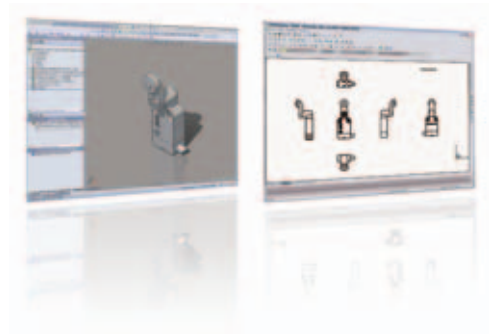
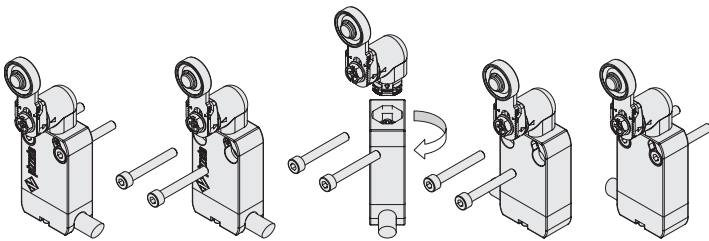
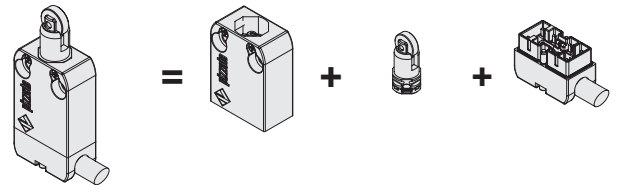
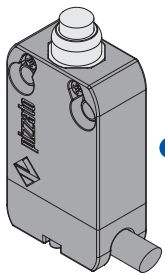
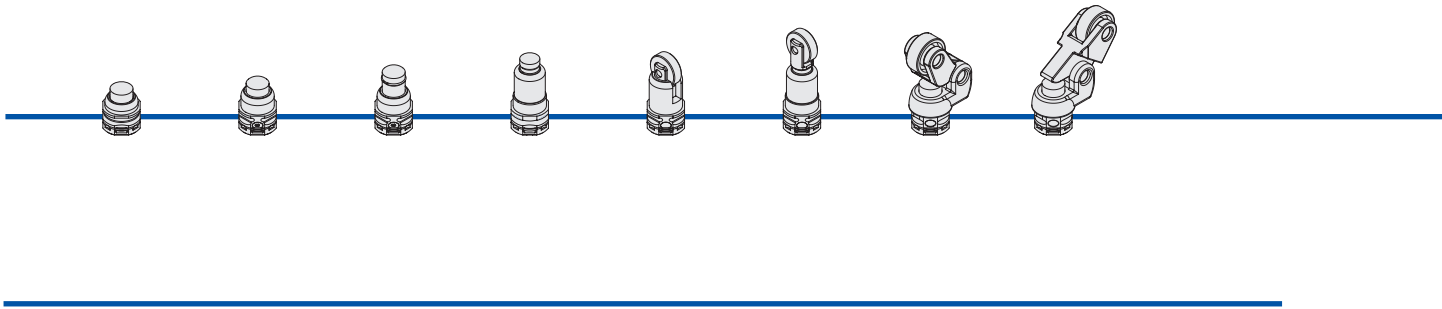


