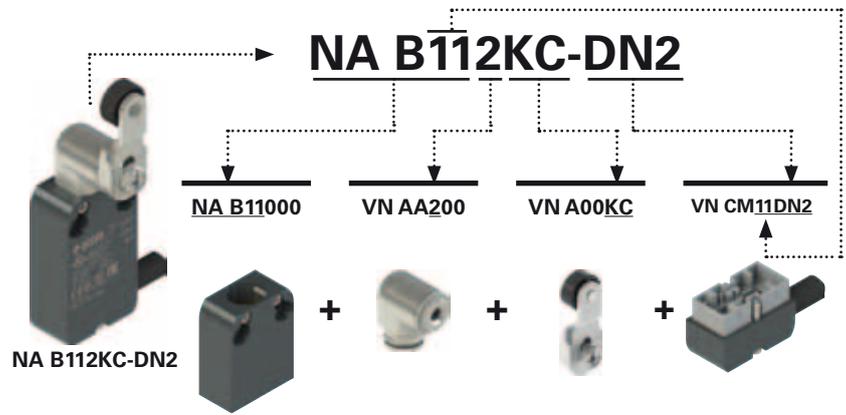
<b>VN AA0CP</b> ⊕ Unidirectional roller lever	<b>VN AA0CV</b> ⊕ Adjustable angled roller lever	<b>VN AA0EB</b> ⊕ Plunger with M12 threaded head	<b>VN AA0EE</b> ⊕ Plunger with M12 threaded head with external gasket	<b>VN AA0FB</b> ⊕ Roller plunger with M12 threaded head	<b>VN AA0GB</b> ⊕ Plunger with Ø 6 mm ball	<b>VN AA0HB</b> Flexible rod with plastic tip	<b>VN AA0HE</b> Flexible rod	<b>VN AA0HH</b> Flexible rod with needle

<b>VN A00KG</b> ⊕ Adjustable metal swivelling lever, shaped, with roller Ø 20 mm	<b>VN A00KH</b> ⊕ Adjustable metal swivelling lever, shaped, with roller Ø 20 mm	<b>VN A00KP</b> ⊕ Metal swivelling lever, straight, with roller Ø 20 mm, extended adjustment	<b>VN A00LB</b> Adjustable metal swivelling lever with stainless steel rod 3x3x125	<b>VN A00LE</b> Adjustable metal swivelling lever with stainless steel rod Ø3x125	<b>VN A00LH</b> Adjustable metal swivelling lever with fiber glass rod Ø6x200	<b>VN A00LL</b> Metal swivelling lever with adjustable flexible rod	<b>VN A00LP</b> ⊕ Metal swivelling lever with porcelain roll

**Article code composition examples**



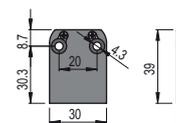
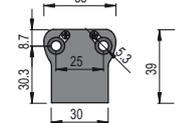
M12 technopolymer connector, right	M12 technopolymer connector, bottom	AMP technopolymer connector, bottom
↔ VN CP11DMK	↔ VN CP11SMK	↔ VN CP11SAK
↔ VN CP02DMK	↔ VN CP02SMK	↔ VN CP02SAK
↔ VN CP20DMK	↔ VN CP20SMK	↔ VN CP20SAK
↔ VN CP22DMK	↔ VN CP22SMK	
↔		



**⚠ Installation for safety applications:**  
 To obtain a safety switch with positive opening ⊕, only join housings bearing the positive opening symbol next to the code ⊕ to actuators bearing the positive opening symbol next to the code ⊕.  
 Example: **VN A00KB ⊕ + VN AA200 ⊕ + NA B11000 ⊕**

## Housings

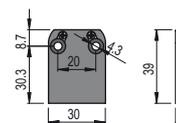
All measures in the drawings are in mm

NA metal housing	metal housing NB
	
NA B11000 ⊕ 1NO+1NC <b>R</b>	NB B11000 ⊕ 1NO+1NC <b>R</b>
NA G11000 ⊕ 1NO+1NC <b>L</b>	NB G11000 ⊕ 1NO+1NC <b>L</b>
NA B12000 ⊕ 1NO+2NC <b>R</b>	NB B12000 ⊕ 1NO+2NC <b>R</b>
NA G12000 ⊕ 1NO+2NC <b>L</b>	NB G12000 ⊕ 1NO+2NC <b>L</b>
NA L12000 ⊕ 1NO+2NC <b>LA</b>	NB L12000 ⊕ 1NO+2NC <b>LA</b>
NA B22000 ⊕ 2NO+2NC <b>R</b>	NB B22000 ⊕ 2NO+2NC <b>R</b>
NA G22000 ⊕ 2NO+2NC <b>L</b>	NB G22000 ⊕ 2NO+2NC <b>L</b>
NA L22000 ⊕ 2NO+2NC <b>LA</b>	NB L22000 ⊕ 2NO+2NC <b>LA</b>
NA H22000 ⊕ 2NO+2NC <b>LO</b>	NB H22000 ⊕ 2NO+2NC <b>LO</b>

Contact type:  
**R** = snap action  
**L** = slow action  
**LO** = slow action overlapped  
**LA** = slow action closer

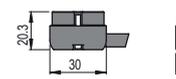
Markings and quality marks:



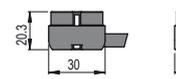
NF technopolymer housing

NF B11000 ⊕ 1NO+1NC <b>R</b>
NF G11000 ⊕ 1NO+1NC <b>L</b>
NF B12000 ⊕ 1NO+2NC <b>R</b>
NF G12000 ⊕ 1NO+2NC <b>L</b>
NF L12000 ⊕ 1NO+2NC <b>LA</b>
NF B22000 ⊕ 2NO+2NC <b>R</b>
NF G22000 ⊕ 2NO+2NC <b>L</b>
NF L22000 ⊕ 2NO+2NC <b>LA</b>
NF H22000 ⊕ 2NO+2NC <b>LO</b>

## Connectors with cable

All measures in the drawings are in mm

metal connector for NA and NB housing	Cable length (m)	Cable type N = PVC H = PUR HALOGEN FREE
		
VN CM11DN2 1NO+1NC	2	N
VN CM11DN5 1NO+1NC	5	
VN CM12DN2 1NO+2NC	2	
VN CM12DN5 1NO+2NC	5	
VN CM22DN2 2NO+2NC	2	
VN CM22DN5 2NO+2NC	5	H
VN CM11DH2 1NO+1NC	2	
VN CM11DH5 1NO+1NC	5	
VN CM12DH2 1NO+2NC	2	
VN CM12DH5 1NO+2NC	5	

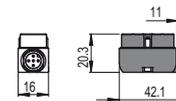
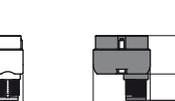
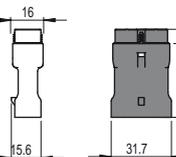
Other cable lengths on request

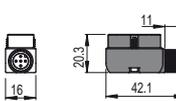
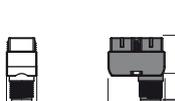
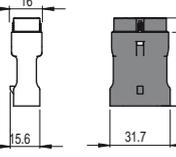
technopolymer connector for NF housing	Cable length (m)	Cable type N = PVC
		
VN CP11DN2 1NO+1NC	2	N
VN CP11DN5 1NO+1NC	5	
VN CP12DN2 1NO+2NC	2	
VN CP12DN5 1NO+2NC	5	
VN CP22DN2 2NO+2NC	2	
VN CP22DN5 2NO+2NC	5	

