

# Позиционные выключатели FZ

## Технические характеристики

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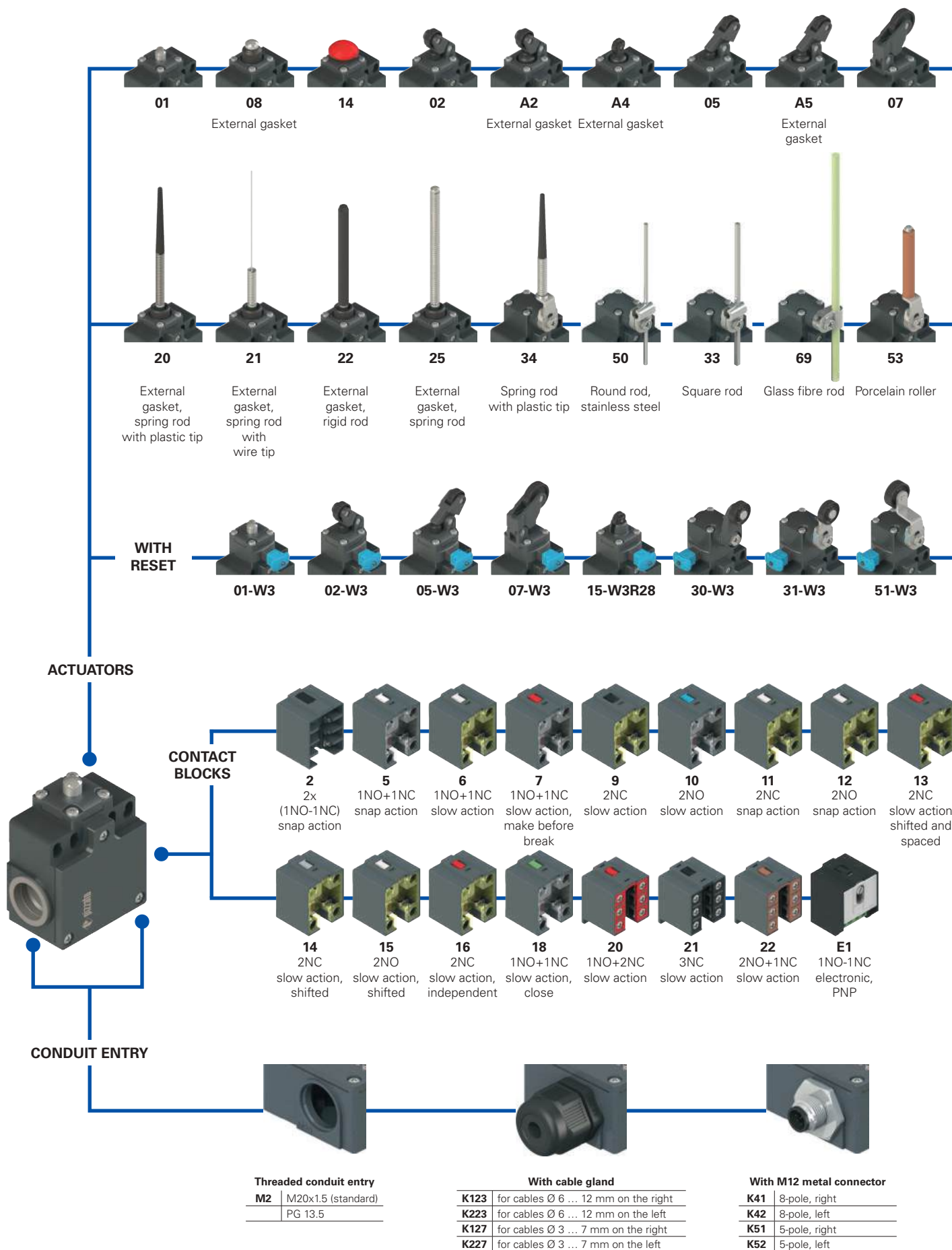
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## Selection diagram





**A7**  
External gasket

**15-R28**  
Steel roller,  
Ø 12 mm,  
with self-  
lubrication

**16**  
Roller  
Ø 20 mm

**12**

**13**  
Steel roller,  
Ø 12 mm,  
with self-  
lubrication

**76**  
Rope switch  
for signalling



**30**

**31**

**51**

**52**

**54**

**56**  
Adjustable  
safety lever

**57**

**38**  
Without  
actuator



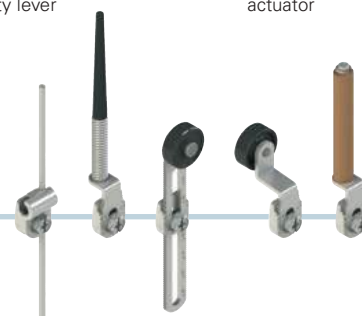
**52-W3**

**54-W3**

**56-W3**

**57-W3**

**38-W3**  
Without  
actuator



**SEPARATE  
ACTUATORS**  
See page 101

## 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 options  
**FZ 502-W3GM2K51R23T6**

### Ambient temperature

|           |                            |
|-----------|----------------------------|
|           | -25°C ... +80°C (standard) |
| <b>T6</b> | -40°C ... +80°C            |

### Housing

**FZ** metal, two conduit entries

### Contact block

|          |                                         |
|----------|-----------------------------------------|
| <b>5</b> | 1NO+1NC, snap action                    |
| <b>6</b> | 1NO+1NC, slow action                    |
| <b>7</b> | 1NO+1NC, slow action, make before break |
| ...      | ...                                     |

### Actuators

|           |                          |
|-----------|--------------------------|
| <b>01</b> | short plunger            |
| <b>02</b> | roller lever             |
| <b>05</b> | angled lever with roller |
| ...       | ...                      |

### Reset

|           |                                     |
|-----------|-------------------------------------|
|           | without reset (standard)            |
| <b>W3</b> | simultaneous reset                  |
| <b>W4</b> | simultaneous reset, increased force |

### Contact type

|           |                                                                            |
|-----------|----------------------------------------------------------------------------|
|           | silver contacts (standard)                                                 |
| <b>G</b>  | silver contacts, 1 µm gold coating                                         |
| <b>G1</b> | silver contacts, 2.5 µm gold coating (not for contact block 2, 20, 21, 22) |

### Pre-installed cable glands or connectors

|             |                                                   |
|-------------|---------------------------------------------------|
|             | no cable gland or connector (standard)            |
| <b>K123</b> | cable gland for cables Ø 6 ... 12 mm on the right |
| <b>K51</b>  | M12 metal connector, 5-pole, right                |

For the complete list of possible combinations please contact our technical department.

### Threaded conduit entry

|           |                    |
|-----------|--------------------|
| <b>M2</b> | M20x1.5 (standard) |
|           | PG 13.5            |

### Rollers

|            |                                                                                                      |
|------------|------------------------------------------------------------------------------------------------------|
|            | standard roller                                                                                      |
| <b>R28</b> | Steel, with self-lubrication, Ø 12 mm (for actuators A4, 15)                                         |
| <b>R44</b> | 316L stainless steel, Ø 12 mm (for actuators A4, 13, 15)                                             |
| <b>R23</b> | Steel, with self-lubrication, Ø 14 mm (for actuators A2, 02, A5, 05, 30, 31, 51, 52, 54, 55, 56, 57) |
| <b>R43</b> | 316L stainless steel, Ø 14 mm (for actuators A2, 02, A5, 05, 30, 31, 51, 52, 54, 55, 56, 57)         |
| <b>R24</b> | Steel, with self-lubrication, Ø 20 mm (for actuators 30, 31, 51, 52, 54, 55, 56, 57)                 |
| <b>R41</b> | 316L stainless steel, Ø 20 mm (for actuators 30, 31, 51, 52, 54, 55, 56, 57)                         |
| <b>R36</b> | Steel, with self-lubrication, Ø 16 mm (for actuators 30, 31, 51, 52, 54, 55, 56, 57)                 |
| <b>R25</b> | technopolymer, Ø 35 mm (for actuators 30, 31, 51, 52, 54, 55, 56, 57)                                |
| <b>R5</b>  | rubber, Ø 40 mm (for actuators 30, 31, 51, 52, 54, 55, 56, 57)                                       |
| <b>R26</b> | rubber, Ø 50 mm (for actuators 51, 52, 54, 55, 56, 57)                                               |
| <b>R27</b> | rubber, protruding, Ø 50 mm (for actuators 55, 56)                                                   |



### Main features

- Metal housing, two conduit entries
- Protection degree IP67 and up to IP69K for actuators without external gasket
- 17 contact blocks available
- 44 actuators available
- Versions with M12 connector
- Versions with gold-plated silver contacts

### Quality marks:



IMO approval: EG610  
 UL approval: E131787  
 CCC approval: 2021000305000101  
 EAC approval: RU C-IT.YT03.B.00035/19

### Technical data

#### Housing

Metal housing, powder-coated

Two threaded conduit entries:

M20x1.5 (standard)

Protection degree with actuators A2, A4, A5, A7, 08, 20, 21, 22, 25:

IP67 acc. to EN 60529 (with cable gland of equal or higher protection degree)

Protection degree with actuators 01, 02, 05, 07, 12, 13, 14, 15, 15-R28, 16, 30, 31, 33, 34, 38, 50, 51, 52, 53, 54, 56, 57, 69, 76:

IP69K acc. to ISO 20653 (with cable gland of equal or higher protection degree)

#### General data

Ambient temperature:

-25°C ... +80°C (standard)

-40°C ... +80°C (T6 option)

Max. actuation frequency:

3600 operating cycles/hour

Mechanical endurance:

20 million operating cycles

Mounting position:

any

Safety parameter  $B_{10D}$ :

40,000,000 for NC contacts

Mechanical interlock, not coded:

type 1 acc. to EN ISO 14119

Tightening torques for installation:

see page 231

Wire cross-sections and

wire stripping lengths:

see page 249

#### In compliance with standards:

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

#### Approvals:

IEC 60947-5-1, UL 508, CSA C22.2 No. 14, GB/T14048.5.

