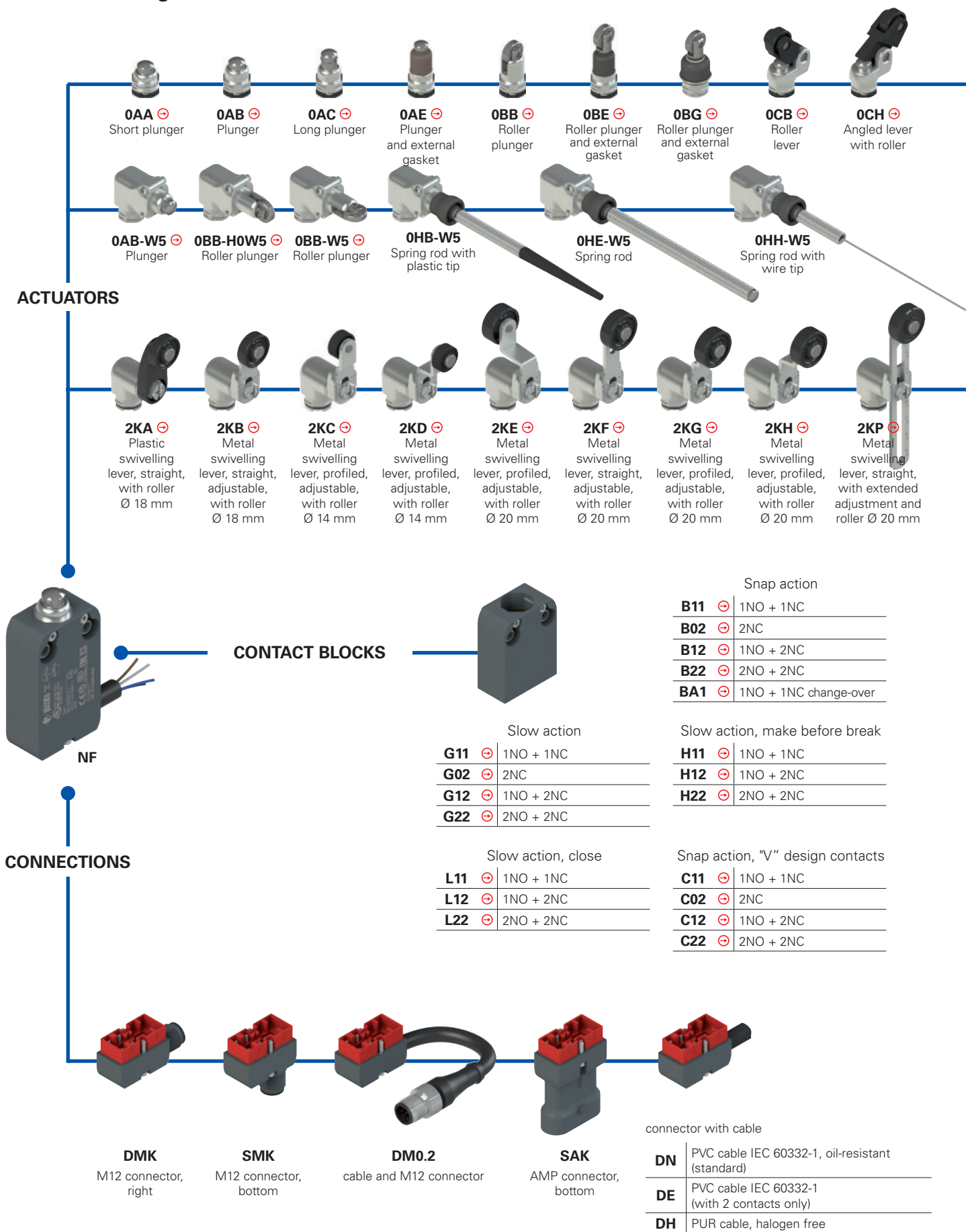
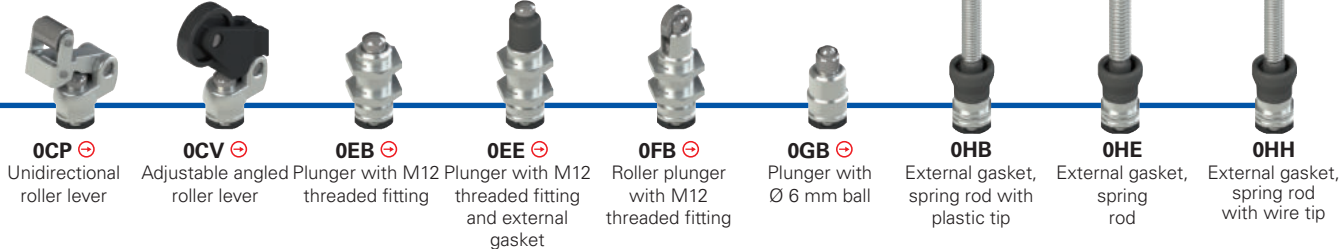
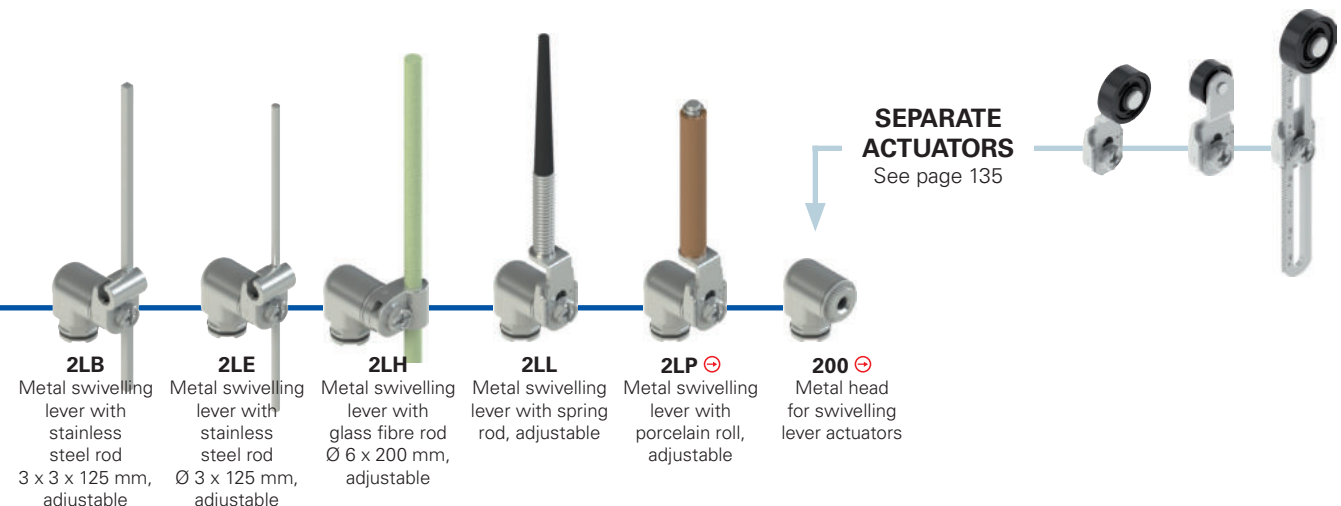