## M12 or AMP connectors

All measures in the drawings are in mm

**⚠ Important:** Always check that the electric load used respects the voltage and current limits for the connectors. See tables on page 122 and 132

metal connectors for NA and NB housing	
M12 connector, right 	M12 connector, bottom 
VN CM11DMK 1NO+1NC	VN CM11SMK 1NO+1NC
VN CM02DMK 2NC	VN CM02SMK 2NC
VN CM22DMK 2NO+2NC	VN CM22SMK 2NO+2NC
technopolymer connectors for NA and NB housing	
AMP superseal 1.5 	
VN CM11SAK 1NO+1NC	
VN CM02SAK 2NC	
VN CM20SAK 2NO	

technopolymer connectors for NF housings	
M12 connector, right 	M12 connector, bottom 
VN CP11DMK 1NO+1NC	VN CP11SMK 1NO+1NC
VN CP02DMK 2NC	VN CP02SMK 2NC
VN CP22DMK 2NO+2NC	VN CP22SMK 2NO+2NC
AMP superseal 1.5 	
VN CP11SAK 1NO+1NC	
VN CP02SAK 2NC	
VN CP20SAK 2NO	

Items with code on green background are stock items

Accessories See page 225

→ The 2D/3D files are available at [www.pizzato.com](http://www.pizzato.com)



## Actuators

All measures in the drawings are in mm

 8.8	 11.3	 16.1	 21.3	 21.3	 31.3
VN AA0AA	VN AA0AB	VN AA0AC	VN AA0AE	VN AA0BB	VN AA0BE
 30.1	 30.3	 36.9	 31.4 (28.4-34.4) 42.1	 26.3	 39.3
VN AA0CB	VN AA0CH	VN AA0CP	VN AA0CV	VN AA0EB	VN AA0EE
 37.3	 3.6	 119.9	 121.8	 135.9	
VN AA0FB	VN AA0GB	VN AA0HB	VN AA0HE	VN AA0HH	

## Levers

All measures in the drawings are in mm

ATTENTION: These loose actuators can be used with products of series NA, NB and NF only.

 35	 35 (30-37)	 33 (28-35)	 33 (28-35)	 40 (35-42)	 48.6 (43.6-50.6)
VN A00KA	VN A00KB	VN A00KC	VN A00KD	VN A00KE	VN A00KF
 40 (35-42)	 43 (38-46)	 27-93	 19-116	 19-116	 19-189
VN A00KG	VN A00KH	VN A00KP	VN A00LB	VN A00LE	VN A00LH
 10.3 (10.4-11.1)	 80.3 (73.5-82.3)	<b>Levers with stainless steel external metallic parts</b>			
VN A00LL	VN A00LP	 35 (30-37)	 40 (35-42)	 40 (35-42)	 27-93
		VN A00KB-V38	VN A00KE-V38	VN A00KG-V38	VN A00KP-V38

## Heads

 10.3	 15.6	 21.2
VN AA200		

## 90° transmission block

 10.8	 15.6	 26.2
VN AA000-W5		

Items with code on **green** background are stock items

Accessories See page 225

The 2D/3D files are available at [www.pizzato.com](http://www.pizzato.com)

## Description



Microswitches of MK series have been developed in order to add new features to traditional and tested microswitches of Pizzato Elettrica.

These products have been designed with shapes and fixing perfectly interchangeable with the previous ones and with various additional functions useful to extend the application field.

The main innovation of this series is the tripping device modern and evolved, with qualitative features higher than solutions present on the market.

The electrical contact on new microswitch has been realized with higher reliability technology, thanks to the double and redundant shape, and has the possibility to carry out operations with positive opening. The housing of the new microswitch provides the possibility to seat gaskets in order to seal the device against fine dusts or liquids up to IP65 degree. Fastening terminals of conductors are more practical and allow the fixing of different diameter cables or the possibility to choose different bends of faston contacts. For high quantity it's possible to supply the microswitch only with the contact NO or NC, in order to minimize purchase costs.

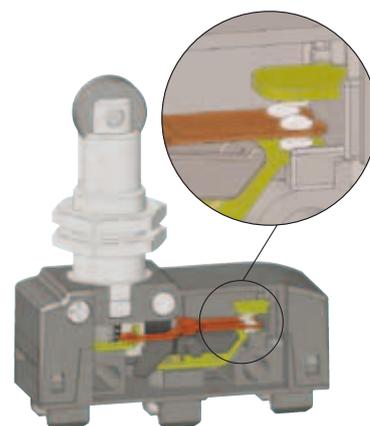
## Contact block reliability

In the following table we refer to the typical microswitch contact structure (type A) normally used in the industry, compared with the innovative solution that Pizzato Elettrica uses in new MK series microswitches: movable contact with single interruption and double contacts (type B). As you can see from the table below, this last structure (type B) offers half of the contact resistance (R) than the simple mobile contact (type A) and a lower probability of failure (fe).

In fact, defined x the probability of a commutation failure of a single interruption, it results that in the type A the failure probability  $fe=x$ , in the type B the probability  $fe \cong x^2$ . This means that if in a certain situation the probability of a single interruption failure x is equal, for instance, to  $1 \times 10^{-4}$  (1 failed interruption every 10,000) we will have:

- for type A one failed commutation every 10,000.
- for type B one failed commutation every 100,000,000

Type	Diagram	Description	Contact resistance R	Failure probability fe
Customary microswitch A		mobile contact, single interruption	$R=R_c$	$fe=x$
Pizzato MK series microswitch B		contacts with single interruption and double contacts	$R=R_c/2$	$fe \cong x^2$

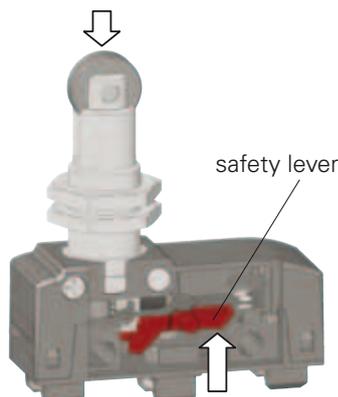


## Extended temperature range

# -40°C

For the new MK series versions with extended temperature range are available on request. Differently from standard MK microswitches with temperature range from +85 C° to -25 C°, these special versions can be used in places where the ambient temperature changes from +85 C° to -40 °C. They can be installed inside cold stores, sterilizers or other equipment with very low ambient temperature. Special materials that have been used to realize these versions, maintain unchanged their features also in these conditions, widening the installation possibilities.

## Microswitches for safety applications



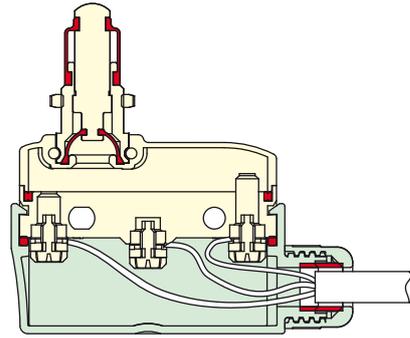
All microswitches that have the symbol  $\ominus$  beside the code are with positive opening, therefore suitable for safety applications. These microswitches are provided with a rigid connection between button and NC contacts, which are opened by force through a strong/sturdy internal safety lever.

The positive opening has been realised in conformity with the standard EN 60947 5 1, enclosure K, therefore these microswitches are suitable for the installation for people's protection.

