Модульные металлические коммутаторы NA-NB-NF

Технические характеристики

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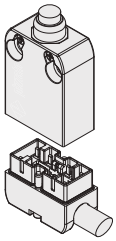
NA-NB-NF series modular pre-wired switches

Description

The result of the long-standing expertise of Pizzato Elettrica in the creation of position switches, the NA, NB, NF series achieve the highest standard of flexibility and depth of range present today on the pre-wired switches market.
Configurable, adjustable, pivotable and, not least, customisable with special cables or custom wiring - these features make these series unique in the current European panorama, ideal for easily providing our customers with customised switches.

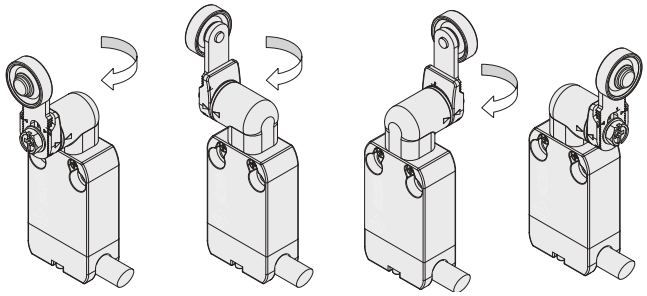
Switches with connectors



The new fundamental feature of this series of pre-wired switches is that the switch body and the wired connector are separated.
Using the connector the end-user can replace a product on field without having to disconnect the complete wiring.
Moreover in this way it is easier to combine products with different cable types and lengths.

Head with variable orientation

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

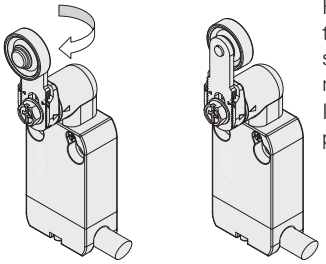


Protection degrees IP67 and IP69K

IP69K
IP67

These devices are designed to be used under the toughest environmental conditions, and they pass the IP67 immersion test acc. to EN 60529. They can therefore be used in all environments where the maximum degree of protection is required for the housing. Due to their special design, these devices are suitable for use in equipment subjected to cleaning with high pressure hot water jets. These devices meet the IP69K test requirements according to ISO 20653 (water jets with 100 bar and 80°C).

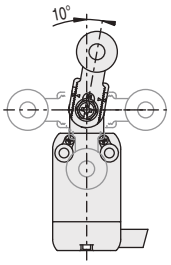
Reversible levers



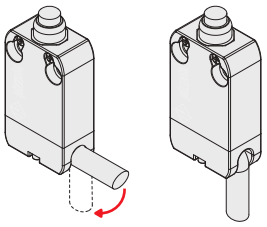
For switches with swivelling lever, the lever can be fastened on straight or reverse side maintaining the positive coupling.
In this way two different working planes of the lever are possible.

Adjustable levers

For switches with swivelling lever, the lever can be adjusted in 10° steps over the entire 360° range.
The positive movement transmission is always guaranteed thanks to the particular geometrical coupling between the lever and the revolving shaft as prescribed for safety applications by the German standard BG-GS-ET-15.

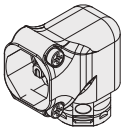


Orientable cable outputs

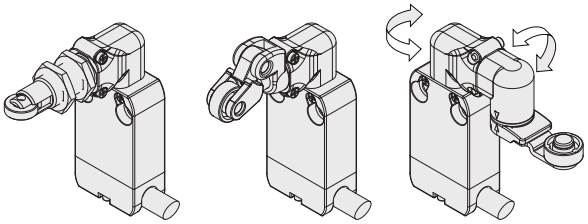


The connector with cable is provided with a cavity to allow cable bending up to 90°.
In this way a flush wall mounting is also possible as well as an easier adjustment of the cable to the supporting flange.

90° redirection for actuators

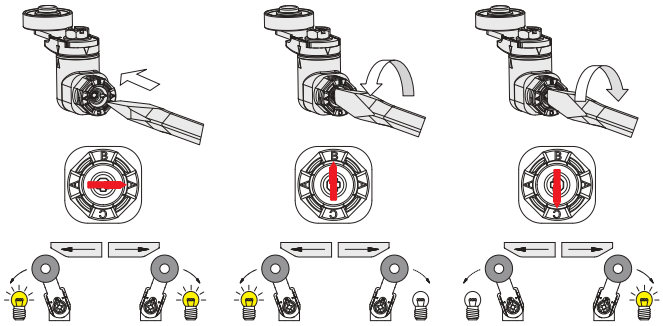


This component highly extends the application possibilities of this product range.
All the actuators that can be attached directly to the body of the switch can also be fastened on this transmission, thus making feasible applications and positioning of the switch that were previously impossible. The redirection piece can also be used in case of heads for swivelling levers. Although technically possible, the use of multiple transmissions in series is not recommended.



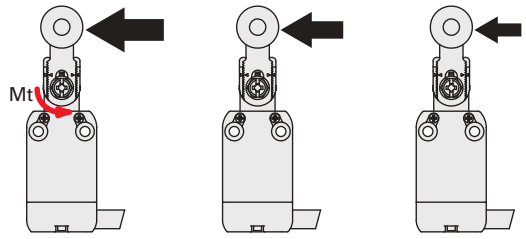
Unidirectional heads

All switches with swivelling lever are supplied with a selector for choosing the lever operating direction.
The following operations are possible: right/left (standard factory setting), only from the right or only from the left. The operating direction can be selected by rotating the dedicated ring mounted on all heads of this kind.



Increased or reduced actuating force

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

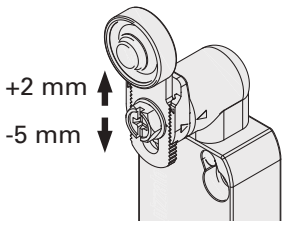


Increased force Mt = 0.09 Nm (E25 option, NA-NB series)

Standard force Mt = 0.07 Nm

Reduced force Mt = 0.04 Nm (E24 option)

Adjustable levers with anti-unscrewing washer



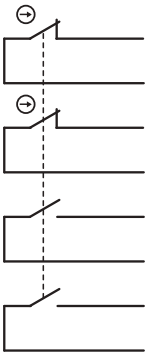
In some applications during the installation of the switches problems are encountered due to the variability of the fastenings and the folds of the structural work.