#### 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  $\ominus$  symbol beside the product code. Always connect the safety circuit to the **NC contacts** (normally closed contacts: 11-12, 21-22 or 31-32) 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 232. 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.**

| Electrical data            |                                                | Utilization category                                                         |                                      |     |      |
|----------------------------|------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------|-----|------|
| without connector          | Thermal current ( $I_{th}$ ):                  | 10 A                                                                         | Alternating current: AC15 (50÷60 Hz) |     |      |
|                            | Rated insulation voltage ( $U_i$ ):            | 500 Vac 600 Vdc<br>400 Vac 500 Vdc<br>(contact blocks 2, 11, 12, 20, 21, 22) | Ue (V)                               | 250 | 400  |
|                            | Rated impulse withstand voltage ( $U_{imp}$ ): | 6 kV<br>4 kV (contact blocks 20, 21, 22)                                     | Ie (A)                               | 6   | 4    |
|                            | Conditional short circuit current:             | 1000 A acc. to EN 60947-5-1                                                  | 1                                    |     |      |
| with M12 connector, 5-pole | Protection against short circuits:             | type aM fuse 10 A 500 V                                                      | Direct current: DC13                 |     |      |
|                            | Pollution degree:                              | 3                                                                            | Ue (V)                               | 24  | 125  |
|                            |                                                |                                                                              | Ie (A)                               | 3   | 0.55 |
|                            |                                                |                                                                              |                                      |     | 0.3  |
| with M12 connector, 8-pole | Thermal current ( $I_{th}$ ):                  | 4 A                                                                          | Alternating current: AC15 (50÷60 Hz) |     |      |
|                            | Rated insulation voltage ( $U_i$ ):            | 250 Vac 300 Vdc                                                              | Ue (V)                               | 24  | 120  |
|                            | Protection against short circuits:             | type gG fuse 4 A 500 V                                                       | Ie (A)                               | 4   | 4    |
|                            | Pollution degree:                              | 3                                                                            | Direct current: DC13                 |     |      |
| with M12 connector, 8-pole | Conditional short circuit current:             | 1000 A acc. to EN 60947-5-1                                                  | Ue (V)                               | 24  | 125  |
|                            | Protection against short circuits:             | type gG fuse 2 A 500 V                                                       | Ie (A)                               | 3   | 0.55 |
|                            | Pollution degree:                              | 3                                                                            |                                      |     | 0.3  |
|                            |                                                |                                                                              | Alternating current: AC15 (50÷60 Hz) |     |      |
| with M12 connector, 8-pole | Thermal current ( $I_{th}$ ):                  | 2 A                                                                          | Ue (V)                               | 24  |      |
|                            | Rated insulation voltage ( $U_i$ ):            | 30 Vac 36 Vdc                                                                | Ie (A)                               | 2   |      |
|                            | Protection against short circuits:             | type gG fuse 2 A 500 V                                                       | Direct current: DC13                 |     |      |
|                            | Pollution degree:                              | 3                                                                            | Ue (V)                               | 24  |      |
| with M12 connector, 8-pole | Conditional short circuit current:             | 1000 A acc. to EN 60947-5-1                                                  | Ie (A)                               | 2   |      |
|                            | Protection against short circuits:             | type gG fuse 2 A 500 V                                                       | Direct current: DC13                 |     |      |
|                            | Pollution degree:                              | 3                                                                            | Ue (V)                               | 24  |      |
|                            |                                                |                                                                              | Ie (A)                               | 2   |      |

**Features approved by IMO**

Rated insulation voltage ( $U_i$ ): 500 Vac  
400 Vac (for contact blocks 2, 11, 12, 20, 21, 22, 28, 29, 30, 37, 33, 34)  
Conventional free air thermal current ( $I_{th}$ ): 10 A  
Protection against short circuits: type aM fuse 10 A 500 V  
Rated impulse withstand voltage ( $U_{imp}$ ): 6 kV  
4 kV (for contact blocks 20, 21, 22, 28, 29, 30, 33, 34)  
Protection degree of the housing: IP67  
MV terminals (screw terminals)  
Pollution degree: 3  
Utilization category: AC15  
Operating voltage ( $U_o$ ): 400 Vac (50 Hz)  
Operating current ( $I_o$ ): 3 A  
Forms of the contact element: Za, Za+Za, X+X, Zb, Y+Y, Y+Y+X, Y+Y+Y, Y+X+X, Y, X.  
Positive opening of contacts on contact blocks 5, 6, 7, 8, 9, 11, 13, 14, 16, 17, 18, 19, 20, 21, 22, 28, 29, 30, 33, 34, 37, 38, 39, 66.  
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: Q300 pilot duty (69 VA, 125-250 V dc)  
A600 pilot duty (720 VA, 120-600 V ac)  
Environmental Ratings: Types 1, 4X, 12, 13  
For all contact blocks except 2 and 3 use 60 or 75°C copper (Cu) conductors, rigid or flexible, wire size 12, 14 AWG. Tightening torque for terminal screws of 7.1 lb in (0.8 Nm).  
For contact blocks 2 and 3 use 60 or 75°C copper (Cu) conductors, rigid or flexible, wire size 14 AWG. Tightening torque for terminal screws of 12 lb in (1.4 Nm).

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

**Wiring diagram for M12 connectors**

| Contact block 2<br>2x(1NO-1NC)                                                                                                                                                            | Contact block 5<br>1NO+1NC | Contact block 6<br>1NO+1NC | Contact block 7<br>1NO+1NC | Contact block 9<br>2NC   | Contact block 10<br>2NO  | Contact block 11<br>2NC  | Contact block 12<br>2NO  | Contact block 13<br>2NC  |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------------|----------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|----|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|----|-----|----|-----|--------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|----|-----|----|-----|--------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|----|-----|----|-----|--------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|----|-----|----|-----|--------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|----|-----|----|-----|--------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|----|-----|----|-----|--------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|----|-----|----|-----|--------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|---------|-----|---------|-----|--------|---|
|                                                                                                                                                                                           |                            |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| M12 connector,<br>8-pole                                                                                                                                                                  | M12 connector,<br>5-pole   | M12 connector,<br>5-pole   | M12 connector,<br>5-pole   | M12 connector,<br>5-pole | M12 connector,<br>5-pole | M12 connector,<br>5-pole | M12 connector,<br>5-pole | M12 connector,<br>5-pole |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| <table><tr><th>Contacts</th><th>Pin no.</th></tr><tr><td>NO</td><td>3-4</td></tr><tr><td>NC</td><td>5-6</td></tr><tr><td>NC</td><td>7-8</td></tr><tr><td>NO</td><td>1-2</td></tr></table> | Contacts                   | Pin no.                    | NO                         | 3-4                      | NC                       | 5-6                      | NC                       | 7-8                      | NO | 1-2 | <table><tr><th>Contacts</th><th>Pin no.</th></tr><tr><td>NC</td><td>1-2</td></tr><tr><td>NO</td><td>3-4</td></tr><tr><td>ground</td><td>5</td></tr></table> | Contacts | Pin no. | NC | 1-2 | NO | 3-4 | ground | 5 | <table><tr><th>Contacts</th><th>Pin no.</th></tr><tr><td>NC</td><td>1-2</td></tr><tr><td>NO</td><td>3-4</td></tr><tr><td>ground</td><td>5</td></tr></table> | Contacts | Pin no. | NC | 1-2 | NO | 3-4 | ground | 5 | <table><tr><th>Contacts</th><th>Pin no.</th></tr><tr><td>NC</td><td>1-2</td></tr><tr><td>NO</td><td>3-4</td></tr><tr><td>ground</td><td>5</td></tr></table> | Contacts | Pin no. | NC | 1-2 | NO | 3-4 | ground | 5 | <table><tr><th>Contacts</th><th>Pin no.</th></tr><tr><td>NC</td><td>1-2</td></tr><tr><td>NC</td><td>3-4</td></tr><tr><td>ground</td><td>5</td></tr></table> | Contacts | Pin no. | NC | 1-2 | NC | 3-4 | ground | 5 | <table><tr><th>Contacts</th><th>Pin no.</th></tr><tr><td>NO</td><td>1-2</td></tr><tr><td>NO</td><td>3-4</td></tr><tr><td>ground</td><td>5</td></tr></table> | Contacts | Pin no. | NO | 1-2 | NO | 3-4 | ground | 5 | <table><tr><th>Contacts</th><th>Pin no.</th></tr><tr><td>NC</td><td>1-2</td></tr><tr><td>NC</td><td>3-4</td></tr><tr><td>ground</td><td>5</td></tr></table> | Contacts | Pin no. | NC | 1-2 | NC | 3-4 | ground | 5 | <table><tr><th>Contacts</th><th>Pin no.</th></tr><tr><td>NO</td><td>1-2</td></tr><tr><td>NO</td><td>3-4</td></tr><tr><td>ground</td><td>5</td></tr></table> | Contacts | Pin no. | NO | 1-2 | NO | 3-4 | ground | 5 | <table><tr><th>Contacts</th><th>Pin no.</th></tr><tr><td>NC (1°)</td><td>1-2</td></tr><tr><td>NC (2°)</td><td>3-4</td></tr><tr><td>ground</td><td>5</td></tr></table> | Contacts | Pin no. | NC (1°) | 1-2 | NC (2°) | 3-4 | ground | 5 |
| Contacts                                                                                                                                                                                  | Pin no.                    |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| NO                                                                                                                                                                                        | 3-4                        |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| NC                                                                                                                                                                                        | 5-6                        |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| NC                                                                                                                                                                                        | 7-8                        |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| NO                                                                                                                                                                                        | 1-2                        |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| Contacts                                                                                                                                                                                  | Pin no.                    |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| NC                                                                                                                                                                                        | 1-2                        |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| NO                                                                                                                                                                                        | 3-4                        |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| ground                                                                                                                                                                                    | 5                          |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| Contacts                                                                                                                                                                                  | Pin no.                    |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| NC                                                                                                                                                                                        | 1-2                        |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| NO                                                                                                                                                                                        | 3-4                        |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| ground                                                                                                                                                                                    | 5                          |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| Contacts                                                                                                                                                                                  | Pin no.                    |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| NC                                                                                                                                                                                        | 1-2                        |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| NO                                                                                                                                                                                        | 3-4                        |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| ground                                                                                                                                                                                    | 5                          |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| Contacts                                                                                                                                                                                  | Pin no.                    |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| NC                                                                                                                                                                                        | 1-2                        |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| NC                                                                                                                                                                                        | 3-4                        |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| ground                                                                                                                                                                                    | 5                          |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| Contacts                                                                                                                                                                                  | Pin no.                    |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| NO                                                                                                                                                                                        | 1-2                        |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| NO                                                                                                                                                                                        | 3-4                        |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| ground                                                                                                                                                                                    | 5                          |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| Contacts                                                                                                                                                                                  | Pin no.                    |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| NC                                                                                                                                                                                        | 1-2                        |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| NC                                                                                                                                                                                        | 3-4                        |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| ground                                                                                                                                                                                    | 5                          |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| Contacts                                                                                                                                                                                  | Pin no.                    |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| NO                                                                                                                                                                                        | 1-2                        |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| NO                                                                                                                                                                                        | 3-4                        |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| ground                                                                                                                                                                                    | 5                          |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| Contacts                                                                                                                                                                                  | Pin no.                    |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| NC (1°)                                                                                                                                                                                   | 1-2                        |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| NC (2°)                                                                                                                                                                                   | 3-4                        |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |
| ground                                                                                                                                                                                    | 5                          |                            |                            |                          |                          |                          |                          |                          |    |     |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                       |          |         |         |     |         |     |        |   |