Selection diagram for item combinations of the NF series





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



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

SEPARATE ACTUATORS
See page 135



Code structure

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

article options
NF B110AB-DN2 GR7T6W5

Housing
NF technopolymer, hole spacing 20 mm

Contact block	
B11	1NO+1NC, snap action (standard)
B02	2NC, snap action (standard)
B12	1NO+2NC, snap action (standard)
B22	2NO+2NC, snap action (standard)
BA1	1NO+1NC, snap action, change-over (available with M connector only)
C11	1NO+1NC, snap action, "V" design contacts
C02	2NC, snap action, "V" design contacts
C12	1NO+2NC, snap action, "V" design contacts
C22	2NO+2NC, snap action, "V" design contacts
G11	1NO+1NC, slow action (standard)
G02	2NC, slow action (standard)
G12	1NO+2NC, slow action (standard)
G22	2NO+2NC, slow action
H11	1NO+1NC, slow action, make before break
H12	1NO+2NC, slow action, make before break
H22	2NO+2NC, slow action, make before break
L11	1NO+1NC, slow action, close
L12	1NO+2NC, slow action, close
L22	2NO+2NC, slow action, close

Other contact blocks on request.

Actuator heads	
0	without head
2	head for swivelling lever actuators

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

Output direction	
D	cable or connector, right
S	connector, bottom

Redirection	
	without redirection
W5	90° redirection

Ambient temperature	
	-25°C ... +80°C (standard)
T6	-40°C ... +80°C

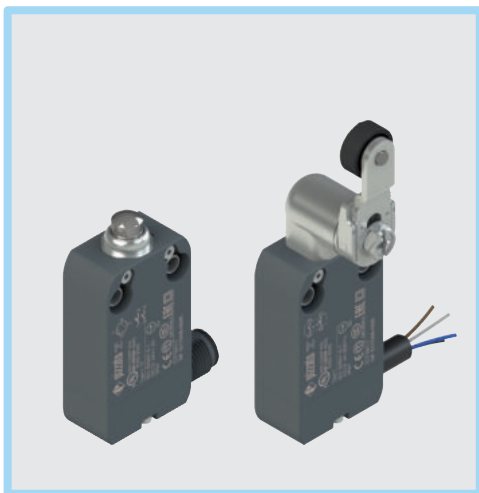
Rollers	
	standard roller
R30	Steel, with self-lubrication, Ø 10.6 mm
R44	316L stainless steel, Ø 12 mm
R29	Steel, with self-lubrication, Ø 13 mm
R18	technopolymer, Ø 14 mm
R23	Steel, with self-lubrication, Ø 14 mm
R43	316L stainless steel, Ø 14 mm
R36	Steel, with self-lubrication, Ø 16 mm
R7	technopolymer, Ø 18 mm
R22	technopolymer, Ø 20 mm
R24	Steel, with self-lubrication, Ø 20 mm
R41	316L stainless steel, Ø 20 mm
R19	technopolymer, Ø 22 mm
R25	technopolymer, Ø 35 mm

Contact type	
	silver contacts (standard)
G	silver contacts with 1 µm gold coating ⁽¹⁾

⁽¹⁾ Not available for contact block C••

Connection type	
0.2	cable, length: 0.2 m with M12 connector (available for DM0.2 versions only)
2	cable, length: 2 m (standard)
5	cable, length 5 m (other cable lengths available on request)
K	integrated connector

Cable or connector type	
N	PVC cable IEC 60332-1, oil-resistant (standard)
E	PVC cable IEC 60332-1 (with 2 contacts only)
H	PUR cable, halogen free
M	M12 connector
A	AMP Superseal 1.5 connector



Main features

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

Quality marks:



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

Technical data

Housing

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

Versions with integrated cable, standard length 2 m. Other lengths 0.5 ... 10 m or special cables available on request.

Versions with integrated M12 connector.

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

Protection degree:	IP67 acc. to EN 60529
	IP69K acc. to ISO 20653 (Protect the cables from direct high-pressure and high-temperature jets)

Corrosion resistance in saline mist:	≥ 300 hours in NSS acc. to ISO 9227
--------------------------------------	-------------------------------------

General data

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

Ambient temperature for switches with cable: See table on page 128

Max. actuation frequency: 3600 operating cycles/hour

Mechanical endurance:

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

• C•• contact block: 5 million operating cycles

Mounting position: any

Safety parameter B_{10D} :

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

• C•• contact block: 10,000,000 for NC contacts

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

Tightening torques for installation: see page 235

Electrical data

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

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

Pollution degree: 3

In compliance with standards:

IEC 60947-5-1, EN 60947-5-1, IEC 60204-1, EN 60204-1, EN ISO 14119, EN ISO 12100, EN 60529, EN IEC 63000, ISO 20653, UL 508, CSA C22.2 No. 14.

Compliance with the requirements of:

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

RoHS Directive 2011/65/EU.

Positive contact opening in conformity with standards:

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

⚠ Installation for safety applications:

Use only switches marked with the ☹ symbol beside the product code. Always connect the safety circuit to the **NC contacts** (normally closed contacts: see "Internal cable wiring" on page 128) as required by **EN ISO 14119, paragraph 5.4** for specific interlock applications and **EN ISO 13849-2 tables D3** (well-ried components) and **D.8** (fault exclusions) for safety applications in general. Actuate the switch **at least up to the positive opening travel** shown in the travel diagrams on page 236. Actuate the switch **at least with the positive opening force**, reported in brackets below each article, next to the actuating force value. All applicable standards must be respected too.

