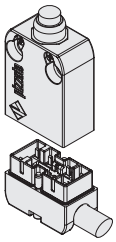
Introduction

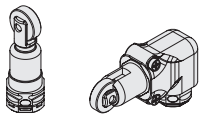
Always consistent with its innovation and the company quality targets, Pizzato Elettrica introduces three new prewired switches series provided with innovative and unique characteristics.
These products series are the result of four years research, development and test; they fulfil new solutions requested by the market and they include more than ten years company experience in the position switches sector. That's why we are proud to introduce the new NA, NB and NF in the Pizzato Elettrica production.

Switches with connectors



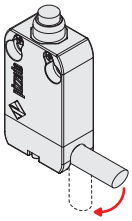
The new fundamental characteristic of these prewired switches series is the separation between the switch body and the wired connector. The connector allows the user to change a product in the field without having to completely remove the wires.
Moreover this way it's easier to assemble products with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

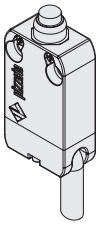
New actuators



New actuators have been created for the series NA-NB-NF, They are not available in the previous series of prewired switches.

Adjustable cable output

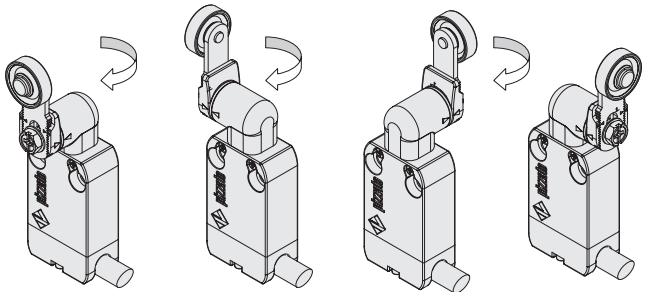




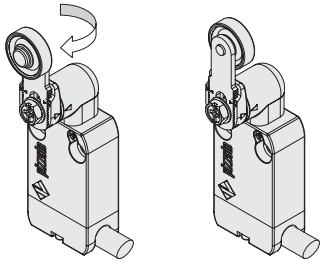
The wired connector is provided with a notch to allow the cable bending up to 90°.
Therefore it's possible to install it by the wall and it's easier to adjust the cable to the supporting flange.

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.

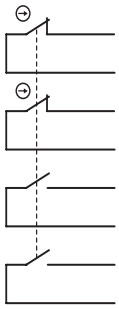


Overturning levers



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.

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).

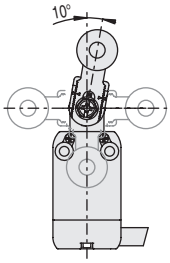
Protection degree IP 67

IP67

These series switches are all IP 67 rated.

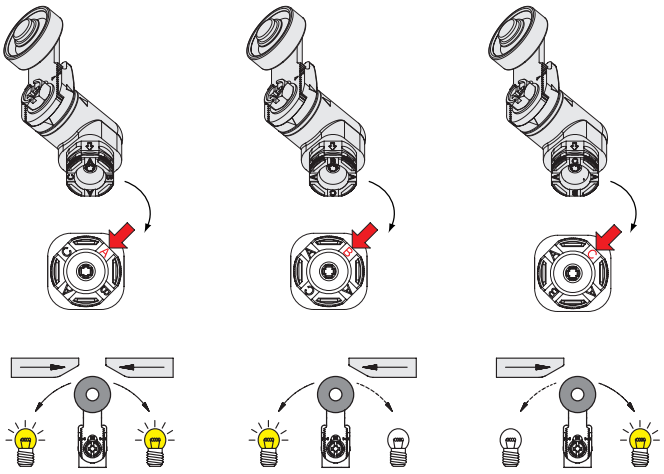
Adjustable levers

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.



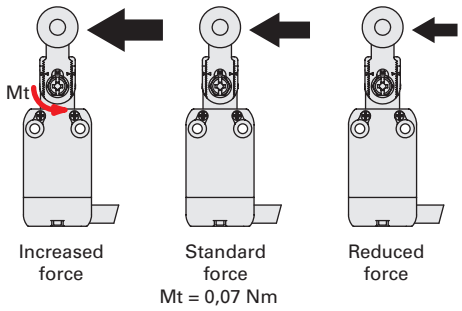
Unidirectional heads

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.



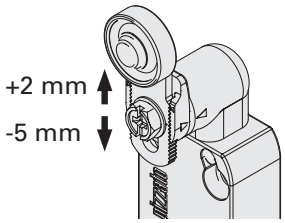
Increased or reduced actuating force

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.



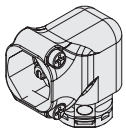
Adjustable levers with anti-vibration washer

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.

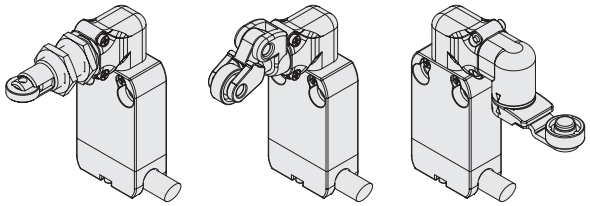


This feature, in conjunction with the radial adjusting actuator provides unique flexibility of alignment whilst still maintaining the geometrical coupling between the lever and the revolving shaft as prescribed for safety applications.

90° transmission block for actuators



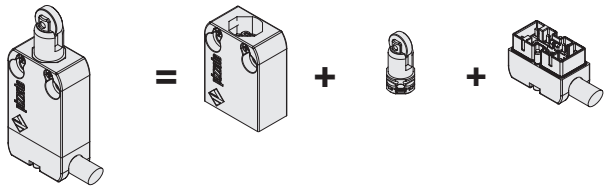
This component largely increases the new products application possibilities.
Actuators that can be attached directly to the switch body can also be fitted via the Transmission Block, increasing the positioning options and therefore the application possibilities.
The transmission block can be used also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

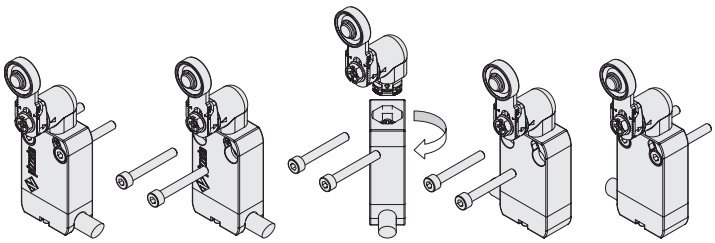
This product series is designed in a modular format, so that its single pieces can be purchased separately. This is advantageous to distributors of electrical material for stock flexibility and final customers for spare parts or new combinations.

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



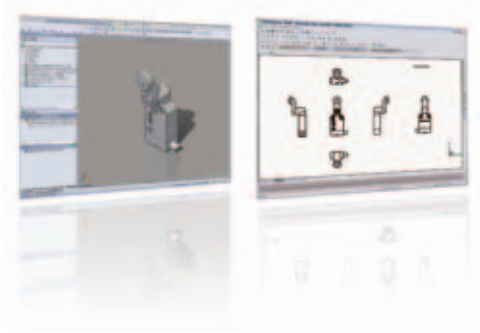
Reversible housing

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.



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.

