

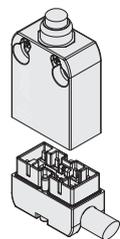
Description



The result of the long-standing expertise of Pizzato Elettrica in the creation of position switches, the NA, NB, NF series achieve the highest standard of flexibility and depth of range present today on the pre-wired switches market.

Configurable, adjustable, pivotable and, not least, customisable with special cables or custom wiring - these features make these series unique in the current European panorama, ideal for easily providing our customers with customised switches.

Switches with connectors



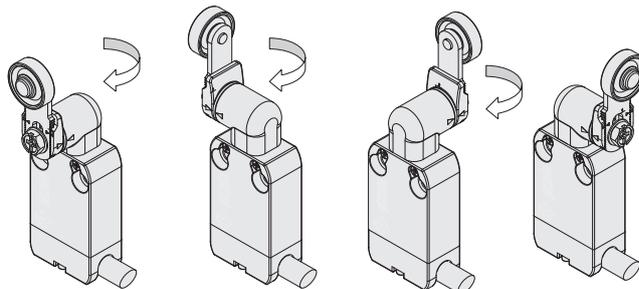
The new fundamental feature of this series of pre-wired switches is that the switch body and the wired connector are separated.

Using the connector the end-user can replace a product on field without having to disconnect the complete wiring.

Moreover in this way it is easier to combine products with different cable types and lengths.

Head with variable orientation

All heads can be turned in 90° steps. The new head for swivelling levers has been designed with compact dimensions so that it does not protrude over the switch profile. Therefore, it is also possible to install the switches on the wall.



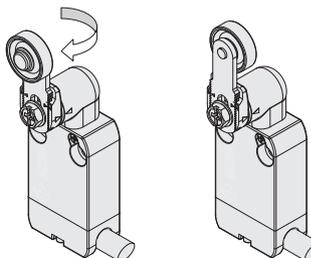
Protection degrees IP67 and IP69K

IP69K
IP67

These devices are designed to be used under the toughest environmental conditions, and they pass the IP67 immersion test acc. to EN 60529. They can therefore be used in all environments where the maximum degree of protection is required for the

housing. Due to their special design, these devices are suitable for use in equipment subjected to cleaning with high pressure hot water jets. These devices meet the IP69K test requirements according to ISO 20653 (water jets with 100 bar and 80°C).

Reversible levers



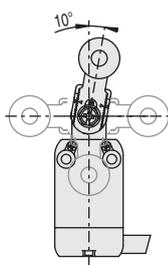
For switches with swivelling lever, the lever can be fastened on straight or reverse side maintaining the positive coupling.

In this way two different working planes of the lever are possible.

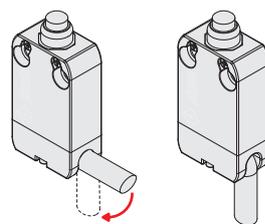
Adjustable levers

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.



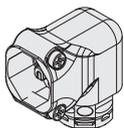
Orientable cable outputs



The connector with cable is provided with a cavity to allow cable bending up to 90°.

In this way a flush wall mounting is also possible as well as an easier adjustment of the cable to the supporting flange.

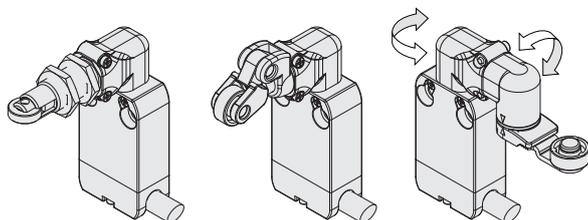
90° redirection for actuators



This component highly extends the application possibilities of this product range.

All the actuators that can be attached directly to the body of the switch can also be fastened on this transmission, thus making feasible applications and positioning of the switch that were previously impossible.

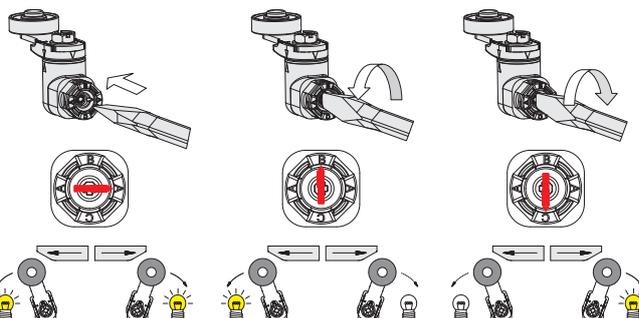
The redirection piece can also be used in case of heads for swivelling levers. Although technically possible, the use of multiple transmissions in series is not recommended.



Unidirectional heads

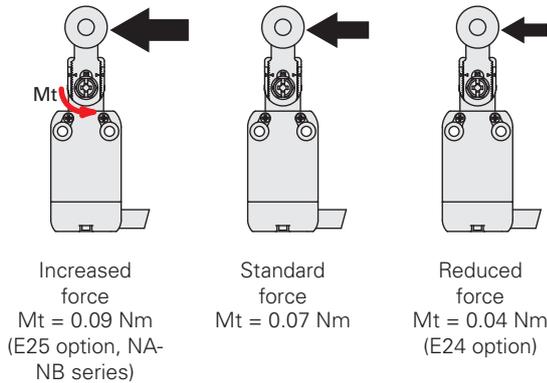
All switches with swivelling lever are supplied with a selector for choosing the lever operating direction.

The following operations are possible: right/left (standard factory setting), only from the right or only from the left. The operating direction can be selected by rotating the dedicated ring mounted on all heads of this kind.

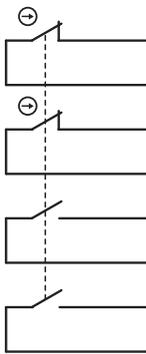


Increased or reduced actuating force

For actuators with swivelling lever, versions with increased or reduced actuating force are available upon request, in order to have a switch perfectly tailored for the application. For further information contact our technical department.



Positive opening contact blocks with 1, 2, 3 or 4 poles



These series of contact blocks are versatile and compact.

They have the same dimensions of the previous versions, but now it is possible to have up to 4 different contacts which are galvanically separated and provided with positive opening (NC contacts).

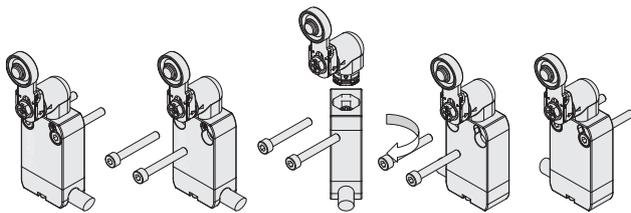
The allowed standard combinations are: 1NO+1NC, 2NC, 1NO+2NC, 2NO+2NC. Other combinations available on request.

The contact blocks have been designed so that they keep the same pin assignment on the connector independently of the action type (slow or snap action) and the number of contacts. In this way, the same cables with connector can be used for units with slow action and snap action as well.

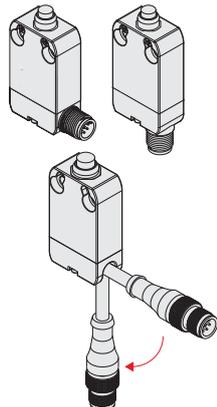
Reversible housing

The shape of the fixing holes and of the switch body, as well as the possibility of rotating the head, make this switch perfectly symmetrical.