| Contact block 14<br>2NC                                                                                                                                               | Contact block 15<br>2NO  | Contact block 16<br>2NC  | Contact block 18<br>1NO+1NC | Contact block 20<br>1NO+2NC | Contact block 21<br>3NC  | Contact block 22<br>2NO+1NC | Contact block 33<br>1NO+1NC | Contact block 34<br>2NC  |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------|-----------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|---------|-----|---------|-----|--------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|------------------------|-----|-----------------------|-----|--------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|----|-----|----|-----|--------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|----|-----|----|-----|----|-----|--------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|----|-----|----|-----|----|-----|--------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|----|-----|----|-----|----|-----|--------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|----|-----|----|-----|--------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|----|-----|----|-----|--------|---|
|                                                                                                                                                                       |                          |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| M12 connector,<br>5-pole                                                                                                                                              | M12 connector,<br>5-pole | M12 connector,<br>5-pole | M12 connector,<br>5-pole    | M12 connector,<br>8-pole    | M12 connector,<br>8-pole | M12 connector,<br>8-pole    | M12 connector,<br>5-pole    | M12 connector,<br>5-pole |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| <table><tr><th>Contacts</th><th>Pin no.</th></tr><tr><td>NC (1°)</td><td>1-2</td></tr><tr><td>NC (2°)</td><td>3-4</td></tr><tr><td>ground</td><td>5</td></tr></table> | Contacts                 | Pin no.                  | NC (1°)                     | 1-2                         | NC (2°)                  | 3-4                         | ground                      | 5                        | <table><tr><th>Contacts</th><th>Pin no.</th></tr><tr><td>NO (1°)</td><td>1-2</td></tr><tr><td>NO (2°)</td><td>3-4</td></tr><tr><td>ground</td><td>5</td></tr></table> | Contacts | Pin no. | NO (1°) | 1-2 | NO (2°) | 3-4 | ground | 5 | <table><tr><th>Contacts</th><th>Pin no.</th></tr><tr><td>NC, lever to the right</td><td>1-2</td></tr><tr><td>NC, lever to the left</td><td>3-4</td></tr><tr><td>ground</td><td>5</td></tr></table> | Contacts | Pin no. | NC, lever to the right | 1-2 | NC, lever to the left | 3-4 | ground | 5 | <table><tr><th>Contacts</th><th>Pin no.</th></tr><tr><td>NC</td><td>1-2</td></tr><tr><td>NO</td><td>3-4</td></tr><tr><td>ground</td><td>5</td></tr></table> | Contacts | Pin no. | NC | 1-2 | NO | 3-4 | ground | 5 | <table><tr><th>Contacts</th><th>Pin no.</th></tr><tr><td>NC</td><td>3-4</td></tr><tr><td>NC</td><td>5-6</td></tr><tr><td>NO</td><td>7-8</td></tr><tr><td>ground</td><td>1</td></tr></table> | Contacts | Pin no. | NC | 3-4 | NC | 5-6 | NO | 7-8 | ground | 1 | <table><tr><th>Contacts</th><th>Pin no.</th></tr><tr><td>NC</td><td>3-4</td></tr><tr><td>NC</td><td>5-6</td></tr><tr><td>NC</td><td>7-8</td></tr><tr><td>ground</td><td>1</td></tr></table> | Contacts | Pin no. | NC | 3-4 | NC | 5-6 | NC | 7-8 | ground | 1 | <table><tr><th>Contacts</th><th>Pin no.</th></tr><tr><td>NC</td><td>3-4</td></tr><tr><td>NO</td><td>5-6</td></tr><tr><td>NO</td><td>7-8</td></tr><tr><td>ground</td><td>1</td></tr></table> | Contacts | Pin no. | NC | 3-4 | NO | 5-6 | NO | 7-8 | ground | 1 | <table><tr><th>Contacts</th><th>Pin no.</th></tr><tr><td>NC</td><td>1-2</td></tr><tr><td>NO</td><td>3-4</td></tr><tr><td>ground</td><td>5</td></tr></table> | Contacts | Pin no. | NC | 1-2 | NO | 3-4 | ground | 5 | <table><tr><th>Contacts</th><th>Pin no.</th></tr><tr><td>NC</td><td>1-2</td></tr><tr><td>NC</td><td>3-4</td></tr><tr><td>ground</td><td>5</td></tr></table> | Contacts | Pin no. | NC | 1-2 | NC | 3-4 | ground | 5 |
| Contacts                                                                                                                                                              | Pin no.                  |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| NC (1°)                                                                                                                                                               | 1-2                      |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| NC (2°)                                                                                                                                                               | 3-4                      |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| ground                                                                                                                                                                | 5                        |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| Contacts                                                                                                                                                              | Pin no.                  |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| NO (1°)                                                                                                                                                               | 1-2                      |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| NO (2°)                                                                                                                                                               | 3-4                      |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| ground                                                                                                                                                                | 5                        |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| Contacts                                                                                                                                                              | Pin no.                  |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| NC, lever to the right                                                                                                                                                | 1-2                      |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| NC, lever to the left                                                                                                                                                 | 3-4                      |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| ground                                                                                                                                                                | 5                        |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| Contacts                                                                                                                                                              | Pin no.                  |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| NC                                                                                                                                                                    | 1-2                      |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| NO                                                                                                                                                                    | 3-4                      |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| ground                                                                                                                                                                | 5                        |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| Contacts                                                                                                                                                              | Pin no.                  |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| NC                                                                                                                                                                    | 3-4                      |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| NC                                                                                                                                                                    | 5-6                      |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| NO                                                                                                                                                                    | 7-8                      |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| ground                                                                                                                                                                | 1                        |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| Contacts                                                                                                                                                              | Pin no.                  |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| NC                                                                                                                                                                    | 3-4                      |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| NC                                                                                                                                                                    | 5-6                      |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| NC                                                                                                                                                                    | 7-8                      |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| ground                                                                                                                                                                | 1                        |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| Contacts                                                                                                                                                              | Pin no.                  |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| NC                                                                                                                                                                    | 3-4                      |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| NO                                                                                                                                                                    | 5-6                      |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| NO                                                                                                                                                                    | 7-8                      |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| ground                                                                                                                                                                | 1                        |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| Contacts                                                                                                                                                              | Pin no.                  |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| NC                                                                                                                                                                    | 1-2                      |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| NO                                                                                                                                                                    | 3-4                      |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| ground                                                                                                                                                                | 5                        |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| Contacts                                                                                                                                                              | Pin no.                  |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| NC                                                                                                                                                                    | 1-2                      |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| NC                                                                                                                                                                    | 3-4                      |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |
| ground                                                                                                                                                                | 5                        |                          |                             |                             |                          |                             |                             |                          |                                                                                                                                                                       |          |         |         |     |         |     |        |   |                                                                                                                                                                                                    |          |         |                        |     |                       |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                                                             |          |         |    |     |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |                                                                                                                                                             |          |         |    |     |    |     |        |   |