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

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

Features approved by IMQ

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

Forms of the contact element: X, Y, X+Y, X+X, Y+Y, Y+Y+X, X+X+Y, X+X+Y+Y, Zb
Positive opening of contacts on contact blocks B01, B11, B02, B12, B21, B22, G01, G11, G02, G12, G21, G22, L01, L11, L02, L12, L21, L22, H01, H11, H02, H12, H21, H22

In compliance with standards: EN 60947-1, EN 60947-5-1, fundamental requirements of the Low Voltage Directive 2014/35/EU.

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

Features approved by UL

Electrical Ratings:	R300 pilot duty (28 VA, 125 250 Vdc) B300 pilot duty (360 VA, 120 240 Vac) (1 cont.) B300 pilot duty (360 VA, 120 240 Vac) (2 - 3 cont. without connector) C300 pilot duty (180 VA, 120 240 Vac) (2 - 3 cont. with connector) C300 pilot duty (180 VA, 120 240 Vac) (4 cont.)
Environmental Ratings:	Types 1, 4X, 6, 12, 13 Types 1, 4X "indoor use only" (1 - 2 cont. with "E" type cable)
Screws torque of the detachable connector housing nominal is	0.2 ÷ 0.3 Nm.

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

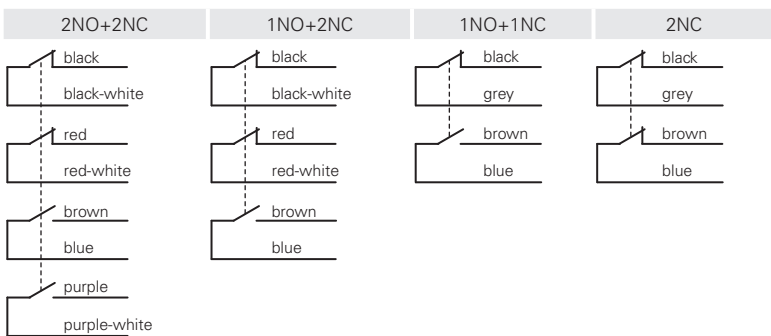


Ambient temperatures for switches with cable and electrical data

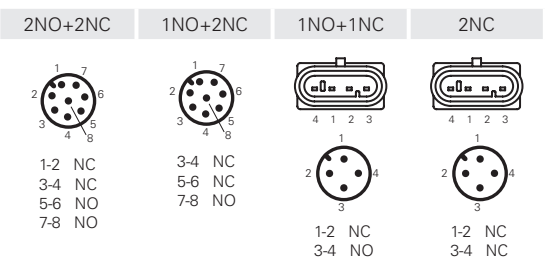
Connection type	Output with cable						Output with M12 connector		Output with AMP connector
	2 contacts			3 contacts	4 contacts		2 contacts	3 or 4 contacts	2 contacts
	E	N	H	N	N	H	M12 connector, 4-pole	M12 connector, 8-pole	AMP Superseal 1.5 connector
Conductors	4x0.75 mm ²	4x0.75 mm ²	4x0.75 mm ²	6x0.5 mm ²	8x0.34 mm ²	8x0.34 mm ²	4x0.34 mm ²	8x0.25mm ²	
Application field	General	General	General, mobile installation	General	General	General, mobile installation	General	General	General
In compliance with standards	H05VV-F	05VV5-F	05EQ-H	03VV-F	03VV-F	03E7Q-H	03VV-H	03VV-H	/
Sheath	PVC	PVC OIL RESISTANT	PUR HALOGEN FREE	PVC OIL RESISTANT	PVC OIL RESISTANT	PUR HALOGEN FREE	PVC OIL RESISTANT	PVC OIL RESISTANT	/
Self-extinguishing	IEC 60332-1-2	IEC 60332-1-2 UL 758:FT1 CEI 20-22 II	IEC60332-1-2 UL 758:FT1	IEC 60332-1-2 UL 758:FT1 CEI 20-22 II	IEC 60332-1-2 UL 758:FT1 CEI 20-22 II	IEC 60332-1-2 UL 758:FT1	IEC60332-1-2 UL 758:FT1 CEI 20-22 II	IEC60332-1-2 UL 758:FT1 CEI 20-22 II	/
Oil resistant	/	UL 758 CSA 22.2 N°210	UL 758 CSA 22.2 N°210	UL 758 CSA 22.2 N°210	UL 758 CSA 22.2 N°210	UL 758 CSA 22.2 N°210	UL 758 CSA 22.2 N°210	UL 758 CSA 22.2 N°210	/
Max. speed	/	/	300 m/min	/	/	300 m/min	50 m/min	50 m/min	/
Max. acceleration	/	/	30 m/s ²	/	/	30 m/s ²	5 m/s ²	5 m/s ²	/
Minimum bending radius	70 mm	70 mm	70 mm	108 mm	108 mm	70 mm	75 mm	90 mm	/
Outer diameter	7 mm	7 mm	7 mm	7 mm	7 mm	7 mm	6 mm	6 mm	/
End stripped	80mm	80mm	80mm	80mm	80mm	80mm	/	/	/
Copper conductors IEC 60228	Class 5	Class 5	Class 6	Class 5	Class 5	Class 6	Class 6	Class 6	/
Engraving	Standard	6266	6279	6272	6276	6283	6263	6275	/

Ambient temperature with cable extended (T6)	Cable, fixed installation	-15°C +60°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	/
	Cable, flexible installation	+5°C +60°C	-5°C +80°C	-25°C +80°C	-5°C +80°C	-5°C +80°C	-25°C +80°C	-15°C +80°C	-15°C +80°C	/
	Cable, mobile installation	/	/	-25°C +80°C	/	/	-25°C +80°C	-15°C +80°C	-15°C +80°C	/
	Cable, fixed installation	/	/	-40°C +80°C	/	/	-40°C +80°C	/	/	/
	Cable, flexible installation	/	/	-40°C +80°C	/	/	-40°C +80°C	/	/	/
	Cable, mobile installation	/	/	-40°C +80°C	/	/	-40°C +80°C	/	/	/
Electrical data	Thermal current I _{th}	10 A	10 A	10 A	6 A	3 A	3 A	4 A	2 A	10 A
	Rated insulation voltage U _i	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac 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	3 A 500 V type gG	3 A 500 V type gG	4 A 500 V type gG	2 A 500 V type gG	10 A 500 V type gG
	Utilization category DC13	24 V	2 A	2 A	2 A	2 A	2 A	2 A	2 A	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 category AC15	24 V	4 A	4 A	4 A	4 A	3 A	3 A	4 A	2 A
120 V		4 A	4 A	4 A	4 A	3 A	3 A	4 A	/	
250 V		4 A	4 A	4 A	4 A	3 A	3 A	4 A	/	
Approvals	CE cULus IMQ EAC CCC	CE cULus IMQ EAC CCC	CE cULus EAC	CE cULus IMQ EAC CCC	CE cULus IMQ EAC CCC	CE cULus EAC	CE cULus EAC	CE cULus IMQ EAC CCC	CE cULus EAC	CE cULus EAC CCC