If a switch with cable output on the left (since the connector cannot be rotated) is required, it is possible to rotate the complete device by maintaining the final position of the actuator unchanged.



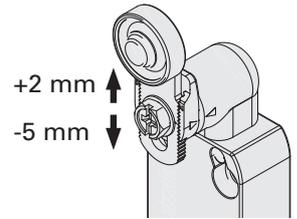
M12 connectors



All contact configurations are available with M12 connector both with two contacts (with 5-pin M12 connector) as well as 3 or 4 contacts (with 8-pin M12 connector). Exit directions below or to the right allow application in narrow spaces; in addition the reversible housing easily allows changing the exit direction from right to left by simply turning the switch. The M12 connector is also available at the end of the cable, whose length can be tailored to the customer's requirements, and the cable can be bent at 90°, allowing installation on walls.

Adjustable levers with anti-unscrewing washer

In some applications during the installation of the switches problems are encountered due to the variability of the fastenings and the folds of the structural work.



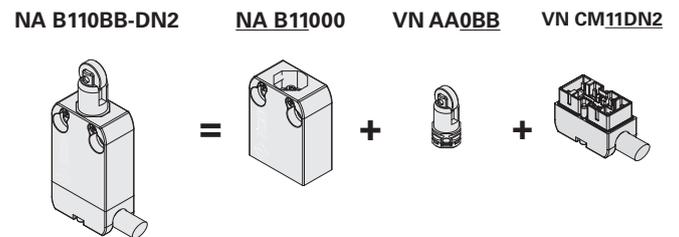
In other cases, small finishing adjustments are required due to the application. Nearly all swivelling levers for switches of the NA, NB and NF series can be adjusted in 1 mm steps along the switch length.

This feature, combined with the additional possibility of the radial adjustment of the actuator, provides the installer with a never before achieved flexibility in the final adjustment of the product.

All this while maintaining the positive geometric locking between lever and swivel shaft as prescribed for safety applications.

Switch components available separately

This product series has been provided with a modular design so that single parts can also be ordered separately. This is an asset both for distributors and for final customers of electrical material in the procurement of spare parts as well as for custom combinations.



Extended temperature range

-40°C

These devices are also available in a special version suitable for an ambient operating temperature range from -40°C up to +80°C.

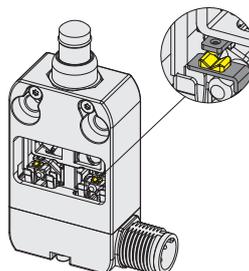
They can therefore be used for applications in cold stores, sterilisers, and other equipment operated in very low-temperature environments. The special materials used to produce these versions retain their characteristics even under these conditions, thereby expanding the installation possibilities.

AMP connectors



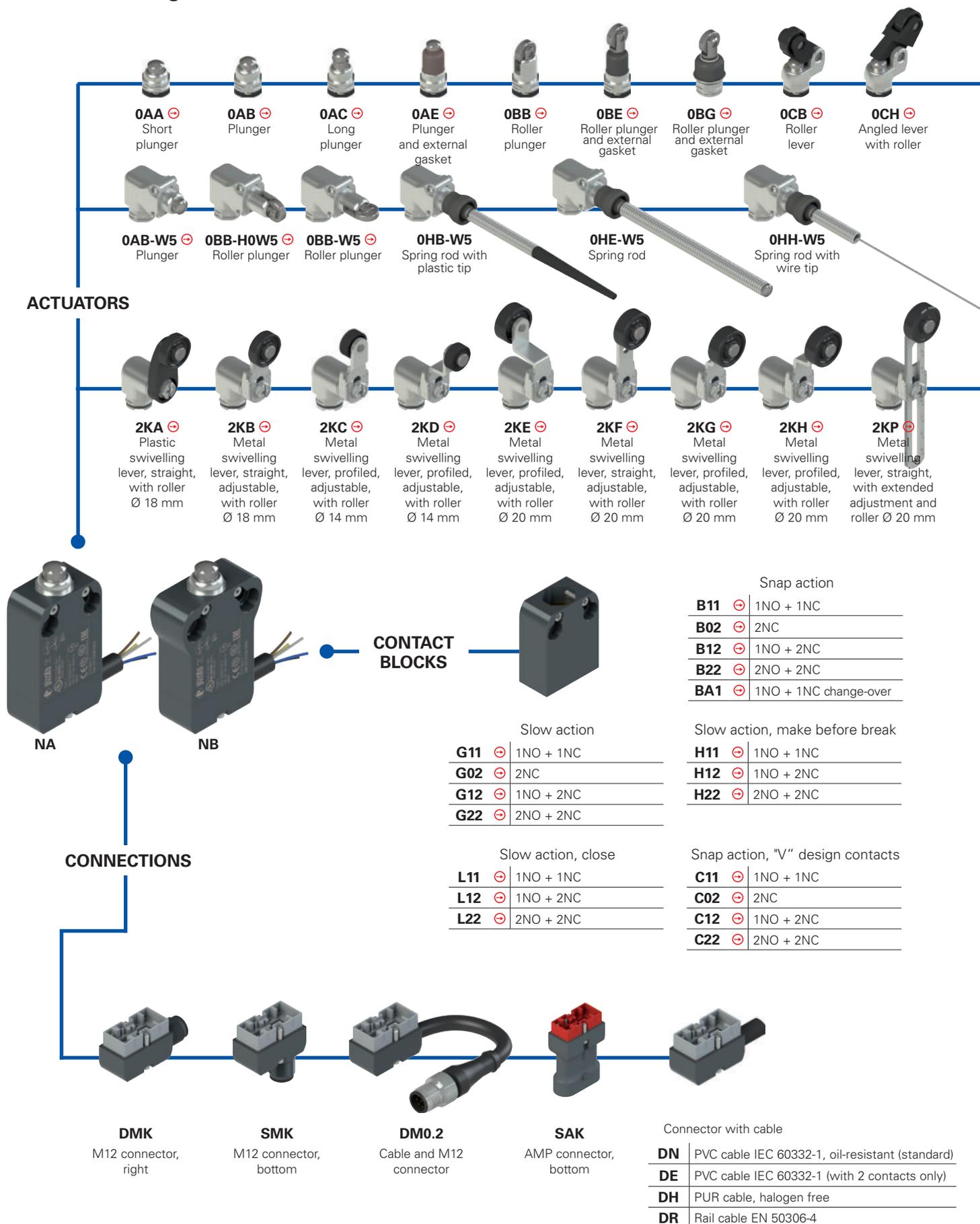
Furthermore, AMP connectors for 2-contact versions are available too. These connectors, specially developed for the automotive industry, are immune to vibration due to the quick coupling.