NA B110BB-DN2    NA B11000    VN AA0BB    VN CM11DN2

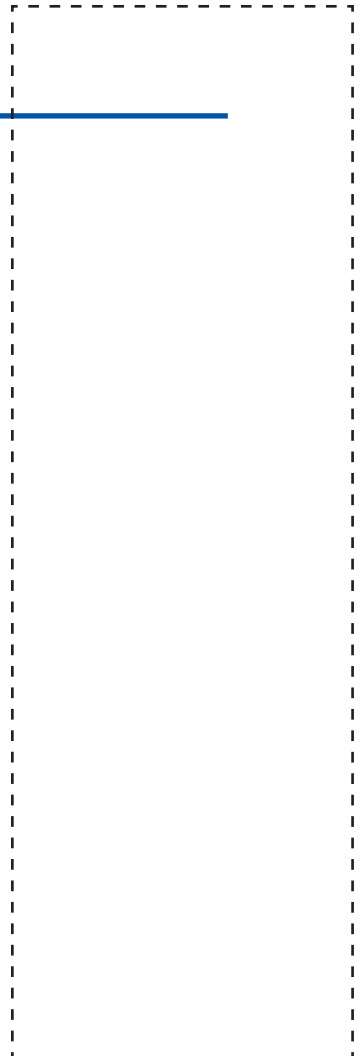


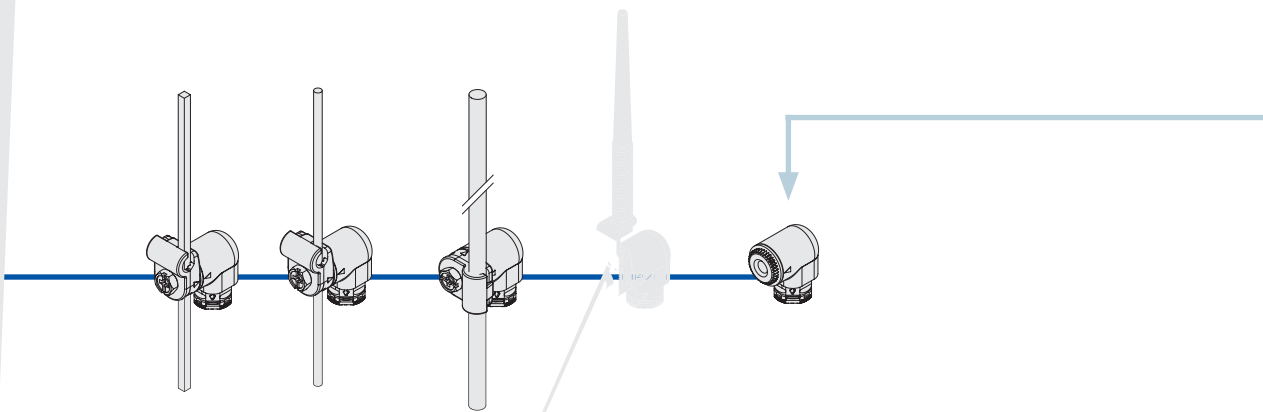
**-40°C**

- 1
- 1A
- 1B
- 2
- 2A
- 2B
- 2C**
- 2D
- 2E
- 3
- 3A
- 3B
- 3C
- 4
- 4A
- 4B
- 4C
- 4D
- 4E
- 4F
- 4G
- 4H
- 5
- 6

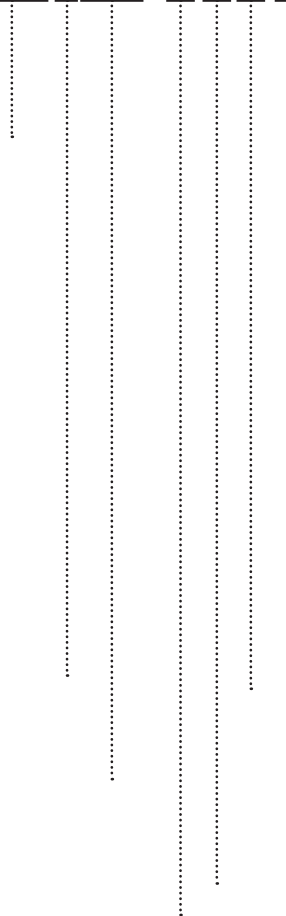


NF





**NF B110AB-DN2 GR7W5**



1

1A

1B

2

2A

2B

**2C**

2D

2E

3

3A

3B

3C

4

4A

4B

4C

4D

4E

4F

4G

4H

5



### 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
- 14 contact blocks available
- 37 actuators available

### Markings and quality marks:



Approval UL:

E131787

### Technical data

#### Housing

Made of glass-reinforced polymer, self-extinguishing, shock-proof thermoplastic resin with double insulation

Version with cable integrated with 4 x 0,75 mm<sup>2</sup> wires, 6 x 0,5 mm<sup>2</sup> wires or 8 x 0,34 mm<sup>2</sup> wires, standard length 2 m. Other lengths on request.

Versions with 4 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 2/114

Max operating frequency:

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

Mechanical endurance:

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

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 2/114) 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 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

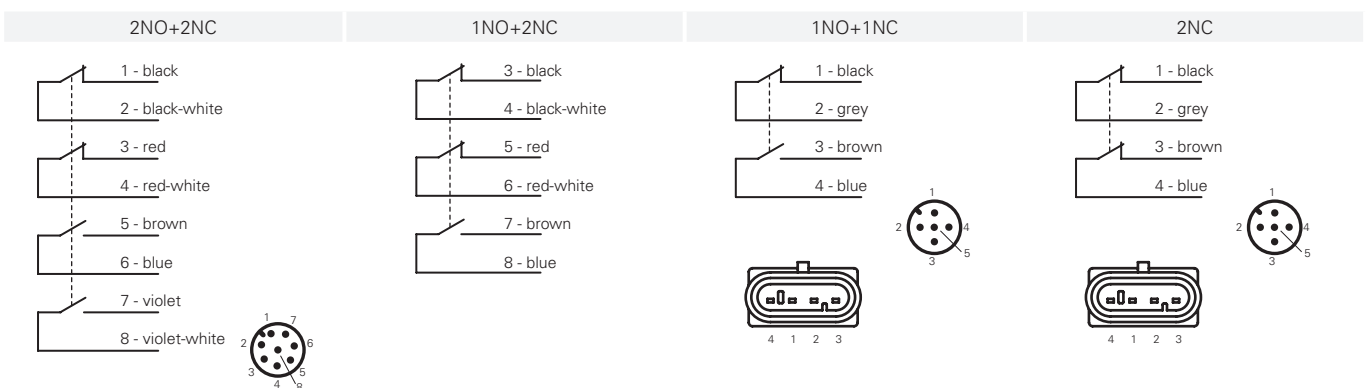
Please contact our technical service for the list of approved products.



## Utilization temperatures and electrical data

		Output with cable				Output with M12 connector		Output with connector AMP	
		2 contacts versions		2 contacts versions	2 contacts versions	2 contacts versions	2 contacts versions	2 contacts versions	
		Cable type N 4x0,75 mm <sup>2</sup> ,	Cable type G 4x0,75 mm <sup>2</sup> ,	Cable type N 6x0,34 mm <sup>2</sup>	Cable type N 8x0,34 mm <sup>2</sup>	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 IEC 60332-2-2	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	Sheath PVC H05VV-F; Not flame-spreading IEC 60332-1-2 IEC 60332-1-3 IEC 60332-2-2	Sheath PVC H05VV-F; Not flame-spreading IEC 60332-1-2 IEC 60332-1-3 IEC 60332-2-2				
		Min. bend radius: 65 mm	Min. bend radius: 65 mm	Min. bend radius: 94 mm	Min. bend radius: 94 mm				
		Oil-resistant IEC 60811-2-1							
		Copper class 5 IEC 60228	Copper class 5 IEC 60228	Copper class 5 IEC 60228	Copper class 5 IEC 60228				
Utilization temperatures	Standard temperature	Fixed laying cable	-25°C ... +80°C	-25°C ... +70°C	-25°C ... +80°C	-25°C ... +80°C			
	Extended temperature -T6	Flexible laying cable	-25°C ... +80°C	+5°C ... +70°C	-25°C ... +80°C	-25°C ... +80°C		-25°C ... +80°C	
		Dynamic laying cable	/	/	/	/			
		Fixed laying cable	/	/	/	/			
		Flexible laying cable	/	/	/	/		-40°C ... +80°C	
		Dynamic laying cable	/	/	/	/			
Electrical data	Thermal current I <sub>th</sub>		10 A	10 A	6 A	4 A	4 A	2 A	10 A
		Rated insulation Voltage U <sub>i</sub>		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	6 A 500 V type gG	4 A 500 V type gG	4 A 500 V type gG	2 A 500V type gG
		Conditional short circuit current according with EN 60947-5-1		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
		Utilization categories DC13	24 V	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
	24 V		4 A	4 A	4 A	4 A	4 A	2 A	4 A
	Utilization categories AC15	120 V	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	
400 V		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

