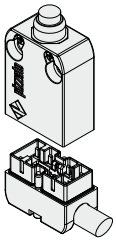
Modular prewired switches **NA-NB-NF series**

Switches with connectors



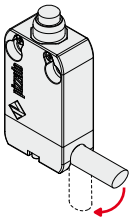
The new fundamental characteristic of these prewired switches series is the separation between the switch body and the wired connector. The connector allows the user to change a product in the field without having to completely remove the wires.
Moreover this way it's easier to assemble products with different cable types and lengths.

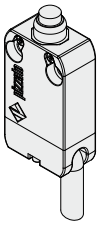
Protection degree IP67 and IP69K

IP69K
IP67

The NA-NB-NF series switches by Pizzato Elettrica, besides having an IP67 protection degree, have passed the test proving their IP69K protection degree according to the prescriptions established by the DIN 40050 standard.Therefore they are suitable for use in machineries subjected to intense washing with high pressure and high temperature water jets and for any condition or environment where a particular attention for cleanness and hygiene is required, such as in food or pharmaceutical industry.

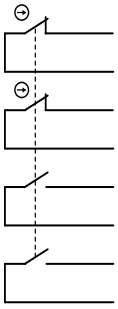
Adjustable cable output





The wired connector is provided with a notch to allow the cable bending up to 90°.
Therefore it's possible to install it by the wall and it's easier to adjust the cable to the supporting flange.

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



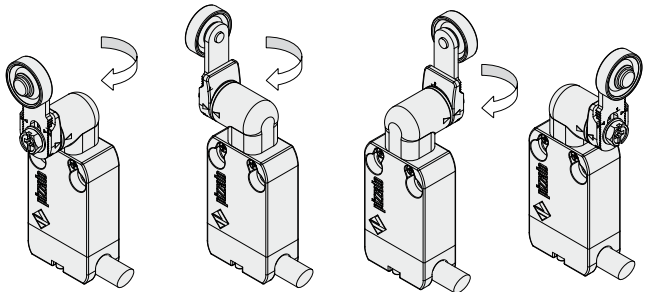
These series contact blocks are versatile and compact.
In the same space of the previous versions now it's possible to have up to 4 different contacts, galvanically separated and provided with positive opening (NC contacts).
The allowed standard combinations are 1NO+1NC, 2NC, 1NO+2NC, 2NO+2NC. Other combinations available by 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.
Thus allowing the use of the same cable with connector both for slow action and snap action contacts without crossing wires, and, if needed, the use of cables fit for more contacts (e.g. 2NO+2NC) also for fewer contacts (e.g. 1NO+1NC).

2D and 3D drawings

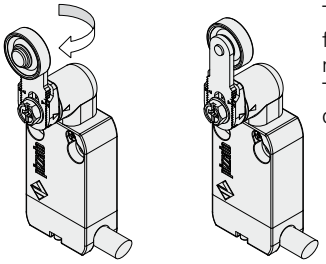
On our website, www.pizzato.com, you can freely download 2D drawings in (DXF format) and 3D drawings (STEP format) for all parts in this series.

Rotating heads

All the heads can rotate 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.



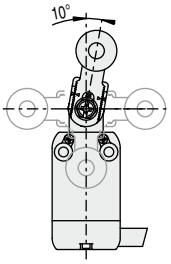
Overturning levers



The lever on switches can be fasten in straight or reverse side, maintaining the positive coupling. This way it's possible to obtain two different work plans of the lever.

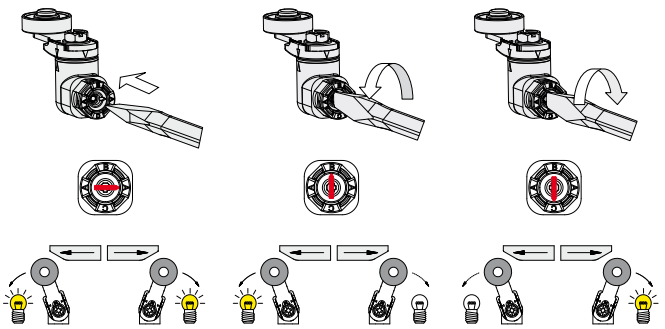
Adjustable levers

In switches with revolving lever it is possible to adjust the lever with 10° steps for the whole 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.



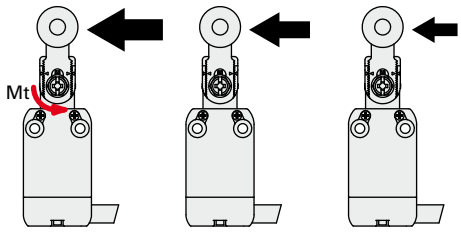
Unidirectional heads

All the switches with revolving levers 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 directional operation by revolving a special ring nut inside this type of heads.



Increased or reduced actuating force

Based on the chosen actuator, many product variations are available. For actuators with revolving 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.



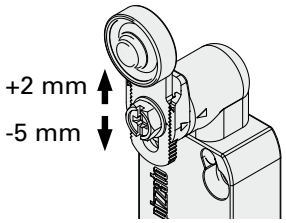
Increased force Mt = 0,09 Nm (E25 option NA NB series)

Standard force Mt = 0,07 Nm

Reduced force Mt = 0,04 Nm (E24 option)

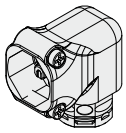
Adjustable levers with anti-vibration washer

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.

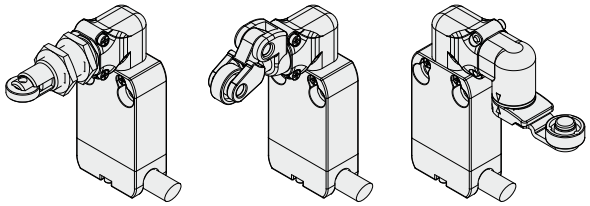


This feature, in conjunction with the radial adjusting actuator provides unique flexibility of alignment whilst still maintaining the geometrical coupling between the lever and the revolving shaft as prescribed for safety applications.

90° transmission block for actuators



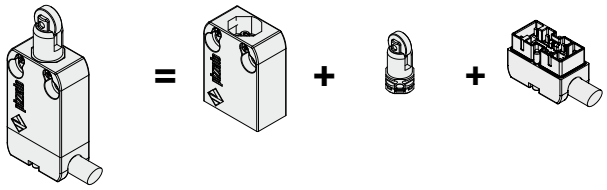
This component largely increases the new products application possibilities.
Actuators that can be attached directly to the switch body can also be fitted via the Transmission Block, increasing the positioning options and therefore the application possibilities.
The transmission block can be used also with revolving 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

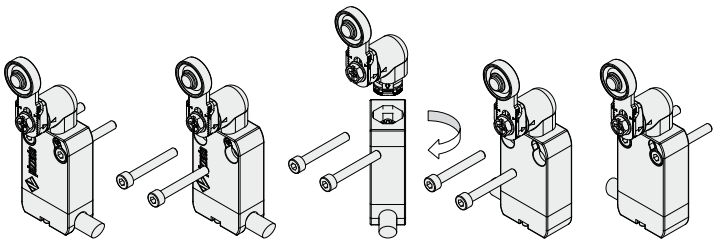
This product series is designed in a modular format, so that its single pieces can be purchased separately. This is advantageous to distributors of electrical material for stock flexibility and final customers for spare parts or new combinations.

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



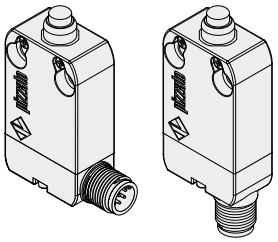
Reversible housing

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.



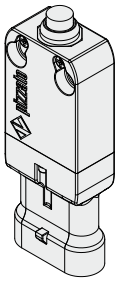
M12 connectors

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



AMP connectors

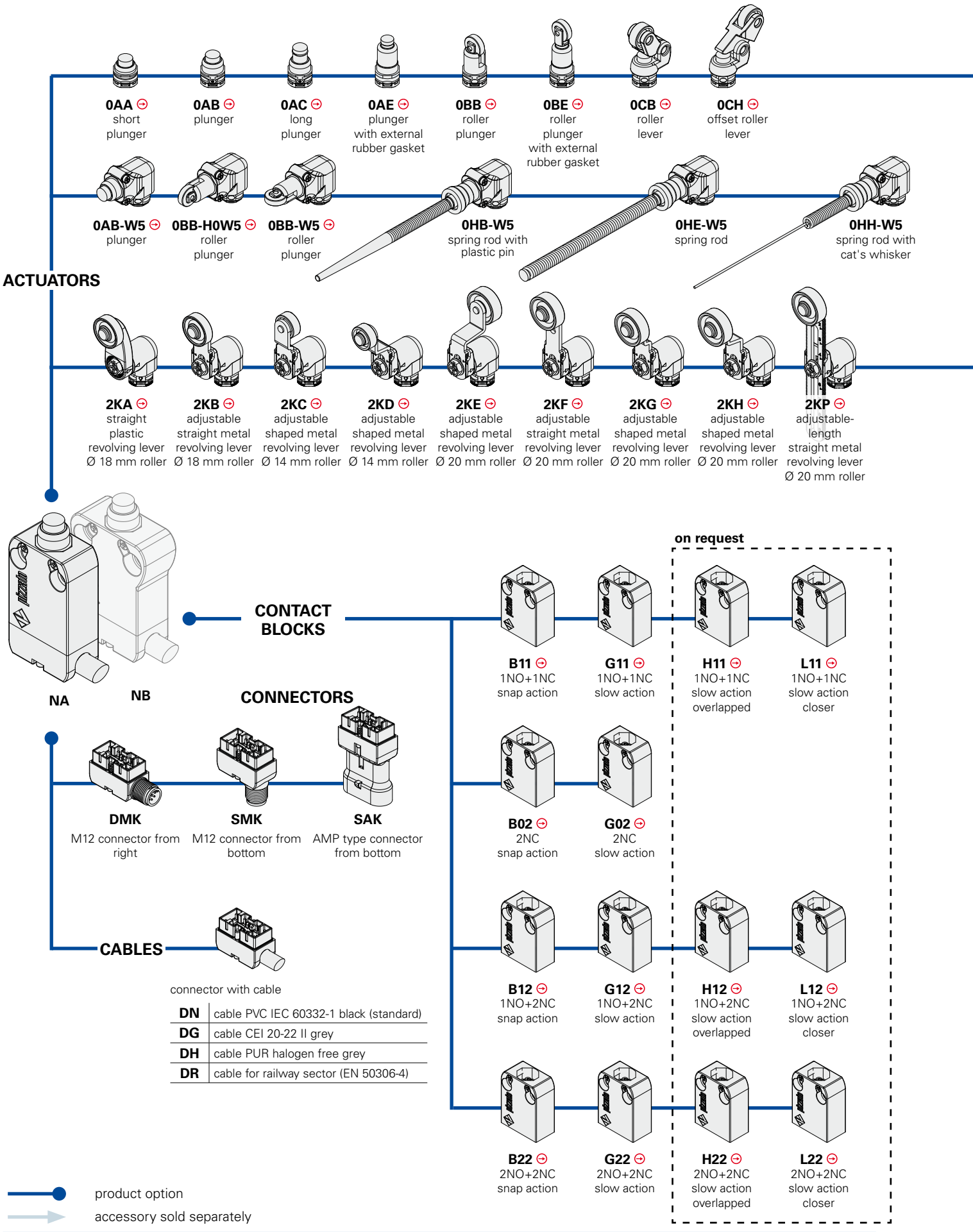
The AMP connectors for 2-contact versions are also available. These connectors, especially developed for the automotive sector, are exempt from vibrations thanks to rapid coupling.



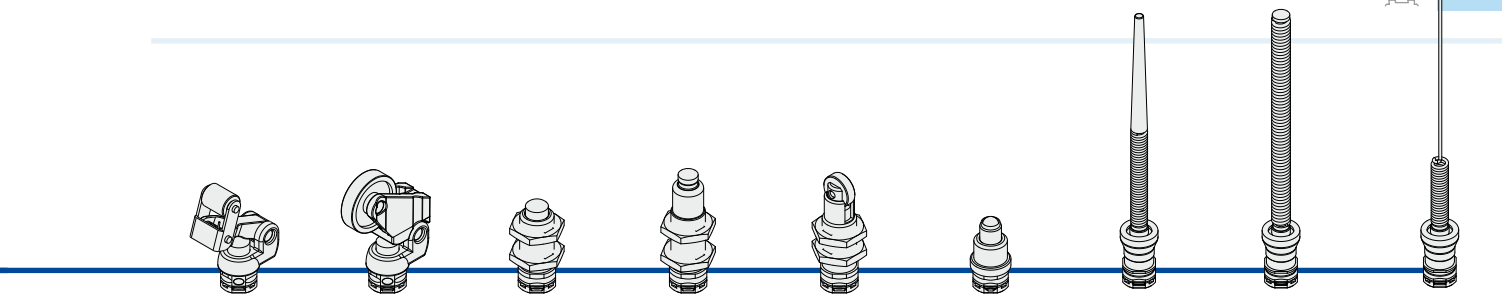
Extended temperature range

-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. This is particularly useful for applications in cold stores, sterilisers and other low temperature environments. The materials used in the production of these switches maintain the standard operating parameters even over this temperature range, further increasing application possibilities.

Selection diagram for articles NA-NB series sold assembled



DN	cable PVC IEC 60332-1 black (standard)
DG	cable CEI 20-22 II grey
DH	cable PUR halogen free grey
DR	cable for railway sector (EN 50306-4)



0CP unidirectional roller lever

0CV adjustable offset roller lever

0EB plunger with M12 threaded bearing

0EE plunger with M12 threaded bearing and external rubber gasket

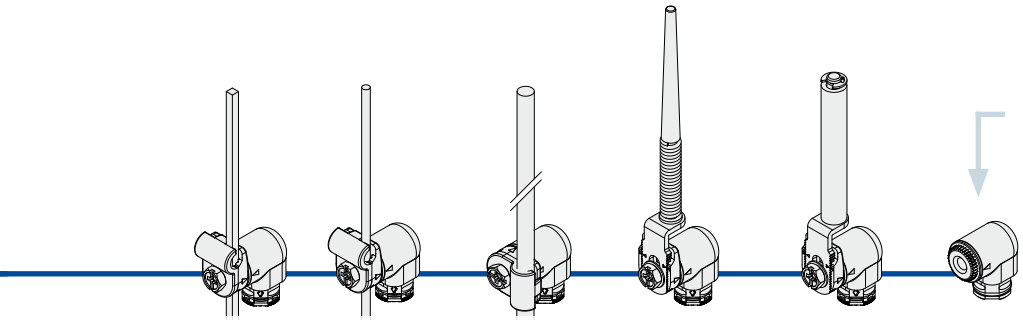
0FB plunger with roller and M12 threaded bearing

0GB plunger with Ø 6 mm sphere

0HB spring rod with plastic pin

0HE spring rod

0HH spring rod with cat's whisker



2LB metal revolving lever with adjustable square stainless steel rod 3x3x125 mm

2LE metal revolving lever with adjustable stainless steel rod Ø3x125 mm

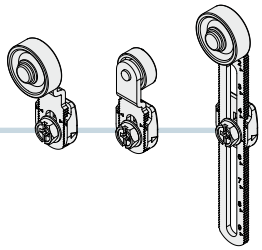
2LH metal revolving lever with adjustable fiber glass rod Ø6x200 mm

2LL metal revolving lever with flexible adjustable rod

2LP metal revolving lever with porcelain roller

200 metal head for actuators with revolving lever

LOOSE ACTUATORS
See page 2/121



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	
NA	metal, 20 mm holes interaxes
NB	metal, 25 mm holes interaxes

Contact blocks	
B11	1NO+1NC, snap action
B02	2NC, snap action
B12	1NO+2NC, snap action
B22	2NO+2NC, snap action
G11	1NO+1NC, slow action
G02	2NC, slow action
G12	1NO+2NC, slow action
G22	2NO+2NC, slow action
H11	1NO+1NC, slow action overlapped
H12	1NO+2NC, slow action overlapped
H22	2NO+2NC, slow action overlapped
L11	1NO+1NC, slow action closer
L12	1NO+2NC, slow action closer
L22	2NO+2NC, slow action closer

Other Contact blocks on requests.