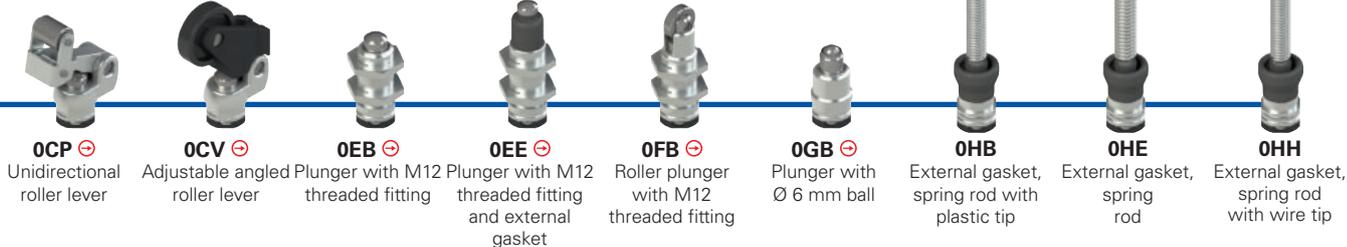
High reliability contacts with "V" design



Articles with contact block C11, C02, C12, C22 are characterised by electrical contacts with a "V" design. This configuration reduces the possibility of error during operation and guarantees even more reliable contact switching, thanks to the contact points doubled compared to the flat-shaped contacts and the self-cleaning action of the contact. In the version with snap action contact, these articles are particularly suitable for use in the railway sector.

Selection diagram for item combinations of the NA-NB series





- OCP** ⊖ Unidirectional roller lever
- OCV** ⊖ Adjustable angled roller lever
- OEB** ⊖ Plunger with M12 threaded fitting
- OEE** ⊖ Plunger with M12 threaded fitting and external gasket
- OFB** ⊖ Roller plunger with M12 threaded fitting
- OGB** ⊖ Plunger with Ø 6 mm ball
- OHB** External gasket, spring rod with plastic tip
- OHE** External gasket, spring rod
- OHH** External gasket, spring rod with wire tip



- 2LB** Metal swivelling lever with stainless steel rod 3 x 3 x 125 mm, adjustable
- 2LE** Metal swivelling lever with stainless steel rod Ø 3 x 125 mm, adjustable
- 2LH** Metal swivelling lever with glass fibre rod Ø 6 x 200 mm, adjustable
- 2LL** Metal swivelling lever with spring rod, adjustable
- 2LP** ⊖ Metal swivelling lever with porcelain roll, adjustable
- 200** ⊖ Metal head for swivelling lever actuators

SEPARATE ACTUATORS
See page 135



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	
Housing		Redirection	
NA	metal, hole spacing 20 mm (standard)	without redirection	
NB	metal, hole spacing 25 mm	W5 90° redirection	
Contact block		Ambient temperature	
B11	1NO+1NC, snap action (standard)	-25°C ... +80°C	
B02	2NC, snap action (standard)	T6 -40°C ... +80°C	
B12	1NO+2NC, snap action (standard)	Rollers	
B22	2NO+2NC, snap action (standard)	standard roller	
BA1	1NO+1NC, snap action, change-over (available with M connector only)	R30 Steel, with self-lubrication, Ø 10.6 mm	
C11	1NO+1NC, snap action, "V" design contacts	R44 316L stainless steel, Ø 12 mm	
C02	2NC, snap action, "V" design contacts	R29 Steel, with self-lubrication, Ø 13 mm	
C12	1NO+2NC, snap action, "V" design contacts	R18 technopolymer, Ø 14 mm	
C22	2NO+2NC, snap action, "V" design contacts	R23 Steel, with self-lubrication, Ø 14 mm	
G11	1NO+1NC, slow action (standard)	R43 316L stainless steel, Ø 14 mm	
G02	2NC, slow action (standard)	R36 Steel, with self-lubrication, Ø 16 mm	
G12	1NO+2NC, slow action (standard)	R7 technopolymer, Ø 18 mm	
G22	2NO+2NC, slow action	R22 technopolymer, Ø 20 mm	
H11	1NO+1NC, slow action, make before break	R24 Steel, with self-lubrication, Ø 20 mm	
H12	1NO+2NC, slow action, make before break	R41 316L stainless steel, Ø 20 mm	
H22	2NO+2NC, slow action, make before break	R19 technopolymer, Ø 22 mm	
L11	1NO+1NC, slow action, close	R25 technopolymer, Ø 35 mm	
L12	1NO+2NC, slow action, close	Contact type	
L22	2NO+2NC, slow action, close	silver contacts (standard)	
Other contact blocks on request.		G silver contacts with 1 µm gold coating ⁽¹⁾	
Actuator heads		Connection type	
0	without head	0.2 cable, length: 0.2 m with M12 connector (available for DM0.2 versions only)	
2	head for swivelling lever actuators	2 cable, length: 2 m (standard)	
Actuators		5 cable, length 5 m (other cable lengths available on request)	
00	without actuator	K integrated connector	
AA	short plunger	Cable or connector type	
AB	plunger	N PVC cable IEC 60332-1, oil-resistant (standard)	
...	...	E PVC cable IEC 60332-1 (with 2 contacts only)	
Output direction		H PUR cable, halogen free	
D	cable or connector, right	R Rail cable EN 50306-4	
S	connector, bottom	M M12 connector	
		A AMP Superseal 1.5 connector	



Main features

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

Quality marks:



IMQ approval:	CA02.04562
UL approval:	E131787
CCC approval:	2021000305000109
EAC approval:	RU C-IT.YT03.B.00035/19

Technical data

Housing

Metal housing, baked with UV resistant powder coating.
Versions with integrated cable, standard length 2 m, other lengths 0.5 ... 10 m on request.

Versions with integrated M12 connector.

Versions with 0.2 m cable length and M12 connector, other lengths 0.1 ... 3 m available on request.

Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653 (Protect the cables from direct high-pressure and high-temperature jets)
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Corrosion resistance in saline mist:	≥ 300 hours in NSS acc. to ISO 9227
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General data

Ambient temperature for switches without cable: -25°C ... + 80°C (standard)
-40°C ... + 80°C (T6 option)

Ambient temperature for switches with cable: See table on page 118
Max. actuation frequency: 3600 operating cycles/hour

Mechanical endurance:

B••, G••, H••, L•• contact blocks:	20 million operating cycles
C•• contact block:	5 million operating cycles

Mounting position:

Safety parameter B_{10D} :

B••, G••, H••, L•• contact blocks:	40,000,000 for NC contacts
C•• contact block:	10,000,000 for NC contacts

Mechanical interlock, not coded: type 1 acc. to EN ISO 14119

Vibration resistance: 5 ... 150 Hz (7.9 m/s²)

(0BB, 2KB, 2KC, 2KD actuators): acc. to EN 61373 cl. 9

Tightening torques for installation: see page 235

Electrical data

Rated impulse withstand voltage (U_{imp}): 4 kV

Conditional short circuit current: 1000 A acc. to EN 60947-5-1

Pollution degree: 3

In compliance 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, EN IEC 63000, ISO 20653, UL 508, CSA C22.2 No. 14.

Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU,

RoHS Directive 2011/65/EU.

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 \ominus symbol beside the product code. Always connect the safety circuit to the **NC contacts** (normally closed contacts: see "Internal cable wiring" on page 118) as required by **EN ISO 14119, paragraph 5.4** for specific interlock applications and **EN ISO 13849-2 tables D3 (well-ried components) and D.8 (fault exclusions)** for safety applications in general. Actuate the switch **at least up to the positive opening travel** shown in the travel diagrams on page 236. Actuate the switch **at least with the positive opening force**, reported in brackets below each article, next to the actuating force value.