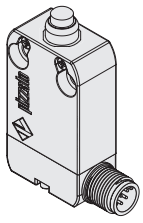


Extended temperature range

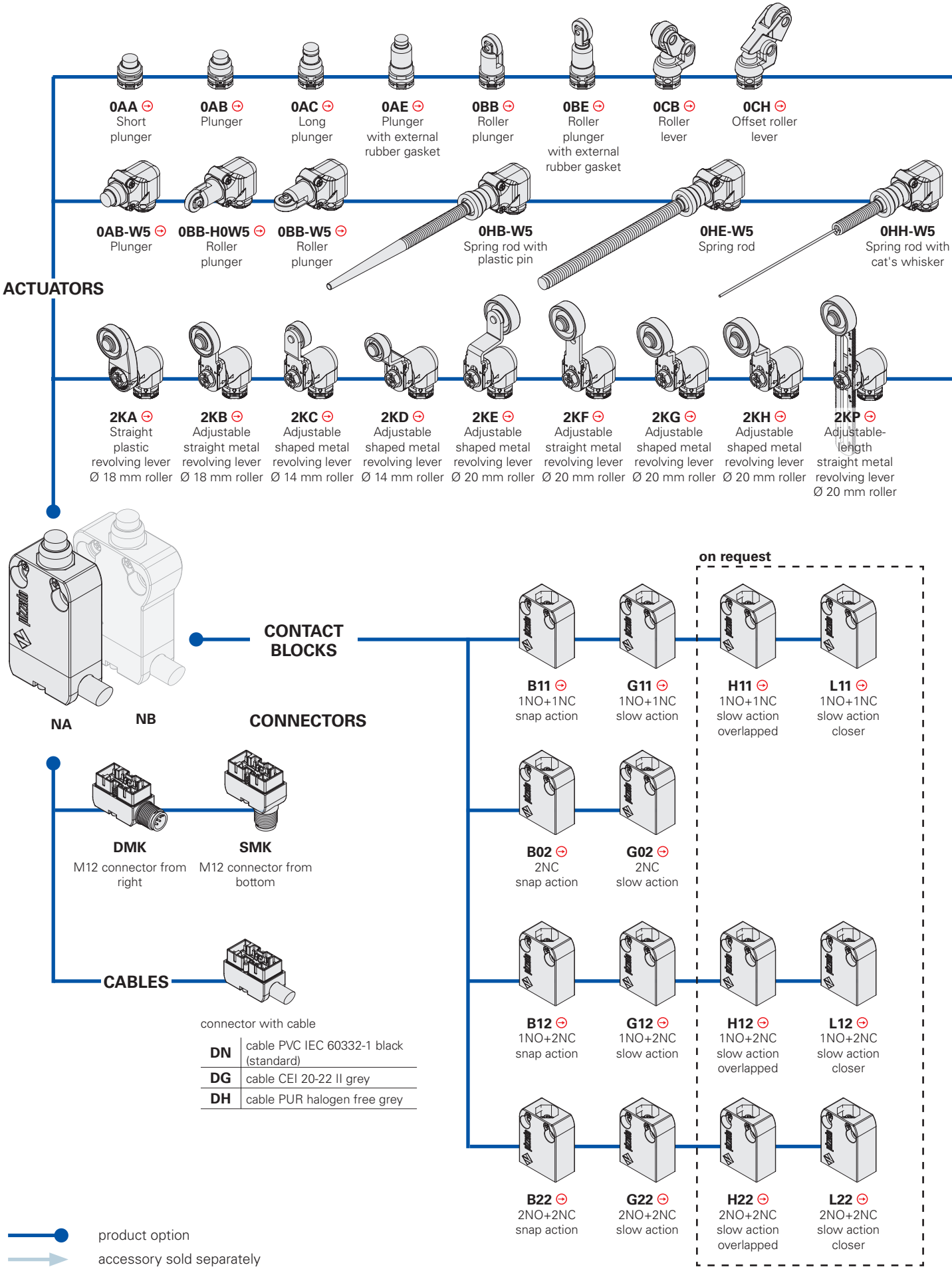
-40°C This range of switches is also available in a special version with an ambient operating temperature range of -40°C to +80°C. This is particularly useful for applications in cold stores, sterilisers and other low temperature environments. The materials used in the production of these switches maintain the standard operating parameters even over this temperature range, further increasing application possibilities.

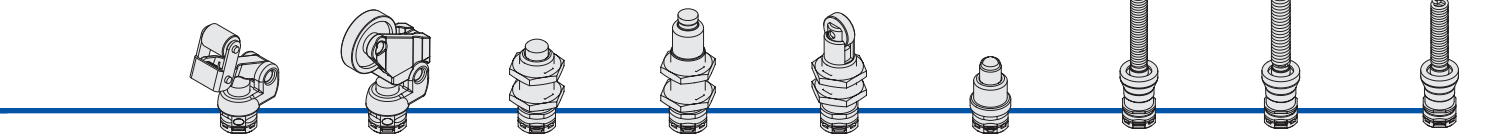
4-5 poles M12 safety connectors ⊕

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 ⊕.



Selection diagram for articles NA-NB series sold assembled





0CP ⊖
Unidirectional roller lever

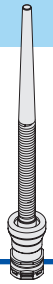
0CV ⊖
Adjustable offset roller lever

0EB ⊖
Plunger with M12 threaded bearing

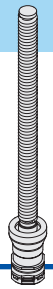
0EE ⊖
Plunger with M12 threaded bearing and external rubber gasket

0FB ⊖
Plunger with roller and M12 threaded bearing

0GB ⊖
Plunger with Ø 6 mm sphere

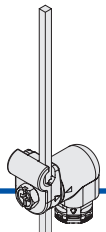


0HB
Spring rod with plastic pin

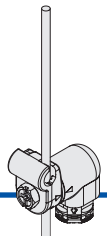


0HE
Spring rod

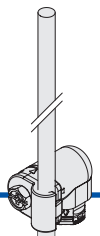
0HH
Spring rod with cat's whisker



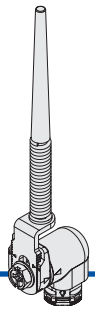
2LB
Metal revolving lever with adjustable square stainless steel rod 3x3x125 mm



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



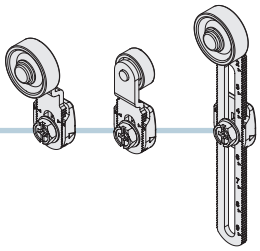
2LH
Metal revolving lever with adjustable fiber glass rod Ø6x200 mm



2LL
Metal revolving lever with flexible adjustable rod

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: **NA B110AB-DN2** options: **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	
AA	with short plunger
AB	with plunger
...	.....