### Protection degree IP65

By installing microswitches MK ●●●● with terminal covers VF MKC●22 or terminal covers VF MKC●23, it's possible to obtain a microswitch fully dust proof and waterproof. Thanks to special rubber gaskets anti-oil, we achieve the protection degree IP65. For application with high presence of dirtiness, are available also versions with double gasket in the button (internal + external). ex. MK ●●2●12 or MK ●●2●13.

- Gaskets
- Microswitch: MKV12D12
- Terminal cover: VF MKCV22



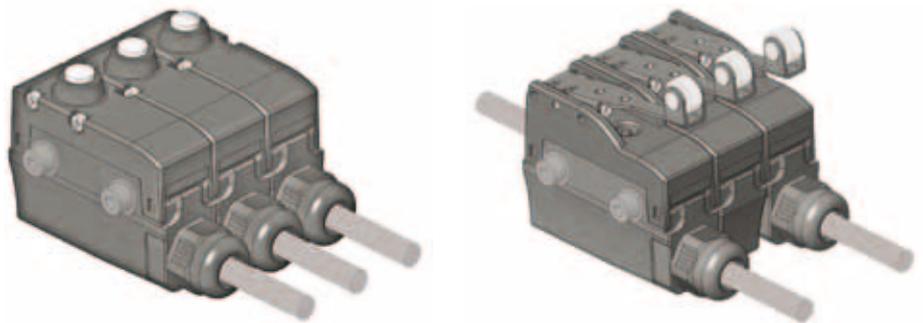
### Clamping screw plates for different diameter cables (MK V●)



These clamping screw plates have a particular "roofing tile" structure and are connected loosely to the clamping screw. In this way, during the wires fixing, the clamping screw plate is able to suit to cables of different diameter (see picture) and tends to tighten the wires toward the screw instead of permitting them to escape towards the outside.

### Stackable terminal covers with wiretrap cable gland

New terminal covers supplied with wiretrap cable gland are provided for the protection degree up to IP65. These terminal covers are snap-in assembled and they have small dimensions in the microswitch profile, it's possible to install them also on microswitches fixed side by side. See page 154.

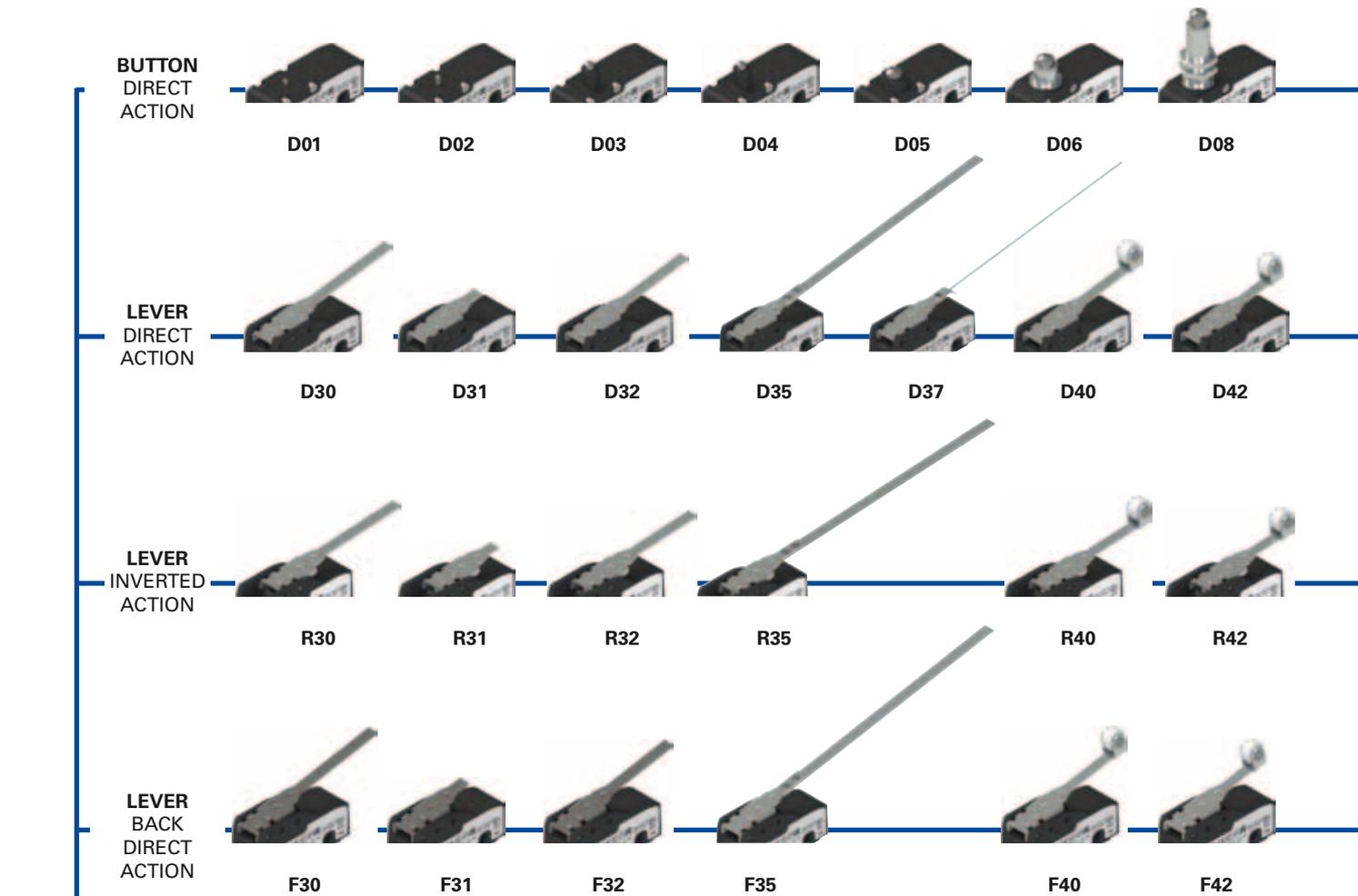


### Orientable actuators

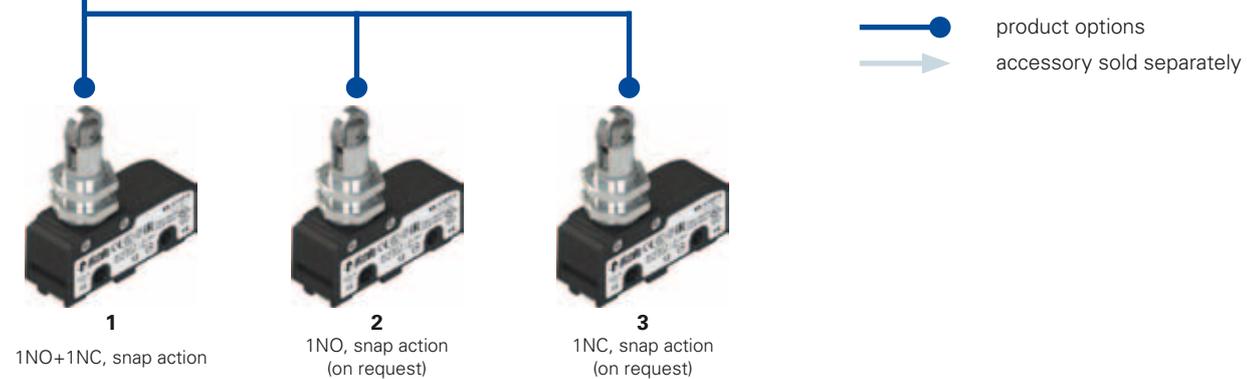


Thanks to the new patented lateral fixing system, it's possible to rotate the roller of microswitches MK ●●●15 and MK ●●●17 in 90° steps.