⚠ If not expressly indicated in this chapter, for correct installation and utilization of all articles see the instructions given on pages 227 to 242.

⚠ 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, versions with 8-pole M12 (2NO+2NC) and AMP connector can be used only in SELV circuits.

Features approved by IMQ

Rated insulation voltage (U_i):	250 Vac
Conventional free air thermal current (I_{th}):	10 A (1-2 contacts) / 6 A (2-3 contacts) / 4 A (4 contacts or 5-pole M12 connector)
Protection against short circuits (fuse):	10 A (1-2 contacts) / 6 A (2-3 contacts) / 4 A (4 contacts or 5-pole M12 connector) type gG
Rated impulse withstand voltage (U_{imp}):	4 kV
Protection degree of the housing:	IP67 / IP69K
MA terminals (crimped terminals)	
Pollution degree:	3
Utilization category:	AC15 / DC13 (with connector)
Operating voltage (U_o):	250 Vac (50 Hz) / 24 Vdc (with connector)
Operating current (I_o):	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 compliance with standards: EN 60947-1, EN 60947-5-1, fundamental requirements of the Low Voltage Directive 2014/35/EU.

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

Features approved by UL

Electrical Ratings:	R300 pilot duty (28 VA, 125 250 Vdc) B300 pilot duty (360 VA, 120 240 Vac) (1 cont.) B300 pilot duty (360 VA, 120 240 Vac) (2 - 3 cont. without connector) C300 pilot duty (180 VA, 120 240 Vac) (4 cont.)
Environmental Ratings:	Types 1, 4X, 6, 12, 13 Types 1, 4X "indoor use only" (1 - 2 cont. with "E" type cable)
Screws torque of the detachable connector housing nominal are	0.3 ÷ 0.6 Nm.

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



Ambient temperatures for switches with cable and electrical data

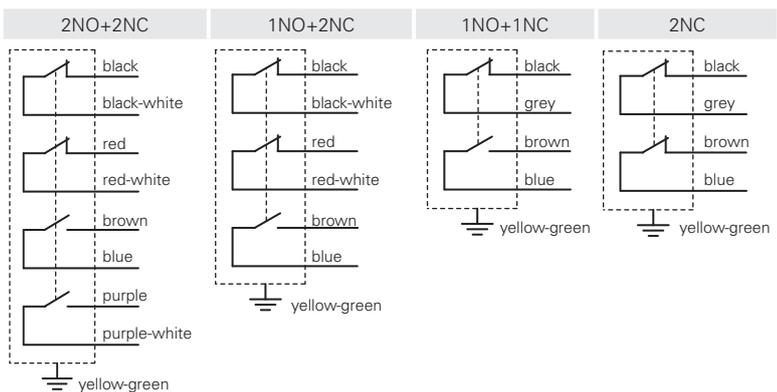
Connection type	Output with cable								Output with M12 connector		Output with AMP connector
	2 contacts				3 contacts		4 contacts		2 contacts	3 or 4 contacts	2 contacts
	E	N	H	R	N	H	N	R	M12 connector, 5-pole	M12 connector, 8-pole	AMP Super-seal 1.5 connector
Conductors	5x0.75 mm ²	5x0.75 mm ²	5x0.75 mm ²	5x0.5mm ²	7x0.5 mm ²	7x0.5 mm ²	9x0.34 mm ²	9x0.5 mm ²	5x0.25 mm ²	8x0.25 mm ²	
Application field	General	General	General, mobile installation	Rail	General	General, mobile installation	General	Rail	General	General	General
In compliance with standards	H05VV-F	05VV5-F	05EQ-H	EN50306-4 IE-300V 5G0.5 mm ² MM-30 EN 50306-4 EN 45545	03VV-F	03E7Q-H	03VV-F	EN50306-4 IE-300V 9G0.5 mm ² MM-30 EN 50306-4 EN 45545	03VV-H	03VW-H	/
Sheath	PVC	PVC OIL RESISTANT	PUR HALOGEN FREE	/	PVC OIL RESISTANT	PUR HALOGEN FREE	PVC OIL RESISTANT	/	PVC OIL RESISTANT	PVC OIL RESISTANT	/
Self-extinguishing	IEC 60332-1-2	IEC 60332-1-2 UL 758:FT1 CEI 20-22 II	IEC 60332-1-2 UL 758:FT1	IEC 60332-1 EN 50305 EN 50306-1	IEC 60332-1-2 UL 758:FT1 CEI 20-22 II	IEC 60332-1-2 UL 758:FT1	IEC 60332-1-2 UL 758:FT1 CEI 20-22 II	IEC 60332-1 EN 50305 EN 50306-1	IEC 60332-1-2 CEI 20-22 II UL 758:FT1	IEC 60332-1-2 CEI 20-22 II UL 758:FT1	/
Oil resistant	/	UL 758 CSA 22.2 N°210	UL 758 CSA 22.2 N°210	/	UL 758 CSA 22.2 N°210	UL 758 CSA 22.2 N°210	UL 758 CSA 22.2 N°210	/	UL 758 CSA 22.2 N°210	UL 758 CSA 22.2 N°210	/
Max. speed	/	/	300 m/min	/	/	300 m/min	/	/	50 m/min	50 m/min	/
Max. acceleration	/	/	30 m/s ²	/	/	30 m/s ²	/	/	5 m/s ²	5 m/s ²	/
Minimum bending radius	80 mm	80 mm	80 mm	60 mm	108 mm	80 mm	108 mm	65 mm	75 mm	90 mm	/
Outer diameter	8 mm	8 mm	8 mm	6 mm	7 mm	7 mm	7 mm	6.5 mm	6 mm	6 mm	/
End stripped	80 mm	80 mm	80 mm	80 mm	80 mm	80 mm	80 mm	80 mm	/	/	/
Copper conductors IEC 60228	Class 5	Class 5	Class 6	Class 5	Class 5	Class 6	Class 5	Class 5	Class 6	Class 6	/
Engraving	Standard	6268	6280	Standard	6274	6282	6278	Standard	6267	6275	/

Ambient temperature with cable extended (T _c)	Cable, fixed installation	-15°C +60°C	-25°C +80°C	/								
	Cable, flexible installation	+5°C +60°C	-5°C +80°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	-15°C +80°C	-15°C +80°C	/
	Cable, mobile installation	/	/	-25°C +80°C	/	/	-25°C +80°C	/	/	-15°C +80°C	-15°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	/	-40°C +80°C	/	-40°C +80°C	/	/	/
	Cable, mobile installation	/	/	-40°C +80°C	/	/	-40°C +80°C	/	/	/	/	/

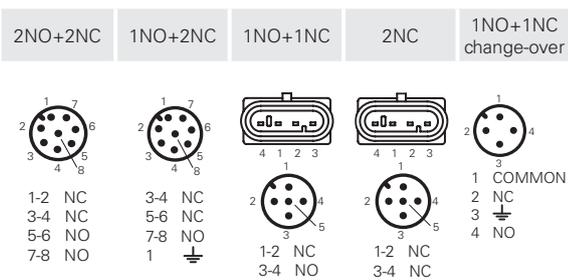
Electrical data	Thermal current I _{th}	10 A	10 A	10 A	6 A	6 A	6 A	3 A	4 A	4 A	2 A	10 A	
	Rated insulation voltage U _i	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac	30 Vac 300 Vdc	30 Vac	
	Protection against short circuits (fuse)	10 A 500 V type gG	10 A 500 V type gG	10 A 500 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	4 A 500 V type gG	2 A 500V 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	/	/
		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	/	/
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	/	/	
	250 V	4 A	4 A	4 A	4 A	4 A	4 A	3 A	4 A	4 A	/	/	