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

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

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

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



These series of contact blocks are versatile and compact.

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

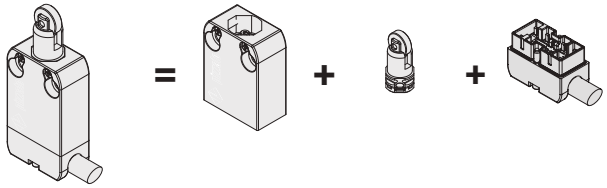
The allowed standard combinations are: 1NO+1NC, 2NC, 1NO+2NC, 2NO+2NC. Other combinations available on request.

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

Switch components available separately

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

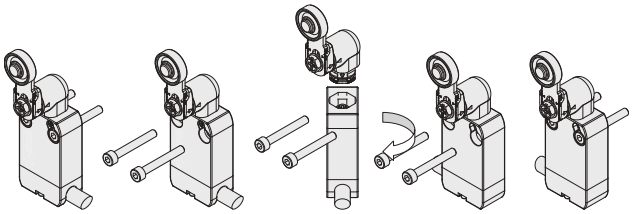
NA B110BB-DN2 **NA B11000** **VN AA0BB** **VN CM11DN2**



Reversible housing

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

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



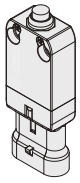
Extended temperature range

-40°C

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

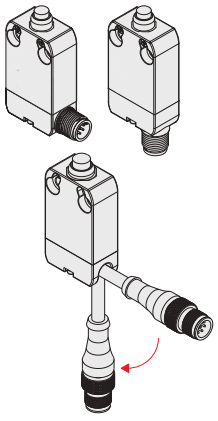
They can therefore be used for applications in cold stores, sterilisers, and other equipment operated in very low-temperature environments. The special materials used to produce these versions retain their characteristics even under these conditions, thereby expanding the installation possibilities.

AMP connectors



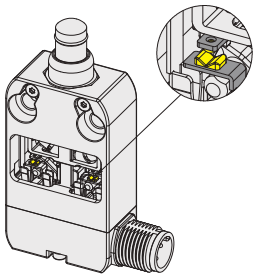
Furthermore, AMP connectors for 2-contact versions are available too. These connectors, specially developed for the automotive industry, are immune to vibration due to the quick coupling.

M12 connectors



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

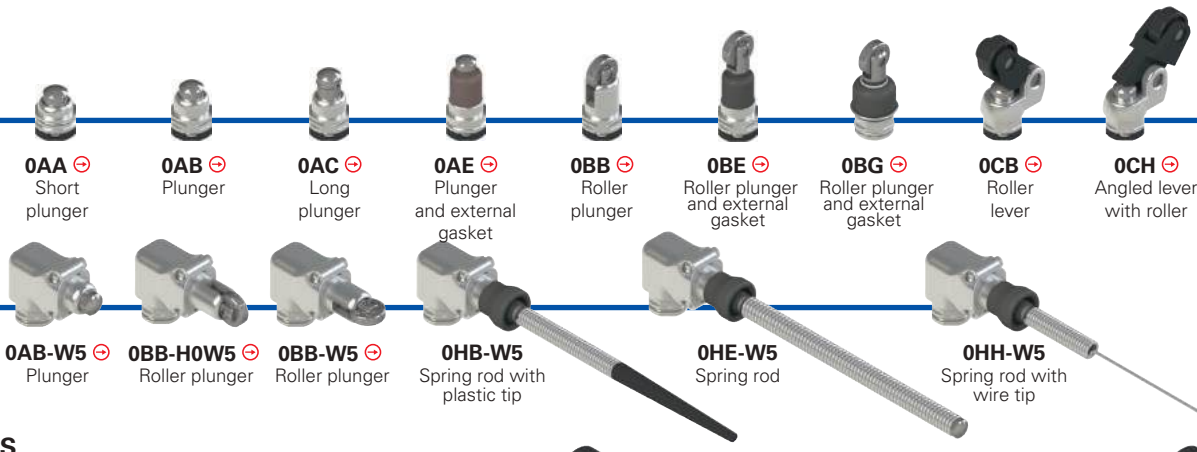
High reliability contacts with “V” design