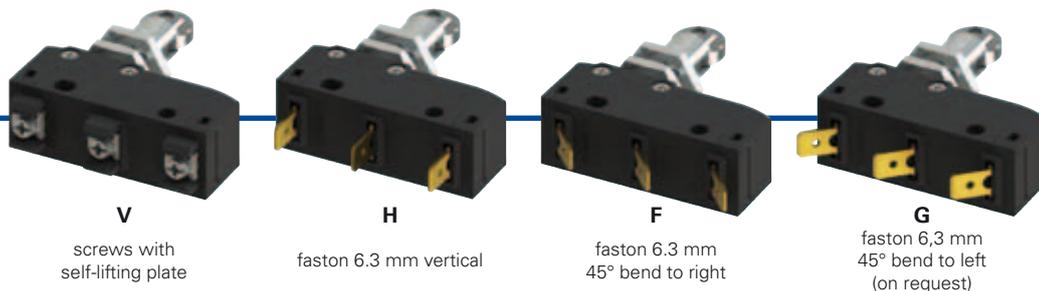
The lateral fixing allows to disconnect the actuator from the body also when the actuator is already fixed to the racket. The flexibility of the product allows also to unify items on stock for applications that require roller both longitudinal or transversal.

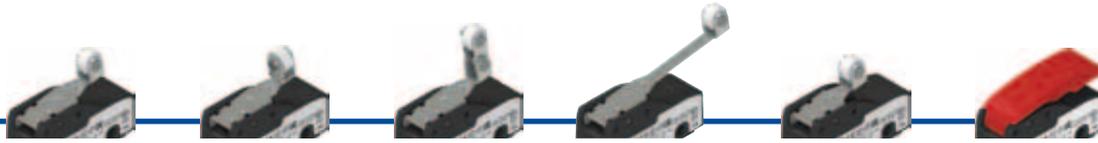


**ACTUATORS**



**TERMINALS**



**D09****D10****D12**  
external  
rubber gasket**D13**  
external  
rubber gasket**D15****D17****D18****D19****D45****D46****D47****D53****D59****D49****R45****R46****R47****R53****R59****R60****F45****F46****F47****F53****F59****F49**

### Code structure

**Attention!** The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

article
options  
**MK V12D40-GR16T6**

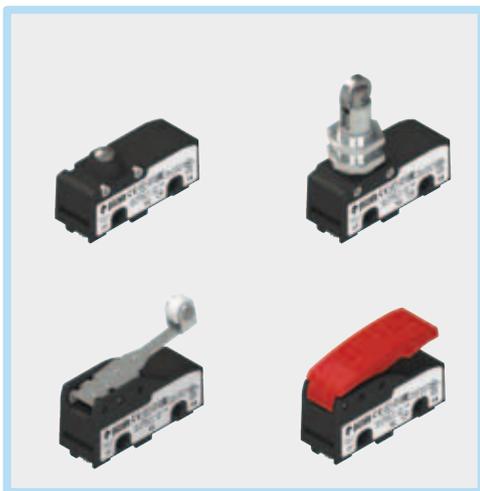
Terminal type	
<b>V</b>	screws with self-lifting plate
<b>H</b>	vertical faston
<b>F</b>	faston, bent 45° to right
<b>G</b>	faston, bent 45° to left (on request)
Contact blocks	
<b>1</b>	1NO+1NC, snap action in deviation
<b>2</b>	1NO, snap action (on request)
<b>3</b>	1NC, snap action (on request)
Maximum protection degree	
<b>1</b>	IP40 (with terminal cover)
<b>2</b>	IP65 (with terminal cover)
Actuation type	
<b>D</b>	direct action
<b>R</b>	inverted action
<b>F</b>	back direct action

Ambient temperature	
	-25°C ... +85°C (standard)
<b>T6</b>	-40°C ... +85°C

Rollers	
	standard roller
<b>R16</b>	metal roller Ø 9.5x4 mm (only for actuators 40, 42, 45, 47, 53, 59)
<b>R10</b>	large plastic roller Ø 9.8x8.4 mm (only for actuators 40, 42, 45, 53)

Contact type	
	silver contacts (standard)
<b>G</b>	silver contacts with 1 µm gold coating

Actuator	
<b>01</b>	pin
<b>02</b>	pin
<b>03</b>	narrow button
..	.....

**Main features**

- Technopolymer housing
- High reliability contacts
- Protection degree up to IP65
- 4 terminal types available
- 47 actuators available
- Versions with positive opening ⊕
- Versions with gold-plated silver contacts
- Terminal covers with wiretrap cable gland

**Markings and quality marks:**

IMQ approval:	CA02.05772
UL approval:	E131787
CCC approval:	2013010305604291
EAC approval:	RU C-IT ДМ94.В.01024

**Technical data****Housing**

Housing made of glass fiber reinforced technopolymer, self-extinguishing and shock-proof.

Protection degree acc. to EN 60529:	IP00 without terminal cover
	IP20 (with terminal cover VF C01, VF C03)
	IP40 (with terminal cover VF MKC•1•, VF C02)
	IP65 (with terminal cover VF MKC•22 + MK V•2••• or VF MKC•23 + MK H•2•••)

**General data**

Ambient temperature:	-25°C ... +85°C
Max. actuation frequency:	3600 operating cycles <sup>1</sup> /hour
Mechanical endurance:	10 million operating cycles <sup>1</sup>
Safety parameters:	

$B_{10d}$ : 20,000,000 for NC contacts

Tightening torques for installation: see pages 235-246

(1) One operation cycle means two movements, one to close and one to open contacts, as defined in EN 60947-5-1.

**Cable cross section (flexible copper strands)**

MK series:	min.	1 x 0.34 mm <sup>2</sup>	(1 x AWG 22)
	max.	2 x 1.5 mm <sup>2</sup>	(2 x AWG 16)

**In conformity with standards:**

IEC 60947-5-1, EN 60947-5-1, IEC 60529, EN 60529, EN 60947-1, IEC 60947-1.

**Approvals:**

UL 508, CSA 22.2 No.14, EN 60947-1, EN 60947-5-1.

**In conformity with the requirements of:**

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and EMC Directive 2004/108/EC.

**Positive contact opening in conformity with standards:**

IEC 60947-5-1, EN 60947-5-1.

**Installation for safety applications:**

Use only microswitches marked with the symbol ⊕ aside the product code. Always connect the safety circuit to the **NC contacts** (normally closed contacts) as stated in **standard EN 60947-5-1, encl. K, par. 2**. Actuate the switch **at least up to the positive opening travel (CAP)** stated aside the article code. Actuate the switch **at least with the positive opening force (FAP)** stated aside the article code.

⚠ **If not expressly indicated in this chapter, for correct installation and utilization of all articles see chapter utilization requirements from page 235 to page 246.**

**Electrical data**

Thermal current (I <sub>th</sub> ):	16 A
Rated insulation voltage (U <sub>i</sub> ):	250 Vac 300 Vdc
Rated impulse withstand voltage (U <sub>imp</sub> ):	4 kV
Conditional short circuit current:	1000 A acc. to EN 60947-5-1
Protection against short circuits:	type gG fuse 16 A 250 V
Pollution degree:	3
Dielectric strength	2000 Vac/min.