## Internal connections



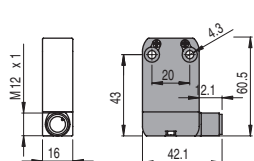
Contacts type:

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

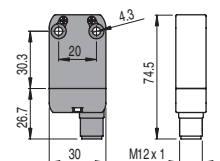
						With external rubber gasket		
Contact blocks								
B11	<b>R</b> NF B110AA-DN2	↻ 1NO+1NC	<b>R</b> NF B110AB-DN2	↻ 1NO+1NC	<b>R</b> NF B110AC-DN2	↻ 1NO+1NC	<b>R</b> NF B110AE-DN2	↻ 1NO+1NC
B02	<b>R</b> NF B020AA-DN2	↻ 2NC	<b>R</b> NF B020AB-DN2	↻ 2NC	<b>R</b> NF B020AC-DN2	↻ 2NC	<b>R</b> NF B020AE-DN2	↻ 2NC
B12	<b>R</b> NF B120AA-DN2	↻ 1NO+2NC	<b>R</b> NF B120AB-DN2	↻ 1NO+2NC	<b>R</b> NF B120AC-DN2	↻ 1NO+2NC	<b>R</b> NF B120AE-DN2	↻ 1NO+2NC
B22	<b>R</b> NF B220AA-DN2	↻ 2NO+2NC	<b>R</b> NF B220AB-DN2	↻ 2NO+2NC	<b>R</b> NF B220AC-DN2	↻ 2NO+2NC	<b>R</b> NF B220AE-DN2	↻ 2NO+2NC
G11	<b>L</b> NF G110AA-DN2	↻ 1NO+1NC	<b>L</b> NF G110AB-DN2	↻ 1NO+1NC	<b>L</b> NF G110AC-DN2	↻ 1NO+1NC	<b>L</b> NF G110AE-DN2	↻ 1NO+1NC
G02	<b>L</b> NF G020AA-DN2	↻ 2NC	<b>L</b> NF G020AB-DN2	↻ 2NC	<b>L</b> NF G020AC-DN2	↻ 2NC	<b>L</b> NF G020AE-DN2	↻ 2NC
G12	<b>L</b> NF G120AA-DN2	↻ 1NO+2NC	<b>L</b> NF G120AB-DN2	↻ 1NO+2NC	<b>L</b> NF G120AC-DN2	↻ 1NO+2NC	<b>L</b> NF G120AE-DN2	↻ 1NO+2NC
G22	<b>L</b> NF G220AA-DN2	↻ 2NO+2NC	<b>L</b> NF G220AB-DN2	↻ 2NO+2NC	<b>L</b> NF G220AC-DN2	↻ 2NO+2NC	<b>L</b> NF 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	

		With external rubber gasket		With stainless steel roller on request		With stainless steel roller on request		
Contact blocks								
B11	<b>R</b> NF B110BB-DN2	↻ 1NO+1NC	<b>R</b> NF B110BE-DN2	↻ 1NO+1NC	<b>R</b> NF B110CB-DN2	↻ 1NO+1NC	<b>R</b> NF B110CH-DN2	↻ 1NO+1NC
B02	<b>R</b> NF B020BB-DN2	↻ 2NC	<b>R</b> NF B020BE-DN2	↻ 2NC	<b>R</b> NF B020CB-DN2	↻ 2NC	<b>R</b> NF B020CH-DN2	↻ 2NC
B12	<b>R</b> NF B120BB-DN2	↻ 1NO+2NC	<b>R</b> NF B120BE-DN2	↻ 1NO+2NC	<b>R</b> NF B120CB-DN2	↻ 1NO+2NC	<b>R</b> NF B120CH-DN2	↻ 1NO+2NC
B22	<b>R</b> NF B220BB-DN2	↻ 2NO+2NC	<b>R</b> NF B220BE-DN2	↻ 2NO+2NC	<b>R</b> NF B220CB-DN2	↻ 2NO+2NC	<b>R</b> NF B220CH-DN2	↻ 2NO+2NC
G11	<b>L</b> NF G110BB-DN2	↻ 1NO+1NC	<b>L</b> NF G110BE-DN2	↻ 1NO+1NC	<b>L</b> NF G110CB-DN2	↻ 1NO+1NC	<b>L</b> NF G110CH-DN2	↻ 1NO+1NC
G02	<b>L</b> NF G020BB-DN2	↻ 2NC	<b>L</b> NF G020BE-DN2	↻ 2NC	<b>L</b> NF G020CB-DN2	↻ 2NC	<b>L</b> NF G020CH-DN2	↻ 2NC
G12	<b>L</b> NF G120BB-DN2	↻ 1NO+2NC	<b>L</b> NF G120BE-DN2	↻ 1NO+2NC	<b>L</b> NF G120CB-DN2	↻ 1NO+2NC	<b>L</b> NF G120CH-DN2	↻ 1NO+2NC
G22	<b>L</b> NF G220BB-DN2	↻ 2NO+2NC	<b>L</b> NF G220BE-DN2	↻ 2NO+2NC	<b>L</b> NF G220CB-DN2	↻ 2NO+2NC	<b>L</b> NF 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	