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

Selection diagram for item combinations of the NA-NB series

ACTUATORS



0AA Short plunger

0AB Plunger

0AC Long plunger

0AE Plunger and external gasket

0BB Roller plunger

0BE Roller plunger and external gasket

0BG Roller plunger and external gasket

0CB Roller lever

0CH Angled lever with roller

0AB-W5 Plunger

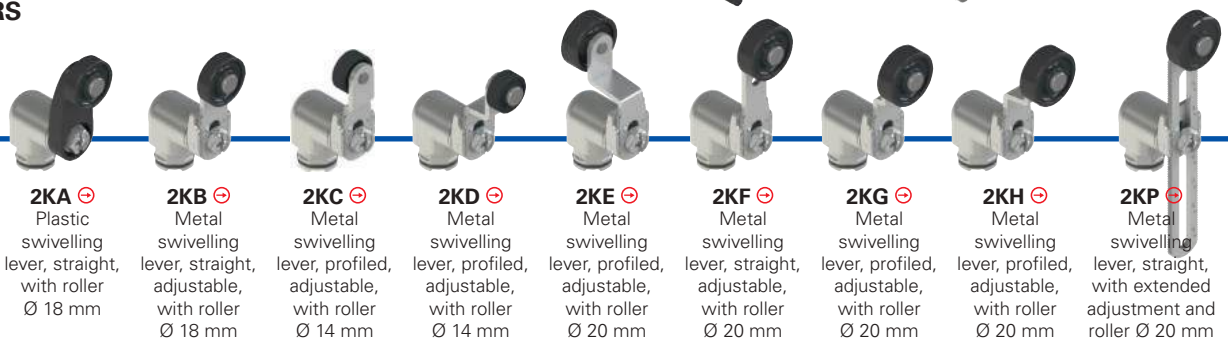
0BB-H0W5 Roller plunger

0BB-W5 Roller plunger

0HB-W5 Spring rod with plastic tip

0HE-W5 Spring rod

0HH-W5 Spring rod with wire tip



2KA Plastic swivelling lever, straight, with roller Ø 18 mm

2KB Metal swivelling lever, straight, adjustable, with roller Ø 18 mm

2KC Metal swivelling lever, profiled, adjustable, with roller Ø 14 mm

2KD Metal swivelling lever, profiled, adjustable, with roller Ø 14 mm

2KE Metal swivelling lever, profiled, adjustable, with roller Ø 20 mm

2KF Metal swivelling lever, straight, adjustable, with roller Ø 20 mm

2KG Metal swivelling lever, profiled, adjustable, with roller Ø 20 mm

2KH Metal swivelling lever, profiled, adjustable, with roller Ø 20 mm

2KP Metal swivelling lever, straight, with extended adjustment and roller Ø 20 mm

NA **NB**

CONTACT BLOCKS

Snap action

B11	1NO + 1NC
B02	2NC
B12	1NO + 2NC
B22	2NO + 2NC
BA1	1NO + 1NC change-over

Slow action

G11	1NO + 1NC
G02	2NC
G12	1NO + 2NC
G22	2NO + 2NC

Slow action, make before break

H11	1NO + 1NC
H12	1NO + 2NC
H22	2NO + 2NC

Slow action, close

L11	1NO + 1NC
L12	1NO + 2NC
L22	2NO + 2NC

Snap action, "V" design contacts

C11	1NO + 1NC
C02	2NC
C12	1NO + 2NC
C22	2NO + 2NC

CONNECTIONS

DMK M12 connector, right

SMK M12 connector, bottom

DM0.2 Cable and M12 connector

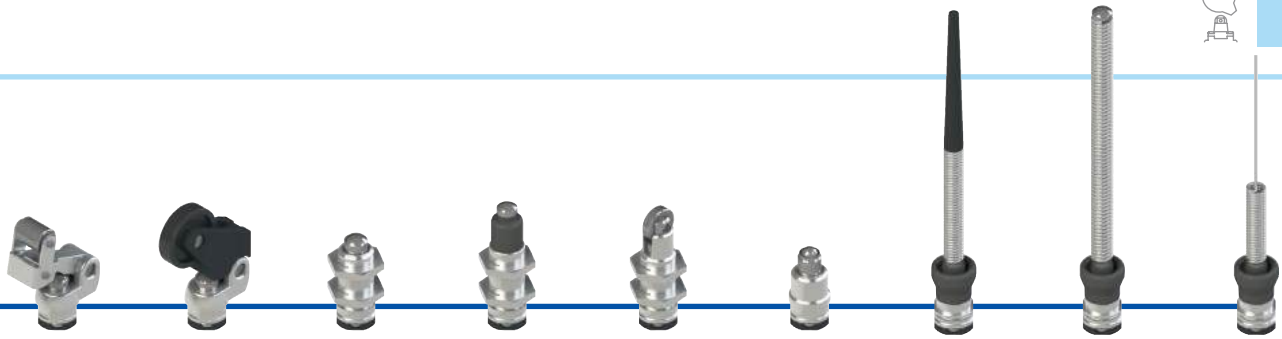
SAK AMP connector, bottom

Connector with cable

DN	PVC cable IEC 60332-1, oil-resistant (standard)
DE	PVC cable IEC 60332-1 (with 2 contacts only)
DH	PUR cable, halogen free
DR	Rail cable EN 50306-4

Product options

Sold separately as accessory



0CP Unidirectional roller lever

0CV Adjustable angled roller lever

0EB Plunger with M12 threaded fitting

0EE Plunger with M12 threaded fitting and external gasket

0FB Roller plunger with M12 threaded fitting

0GB Plunger with Ø 6 mm ball

0HB External gasket, spring rod with plastic tip

0HE External gasket, spring rod

0HH 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: **NA B110AB-DN2** options: **GR7T6W5**

Housing

NA	metal, hole spacing 20 mm (standard)
NB	metal, hole spacing 25 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

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

Output direction

D	cable or connector, right
S	connector, bottom

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
R	Rail cable EN 50306-4
M	M12 connector
A	AMP Superseal 1.5 connector

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

Contact type

	silver contacts (standard)
G	silver contacts with 1 µm gold coating [1]

[1] Not available for contact block 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

Ambient temperature

	-25°C ... +80°C
T6	-40°C ... +80°C

Redirection

	without redirection
W5	90° redirection

NA-NB series modular metal pre-wired switches

Main features

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

Quality marks:

IMQ approval:	CA02.04562
UL approval:	E131787
CCC approval:	2021000305000109
EAC approval:	RU C-IT.УТ03.B.00035/19

Technical data

Housing

Metal housing, baked with UV resistant powder coating.
Versions with integrated cable, standard length 2 m, other lengths 0.5 … 10 m on request.
Versions with integrated M12 connector.
Versions with 0.2 m cable length and M12 connector, other lengths 0.1 … 3 m available on request.

Protection degree:	IP67 acc. to EN 60529 IP69K acc. to ISO 20653 (Protect the cables from direct high-pressure and high-temperature jets)
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 118
Max. actuation frequency:	3600 operating cycles/hour
Mechanical endurance:	
B••, G••, H••, L•• contact blocks:	20 million operating cycles
C•• contact block:	5 million operating cycles
Mounting position:	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
Vibration resistance (0BB, 2KB, 2KC, 2KD actuators):	5 … 150 Hz (7.9 m/s²) acc. to EN 61373 cl. 9
Tightening torques for installation:	see page 235

Electrical data

Rated impulse withstand voltage (U_{imp}):	4 kV
Conditional short circuit current:	1000 A acc. to EN 60947-5-1
Pollution degree:	3

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

Compliance with the requirements of:
Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU, RoHS Directive 2011/65/EU.
Positive contact opening in conformity with standards:
IEC 60947-5-1, EN 60947-5-1.