Internal cable wiring



Connector pin assignment

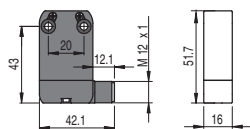


Female connectors see page 210

Contact type					External gasket	
R = snap action L = slow action						
Contact block						
B11	R NF B110AA-DN2	1NO+1NC	R NF B110AB-DN2	1NO+1NC	R NF B110AC-DN2	1NO+1NC
B02	R NF B020AA-DN2	2NC	R NF B020AB-DN2	2NC	R NF B020AC-DN2	2NC
B12	R NF B120AA-DN2	1NO+2NC	R NF B120AB-DN2	1NO+2NC	R NF B120AC-DN2	1NO+2NC
B22	R NF B220AA-DN2	2NO+2NC	R NF B220AB-DN2	2NO+2NC	R NF B220AC-DN2	2NO+2NC
G11	L NF G110AA-DN2	1NO+1NC	L NF G110AB-DN2	1NO+1NC	L NF G110AC-DN2	1NO+1NC
G02	L NF G020AA-DN2	2NC	L NF G020AB-DN2	2NC	L NF G020AC-DN2	2NC
G12	L NF G120AA-DN2	1NO+2NC	L NF G120AB-DN2	1NO+2NC	L NF G120AC-DN2	1NO+2NC
G22	L NF G220AA-DN2	2NO+2NC	L NF G220AB-DN2	2NO+2NC	L NF G220AC-DN2	2NO+2NC
Max. speed	page 235 - type 4		page 235 - type 4		page 235 - type 4	
Actuating force	7 N (25 N ⊕)		7 N (25 N ⊕)		7 N (25 N ⊕)	
Travel diagrams	page 236 - group 1		page 236 - group 1		page 236 - group 1	

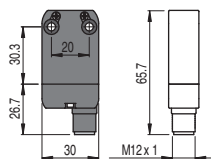
Contact type		With 316L stainless steel roller on request	External gasket	External gasket	With steel roller with self-lubrication or 316L stainless steel on request
R = snap action L = slow action			With 316L stainless steel roller on request	With 316L stainless steel roller on request	
Contact block					
B11	R NF B110BB-DN2	1NO+1NC	R NF B110BE-DN2	1NO+1NC	R NF B110CB-DN2
B02	R NF B020BB-DN2	2NC	R NF B020BE-DN2	2NC	R NF B020CB-DN2
B12	R NF B120BB-DN2	1NO+2NC	R NF B120BE-DN2	1NO+2NC	R NF B120CB-DN2
B22	R NF B220BB-DN2	2NO+2NC	R NF B220BE-DN2	2NO+2NC	R NF B220CB-DN2
G11	L NF G110BB-DN2	1NO+1NC	L NF G110BE-DN2	1NO+1NC	L NF G110CB-DN2
G02	L NF G020BB-DN2	2NC	L NF G020BE-DN2	2NC	L NF G020CB-DN2
G12	L NF G120BB-DN2	1NO+2NC	L NF G120BE-DN2	1NO+2NC	L NF G120CB-DN2
G22	L NF G220BB-DN2	2NO+2NC	L NF G220BE-DN2	2NO+2NC	L NF G220CB-DN2
Max. speed	page 235 - type 2		page 235 - type 5		page 235 - type 3
Actuating force	7 N (25 N ⊕)		7 N (25 N ⊕)		5 N (25 N ⊕)
Travel diagrams	page 236 - group 1		page 236 - group 1		page 236 - group 2

M12 connector, right



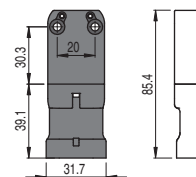
To order a product with M12 right connector, replace DN2 with DMK in the codes shown above.
 Example:
 NF B110AA-DN2 → NF B110AA-DMK

M12 connector, bottom



To order a product with M12 bottom connector, replace DN2 with SMK in the codes shown above.
 Example:
 NF B110AA-DN2 → NF B110AA-SMK

AMP Superseal 1.5 connector



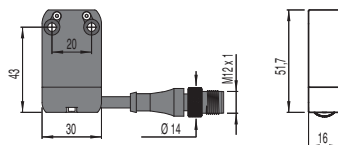
To order a product with AMP connector, replace DN2 with SAK in the codes shown above. Example:
 NF B110AA-DN2 → NF B110AA-SAK



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

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

Cable and M12 connector

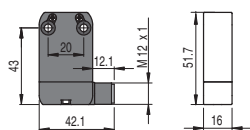


To order a product with cable and M12 connector:
replace DN2 with DM0.2 in the codes shown above. Example:
NF B110AA-DN2 → NF B110AA-DM0.2

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

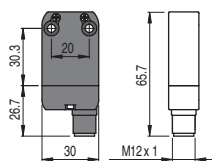
Contact type	With steel roller with self-lubrication or 316L stainless steel on request		With steel roller with self-lubrication or 316L stainless steel on request		With steel roller with self-lubrication or 316L stainless steel on request		With steel roller with self-lubrication or 316L stainless steel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

M12 connector, right



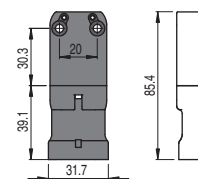
To order a product with M12 right connector, replace DN2 with DMK in the codes shown above.
Example:
NF B110AA-DN2 → NF B110AA-DMK

M12 connector, bottom



To order a product with M12 bottom connector, replace DN2 with SMK in the codes shown above.
Example:
NF B110AA-DN2 → NF B110AA-SMK