Actuation heads	
0	without head
2	head for revolving lever actuators

Actuators	
00	without actuator
AA	with short plunger
AB	with plunger
...	.....

Connection output direction	
D	cable or connector from right
S	connector from bottom

Type of cable	
N	cable PVC IEC 60332-1 black (standard)
G	cable CEI 20-22 II grey
H	cable PUR halogen free grey
R	cable for railway sector (EN 50306-4)
M	M12 connector
A	super seal 1,5 AMP connector

Check modularity with table on page 2/104.

Cable length	
2	cable length 2 m (standard)
5	cable length 5 m
K	with connector

Other length on requests.

Contacts type	
	silver contacts (standard)
G	silver contacts gold plated 1 µm

Roller	
	with standard roller
R7	with Ø 18 mm plastic roller
R18	with Ø 14 mm plastic roller
R19	with Ø 22 mm plastic roller
R22	with Ø 20 mm plastic roller
R23	with Ø 14 mm stainless steel roller
R24	with Ø 20 mm stainless steel roller
R25	with Ø 35 mm plastic roller

Utilization temperatures	
	-25 °C ... +80 °C
T6	-40 °C ... +80 °C

Transmission block	
	without transmission block
W5	90° transmission block

Metal modular prewired switches **NA-NB series**

Main data

- Metal housing, cable output from right or from bottom
- 4 integrated cable types available
- Versions with M12 connector from right or from bottom suitable for safety applications ⊖
- Protection degree IP67 and IP69K
- 14 contact blocks available
- 36 actuators available

Markings and quality marks:

Approval IMQ: CA02.03746
Approval UL: E131787
Approval GOST: POCC IT.AB24.B04512

Technical data

Housing
Metal housing, coated with baked UV resistant powder.
Version with cable integrated, standard length 2 m. Other lengths on request.
Versions with 5 or 8 poles M12 integrated connector

Protection degree:	IP67 according to EN 60529 IP69K according to DIN 40050 (Protect the cables from direct high-pressure and high-temperature jets)
Saline smoke resistance:	≥ 300 hours in NSS according to ISO 9227

General data

Utilization temperatures:	See table on page 2/104
Max actuation frequency:	3600 operations cycles[1]/hour
Mechanical endurance:	20 million operations cycles[1]
Assembling position:	any
Driving torque for installation:	see pages 7/1-7/12

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

Electrical data

Rated impulse withstand voltage (U_{imp}):	4 kV
Conditional shot 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 1088, EN ISO 12100-1, EN ISO 12100-2, IEC 529, EN 60529, DIN 40050, NFC 63-140, VDE 0660-200, VDE 0113.

In conformity with requirements requested by:
Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and Electromagnetic Compatibility 2004/108/EC.
Positive contact opening in conformity with standards:
IEC 60947-5-1, EN 60947-5-1, VDE 0660-206.

⚠ **Installation for persons protection applications:**
Use only switches marked with the symbol ⊖. The safety circuit must always be connected with the **contacts NC** (normally closed contacts: see "internal connections" on page 2/104) as stated in the **standard EN 60947-5-1, encl. K, par. 2**. The switch must be actuated with **at least up to the positive opening travel** indicated in the travel diagrams at page 7/10. The switch must be actuated **at least with the positive opening force**, shown in brackets, underneath each article, near the value of the min. force. All enforceable standards must be respected.

⚠ **If not expressly indicated in this chapter, for the right installation and the correct utilization of all articles see requirements indicated from page 7/1 to page 7/12.**

⚠ **Attention: switch off the circuit voltage before disconnecting the connector from the switch. The connector is not suitable for sectioning of electrical loads. According to EN 60204-1, versions with 8 poles M12 and AMP connector can be used only in circuits PELV.**

Data type approved by IMQ

Rated insulation voltage (Ui):	250 Vac
Thermal current (Ith):	10 A (1-2 contacts) / 6 A (2-3 contacts) / 4 A (4 contacts or 5 poles M12 connector)
Protection against short circuits (fuse):	10 A (1-2 contacts) / 6 A (2-3 contacts) / 4 A (4 contacts or 5 poles M12 connector) type gG
Rated impulse withstand voltage (U_{imp}):	4 kV
Protection degree:	IP67
MA terminals (seamed clamps)	
Pollution degree:	3
Utilization category:	AC15 / DC13 (with connector)
Operation voltage (Ue):	250 Vac (50 Hz) / 24 Vdc (with connector)
Operation 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 block 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/CE.

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

Data type 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 the housing type 1, 4X "indoor use only", 12
Data of the housing with 1-2-contact versions with N-type cable type 1, 4X "indoor use only"

In conformity with standard: UL 508

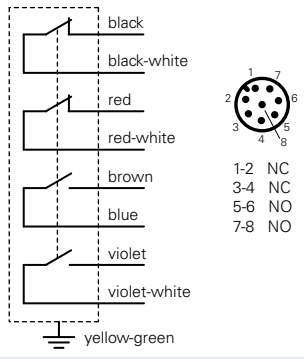
Please contact our technical service for the list of approved products.

Utilization temperatures and electrical data

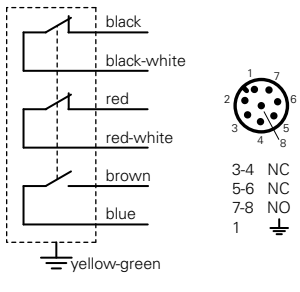
			output with cable								output with connector M12		Output with AMP connector
			2 contacts versions				3 contacts versions		4 contacts versions		2 contacts versions	3 /4 contacts versions	2 contacts versions
			Cable type N 5x0,75 mm², Sheath PVC H05VV-F, Not flame-spreading IEC 60332-1-2 IEC 60332-1-3	Cable type G 5x0,75 mm², Sheath PVC S05VV-F, Not flame-spreading IEC 60332-1-2 IEC 60332-1-3 IEC 60332-3 CEI 20-22 II	Cable type H 5x0,75 mm², Max Speed 100 m/min Max Acceleration 2 m/s², Sheath PUR HALO-GEN FREE Not flame-spreading IEC 60332-1-2 IEC 60332-1-3	Cable type R 5x0,5mm², Cable for railway applications EN50306-4 1E-300V-5x0,5 mm² MM-90, According to: EN 50306-4 EN 45555 Not flame-spreading: IEC 60332-1 EN 50305 EN 50306-1	Cable type N 7x0,5 mm², Sheath PVC H05VV-F, Not flame-spreading IEC 60332-1-2 IEC 60332-1-3	Cable type H 7x0,5 mm², Max Speed 300 m/min Max Acceleration 25 m/s², Sheath PUR HALO-GEN FREE Not flame-spreading IEC 60332-1-2 IEC 60332-1-3	Cable type N 9x0,34 mm², Sheath PVC H05VV-F, Not flame-spreading IEC 60332-1-2 IEC 60332-1-3	Cable type R 9x0,5mm², Cable for railway applications EN50306-4 1P-300V-9x0,5 mm² MM-90, According to: EN 50306-4 EN 45555 Not flame-spreading: IEC 60332-1 EN 50305 EN 50306-1	5 poles M12 connector	8 poles M12 connector	AMP super seal 1,5 connector
			Min. bend radius: 72 mm	Min. bend radius: 72 mm	Min. bend radius: 70 mm Without halogens Oil-resistant IEC 60811-2-1	Min. bend radius: 60 mm	Min. bend radius 108 mm	Min. bend radius: 108 mm Without halogens Oil-resistant IEC 60811-2-1	Min. bend radius: 94 mm	Min. bend radius: 60 mm			
			Copper class 5 IEC 60228	Copper class 5 IEC 60228	Copper class 6 IEC 60228	Copper class 5 IEC 60228	Copper class 5 IEC 60228	Copper class 6 IEC 60228	Copper class 5 IEC 60228	Copper class 5 IEC 60228			
Utilization temperatures Standard		Fixed laying cable	-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	-25°C ... +80°C		
		Flexible laying cable	+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			
		Dynamic laying cable	/	/	-25°C ... +80°C	/	/	-25°C ... +80°C	/	/			
Utilization temperatures Extended -T6		Fixed laying cable	/	/	-40°C ... +80°C	-40°C ... +80°C	/	-40°C ... +80°C	/	-40°C +80°C	-40°C ... +80°C		
		Flexible laying cable	/	/	-40°C ... +80°C	-40°C ... +80°C	/	-30°C ... +80°C	/	-40°C +80°C			
		Dynamic laying cable	/	/	-40°C ... +80°C	/	/	-30°C ... +80°C	/	/			
Electrical data		Thermal current Ith	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 Ui	250 Vac	250 Vac	250 Vac	250 Vac	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	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 500V type gG	10 A 500 V type gG
	Utilization categories 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 categories 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 of switches with integrated cable			CE cULus IMQ	CE	CE cULus IMQ	CE IMQ	CE cULus IMQ	CE cULus IMQ	CE cULus IMQ	CE IMQ	CE cULus IMQ	CE cULus	CE cULus

Internal connections

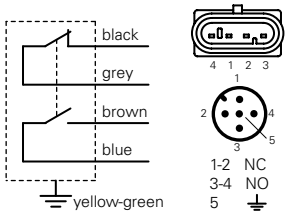
2NO+2NC



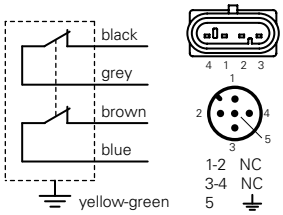
1NO+2NC



1NO+1NC



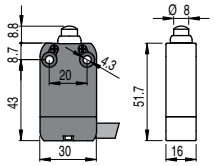
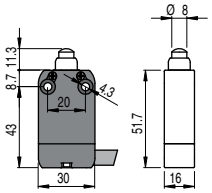
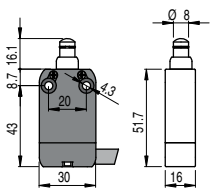
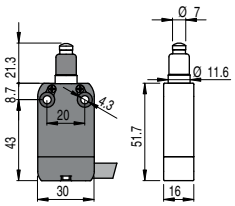
2NC

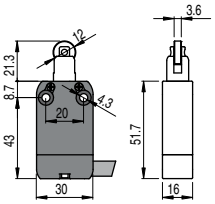
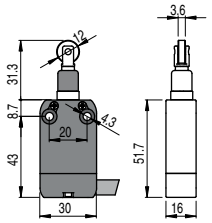
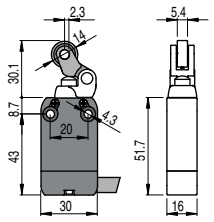
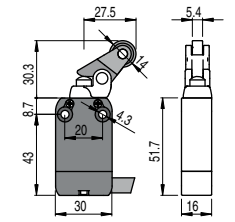


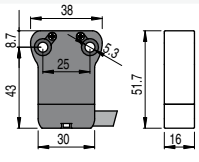
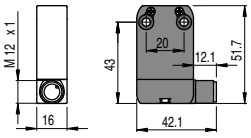
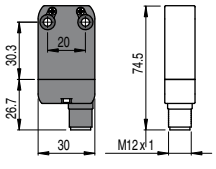
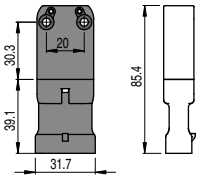
Metal modular prewired switches **NA-NB series**

Contacts type:

R = snap action
L = slow action

Contact blocks								
							With external rubber gasket 	
B11	R	NA B110AA-DN2	1NO+1NC	NA B110AB-DN2	1NO+1NC	NA B110AC-DN2	1NO+1NC	NA B110AE-DN2	1NO+1NC
B02	R	NA B020AA-DN2	2NC	NA B020AB-DN2	2NC	NA B020AC-DN2	2NC	NA B020AE-DN2	2NC
B12	R	NA B120AA-DN2	1NO+2NC	NA B120AB-DN2	1NO+2NC	NA B120AC-DN2	1NO+2NC	NA B120AE-DN2	1NO+2NC
B22	R	NA B220AA-DN2	2NO+2NC	NA B220AB-DN2	2NO+2NC	NA B220AC-DN2	2NO+2NC	NA B220AE-DN2	2NO+2NC
G11	L	NA G110AA-DN2	1NO+1NC	NA G110AB-DN2	1NO+1NC	NA G110AC-DN2	1NO+1NC	NA G110AE-DN2	1NO+1NC
G02	L	NA G020AA-DN2	2NC	NA G020AB-DN2	2NC	NA G020AC-DN2	2NC	NA G020AE-DN2	2NC
G12	L	NA G120AA-DN2	1NO+2NC	NA G120AB-DN2	1NO+2NC	NA G120AC-DN2	1NO+2NC	NA G120AE-DN2	1NO+2NC
G22	L	NA G220AA-DN2	2NO+2NC	NA G220AB-DN2	2NO+2NC	NA G220AC-DN2	2NO+2NC	NA G220AE-DN2	2NO+2NC
Max speed		page 7/9 - type 4		page 7/9 - type 4		page 7/9 - type 4		page 7/9 - type 4	
Min. force		7 N (25 N ⊖)		7 N (25 N ⊖)		7 N (25 N ⊖)		7 N (25 N ⊖)	
Travel diagrams		page 7/10 - group 1		page 7/10 - group 1		page 7/10 - group 1		page 7/10 - group 1	

Contact blocks				With external rubber gasket		With stainless steel roller on request		With stainless steel roller on request	
									
B11	R	NA B110BB-DN2	1NO+1NC	NA B110BE-DN2	1NO+1NC	NA B110CB-DN2	1NO+1NC	NA B110CH-DN2	1NO+1NC
B02	R	NA B020BB-DN2	2NC	NA B020BE-DN2	2NC	NA B020CB-DN2	2NC	NA B020CH-DN2	2NC
B12	R	NA B120BB-DN2	1NO+2NC	NA B120BE-DN2	1NO+2NC	NA B120CB-DN2	1NO+2NC	NA B120CH-DN2	1NO+2NC
B22	R	NA B220BB-DN2	2NO+2NC	NA B220BE-DN2	2NO+2NC	NA B220CB-DN2	2NO+2NC	NA B220CH-DN2	2NO+2NC
G11	L	NA G110BB-DN2	1NO+1NC	NA G110BE-DN2	1NO+1NC	NA G110CB-DN2	1NO+1NC	NA G110CH-DN2	1NO+1NC
G02	L	NA G020BB-DN2	2NC	NA G020BE-DN2	2NC	NA G020CB-DN2	2NC	NA G020CH-DN2	2NC
G12	L	NA G120BB-DN2	1NO+2NC	NA G120BE-DN2	1NO+2NC	NA G120CB-DN2	1NO+2NC	NA G120CH-DN2	1NO+2NC
G22	L	NA G220BB-DN2	2NO+2NC	NA G220BE-DN2	2NO+2NC	NA G220CB-DN2	2NO+2NC	NA G220CH-DN2	2NO+2NC
Max speed		page 7/9 - type 2		page 7/9 - type 5		page 7/9 - type 3		page 7/9 - type 3	
Min. force		7 N (25 N ⊖)		7 N (25 N ⊖)		5 N (25 N ⊖)		5 N (25 N ⊖)	
Travel diagrams		page 7/10 - group 1		page 7/10 - group 1		page 7/10 - group 2		page 7/10 - group 2	