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

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

⚠ **Important: Switch off the circuit voltage before disconnecting the connector from the switch. The connector is not suitable for separation of electrical loads. According to EN 60204-1, versions with 8-pole M12 (2NO+2NC) and AMP connector can be used only in SELV circuits.**

Features approved by IMQ

Rated insulation voltage (U_i):	250 Vac
Conventional free air thermal current (I_{th}):	10 A (1-2 contacts) / 6 A (2-3 contacts) / 4 A (4 contacts or 5-pole M12 connector)
Protection against short circuits (fuse):	10 A (1-2 contacts) / 6 A (2-3 contacts) / 4 A (4 contacts or 5-pole M12 connector) type gG
Rated impulse withstand voltage (U_{imp}):	4 kV
Protection degree of the housing:	IP67 / IP69K
MA terminals (crimped terminals)	
Pollution degree:	3
Utilization category:	AC15 / DC13 (with connector)
Operating voltage (U_e):	250 Vac (50 Hz) / 24 Vdc (with connector)
Operating current (I_e):	3 A / 2 A (with connector)

Forms of the contact element: X, Y, X+Y, X+X, Y+Y, Y+Y+X, X+X+Y, X+X+Y+Y, Zb
Positive opening of contacts on contact blocks B01, B11, B02, B12, B21, B22, G01, G11, G02, G12, G21, G22, L01, L11, L02, L12, L21, L22, H01, H11, H02, H12, H21, H22
In compliance with standards: EN 60947-1, EN 60947-5-1, fundamental requirements of the Low Voltage Directive 2014/35/EU.

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

Features approved by UL

Electrical Ratings:	R300 pilot duty (28 VA, 125 250 Vdc) B300 pilot duty (360 VA, 120 240 Vac) (1 cont.) B300 pilot duty (360 VA, 120 240 Vac) (2 - 3 cont. without connector) C300 pilot duty (180 VA, 120 240 Vac) (4 cont.)
Environmental Ratings:	Types 1, 4X, 6, 12, 13 Types 1, 4X "indoor use only" (1 - 2 cont. with "E" type cable)

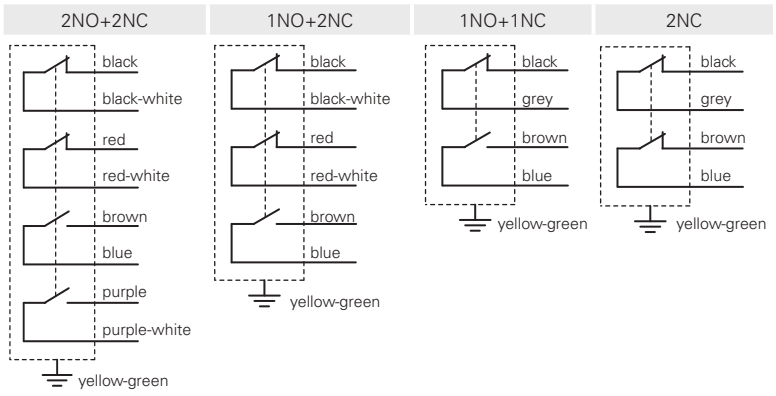
Screws torque of the detachable connector housing nominal are 0.3 ÷ 0.6 Nm.

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

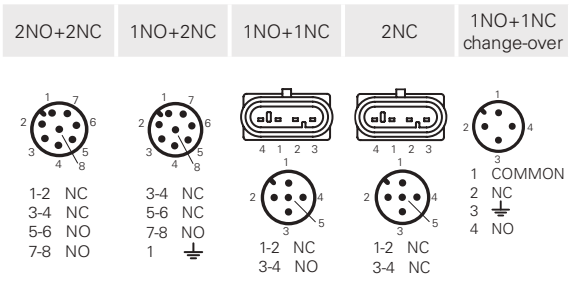
Ambient temperatures for switches with cable and electrical data