Approvals	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 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	CE cULus EAC
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Internal cable wiring



Connector pin assignment



Female connectors see page 210

NA-NB series modular metal pre-wired switches

External gasket																																			
<p>Contact type</p> <p>R = snap action</p> <p>L = slow action</p>																																			
<p>Contact block</p> <table border="1"> <tr> <td>B11</td> <td>R</td> <td>NA B110AA-DN2</td> <td>1NO+1NC</td> </tr> <tr> <td>B02</td> <td>R</td> <td>NA B020AA-DN2</td> <td>2NC</td> </tr> <tr> <td>B12</td> <td>R</td> <td>NA B120AA-DN2</td> <td>1NO+2NC</td> </tr> <tr> <td>B22</td> <td>R</td> <td>NA B220AA-DN2</td> <td>2NO+2NC</td> </tr> <tr> <td>G11</td> <td>L</td> <td>NA G110AA-DN2</td> <td>1NO+1NC</td> </tr> <tr> <td>G02</td> <td>L</td> <td>NA G020AA-DN2</td> <td>2NC</td> </tr> <tr> <td>G12</td> <td>L</td> <td>NA G120AA-DN2</td> <td>1NO+2NC</td> </tr> <tr> <td>G22</td> <td>L</td> <td>NA G220AA-DN2</td> <td>2NO+2NC</td> </tr> </table>	B11	R	NA B110AA-DN2	1NO+1NC	B02	R	NA B020AA-DN2	2NC	B12	R	NA B120AA-DN2	1NO+2NC	B22	R	NA B220AA-DN2	2NO+2NC	G11	L	NA G110AA-DN2	1NO+1NC	G02	L	NA G020AA-DN2	2NC	G12	L	NA G120AA-DN2	1NO+2NC	G22	L	NA G220AA-DN2	2NO+2NC			
B11	R	NA B110AA-DN2	1NO+1NC																																
B02	R	NA B020AA-DN2	2NC																																
B12	R	NA B120AA-DN2	1NO+2NC																																
B22	R	NA B220AA-DN2	2NO+2NC																																
G11	L	NA G110AA-DN2	1NO+1NC																																
G02	L	NA G020AA-DN2	2NC																																
G12	L	NA G120AA-DN2	1NO+2NC																																
G22	L	NA G220AA-DN2	2NO+2NC																																
Max. speed	page 235 - type 4																																		
Actuating force	7 N (25 N)																																		
Travel diagrams	page 236 - group 1																																		

External gasket	External gasket	External gasket	With steel roller with self-lubrication or 316L stainless steel on request																																
<p>Contact type</p> <p>R = snap action</p> <p>L = slow action</p>																																			
<p>Contact block</p> <table border="1"> <tr> <td>B11</td> <td>R</td> <td>NA B110BB-DN2</td> <td>1NO+1NC</td> </tr> <tr> <td>B02</td> <td>R</td> <td>NA B020BB-DN2</td> <td>2NC</td> </tr> <tr> <td>B12</td> <td>R</td> <td>NA B120BB-DN2</td> <td>1NO+2NC</td> </tr> <tr> <td>B22</td> <td>R</td> <td>NA B220BB-DN2</td> <td>2NO+2NC</td> </tr> <tr> <td>G11</td> <td>L</td> <td>NA G110BB-DN2</td> <td>1NO+1NC</td> </tr> <tr> <td>G02</td> <td>L</td> <td>NA G020BB-DN2</td> <td>2NC</td> </tr> <tr> <td>G12</td> <td>L</td> <td>NA G120BB-DN2</td> <td>1NO+2NC</td> </tr> <tr> <td>G22</td> <td>L</td> <td>NA G220BB-DN2</td> <td>2NO+2NC</td> </tr> </table>	B11	R	NA B110BB-DN2	1NO+1NC	B02	R	NA B020BB-DN2	2NC	B12	R	NA B120BB-DN2	1NO+2NC	B22	R	NA B220BB-DN2	2NO+2NC	G11	L	NA G110BB-DN2	1NO+1NC	G02	L	NA G020BB-DN2	2NC	G12	L	NA G120BB-DN2	1NO+2NC	G22	L	NA G220BB-DN2	2NO+2NC			
B11	R	NA B110BB-DN2	1NO+1NC																																
B02	R	NA B020BB-DN2	2NC																																
B12	R	NA B120BB-DN2	1NO+2NC																																
B22	R	NA B220BB-DN2	2NO+2NC																																
G11	L	NA G110BB-DN2	1NO+1NC																																
G02	L	NA G020BB-DN2	2NC																																
G12	L	NA G120BB-DN2	1NO+2NC																																
G22	L	NA G220BB-DN2	2NO+2NC																																
Max. speed	page 235 - type 2	page 235 - type 5	page 235 - type 3																																
Actuating force	7 N (25 N)	7 N (25 N)	5 N (25 N)																																
Travel diagrams	page 236 - group 1	page 236 - group 1	page 236 - group 2																																

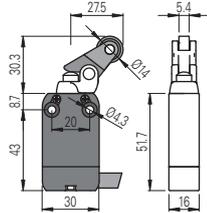
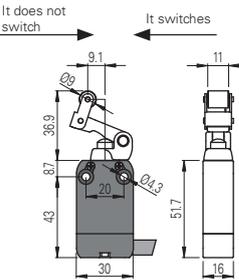
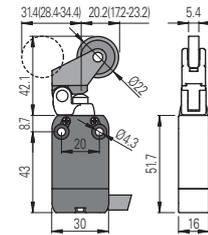
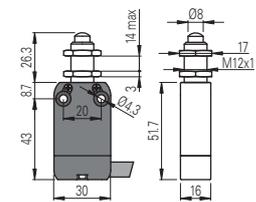
NB series housing	M12 connector, right	M12 connector, bottom	AMP Superseal 1.5 connector
<p>To order a product of the NB series, replace NA with NB in the codes shown above. Example: NA B110AA-DN2 → NB B110AA-DN2</p>	<p>To order a product with M12 right connector, replace DN2 with DMK in the codes shown above. Example: NA B110AA-DN2 → NA B110AA-DMK</p>	<p>To order a product with M12 bottom connector, replace DN2 with SMK in the codes shown above. Example: NA B110AA-DN2 → NA B110AA-SMK</p>	<p>To order a product with AMP connector, replace DN2 with SAK in the codes shown above. Example: NA B110AA-DN2 → NA B110AA-SAK</p>