| Contact block E1<br>PNP                                                                                                                                                                                           |          |         |   |   |   |   |    |   |    |   |        |   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|---|---|---|---|----|---|----|---|--------|---|
|                                                                                                                                                                                                                   |          |         |   |   |   |   |    |   |    |   |        |   |
| M12 connector,<br>5-pole                                                                                                                                                                                          |          |         |   |   |   |   |    |   |    |   |        |   |
| <table><tr><th>Contacts</th><th>Pin no.</th></tr><tr><td>+</td><td>1</td></tr><tr><td>-</td><td>3</td></tr><tr><td>NC</td><td>2</td></tr><tr><td>NO</td><td>4</td></tr><tr><td>ground</td><td>5</td></tr></table> | Contacts | Pin no. | + | 1 | - | 3 | NC | 2 | NO | 4 | ground | 5 |
| Contacts                                                                                                                                                                                                          | Pin no.  |         |   |   |   |   |    |   |    |   |        |   |
| +                                                                                                                                                                                                                 | 1        |         |   |   |   |   |    |   |    |   |        |   |
| -                                                                                                                                                                                                                 | 3        |         |   |   |   |   |    |   |    |   |        |   |
| NC                                                                                                                                                                                                                | 2        |         |   |   |   |   |    |   |    |   |        |   |
| NO                                                                                                                                                                                                                | 4        |         |   |   |   |   |    |   |    |   |        |   |
| ground                                                                                                                                                                                                            | 5        |         |   |   |   |   |    |   |    |   |        |   |

## Contact type

- R** = snap action  
**L** = slow action  
**LO** = slow action, make before break  
**LS** = slow action, shifted  
**LV** = slow action, shifted and spaced  
**LI** = slow action, independent  
**LA** = slow action, close  
 = electronic, PNP

## Contact block

|                 |                                                                                 |                    | With steel roller with self-lubrication or 316L stainless steel on request |                    | External gasket |                    | External gasket |
|-----------------|---------------------------------------------------------------------------------|--------------------|----------------------------------------------------------------------------|--------------------|-----------------|--------------------|-----------------|
| 2               | <b>R</b>                                                                        | FZ 201-M2          | 2x(1NO-1NC)                                                                | FZ 202-M2          | 2x(1NO-1NC)     | FZ 2A2-M2          | 2x(1NO-1NC)     |
| 5               | <b>R</b>                                                                        | FZ 501-M2          | ➔ 1NO+1NC                                                                  | FZ 502-M2          | ➔ 1NO+1NC       | FZ 5A2-M2          | ➔ 1NO+1NC       |
| 6               | <b>L</b>                                                                        | FZ 601-M2          | ➔ 1NO+1NC                                                                  | FZ 602-M2          | ➔ 1NO+1NC       | FZ 6A2-M2          | ➔ 1NO+1NC       |
| 7               | <b>LO</b>                                                                       | FZ 701-M2          | ➔ 1NO+1NC                                                                  | FZ 702-M2          | ➔ 1NO+1NC       | FZ 7A2-M2          | ➔ 1NO+1NC       |
| 9               | <b>L</b>                                                                        | FZ 901-M2          | ➔ 2NC                                                                      | FZ 902-M2          | ➔ 2NC           | FZ 9A2-M2          | ➔ 2NC           |
| 10              | <b>L</b>                                                                        | FZ 1001-M2         | 2NO                                                                        | FZ 1002-M2         | 2NO             | FZ 10A2-M2         | 2NO             |
| 11              | <b>R</b>                                                                        | FZ 1101-M2         | ➔ 2NC                                                                      | FZ 1102-M2         | ➔ 2NC           | FZ 11A2-M2         | ➔ 2NC           |
| 12              | <b>R</b>                                                                        | FZ 1201-M2         | 2NO                                                                        | FZ 1202-M2         | 2NO             | FZ 12A2-M2         | 2NO             |
| 13              | <b>LV</b>                                                                       | FZ 1301-M2         | ➔ 2NC                                                                      | FZ 1302-M2         | ➔ 2NC           | FZ 13A2-M2         | ➔ 2NC           |
| 14              | <b>LS</b>                                                                       | FZ 1401-M2         | ➔ 2NC                                                                      | FZ 1402-M2         | ➔ 2NC           | FZ 14A2-M2         | ➔ 2NC           |
| 15              | <b>LS</b>                                                                       | FZ 1501-M2         | 2NO                                                                        | FZ 1502-M2         | 2NO             | FZ 15A2-M2         | 2NO             |
| 18              | <b>LA</b>                                                                       | FZ 1801-M2         | ➔ 1NO+1NC                                                                  | FZ 1802-M2         | ➔ 1NO+1NC       | FZ 18A2-M2         | ➔ 1NO+1NC       |
| 20              | <b>L</b>                                                                        | FZ 2001-M2         | ➔ 1NO+2NC                                                                  | FZ 2002-M2         | ➔ 1NO+2NC       | FZ 20A2-M2         | ➔ 1NO+2NC       |
| 21              | <b>L</b>                                                                        | FZ 2101-M2         | ➔ 3NC                                                                      | FZ 2102-M2         | ➔ 3NC           | FZ 21A2-M2         | ➔ 3NC           |
| 22              | <b>L</b>                                                                        | FZ 2201-M2         | ➔ 2NO+1NC                                                                  | FZ 2202-M2         | ➔ 2NO+1NC       | FZ 22A2-M2         | ➔ 2NO+1NC       |
| E1              |  | FZ E101-M2         | 1NO-1NC                                                                    | FZ E102-M2         | 1NO-1NC         | FZ E1A2-M2         | 1NO-1NC         |
| Max. speed      |                                                                                 | page 231 - type 4  |                                                                            | page 231 - type 3  |                 | page 231 - type 3  |                 |
| Actuating force |                                                                                 | 8 N (25 N ➔)       |                                                                            | 6 N (25 N ➔)       |                 | 4.3 N (25 N ➔)     |                 |
| Travel diagrams |                                                                                 | page 232 - group 1 |                                                                            | page 232 - group 2 |                 | page 232 - group 2 |                 |
|                 |                                                                                 |                    |                                                                            |                    |                 | page 232 - group 1 |                 |

## Contact type

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 = electronic, PNP

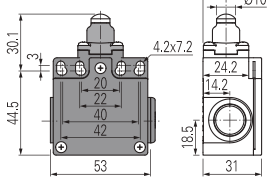
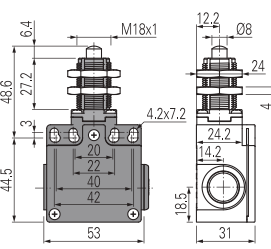
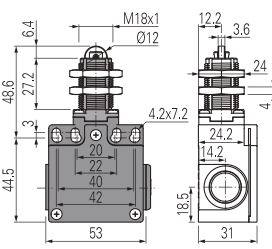
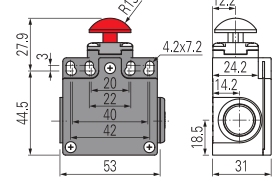
## Contact block