	Connection type	Output with cable								Output with M12 connector		Output with AMP connector
	Contact block	2 contacts				3 contacts		4 contacts		2 contacts	3 or 4 contacts	2 contacts
	Cable or connector type	E	N	H	R	N	H	N	R	M12 connector, 5-pole	M12 connector, 8-pole	AMP Superseal 1.5 connector
Cable features	Conductors	5x0.75 mm²	5x0.75 mm²	5x0.75 mm²	5x0.5mm²	7x0.5 mm²	7x0.5 mm²	9x0.34 mm²	9x0.5 mm²	5x0.25 mm²	8x0.25 mm²	
	Application field	General	General	General, mobile installation	Rail	General	General, mobile installation	General	Rail	General	General	General
	In compliance with standards	H05VV-F	05VV5-F	05EQ-H	EN50306-4 1E-300V 5G0.5 mm² MM-90 EN 50306-4 EN 45545	03VV-F	03E7Q-H	03VV-F	EN50306-4 1P-300V- 9G0.5 mm² MM-90 EN 50306-4 EN 45545	03VV-H	03VV-H	/
	Sheath	PVC	PVC OIL RESISTANT	PUR HALOGEN FREE	/	PVC OIL RESISTANT	PUR HALOGEN FREE	PVC OIL RESISTANT	/	PVC OIL RESISTANT	PVC OIL RESISTANT	/
	Self-extinguishing	IEC 60332-1-2	IEC 60332-1-2 UL 758:FT1 CEI 20-22 II	IEC 60332-1-2 UL 758:FT1	IEC 60332-1 EN 50305 EN 50306-1	IEC 60332-1-2 UL 758:FT1 CEI 20-22 II	IEC 60332-1-2 UL 758:FT1	IEC 60332-1-2 UL 758:FT1 CEI 20-22 II	IEC 60332-1 EN 50305 EN 50306-1	IEC 60332-1-2 CEI 20-22 II UL 758:FT1	IEC 60332-1-2 CEI 20-22 II UL 758:FT1	/
	Oil resistant	/	UL 758 CSA 22.2 N°210	UL 758 CSA 22.2 N°210	/	UL 758 CSA 22.2 N°210	UL 758 CSA 22.2 N°210	UL 758 CSA 22.2 N°210	/	UL 758 CSA 22.2 N°210	UL 758 CSA 22.2 N°210	/
	Max. speed	/	/	300 m/min	/	/	300 m/min	/	/	50 m/min	50 m/min	/
	Max. acceleration	/	/	30 m/s²	/	/	30 m/s²	/	/	5 m/s²	5 m/s²	/
	Minimum bending radius	80 mm	80 mm	80 mm	60 mm	108 mm	80 mm	108 mm	65 mm	75 mm	90 mm	/
	Outer diameter	8 mm	8 mm	8 mm	6 mm	7 mm	7 mm	7 mm	6.5 mm	6 mm	6 mm	/
	End stripped	80 mm	80 mm	80 mm	80 mm	80 mm	80 mm	80 mm	80 mm	/	/	/
	Copper conductors IEC 60228	Class 5	Class 5	Class 6	Class 5	Class 5	Class 6	Class 5	Class 5	Class 6	Class 6	/
	Engraving	Standard	6268	6280	Standard	6274	6282	6278	Standard	6267	6275	/
Ambient temperature with cable standard	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	-25°C +80°C	-25°C +80°C	/
	Cable, flexible installation	+5°C +60°C	-5°C +80°C	-25°C +80°C	-25°C +80°C	-5°C +80°C	-25°C +80°C	-5°C +80°C	-25°C +80°C	-15°C +80°C	-15°C +80°C	/
	Cable, mobile installation	/	/	-25°C +80°C	/	/	-25°C +80°C	/	/	-15°C +80°C	-15°C +80°C	/
Ambient temperature extended (T6)	Cable, fixed installation	/	/	-40°C +80°C	-40°C +80°C	/	-40°C +80°C	/	-40°C +80°C	/	/	/
	Cable, flexible installation	/	/	-40°C +80°C	-40°C +80°C	/	-40°C +80°C	/	-40°C +80°C	/	/	/
	Cable, mobile installation	/	/	-40°C +80°C	/	/	-40°C +80°C	/	/	/	/	/
Electrical data	Thermal current Ith	10 A	10 A	10 A	6 A	6 A	6 A	3 A	4 A	4 A	2 A	10 A
	Rated insulation voltage Ui	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac	250 Vac 300 Vdc	30 Vac 36 Vdc	30 Vac
	Protection against short circuits (fuse)	10 A 500 V type gG	10 A 500 V type gG	10 A 500 V type gG	6 A 500 V type gG	6 A 500 V type gG	6 A 500 V type gG	3 A 500 V type gG	4 A 500 V type gG	4 A 500 V type gG	2 A 500V type gG	10 A 500 V type gG
	Utilization category DC13 — 24 V	2 A	2 A	2 A	2 A	2 A	2 A	2 A	2 A	2 A	2 A	2 A
	Utilization category DC13 — 125 V	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	0.4 A	/	/
	Utilization category DC13 — 250 V	0.3 A	0.3 A	0.3 A	0.3 A	0.3 A	0.3 A	0.3 A	0.3 A	0.3 A	/	/
	Utilization category AC15 — 24 V	4 A	4 A	4 A	4 A	4 A	4 A	3 A	4 A	4 A	2 A	4 A
	Utilization category AC15 — 120 V	4 A	4 A	4 A	4 A	4 A	4 A	3 A	4 A	4 A	/	/
	Utilization category AC15 — 250 V	4 A	4 A	4 A	4 A	4 A	4 A	3 A	4 A	4 A	/	/
	Approvals	CE cULus IMQ EAC CCC	CE cULus IMQ EAC CCC	CE cULus IMQ EAC CCC	CE IMQ EAC CCC	CE cULus IMQ EAC CCC	CE cULus IMQ EAC CCC	CE cULus IMQ EAC CCC	CE IMQ EAC CCC	CE cULus IMQ EAC CCC	CE cULus EAC	CE cULus EAC

Internal cable wiring



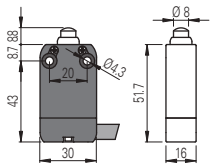
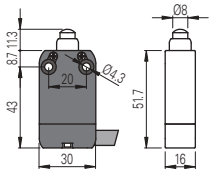
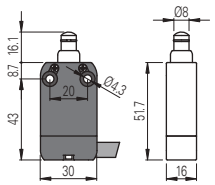
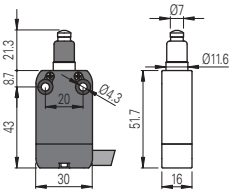
Connector pin assignment



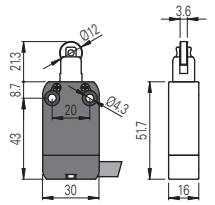
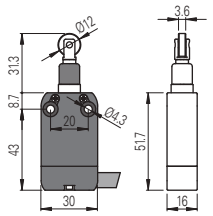
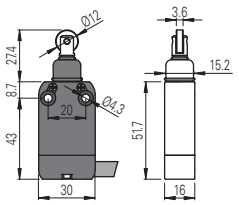
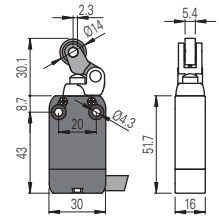
Female connectors see page 210

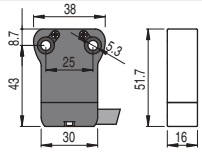
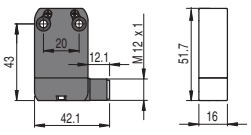
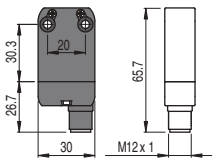
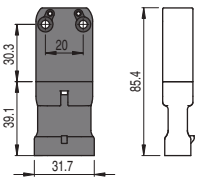
NA-NB series modular metal pre-wired switches

Contact type
R = snap action
L = slow action

Contact block					
					External 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 235 - type 4	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 →)	7 N (25 N →)
Travel diagrams		page 236 - group 1	page 236 - group 1	page 236 - group 1	page 236 - group 1

Contact type
R = snap action
L = slow action

Contact block					
		With 316L stainless steel roller on request	External gasket With 316L stainless steel roller on request	External gasket With 316L stainless steel roller on request	With steel roller with self-lubrication or 316L stainless steel on request
					