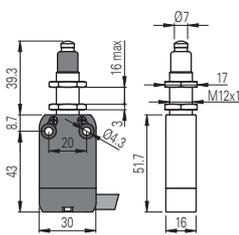
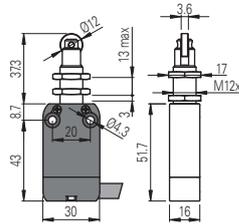
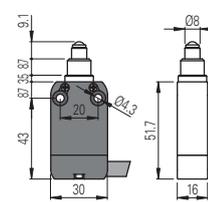
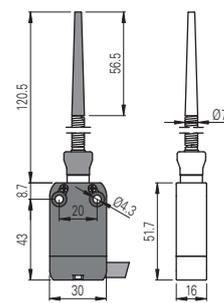
All values in the drawings are in mm

Accessories See page 207

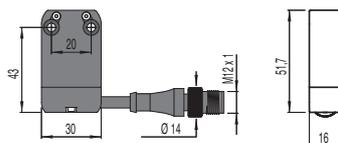
The 2D and 3D files are available at www.pizzato.com



Contact type R = snap action L = slow action	With steel roller with self-lubrication or 316L stainless steel on request	Unidirectional operation	Secured only by means of threaded head	
				
Contact block				
B11 R	NA B110CH-DN2 \rightarrow 1NO+1NC	NA B110CP-DN2 \rightarrow 1NO+1NC	NA B110CV-DN2 \rightarrow 1NO+1NC	NA B110EB-DN2 \rightarrow 1NO+1NC
B02 R	NA B020CH-DN2 \rightarrow 2NC	NA B020CP-DN2 \rightarrow 2NC	NA B020CV-DN2 \rightarrow 2NC	NA B020EB-DN2 \rightarrow 2NC
B12 R	NA B120CH-DN2 \rightarrow 1NO+2NC	NA B120CP-DN2 \rightarrow 1NO+2NC	NA B120CV-DN2 \rightarrow 1NO+2NC	NA B120EB-DN2 \rightarrow 1NO+2NC
B22 R	NA B220CH-DN2 \rightarrow 2NO+2NC	NA B220CP-DN2 \rightarrow 2NO+2NC	NA B220CV-DN2 \rightarrow 2NO+2NC	NA B220EB-DN2 \rightarrow 2NO+2NC
G11 L	NA G110CH-DN2 \rightarrow 1NO+1NC	NA G110CP-DN2 \rightarrow 1NO+1NC	NA G110CV-DN2 \rightarrow 1NO+1NC	NA G110EB-DN2 \rightarrow 1NO+1NC
G02 L	NA G020CH-DN2 \rightarrow 2NC	NA G020CP-DN2 \rightarrow 2NC	NA G020CV-DN2 \rightarrow 2NC	NA G020EB-DN2 \rightarrow 2NC
G12 L	NA G120CH-DN2 \rightarrow 1NO+2NC	NA G120CP-DN2 \rightarrow 1NO+2NC	NA G120CV-DN2 \rightarrow 1NO+2NC	NA G120EB-DN2 \rightarrow 1NO+2NC
G22 L	NA G220CH-DN2 \rightarrow 2NO+2NC	NA G220CP-DN2 \rightarrow 2NO+2NC	NA G220CV-DN2 \rightarrow 2NO+2NC	NA G220EB-DN2 \rightarrow 2NO+2NC
Max. speed	page 235 - type 3	page 235 - type 3	page 235 - type 3	page 235 - type 4
Actuating force	5 N (25 N \rightarrow)	3 N (25 N \rightarrow)	3 N (25 N \rightarrow)	7 N (25 N \rightarrow)
Travel diagrams	page 236 - group 2	page 236 - group 6	page 236 - group 3	page 236 - group 1

Contact type R = snap action L = slow action	External gasket Secured only by means of threaded head	Secured only by means of threaded head With \varnothing 12 mm roller in 316L stainless steel on request	Plunger with \varnothing 6 mm ball	External gasket
				
Contact block				
B11 R	NA B110EE-DN2 \rightarrow 1NO+1NC	NA B110FB-DN2 \rightarrow 1NO+1NC	NA B110GB-DN2 \rightarrow 1NO+1NC	NA B110HB-DN2 1NO+1NC
B02 R	NA B020EE-DN2 \rightarrow 2NC	NA B020FB-DN2 \rightarrow 2NC	NA B020GB-DN2 \rightarrow 2NC	NA B020HB-DN2 2NC
B12 R	NA B120EE-DN2 \rightarrow 1NO+2NC	NA B120FB-DN2 \rightarrow 1NO+2NC	NA B120GB-DN2 \rightarrow 1NO+2NC	NA B120HB-DN2 1NO+2NC
B22 R	NA B220EE-DN2 \rightarrow 2NO+2NC	NA B220FB-DN2 \rightarrow 2NO+2NC	NA B220GB-DN2 \rightarrow 2NO+2NC	NA B220HB-DN2 2NO+2NC
G11 L	NA G110EE-DN2 \rightarrow 1NO+1NC	NA G110FB-DN2 \rightarrow 1NO+1NC	NA G110GB-DN2 \rightarrow 1NO+1NC	/
G02 L	NA G020EE-DN2 \rightarrow 2NC	NA G020FB-DN2 \rightarrow 2NC	NA G020GB-DN2 \rightarrow 2NC	NA G020HB-DN2 2NC
G12 L	NA G120EE-DN2 \rightarrow 1NO+2NC	NA G120FB-DN2 \rightarrow 1NO+2NC	NA G120GB-DN2 \rightarrow 1NO+2NC	/
G22 L	NA G220EE-DN2 \rightarrow 2NO+2NC	NA G220FB-DN2 \rightarrow 2NO+2NC	NA G220GB-DN2 \rightarrow 2NO+2NC	/
Max. speed	page 235 - type 4	page 235 - type 2	page 235 - type 2	1 m/s
Actuating force	7 N (25 N \rightarrow)	7 N (25 N \rightarrow)	7 N (25 N \rightarrow)	0.03 Nm
Travel diagrams	page 236 - group 1	page 236 - group 1	page 236 - group 1	page 236 - group 4

Cable and M12 connector



To order a product with cable and M12 connector replace DN2 with DM0.2 in the codes shown above. Example: NA B110AA-DN2 \rightarrow NA B110AA-DM0.2

NA-NB series modular metal pre-wired switches

Contact type R = snap action L = slow action	External gasket		External gasket		With Ø 20 mm steel roller with self-lubrication or 316L stainless steel on request		With Ø 20 mm steel roller with self-lubrication or 316L stainless steel on request	
Contact block								
B11 R	NA B110HE-DN2	1NO+1NC	NA B110HH-DN2	1NO+1NC	NA B112KA-DN2	1NO+1NC	NA B112KB-DN2	1NO+1NC
B02 R	NA B020HE-DN2	2NC	NA B020HH-DN2	2NC	NA B022KA-DN2	2NC	NA B022KB-DN2	2NC
B12 R	NA B120HE-DN2	1NO+2NC	NA B120HH-DN2	1NO+2NC	NA B122KA-DN2	1NO+2NC	NA B122KB-DN2	1NO+2NC
B22 R	NA B220HE-DN2	2NO+2NC	NA B220HH-DN2	2NO+2NC	NA B222KA-DN2	2NO+2NC	NA B222KB-DN2	2NO+2NC
G11 L	/	/	/	/	NA G112KA-DN2	1NO+1NC	NA G112KB-DN2	1NO+1NC
G02 L	NA G020HE-DN2	2NC	NA G020HH-DN2	2NC	NA G022KA-DN2	2NC	NA G022KB-DN2	2NC
G12 L	/	/	/	/	NA G122KA-DN2	1NO+2NC	NA G122KB-DN2	1NO+2NC
G22 L	/	/	/	/	NA G222KA-DN2	2NO+2NC	NA G222KB-DN2	2NO+2NC
Max. speed	1 m/s		1 m/s		page 235 - type 1		page 235 - type 1	
Actuating force	0.07 Nm		0.03 Nm		0.07 Nm (0.25 Nm)		0.07 Nm (0.25 Nm)	
Travel diagrams	page 236 - group 4		page 236 - group 4		page 236 - group 5		page 236 - group 5	