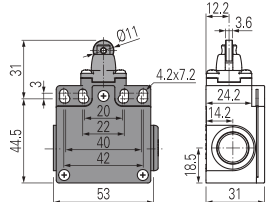
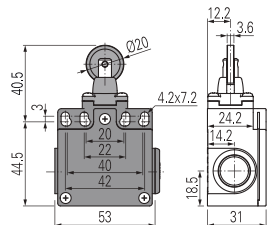
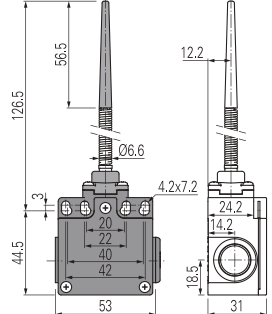
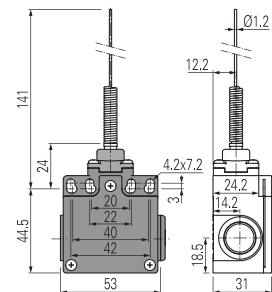
|                 |                                                                                   |                    | With steel roller with self-lubrication or 316L stainless steel on request |                    | External gasket |                    | External gasket |
|-----------------|-----------------------------------------------------------------------------------|--------------------|----------------------------------------------------------------------------|--------------------|-----------------|--------------------|-----------------|
| 2               | <b>R</b>                                                                          | FZ 205-M2          | 2x(1NO-1NC)                                                                | FZ 2A5-M2          | 2x(1NO-1NC)     | FZ 207-M2          | 2x(1NO-1NC)     |
| 5               | <b>R</b>                                                                          | FZ 505-M2          | ➔ 1NO+1NC                                                                  | FZ 5A5-M2          | ➔ 1NO+1NC       | FZ 507-M2          | ➔ 1NO+1NC       |
| 6               | <b>L</b>                                                                          | FZ 605-M2          | ➔ 1NO+1NC                                                                  | FZ 6A5-M2          | ➔ 1NO+1NC       | FZ 607-M2          | ➔ 1NO+1NC       |
| 7               | <b>LO</b>                                                                         | FZ 705-M2          | ➔ 1NO+1NC                                                                  | FZ 7A5-M2          | ➔ 1NO+1NC       | FZ 707-M2          | ➔ 1NO+1NC       |
| 9               | <b>L</b>                                                                          | FZ 905-M2          | ➔ 2NC                                                                      | FZ 9A5-M2          | ➔ 2NC           | FZ 907-M2          | ➔ 2NC           |
| 10              | <b>L</b>                                                                          | FZ 1005-M2         | 2NO                                                                        | FZ 10A5-M2         | 2NO             | FZ 1007-M2         | 2NO             |
| 11              | <b>R</b>                                                                          | FZ 1105-M2         | ➔ 2NC                                                                      | FZ 11A5-M2         | ➔ 2NC           | FZ 1107-M2         | ➔ 2NC           |
| 12              | <b>R</b>                                                                          | FZ 1205-M2         | 2NO                                                                        | FZ 12A5-M2         | 2NO             | FZ 1207-M2         | 2NO             |
| 13              | <b>LV</b>                                                                         | FZ 1305-M2         | ➔ 2NC                                                                      | FZ 13A5-M2         | ➔ 2NC           | FZ 1307-M2         | ➔ 2NC           |
| 14              | <b>LS</b>                                                                         | FZ 1405-M2         | ➔ 2NC                                                                      | FZ 14A5-M2         | ➔ 2NC           | FZ 1407-M2         | ➔ 2NC           |
| 15              | <b>LS</b>                                                                         | FZ 1505-M2         | 2NO                                                                        | FZ 15A5-M2         | 2NO             | FZ 1507-M2         | 2NO             |
| 18              | <b>LA</b>                                                                         | FZ 1805-M2         | ➔ 1NO+1NC                                                                  | FZ 18A5-M2         | ➔ 1NO+1NC       | FZ 1807-M2         | ➔ 1NO+1NC       |
| 20              | <b>L</b>                                                                          | FZ 2005-M2         | ➔ 1NO+2NC                                                                  | FZ 20A5-M2         | ➔ 1NO+2NC       | FZ 2007-M2         | ➔ 1NO+2NC       |
| 21              | <b>L</b>                                                                          | FZ 2105-M2         | ➔ 3NC                                                                      | FZ 21A5-M2         | ➔ 3NC           | FZ 2107-M2         | ➔ 3NC           |
| 22              | <b>L</b>                                                                          | FZ 2205-M2         | ➔ 2NO+1NC                                                                  | FZ 22A5-M2         | ➔ 2NO+1NC       | FZ 2207-M2         | ➔ 2NO+1NC       |
| E1              |  | FZ E105-M2         | 1NO-1NC                                                                    | FZ E1A5-M2         | 1NO-1NC         | FZ E107-M2         | 1NO-1NC         |
| Max. speed      |                                                                                   | page 231 - type 3  |                                                                            | page 231 - type 3  |                 | page 231 - type 3  |                 |
| Actuating force |                                                                                   | 6 N (25 N ➔)       |                                                                            | 4.3 N (25 N ➔)     |                 | 4 N (25 N ➔)       |                 |
| Travel diagrams |                                                                                   | page 232 - group 2 |                                                                            | page 232 - group 2 |                 | page 232 - group 3 |                 |
|                 |                                                                                   |                    |                                                                            |                    |                 | page 232 - group 3 |                 |

All values in the drawings are in mm

Accessories See page 207



|                 |                                                                                   | External gasket                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |                                                                                     |             |                                                                                   |             |
|-----------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------------------------------------------------------------------------------|-------------|-----------------------------------------------------------------------------------|-------------|
| Contact type    |                                                                                   |  = snap action<br> = slow action<br> = slow action, make before break<br> = slow action, shifted<br> = slow action, shifted and spaced<br> = slow action, independent<br> = slow action, close<br> = electronic, PNP |             |    |             |  |             |
|                 |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             |  |             |                                                                                   |             |
| Contact block   |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |                                                                                     |             |                                                                                   |             |
| 2               |  | FZ 208-M2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2x(1NO-1NC) | FZ 212-M2                                                                           | 2x(1NO-1NC) | FZ 213-M2                                                                         | 2x(1NO-1NC) |
| 5               |  | FZ 508-M2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ➔ 1NO+1NC   | FZ 512-M2                                                                           | ➔ 1NO+1NC   | FZ 513-M2                                                                         | ➔ 1NO+1NC   |
| 6               |  | FZ 608-M2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ➔ 1NO+1NC   | FZ 612-M2                                                                           | ➔ 1NO+1NC   | FZ 613-M2                                                                         | ➔ 1NO+1NC   |
| 7               |  | FZ 708-M2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ➔ 1NO+1NC   | FZ 712-M2                                                                           | ➔ 1NO+1NC   | FZ 713-M2                                                                         | ➔ 1NO+1NC   |
| 9               |  | FZ 908-M2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ➔ 2NC       | FZ 912-M2                                                                           | ➔ 2NC       | FZ 913-M2                                                                         | ➔ 2NC       |
| 10              |  | FZ 1008-M2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2NO         | FZ 1012-M2                                                                          | 2NO         | FZ 1013-M2                                                                        | 2NO         |
| 11              |  | FZ 1108-M2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ➔ 2NC       | FZ 1112-M2                                                                          | ➔ 2NC       | FZ 1113-M2                                                                        | ➔ 2NC       |
| 12              |  | FZ 1208-M2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2NO         | FZ 1212-M2                                                                          | 2NO         | FZ 1213-M2                                                                        | 2NO         |
| 13              |  | FZ 1308-M2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ➔ 2NC       | FZ 1312-M2                                                                          | ➔ 2NC       | FZ 1313-M2                                                                        | ➔ 2NC       |
| 14              |  | FZ 1408-M2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ➔ 2NC       | FZ 1412-M2                                                                          | ➔ 2NC       | FZ 1413-M2                                                                        | ➔ 2NC       |
| 15              |  | FZ 1508-M2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2NO         | FZ 1512-M2                                                                          | 2NO         | FZ 1513-M2                                                                        | 2NO         |
| 18              |  | FZ 1808-M2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ➔ 1NO+1NC   | FZ 1812-M2                                                                          | ➔ 1NO+1NC   | FZ 1813-M2                                                                        | ➔ 1NO+1NC   |
| 20              |  | FZ 2008-M2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ➔ 1NO+2NC   | FZ 2012-M2                                                                          | ➔ 1NO+2NC   | FZ 2013-M2                                                                        | ➔ 1NO+2NC   |
| 21              |  | FZ 2108-M2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ➔ 3NC       | FZ 2112-M2                                                                          | ➔ 3NC       | FZ 2113-M2                                                                        | ➔ 3NC       |
| 22              |  | FZ 2208-M2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ➔ 2NO+1NC   | FZ 2212-M2                                                                          | ➔ 2NO+1NC   | FZ 2213-M2                                                                        | ➔ 2NO+1NC   |
| E1              |  | FZ E108-M2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1NO-1NC     | FZ E112-M2                                                                          | 1NO-1NC     | FZ E113-M2                                                                        | 1NO-1NC     |
| Max. speed      |                                                                                   | page 231 - type 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             | page 231 - type 4                                                                   |             | page 231 - type 2                                                                 |             |
| Actuating force |                                                                                   | 8 N (25 N ➔)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |             | 8 N (25 N ➔)                                                                        |             | 8 N (25 N ➔)                                                                      |             |
| Travel diagrams |                                                                                   | page 232 - group 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |             | page 232 - group 1                                                                  |             | page 232 - group 1                                                                |             |