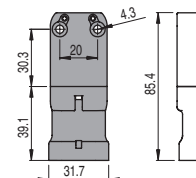
M12 connector output from right



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: 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:	No switching		Switching		Fixed only by threaded head		Fixed only by threaded head With external rubber gasket		
	<b>R</b> = snap action	<b>L</b> = slow action							
Contact blocks									
B11	<b>R</b>	NF B110CP-DN2	⊕ 1NO+1NC	NF B110CV-DN2	⊕ 1NO+1NC	NF B110EB-DN2	⊕ 1NO+1NC	NF B110EE-DN2	⊕ 1NO+1NC
B02	<b>R</b>	NF B020CP-DN2	⊕ 2NC	NF B020CV-DN2	⊕ 2NC	NF B020EB-DN2	⊕ 2NC	NF B020EE-DN2	⊕ 2NC
B12	<b>R</b>	NF B120CP-DN2	⊕ 1NO+2NC	NF B120CV-DN2	⊕ 1NO+2NC	NF B120EB-DN2	⊕ 1NO+2NC	NF B120EE-DN2	⊕ 1NO+2NC
B22	<b>R</b>	NF B220CP-DN2	⊕ 2NO+2NC	NF B220CV-DN2	⊕ 2NO+2NC	NF B220EB-DN2	⊕ 2NO+2NC	NF B220EE-DN2	⊕ 2NO+2NC
G11	<b>L</b>	NF G110CP-DN2	⊕ 1NO+1NC	NF G110CV-DN2	⊕ 1NO+1NC	NF G110EB-DN2	⊕ 1NO+1NC	NF G110EE-DN2	⊕ 1NO+1NC
G02	<b>L</b>	NF G020CP-DN2	⊕ 2NC	NF G020CV-DN2	⊕ 2NC	NF G020EB-DN2	⊕ 2NC	NF G020EE-DN2	⊕ 2NC
G12	<b>L</b>	NF G120CP-DN2	⊕ 1NO+2NC	NF G120CV-DN2	⊕ 1NO+2NC	NF G120EB-DN2	⊕ 1NO+2NC	NF G120EE-DN2	⊕ 1NO+2NC
G22	<b>L</b>	NF G220CP-DN2	⊕ 2NO+2NC	NF G220CV-DN2	⊕ 2NO+2NC	NF G220EB-DN2	⊕ 2NO+2NC	NF 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	<b>R</b>	NF B110FB-DN2	⊕ 1NO+1NC	NF B110GB-DN2	⊕ 1NO+1NC	NF B110HB-DN2	1NO+1NC	NF B110HE-DN2	1NO+1NC
B02	<b>R</b>	NF B020FB-DN2	⊕ 2NC	NF B020GB-DN2	⊕ 2NC	NF B020HB-DN2	2NC	NF B020HE-DN2	2NC
B12	<b>R</b>	NF B120FB-DN2	⊕ 1NO+2NC	NF B120GB-DN2	⊕ 1NO+2NC	NF B120HB-DN2	1NO+2NC	NF B120HE-DN2	1NO+2NC
B22	<b>R</b>	NF B220FB-DN2	⊕ 2NO+2NC	NF B220GB-DN2	⊕ 2NO+2NC	NF B220HB-DN2	2NO+2NC	NF B220HE-DN2	2NO+2NC
G11	<b>L</b>	NF G110FB-DN2	⊕ 1NO+1NC	NF G110GB-DN2	⊕ 1NO+1NC	NF G110HB-DN2	1NO+1NC	NF G110HE-DN2	1NO+1NC
G02	<b>L</b>	NF G020FB-DN2	⊕ 2NC	NF G020GB-DN2	⊕ 2NC	NF G020HB-DN2	2NC	NF G020HE-DN2	2NC
G12	<b>L</b>	NF G120FB-DN2	⊕ 1NO+2NC	NF G120GB-DN2	⊕ 1NO+2NC	NF G120HB-DN2	1NO+2NC	NF G120HE-DN2	1NO+2NC
G22	<b>L</b>	NF G220FB-DN2	⊕ 2NO+2NC	NF G220GB-DN2	⊕ 2NO+2NC	NF G220HB-DN2	2NO+2NC	NF 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

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



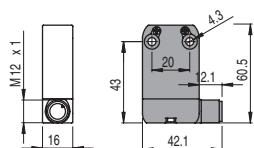
Contacts type:

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

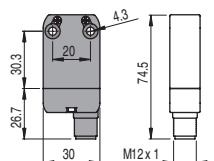
	With external rubber gasket	With stainless steel roller on request	With stainless steel roller on request	With stainless steel roller on request
Diagram				
Contact blocks				
B11	<b>R</b> NF B110HH-DN2 1NO+1NC	NF B112KA-DN2 $\rightarrow$ 1NO+1NC	NF B112KB-DN2 $\rightarrow$ 1NO+1NC	NF B112KC-DN2 $\rightarrow$ 1NO+1NC
B02	<b>R</b> NF B020HH-DN2 2NC	NF B022KA-DN2 $\rightarrow$ 2NC	NF B022KB-DN2 $\rightarrow$ 2NC	NF B022KC-DN2 $\rightarrow$ 2NC
B12	<b>R</b> NF B120HH-DN2 1NO+2NC	NF B122KA-DN2 $\rightarrow$ 1NO+2NC	NF B122KB-DN2 $\rightarrow$ 1NO+2NC	NF B122KC-DN2 $\rightarrow$ 1NO+2NC
B22	<b>R</b> NF B220HH-DN2 2NO+2NC	NF B222KA-DN2 $\rightarrow$ 2NO+2NC	NF B222KB-DN2 $\rightarrow$ 2NO+2NC	NF B222KC-DN2 $\rightarrow$ 2NO+2NC
G11	<b>L</b> NF G110HH-DN2 1NO+1NC	NF G112KA-DN2 $\rightarrow$ 1NO+1NC	NF G112KB-DN2 $\rightarrow$ 1NO+1NC	NF G112KC-DN2 $\rightarrow$ 1NO+1NC
G02	<b>L</b> NF G020HH-DN2 2NC	NF G022KA-DN2 $\rightarrow$ 2NC	NF G022KB-DN2 $\rightarrow$ 2NC	NF G022KC-DN2 $\rightarrow$ 2NC
G12	<b>L</b> NF G120HH-DN2 1NO+2NC	NF G122KA-DN2 $\rightarrow$ 1NO+2NC	NF G122KB-DN2 $\rightarrow$ 1NO+2NC	NF G122KC-DN2 $\rightarrow$ 1NO+2NC
G22	<b>L</b> NF G220HH-DN2 2NO+2NC	NF G222KA-DN2 $\rightarrow$ 2NO+2NC	NF G222KB-DN2 $\rightarrow$ 2NO+2NC	NF G222KC-DN2 $\rightarrow$ 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 $\rightarrow$ )	0,07 Nm (0,25 Nm $\rightarrow$ )	0,07 Nm (0,25 Nm $\rightarrow$ )
Travel diagrams	page 6/10 - group 4	page 6/10 - group 5	page 6/10 - group 5	page 6/10 - group 5