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

Transmission block	
	Without transmission block
W5	90° transmission block

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

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

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

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

other length on requests

Type of cable	
N	cable PVC IEC 60332-1 black (standard)
G	cable CEI 20-22 II grey
H	cable PUR halogen free grey
M	M12 connector

Main data

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

Markings and quality marks:

CE

c UL us

Approval UL: E131787

Technical data

Housing

Metal housing, coated with baked UV resistant powder.
Version with cable integrated with 5 x 0,75 mm² wires, 7 x 0,5 mm² wires or 9 x 0,34 mm² wires, standard length 2 m. Other lengths on request.
Versions with 5 or 8 poles M12 integrated connector

Protection degree:	IP67 according to EN 60529
Saline smoke resistance:	≥ 300 hours in NSS according to ISO 9227

General data

Utilization temperatures:	See table on page 2/104
Max operating frequency:	3600 operations cycles[1]/hour
Mechanical endurance:	20 million operations cycles[1]
Assembling position:	any
Driving torque for installation:	see pages 6/1-6/10

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

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 2/104) 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 6/10. 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 6/1 to page 6/10.**

⚠ **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 connector can be used only in circuits PELV.**

Data type approved by UL

Utilization categories: R300 pilot duty (28 VA, 125-250 Vdc)
B300 pilot duty (360 VA, 120-240 Vac)

Data of the housing type 1, 4X "indoor use only", 12

In conformity with standard: UL 508

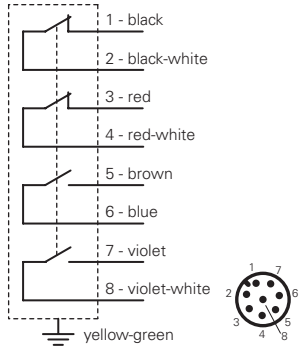
Please contact our technical service for the list of approved products.

Utilization temperatures and electrical data

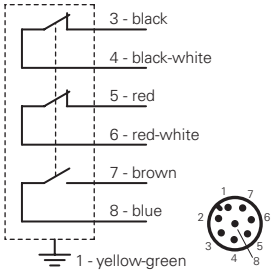
			output with cable						output with connector	
			2 contacts versions			3 contacts versions		4 contacts versions	2 contacts versions	3 or 4 contacts versions
			Cable type N 5x0,75 mm², Sheath PVC H05VV-F, Not flame-spreading IEC 60332-1-2 IEC 60332-1-3 IEC 60332-2-2 Min. bend radius: 72 mm Oil-resistant IEC 60811-2-1 Copper class 5 IEC 60228	Cable type G 5x0,75 mm², Sheath PVC S05VV-F, Not flame-spreading IEC 60332-1-2 IEC 60332-1-3 IEC 60332-2-2 IEC 60332-3 CEI 20-22 II Min. bend radius: 72 mm Copper class 5 IEC 60228	Cable type H 5x0,75 mm², Max Speed 100 m/min Max Acceleration 2 m/s² Sheath PUR HALOGEN FREE Not flame-spreading IEC 60332-1-2 IEC 60332-1-3 IEC 60332-2-2 IEC 60332-3 Min. bend radius: 70 mm Without halogens IEC 60754-1 Oil-resistant IEC 60811-2-1 Gas emission reduced IEC 61034-1 Copper class 6 IEC 60228	Cable type N 7x0,5 mm² Sheath PVC H05VV-F, Not flame-spreading IEC 60332-1-2 IEC 60332-1-3 IEC 60332-2-2 Min. bend radius 108 mm Copper class 5 IEC 60228	Cable type H 7x0,5 mm², Max Speed 300 m/min Max Acceleration 25 m/s² Sheath PUR HALOGEN FREE Not flame-spreading IEC 60332-1-2 IEC 60332-1-3 IEC 60332-2-2 IEC 60332-3 Min. bend radius: 108 mm Without halogens IEC 60754-1 Oil-resistant IEC 60811-2-1 Gas emission reduced IEC 61034-1 Copper class 6 IEC 60228	Cable type N 9x0,34 mm² Sheath PVC H05VV-F, Not flame-spreading IEC 60332-1-2 IEC 60332-1-3 IEC 60332-2-2 Min. bend radius: 94 mm Copper class 5 IEC 60228	5 poles M12 connector	8 poles M12 connector
Utilization temperatures	Standard temperature	Fixed laying cable	-25°C ... +80°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	
		Flexible laying cable	-25°C ... +80°C	+5°C ... +70°C	-25°C ... +80°C	-25°C ... +80°C	-25°C ... +80°C	-25°C ... +80°C		
		Dynamic laying cable	/	/	-25°C ... +80°C	/	-25°C ... +80°C	/		
	Extended temperature -T6	Fixed laying cable	/	/	-40°C ... +80°C	/	-40°C ... +80°C	/	-40°C ... +80°C	
		Flexible laying cable	/	/	-40°C ... +80°C	/	-30°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	4 A	4 A	2 A
		Rated insulation Voltage Ui	400 Vac	400 Vac	400 Vac	400 Vac	400 Vac	400 Vac	250 Vac 300 Vdc	30 Vac 36 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	4 A 500 V type gG	4 A 500 V type gG	2 A 500V type gG
		Conditional shot circuit current according with EN 60947-5-1	1000 A	1000 A	1000 A	1000 A	1000 A	1000 A	1000 A	1000 A
		Pollution degree according with EN 60947-5-1	3	3	3	3	3	3	3	3
	Utilization categories DC13	24 V	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	/
		250 V	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	4 A	2 A
		120 V	4 A	4 A	4 A	4 A	4 A	4 A	4 A	/
		250 V	4 A	4 A	4 A	4 A	4 A	4 A	4 A	/
		400 V	3 A	3 A	3 A	3 A	3 A	3 A	/	/
Approvals of switches with integrated cable			CE	CE	CE, cULus	CE, cULus	CE, cULus	CE, cULus	CE, cULus	CE, cULus

Internal connections

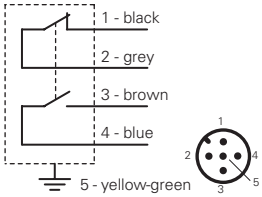
2NO+2NC



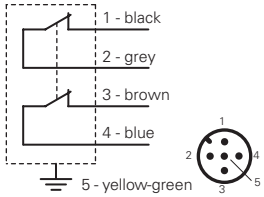
1NO+2NC



1NO+1NC

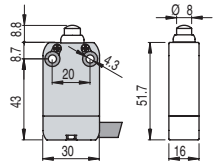
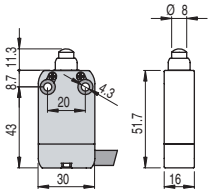
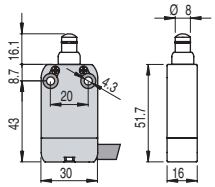
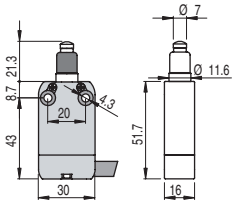


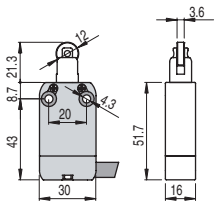
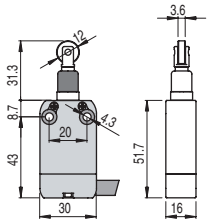
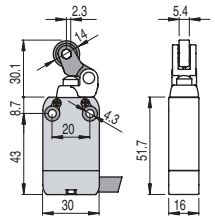
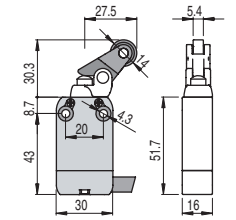
2NC



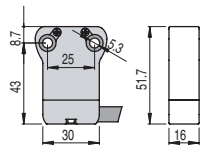
Contacts type:

R = snap action
L = slow action

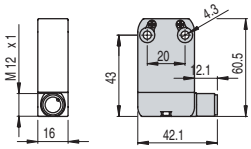
Contact blocks								
								With external rubber gasket 
B11	R	NA B110AA-DN2	1NO+1NC	NA B110AB-DN2	1NO+1NC	NA B110AC-DN2	1NO+1NC	NA B110AE-DN2	1NO+1NC
B02	R	NA B020AA-DN2	2NC	NA B020AB-DN2	2NC	NA B020AC-DN2	2NC	NA B020AE-DN2	2NC
B12	R	NA B120AA-DN2	1NO+2NC	NA B120AB-DN2	1NO+2NC	NA B120AC-DN2	1NO+2NC	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 6/9 - type 4		page 6/9 - type 4		page 6/9 - type 4		page 6/9 - type 4	
Min. force		7 N (25 N ⊖)		7 N (25 N ⊖)		7 N (25 N ⊖)		7 N (25 N ⊖)	
Travel diagrams		page 6/10 - group 1		page 6/10 - group 1		page 6/10 - group 1		page 6/10 - 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 6/9 - type 2		page 6/9 - type 5		page 6/9 - type 3		page 6/9 - type 3	
Min. force		7 N (25 N ⊖)		7 N (25 N ⊖)		5 N (25 N ⊖)		5 N (25 N ⊖)	
Travel diagrams		page 6/10 - group 1		page 6/10 - group 1		page 6/10 - group 2		page 6/10 - group 2	

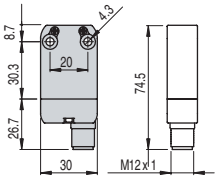
Housing NB series



M12 connector output from right



M12 connector output from bottom



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

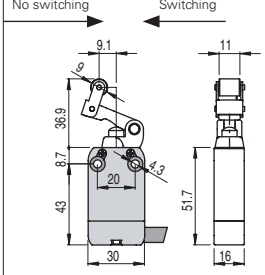
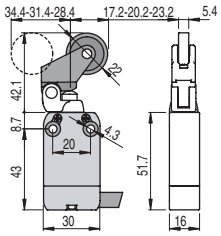
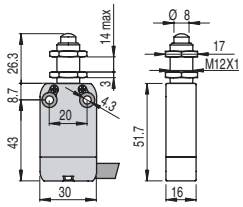
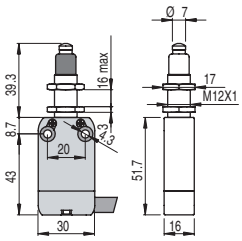
In order to buy a product with M12 connector output from right substitute on above mentioned codes DN2 with DMK. Example:
NA B110AA-**DN2** → NA B110AA-**DMK**

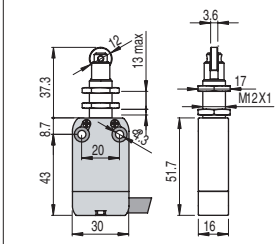
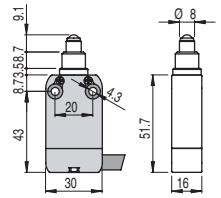
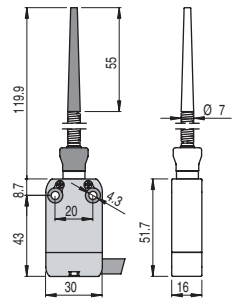
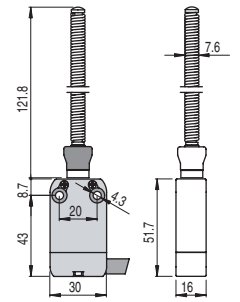
In order to buy a product with M12 connector output from bottom substitute on above mentioned codes DN2 with SMK. Example:
NA B110AA-**DN2** → NA B110AA-**SMK**

All measures in the drawings are in mm

Contacts type:

R = snap action
L = slow action

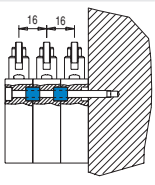
Contact blocks								
						 Fixed only by threaded head		 Fixed only by threaded head With external rubber gasket	
B11	R	NA B110CP-DN2	1NO+1NC	NA B110CV-DN2	1NO+1NC	NA B110EB-DN2	1NO+1NC	NA B110EE-DN2	1NO+1NC
B02	R	NA B020CP-DN2	2NC	NA B020CV-DN2	2NC	NA B020EB-DN2	2NC	NA B020EE-DN2	2NC
B12	R	NA B120CP-DN2	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 6/9 - type 3		page 6/9 - type 3		page 6/9 - type 4		page 6/9 - type 4	
Min. force		3 N (25 N ⊖)		3 N (25 N ⊖)		7 N (25 N ⊖)		7 N (25 N ⊖)	
Travel diagrams		page 6/10 - group 6		page 6/10 - group 3		page 6/10 - group 1		page 6/10 - group 1	

Contact blocks								
		Fixed only by threaded head 				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	NA G110HB-DN2	1NO+1NC	NA G110HE-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	NA G120HB-DN2	1NO+2NC	NA G120HE-DN2	1NO+2NC
G22	L	NA G220FB-DN2	2NO+2NC	NA G220GB-DN2	2NO+2NC	NA G220HB-DN2	2NO+2NC	NA G220HE-DN2	2NO+2NC
Max speed		page 6/9 - type 2		page 6/9 - 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 6/10 - group 1		page 6/10 - group 1		page 6/10 - group 4		page 6/10 - 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 5/2

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

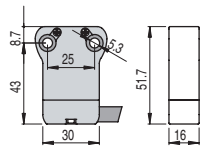
Contacts type:

R = snap action
L = slow action

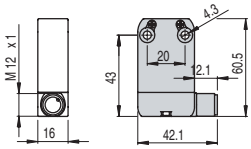
Contact blocks		With external rubber gasket	With stainless steel roller on request	With stainless steel roller on request	With stainless steel roller on request
B11	R	NA B110HH-DN2 1NO+1NC	NA B112KA-DN2 1NO+1NC	NA B112KB-DN2 1NO+1NC	NA B112KC-DN2 1NO+1NC
B02	R	NA B020HH-DN2 2NC	NA B022KA-DN2 2NC	NA B022KB-DN2 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 G110HH-DN2 1NO+1NC	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 G120HH-DN2 1NO+2NC	NA G122KA-DN2 1NO+2NC	NA G122KB-DN2 1NO+2NC	NA G122KC-DN2 1NO+2NC
G22	L	NA G220HH-DN2 2NO+2NC	NA G222KA-DN2 2NO+2NC	NA G222KB-DN2 2NO+2NC	NA G222KC-DN2 2NO+2NC
Max speed		1 m/s	page 6/9 - type 1	page 6/9 - type 1	page 6/9 - 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 6/10 - group 4	page 6/10 - group 5	page 6/10 - group 5	page 6/10 - 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 6/9 - type 1	page 6/9 - type 1	page 6/9 - type 1	page 6/9 - 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 6/10 - group 5	page 6/10 - group 5	page 6/10 - group 5	page 6/10 - group 5