Housing NB series	M12 connector output from right	M12 connector output from bottom	AMP superseal 1,5 connector
			

In order to buy a NB series product: substitute on above mentioned codes NA with NB.
Example:
NA B110AA-DN2 → **NB** B110AA-DN2

In order to buy a product with M12 connector output from right substitute on above mentioned codes DN2 with DMK.
Example:
NA B110AA-**DN2** → NA B110AA-**DMK**

In order to buy a product with M12 connector output from bottom substitute on above mentioned codes DN2 with SMK.
Example:
NA B110AA-**DN2** → NA B110AA-**SMK**

In order to buy a product with AMP type connector output substitute on above mentioned codes DN2 with SAK. Example:
NA B110AA-**DN2** → NA B110AA-**SAK**

All measures in the drawings are in mm

Contacts type:

R = snap action
L = slow action

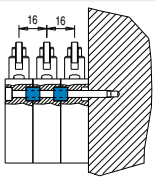
Contact blocks									
		No switching → Switching				Fixed only by threaded head		Fixed only by threaded head With external rubber gasket	
B11	R	NA B110CP-DN2	1NO+1NC	NA B110CV-DN2	1NO+1NC	NA B110EB-DN2	1NO+1NC	NA B110EE-DN2	1NO+1NC
B02	R	NA B020CP-DN2	2NC	NA B020CV-DN2	2NC	NA B020EB-DN2	2NC	NA B020EE-DN2	2NC
B12	R	NA B120CP-DN2	1NO+2NC	NA B120CV-DN2	1NO+2NC	NA B120EB-DN2	1NO+2NC	NA B120EE-DN2	1NO+2NC
B22	R	NA B220CP-DN2	2NO+2NC	NA B220CV-DN2	2NO+2NC	NA B220EB-DN2	2NO+2NC	NA B220EE-DN2	2NO+2NC
G11	L	NA G110CP-DN2	1NO+1NC	NA G110CV-DN2	1NO+1NC	NA G110EB-DN2	1NO+1NC	NA G110EE-DN2	1NO+1NC
G02	L	NA G020CP-DN2	2NC	NA G020CV-DN2	2NC	NA G020EB-DN2	2NC	NA G020EE-DN2	2NC
G12	L	NA G120CP-DN2	1NO+2NC	NA G120CV-DN2	1NO+2NC	NA G120EB-DN2	1NO+2NC	NA G120EE-DN2	1NO+2NC
G22	L	NA G220CP-DN2	2NO+2NC	NA G220CV-DN2	2NO+2NC	NA G220EB-DN2	2NO+2NC	NA G220EE-DN2	2NO+2NC
Max speed		page 7/9 - type 3		page 7/9 - type 3		page 7/9 - type 4		page 7/9 - type 4	
Min. force		3 N (25 N →)		3 N (25 N →)		7 N (25 N →)		7 N (25 N →)	
Travel diagrams		page 7/10 - group 6		page 7/10 - group 3		page 7/10 - group 1		page 7/10 - group 1	

Contact blocks									
		Fixed only by threaded head		Plunger with Ø 6 mm sphere		With external rubber gasket		With external rubber gasket	
B11	R	NA B110FB-DN2	1NO+1NC	NA B110GB-DN2	1NO+1NC	NA B110HB-DN2	1NO+1NC	NA B110HE-DN2	1NO+1NC
B02	R	NA B020FB-DN2	2NC	NA B020GB-DN2	2NC	NA B020HB-DN2	2NC	NA B020HE-DN2	2NC
B12	R	NA B120FB-DN2	1NO+2NC	NA B120GB-DN2	1NO+2NC	NA B120HB-DN2	1NO+2NC	NA B120HE-DN2	1NO+2NC
B22	R	NA B220FB-DN2	2NO+2NC	NA B220GB-DN2	2NO+2NC	NA B220HB-DN2	2NO+2NC	NA B220HE-DN2	2NO+2NC
G11	L	NA G110FB-DN2	1NO+1NC	NA G110GB-DN2	1NO+1NC				
G02	L	NA G020FB-DN2	2NC	NA G020GB-DN2	2NC	NA G020HB-DN2	2NC	NA G020HE-DN2	2NC
G12	L	NA G120FB-DN2	1NO+2NC	NA G120GB-DN2	1NO+2NC				
G22	L	NA G220FB-DN2	2NO+2NC	NA G220GB-DN2	2NO+2NC				
Max speed		page 7/9 - type 2		page 7/9 - type 2		1 m/s		1 m/s	
Min. force		7 N (25 N →)		7 N (25 N →)		0,03 Nm		0,07 Nm	
Travel diagrams		page 7/10 - group 1		page 7/10 - group 1		page 7/10 - group 4		page 7/10 - group 4	

Accessories

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

By interposing spacers between the switches, it is possible to join two or more prewired switches, preventing them from moving one against the other.
10 pcs packs



Article	Description
VF CA••••M	Female wired connectors

General data:
- Self locking ring nut
- High flexibility wire suitable for dynamic laying applications (copper class 6)
- Gold plated contact (resistance < 5 mΩ)
- Connector body in polyurethane

See page 6/2

Items with code on the **green** background are available in stock

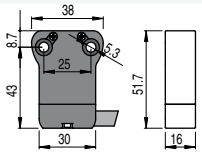
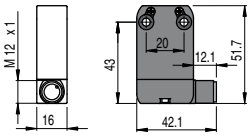
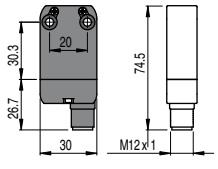
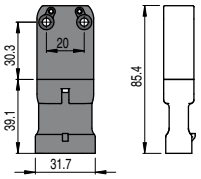
Metal modular prewired switches **NA-NB series**

Contacts type:

R = snap action
L = slow action

Contact blocks		With external rubber gasket		With stainless steel roller on request		With stainless steel roller on request		With stainless steel roller on request	
B11	R	NA B110HH-DN2	1NO+1NC	NA B112KA-DN2	1NO+1NC	NA B112KB-DN2	1NO+1NC	NA B112KC-DN2	1NO+1NC
B02	R	NA B020HH-DN2	2NC	NA B022KA-DN2	2NC	NA B022KB-DN2	2NC	NA B022KC-DN2	2NC
B12	R	NA B120HH-DN2	1NO+2NC	NA B122KA-DN2	1NO+2NC	NA B122KB-DN2	1NO+2NC	NA B122KC-DN2	1NO+2NC
B22	R	NA B220HH-DN2	2NO+2NC	NA B222KA-DN2	2NO+2NC	NA B222KB-DN2	2NO+2NC	NA B222KC-DN2	2NO+2NC
G11	L			NA G112KA-DN2	1NO+1NC	NA G112KB-DN2	1NO+1NC	NA G112KC-DN2	1NO+1NC
G02	L	NA G020HH-DN2	2NC	NA G022KA-DN2	2NC	NA G022KB-DN2	2NC	NA G022KC-DN2	2NC
G12	L			NA G122KA-DN2	1NO+2NC	NA G122KB-DN2	1NO+2NC	NA G122KC-DN2	1NO+2NC
G22	L			NA G222KA-DN2	2NO+2NC	NA G222KB-DN2	2NO+2NC	NA G222KC-DN2	2NO+2NC
Max speed		1 m/s		page 7/9 - type 1		page 7/9 - type 1		page 7/9 - type 1	
Min. force		0,03 Nm		0,07 Nm (0,25 Nm ⊖)		0,07 Nm (0,25 Nm ⊖)		0,07 Nm (0,25 Nm ⊖)	
Travel diagrams		page 7/10 - group 4		page 7/10 - group 5		page 7/10 - group 5		page 7/10 - group 5	

Contact blocks		With stainless steel roller on request		With stainless steel roller on request		With stainless steel roller on request		With stainless steel roller on request	
B11	R	NA B112KD-DN2	1NO+1NC	NA B112KE-DN2	1NO+1NC	NA B112KF-DN2	1NO+1NC	NA B112KG-DN2	1NO+1NC
B02	R	NA B022KD-DN2	2NC	NA B022KE-DN2	2NC	NA B022KF-DN2	2NC	NA B022KG-DN2	2NC
B12	R	NA B122KD-DN2	1NO+2NC	NA B122KE-DN2	1NO+2NC	NA B122KF-DN2	1NO+2NC	NA B122KG-DN2	1NO+2NC
B22	R	NA B222KD-DN2	2NO+2NC	NA B222KE-DN2	2NO+2NC	NA B222KF-DN2	2NO+2NC	NA B222KG-DN2	2NO+2NC
G11	L	NA G112KD-DN2	1NO+1NC	NA G112KE-DN2	1NO+1NC	NA G112KF-DN2	1NO+1NC	NA G112KG-DN2	1NO+1NC
G02	L	NA G022KD-DN2	2NC	NA G022KE-DN2	2NC	NA G022KF-DN2	2NC	NA G022KG-DN2	2NC
G12	L	NA G122KD-DN2	1NO+2NC	NA G122KE-DN2	1NO+2NC	NA G122KF-DN2	1NO+2NC	NA G122KG-DN2	1NO+2NC
G22	L	NA G222KD-DN2	2NO+2NC	NA G222KE-DN2	2NO+2NC	NA G222KF-DN2	2NO+2NC	NA G222KG-DN2	2NO+2NC
Max speed		page 7/9 - type 1		page 7/9 - type 1		page 7/9 - type 1		page 7/9 - 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 7/10 - group 5		page 7/10 - group 5		page 7/10 - group 5		page 7/10 - group 5	

Housing NB series	M12 connector output from right	M12 connector output from bottom	AMP superseal 1,5 connector
			

In order to buy a NB series product: substitute on above mentioned codes NA with NB.
Example:
NA B110AA-DN2 → **NB** B110AA-DN2

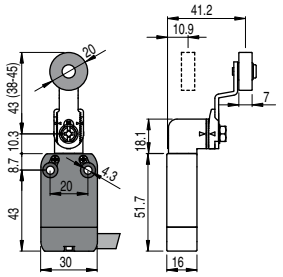
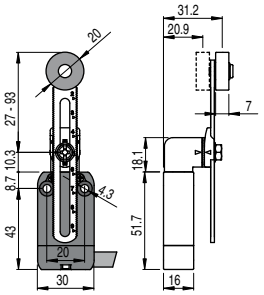
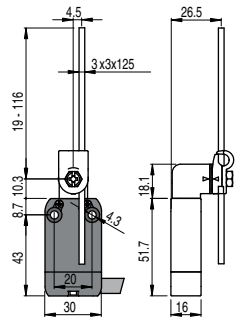
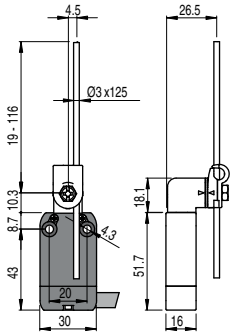
In order to buy a product with M12 connector output from right substitute on above mentioned codes DN2 with DMK.
Example:
NA B110AA-**DN2** → NA B110AA-**DMK**

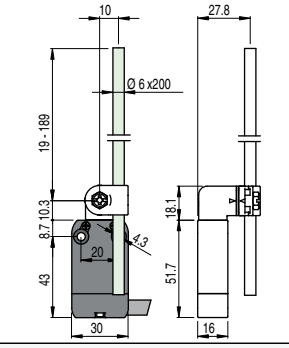
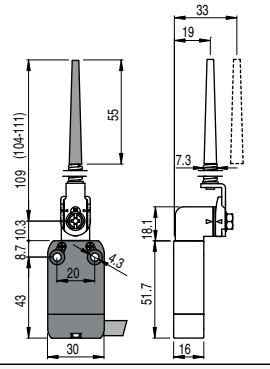
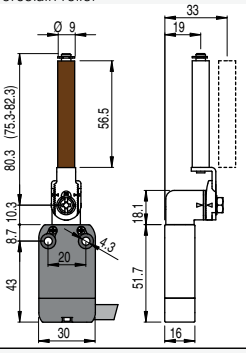
In order to buy a product with M12 connector output from bottom substitute on above mentioned codes DN2 with SMK.
Example:
NA B110AA-**DN2** → NA B110AA-**SMK**

In order to buy a product with AMP type connector output substitute on above mentioned codes DN2 with SAK. Example:
NA B110AA-**DN2** → NA B110AA-**SAK**

Contacts type:

R = snap action
L = slow action

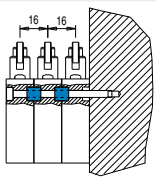
Contact blocks		With stainless steel roller on request	With stainless steel roller on request	Stainless steel 3x3 mm square rod	Ø 3 mm stainless steel round rod
					
B11	R	NA B112KH-DN2 1NO+1NC	NA B112KP-DN2 1NO+1NC	NA B112LB-DN2 1NO+1NC	NA B112LE-DN2 1NO+1NC
B02	R	NA B022KH-DN2 2NC	NA B022KP-DN2 2NC	NA B022LB-DN2 2NC	NA B022LE-DN2 2NC
B12	R	NA B122KH-DN2 1NO+2NC	NA B122KP-DN2 1NO+2NC	NA B122LB-DN2 1NO+2NC	NA B122LE-DN2 1NO+2NC
B22	R	NA B222KH-DN2 2NO+2NC	NA B222KP-DN2 2NO+2NC	NA B222LB-DN2 2NO+2NC	NA B222LE-DN2 2NO+2NC
G11	L	NA G112KH-DN2 1NO+1NC	NA G112KP-DN2 1NO+1NC	NA G112LB-DN2 1NO+1NC	NA G112LE-DN2 1NO+1NC
G02	L	NA G022KH-DN2 2NC	NA G022KP-DN2 2NC	NA G022LB-DN2 2NC	NA G022LE-DN2 2NC
G12	L	NA G122KH-DN2 1NO+2NC	NA G122KP-DN2 1NO+2NC	NA G122LB-DN2 1NO+2NC	NA G122LE-DN2 1NO+2NC
G22	L	NA G222KH-DN2 2NO+2NC	NA G222KP-DN2 2NO+2NC	NA G222LB-DN2 2NO+2NC	NA G222LE-DN2 2NO+2NC
Max speed		page 7/9 - type 1	page 7/9 - type 1	1,5 m/s	1,5 m/s
Min. force		0,07 Nm (0,25 Nm)	0,07 Nm (0,25 Nm)	0,07 Nm	0,07 Nm
Travel diagrams		page 7/10 - group 5	page 7/10 - group 5	page 7/10 - group 5	page 7/10 - group 5

Contact blocks		Fiber glass rod		Porcelain roller	
					
B11	R	NA B112LH-DN2 1NO+1NC	NA B112LL-DN2 1NO+1NC	NA B112LP-DN2E24 1NO+1NC	
B02	R	NA B022LH-DN2 2NC	NA B022LL-DN2 2NC	NA B022LP-DN2E24 2NC	
B12	R	NA B122LH-DN2 1NO+2NC	NA B122LL-DN2 1NO+2NC	NA B122LP-DN2E24 1NO+2NC	
B22	R	NA B222LH-DN2 2NO+2NC	NA B222LL-DN2 2NO+2NC	NA B222LP-DN2E24 2NO+2NC	
G11	L	NA G112LH-DN2 1NO+1NC	NA G112LL-DN2 1NO+1NC	NA G112LP-DN2E24 1NO+1NC	
G02	L	NA G022LH-DN2 2NC	NA G022LL-DN2 2NC	NA G022LP-DN2E24 2NC	
G12	L	NA G122LH-DN2 1NO+2NC	NA G122LL-DN2 1NO+2NC	NA G122LP-DN2E24 1NO+2NC	
G22	L	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	0,5 m/s	
Min. force		0,07 Nm	0,07 Nm	0,04 Nm	
Travel diagrams		page 7/10 - group 5	page 7/10 - group 5	page 7/10 - group 5	