	With stainless steel roller on request	With stainless steel roller on request	With stainless steel roller on request	With stainless steel roller on request
Diagram				
Contact blocks				
B11	<b>R</b> NF B112KD-DN2 $\rightarrow$ 1NO+1NC	NF B112KE-DN2 $\rightarrow$ 1NO+1NC	NF B112KF-DN2 $\rightarrow$ 1NO+1NC	NF B112KG-DN2 $\rightarrow$ 1NO+1NC
B02	<b>R</b> NF B022KD-DN2 $\rightarrow$ 2NC	NF B022KE-DN2 $\rightarrow$ 2NC	NF B022KF-DN2 $\rightarrow$ 2NC	NF B022KG-DN2 $\rightarrow$ 2NC
B12	<b>R</b> NF B122KD-DN2 $\rightarrow$ 1NO+2NC	NF B122KE-DN2 $\rightarrow$ 1NO+2NC	NF B122KF-DN2 $\rightarrow$ 1NO+2NC	NF B122KG-DN2 $\rightarrow$ 1NO+2NC
B22	<b>R</b> NF B222KD-DN2 $\rightarrow$ 2NO+2NC	NF B222KE-DN2 $\rightarrow$ 2NO+2NC	NF B222KF-DN2 $\rightarrow$ 2NO+2NC	NF B222KG-DN2 $\rightarrow$ 2NO+2NC
G11	<b>L</b> NF G112KD-DN2 $\rightarrow$ 1NO+1NC	NF G112KE-DN2 $\rightarrow$ 1NO+1NC	NF G112KF-DN2 $\rightarrow$ 1NO+1NC	NF G112KG-DN2 $\rightarrow$ 1NO+1NC
G02	<b>L</b> NF G022KD-DN2 $\rightarrow$ 2NC	NF G022KE-DN2 $\rightarrow$ 2NC	NF G022KF-DN2 $\rightarrow$ 2NC	NF G022KG-DN2 $\rightarrow$ 2NC
G12	<b>L</b> NF G122KD-DN2 $\rightarrow$ 1NO+2NC	NF G122KE-DN2 $\rightarrow$ 1NO+2NC	NF G122KF-DN2 $\rightarrow$ 1NO+2NC	NF G122KG-DN2 $\rightarrow$ 1NO+2NC
G22	<b>L</b> NF G222KD-DN2 $\rightarrow$ 2NO+2NC	NF G222KE-DN2 $\rightarrow$ 2NO+2NC	NF G222KF-DN2 $\rightarrow$ 2NO+2NC	NF G222KG-DN2 $\rightarrow$ 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 $\rightarrow$ )	0,07 Nm (0,25 Nm $\rightarrow$ )	0,07 Nm (0,25 Nm $\rightarrow$ )	0,07 Nm (0,25 Nm $\rightarrow$ )
Travel diagrams	page 6/10 - group 5	page 6/10 - group 5	page 6/10 - group 5	page 6/10 - group 5

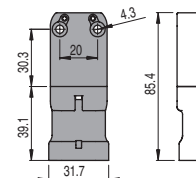
M12 connector output from right



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: NA B110AA-DN2  $\rightarrow$  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  $\rightarrow$  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  $\rightarrow$  NA B110AA-SAK



Contacts type:	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		
	<b>R</b> = snap action <b>L</b> = slow action								
Contact blocks									
B11	<b>R</b>	NF B112KH-DN2	⊕ 1NO+1NC	NF B112KP-DN2	⊕ 1NO+1NC	NF B112LB-DN2	1NO+1NC	NF B112LE-DN2	1NO+1NC
B02	<b>R</b>	NF B022KH-DN2	⊕ 2NC	NF B022KP-DN2	⊕ 2NC	NF B022LB-DN2	2NC	NF B022LE-DN2	2NC
B12	<b>R</b>	NF B122KH-DN2	⊕ 1NO+2NC	NF B122KP-DN2	⊕ 1NO+2NC	NF B122LB-DN2	1NO+2NC	NF B122LE-DN2	1NO+2NC
B22	<b>R</b>	NF B222KH-DN2	⊕ 2NO+2NC	NF B222KP-DN2	⊕ 2NO+2NC	NF B222LB-DN2	2NO+2NC	NF B222LE-DN2	2NO+2NC
G11	<b>L</b>	NF G112KH-DN2	⊕ 1NO+1NC	NF G112KP-DN2	⊕ 1NO+1NC	NF G112LB-DN2	1NO+1NC	NF G112LE-DN2	1NO+1NC
G02	<b>L</b>	NF G022KH-DN2	⊕ 2NC	NF G022KP-DN2	⊕ 2NC	NF G022LB-DN2	2NC	NF G022LE-DN2	2NC
G12	<b>L</b>	NF G122KH-DN2	⊕ 1NO+2NC	NF G122KP-DN2	⊕ 1NO+2NC	NF G122LB-DN2	1NO+2NC	NF G122LE-DN2	1NO+2NC
G22	<b>L</b>	NF G222KH-DN2	⊕ 2NO+2NC	NF G222KP-DN2	⊕ 2NO+2NC	NF G222LB-DN2	2NO+2NC	NF 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	