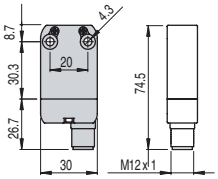
Housing NB series



M12 connector output from right



M12 connector output from bottom



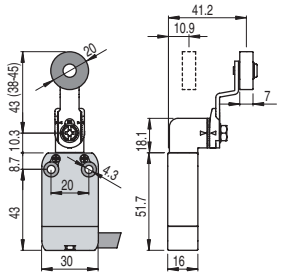
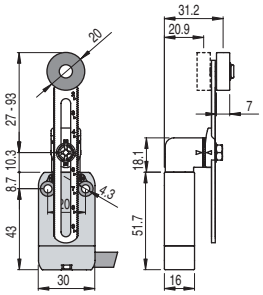
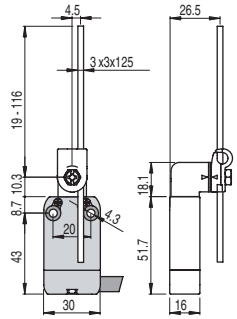
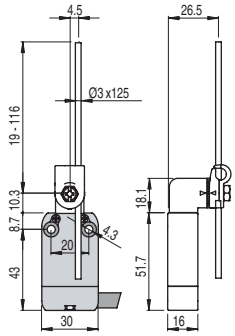
In order to buy a NB series product:
substitute on above mentioned codes NA with NB.
Example:
NA B110AA-DN2 → **NB** B110AA-DN2

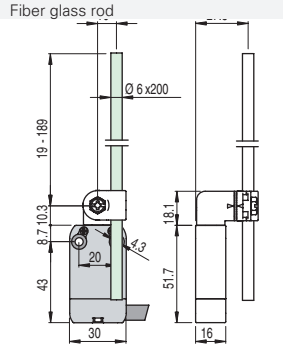
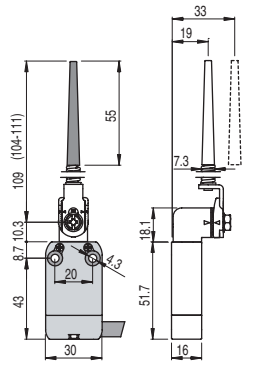
In order to buy a product with M12 connector output from right substitute on above mentioned codes DN2 with DMK. Example:
NA B110AA-**DN2** → NA B110AA-**DMK**

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**

Contacts type:

R = snap action
L = slow action

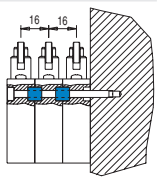
Contact blocks		With stainless steel roller on request		With stainless steel roller on request		Stainless steel 3x3 mm square rod		Ø 3 mm stainless steel round rod	
									
B11	R	NA B112KH-DN2	1NO+1NC	NA B112KP-DN2	1NO+1NC	NA B112LB-DN2	1NO+1NC	NA B112LE-DN2	1NO+1NC
B02	R	NA B022KH-DN2	2NC	NA B022KP-DN2	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 6/9 - type 1		page 6/9 - 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 6/10 - group 5		page 6/10 - group 5		page 6/10 - group 5		page 6/10 - group 5	

Contact blocks		Fiber glass rod			
					
B11	R	NA B112LH-DN2	1NO+1NC	NA B112LL-DN2	1NO+1NC
B02	R	NA B022LH-DN2	2NC	NA B022LL-DN2	2NC
B12	R	NA B122LH-DN2	1NO+2NC	NA B122LL-DN2	1NO+2NC
B22	R	NA B222LH-DN2	2NO+2NC	NA B222LL-DN2	2NO+2NC
G11	L	NA G112LH-DN2	1NO+1NC	NA G112LL-DN2	1NO+1NC
G02	L	NA G022LH-DN2	2NC	NA G022LL-DN2	2NC
G12	L	NA G122LH-DN2	1NO+2NC	NA G122LL-DN2	1NO+2NC
G22	L	NA G222LH-DN2	2NO+2NC	NA G222LL-DN2	2NO+2NC
Max speed		1,5 m/s		1,5 m/s	
Min. force		0,07 Nm		0,07 Nm	
Travel diagrams		page 6/10 - group 5		page 6/10 - 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

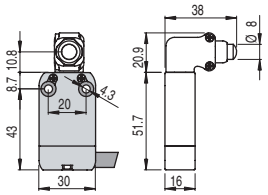
See page 5/2

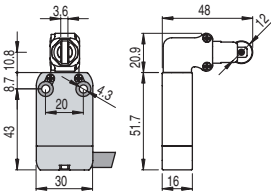
Items with code on the **green** background are available in stock

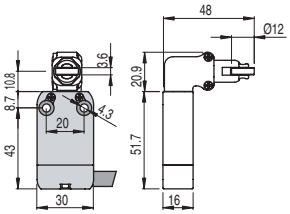
Contacts type:

R = snap action
L = slow action

Contact blocks



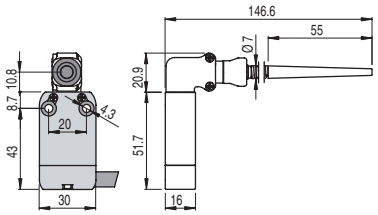




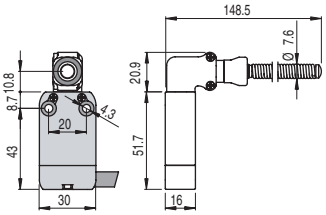
B11	R	NA B110AB-DN2W5 1NO+1NC	NA B110BB-DN2H0W5 1NO+1NC	NA B110BB-DN2W5 1NO+1NC
B02	R	NA B020AB-DN2W5 2NC	NA B020BB-DN2H0W5 2NC	NA B020BB-DN2W5 2NC
B12	R	NA B120AB-DN2W5 1NO+2NC	NA B120BB-DN2H0W5 1NO+2NC	NA B120BB-DN2W5 1NO+2NC
B22	R	NA B220AB-DN2W5 2NO+2NC	NA B220BB-DN2H0W5 2NO+2NC	NA B220BB-DN2W5 2NO+2NC
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 6/9 - type 4	page 6/9 - type 2	page 6/9 - type 2
Min. force		9,5 N (25 N ⊖)	9,5 N (25 N ⊖)	9,5 N (25 N ⊖)
Travel diagrams		page 6/10 - group 1	page 6/10 - group 1	page 6/10 - group 1

Contact blocks

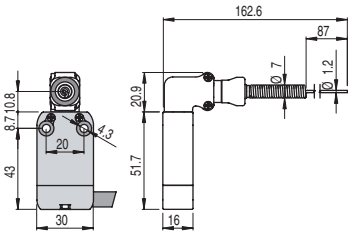
With external rubber gasket



With external rubber gasket

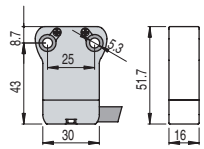


With external rubber gasket



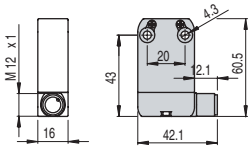
B11	R	NA B110HB-DN2W5 1NO+1NC	NA B110HE-DN2W5 1NO+1NC	NA B110HH-DN2W5 1NO+1NC
B02	R	NA B020HB-DN2W5 2NC	NA B020HE-DN2W5 2NC	NA B020HH-DN2W5 2NC
B12	R	NA B120HB-DN2W5 1NO+2NC	NA B120HE-DN2W5 1NO+2NC	NA B120HH-DN2W5 1NO+2NC
B22	R	NA B220HB-DN2W5 2NO+2NC	NA B220HE-DN2W5 2NO+2NC	NA B220HH-DN2W5 2NO+2NC
G11	L	NA G110HB-DN2W5 1NO+1NC	NA G110HE-DN2W5 1NO+1NC	NA G110HH-DN2W5 1NO+1NC
G02	L	NA G020HB-DN2W5 2NC	NA G020HE-DN2W5 2NC	NA G020HH-DN2W5 2NC
G12	L	NA G120HB-DN2W5 1NO+2NC	NA G120HE-DN2W5 1NO+2NC	NA G120HH-DN2W5 1NO+2NC
G22	L	NA G220HB-DN2W5 2NO+2NC	NA G220HE-DN2W5 2NO+2NC	NA G220HH-DN2W5 2NO+2NC
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 6/10 - group 4	page 6/10 - group 4	page 6/10 - group 4