B11	R	NA B110BB-DN2 → 1NO+1NC	NA B110BE-DN2 → 1NO+1NC	NA B110BG-DN2 → 1NO+1NC	NA B110CB-DN2 → 1NO+1NC
B02	R	NA B020BB-DN2 → 2NC	NA B020BE-DN2 → 2NC	NA B020BG-DN2 → 2NC	NA B020CB-DN2 → 2NC
B12	R	NA B120BB-DN2 → 1NO+2NC	NA B120BE-DN2 → 1NO+2NC	NA B120BG-DN2 → 1NO+2NC	NA B120CB-DN2 → 1NO+2NC
B22	R	NA B220BB-DN2 → 2NO+2NC	NA B220BE-DN2 → 2NO+2NC	NA B220BG-DN2 → 2NO+2NC	NA B220CB-DN2 → 2NO+2NC
G11	L	NA G110BB-DN2 → 1NO+1NC	NA G110BE-DN2 → 1NO+1NC	NA G110BG-DN2 → 1NO+1NC	NA G110CB-DN2 → 1NO+1NC
G02	L	NA G020BB-DN2 → 2NC	NA G020BE-DN2 → 2NC	NA G020BG-DN2 → 2NC	NA G020CB-DN2 → 2NC
G12	L	NA G120BB-DN2 → 1NO+2NC	NA G120BE-DN2 → 1NO+2NC	NA G120BG-DN2 → 1NO+2NC	NA G120CB-DN2 → 1NO+2NC
G22	L	NA G220BB-DN2 → 2NO+2NC	NA G220BE-DN2 → 2NO+2NC	NA G220BG-DN2 → 2NO+2NC	NA G220CB-DN2 → 2NO+2NC
Max. speed		page 235 - type 2	page 235 - type 5	page 235 - type 5	page 235 - type 3
Actuating force		7 N (25 N →)	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 1	page 236 - group 2

NB series housing	M12 connector, right	M12 connector, bottom	AMP Superseal 1.5 connector
			

To order a product of the NB series, replace NA with NB in the codes shown above. Example:
NA B110AA-DN2 → **NB** B110AA-DN2

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

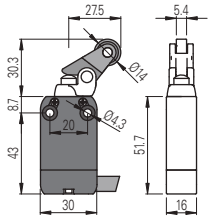
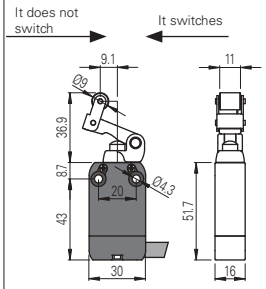
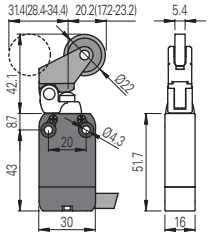
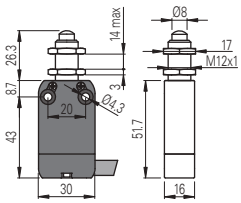
To order a product with M12 bottom connector, replace DN2 with SMK in the codes shown above. Example:
NA B110AA-**DN2** → NA B110AA-**SMK**

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

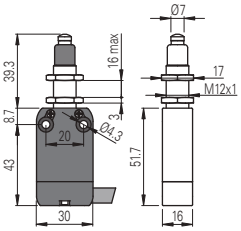
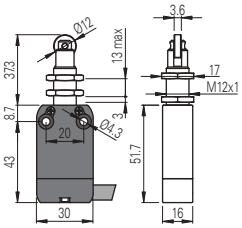
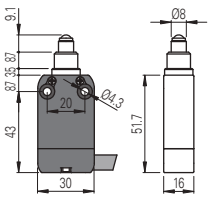
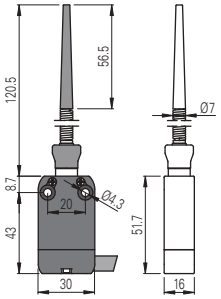
All values in the drawings are in mm

Accessories See page 207

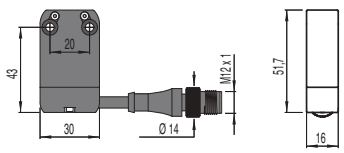
Contact type
R = snap action
L = slow action

	With steel roller with self-lubrication or 316L stainless steel on request	Unidirectional operation		Secured only by means of threaded head
				
Contact block				
B11 R	NA B110CH-DN2 ⊖ 1NO+1NC	NA B110CP-DN2 ⊖ 1NO+1NC	NA B110CV-DN2 ⊖ 1NO+1NC	NA B110EB-DN2 ⊖ 1NO+1NC
B02 R	NA B020CH-DN2 ⊖ 2NC	NA B020CP-DN2 ⊖ 2NC	NA B020CV-DN2 ⊖ 2NC	NA B020EB-DN2 ⊖ 2NC
B12 R	NA B120CH-DN2 ⊖ 1NO+2NC	NA B120CP-DN2 ⊖ 1NO+2NC	NA B120CV-DN2 ⊖ 1NO+2NC	NA B120EB-DN2 ⊖ 1NO+2NC
B22 R	NA B220CH-DN2 ⊖ 2NO+2NC	NA B220CP-DN2 ⊖ 2NO+2NC	NA B220CV-DN2 ⊖ 2NO+2NC	NA B220EB-DN2 ⊖ 2NO+2NC
G11 L	NA G110CH-DN2 ⊖ 1NO+1NC	NA G110CP-DN2 ⊖ 1NO+1NC	NA G110CV-DN2 ⊖ 1NO+1NC	NA G110EB-DN2 ⊖ 1NO+1NC
G02 L	NA G020CH-DN2 ⊖ 2NC	NA G020CP-DN2 ⊖ 2NC	NA G020CV-DN2 ⊖ 2NC	NA G020EB-DN2 ⊖ 2NC
G12 L	NA G120CH-DN2 ⊖ 1NO+2NC	NA G120CP-DN2 ⊖ 1NO+2NC	NA G120CV-DN2 ⊖ 1NO+2NC	NA G120EB-DN2 ⊖ 1NO+2NC
G22 L	NA G220CH-DN2 ⊖ 2NO+2NC	NA G220CP-DN2 ⊖ 2NO+2NC	NA G220CV-DN2 ⊖ 2NO+2NC	NA 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