AMP Superseal 1.5 connector



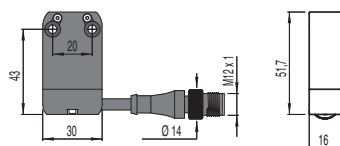
To order a product with AMP connector, replace DN2 with SAK in the codes shown above. Example:
NF B110AA-DN2 → NF B110AA-SAK



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

Contact type	Round rod, Ø 3 mm, stainless steel		Glass fibre rod		Porcelain roller			
R = snap action L = slow action								
Contact block								
B11 R	NF B112LE-DN2	1NO+1NC	NF B112LH-DN2	1NO+1NC	NF B112LL-DN2	1NO+1NC	NF B112LP-DN2E24	1NO+1NC
B02 R	NF B022LE-DN2	2NC	NF B022LH-DN2	2NC	NF B022LL-DN2	2NC	NF B022LP-DN2E24	2NC
B12 R	NF B122LE-DN2	1NO+2NC	NF B122LH-DN2	1NO+2NC	NF B122LL-DN2	1NO+2NC	NF B122LP-DN2E24	1NO+2NC
B22 R	NF B222LE-DN2	2NO+2NC	NF B222LH-DN2	2NO+2NC	NF B222LL-DN2	2NO+2NC	NF B222LP-DN2E24	2NO+2NC
G11 L	NF G112LE-DN2	1NO+1NC	NF G112LH-DN2	1NO+1NC	NF G112LL-DN2	1NO+1NC	NF G112LP-DN2E24	1NO+1NC
G02 L	NF G022LE-DN2	2NC	NF G022LH-DN2	2NC	NF G022LL-DN2	2NC	NF G022LP-DN2E24	2NC
G12 L	NF G122LE-DN2	1NO+2NC	NF G122LH-DN2	1NO+2NC	NF G122LL-DN2	1NO+2NC	NF G122LP-DN2E24	1NO+2NC
G22 L	NF G222LE-DN2	2NO+2NC	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		1.5 m/s		0.5 m/s	
Actuating force	0.07 Nm		0.07 Nm		0.07 Nm		0.04 Nm	
Travel diagrams	page 236 - group 5		page 236 - group 5		page 236 - group 5		page 236 - group 5	

Cable and M12 connector

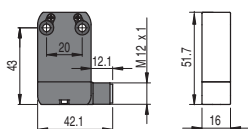


To order a product with cable and M12 connector:
replace DN2 with DM0.2 in the codes shown above. Example:
NF B110AA-DN2 → NF B110AA-DM0.2

Contact type									
R = snap action L = slow action									
Contact block									
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 235 - type 4		page 235 - type 2		page 235 - type 2				
Actuating force	9.5 N (25 N ⊕)		9.5 N (25 N ⊕)		9.5 N (25 N ⊕)				
Travel diagrams	page 236 - group 1		page 236 - group 1		page 236 - group 1				

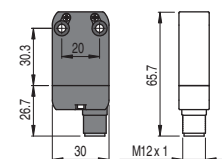
Contact type		External gasket		External gasket		External gasket	
R = snap action L = slow action							
Contact block							
B11	R NF B110HB-DN2W5	1NO+1NC	NF B110HE-DN2W5	1NO+1NC	NF B110HH-DN2W5	1NO+1NC	
B02	R NF B020HB-DN2W5	2NC	NF B020HE-DN2W5	2NC	NF B020HH-DN2W5	2NC	
B12	R NF B120HB-DN2W5	1NO+2NC	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		
Actuating force	0.08 Nm		0.12 Nm		0.08 Nm		
Travel diagrams	page 236 - group 4		page 236 - group 4		page 236 - group 4		

M12 connector, right



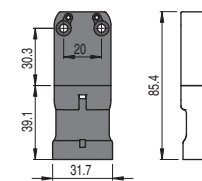
To order a product with M12 right connector, replace DN2 with DMK in the codes shown above.
 Example:
 NF B110AA-DN2 → NF B110AA-DMK

M12 connector, bottom



To order a product with M12 bottom connector, replace DN2 with SMK in the codes shown above.
 Example:
 NF B110AA-DN2 → NF B110AA-SMK

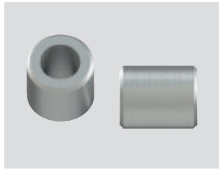
AMP Superseal 1.5 connector



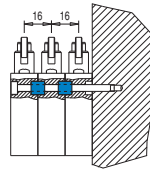
To order a product with AMP connector, replace DN2 with SAK in the codes shown above. Example:
 NF B110AA-DN2 → NF B110AA-SAK

Accessories Packs of **10 pcs.**

Article	Description
VN DT1F	Spacer for NA and NF series



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


M12 female connectors with cable

Features:

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

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

article
options
VF CA4PD3M-X

No. of poles	
4	4 poles
5	5 poles
8	8 poles
12	12 poles

Cable sheath	
P	PVC (standard)
U	PUR

Connector type	
D	straight (standard)
G	angled

Connection type	
M	M12x1

Fixing ring	
	knurled ring (standard)
X	stainless steel hex ring nut

Cable length (L)	
1	1 metre
2	2 metres
3	3 metres (standard)
4	4 metres
5	5 metres (standard)
...	
10	10 metres (standard)

Other lengths on request.