|                 |                                                                                     | External gasket                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             | External gasket                                                                      |             |
|-----------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------------------------------------------------------------------------|-------------|
|                 |                                                                                     | Spring rod                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |             | Spring rod                                                                           |             |
| Contact type    |                                                                                     |  = snap action<br> = slow action<br> = slow action, make before break<br> = slow action, shifted<br> = slow action, shifted and spaced<br> = slow action, independent<br> = slow action, close<br> = electronic, PNP |             |   |             |
|                 |                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |             |  |             |
|                 |                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |             |                                                                                      |             |
| Contact block   |                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |                                                                                      |             |
| 2               |  | FZ 215-M2R28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2x(1NO-1NC) | FZ 216-M2                                                                            | 2x(1NO-1NC) |
| 5               |  | FZ 515-M2R28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ➔ 1NO+1NC   | FZ 516-M2                                                                            | ➔ 1NO+1NC   |
| 6               |  | FZ 615-M2R28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ➔ 1NO+1NC   | FZ 616-M2                                                                            | ➔ 1NO+1NC   |
| 7               |  | FZ 715-M2R28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ➔ 1NO+1NC   | FZ 716-M2                                                                            | ➔ 1NO+1NC   |
| 9               |  | FZ 915-M2R28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ➔ 2NC       | FZ 916-M2                                                                            | ➔ 2NC       |
| 10              |  | FZ 1015-M2R28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2NO         | FZ 1016-M2                                                                           | 2NO         |
| 11              |  | FZ 1115-M2R28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ➔ 2NC       | FZ 1116-M2                                                                           | ➔ 2NC       |
| 12              |  | FZ 1215-M2R28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2NO         | FZ 1216-M2                                                                           | 2NO         |
| 13              |  | FZ 1315-M2R28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ➔ 2NC       | FZ 1316-M2                                                                           | ➔ 2NC       |
| 14              |  | FZ 1415-M2R28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ➔ 2NC       | FZ 1416-M2                                                                           | ➔ 2NC       |
| 15              |  | FZ 1515-M2R28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2NO         | FZ 1516-M2                                                                           | 2NO         |
| 18              |  | FZ 1815-M2R28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ➔ 1NO+1NC   | FZ 1816-M2                                                                           | ➔ 1NO+1NC   |
| 20              |  | FZ 2015-M2R28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ➔ 1NO+2NC   | FZ 2016-M2                                                                           | ➔ 1NO+2NC   |
| 21              |  | FZ 2115-M2R28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ➔ 3NC       | FZ 2116-M2                                                                           | ➔ 3NC       |
| 22              |  | FZ 2215-M2R28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ➔ 2NO+1NC   | FZ 2216-M2                                                                           | ➔ 2NO+1NC   |
| E1              |  | FZ E115-M2R28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1NO-1NC     | FZ E116-M2                                                                           | 1NO-1NC     |
| Max. speed      |                                                                                     | page 231 - type 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             | 1 m/s                                                                                |             |
| Actuating force |                                                                                     | 8 N (25 N ➔)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |             | 0.07 Nm                                                                              |             |
| Travel diagrams |                                                                                     | page 232 - group 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |             | page 232 - group 4                                                                   |             |

All values in the drawings are in mm

Accessories See page 207

## Contact type

- R** = snap action  
**L** = slow action  
**LO** = slow action, make before break  
**LS** = slow action, shifted  
**LV** = slow action, shifted and spaced  
**LI** = slow action, independent  
**LA** = slow action, close  
 = electronic, PNP

## Contact block

|                 | External gasket<br>Rigid rod                                                                           | External gasket<br>Spring rod | With Ø 20 mm steel roller with self-lubrication<br>or 316L stainless steel on request                    | Other rollers available. See page 102                                                                    |
|-----------------|--------------------------------------------------------------------------------------------------------|-------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| 2               | <b>R</b> FZ 222-M2 2x(1NO-1NC)                                                                         | FZ 225-M2 2x(1NO-1NC)         | FZ 230-M2 2x(1NO-1NC)                                                                                    | FZ 231-M2 2x(1NO-1NC)                                                                                    |
| 5               | <b>R</b> /                                                                                             | FZ 525-M2 1NO+1NC             | FZ 530-M2 1NO+1NC                                                                                        | FZ 531-M2 1NO+1NC                                                                                        |
| 6               | <b>L</b> /                                                                                             | /                             | FZ 630-M2 1NO+1NC                                                                                        | FZ 631-M2 1NO+1NC                                                                                        |
| 7               | <b>LO</b> /                                                                                            | /                             | FZ 730-M2 1NO+1NC                                                                                        | FZ 731-M2 1NO+1NC                                                                                        |
| 9               | <b>L</b> /                                                                                             | /                             | FZ 930-M2 2NC                                                                                            | FZ 931-M2 2NC                                                                                            |
| 10              | <b>L</b> FZ 1022-M2 2NO                                                                                | FZ 1025-M2 2NO                | FZ 1030-M2 2NO                                                                                           | FZ 1031-M2 2NO                                                                                           |
| 11              | <b>R</b> /                                                                                             | /                             | FZ 1130-M2 2NC                                                                                           | FZ 1131-M2 2NC                                                                                           |
| 12              | <b>R</b> FZ 1222-M2 2NO                                                                                | FZ 1225-M2 2NO                | FZ 1230-M2 2NO                                                                                           | FZ 1231-M2 2NO                                                                                           |
| 13              | <b>LV</b> /                                                                                            | /                             | FZ 1330-M2 2NC                                                                                           | FZ 1331-M2 2NC                                                                                           |
| 14              | <b>LS</b> /                                                                                            | /                             | FZ 1430-M2 2NC                                                                                           | FZ 1431-M2 2NC                                                                                           |
| 15              | <b>LS</b> /                                                                                            | /                             | FZ 1530-M2 2NO                                                                                           | FZ 1531-M2 2NO                                                                                           |
| 16              | <b>LI</b> /                                                                                            | /                             | FZ 1630-M2 2NC                                                                                           | FZ 1631-M2 2NC                                                                                           |
| 18              | <b>LA</b> FZ 1822-M2 1NO+1NC                                                                           | FZ 1825-M2 1NO+1NC            | FZ 1830-M2 1NO+1NC                                                                                       | FZ 1831-M2 1NO+1NC                                                                                       |
| 20              | <b>L</b> FZ 2022-M2 1NO+2NC                                                                            | FZ 2025-M2 1NO+2NC            | FZ 2030-M2 1NO+2NC                                                                                       | FZ 2031-M2 1NO+2NC                                                                                       |
| 21              | <b>L</b> FZ 2122-M2 3NC                                                                                | FZ 2125-M2 3NC                | FZ 2130-M2 3NC                                                                                           | FZ 2131-M2 3NC                                                                                           |
| 22              | <b>L</b> FZ 2222-M2 2NO+1NC                                                                            | FZ 2225-M2 2NO+1NC            | FZ 2230-M2 2NO+1NC                                                                                       | FZ 2231-M2 2NO+1NC                                                                                       |
| E1              |  FZ E122-M2 1NO-1NC    | FZ E125-M2 1NO-1NC            | FZ E130-M2 1NO-1NC                                                                                       | FZ E131-M2 1NO-1NC                                                                                       |
| Max. speed      | 1 m/s                                                                                                  | 1 m/s                         | page 231 - type 1                                                                                        | page 231 - type 1                                                                                        |
| Actuating force | 0.12 Nm (0.25 Nm  ) | 0.12 Nm                       | 0.06 Nm (0.25 Nm  ) | 0.06 Nm (0.25 Nm  ) |
| Travel diagrams | page 232 - group 4                                                                                     | page 232 - group 4            | page 232 - group 5                                                                                       | page 232 - group 5                                                                                       |

## Contact type

- R** = snap action  
**L** = slow action  
**LO** = slow action, make before break  
**LS** = slow action, shifted  
**LV** = slow action, shifted and spaced  
**LI** = slow action, independent  
**LA** = slow action, close  
 = electronic, PNP

## Contact block

|                 | Square rod, 3x3 mm                                                                                   | Round rod, Ø 3 mm, stainless steel | Other rollers available. See page 102 |
|-----------------|------------------------------------------------------------------------------------------------------|------------------------------------|---------------------------------------|
| 2               | <b>R</b> FZ 233-M2 2x(1NO-1NC)                                                                       | FZ 234-M2 2x(1NO-1NC)              | FZ 250-M2 2x(1NO-1NC)                 |
| 5               | <b>R</b> FZ 533-M2 1NO+1NC                                                                           | FZ 534-M2 1NO+1NC                  | FZ 550-M2 1NO+1NC                     |
| 6               | <b>L</b> FZ 633-M2 1NO+1NC                                                                           | FZ 634-M2 1NO+1NC                  | FZ 650-M2 1NO+1NC                     |
| 7               | <b>LO</b> FZ 733-M2 1NO+1NC                                                                          | FZ 734-M2 1NO+1NC                  | FZ 750-M2 1NO+1NC                     |
| 9               | <b>L</b> FZ 933-M2 2NC                                                                               | FZ 934-M2 2NC                      | FZ 950-M2 2NC                         |
| 10              | <b>L</b> FZ 1033-M2 2NO                                                                              | FZ 1034-M2 2NO                     | FZ 1050-M2 2NO                        |
| 11              | <b>R</b> FZ 1133-M2 2NC                                                                              | FZ 1134-M2 2NC                     | FZ 1150-M2 2NC                        |
| 12              | <b>R</b> FZ 1233-M2 2NO                                                                              | FZ 1234-M2 2NO                     | FZ 1250-M2 2NO                        |
| 13              | <b>LV</b> FZ 1333-M2 2NC                                                                             | FZ 1334-M2 2NC                     | FZ 1350-M2 2NC                        |
| 14              | <b>LS</b> FZ 1433-M2 2NC                                                                             | FZ 1434-M2 2NC                     | FZ 1450-M2 2NC                        |
| 15              | <b>LS</b> FZ 1533-M2 2NO                                                                             | FZ 1534-M2 2NO                     | FZ 1550-M2 2NO                        |
| 16              | <b>LI</b> FZ 1633-M2 2NC                                                                             | FZ 1634-M2 2NC                     | FZ 1650-M2 2NC                        |
| 18              | <b>LA</b> FZ 1833-M2 1NO+1NC                                                                         | FZ 1834-M2 1NO+1NC                 | FZ 1850-M2 1NO+1NC                    |
| 20              | <b>L</b> FZ 2033-M2 1NO+2NC                                                                          | FZ 2034-M2 1NO+2NC                 | FZ 2050-M2 1NO+2NC                    |
| 21              | <b>L</b> FZ 2133-M2 3NC                                                                              | FZ 2134-M2 3NC                     | FZ 2150-M2 3NC                        |
| 22              | <b>L</b> FZ 2233-M2 2NO+1NC                                                                          | FZ 2234-M2 2NO+1NC                 | FZ 2250-M2 2NO+1NC                    |
| E1              |  FZ E133-M2 1NO-1NC | FZ E134-M2 1NO-1NC                 | FZ E150-M2 1NO-1NC                    |
| Max. speed      | 1.5 m/s                                                                                              | 1.5 m/s                            | 1.5 m/s                               |
| Actuating force | 0.06 Nm                                                                                              | 0.06 Nm                            | 0.06 Nm                               |
| Travel diagrams | page 232 - group 5                                                                                   | page 232 - group 5                 | page 232 - group 5                    |