Accessories

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

By interposing spacers between the switches, it is possible to join two or more prewired switches, preventing them from moving one against the other.
10 pcs packs



Article	Description
VF CA••••M	Female wired connectors

General data:
- Self locking ring nut
- High flexibility wire suitable for dynamic laying applications (copper class 6)
- Gold plated contact (resistance < 5 mΩ)
- Connector body in polyurethane

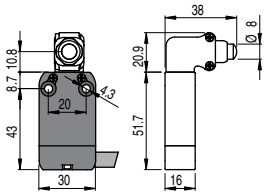
See page 6/2

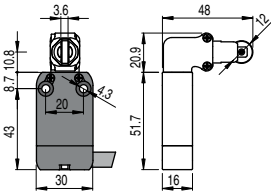
Items with code on the **green** background are available in stock

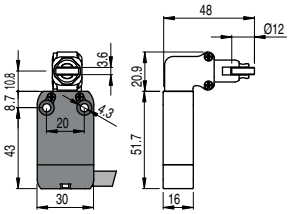
Metal modular prewired switches **NA-NB series**

Contacts type:

R = snap action
L = slow action

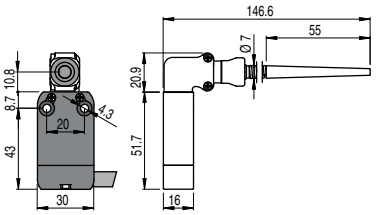




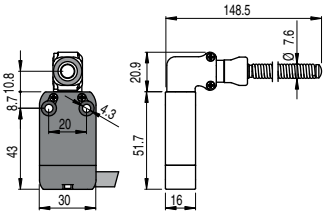


Contact blocks						
B11	R	NA B110AB-DN2W5	1NO+1NC	NA B110BB-DN2H0W5	1NO+1NC	NA B110BB-DN2W5	1NO+1NC
B02	R	NA B020AB-DN2W5	2NC	NA B020BB-DN2H0W5	2NC	NA B020BB-DN2W5	2NC
B12	R	NA B120AB-DN2W5	1NO+2NC	NA B120BB-DN2H0W5	1NO+2NC	NA B120BB-DN2W5	1NO+2NC
B22	R	NA B220AB-DN2W5	2NO+2NC	NA B220BB-DN2H0W5	2NO+2NC	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 7/9 - type 4		page 7/9 - type 2		page 7/9 - type 2	
Min. force		9,5 N (25 N ⇾)		9,5 N (25 N ⇾)		9,5 N (25 N ⇾)	
Travel diagrams		page 7/10 - group 1		page 7/10 - group 1		page 7/10 - group 1	

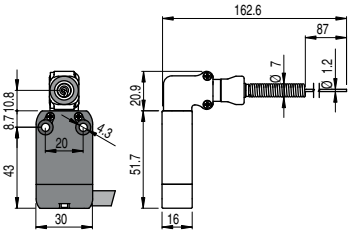
With external rubber gasket



With external rubber gasket

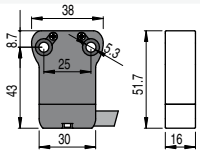


With external rubber gasket



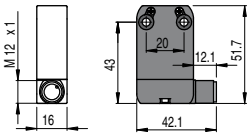
Contact blocks							
B11	R	NA B110HB-DN2W5	1NO+1NC	NA B110HE-DN2W5	1NO+1NC	NA B110HH-DN2W5	1NO+1NC
B02	R	NA B020HB-DN2W5	2NC	NA B020HE-DN2W5	2NC	NA B020HH-DN2W5	2NC
B12	R	NA B120HB-DN2W5	1NO+2NC	NA B120HE-DN2W5	1NO+2NC	NA B120HH-DN2W5	1NO+2NC
B22	R	NA B220HB-DN2W5	2NO+2NC	NA B220HE-DN2W5	2NO+2NC	NA 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	
Min. force		0,08 Nm		0,12 Nm		0,08 Nm	
Travel diagrams		page 7/10 - group 4		page 7/10 - group 4		page 7/10 - group 4	

Housing NB series



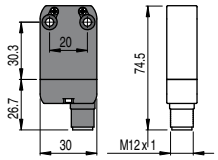
In order to buy a NB series product: substitute on above mentioned codes NA with NB.
Example:
NA B110AA-DN2 → **NB** B110AA-DN2

M12 connector output from right



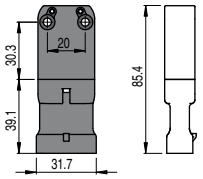
In order to buy a product with M12 connector output from right substitute on above mentioned codes DN2 with DMK.
Example:
NA B110AA-**DN2** → NA B110AA-**DMK**

M12 connector output from bottom



In order to buy a product with M12 connector output from bottom substitute on above mentioned codes DN2 with SMK.
Example:
NA B110AA-**DN2** → NA B110AA-**SMK**

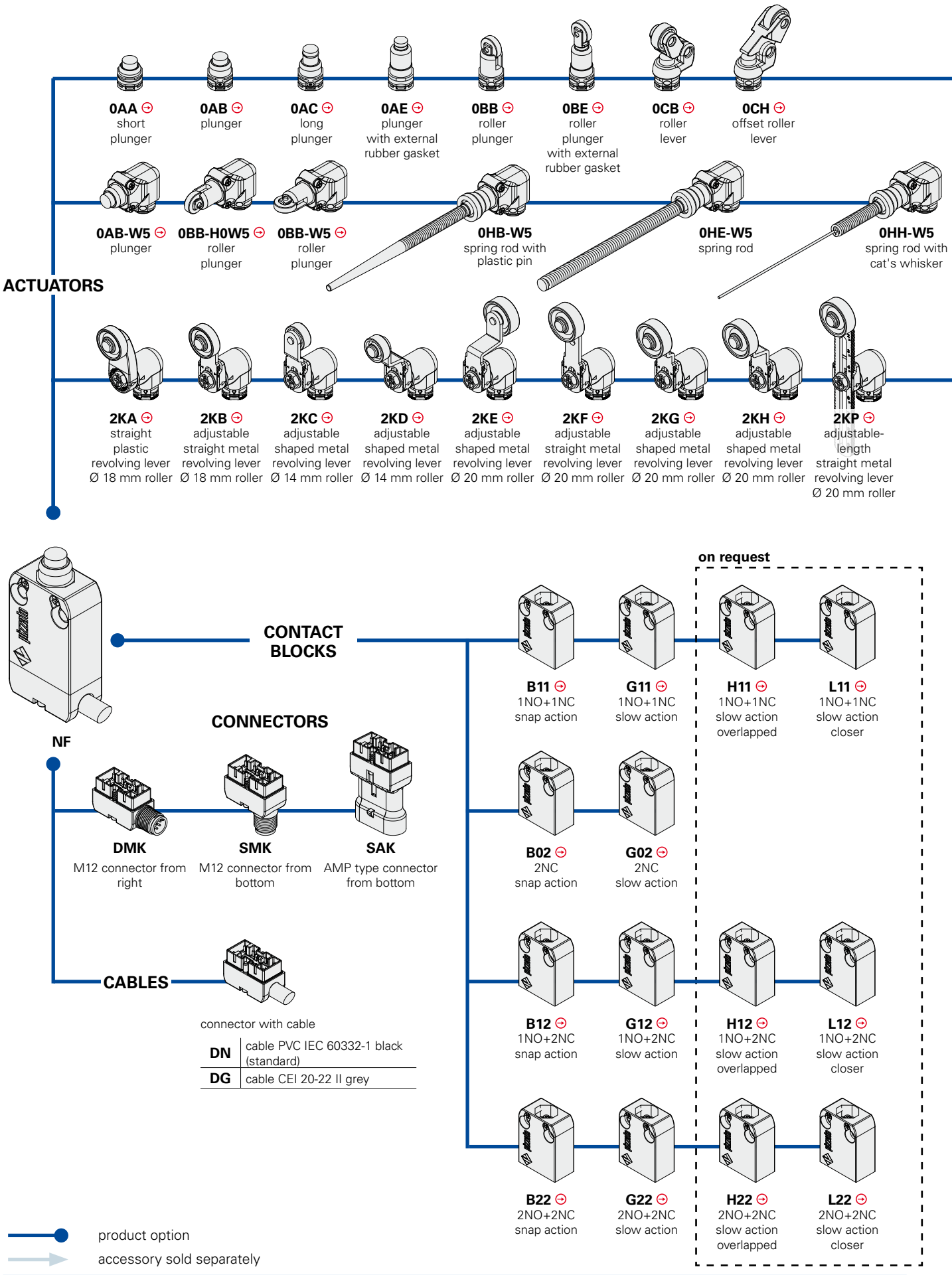
AMP superseal 1,5 connector

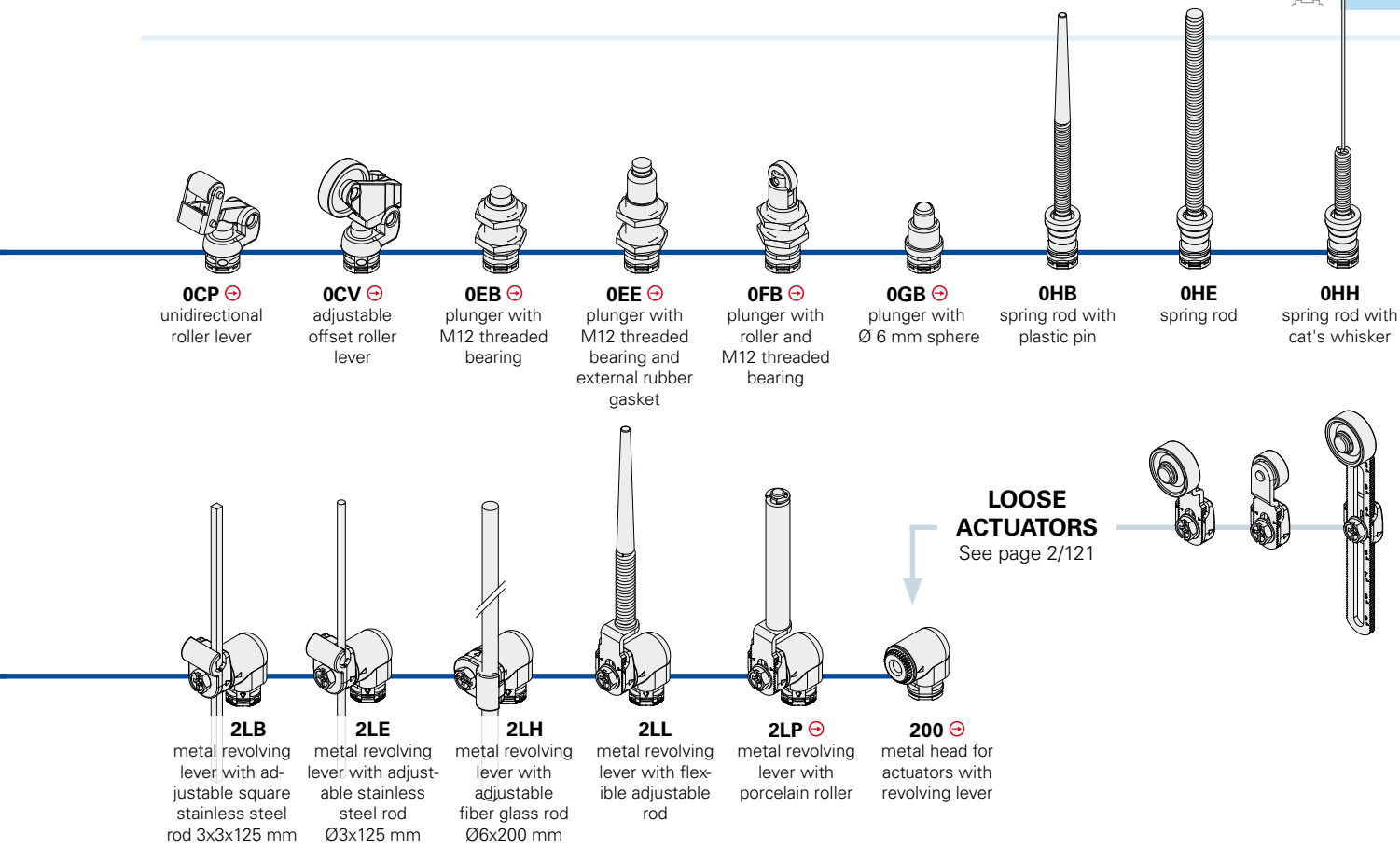


In order to buy a product with AMP type connector output substitute on above mentioned codes DN2 with SAK. Example:
NA B110AA-**DN2** → NA B110AA-**SAK**

Notes

Selection diagram for articles NF series sold assembled





0CP unidirectional roller lever

0CV adjustable offset roller lever

0EB plunger with M12 threaded bearing

0EE plunger with M12 threaded bearing and external rubber gasket

0FB plunger with roller and M12 threaded bearing

0GB plunger with Ø 6 mm sphere

0HB spring rod with plastic pin

0HE spring rod

0HH spring rod with cat's whisker

LOOSE ACTUATORS
See page 2/121

2LB metal revolving lever with adjustable square stainless steel rod 3x3x125 mm

2LE metal revolving lever with adjustable stainless steel rod Ø3x125 mm

2LH metal revolving lever with adjustable fiber glass rod Ø6x200 mm

2LL metal revolving lever with flexible adjustable rod

2LP metal revolving lever with porcelain roller

200 metal head for actuators with revolving lever

Code structure

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

article: **NF B110AB-DN2** options: **GR7T6W5**

Housing
NF	polymer, 20 mm holes interaxes

Contact blocks
B11	1NO+1NC, snap action
B02	2NC, snap action
B12	1NO+2NC, snap action
B22	2NO+2NC, snap action
G11	1NO+1NC, slow action
G02	2NC, slow action
G12	1NO+2NC, slow action
G22	2NO+2NC, slow action
H11	1NO+1NC, slow action overlapped
H12	1NO+2NC, slow action overlapped
H22	2NO+2NC, slow action overlapped
L11	1NO+1NC, slow action closer
L12	1NO+2NC, slow action closer
L22	2NO+2NC, slow action closer

Other contact blocks on requests.

Actuation heads
0	without head
2	head for revolving lever actuators

Actuators
AA	with short plunger
AB	with plunger
...	.....

Connection output direction
D	cable or connector from right
S	connector from bottom

Type of cable
N	cable PVC IEC 60332-1 black (standard)
G	cable CEI 20-22 II grey
M	M12 connector
A	super seal 1,5 AMP connector

Check modularity with table on page 2/114.

Cable length
2	cable length 2 m (standard)
5	cable length 5 m
K	with connector

Other length on requests.