Stock items

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

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

Field wireable M12 female connectors

General data

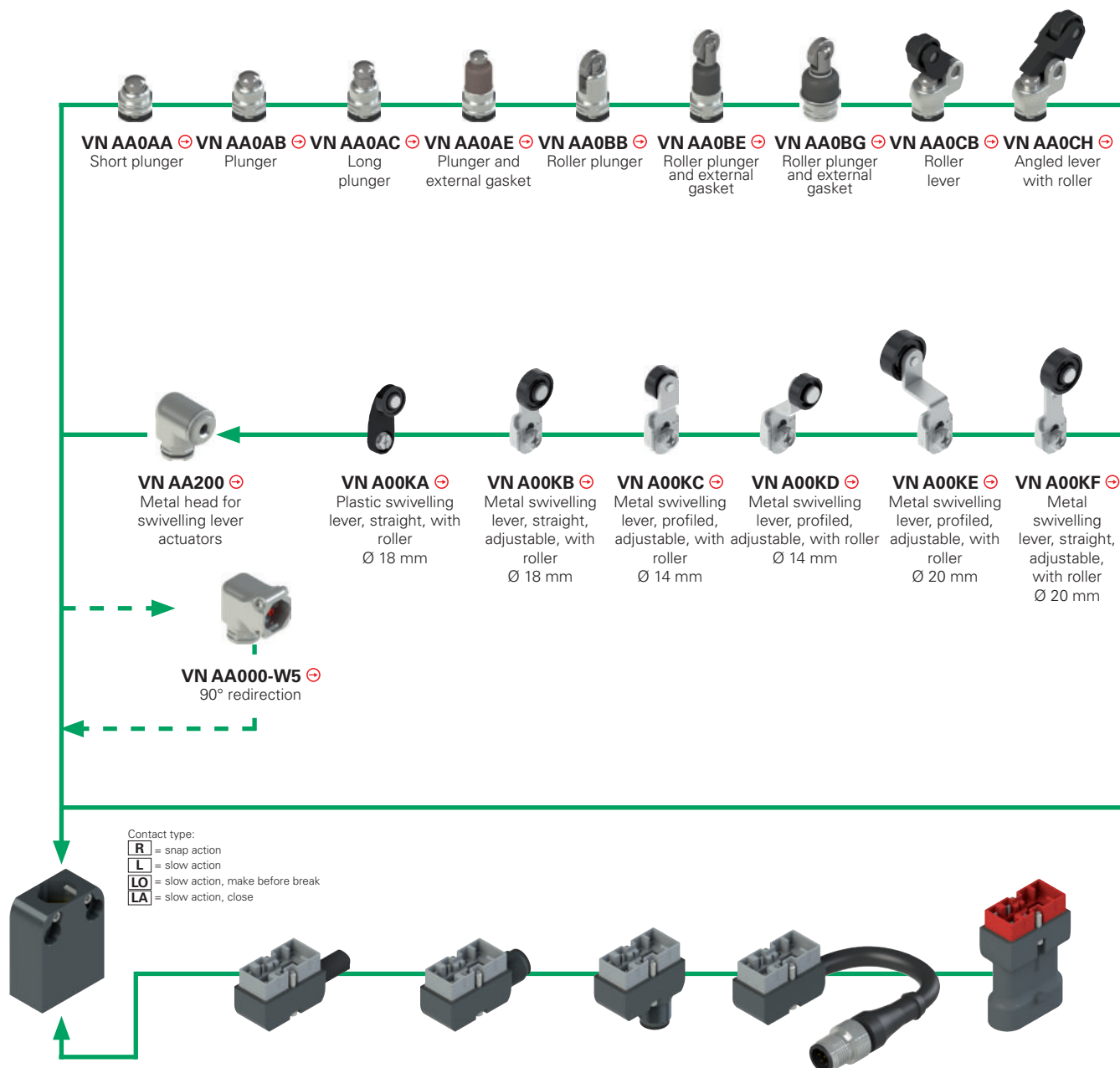
Technopolymer connector body
 Gold-plated contacts
 Screw terminals for cable screw fittings

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

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

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

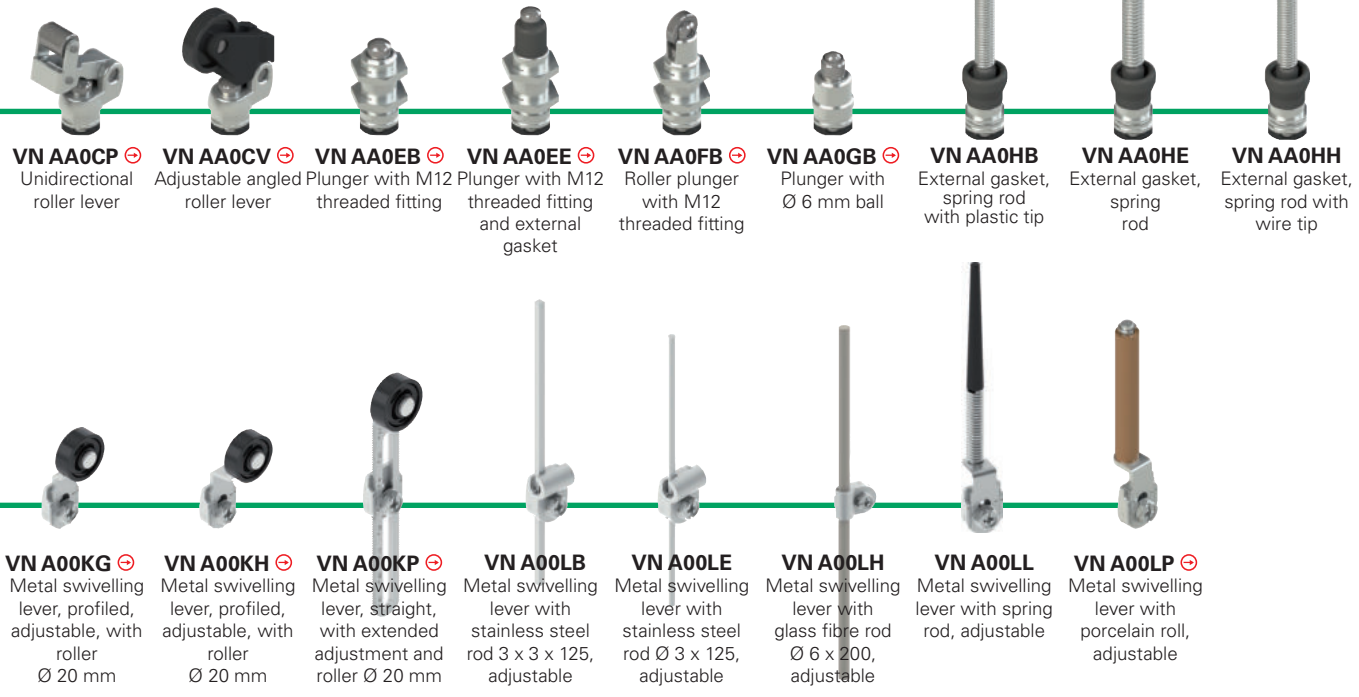
Selection diagram for item combinations of the NA, NB, NF series