All values in the drawings are in mm

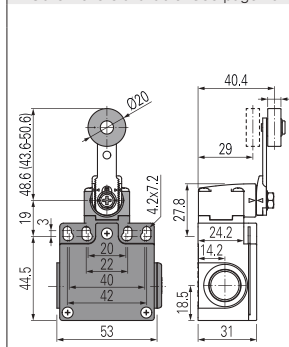
Accessories See page 207



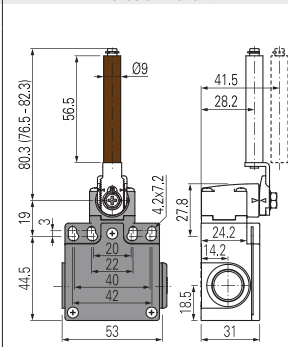
Contact type  
**R** = snap action  
**L** = slow action  
**LO** = slow action, make before break  
**LS** = slow action, shifted  
**LV** = slow action, shifted and spaced  
**LI** = slow action, independent  
**LA** = slow action, close  
**A** = electronic, PNP

Contact block

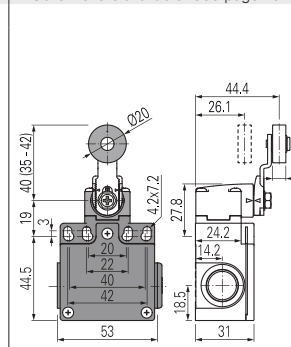
Other rollers available. See page 102



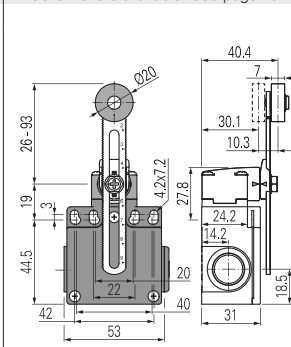
Porcelain roller



Other rollers available. See page 102



Other rollers available. See page 102

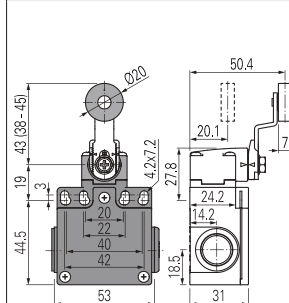


|                 |           |                     |             |                     |             |                     |             |                     |             |
|-----------------|-----------|---------------------|-------------|---------------------|-------------|---------------------|-------------|---------------------|-------------|
| 2               | <b>R</b>  | FZ 252-M2           | 2x(1NO-1NC) | FZ 253-E0M2         | 2x(1NO-1NC) | FZ 254-M2           | 2x(1NO-1NC) | FZ 256-M2           | 2x(1NO-1NC) |
| 5               | <b>R</b>  | FZ 552-M2           | ➔ 1NO+1NC   | FZ 553-E0M2V9       | ➔ 1NO+1NC   | FZ 554-M2           | ➔ 1NO+1NC   | FZ 556-M2           | ➔ 1NO+1NC   |
| 6               | <b>L</b>  | FZ 652-M2           | ➔ 1NO+1NC   | FZ 653-E0M2V9       | ➔ 1NO+1NC   | FZ 654-M2           | ➔ 1NO+1NC   | FZ 656-M2           | ➔ 1NO+1NC   |
| 7               | <b>LO</b> | FZ 752-M2           | ➔ 1NO+1NC   | FZ 753-E0M2V9       | ➔ 1NO+1NC   | FZ 754-M2           | ➔ 1NO+1NC   | FZ 756-M2           | ➔ 1NO+1NC   |
| 9               | <b>L</b>  | FZ 952-M2           | ➔ 2NC       | FZ 953-E0M2V9       | ➔ 2NC       | FZ 954-M2           | ➔ 2NC       | FZ 956-M2           | ➔ 2NC       |
| 10              | <b>L</b>  | FZ 1052-M2          | 2NO         | FZ 1053-E0M2V9      | 2NO         | FZ 1054-M2          | 2NO         | FZ 1056-M2          | 2NO         |
| 11              | <b>R</b>  | FZ 1152-M2          | ➔ 2NC       | /                   | /           | FZ 1154-M2          | ➔ 2NC       | FZ 1156-M2          | ➔ 2NC       |
| 12              | <b>R</b>  | FZ 1252-M2          | 2NO         | FZ 1253-E0M2V9      | 2NO         | FZ 1254-M2          | 2NO         | FZ 1256-M2          | 2NO         |
| 13              | <b>LV</b> | FZ 1352-M2          | ➔ 2NC       | FZ 1353-E0M2V9      | ➔ 2NC       | FZ 1354-M2          | ➔ 2NC       | FZ 1356-M2          | ➔ 2NC       |
| 14              | <b>LS</b> | FZ 1452-M2          | ➔ 2NC       | FZ 1453-E0M2V9      | ➔ 2NC       | FZ 1454-M2          | ➔ 2NC       | FZ 1456-M2          | ➔ 2NC       |
| 15              | <b>LS</b> | FZ 1552-M2          | 2NO         | FZ 1553-E0M2V9      | 2NO         | FZ 1554-M2          | 2NO         | FZ 1556-M2          | 2NO         |
| 16              | <b>LI</b> | FZ 1652-M2          | ➔ 2NC       | /                   | /           | FZ 1654-M2          | ➔ 2NC       | FZ 1656-M2          | ➔ 2NC       |
| 18              | <b>LA</b> | FZ 1852-M2          | ➔ 1NO+1NC   | FZ 1853-E0M2V9      | ➔ 1NO+1NC   | FZ 1854-M2          | ➔ 1NO+1NC   | FZ 1856-M2          | ➔ 1NO+1NC   |
| 20              | <b>L</b>  | FZ 2052-M2          | ➔ 1NO+2NC   | FZ 2053-E0M2V9      | ➔ 1NO+2NC   | FZ 2054-M2          | ➔ 1NO+2NC   | FZ 2056-M2          | ➔ 1NO+2NC   |
| 21              | <b>L</b>  | FZ 2152-M2          | ➔ 3NC       | FZ 2153-E0M2V9      | ➔ 3NC       | FZ 2154-M2          | ➔ 3NC       | FZ 2156-M2          | ➔ 3NC       |
| 22              | <b>L</b>  | FZ 2252-M2          | ➔ 2NO+1NC   | FZ 2253-E0M2V9      | ➔ 2NO+1NC   | FZ 2254-M2          | ➔ 2NO+1NC   | FZ 2256-M2          | ➔ 2NO+1NC   |
| E1              | <b>A</b>  | FZ E152-M2          | 1NO-1NC     | FZ E153-E0M2V9      | 1NO-1NC     | FZ E154-M2          | 1NO-1NC     | FZ E156-M2          | 1NO-1NC     |
| Max. speed      |           | page 231 - type 1   |             | 0.5 m/s             |             | page 231 - type 1   |             | page 231 - type 1   |             |
| Actuating force |           | 0.06 Nm (0.25 Nm ➔) |             | 0.03 Nm (0.25 Nm ➔) |             | 0.06 Nm (0.25 Nm ➔) |             | 0.06 Nm (0.25 Nm ➔) |             |
| Travel diagrams |           | page 232 - group 5  |             | page 232 - group 6  |             | page 232 - group 5  |             | page 232 - group 5  |             |

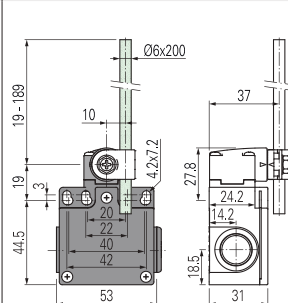
Contact type  
**R** = snap action  
**L** = slow action  
**LO** = slow action, make before break  
**LS** = slow action, shifted  
**LV** = slow action, shifted and spaced  
**LI** = slow action, independent  
**LA** = slow action, close  
**A** = electronic, PNP