	External gasket Secured only by means of threaded head	Secured only by means of threaded head With Ø12 mm roller in 316L stainless steel on request	Plunger with Ø 6 mm ball	External gasket
				
Contact block				
B11 R	NA B110EE-DN2 ⊖ 1NO+1NC	NA B110FB-DN2 ⊖ 1NO+1NC	NA B110GB-DN2 ⊖ 1NO+1NC	NA B110HB-DN2 1NO+1NC
B02 R	NA B020EE-DN2 ⊖ 2NC	NA B020FB-DN2 ⊖ 2NC	NA B020GB-DN2 ⊖ 2NC	NA B020HB-DN2 2NC
B12 R	NA B120EE-DN2 ⊖ 1NO+2NC	NA B120FB-DN2 ⊖ 1NO+2NC	NA B120GB-DN2 ⊖ 1NO+2NC	NA B120HB-DN2 1NO+2NC
B22 R	NA B220EE-DN2 ⊖ 2NO+2NC	NA B220FB-DN2 ⊖ 2NO+2NC	NA B220GB-DN2 ⊖ 2NO+2NC	NA B220HB-DN2 2NO+2NC
G11 L	NA G110EE-DN2 ⊖ 1NO+1NC	NA G110FB-DN2 ⊖ 1NO+1NC	NA G110GB-DN2 ⊖ 1NO+1NC	/
G02 L	NA G020EE-DN2 ⊖ 2NC	NA G020FB-DN2 ⊖ 2NC	NA G020GB-DN2 ⊖ 2NC	NA G020HB-DN2 2NC
G12 L	NA G120EE-DN2 ⊖ 1NO+2NC	NA G120FB-DN2 ⊖ 1NO+2NC	NA G120GB-DN2 ⊖ 1NO+2NC	/
G22 L	NA G220EE-DN2 ⊖ 2NO+2NC	NA G220FB-DN2 ⊖ 2NO+2NC	NA 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:
NA B110AA-**DN2** → NA B110AA-**DM0.2**

All values in the drawings are in mm

Accessories See page 207

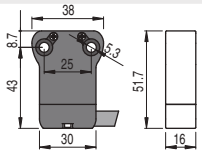
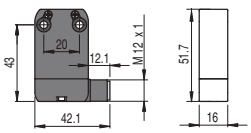
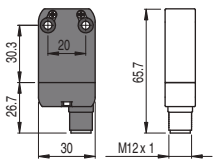
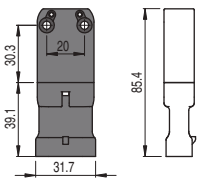
NA-NB series modular metal pre-wired switches

Contact type
R = snap action
L = slow action

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

Contact type
R = snap action
L = slow action

Contact block		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	
B11	R	NA B112KC-DN2 →	1NO+1NC	NA B112KD-DN2 →	1NO+1NC	NA B112KE-DN2 →	1NO+1NC	NA B112KF-DN2 →	1NO+1NC
B02	R	NA B022KC-DN2 →	2NC	NA B022KD-DN2 →	2NC	NA B022KE-DN2 →	2NC	NA B022KF-DN2 →	2NC
B12	R	NA B122KC-DN2 →	1NO+2NC	NA B122KD-DN2 →	1NO+2NC	NA B122KE-DN2 →	1NO+2NC	NA B122KF-DN2 →	1NO+2NC
B22	R	NA B222KC-DN2 →	2NO+2NC	NA B222KD-DN2 →	2NO+2NC	NA B222KE-DN2 →	2NO+2NC	NA B222KF-DN2 →	2NO+2NC
G11	L	NA G112KC-DN2 →	1NO+1NC	NA G112KD-DN2 →	1NO+1NC	NA G112KE-DN2 →	1NO+1NC	NA G112KF-DN2 →	1NO+1NC
G02	L	NA G022KC-DN2 →	2NC	NA G022KD-DN2 →	2NC	NA G022KE-DN2 →	2NC	NA G022KF-DN2 →	2NC
G12	L	NA G122KC-DN2 →	1NO+2NC	NA G122KD-DN2 →	1NO+2NC	NA G122KE-DN2 →	1NO+2NC	NA G122KF-DN2 →	1NO+2NC
G22	L	NA G222KC-DN2 →	2NO+2NC	NA G222KD-DN2 →	2NO+2NC	NA G222KE-DN2 →	2NO+2NC	NA G222KF-DN2 →	2NO+2NC
Max. speed		page 235 - type 1		page 235 - type 1		page 235 - type 1		page 235 - type 1	
Actuating 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 236 - group 5		page 236 - group 5		page 236 - group 5		page 236 - group 5	

NB series housing	M12 connector, right	M12 connector, bottom	AMP Superseal 1.5 connector
			

To order a product of the NB series, replace NA with NB in the codes shown above. Example:
NA B110AA-DN2 → **NB** B110AA-DN2

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

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

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

All values in the drawings are in mm

Accessories See page 207

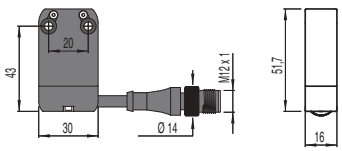
Contact type
R = snap action
L = slow action

Contact block		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
B11	R	NA B112KG-DN2 1NO+1NC	NA B112KH-DN2 1NO+1NC	NA B112KP-DN2 1NO+1NC	NA B112LB-DN2 1NO+1NC
B02	R	NA B022KG-DN2 2NC	NA B022KH-DN2 2NC	NA B022KP-DN2 2NC	NA B022LB-DN2 2NC
B12	R	NA B122KG-DN2 1NO+2NC	NA B122KH-DN2 1NO+2NC	NA B122KP-DN2 1NO+2NC	NA B122LB-DN2 1NO+2NC
B22	R	NA B222KG-DN2 2NO+2NC	NA B222KH-DN2 2NO+2NC	NA B222KP-DN2 2NO+2NC	NA B222LB-DN2 2NO+2NC
G11	L	NA G112KG-DN2 1NO+1NC	NA G112KH-DN2 1NO+1NC	NA G112KP-DN2 1NO+1NC	NA G112LB-DN2 1NO+1NC
G02	L	NA G022KG-DN2 2NC	NA G022KH-DN2 2NC	NA G022KP-DN2 2NC	NA G022LB-DN2 2NC
G12	L	NA G122KG-DN2 1NO+2NC	NA G122KH-DN2 1NO+2NC	NA G122KP-DN2 1NO+2NC	NA G122LB-DN2 1NO+2NC
G22	L	NA G222KG-DN2 2NO+2NC	NA G222KH-DN2 2NO+2NC	NA G222KP-DN2 2NO+2NC	NA G222LB-DN2 2NO+2NC
Max. speed		page 235 - type 1	page 235 - type 1	page 235 - type 1	1.5 m/s
Actuating force		0.07 Nm (0.25 Nm)	0.07 Nm (0.25 Nm)	0.07 Nm (0.25 Nm)	0.07 Nm
Travel diagrams		page 236 - group 5	page 236 - group 5	page 236 - group 5	page 236 - group 5