METAL housing, NA hole spacing 20 mm	Metal connector with cable	Cable length (m)	M12 metal connector, right	M12 metal connector, bottom	Metal connector with cable and M12 connector	Cable length (m)	AMP technopolymer connector, bottom
NA B11000 ⊕ 1NO+1NC R	VN CM11DN2	2	VN CM11DMK	VN CM11SMK	VN CM11DM0.2	0.2	VN CM11SAK
NA G11000 ⊕ 1NO+1NC L		5					
NA L11000 ⊕ 1NO+1NC LA	VN CM11DN5	2	VN CM11DMK	VN CM11SMK	VN CM11DM0.2	0.2	VN CM11SAK
NA H11000 ⊕ 1NO+1NC LO		5					
NA B02000 ⊕ 2NC R	VN CM02DN2	2	VN CM02DMK	VN CM02SMK	VN CM02DM0.2	0.2	VN CM02SAK
NA G02000 ⊕ 2NC L		5					
NA B20000 ⊕ 2NO R	VN CM20DN2	2	VN CM20DMK	VN CM20SMK	VN CM20DM0.2	0.2	VN CM20SAK
NA G20000 ⊕ 2NO L		5					
NA B12000 ⊕ 1NO+2NC R	VN CM12DN2	2	VN CM12DMK	VN CM12SMK	VN CM12DM0.2	0.2	VN CM12SAK
NA G12000 ⊕ 1NO+2NC L		5					
NA L12000 ⊕ 1NO+2NC LA	VN CM12DN5	2	VN CM12DMK	VN CM12SMK	VN CM12DM0.2	0.2	VN CM12SAK
NA H12000 ⊕ 1NO+2NC LO		5					
NA B22000 ⊕ 2NO+2NC R	VN CM22DN2	2	VN CM22DMK	VN CM22SMK	VN CM22DM0.2	0.2	VN CM22SAK
NA G22000 ⊕ 2NO+2NC L		5					
NA L22000 ⊕ 2NO+2NC LA	VN CM22DN5	2	VN CM22DMK	VN CM22SMK	VN CM22DM0.2	0.2	VN CM22SAK
NA H22000 ⊕ 2NO+2NC LO		5					

To order a NB series housing, replace NA with NB in the codes shown above. Example:
NA B11000 → NB B11000

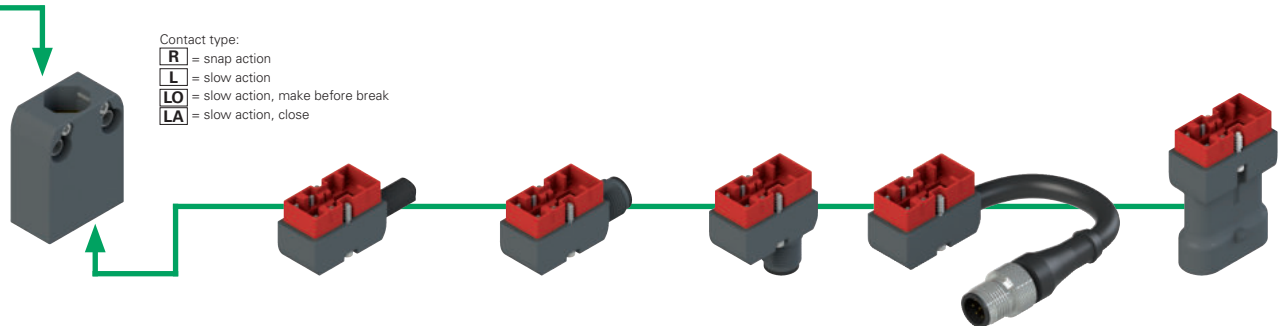
⚠ It is not allowed to install VN CM***** connectors on technopolymer housings



VN AA0CP ⊕ Unidirectional roller lever
VN AA0CV ⊕ Adjustable angled roller lever
VN AA0EB ⊕ Plunger with M12 threaded fitting
VN AA0EE ⊕ Plunger with M12 threaded fitting and external gasket
VN AA0FB ⊕ Roller plunger with M12 threaded fitting
VN AA0GB ⊕ Plunger with Ø 6 mm ball
VN AA0HB External gasket, spring rod with plastic tip
VN AA0HE External gasket, spring rod
VN AA0HH External gasket, spring rod with wire tip

VN A00KG ⊕ Metal swivelling lever, profiled, adjustable, with roller Ø 20 mm
VN A00KH ⊕ Metal swivelling lever, profiled, adjustable, with roller Ø 20 mm
VN A00KP ⊕ Metal swivelling lever, straight, with extended adjustment and roller Ø 20 mm
VN A00LB Metal swivelling lever with stainless steel rod 3 x 3 x 125, adjustable
VN A00LE Metal swivelling lever with stainless steel rod Ø 3 x 125, adjustable
VN A00LH Metal swivelling lever with glass fibre rod Ø 6 x 200, adjustable
VN A00LL Metal swivelling lever with spring rod, adjustable
VN A00LP ⊕ Metal swivelling lever with porcelain roll, adjustable

Contact type:
R = snap action
L = slow action
LO = slow action, make before break
LA = slow action, close

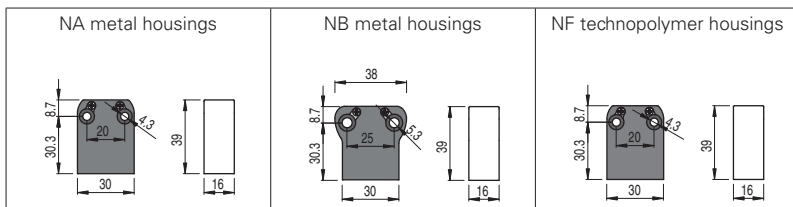


NFTECHNOPOLYMER housing, 20 mm hole spacing	Technopolymer connector with cable	Cable length (m)	M12 technopolymer connector, right	M12 technopolymer connector, bottom	Technopolymer connector with cable and M12 connector	Cable length (m)	AMP technopolymer connector, bottom
NF B11000 ⊕ 1NO+1NC R	VN CP11DN2	2	VN CP11DMK	VN CP11SMK	VN CP11DM0.2	0.2	VN CP11SAK
NF G11000 ⊕ 1NO+1NC L	VN CP11DN5	5					
NF L11000 ⊕ 1NO+1NC LA	VN CP02DN2	2	VN CP02DMK	VN CP02SMK	VN CP02DM0.2	0.2	VN CP02SAK
NF H11000 ⊕ 1NO+1NC LO	VN CP02DN5	5					
NF B02000 ⊕ 2NC R	VN CP20DN2	2	VN CP20DMK	VN CP20SMK	VN CP20DM0.2	0.2	VN CP20SAK
NF G02000 ⊕ 2NC L	VN CP20DN5	5					
NF B20000 ⊕ 2NO R	VN CP12DN2	2	VN CP12DMK	VN CP12SMK	VN CP12DM0.2	0.2	
NF G20000 ⊕ 2NO L	VN CP12DN5	5					
NF B22000 ⊕ 2NO+2NC R	VN CP22DN2	2	VN CP22DMK	VN CP22SMK	VN CP22DM0.2	0.2	
NF G22000 ⊕ 2NO+2NC L	VN CP22DN5	5					
NF L22000 ⊕ 2NO+2NC LA							
NF H22000 ⊕ 2NO+2NC LO							