Contacts type
	silver contacts (standard)
G	silver contacts gold plated 1 µm

Roller
	with standard roller
R7	with Ø 18 mm plastic roller
R18	with Ø 14 mm plastic roller
R19	with Ø 22 mm plastic roller
R22	with Ø 20 mm plastic roller
R23	with Ø 14 mm stainless steel roller
R24	with Ø 20 mm stainless steel roller
R25	with Ø 35 mm plastic roller

Utilization temperatures
	-25 °C ... +80 °C (standard)
T6	-40 °C ... +80 °C

Transmission block
	without transmission block
W5	90° transmission block

Technopolymer modular prewired switches **NF series**

Main data

- Polymer housing, cable output from right or from bottom
- 2 integrated cable types available
- Versions with M12 connector from right or from bottom
- Connector AMP version
- Protection degree IP67 and IP69K
- 14 contact blocks available
- 37 actuators available

Markings and quality marks:

Approval IMQ: CA02.03746
Approval UL: E131787
Approval GOST: POCC IT.AB24.B04512

Technical data

Housing
Made of glass-reinforced polymer, self-extinguishing, shock-proof thermoplastic resin with double insulation ⧈
Version with cable integrated, standard length 2 m. Other lengths on request.
Versions with 4 or 8 poles M12 integrated connector

Protection degree:	IP67 according to EN 60529 IP69K according to DIN 40050 (Protect the cables from direct high-pressure and high-temperature jets)
Saline smoke resistance:	≥ 300 hours in NSS according to ISO 9227

General data

Utilization temperatures:	See table on page 2/114
Max actuation frequency:	3600 operations cycles[1]/hour
Mechanical endurance:	20 million operations cycles[1]
Assembling position:	any
Driving torque for installation:	see pages 7/1-7/12

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

Electrical data

Rated impulse withstand voltage (U_{imp}):	4 kV
Conditional shot 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 1088, EN ISO 12100-1, EN ISO 12100-2, IEC 529, EN 60529, NFC 63-140, VDE 0660-200, VDE 0113.

In conformity with requirements requested by:
Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and Electromagnetic Compatibility 2004/108/EC.
Positive contact opening in conformity with standards:
IEC 60947-5-1, EN 60947-5-1, VDE 0660-206.

⚠ **Installation for persons protection applications:**
Use only switches marked with the symbol ⊖. The safety circuit must always be connected with the **contacts NC** (normally closed contacts: see "internal connections" on page 2/114) as stated in the **standard EN 60947-5-1, encl. K, par. 2**. The switch must be actuated with **at least up to the positive opening travel** indicated in the travel diagrams at page 7/10. The switch must be actuated **at least with the positive opening force**, shown in brackets, underneath each article, near the value of the min. force. All enforceable standards must be respected.

⚠ **If not expressly indicated in this chapter, for the right installation and the correct utilization of all articles see requirements indicated from page 7/1 to page 7/12.**

⚠ **Attention: switch off the circuit voltage before disconnecting the connector from the switch. The connector is not suitable for sectioning of electrical loads. According to EN 60204-1, versions with 8 poles M12 and AMP connector can be used only in circuits PELV.**

Data type approved by IMQ

Rated insulation voltage (Ui):	250 Vac
Thermal current (Ith):	10 A (1-2 contacts) / 6 A (2-3 contacts) / 4 A (4 contacts or 4 poles M12 connector)
Protection against short circuits (fuse):	10 A (1-2 contacts) / 6 A (2-3 contacts) / 4 A (4 contacts or 4 poles M12 connector) type gG
Rated impulse withstand voltage (U_{imp}):	4 kV
Protection degree:	IP67
MA terminals (seamed clamps)	
Pollution degree:	3
Utilization category:	AC15 / DC13 (with connector)
Operation voltage (Ue):	250 Vac (50 Hz) / 24 Vdc (with connector)
Operation 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 block 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/CE.

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

Data type 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 the housing type 1, 4X "indoor use only", 12
Data of the housing with 1-2-contact versions with N-type cable type 1, 4X "indoor use only"

In conformity with standard: UL 508

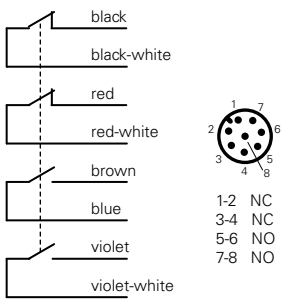
Please contact our technical service for the list of approved products.

Utilization temperatures and electrical data

			output with cable				output with connector M12		Output with AMP connector
			2 contacts versions		3 contacts versions	4 contacts versions	2 contacts versions	3 /4 contacts versions	2 contacts versions
			Cable type N 4x0,75 mm²,	Cable type G 4x0,75 mm²,	Cable type N 6x0,5 mm²	Cable type N 8x0,34 mm²	4 poles M12 connector	8 poles M12 connector	AMP super seal 1,5 connector
			Sheath PVC H05VV-F, Not flame-spreading IEC 60332-1-2 IEC 60332-1-3	Sheath PVC S05VV-F, Not flame-spreading IEC 60332-1-2 IEC 60332-1-3 IEC 60332-3 CEI 20-22 II	Sheath PVC H05VV-F, Not flame-spreading IEC 60332-1-2 IEC 60332-1-3	Sheath PVC H05VV-F, Not flame-spreading IEC 60332-1-2 IEC 60332-1-3			
			Min. bend radius: 72 mm	Min. bend radius: 72 mm	Min. bend radius 108 mm	Min. bend radius: 94 mm			
			Copper class 5 IEC 60228	Copper class 5 IEC 60228	Copper class 5 IEC 60228	Copper class 5 IEC 60228			
Utilization temperatures Standard		Fixed laying cable	-25°C ... +70°C	-25°C ... +70°C	-25°C ... +80°C	-25°C ... +80°C	-25°C ... +80°C		
		Flexible laying cable	+5°C ... +70°C	+5°C ... +70°C	-5°C ... +80°C	-5°C ... +80°C			
		Dynamic laying cable	/	/	/	/			
Utilization temperatures Extended -T6		Fixed laying cable	/	/	/	/	-40°C ... +80°C		
		Flexible laying cable	/	/	/	/			
		Dynamic laying cable	/	/	/	/			
Electrical data		Thermal current Ith	10 A	10 A	6 A	3 A	4 A	2 A	10 A
		Rated insulation Voltage Ui	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 500V type gG	10 A 500 V type gG
	Utilization categories 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 categories 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	CE	CE cULus IMQ	CE cULus IMQ	CE cULus IMQ	CE cULus	CE cULus

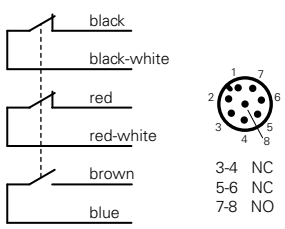
Internal connections

2NO+2NC



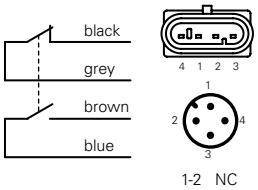
1-2 NC
3-4 NC
5-6 NO
7-8 NO

1NO+2NC



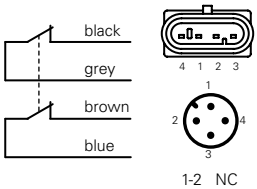
3-4 NC
5-6 NC
7-8 NO

1NO+1NC



1-2 NC
3-4 NO

2NC

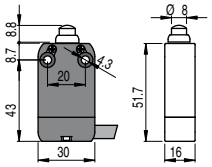
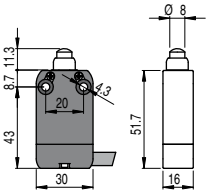
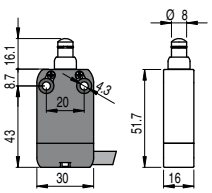
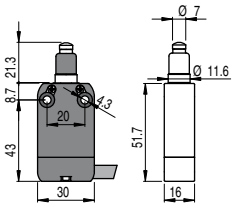


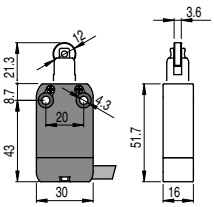
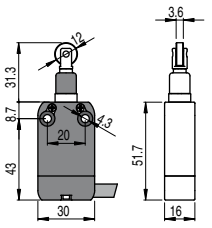
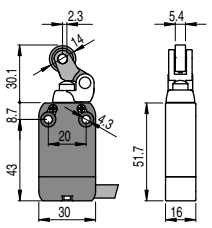
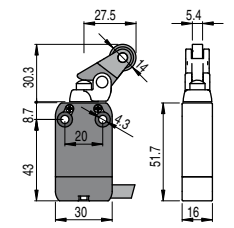
1-2 NC
3-4 NC

Technopolymer modular prewired switches **NF series**

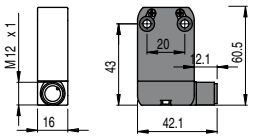
Contacts type:

R = snap action
L = slow action

Contact blocks								
							With external rubber gasket 	
B11	R	NF B110AA-DN2	1NO+1NC	NF B110AB-DN2	1NO+1NC	NF B110AC-DN2	1NO+1NC	NF B110AE-DN2	1NO+1NC
B02	R	NF B020AA-DN2	2NC	NF B020AB-DN2	2NC	NF B020AC-DN2	2NC	NF B020AE-DN2	2NC
B12	R	NF B120AA-DN2	1NO+2NC	NF B120AB-DN2	1NO+2NC	NF B120AC-DN2	1NO+2NC	NF B120AE-DN2	1NO+2NC
B22	R	NF B220AA-DN2	2NO+2NC	NF B220AB-DN2	2NO+2NC	NF B220AC-DN2	2NO+2NC	NF B220AE-DN2	2NO+2NC
G11	L	NF G110AA-DN2	1NO+1NC	NF G110AB-DN2	1NO+1NC	NF G110AC-DN2	1NO+1NC	NF G110AE-DN2	1NO+1NC
G02	L	NF G020AA-DN2	2NC	NF G020AB-DN2	2NC	NF G020AC-DN2	2NC	NF G020AE-DN2	2NC
G12	L	NF G120AA-DN2	1NO+2NC	NF G120AB-DN2	1NO+2NC	NF G120AC-DN2	1NO+2NC	NF G120AE-DN2	1NO+2NC
G22	L	NF G220AA-DN2	2NO+2NC	NF G220AB-DN2	2NO+2NC	NF G220AC-DN2	2NO+2NC	NF G220AE-DN2	2NO+2NC
Max speed		page 7/9 - type 4		page 7/9 - type 4		page 7/9 - type 4		page 7/9 - type 4	
Min. force		7 N (25 N ⇾)		7 N (25 N ⇾)		7 N (25 N ⇾)		7 N (25 N ⇾)	
Travel diagrams		page 7/10 - group 1		page 7/10 - group 1		page 7/10 - group 1		page 7/10 - group 1	

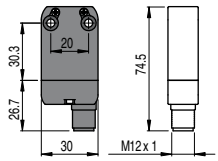
Contact blocks				With external rubber gasket		With stainless steel roller on request		With stainless steel roller on request	
									
B11	R	NF B110BB-DN2	1NO+1NC	NF B110BE-DN2	1NO+1NC	NF B110CB-DN2	1NO+1NC	NF B110CH-DN2	1NO+1NC
B02	R	NF B020BB-DN2	2NC	NF B020BE-DN2	2NC	NF B020CB-DN2	2NC	NF B020CH-DN2	2NC
B12	R	NF B120BB-DN2	1NO+2NC	NF B120BE-DN2	1NO+2NC	NF B120CB-DN2	1NO+2NC	NF B120CH-DN2	1NO+2NC
B22	R	NF B220BB-DN2	2NO+2NC	NF B220BE-DN2	2NO+2NC	NF B220CB-DN2	2NO+2NC	NF B220CH-DN2	2NO+2NC
G11	L	NF G110BB-DN2	1NO+1NC	NF G110BE-DN2	1NO+1NC	NF G110CB-DN2	1NO+1NC	NF G110CH-DN2	1NO+1NC
G02	L	NF G020BB-DN2	2NC	NF G020BE-DN2	2NC	NF G020CB-DN2	2NC	NF G020CH-DN2	2NC
G12	L	NF G120BB-DN2	1NO+2NC	NF G120BE-DN2	1NO+2NC	NF G120CB-DN2	1NO+2NC	NF G120CH-DN2	1NO+2NC
G22	L	NF G220BB-DN2	2NO+2NC	NF G220BE-DN2	2NO+2NC	NF G220CB-DN2	2NO+2NC	NF G220CH-DN2	2NO+2NC
Max speed		page 7/9 - type 2		page 7/9 - type 5		page 7/9 - type 3		page 7/9 - type 3	
Min. force		7 N (25 N ⇾)		7 N (25 N ⇾)		5 N (25 N ⇾)		5 N (25 N ⇾)	
Travel diagrams		page 7/10 - group 1		page 7/10 - group 1		page 7/10 - group 2		page 7/10 - group 2	

M12 connector output from right



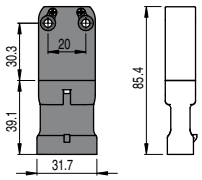
In order to buy a product with M12 connector output from right substitute on above mentioned codes DN2 with DMK. Example:
NF B110AA-**DN2** → NF B110AA-**DMK**

M12 connector output from bottom



In order to buy a product with M12 connector output from bottom substitute on above mentioned codes DN2 with SMK. Example:
NF B110AA-**DN2** → NF B110AA-**SMK**

AMP superseal 1,5 connector

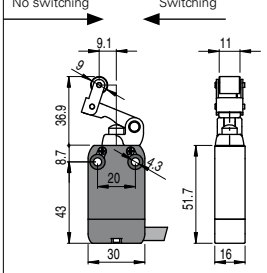
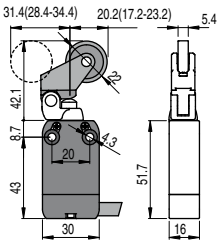
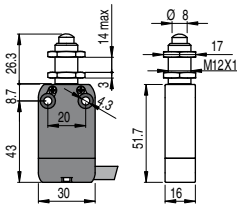
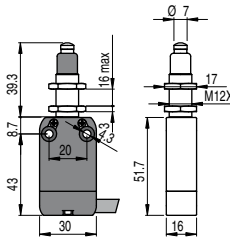


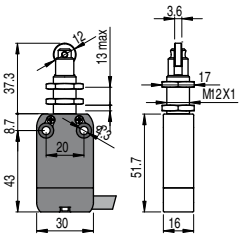
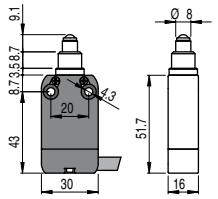
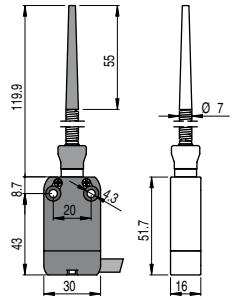
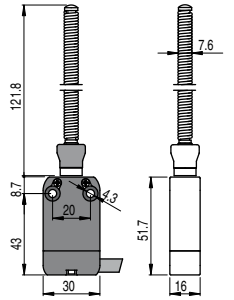
In order to buy a product with AMP type connector output substitute on above mentioned codes DN2 with SAK. Example:
NF B110AA-**DN2** → NF B110AA-**SAK**

All measures in the drawings are in mm

Contacts type:

R = snap action
L = slow action

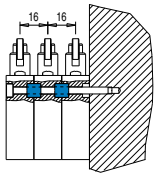
Contact blocks		Fixed only by threaded head		Fixed only by threaded head With external rubber gasket	
					