Housing NB series



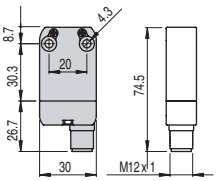
In order to buy a NB series product:
substitute on above mentioned codes NA with NB.
Example:
NA B110AA-DN2 → **NB** B110AA-DN2

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**

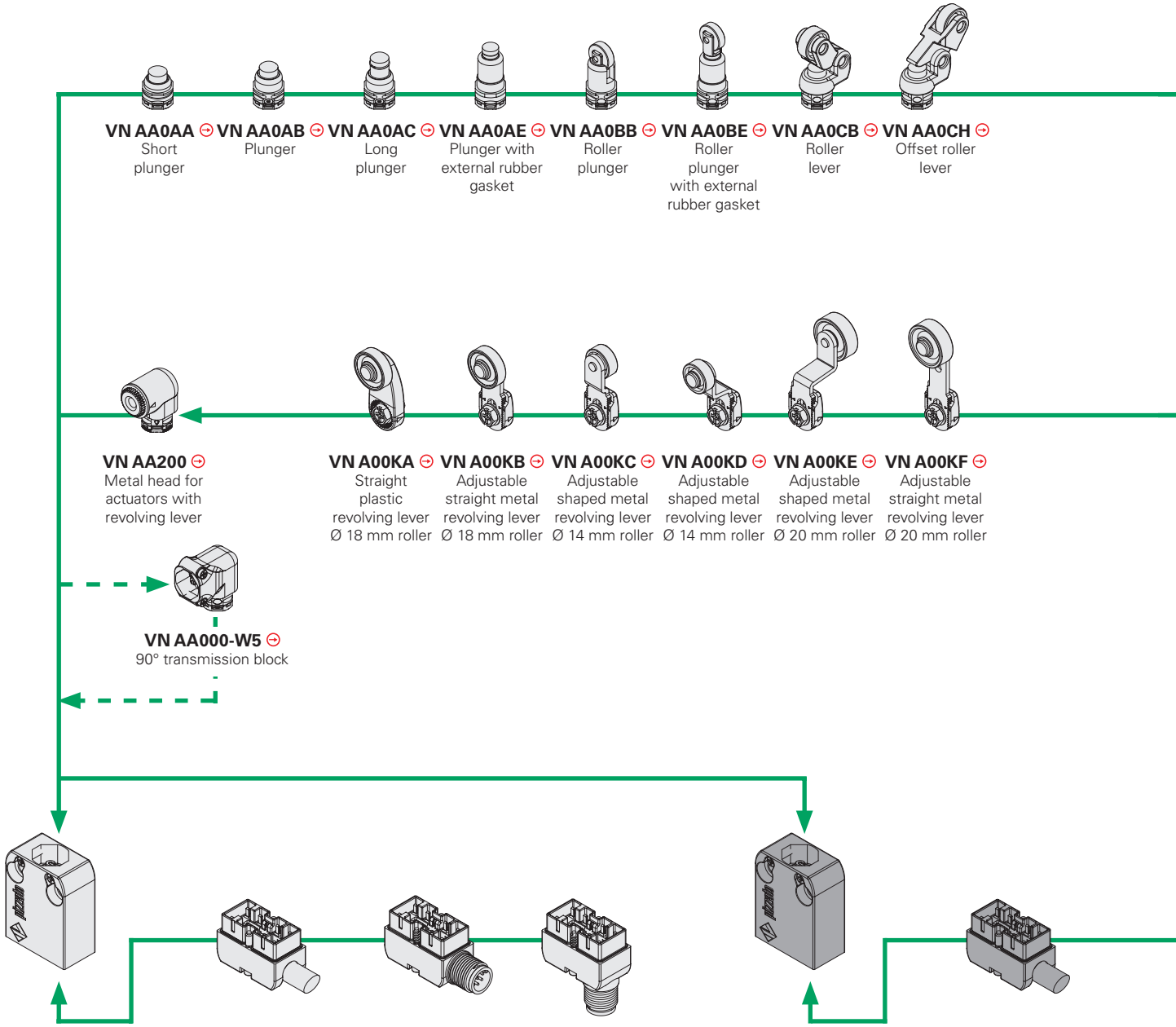
M12 connector output from bottom



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**

Notes

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



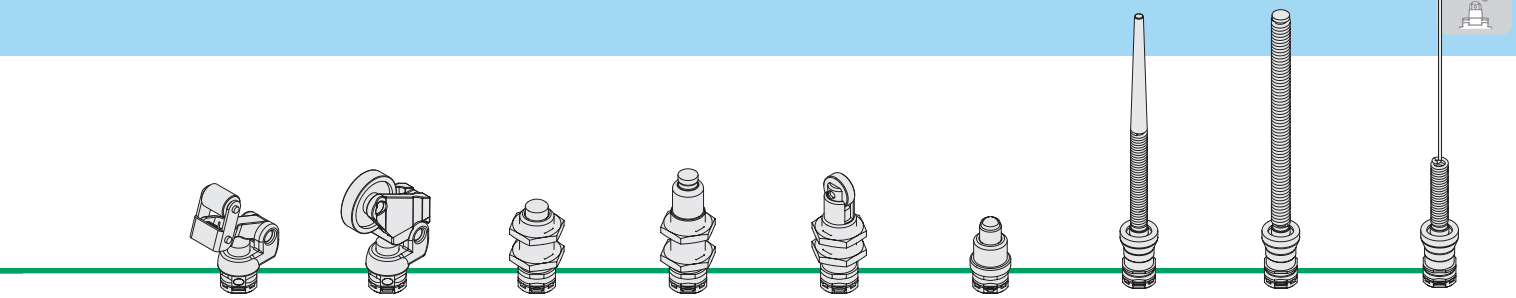
METAL housing NA 20 mm holes interaxes		Metal connector with cable	cable length(m)	M12 metal connector from right	M12 metal connector from bottom,
NA B11000	1NO+1NC R	VN CM11DN2	2	VN CM11DMK	VN CM11SMK
NA G11000	1NO+1NC L				
NA L11000	1NO+1NC LA	VN CM11DN5	5		
NA H11000	1NO+1NC LO				
NA B02000	2NC R	VN CM02DN2	2	VN CM02DMK	VN CM02SMK
NA G02000	2NC L	VN CM02DN5	5		
NA B12000	1NO+2NC R	VN CM12DN2	2	VN CM12DMK	VN CM12SMK
NA G12000	1NO+2NC L				
NA L12000	1NO+2NC LA	VN CM12DN5	5		
NA H12000	1NO+2NC LO				
NA B22000	2NO+2NC R	VN CM22DN2	2	VN CM22DMK	VN CM22SMK
NA G22000	2NO+2NC L				
NA L22000	2NO+2NC LA	VN CM22DN5	5		
NA H22000	2NO+2NC LO				