⚠ It is not allowed to install VN CP***** connectors on metal housings

Housings

Contact type:
R = snap action
L = slow action
LO = slow action, make before break
LA = slow action, close

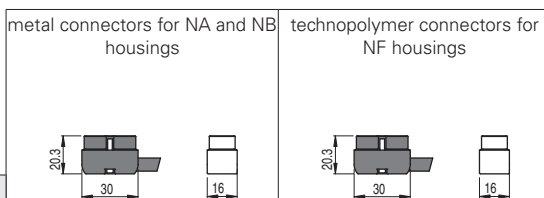


R	NA B11000	⊕	1NO+1NC	NB B11000	⊕	1NO+1NC	NF B11000	⊕	1NO+1NC
L	NA G11000	⊕	1NO+1NC	NB G11000	⊕	1NO+1NC	NF G11000	⊕	1NO+1NC
LA	NA L11000	⊕	1NO+1NC	NB L11000	⊕	1NO+1NC	NF L11000	⊕	1NO+1NC
LO	NA H11000	⊕	1NO+1NC	NB H11000	⊕	1NO+1NC	NF H11000	⊕	1NO+1NC
R	NA B12000	⊕	1NO+2NC	NB B12000	⊕	1NO+2NC	NF B12000	⊕	1NO+2NC
L	NA G12000	⊕	1NO+2NC	NB G12000	⊕	1NO+2NC	NF G12000	⊕	1NO+2NC
LA	NA L12000	⊕	1NO+2NC	NB L12000	⊕	1NO+2NC	NF L12000	⊕	1NO+2NC
LO	NA H12000	⊕	1NO+2NC	NB H12000	⊕	1NO+2NC	NF H12000	⊕	1NO+2NC
R	NA B22000	⊕	2NO+2NC	NB B22000	⊕	2NO+2NC	NF B22000	⊕	2NO+2NC
L	NA G22000	⊕	2NO+2NC	NB G22000	⊕	2NO+2NC	NF G22000	⊕	2NO+2NC
LA	NA L22000	⊕	2NO+2NC	NB L22000	⊕	2NO+2NC	NF L22000	⊕	2NO+2NC
LO	NA H22000	⊕	2NO+2NC	NB H22000	⊕	2NO+2NC	NF H22000	⊕	2NO+2NC

Quality marks:



Connectors with cable



Cable type	Length (m)	metal connectors for NA and NB housings	technopolymer connectors for NF housings
N PVC	2	VN CM11DN2 1NO+1NC	VN CP11DN2 1NO+1NC
	5	VN CM11DN5 1NO+1NC	VN CP11DN5 1NO+1NC
	2	VN CM12DN2 1NO+2NC	VN CP12DN2 1NO+2NC
	5	VN CM12DN5 1NO+2NC	VN CP12DN5 1NO+2NC
	2	VN CM22DN2 2NO+2NC	VN CP22DN2 2NO+2NC
	5	VN CM22DN5 2NO+2NC	VN CP22DN5 2NO+2NC
H PUR halogen free	2	VN CM11DH2 1NO+1NC	VN CP11DH2 1NO+1NC
	5	VN CM11DH5 1NO+1NC	VN CP11DH5 1NO+1NC
	2	VN CM12DH2 1NO+2NC	VN CP22DH2 2NO+2NC
	5	VN CM12DH5 1NO+2NC	VN CP22DH5 2NO+2NC

Other cable lengths on request

M12 connectors

metal connectors for NA and NB housings

M12 connector, right	M12 connector, bottom	with cable and M12 connector
VN CM11DMK 1NO+1NC	VN CM11SMK 1NO+1NC	VN CM11DM0.2 1NO+1NC
VN CM02DMK 2NC	VN CM02SMK 2NC	VN CM02DM0.2 2NC
VN CM22DMK 2NO+2NC	VN CM22SMK 2NO+2NC	VN CM22DM0.2 2NO+2NC

technopolymer connectors for NF housings

M12 connector, right	M12 connector, bottom	with cable and M12 connector
VN CP11DMK 1NO+1NC	VN CP11SMK 1NO+1NC	VN CP11DM0.2 1NO+1NC
VN CP02DMK 2NC	VN CP02SMK 2NC	VN CP02DM0.2 2NC
VN CP22DMK 2NO+2NC	VN CP22SMK 2NO+2NC	VN CP22DM0.2 2NO+2NC

AMP connectors

technopolymer connectors for NA and NB housings

AMP superseal 1.5
VN CM11SAK 1NO+1NC
VN CM02SAK 2NC
VN CM20SAK 2NO

technopolymer connectors for NF housings

AMP superseal 1.5
VN CP11SAK 1NO+1NC
VN CP02SAK 2NC
VN CP20SAK 2NO

⚠ Important: Always check that the applied electric load is within the voltage and current limits defined for the connectors. See tables on page 118 and 128.

All values in the drawings are in mm

Accessories See page 207

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



Actuators

VN AA0AA	VN AA0AB	VN AA0AC	VN AA0AE	VN AA0BB	VN AA0BE
VN AA0BG	VN AA0CB	VN AA0CH	VN AA0CP	VN AA0CV	VN AA0EB
VN AA0EE	VN AA0FB	VN AA0GB	VN AA0HB	VN AA0HE	VN AA0HH

Levers

ATTENTION: These separate actuators can be used only with items of the NA, NB and NF series.

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	VN A00KB-V38	VN A00KE-V38	VN A00KG-V38	VN A00KP-V38

Heads

VN AA200

90° redirection

VN AA000-W5

All values in the drawings are in mm

Accessories See page 207

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