Contact type R = snap action L = slow action	With steel roller with self-lubrication or 316L stainless steel on request		With steel roller with self-lubrication or 316L stainless steel on request		With steel roller with self-lubrication or 316L stainless steel on request		With steel roller with self-lubrication or 316L stainless steel on request	
Contact block								
B11 R	NA B112KC-DN2	1NO+1NC	NA B112KD-DN2	1NO+1NC	NA B112KE-DN2	1NO+1NC	NA B112KF-DN2	1NO+1NC
B02 R	NA B022KC-DN2	2NC	NA B022KD-DN2	2NC	NA B022KE-DN2	2NC	NA B022KF-DN2	2NC
B12 R	NA B122KC-DN2	1NO+2NC	NA B122KD-DN2	1NO+2NC	NA B122KE-DN2	1NO+2NC	NA B122KF-DN2	1NO+2NC
B22 R	NA B222KC-DN2	2NO+2NC	NA B222KD-DN2	2NO+2NC	NA B222KE-DN2	2NO+2NC	NA B222KF-DN2	2NO+2NC
G11 L	NA G112KC-DN2	1NO+1NC	NA G112KD-DN2	1NO+1NC	NA G112KE-DN2	1NO+1NC	NA G112KF-DN2	1NO+1NC
G02 L	NA G022KC-DN2	2NC	NA G022KD-DN2	2NC	NA G022KE-DN2	2NC	NA G022KF-DN2	2NC
G12 L	NA G122KC-DN2	1NO+2NC	NA G122KD-DN2	1NO+2NC	NA G122KE-DN2	1NO+2NC	NA G122KF-DN2	1NO+2NC
G22 L	NA G222KC-DN2	2NO+2NC	NA G222KD-DN2	2NO+2NC	NA G222KE-DN2	2NO+2NC	NA G222KF-DN2	2NO+2NC
Max. speed	page 235 - type 1							
Actuating force	0.07 Nm (0.25 Nm)							
Travel diagrams	page 236 - group 5							

NB series housing	M12 connector, right	M12 connector, bottom	AMP Superseal 1.5 connector
To order a product of the NB series, replace NA with NB in the codes shown above. Example: NA B110AA-DN2 → NB B110AA-DN2	To order a product with M12 right connector, replace DN2 with DMK in the codes shown above. Example: NA B110AA-DN2 → NA B110AA-DMK	To order a product with M12 bottom connector, replace DN2 with SMK in the codes shown above. Example: NA B110AA-DN2 → NA B110AA-SMK	To order a product with AMP connector, replace DN2 with SAK in the codes shown above. Example: NA B110AA-DN2 → NA B110AA-SAK

All values in the drawings are in mm

Accessories See page 207

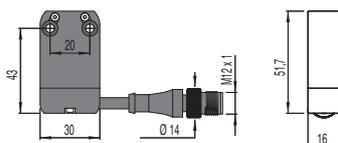
→ The 2D and 3D files are available at www.pizzato.com



Contact type R = snap action L = slow action	With steel roller with self-lubrication or 316L stainless steel on request		With steel roller with self-lubrication or 316L stainless steel on request		With steel roller with self-lubrication or 316L stainless steel on request		Square rod, 3x3 mm, stainless steel	
Contact block								
B11 R	NA B112KG-DN2	1NO+1NC	NA B112KH-DN2	1NO+1NC	NA B112KP-DN2	1NO+1NC	NA B112LB-DN2	1NO+1NC
B02 R	NA B022KG-DN2	2NC	NA B022KH-DN2	2NC	NA B022KP-DN2	2NC	NA B022LB-DN2	2NC
B12 R	NA B122KG-DN2	1NO+2NC	NA B122KH-DN2	1NO+2NC	NA B122KP-DN2	1NO+2NC	NA B122LB-DN2	1NO+2NC
B22 R	NA B222KG-DN2	2NO+2NC	NA B222KH-DN2	2NO+2NC	NA B222KP-DN2	2NO+2NC	NA B222LB-DN2	2NO+2NC
G11 L	NA G112KG-DN2	1NO+1NC	NA G112KH-DN2	1NO+1NC	NA G112KP-DN2	1NO+1NC	NA G112LB-DN2	1NO+1NC
G02 L	NA G022KG-DN2	2NC	NA G022KH-DN2	2NC	NA G022KP-DN2	2NC	NA G022LB-DN2	2NC
G12 L	NA G122KG-DN2	1NO+2NC	NA G122KH-DN2	1NO+2NC	NA G122KP-DN2	1NO+2NC	NA G122LB-DN2	1NO+2NC
G22 L	NA G222KG-DN2	2NO+2NC	NA G222KH-DN2	2NO+2NC	NA G222KP-DN2	2NO+2NC	NA G222LB-DN2	2NO+2NC
Max. speed	page 235 - type 1		page 235 - type 1		page 235 - type 1		1.5 m/s	
Actuating force	0.07 Nm (0.25 Nm \ominus)		0.07 Nm (0.25 Nm \ominus)		0.07 Nm (0.25 Nm \ominus)		0.07 Nm	
Travel diagrams	page 236 - group 5		page 236 - group 5		page 236 - group 5		page 236 - group 5	

Contact type R = snap action L = slow action	Round rod, Ø 3 mm, stainless steel		Glass fibre rod		Porcelain roller			
Contact block								
B11 R	NA B112LE-DN2	1NO+1NC	NA B112LH-DN2	1NO+1NC	NA B112LL-DN2	1NO+1NC	NA B112LP-DN2E24	1NO+1NC
B02 R	NA B022LE-DN2	2NC	NA B022LH-DN2	2NC	NA B022LL-DN2	2NC	NA B022LP-DN2E24	2NC
B12 R	NA B122LE-DN2	1NO+2NC	NA B122LH-DN2	1NO+2NC	NA B122LL-DN2	1NO+2NC	NA B122LP-DN2E24	1NO+2NC
B22 R	NA B222LE-DN2	2NO+2NC	NA B222LH-DN2	2NO+2NC	NA B222LL-DN2	2NO+2NC	NA B222LP-DN2E24	2NO+2NC
G11 L	NA G112LE-DN2	1NO+1NC	NA G112LH-DN2	1NO+1NC	NA G112LL-DN2	1NO+1NC	NA G112LP-DN2E24	1NO+1NC
G02 L	NA G022LE-DN2	2NC	NA G022LH-DN2	2NC	NA G022LL-DN2	2NC	NA G022LP-DN2E24	2NC
G12 L	NA G122LE-DN2	1NO+2NC	NA G122LH-DN2	1NO+2NC	NA G122LL-DN2	1NO+2NC	NA G122LP-DN2E24	1NO+2NC
G22 L	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	
Actuating force	0.07 Nm		0.07 Nm		0.07 Nm		0.04 Nm	
Travel diagrams	page 236 - group 5		page 236 - group 5		page 236 - group 5		page 236 - group 5	