Contacts type:	Fiber glass rod		Fiber glass rod						
	<b>R</b> = snap action <b>L</b> = slow action								
Contact blocks									
B11	<b>R</b>	NF B112LH-DN2	1NO+1NC	NF B112LL-DN2	1NO+1NC				
B02	<b>R</b>	NF B022LH-DN2	2NC	NF B022LL-DN2	2NC				
B12	<b>R</b>	NF B122LH-DN2	1NO+2NC	NF B122LL-DN2	1NO+2NC				
B22	<b>R</b>	NF B222LH-DN2	2NO+2NC	NF B222LL-DN2	2NO+2NC				
G11	<b>L</b>	NF G112LH-DN2	1NO+1NC	NF G112LL-DN2	1NO+1NC				
G02	<b>L</b>	NF G022LH-DN2	2NC	NF G022LL-DN2	2NC				
G12	<b>L</b>	NF G122LH-DN2	1NO+2NC	NF G122LL-DN2	1NO+2NC				
G22	<b>L</b>	NF G222LH-DN2	2NO+2NC	NF 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

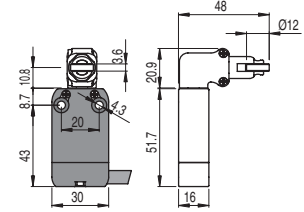
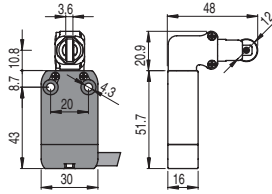
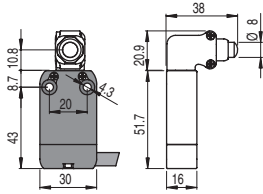
Article	Description
VN DT1F	Spacers for NA-NF series
	By interposing spacers between the switches, it is possible to join two or more prewired switches, preventing them from moving one against the other. <b>10 pcs</b> packs

Article	Description
VF CA***M	Female wired connectors
	<b>General data:</b> - 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 <b>See page 5/2</b>

Items with code on the green background are available in stock

Contacts type:

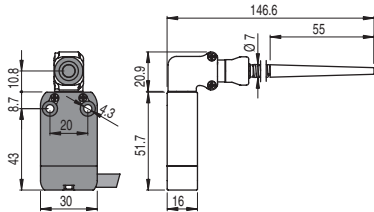
- R** = snap action
- L** = slow action



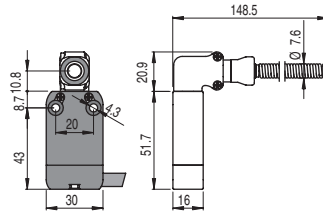
Contact blocks

B11	<b>R</b>	NF B110AB-DN2W5	⊕ 1NO+1NC	NF B110BB-DN2H0W5	⊕ 1NO+1NC	NF B110BB-DN2W5	⊕ 1NO+1NC
B02	<b>R</b>	NF B020AB-DN2W5	⊕ 2NC	NF B020BB-DN2H0W5	⊕ 2NC	NF B020BB-DN2W5	⊕ 2NC
B12	<b>R</b>	NF B120AB-DN2W5	⊕ 1NO+2NC	NF B120BB-DN2H0W5	⊕ 1NO+2NC	NF B120BB-DN2W5	⊕ 1NO+2NC
B22	<b>R</b>	NF B220AB-DN2W5	⊕ 2NO+2NC	NF B220BB-DN2H0W5	⊕ 2NO+2NC	NF B220BB-DN2W5	⊕ 2NO+2NC
G11	<b>L</b>	NF G110AB-DN2W5	⊕ 1NO+1NC	NF G110BB-DN2H0W5	⊕ 1NO+1NC	NF G110BB-DN2W5	⊕ 1NO+1NC
G02	<b>L</b>	NF G020AB-DN2W5	⊕ 2NC	NF G020BB-DN2H0W5	⊕ 2NC	NF G020BB-DN2W5	⊕ 2NC
G12	<b>L</b>	NF G120AB-DN2W5	⊕ 1NO+2NC	NF G120BB-DN2H0W5	⊕ 1NO+2NC	NF G120BB-DN2W5	⊕ 1NO+2NC
G22	<b>L</b>	NF G220AB-DN2W5	⊕ 2NO+2NC	NF G220BB-DN2H0W5	⊕ 2NO+2NC	NF 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	

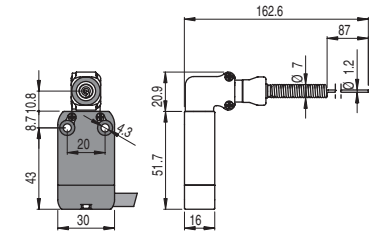
With external rubber gasket



With external rubber gasket



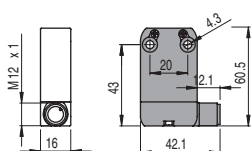
With external rubber gasket



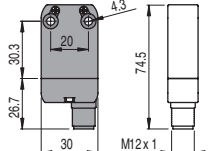
Contact blocks

B11	<b>R</b>	NF B110HB-DN2W5	1NO+1NC	NF B110HE-DN2W5	1NO+1NC	NF B110HH-DN2W5	1NO+1NC
B02	<b>R</b>	NF B020HB-DN2W5	2NC	NF B020HE-DN2W5	2NC	NF B020HH-DN2W5	2NC
B12	<b>R</b>	NF B120HB-DN2W5	1NO+2NC	NF B120HE-DN2W5	1NO+2NC	NF B120HH-DN2W5	1NO+2NC
B22	<b>R</b>	NF B220HB-DN2W5	2NO+2NC	NF B220HE-DN2W5	2NO+2NC	NF B220HH-DN2W5	2NO+2NC
G11	<b>L</b>	NF G110HB-DN2W5	1NO+1NC	NF G110HE-DN2W5	1NO+1NC	NF G110HH-DN2W5	1NO+1NC
G02	<b>L</b>	NF G020HB-DN2W5	2NC	NF G020HE-DN2W5	2NC	NF G020HH-DN2W5	2NC
G12	<b>L</b>	NF G120HB-DN2W5	1NO+2NC	NF G120HE-DN2W5	1NO+2NC	NF G120HH-DN2W5	1NO+2NC
G22	<b>L</b>	NF G220HB-DN2W5	2NO+2NC	NF G220HE-DN2W5	2NO+2NC	NF 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	