**Utilization category**

Alternating current: AC15 (50 ... 60 Hz)			
U <sub>e</sub> (V)	250	120	
I <sub>e</sub> (A)	6	6	
Direct current: DC13			
U <sub>e</sub> (V)	24	125	250
I <sub>e</sub> (A)	5	0.6	0.3

### Characteristics approved by IMQ and CCC

Rated insulation voltage (Ui): 250 Vac  
 Conventional free air thermal current (Ith): 16 A  
 Protection against short circuits: type gG fuse 16 A 250 V  
 Rated impulse withstand voltage (Uimp): 4 kV  
 Conditional short circuit current: 1000 A  
 Protection degree of the housing: IP00  
 Terminals: screw terminals/faston  
 Pollution degree: 3  
 Utilization category: AC15  
 Operating voltage (Ue): 250 Vac (50 Hz)  
 Operating current (Ie): 5 A  
 Forms of the contact element: X; Y; C  
 Positive opening of contacts on contact blocks: 1, 3

In conformity with standards: EN 60947-1, EN 60947-5-1+ A1:2009, fundamental requirements of the Low Voltage Directive 2006/95/EC.

Please contact our technical service for the list of approved products.

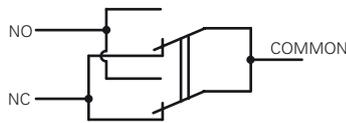
### Characteristics approved by UL

Utilization categories Q300 (69 VA, 125-250 Vdc)  
 A300 (720 VA, 120 ... 300 Vac)

In conformity with standard: UL 508, CSA 22.2 No.14

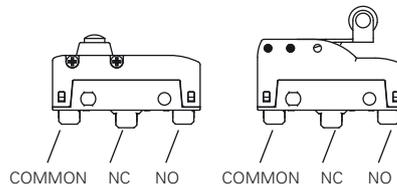
Please contact our technical service for the list of approved products.

### Circuit diagram

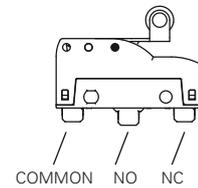


Contacts with single interruption and double contacts

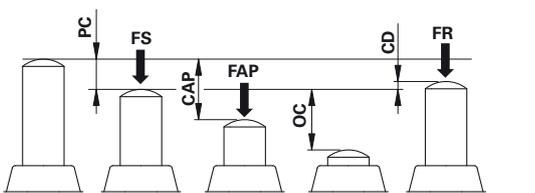
With direct and back direct action (F, D)



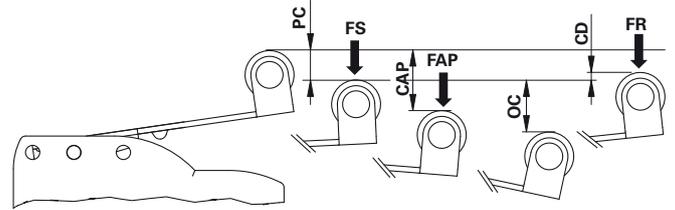
With inverted action (R)



### Actuation forces and travels



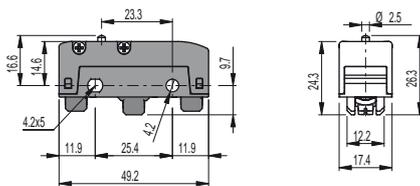
PC pre-travel  
 CAP positive opening travel  
 OC over-travel  
 CD differential travel



FS operating force  
 FR releasing force  
 FAP positive opening force

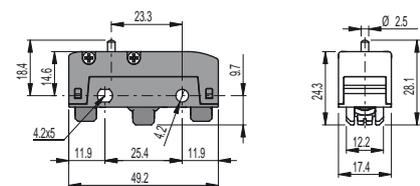
### Microswitches with direct action

All measures in the drawings are in mm



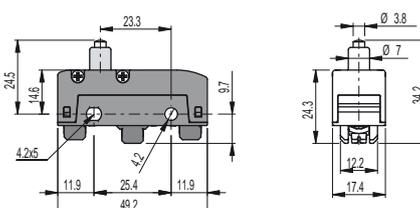
**MK V11D01** 1NO+1NC PC 0,5 mm FS 4 N  
 OC 1,5 mm FR 3 N  
 CD 0,05 mm

Maximum and Minimum speed page 245 - type 1



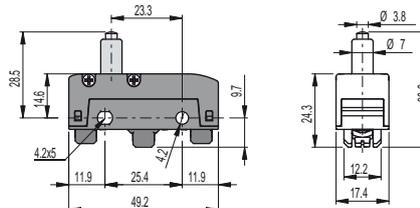
**MK V11D02** 1NO+1NC PC 0,5 mm FS 4 N  
 OC 2 mm FR 3 N  
 CD 0,05 mm

Maximum and Minimum speed page 245 - type 1



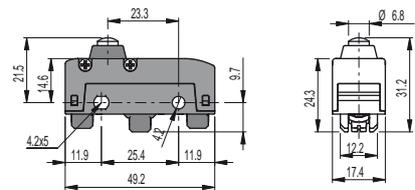
**MK V11D03** 1NO+1NC PC 0,5 mm FS 4 N  
 OC 2 mm FR 3 N  
 CD 0,05 mm

Maximum and Minimum speed page 245 - type 1



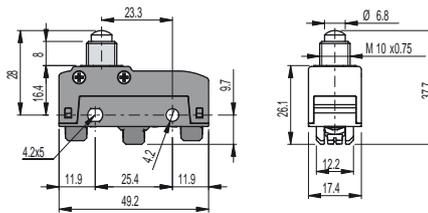
**MK V11D04** 1NO+1NC PC 0,5 mm FS 4 N  
 OC 2 mm FR 3 N  
 CD 0,05 mm

Maximum and Minimum speed page 245 - type 1



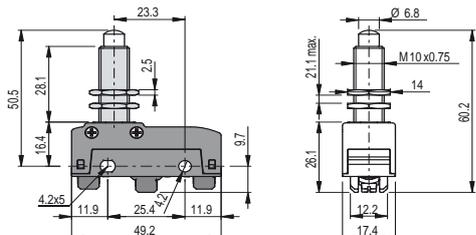
<b>MK V11D05</b> (1NO+1NC)	PC	0,5 mm	FS	4 N
	OC	2 mm	FR	3 N
	CD	0,05 mm	FAP	20 N
	CAP	2,2 mm		

Maximum and Minimum speed page 245 - type 1



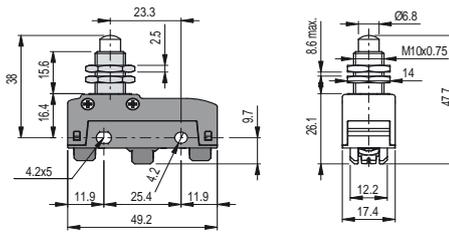
<b>MK V11D06</b> (1NO+1NC)	PC	0,5 mm	FS	4 N
	OC	3 mm	FR	3 N
	CD	0,05 mm	FAP	20 N
	CAP	2,2 mm		