B11	R	NF B110CP-DN2	1NO+1NC	NF B110CV-DN2	1NO+1NC	NF B110EB-DN2	1NO+1NC	NF B110EE-DN2	1NO+1NC
B02	R	NF B020CP-DN2	2NC	NF B020CV-DN2	2NC	NF B020EB-DN2	2NC	NF B020EE-DN2	2NC
B12	R	NF B120CP-DN2	1NO+2NC	NF B120CV-DN2	1NO+2NC	NF B120EB-DN2	1NO+2NC	NF B120EE-DN2	1NO+2NC
B22	R	NF B220CP-DN2	2NO+2NC	NF B220CV-DN2	2NO+2NC	NF B220EB-DN2	2NO+2NC	NF B220EE-DN2	2NO+2NC
G11	L	NF G110CP-DN2	1NO+1NC	NF G110CV-DN2	1NO+1NC	NF G110EB-DN2	1NO+1NC	NF G110EE-DN2	1NO+1NC
G02	L	NF G020CP-DN2	2NC	NF G020CV-DN2	2NC	NF G020EB-DN2	2NC	NF G020EE-DN2	2NC
G12	L	NF G120CP-DN2	1NO+2NC	NF G120CV-DN2	1NO+2NC	NF G120EB-DN2	1NO+2NC	NF G120EE-DN2	1NO+2NC
G22	L	NF G220CP-DN2	2NO+2NC	NF G220CV-DN2	2NO+2NC	NF G220EB-DN2	2NO+2NC	NF G220EE-DN2	2NO+2NC
Max speed		page 7/9 - type 3		page 7/9 - type 3		page 7/9 - type 4		page 7/9 - type 4	
Min. force		3 N (25 N →)		3 N (25 N →)		7 N (25 N →)		7 N (25 N →)	
Travel diagrams		page 7/10 - group 6		page 7/10 - group 3		page 7/10 - group 1		page 7/10 - group 1	

Contact blocks		Fixed only by threaded head		Plunger with Ø 6 mm sphere		With external rubber gasket		With external rubber gasket	
									
B11	R	NF B110FB-DN2	1NO+1NC	NF B110GB-DN2	1NO+1NC	NF B110HB-DN2	1NO+1NC	NF B110HE-DN2	1NO+1NC
B02	R	NF B020FB-DN2	2NC	NF B020GB-DN2	2NC	NF B020HB-DN2	2NC	NF B020HE-DN2	2NC
B12	R	NF B120FB-DN2	1NO+2NC	NF B120GB-DN2	1NO+2NC	NF B120HB-DN2	1NO+2NC	NF B120HE-DN2	1NO+2NC
B22	R	NF B220FB-DN2	2NO+2NC	NF B220GB-DN2	2NO+2NC	NF B220HB-DN2	2NO+2NC	NF B220HE-DN2	2NO+2NC
G11	L	NF G110FB-DN2	1NO+1NC	NF G110GB-DN2	1NO+1NC				
G02	L	NF G020FB-DN2	2NC	NF G020GB-DN2	2NC	NF G020HB-DN2	2NC	NF G020HE-DN2	2NC
G12	L	NF G120FB-DN2	1NO+2NC	NF G120GB-DN2	1NO+2NC				
G22	L	NF G220FB-DN2	2NO+2NC	NF G220GB-DN2	2NO+2NC				
Max speed		page 7/9 - type 2		page 7/9 - type 2		1 m/s		1 m/s	
Min. force		7 N (25 N →)		7 N (25 N →)		0,03 Nm		0,07 Nm	
Travel diagrams		page 7/10 - group 1		page 7/10 - group 1		page 7/10 - group 4		page 7/10 - group 4	

Accessories

Article	Description
VN DT1F	Spacers for NA-NF series

By interposing spacers between the switches, it is possible to join two or more prewired switches, preventing them from moving one against the other.
10 pcs packs



Article	Description
VF CA••••M	Female wired connectors

General data:
- Self locking ring nut
- High flexibility wire suitable for dynamic laying applications (copper class 6)
- Gold plated contact (resistance < 5 mΩ)
- Connector body in polyurethane

See page 6/2

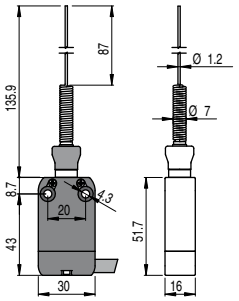
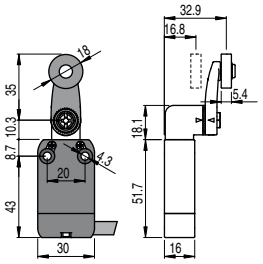
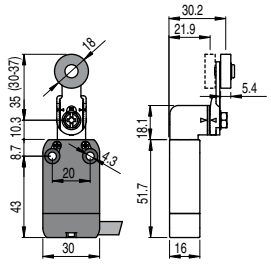
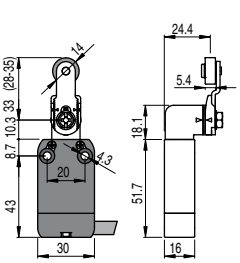
Items with code on the **green** background are available in stock

Technopolymer modular prewired switches **NF series**

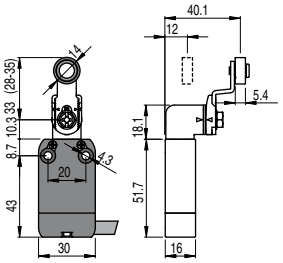
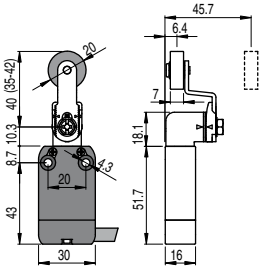
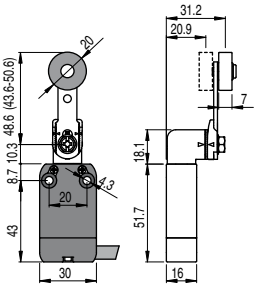
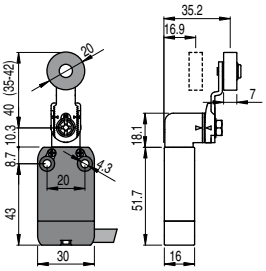
Contacts type:

R = snap action
L = slow action

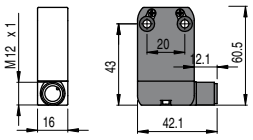
Contact blocks

	With external rubber gasket	With stainless steel roller on request	With stainless steel roller on request	With stainless steel roller on request
				
B11 R	NF B110HH-DN2 1NO+1NC	NF B112KA-DN2 1NO+1NC	NF B112KB-DN2 1NO+1NC	NF B112KC-DN2 1NO+1NC
B02 R	NF B020HH-DN2 2NC	NF B022KA-DN2 2NC	NF B022KB-DN2 2NC	NF B022KC-DN2 2NC
B12 R	NF B120HH-DN2 1NO+2NC	NF B122KA-DN2 1NO+2NC	NF B122KB-DN2 1NO+2NC	NF B122KC-DN2 1NO+2NC
B22 R	NF B220HH-DN2 2NO+2NC	NF B222KA-DN2 2NO+2NC	NF B222KB-DN2 2NO+2NC	NF B222KC-DN2 2NO+2NC
G11 L		NF G112KA-DN2 1NO+1NC	NF G112KB-DN2 1NO+1NC	NF G112KC-DN2 1NO+1NC
G02 L	NF G020HH-DN2 2NC	NF G022KA-DN2 2NC	NF G022KB-DN2 2NC	NF G022KC-DN2 2NC
G12 L		NF G122KA-DN2 1NO+2NC	NF G122KB-DN2 1NO+2NC	NF G122KC-DN2 1NO+2NC
G22 L		NF G222KA-DN2 2NO+2NC	NF G222KB-DN2 2NO+2NC	NF G222KC-DN2 2NO+2NC
Max speed	1 m/s	page 7/9 - type 1	page 7/9 - type 1	page 7/9 - type 1
Min. force	0,03 Nm	0,07 Nm (0,25 Nm →)	0,07 Nm (0,25 Nm →)	0,07 Nm (0,25 Nm →)
Travel diagrams	page 7/10 - group 4	page 7/10 - group 5	page 7/10 - group 5	page 7/10 - group 5

Contact blocks

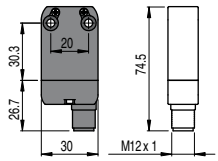
	With stainless steel roller on request	With stainless steel roller on request	With stainless steel roller on request	With stainless steel roller on request
				
B11 R	NF B112KD-DN2 1NO+1NC	NF B112KE-DN2 1NO+1NC	NF B112KF-DN2 1NO+1NC	NF B112KG-DN2 1NO+1NC
B02 R	NF B022KD-DN2 2NC	NF B022KE-DN2 2NC	NF B022KF-DN2 2NC	NF B022KG-DN2 2NC
B12 R	NF B122KD-DN2 1NO+2NC	NF B122KE-DN2 1NO+2NC	NF B122KF-DN2 1NO+2NC	NF B122KG-DN2 1NO+2NC
B22 R	NF B222KD-DN2 2NO+2NC	NF B222KE-DN2 2NO+2NC	NF B222KF-DN2 2NO+2NC	NF B222KG-DN2 2NO+2NC
G11 L	NF G112KD-DN2 1NO+1NC	NF G112KE-DN2 1NO+1NC	NF G112KF-DN2 1NO+1NC	NF G112KG-DN2 1NO+1NC
G02 L	NF G022KD-DN2 2NC	NF G022KE-DN2 2NC	NF G022KF-DN2 2NC	NF G022KG-DN2 2NC
G12 L	NF G122KD-DN2 1NO+2NC	NF G122KE-DN2 1NO+2NC	NF G122KF-DN2 1NO+2NC	NF G122KG-DN2 1NO+2NC
G22 L	NF G222KD-DN2 2NO+2NC	NF G222KE-DN2 2NO+2NC	NF G222KF-DN2 2NO+2NC	NF G222KG-DN2 2NO+2NC
Max speed	page 7/9 - type 1	page 7/9 - type 1	page 7/9 - type 1	page 7/9 - 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 7/10 - group 5	page 7/10 - group 5	page 7/10 - group 5	page 7/10 - group 5

M12 connector output from right



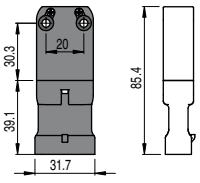
In order to buy a product with M12 connector output from right substitute on above mentioned codes DN2 with DMK. Example:
NF B110AA-**DN2** → NF B110AA-**DMK**

M12 connector output from bottom



In order to buy a product with M12 connector output from bottom substitute on above mentioned codes DN2 with SMK. Example:
NF B110AA-**DN2** → NF B110AA-**SMK**

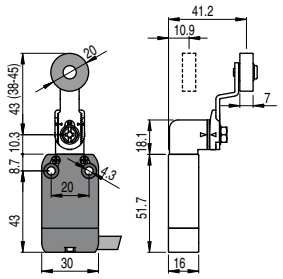
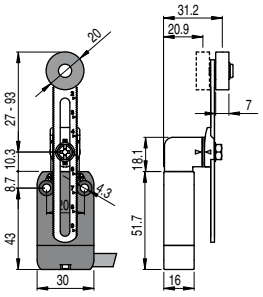
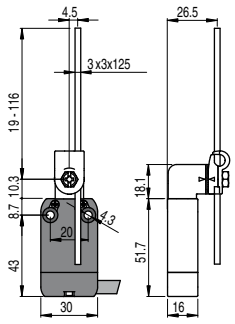
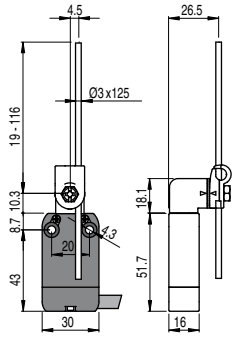
AMP superseal 1,5 connector

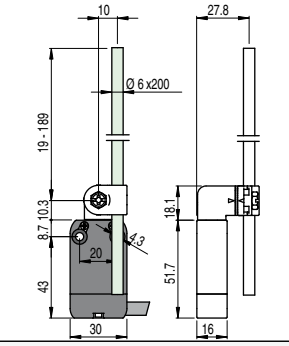
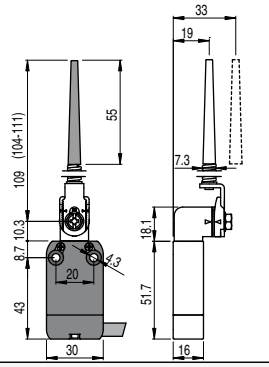
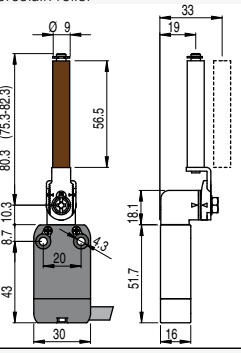


In order to buy a product with AMP type connector output substitute on above mentioned codes DN2 with SAK. Example:
NF B110AA-**DN2** → NF B110AA-**SAK**

Contacts type:

R = snap action
L = slow action

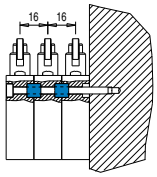
Contact blocks		With stainless steel roller on request	With stainless steel roller on request	Stainless steel 3x3 mm square rod	Ø 3 mm stainless steel round rod
					
B11	R	NF B112KH-DN2 1NO+1NC	NF B112KP-DN2 1NO+1NC	NF B112LB-DN2 1NO+1NC	NF B112LE-DN2 1NO+1NC
B02	R	NF B022KH-DN2 2NC	NF B022KP-DN2 2NC	NF B022LB-DN2 2NC	NF B022LE-DN2 2NC
B12	R	NF B122KH-DN2 1NO+2NC	NF B122KP-DN2 1NO+2NC	NF B122LB-DN2 1NO+2NC	NF B122LE-DN2 1NO+2NC
B22	R	NF B222KH-DN2 2NO+2NC	NF B222KP-DN2 2NO+2NC	NF B222LB-DN2 2NO+2NC	NF B222LE-DN2 2NO+2NC
G11	L	NF G112KH-DN2 1NO+1NC	NF G112KP-DN2 1NO+1NC	NF G112LB-DN2 1NO+1NC	NF G112LE-DN2 1NO+1NC
G02	L	NF G022KH-DN2 2NC	NF G022KP-DN2 2NC	NF G022LB-DN2 2NC	NF G022LE-DN2 2NC
G12	L	NF G122KH-DN2 1NO+2NC	NF G122KP-DN2 1NO+2NC	NF G122LB-DN2 1NO+2NC	NF G122LE-DN2 1NO+2NC
G22	L	NF G222KH-DN2 2NO+2NC	NF G222KP-DN2 2NO+2NC	NF G222LB-DN2 2NO+2NC	NF G222LE-DN2 2NO+2NC
Max speed		page 7/9 - type 1	page 7/9 - type 1	1,5 m/s	1,5 m/s
Min. force		0,07 Nm (0,25 Nm)	0,07 Nm (0,25 Nm)	0,07 Nm	0,07 Nm
Travel diagrams		page 7/10 - group 5	page 7/10 - group 5	page 7/10 - group 5	page 7/10 - group 5

Contact blocks		Fiber glass rod		Porcelain roller	
					
B11	R	NF B112LH-DN2 1NO+1NC	NF B112LL-DN2 1NO+1NC	NF B112LP-DN2E24 1NO+1NC	
B02	R	NF B022LH-DN2 2NC	NF B022LL-DN2 2NC	NF B022LP-DN2E24 2NC	
B12	R	NF B122LH-DN2 1NO+2NC	NF B122LL-DN2 1NO+2NC	NF B122LP-DN2E24 1NO+2NC	
B22	R	NF B222LH-DN2 2NO+2NC	NF B222LL-DN2 2NO+2NC	NF B222LP-DN2E24 2NO+2NC	
G11	L	NF G112LH-DN2 1NO+1NC	NF G112LL-DN2 1NO+1NC	NF G112LP-DN2E24 1NO+1NC	
G02	L	NF G022LH-DN2 2NC	NF G022LL-DN2 2NC	NF G022LP-DN2E24 2NC	
G12	L	NF G122LH-DN2 1NO+2NC	NF G122LL-DN2 1NO+2NC	NF G122LP-DN2E24 1NO+2NC	
G22	L	NF G222LH-DN2 2NO+2NC	NF G222LL-DN2 2NO+2NC	NF G222LP-DN2E24 2NO+2NC	
Max speed		1,5 m/s	1,5 m/s	0,5 m/s	
Min. force		0,07 Nm	0,07 Nm	0,04 Nm	
Travel diagrams		page 7/10 - group 5	page 7/10 - group 5	page 7/10 - group 5	