Contact type
R = snap action
L = slow action

Contact block		Round rod, Ø 3 mm, stainless steel	Glass fibre rod		Porcelain roller
B11	R	NA B112LE-DN2 1NO+1NC	NA B112LH-DN2 1NO+1NC	NA B112LL-DN2 1NO+1NC	NA B112LP-DN2E24 1NO+1NC
B02	R	NA B022LE-DN2 2NC	NA B022LH-DN2 2NC	NA B022LL-DN2 2NC	NA B022LP-DN2E24 2NC
B12	R	NA B122LE-DN2 1NO+2NC	NA B122LH-DN2 1NO+2NC	NA B122LL-DN2 1NO+2NC	NA B122LP-DN2E24 1NO+2NC
B22	R	NA B222LE-DN2 2NO+2NC	NA B222LH-DN2 2NO+2NC	NA B222LL-DN2 2NO+2NC	NA B222LP-DN2E24 2NO+2NC
G11	L	NA G112LE-DN2 1NO+1NC	NA G112LH-DN2 1NO+1NC	NA G112LL-DN2 1NO+1NC	NA G112LP-DN2E24 1NO+1NC
G02	L	NA G022LE-DN2 2NC	NA G022LH-DN2 2NC	NA G022LL-DN2 2NC	NA G022LP-DN2E24 2NC
G12	L	NA G122LE-DN2 1NO+2NC	NA G122LH-DN2 1NO+2NC	NA G122LL-DN2 1NO+2NC	NA G122LP-DN2E24 1NO+2NC
G22	L	NA G222LE-DN2 2NO+2NC	NA G222LH-DN2 2NO+2NC	NA G222LL-DN2 2NO+2NC	NA G222LP-DN2E24 2NO+2NC
Max. speed		1.5 m/s	1.5 m/s	1.5 m/s	0.5 m/s
Actuating force		0.07 Nm	0.07 Nm	0.07 Nm	0.04 Nm
Travel diagrams		page 236 - group 5	page 236 - group 5	page 236 - group 5	page 236 - group 5

Cable and M12 connector



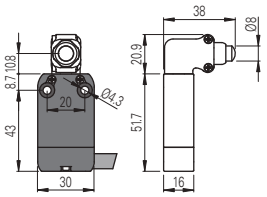
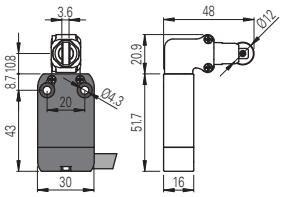
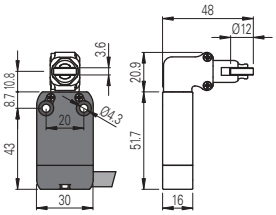
To order a product with cable and M12 connector:
replace DN2 with DM0.2 in the codes shown above. Example:
NA B110AA-**DN2** → NA B110AA-**DM0.2**

All values in the drawings are in mm

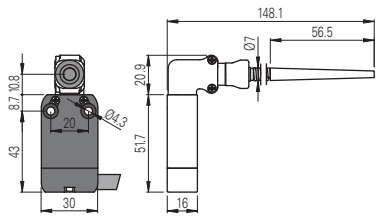
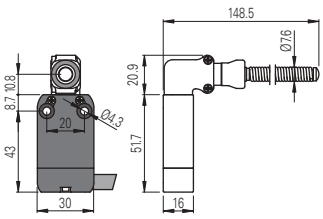
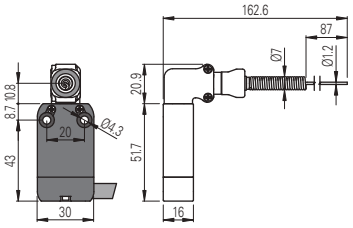
Accessories See page 207

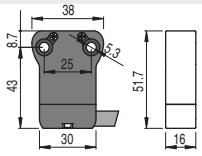
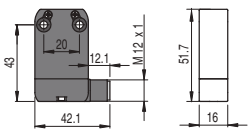
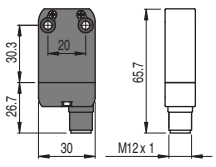
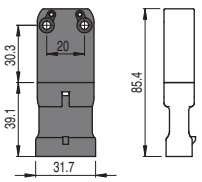
NA-NB series modular metal pre-wired switches

Contact type
R = snap action
L = slow action

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

Contact type
R = snap action
L = slow action

Contact block		External gasket		External gasket		External 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	/		/		/	
G02	L	NA G020HB-DN2W5	2NC	NA G020HE-DN2W5	2NC	NA G020HH-DN2W5	2NC
G12	L	/		/		/	
G22	L	/		/		/	
Max. speed		1 m/s		1 m/s		1 m/s	
Actuating force		0.08 Nm		0.12 Nm		0.08 Nm	
Travel diagrams		page 236 - group 4		page 236 - group 4		page 236 - group 4	

NB series housing	M12 connector, right	M12 connector, bottom	AMP Superseal 1.5 connector
			

To order a product of the NB series, replace NA with NB in the codes shown above. Example:
NA B110AA-DN2 → **NB** B110AA-DN2

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

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

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

All values in the drawings are in mm

Accessories See page 207

По вопросам продаж и поддержки обращайтесь:

Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
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Казань (843)206-01-48
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Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
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Ярославль (4852)69-52-93

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