Maximum and Minimum speed page 245 - type 1



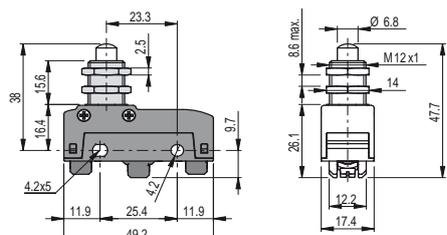
<b>MK V11D08</b> (1NO+1NC)	PC	0,5 mm	FS	4 N
	OC	5,5 mm	FR	3 N
	CD	0,05 mm	FAP	20 N
	CAP	2,2 mm		

Maximum and Minimum speed page 245 - type 1



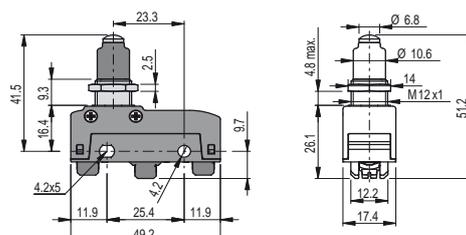
<b>MK V11D09</b> (1NO+1NC)	PC	0,5 mm	FS	4 N
	OC	5,5 mm	FR	3 N
	CD	0,05 mm	FAP	20 N
	CAP	2,2 mm		

Maximum and Minimum speed page 245 - type 1



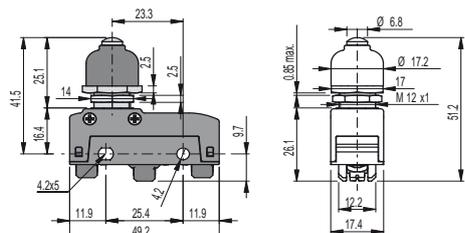
<b>MK V11D10</b> (1NO+1NC)	PC	0,5 mm	FS	4 N
	OC	5,5 mm	FR	3 N
	CD	0,05 mm	FAP	20 N
	CAP	2,2 mm		

Maximum and Minimum speed page 245 - type 1



<b>MK V11D12</b> (1NO+1NC)	PC	0,5 mm	FS	4,5 N
	OC	5,5 mm	FR	3 N
	CD	0,05 mm	FAP	20 N
	CAP	2,2 mm		

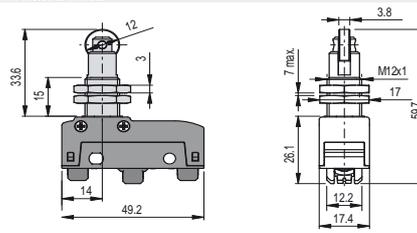
Maximum and Minimum speed page 245 - type 1



<b>MK V11D13</b> (1NO+1NC)	PC	0,6 mm	FS	6 N
	OC	5,4 mm	FR	4 N
	CD	0,05 mm	FAP	20 N
	CAP	2,2 mm		

Maximum and Minimum speed page 245 - type 1

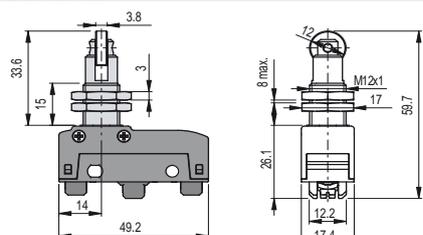
Fixed only by threaded head



<b>MK V11D15</b> (1NO+1NC)	PC	0,5 mm	FS	4 N
	OC	5,5 mm	FR	3 N
	CD	0,05 mm	FAP	20 N
	CAP	2,2 mm		

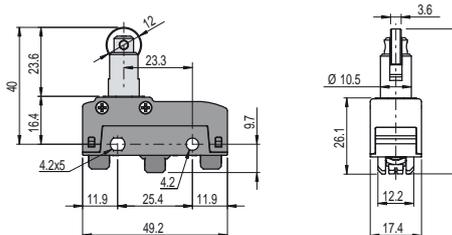
Maximum and Minimum speed page 245 - type 2

Fixed only by threaded head



<b>MK V11D17</b> (1NO+1NC)	PC	0,5 mm	FS	4 N
	OC	5,5 mm	FR	3 N
	CD	0,05 mm	FAP	20 N
	CAP	2,2 mm		

Maximum and Minimum speed page 245 - type 2



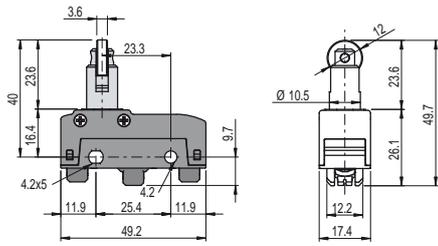
<b>MK V11D18</b> (1NO+1NC)	PC	0,5 mm	FS	4 N
	OC	5,5 mm	FR	3 N
	CD	0,05 mm	FAP	20 N
	CAP	2,2 mm		

Maximum and Minimum speed page 245 - type 2

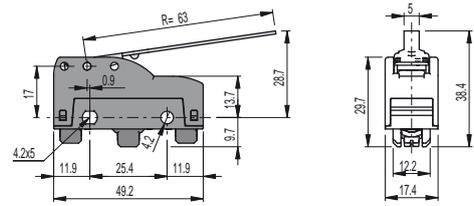
Items with code on **green** background are stock items

Accessories See page 225

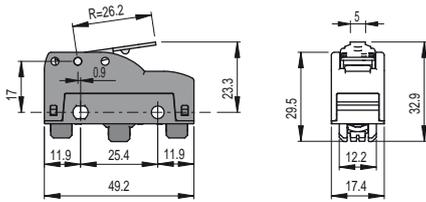
→ The 2D/3D files are available at [www.pizzato.com](http://www.pizzato.com)



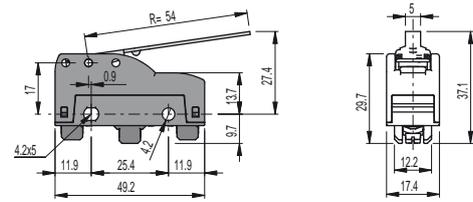
<b>MK V11D19</b> <span style="background-color: #e0ffe0;">1NO+1NC</span>	PC	0,5 mm	FS	4 N
	OC	5,5 mm	FR	3 N.
	CD	0,05 mm	FAP	20 N
	CAP	2,2 mm		
	Maximum and Minimum speed page 245 - type 2			



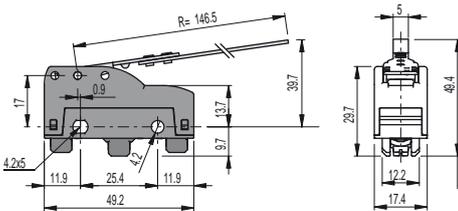
<b>MK V11D30</b> <span style="background-color: #e0ffe0;">1NO+1NC</span>	PC	9 mm	FS	0,65 N
	OC	10 mm	FR	0,5 N
	CD	1,1 mm		
	Maximum and Minimum speed page 245 - type 3			



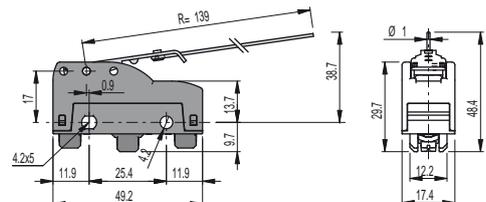
<b>MK V11D31</b> <span style="background-color: #e0ffe0;">1NO+1NC</span>	PC	4,54 mm	FS	1,66 N
	OC	3,86 mm	FR	1,32 N
	CD	0,42 mm		
	Maximum and Minimum speed page 245 - type 3			