Cable and M12 connector



To order a product with cable and M12 connector:
 replace DN2 with DM0.2 in the codes shown above. Example:
 NA B110AA-DN2 → NA B110AA-DM0.2

Contact type						
R	= snap action					
L	= slow action					
Contact block						
B11	R NA B110AB-DN2W5	⊕ 1NO+1NC	⊕ NA B110BB-DN2H0W5	⊕ 1NO+1NC	⊕ NA B110BB-DN2W5	⊕ 1NO+1NC
B02	R NA B020AB-DN2W5	⊕ 2NC	⊕ NA B020BB-DN2H0W5	⊕ 2NC	⊕ NA B020BB-DN2W5	⊕ 2NC
B12	R NA B120AB-DN2W5	⊕ 1NO+2NC	⊕ NA B120BB-DN2H0W5	⊕ 1NO+2NC	⊕ NA B120BB-DN2W5	⊕ 1NO+2NC
B22	R NA B220AB-DN2W5	⊕ 2NO+2NC	⊕ NA B220BB-DN2H0W5	⊕ 2NO+2NC	⊕ NA B220BB-DN2W5	⊕ 2NO+2NC
G11	L NA G110AB-DN2W5	⊕ 1NO+1NC	⊕ NA G110BB-DN2H0W5	⊕ 1NO+1NC	⊕ NA G110BB-DN2W5	⊕ 1NO+1NC
G02	L NA G020AB-DN2W5	⊕ 2NC	⊕ NA G020BB-DN2H0W5	⊕ 2NC	⊕ NA G020BB-DN2W5	⊕ 2NC
G12	L NA G120AB-DN2W5	⊕ 1NO+2NC	⊕ NA G120BB-DN2H0W5	⊕ 1NO+2NC	⊕ NA G120BB-DN2W5	⊕ 1NO+2NC
G22	L NA G220AB-DN2W5	⊕ 2NO+2NC	⊕ NA G220BB-DN2H0W5	⊕ 2NO+2NC	⊕ NA G220BB-DN2W5	⊕ 2NO+2NC
Max. speed	page 235 - type 4		page 235 - type 2		page 235 - type 2	
Actuating force	9.5 N (25 N ⊕)		9.5 N (25 N ⊕)		9.5 N (25 N ⊕)	
Travel diagrams	page 236 - group 1		page 236 - group 1		page 236 - group 1	

Contact type						
R	= snap action					
L	= slow action					
Contact block						
B11	R NA B110HB-DN2W5	1NO+1NC	⊕ NA B110HE-DN2W5	1NO+1NC	⊕ NA B110HH-DN2W5	1NO+1NC
B02	R NA B020HB-DN2W5	2NC	⊕ NA B020HE-DN2W5	2NC	⊕ NA B020HH-DN2W5	2NC
B12	R NA B120HB-DN2W5	1NO+2NC	⊕ NA B120HE-DN2W5	1NO+2NC	⊕ NA B120HH-DN2W5	1NO+2NC
B22	R NA B220HB-DN2W5	2NO+2NC	⊕ NA B220HE-DN2W5	2NO+2NC	⊕ NA B220HH-DN2W5	2NO+2NC
G11	L /	/	/	/	/	/
G02	L NA G020HB-DN2W5	2NC	⊕ NA G020HE-DN2W5	2NC	⊕ NA G020HH-DN2W5	2NC
G12	L /	/	/	/	/	/
G22	L /	/	/	/	/	/
Max. speed	1 m/s		1 m/s		1 m/s	
Actuating force	0.08 Nm		0.12 Nm		0.08 Nm	
Travel diagrams	page 236 - group 4		page 236 - group 4		page 236 - group 4	

NB series housing	M12 connector, right	M12 connector, bottom	AMP Superseal 1.5 connector
To order a product of the NB series, replace NA with NB in the codes shown above. Example: NA B110AA-DN2 → NB B110AA-DN2	To order a product with M12 right connector, replace DN2 with DMK in the codes shown above. Example: NA B110AA-DN2 → NA B110AA-DMK	To order a product with M12 bottom connector, replace DN2 with SMK in the codes shown above. Example: NA B110AA-DN2 → NA B110AA-SMK	To order a product with AMP connector, replace DN2 with SAK in the codes shown above. Example: NA B110AA-DN2 → NA B110AA-SAK

All values in the drawings are in mm

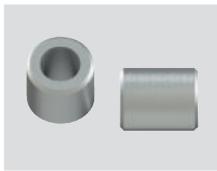
Accessories See page 207

→ The 2D and 3D files are available at www.pizzato.com

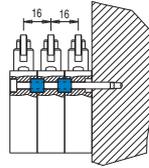
Accessories

 Packs of **10 pcs.**

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



By installing spacers between two switches, it is possible to have 2 or more pre-wired switches, preventing them from slipping.


M12 female connectors with cable

Features:

- Polyurethane connector body
- Class 6 copper conductors acc. to IEC 60228 - mobile installation
- Gold-plated contacts
- Anti-vibration self-locking ring nut made of nickel-plated brass, available on request in AISI 316L stainless steel hex version
- High flexibility cable with oil resistant PVC or PUR sheath suitable to be used in drag chains, acc. to IEC 60332-1-2

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	
VF CA4PD3M		-X	
No. of poles		Connection type	
4	4 poles	M	M12x1
5	5 poles		
8	8 poles		
12	12 poles		
Cable sheath		Cable length (L)	
P	PVC (standard)	1	1 metre
U	PUR	2	2 metres
		3	3 metres (standard)
		4	4 metres
		5	5 metres (standard)
		...	
		10	10 metres (standard)
		Other lengths on request.	
Connector type		Fixing ring	
D	straight (standard)		knurled ring (standard)
G	angled	X	stainless steel hex ring nut

Stock items

VF CA4PD3M
VF CA4PD5M
VF CA4PD10M
VF CA5PD3M
VF CA5PD5M
VF CA5PD10M
VF CA8PD3M
VF CA8PD5M
VF CA8PD10M
VF CA8PD20M
VF CA12PD3M
VF CA12PD5M
VF CA12PD10M
VF CA12PD20M
VF CA12PD30M
VF CA8UD5M-X
VF CA8UD10M-X
VF CA12UD10M-X

Attention! For items not in stock the minimum order quantity is 100 pcs.

Field wireable M12 female connectors

General data

Technopolymer connector body	
Gold-plated contacts	
Screw terminals for cable screw fittings	
Max. operating voltages	250 Vac/dc (4 and 5-pole) 30 Vac/dc (8-pole)
Maximum current	4 A (4 and 5-pole) 2 A (8-pole)
Protection degree	IP67 acc. to EN 60529
Ambient temperature	-25°C ... +85°C
Wire cross-section	0.25 mm ² (23 AWG) ... 0.5 mm ² (20 AWG)
Tightening torque:	0.6 ... 0.8 Nm

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

 → The 2D and 3D files are available at www.pizzato.com