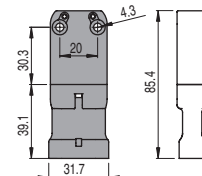
M12 connector output from right



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:  
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 AMP connector output from bottom** substitute on above mentioned codes DN2 with SAK. Example:  
NA B110AA-DN2 → NA B110AA-SAK



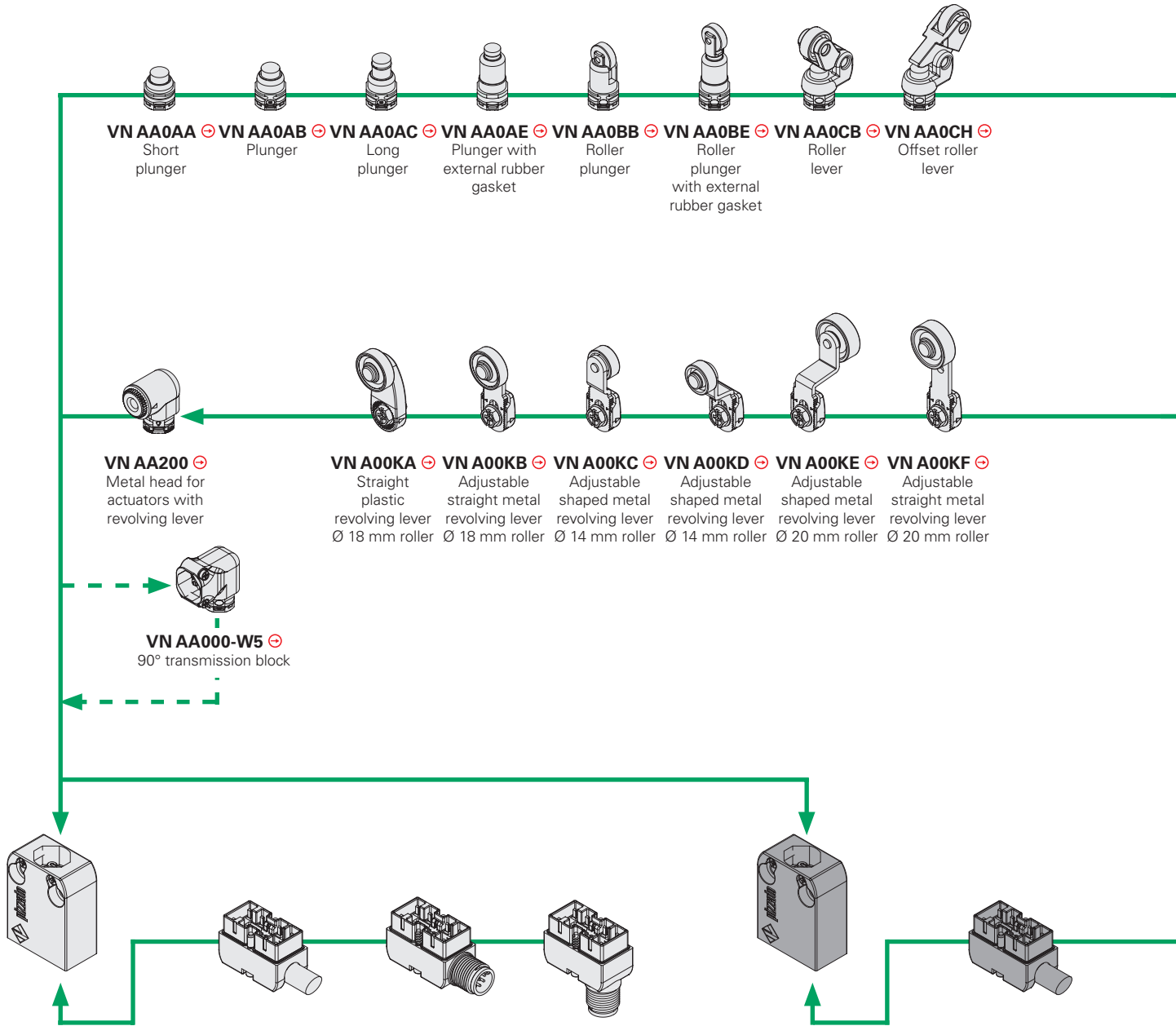
# Notes

Horizontal lines for writing notes

Grid area for writing notes

- 1
- 1A
- 1B
- 2
- 2A
- 2B
- 2C**
- 2D
- 2E
- 3
- 3A
- 3B
- 3C
- 4
- 4A
- 4B
- 4C
- 4D
- 4E
- 4F
- 4G
- 4H
- 5
- 6

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



METAL housing NA 20 mm holes interaxes	
NA B11000	⊕ 1NO+1NC [R]
NA G11000	⊕ 1NO+1NC [L]
NA L11000	⊕ 1NO+1NC [LA]
NA H11000	⊕ 1NO+1NC [LO]
NA B02000	⊕ 2NC [R]
NA G02000	⊕ 2NC [L]
NA B12000	⊕ 1NO+2NC [R]
NA G12000	⊕ 1NO+2NC [L]
NA L12000	⊕ 1NO+2NC [LA]
NA H12000	⊕ 1NO+2NC [LO]
NA B22000	⊕ 2NO+2NC [R]
NA G22000	⊕ 2NO+2NC [L]
NA L22000	⊕ 2NO+2NC [LA]
NA H22000	⊕ 2NO+2NC [LO]