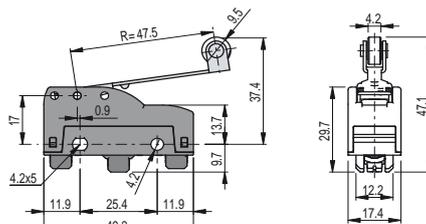
<b>MK V11D32</b> <span style="background-color: #e0ffe0;">1NO+1NC</span>	PC	7,7 mm	FS	0,76 N
	OC	8,3 mm	FR	0,58 N
	CD	0,9 mm		
	Maximum and Minimum speed page 245 - type 3			



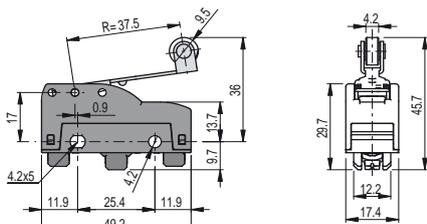
<b>MK V11D35</b> <span style="background-color: #e0ffe0;">1NO+1NC</span>	PC	19 mm	FS	0,28 N
	OC	16,7 mm	FR	0,22 N
	CD	2,5 mm		
	Maximum and Minimum speed page 245 - type 3			



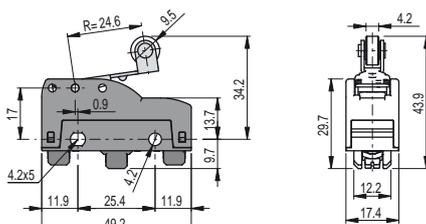
<b>MK V11D37</b> <span style="background-color: #e0ffe0;">1NO+1NC</span>	PC	19 mm	FS	0,08 N
	OC	9,5 mm	FR	0,04 N
	CD	2,3 mm		
	Maximum and Minimum speed page 245 - type 3			



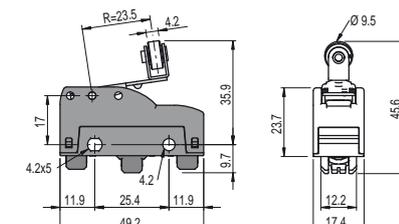
<b>MK V11D40</b> <span style="background-color: #e0ffe0;">1NO+1NC</span>	PC	6,7 mm	FS	0,86 N
	OC	7,8 mm	FR	0,66 N
	CD	0,8 mm		
	Maximum and Minimum speed page 245 - type 6			



<b>MK V11D42</b> <span style="background-color: #e0ffe0;">1NO+1NC</span>	PC	5,3 mm	FS	1,09 N
	OC	5,7 mm	FR	0,84 N
	CD	0,6 mm		
	Maximum and Minimum speed page 245 - type 6			



<b>MK V11D45</b> <span style="background-color: #e0ffe0;">1NO+1NC</span>	PC	3,5 mm	FS	1,66 N
	OC	4,5 mm	FR	1,28 N
	CD	0,4 mm		
	Maximum and Minimum speed page 245 - type 6			



<b>MK V11D46</b> <span style="background-color: #e0ffe0;">1NO+1NC</span>	PC	3,5 mm	FS	1,66 N
	OC	4,5 mm	FR	1,28 N
	CD	0,4 mm		
	Maximum and Minimum speed page 245 - type 6			

Items with code on **green** background are stock items

Accessories See page 225

→ The 2D/3D files are available at [www.pizzato.com](http://www.pizzato.com)

It switches → ← It does not switch

<b>MK V11D47</b>	1NO+1NC	PC 3,5 mm OC 4 mm CD 0,4 mm	FS 1,66 N FR 1,28 N
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Maximum and Minimum speed page 245 - type 6

<b>MK V11D49</b>	1NO+1NC	Hand operated	
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Maximum and Minimum speed page 245 - type 3

<b>MK V11D53</b>	1NO+1NC	PC 7,7 mm OC 8,9 mm CD 0,9 mm	FS 0,76 N FR 0,58 N
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Maximum and Minimum speed page 245 - type 6

<b>MK V11D59</b>	1NO+1NC	PC 2,5 mm OC 4,5 mm CD 0,2 mm	FS 2,3 N FR 1,77 N
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Maximum and Minimum speed page 245 - type 6

**Microswitches with inverted action**

<b>MK V11R30</b>	1NO+1NC	PC 4,4 mm OC 14 mm CD 1 mm	FS 0,6 N FR 0,4 N
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Maximum and Minimum speed page 245 - type 4

<b>MK V11R31</b>	1NO+1NC	PC 0,7 mm OC 6,01 mm CD 0,23 mm	FS 1,47 N FR 0,72 N
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Maximum and Minimum speed page 245 - type 4

<b>MK V11R32</b>	1NO+1NC	PC 3,7 mm OC 11,8 mm CD 0,8 mm	FS 0,7 N FR 0,5 N
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Maximum and Minimum speed page 245 - type 4

<b>MK V11R35</b>	1NO+1NC	PC 14,3 mm OC 25,7 mm CD 3,2 mm	FS 0,3 N FR 0,2 N
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Maximum and Minimum speed page 245 - type 7

<b>MK V11R40</b>	1NO+1NC	PC 3,4 mm OC 10,3 mm CD 0,7 mm	FS 0,8 N FR 0,5 N
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Maximum and Minimum speed page 245 - type 7

<b>MK V11R42</b>	1NO+1NC	PC 2,7 mm OC 7,9 mm CD 0,5 mm	FS 1,2 N FR 1,7 N
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Maximum and Minimum speed page 245 - type 7

Items with code on **green** background are stock items

Accessories See page 225

→ The 2D/3D files are available at [www.pizzato.com](http://www.pizzato.com)

<b>MK V11R45</b>	1NO+1NC PC 1,5 mm OC 5,5 mm CD 0,3 mm	FS 1,7 N FR 1 N	<b>MK V11R46</b>	1NO+1NC PC 3,5 mm OC 5,4 mm CD 0,2 mm	FS 1,5 N FR 1,45 N
Maximum and Minimum speed page 245 - type 7			Maximum and Minimum speed page 245 - type 7		

<b>MK V11R47</b>	1NO+1NC PC 1,7 mm OC 5,3 mm CD 0,3 mm	FS 1,7 N FR 1 N	<b>MK V11R53</b>	1NO+1NC PC 4,3 mm OC 11,6 mm CD 0,8 mm	FS 0,8 N FR 0,4 N
Maximum and Minimum speed page 245 - type 7			Maximum and Minimum speed page 245 - type 7		

<b>MK V11R59</b>	1NO+1NC PC 1,5 mm OC 3,9 mm CD 0,3 mm	FS 2,4 N FR 1,3 N	<b>MK V11R60</b>	1NO+1NC PC 2,7 mm OC 9,2 mm CD 0,5 mm	FS 1,2 N FR 0,6 N
Maximum and Minimum speed page 245 - type 7			Maximum and Minimum speed page 245 - type 4		

**Microswitches with back direct action**

<b>MK V11F30</b>	1NO+1NC PC 2,7 mm OC 12,9 mm CD 0,35 mm	FS 0,6 N FR 0,5 N	<b>MK V11F31</b>	1NO+1NC PC 1,63 mm OC 4,64 mm CD 0,17 mm CAP 5,72 mm	FS 1,76 N FR 1,08 N FAP 5,78 N
Maximum and Minimum speed page 245 - type 5			Maximum and Minimum speed page 245 - type 5		