POLYMER housing NF 20 mm holes interaxes		Polymer connectors with cable	cable length(m)
NF B11000	1NO+1NC R	VN CP11DN2	2
NF G11000	1NO+1NC L		
NF L11000	1NO+1NC LA	VN CP11DN5	5
NF H11000	1NO+1NC LO		
NF B02000	2NC R	VN CP02DN2	2
NF G02000	2NC L	VN CP02DN5	5
NF B12000	1NO+2NC R	VN CP12DN2	2
NF G12000	1NO+2NC L		
NF L12000	1NO+2NC LA	VN CP12DN5	5
NF H12000	1NO+2NC LO		
NF B22000	2NO+2NC R	VN CP22DN2	2
NF G22000	2NO+2NC L		
NF L22000	2NO+2NC LA	VN CP22DN5	5
NF H22000	2NO+2NC LO		

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

Forbidden to install metal connector on polymer housing

Forbidden to install polymer 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

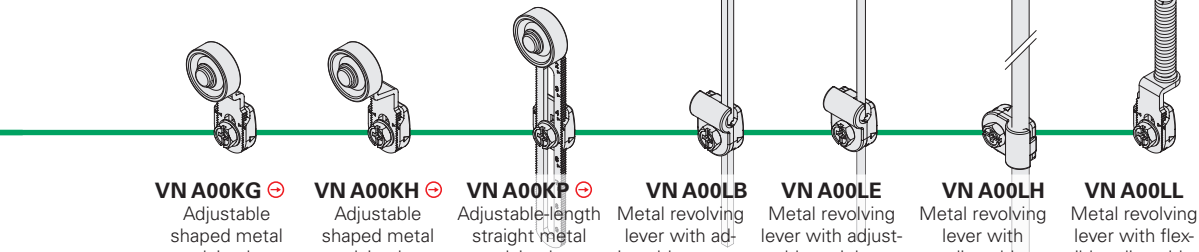
VN AA0FB ⊖
Plunger with roller and M12 threaded bearing

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

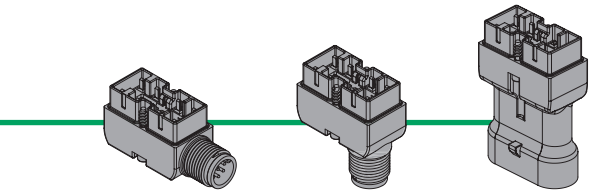
VN A00LB
Metal revolving lever with adjustable square stainless steel rod 3x3x125

VN A00LE
Metal revolving lever with adjustable stainless steel rod Ø3x125

VN A00LH
Metal revolving lever with adjustable fiber glass rod Ø6x200

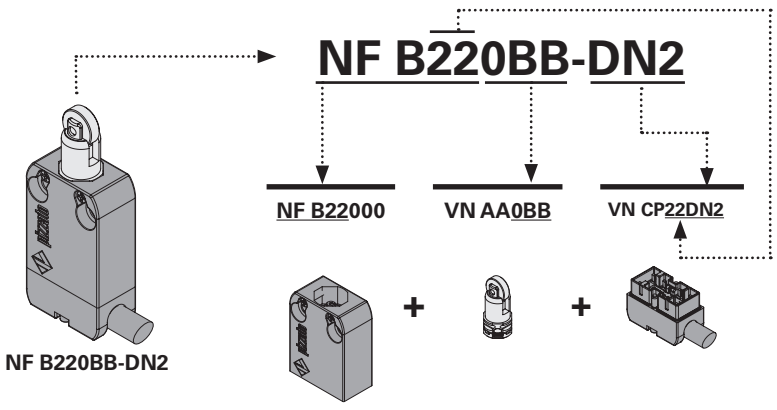
VN A00LL
Metal revolving lever with flexible adjustable rod

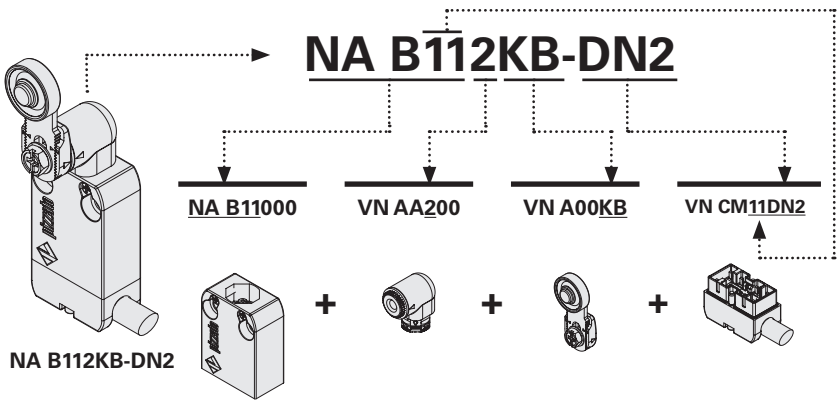
⚠ **Installation for persons protection applications:**
In order to obtain a safety switch with positive opening ⊖, assemble housings having the positive opening symbol next to the code ⊖ with actuators having the positive opening symbol next to the code ⊖.
Example: **VN A00KB ⊖ + VN AA200 ⊖ + NA B11000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



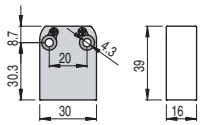
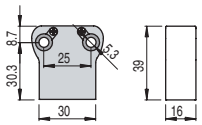
M12 polymer connector from right		M12 polymer connector from bottom		AMP type polymer connector from bottom
VN CP11DMK	↔	VN CP11SMK	↔	VN CP11SAK
VN CP02DMK	↔	VN CP02SMK	↔	VN CP02SAK
VN CP22DMK	↔	VN CP22SMK	↔	

Examples of article code composition

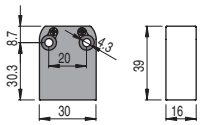




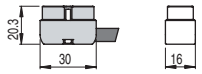
Housings

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

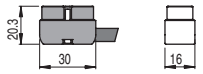
Contacts type:
R = snap action
L = slow action
LO = slow action overlapped
LA = slow action closer

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

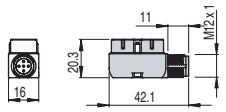
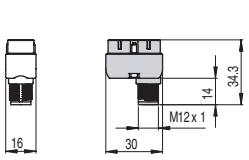
Connector with cable

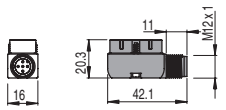
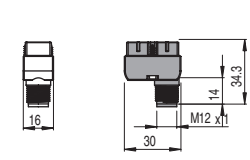
metal connectors for NA and NB housing			
		Cable length(m)	Cable type N = PVC Fixed laying cable H = PUR HALOGEN FREE Dynamic laying cable
VN CM11DN2	1NO+1NC	2	N
VN CM11DN5	1NO+1NC	5	
VN CM12DN2	1NO+2NC	2	
VN CM12DN5	1NO+2NC	5	
VN CM22DN2	2NO+2NC	2	
VN CM22DN5	2NO+2NC	5	
VN CM11DH2	1NO+1NC	2	H
VN CM11DH5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