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

M12 metal connector from right
VN CM11DMK
VN CM02DMK
VN CM12DMK
VN CM22DMK

M12 metal connector from bottom,
VN CM11SMK
VN CM02SMK
VN CM12SMK
VN CM22SMK

POLYMER housing NF 20 mm holes interaxes	
NF B11000	⊕ 1NO+1NC [R]
NF G11000	⊕ 1NO+1NC [L]
NF L11000	⊕ 1NO+1NC [LA]
NF H11000	⊕ 1NO+1NC [LO]
NF B02000	⊕ 2NC [R]
NF G02000	⊕ 2NC [L]
NF B12000	⊕ 1NO+2NC [R]
NF G12000	⊕ 1NO+2NC [L]
NF L12000	⊕ 1NO+2NC [LA]
NF H12000	⊕ 1NO+2NC [LO]
NF B22000	⊕ 2NO+2NC [R]
NF G22000	⊕ 2NO+2NC [L]
NF L22000	⊕ 2NO+2NC [LA]
NF H22000	⊕ 2NO+2NC [LO]

Polymer connectors with cable	cable length(m)
VN CP11DN2	2
VN CP11DN5	5
VN CP02DN2	2
VN CP02DN5	5
VN CP12DN2	2
VN CP12DN5	5
VN CP22DN2	2
VN CP22DN5	5

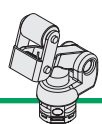
Contacts type:  
 [R] = snap action  
 [L] = slow action  
 [LO] = slow action overlapped  
 [LA] = slow action closer

Forbidden to install metal connector on polymer housing

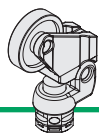
Forbidden to install polymer connector on metal housing



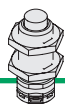
- 1
- 1A
- 1B
- 2
- 2A
- 2B
- 2C
- 2D
- 2E
- 3
- 3A
- 3B
- 3C
- 4
- 4A
- 4B
- 4C
- 4D
- 4E
- 4F
- 4G
- 4H
- 5
- 6



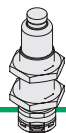
**VN AA0CP** ⊕  
Unidirectional roller lever



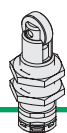
**VN AA0CV** ⊕  
Adjustable offset roller lever



**VN AA0EB** ⊕  
Plunger with M12 threaded bearing



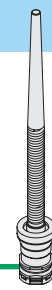
**VN AA0EE** ⊕  
Plunger with M12 threaded bearing and external rubber gasket



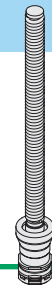
**VN AA0FB** ⊕  
Plunger with roller and M12 threaded bearing



**VN AA0GB** ⊕  
Plunger with Ø 6 mm sphere



**VN AA0HB**  
Spring rod with plastic pin



**VN AA0HE**  
Spring rod



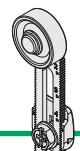
**VN AA0HH**  
Spring rod with cat's whisker



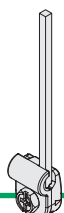
**VN A00KG** ⊕  
Adjustable shaped metal revolving lever Ø 20 mm roller



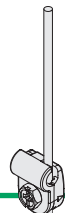
**VN A00KH** ⊕  
Adjustable shaped metal revolving lever Ø 20 mm roller



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



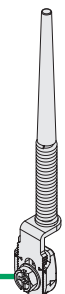
**VN A00LB**  
Metal revolving lever with adjustable square stainless steel rod 3x3x125



**VN A00LE**  
Metal revolving lever with adjustable stainless steel rod Ø3x125



**VN A00LH**  
Metal revolving lever with adjustable fiber glass rod Ø6x200



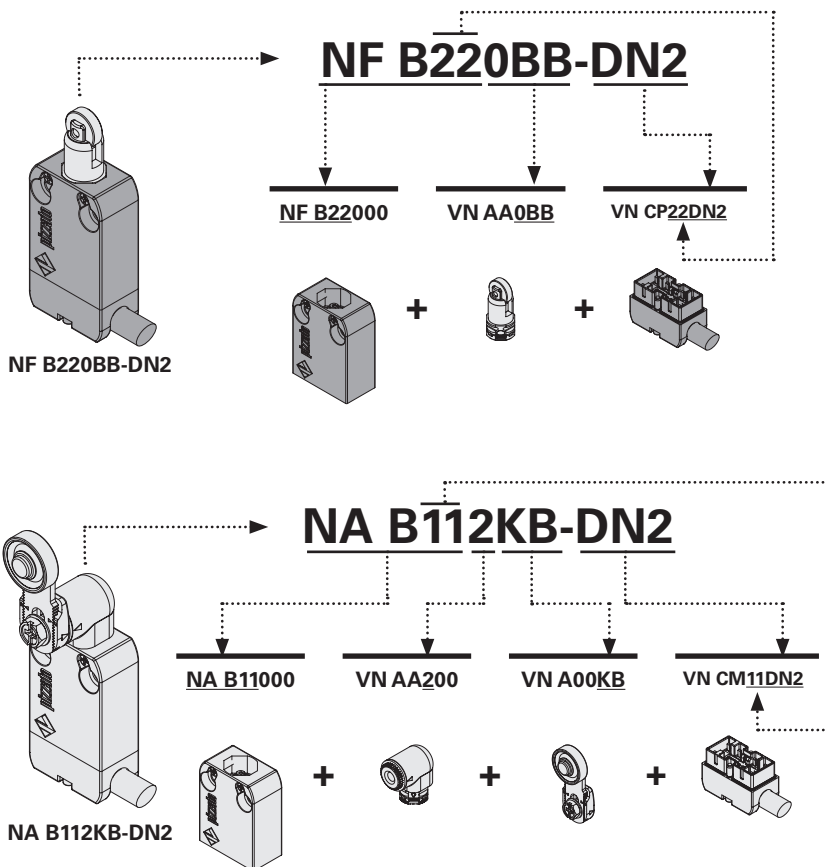
**VN A00LL**  
Metal revolving lever with flexible adjustable rod

**⚠ 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 ⊕**

**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 CP22DMK ↔	↔ VN CP22SMK ↔	



Housings

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

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

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

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	H
VN CM22DN5 2NO+2NC	5	
VN CM11DH2 1NO+1NC	2	
VN CM11DH5 1NO+1NC	5	
VN CM12DH2 1NO+2NC	2	
VN CM12DH5 1NO+2NC	5	

other cable lengths on request

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