<b>MK V11F32</b>	1NO+1NC PC 2,5 mm OC 11,5 mm CD 0,3 mm	FS 0,7 N FR 0,6 N	<b>MK V11F35</b>	1NO+1NC PC 7,5 mm OC 25,9 mm CD 1,3 mm	FS 0,25 N FR 0,2 N
Maximum and Minimum speed page 245 - type 5			Maximum and Minimum speed page 245 - type 5		

**Accessories** See page 225

 → The 2D/3D files are available at [www.pizzato.com](http://www.pizzato.com)

<b>MK V11F40</b>	1NO+1NC	PC 2,4 mm OC 10,4 mm CD 0,25 mm	FS 0,85 N FR 0,65 N
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Maximum and Minimum speed page 245 - type 8

<b>MK V11F42</b>	1NO+1NC	PC 1,6 mm OC 8,4 mm CD 0,2 mm CAP 9 mm	FS 1 N FR 0,7 N FAP 4,9 N
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Maximum and Minimum speed page 245 - type 8

<b>MK V11F45</b>	1NO+1NC	PC 1,1 mm OC 6,6 mm CD 0,1 mm CAP 6,3 mm	FS 1,3 N FR 0,9 N FAP 6,9 N
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Maximum and Minimum speed page 245 - type 8

<b>MK V11F46</b>	1NO+1NC	PC 1,1 mm OC 6,6 mm CD 0,1 mm CAP 6,3 mm	FS 1,3 N FR 0,9 N FAP 6,9 N
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Maximum and Minimum speed page 245 - type 8

<b>MK V11F47</b>	1NO+1NC	PC 1,1 mm OC 5,6 mm CD 0,1 mm CAP 6,3 mm	FS 1,3 N FR 0,9 N FAP 6,9 N
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Maximum and Minimum speed page 245 - type 8

<b>MK V11F49</b>	1NO+1NC	PC 1,5 mm OC 7,5 mm CD 0,2 mm CAP 9 mm	FS 1 N FR 0,7 N FAP 4,8 N
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Maximum and Minimum speed page 245 - type 5

<b>MK V11F53</b>	1NO+1NC	PC 2,5 mm OC 11,5 mm CD 0,3 mm	FS 0,7 N FR 0,6 N
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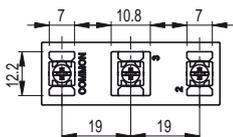
Maximum and Minimum speed page 245 - type 8

<b>MK V11F59</b>	1NO+1NC	PC 0,8 mm OC 5,2 mm CD 0,08 mm CAP 4,9 mm	FS 1,7 N FR 1,3 N FAP 8,9 N
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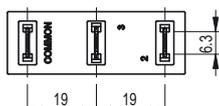
Maximum and Minimum speed page 245 - type 8

**Terminals outline dimensions**

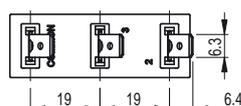
All measures in the drawings are in mm



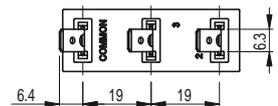
Screw terminals **V** with plate



Vertical faston **H** terminals



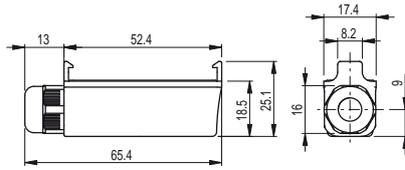
Faston terminals **F**, right bending



Faston terminals **G**, left bending (on request)

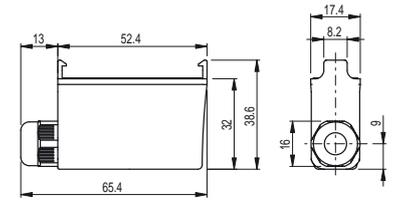
Note: H vertical faston terminals can be bent according to one's installation requirements.

We recommend to bend the faston with an angle not higher than 45° and to carry out this operation no more than 5 times.

**Protections (terminal covers)**
**10 pcs. packs**


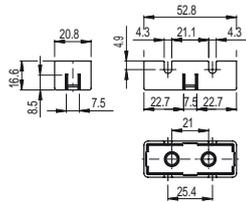
Protective terminal cover for screw terminals snap-in assembled and with wiretrap cable gland. Allows the stacked installation of switches.

Article	Description	Protection degree
VF MKCV11	Protective terminal cover without gasket for multipolar cables from Ø 5 to Ø 7.5 mm	IP40
VF MKCV12	Protective terminal cover without gasket for multipolar cables from Ø 4 to Ø 7.5 mm	IP40
VF MKCV13	Protective terminal cover without gasket for multipolar cables from Ø 2 to Ø 5.5 mm	IP40
VF MKCV22	Protective terminal cover with gasket for multipolar cables from Ø 4 to Ø 7.5 mm	IP65
VF MKCV23	Protective terminal cover with gasket for multipolar cables from Ø 2 to Ø 5.5 mm	IP65

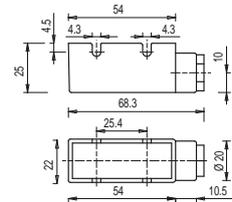


Protective terminal cover for vertical faston terminals with wiretrap cable gland, snap-in attachment. Allows the stacked installation of switches.

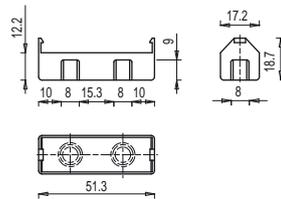
Article	Description	Protection degree
VF MKCH11	Protective terminal cover without gasket for multipolar cables from Ø 5 to Ø 7.5 mm	IP40
VF MKCH12	Protective terminal cover without gasket for multipolar cables from Ø 4 to Ø 7.5 mm	IP40
VF MKCH13	Protective terminal cover without gasket for multipolar cables from Ø 2 to Ø 5.5 mm	IP40
VF MKCH22	Protective terminal cover with gasket for multipolar cables from Ø 4 to Ø 7.5 mm	IP65
VF MKCH23	Protective terminal cover with gasket for multipolar cables from Ø 2 to Ø 5.5 mm	IP65



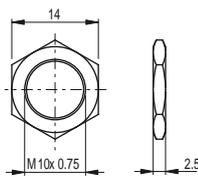
Article	Description	Protection degree
VF C01	Protective terminal cover for screw terminals	IP20



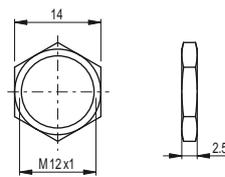
Article	Description	Protection degree
VF C02	Protective terminal cover for screw terminals with cable gland PG9 for multipolar cables from Ø 5 to Ø 7 mm	IP40



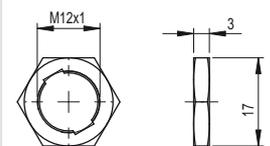
Article	Description	Protection degree
VF C03	Protective terminal cover for screw terminals, snap-in attachment. Allows the stacked installation of switches	IP20

**Accessories**
**10 pcs. packs**


Article	Description
VF AC83	Hexagonal threaded nut for microswitches with actuators D06, D08, D09



Article	Description
VF AC72	Hexagonal threaded nut for microswitches with actuators D10, D12, D13



Article	Description
AC35	Hexagonal threaded nut notched for microswitches with actuators D15, D16

 Items with code on **green** background are stock items

**Accessories** See page 225

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