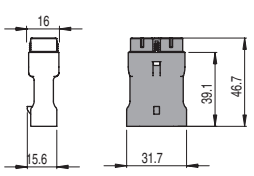
other cable lengths on request

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

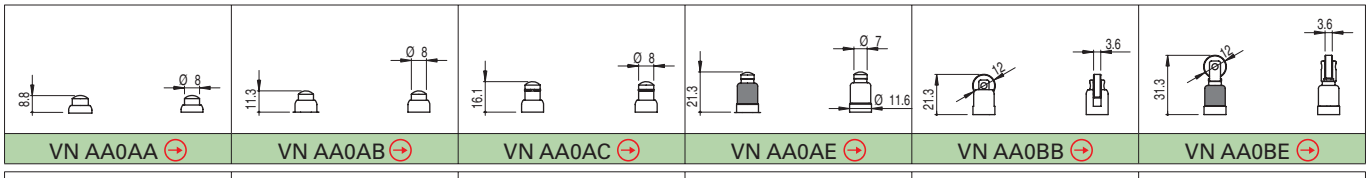
M12 connector from right		M12 connector from bottom	
			
VN CM11DMK	1NO+1NC	VN CM11SMK	1NO+1NC
VN CM02DMK	2NC	VN CM02SMK	2NC
VN CM22DMK	2NO+2NC	VN CM22SMK	2NO+2NC

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

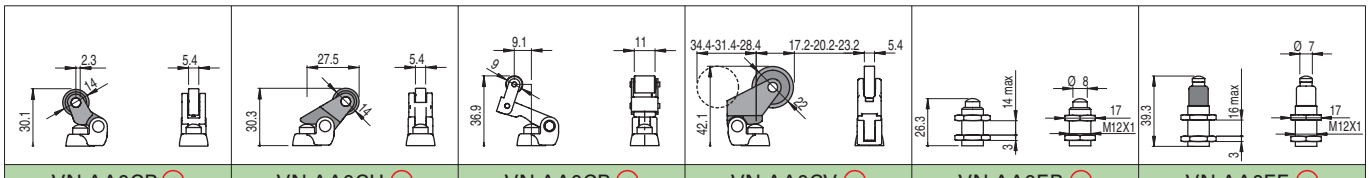
AMP super seal 1,5 connector	
	
VN CP11SAK	1NO+1NC
VN CP02SAK	2NC

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

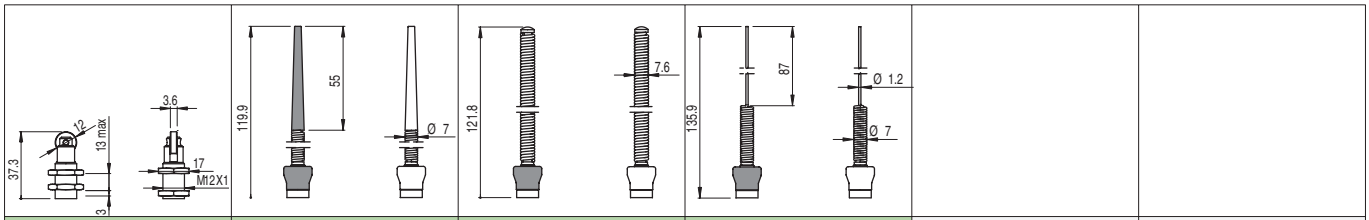
Actuators



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



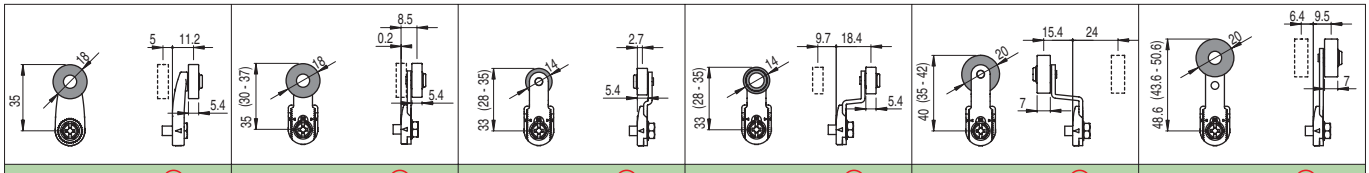
VN AA0CB | VN AA0CH | VN AA0CP | VN AA0CV | VN AA0EB | VN AA0EE



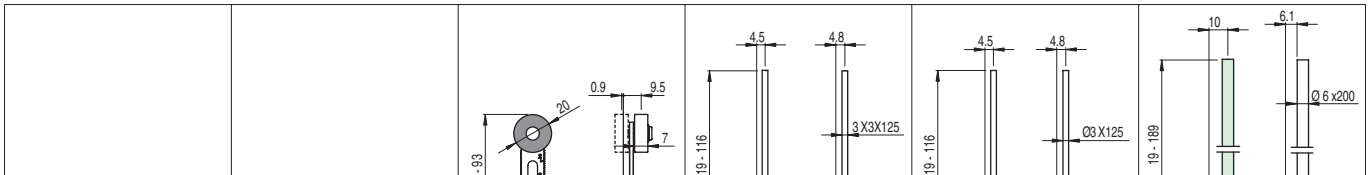
VN AA0FB | VN AA0HB | VN AA0HE | VN AA0HH

Revolving levers

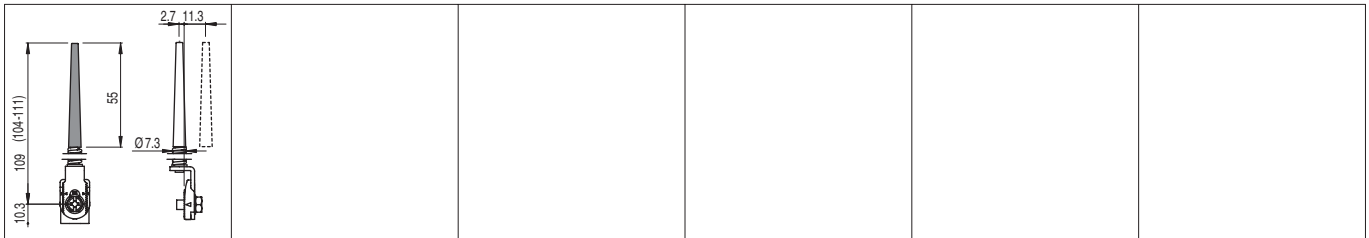
ATTENTION: These loose actuators can be used with products of series NA, NB and NF only.



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

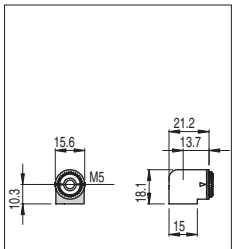


VN A00KG | VN A00KH | VN A00KP | VN A00LB | VN A00LE | VN A00LH



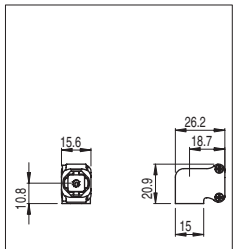
VN A00LL

Head



VN AA200

Transmission block



VN AA000-W5

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