Accessories

Article	Description
VN DT1F	Spacers for NA-NF series

By interposing spacers between the switches, it is possible to join two or more prewired switches, preventing them from moving one against the other.
10 pcs packs



Article	Description
VF CA••••M	Female wired connectors

General data:
- Self locking ring nut
- High flexibility wire suitable for dynamic laying applications (copper class 6)
- Gold plated contact (resistance < 5 mΩ)
- Connector body in polyurethane

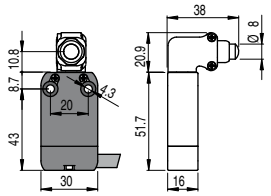
See page 6/2

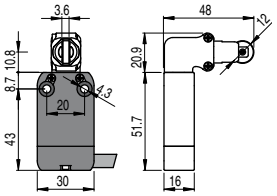
Items with code on the **green** background are available in stock

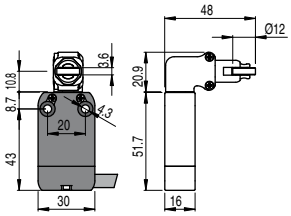
Technopolymer modular prewired switches **NF series**

Contacts type:

R = snap action
L = slow action

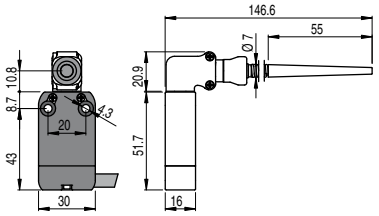




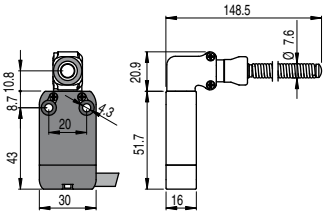


Contact blocks						
B11	R	NF B110AB-DN2W5	1NO+1NC	NF B110BB-DN2H0W5	1NO+1NC	NF B110BB-DN2W5	1NO+1NC
B02	R	NF B020AB-DN2W5	2NC	NF B020BB-DN2H0W5	2NC	NF B020BB-DN2W5	2NC
B12	R	NF B120AB-DN2W5	1NO+2NC	NF B120BB-DN2H0W5	1NO+2NC	NF B120BB-DN2W5	1NO+2NC
B22	R	NF B220AB-DN2W5	2NO+2NC	NF B220BB-DN2H0W5	2NO+2NC	NF B220BB-DN2W5	2NO+2NC
G11	L	NF G110AB-DN2W5	1NO+1NC	NF G110BB-DN2H0W5	1NO+1NC	NF G110BB-DN2W5	1NO+1NC
G02	L	NF G020AB-DN2W5	2NC	NF G020BB-DN2H0W5	2NC	NF G020BB-DN2W5	2NC
G12	L	NF G120AB-DN2W5	1NO+2NC	NF G120BB-DN2H0W5	1NO+2NC	NF G120BB-DN2W5	1NO+2NC
G22	L	NF G220AB-DN2W5	2NO+2NC	NF G220BB-DN2H0W5	2NO+2NC	NF G220BB-DN2W5	2NO+2NC
Max speed		page 7/9 - type 4		page 7/9 - type 2		page 7/9 - type 2	
Min. force		9,5 N (25 N ⊖)		9,5 N (25 N ⊖)		9,5 N (25 N ⊖)	
Travel diagrams		page 7/10 - group 1		page 7/10 - group 1		page 7/10 - group 1	

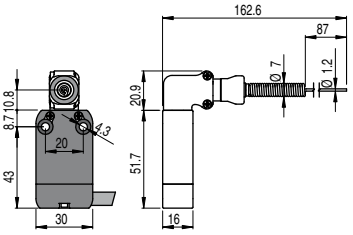
With external rubber gasket



With external rubber gasket

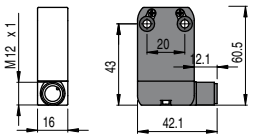


With external rubber gasket

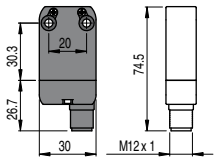


Contact blocks						
B11	R	NF B110HB-DN2W5	1NO+1NC	NF B110HE-DN2W5	1NO+1NC	NF B110HH-DN2W5	1NO+1NC
B02	R	NF B020HB-DN2W5	2NC	NF B020HE-DN2W5	2NC	NF B020HH-DN2W5	2NC
B12	R	NF B120HB-DN2W5	1NO+2NC	NF B120HE-DN2W5	1NO+2NC	NF B120HH-DN2W5	1NO+2NC
B22	R	NF B220HB-DN2W5	2NO+2NC	NF B220HE-DN2W5	2NO+2NC	NF B220HH-DN2W5	2NO+2NC
G11	L						
G02	L	NF G020HB-DN2W5	2NC	NF G020HE-DN2W5	2NC	NF G020HH-DN2W5	2NC
G12	L						
G22	L						
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 7/10 - group 4		page 7/10 - group 4		page 7/10 - group 4	

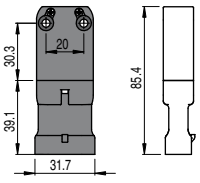
M12 connector output from right



M12 connector output from bottom



AMP superseal 1,5 connector



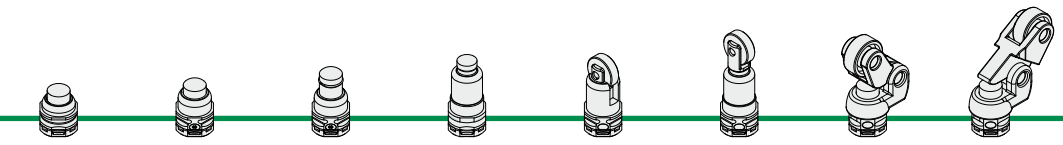
In order to buy a product with M12 connector output from right substitute on above mentioned codes DN2 with DMK. Example:
NF B110AA-**DN2** → NF B110AA-**DMK**

In order to buy a product with M12 connector output from bottom substitute on above mentioned codes DN2 with SMK. Example:
NF B110AA-**DN2** → NF B110AA-**SMK**

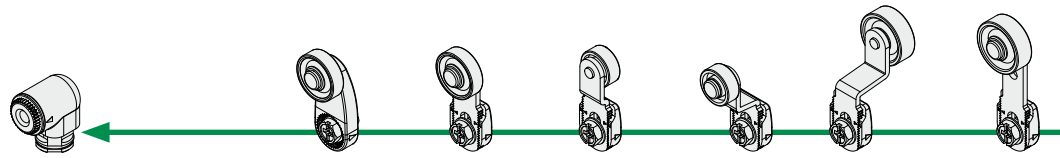
In order to buy a product AMP connector output substitute on above mentioned codes DN2 with SAK. Example:
NF B110AA-**DN2** → NF B110AA-**SAK**

Notes

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



VN AA0AA Short plunger
VN AA0AB Plunger
VN AA0AC Long plunger
VN AA0AE Plunger with external rubber gasket
VN AA0BB Roller plunger
VN AA0BE Roller plunger with external rubber gasket
VN AA0CB Roller lever
VN AA0CH Offset roller lever

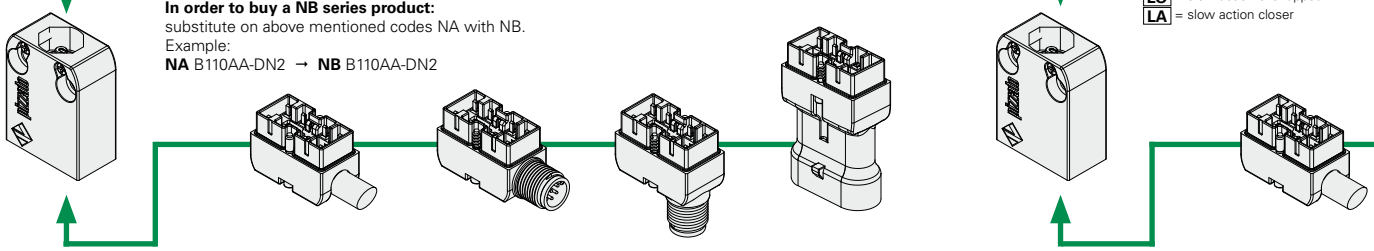


VN AA200 Metal head for actuators with revolving lever
VN A00KA Straight plastic revolving lever Ø 18 mm roller
VN A00KB Adjustable straight metal revolving lever Ø 18 mm roller
VN A00KC Adjustable shaped metal revolving lever Ø 14 mm roller
VN A00KD Adjustable shaped metal revolving lever Ø 14 mm roller
VN A00KE Adjustable shaped metal revolving lever Ø 20 mm roller
VN A00KF Adjustable straight metal revolving lever Ø 20 mm roller

VN AA000-W5
90° transmission block

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

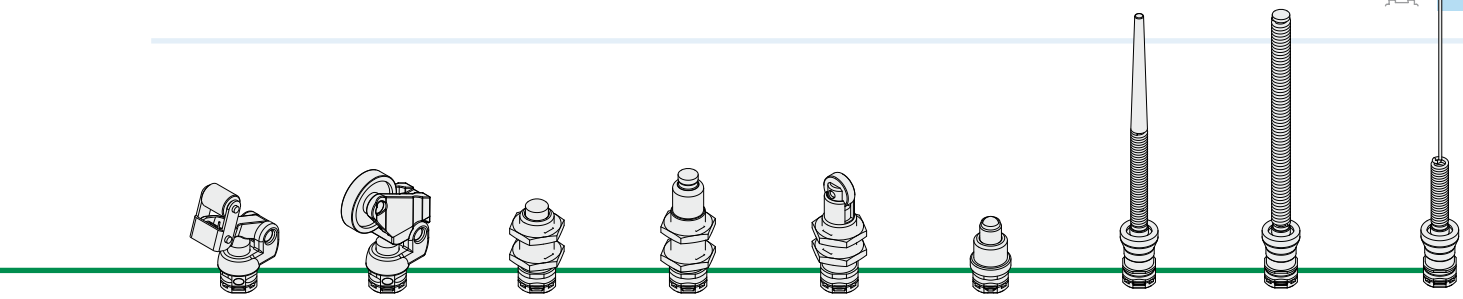
In order to buy a NB series product:
substitute on above mentioned codes NA with NB.
Example:
NA B110AA-DN2 → **NB** B110AA-DN2



METAL housing NA 20 mm holes interaxes	Metal connector with cable	cable length(m)	M12 metal connector from right	M12 metal connector from bottom,	AMP type polymer connector from bottom	POLYMER housing NF 20 mm holes interaxes	Polymer connectors with cable	cable length(m)
NA B11000 1NO+1NC R	VN CM11DN2	2	VN CM11DMK	VN CM11SMK	VN CM11SAK	NF B11000 1NO+1NC R	VN CP11DN2	2
NA G11000 1NO+1NC L						NF G11000 1NO+1NC L		
NA L11000 1NO+1NC LA	VN CM11DN5	5				NF L11000 1NO+1NC LA	VN CP11DN5	5
NA H11000 1NO+1NC LO						NF H11000 1NO+1NC LO		
NA B02000 2NC R	VN CM02DN2	2	VN CM02DMK	VN CM02SMK	VN CM02SAK	NF B02000 2NC R	VN CP02DN2	2
NA G02000 2NC L	VN CM02DN5	5				NF G02000 2NC L	VN CP02DN5	5
NA B20000 2NO R	/		VN CM20DMK	VN CM20SMK	VN CM20SAK	NF B20000 2NO R	/	
NA G20000 2NO L	/					NF G20000 2NO L	/	
NA B12000 1NO+2NC R	VN CM12DN2	2	VN CM12DMK	VN CM12SMK		NF B12000 1NO+2NC R	VN CP12DN2	2
NA G12000 1NO+2NC L						NF G12000 1NO+2NC L		
NA L12000 1NO+2NC LA	VN CM12DN5	5				NF L12000 1NO+2NC LA	VN CP12DN5	5
NA H12000 1NO+2NC LO						NF H12000 1NO+2NC LO		
NA B22000 2NO+2NC R	VN CM22DN2	2	VN CM22DMK	VN CM22SMK		NF B22000 2NO+2NC R	VN CP22DN2	2
NA G22000 2NO+2NC L						NF G22000 2NO+2NC L		
NA L22000 2NO+2NC LA	VN CM22DN5	5				NF L22000 2NO+2NC LA	VN CP22DN5	5
NA H22000 2NO+2NC LO						NF H22000 2NO+2NC LO		

⚠ **Forbidden to install VN CM••••• connector on polymer housing**

⚠ **Forbidden to install VN CP••••• connector on metal housing**



VN AA0CP ⊖
Unidirectional roller lever

VN AA0CV ⊖
Adjustable offset roller lever

VN AA0EB ⊖
Plunger with M12 threaded bearing

VN AA0EE ⊖
Plunger with M12 threaded bearing and external rubber gasket

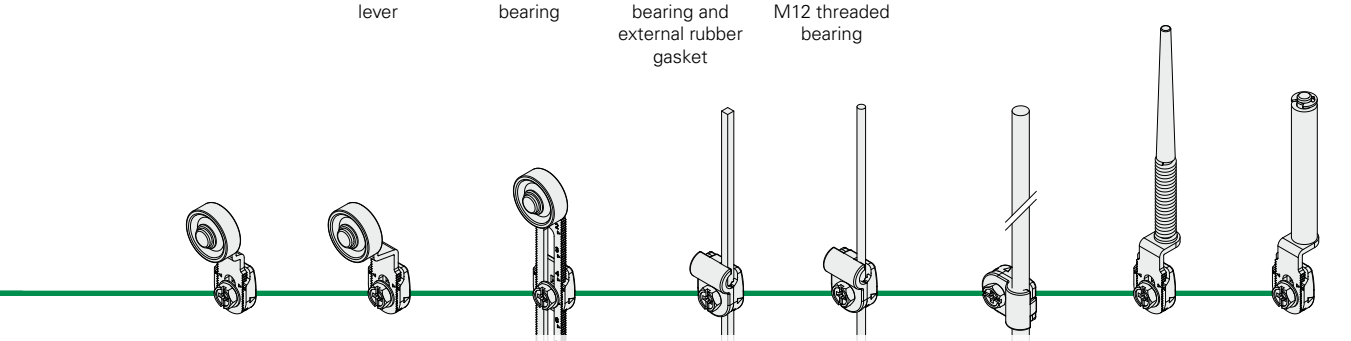
VN AA0FB ⊖
Plunger with roller and M12 threaded bearing

VN AA0GB ⊖
Plunger with Ø 6 mm sphere

VN AA0HB
Spring rod with plastic pin

VN AA0HE
Spring rod

VN AA0HH
Spring rod with cat's whisker



VN A00KG ⊖
Adjustable shaped metal revolving lever Ø 20 mm roller

VN A00KH ⊖
Adjustable shaped metal revolving lever Ø 20 mm roller

VN A00KP ⊖
Adjustable-length straight metal revolving lever Ø 20 mm roller

VN A00LB
Metal revolving lever with adjustable square stainless steel rod 3x3x125

VN A00LE
Metal revolving lever with adjustable stainless steel rod Ø3x125

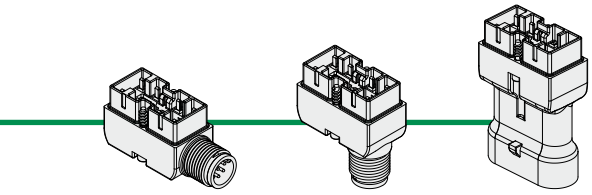
VN A00LH
Metal revolving lever with adjustable fiber glass rod Ø6x200

VN A00LL
Metal revolving lever with flexible adjustable rod

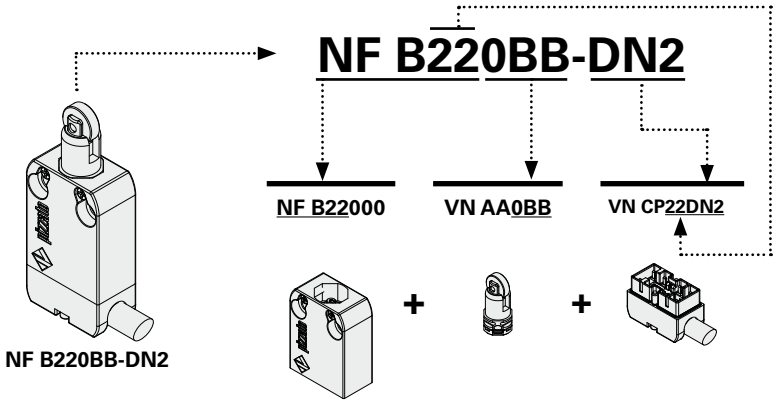
VN A00LP ⊖
Metal revolving lever with porcelain roller

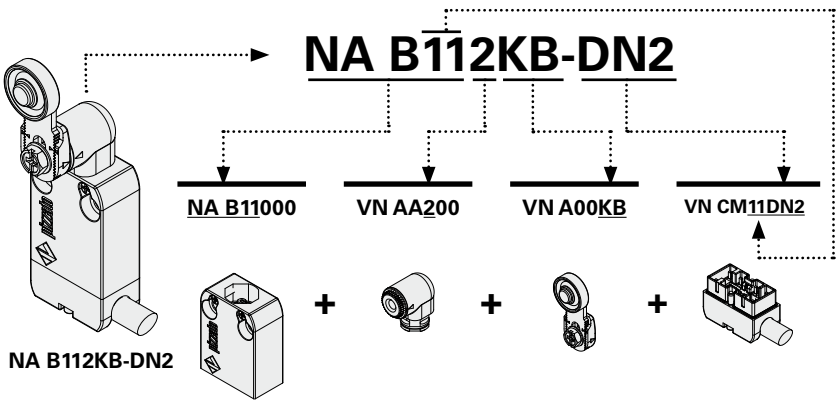
⚠ **Installation for persons protection applications:**
In order to obtain a safety switch with positive opening ⊖, assemble housings having the positive opening symbol next to the code ⊖ with actuators having the positive opening symbol next to the code ⊖.
Example: **VN A00KB ⊖ + VN AA200 ⊖ + NA B11000 ⊖**

Examples of article code composition



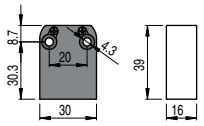
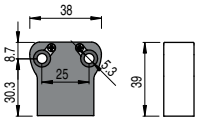
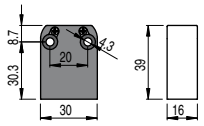
M12 polymer connector from right		M12 polymer connector from bottom		AMP type polymer connector from bottom
↔ VN CP11DMK	↔	VN CP11SMK	↔	VN CP11SAK
↔ VN CP02DMK	↔	VN CP02SMK	↔	VN CP02SAK
↔ VN CP20DMK	↔	VN CP20SMK	↔	VN CP20SAK
↔ VN CP22DMK ↔	↔	VN CP22SMK		





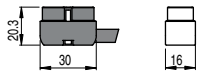
Modular prewired switches **NA-NB-NF series**

Housings

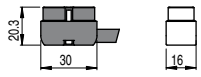
metal housing NA		metal housing NB		polymer housing NF	
					
NA B11000	1NO+1NC R	NB B11000	1NO+1NC R	NF B11000	1NO+1NC R
NA G11000	1NO+1NC L	NB G11000	1NO+1NC L	NF G11000	1NO+1NC L
NA B12000	1NO+2NC R	NB B12000	1NO+2NC R	NF B12000	1NO+2NC R
NA G12000	1NO+2NC L	NB G12000	1NO+2NC L	NF G12000	1NO+2NC L
NA L12000	1NO+2NC LA	NB L12000	1NO+2NC LA	NF L12000	1NO+2NC LA
NA B22000	2NO+2NC R	NB B22000	2NO+2NC R	NF B22000	2NO+2NC R
NA G22000	2NO+2NC L	NB G22000	2NO+2NC L	NF G22000	2NO+2NC L
NA L22000	2NO+2NC LA	NB L22000	2NO+2NC LA	NF L22000	2NO+2NC LA
NA H22000	2NO+2NC LO	NB H22000	2NO+2NC LO	NF H22000	2NO+2NC LO

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

Connector with cable

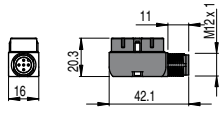
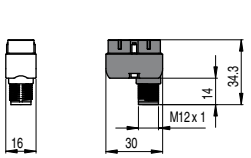
metal connectors for NA and NB housing			
		Cable length(m)	Cable type N = PVC Fixed laying cable H = PUR HALOGEN FREE Dynamic laying cable
VN CM11DN2	1NO+1NC	2	N
VN CM11DN5	1NO+1NC	5	
VN CM12DN2	1NO+2NC	2	
VN CM12DN5	1NO+2NC	5	
VN CM22DN2	2NO+2NC	2	
VN CM22DN5	2NO+2NC	5	
VN CM11DH2	1NO+1NC	2	H
VN CM11DH5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

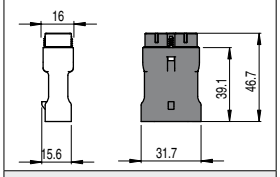
Other cable lengths on request

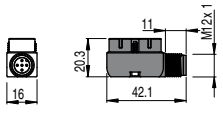
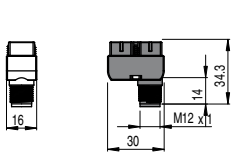
polymer connectors for NF housing			
		Cable length(m)	Cable type N = PVC Fixed laying cable
VN CP11DN2	1NO+1NC	2	N
VN CP11DN5	1NO+1NC	5	
VN CP12DN2	1NO+2NC	2	
VN CP12DN5	1NO+2NC	5	
VN CP22DN2	2NO+2NC	2	
VN CP22DN5	2NO+2NC	5	

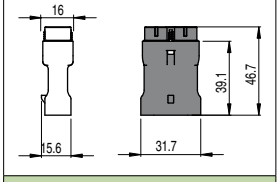
M12 or AMP connector

⚠ **Attention: Always check that the electric load used respects the voltage and current limits for the connectors. See table on page 2/104 - 2/114.**

metal connectors for NA and NB housing			
M12 connector from right		M12 connector from bottom	
			
VN CM11DMK	1NO+1NC	VN CM11SMK	1NO+1NC
VN CM02DMK	2NC	VN CM02SMK	2NC
VN CM22DMK	2NO+2NC	VN CM22SMK	2NO+2NC

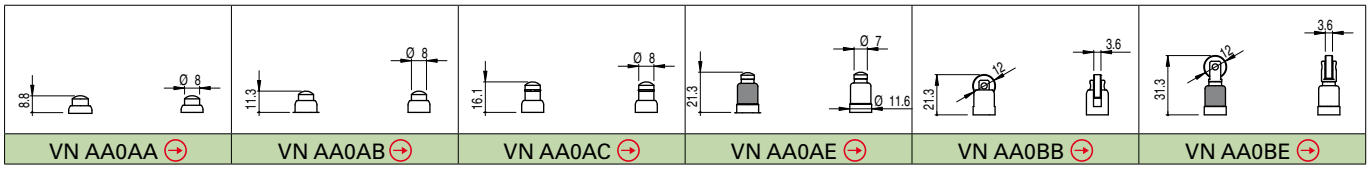
polymer connectors for NA and NB housing			
AMP super seal 1,5 connector			
			
VN CM11SAK	1NO+1NC		
VN CM02SAK	2NC		
VN CM20SAK	2NO		

polymer connectors for NF housing			
M12 connector from right		M12 connector from bottom	
			
VN CP11DMK	1NO+1NC	VN CP11SMK	1NO+1NC
VN CP02DMK	2NC	VN CP02SMK	2NC
VN CP22DMK	2NO+2NC	VN CP22SMK	2NO+2NC

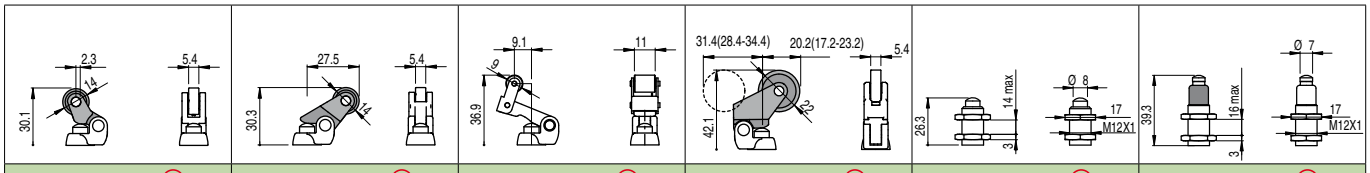
polymer connectors for NF housing			
AMP super seal 1,5 connector			
			
VN CP11SAK	1NO+1NC		
VN CP02SAK	2NC		
VN CP20SAK	2NO		

Items with code on the **green** background are available in stock

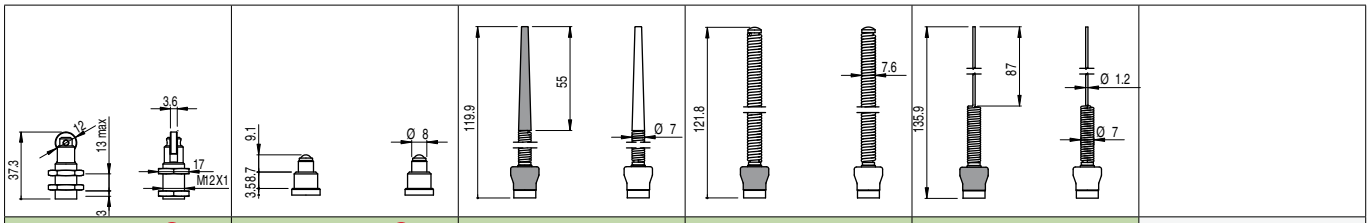
Actuators



VN AA0AA | VN AA0AB | VN AA0AC | VN AA0AE | VN AA0BB | VN AA0BE



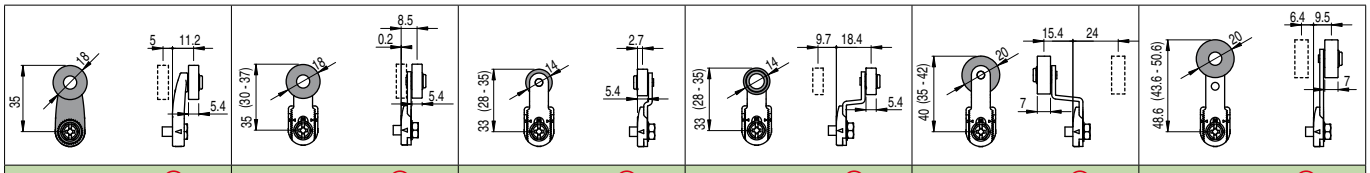
VN AA0CB | VN AA0CH | VN AA0CP | VN AA0CV | VN AA0EB | VN AA0EE



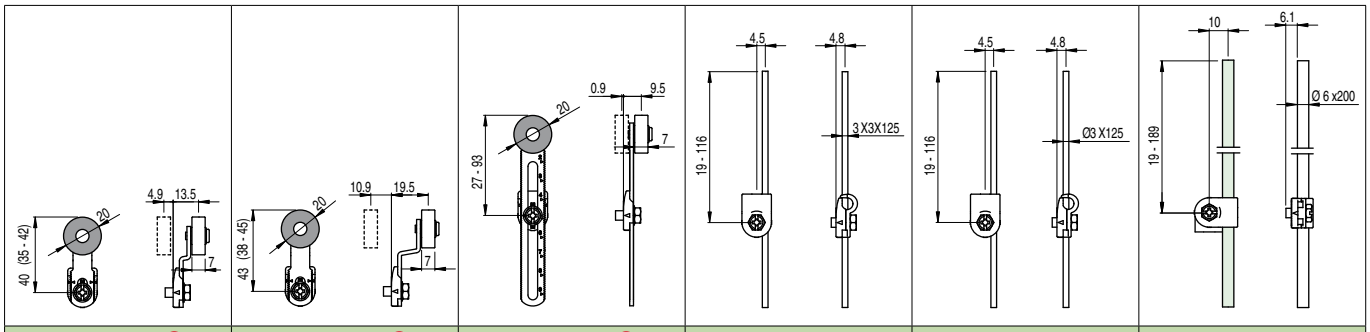
VN AA0FB | VN AA0GB | VN AA0HB | VN AA0HE | VN AA0HH

Revolving levers

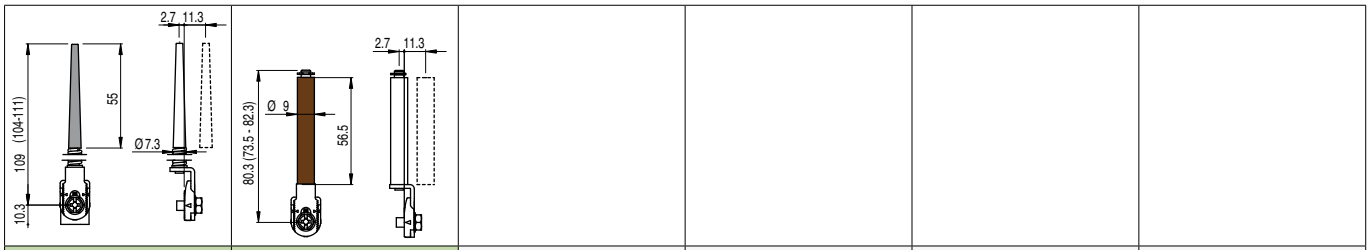
ATTENTION: These loose actuators can be used with products of series NA, NB and NF only.



VN A00KA | VN A00KB | VN A00KC | VN A00KD | VN A00KE | VN A00KF

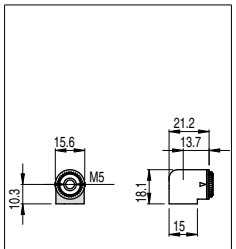


VN A00KG | VN A00KH | VN A00KP | VN A00LB | VN A00LE | VN A00LH



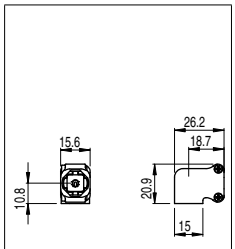
VN A00LL | VN A00LP

Head



VN AA200

Transmission block



VN AA000-W5

Items with code on the **green** background are available in stock