Contact block

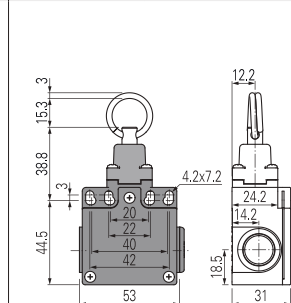
Other rollers available. See page 102



Glass fibre rod



Rope switch for signalling



|                 |           |                     |             |                    |             |                           |             |
|-----------------|-----------|---------------------|-------------|--------------------|-------------|---------------------------|-------------|
| 2               | <b>R</b>  | FZ 257-M2           | 2x(1NO-1NC) | FZ 269-M2          | 2x(1NO-1NC) | FZ 276-M2                 | 2x(1NO-1NC) |
| 5               | <b>R</b>  | FZ 557-M2           | ➔ 1NO+1NC   | FZ 569-M2          | 1NO+1NC     | FZ 576-M2                 | 1NO+1NC     |
| 6               | <b>L</b>  | FZ 657-M2           | ➔ 1NO+1NC   | FZ 669-M2          | 1NO+1NC     | FZ 676-M2                 | 1NO+1NC     |
| 7               | <b>LO</b> | FZ 757-M2           | ➔ 1NO+1NC   | FZ 769-M2          | 1NO+1NC     | FZ 776-M2                 | 1NO+1NC     |
| 9               | <b>L</b>  | FZ 957-M2           | ➔ 2NC       | FZ 969-M2          | 2NC         | FZ 976-M2                 | 2NO         |
| 10              | <b>L</b>  | FZ 1057-M2          | 2NO         | FZ 1069-M2         | 2NO         | FZ 1076-M2                | 2NC         |
| 11              | <b>R</b>  | FZ 1157-M2          | ➔ 2NC       | FZ 1169-M2         | 2NC         | FZ 1176-M2                | 2NO         |
| 12              | <b>R</b>  | FZ 1257-M2          | 2NO         | FZ 1269-M2         | 2NO         | FZ 1276-M2                | 2NC         |
| 13              | <b>LV</b> | FZ 1357-M2          | ➔ 2NC       | FZ 1369-M2         | 2NC         | FZ 1376-M2                | 2NO         |
| 14              | <b>LS</b> | FZ 1457-M2          | ➔ 2NC       | FZ 1469-M2         | 2NC         | FZ 1476-M2                | 2NO         |
| 15              | <b>LS</b> | FZ 1557-M2          | 2NO         | FZ 1569-M2         | 2NO         | FZ 1576-M2                | 2NC         |
| 16              | <b>LI</b> | FZ 1657-M2          | ➔ 2NC       | FZ 1669-M2         | 2NC         | /                         | /           |
| 18              | <b>LA</b> | FZ 1857-M2          | ➔ 1NO+1NC   | FZ 1869-M2         | 1NO+1NC     | FZ 1876-M2                | 1NO+1NC     |
| 20              | <b>L</b>  | FZ 2057-M2          | ➔ 1NO+2NC   | FZ 2069-M2         | 1NO+2NC     | FZ 2076-M2                | 2NO+1NC     |
| 21              | <b>L</b>  | FZ 2157-M2          | ➔ 3NC       | FZ 2169-M2         | 3NC         | FZ 2176-M2                | 3NO         |
| 22              | <b>L</b>  | FZ 2257-M2          | ➔ 2NO+1NC   | FZ 2269-M2         | 2NO+1NC     | FZ 2276-M2                | 1NO+2NC     |
| E1              | <b>A</b>  | FZ E157-M2          | 1NO-1NC     | FZ E169-M2         | 1NO-1NC     | /                         | /           |
| Max. speed      |           | page 231 - type 1   |             | 1.5 m/s            |             | 0.5 m/s                   |             |
| Actuating force |           | 0.06 Nm (0.25 Nm ➔) |             | 0.06 Nm            |             | initial 20 N - final 40 N |             |
| Travel diagrams |           | page 232 - group 5  |             | page 232 - group 5 |             | page 232 - group 7        |             |

(1) Positive opening only with actuator set to max. See page 102.  
All values in the drawings are in mm

## FZ series position switches with reset



The majority of switches can be equipped with a reset device (option W3) which enables the simultaneous actuation of actuator and contact block. The device is a module that is mounted between the body and the head of the switch that can be rotated independently from the head. The reset device has the following advantages:

- can be integrated into the majority of standard actuator heads;
- contact blocks with snap action are no more necessary because the tripping movement is executed by the reset device itself;
- can be rotated independently from the head ensuring maximum flexibility during installation;
- can be delivered with two different actuating forces: standard and increased for vibration applications;
- mechanical endurance: 1 million operating cycles.

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 |             |
|-----------------|----------|-----------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------|-------------|
|                 |          |                             |                                                                            |                                                                            |             |
| 2               | <b>R</b> | FZ 201-W3M2                 | 2x(1NO-1NC)                                                                | FZ 202-W3M2                                                                | 2x(1NO-1NC) |
| 6               | <b>L</b> | FZ 601-W3M2                 | 1NO+1NC                                                                    | FZ 602-W3M2                                                                | 1NO+1NC     |
| 9               | <b>L</b> | FZ 901-W3M2                 | 2NC                                                                        | FZ 902-W3M2                                                                | 2NC         |
| 10              | <b>L</b> | FZ 1001-W3M2                | 2NO                                                                        | FZ 1002-W3M2                                                               | 2NO         |
| 20              | <b>L</b> | FZ 2001-W3M2                | 1NO+2NC                                                                    | FZ 2002-W3M2                                                               | 1NO+2NC     |
| 21              | <b>L</b> | FZ 2101-W3M2                | 3NC                                                                        | FZ 2102-W3M2                                                               | 3NC         |
| 22              | <b>L</b> | FZ 2201-W3M2                | 2NO+1NC                                                                    | FZ 2202-W3M2                                                               | 2NO+1NC     |
| Max. speed      |          | page 231 - type 4           |                                                                            | page 231 - type 3                                                          |             |
| Actuating force |          | 4.5 N (25 N $\rightarrow$ ) |                                                                            | 4 N (25 N $\rightarrow$ )                                                  |             |
| Travel diagrams |          | page 231 - group 1          |                                                                            | page 231 - group 2                                                         |             |

Contact type

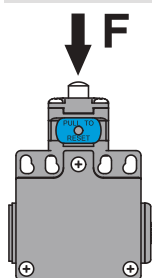
**R** = snap action  
**L** = slow action

Contact block

|                 |          |                             | With Ø 20 mm steel roller with self-lubrication or 316L stainless steel on request | Other rollers available. See page 102 | Other rollers available. See page 102 |
|-----------------|----------|-----------------------------|------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------|
|                 |          |                             |                                                                                    |                                       |                                       |
| 2               | <b>R</b> | FZ 215-W3M2R28              | 2x(1NO-1NC)                                                                        | FZ 230-W3M2                           | 2x(1NO-1NC)                           |
| 6               | <b>L</b> | FZ 615-W3M2R28              | 1NO+1NC                                                                            | FZ 630-W3M2                           | 1NO+1NC                               |
| 9               | <b>L</b> | FZ 915-W3M2R28              | 2NC                                                                                | FZ 930-W3M2                           | 2NC                                   |
| 10              | <b>L</b> | FZ 1015-W3M2R28             | 2NO                                                                                | FZ 1030-W3M2                          | 2NO                                   |
| 20              | <b>L</b> | FZ 2015-W3M2R28             | 1NO+2NC                                                                            | FZ 2030-W3M2                          | 1NO+2NC                               |
| 21              | <b>L</b> | FZ 2115-W3M2R28             | 3NC                                                                                | FZ 2130-W3M2                          | 3NC                                   |
| 22              | <b>L</b> | FZ 2215-W3M2R28             | 2NO+1NC                                                                            | FZ 2230-W3M2                          | 2NO+1NC                               |
| Max. speed      |          | page 231 - type 2           |                                                                                    | page 231 - type 1                     |                                       |
| Actuating force |          | 4.5 N (25 N $\rightarrow$ ) |                                                                                    | 0.07 Nm (0.25 Nm $\rightarrow$ )      |                                       |
| Travel diagrams |          | page 231 - group 1          |                                                                                    | page 231 - group 4                    |                                       |

| Contact type                                     | Other rollers available. See page 102                                                                                                                                                                                                      |  | Other rollers available. See page 102                                                                                                                     |  | Other rollers available. See page 102                                                                                                                     |  | Other rollers available. See page 102                                                                                                                     |  |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>R</b> = snap action<br><b>L</b> = slow action |                                                                                                                                                                                                                                            |  |                                                                                                                                                           |  |                                                                                                                                                           |  |                                                                                                                                                           |  |
| Contact block                                    | 2 <b>R</b> FZ 252-W3M2 2x(1NO-1NC)<br>6 <b>L</b> FZ 652-W3M2 1NO+1NC<br>9 <b>L</b> FZ 952-W3M2 2NC<br>10 <b>L</b> FZ 1052-W3M2 2NO<br>20 <b>L</b> FZ 2052-W3M2 1NO+2NC<br>21 <b>L</b> FZ 2152-W3M2 3NC<br>22 <b>L</b> FZ 2252-W3M2 2NO+1NC |  | FZ 254-W3M2 2x(1NO-1NC)<br>FZ 654-W3M2 1NO+1NC<br>FZ 954-W3M2 2NC<br>FZ 1054-W3M2 2NO<br>FZ 2054-W3M2 1NO+2NC<br>FZ 2154-W3M2 3NC<br>FZ 2254-W3M2 2NO+1NC |  | FZ 256-W3M2 2x(1NO-1NC)<br>FZ 656-W3M2 1NO+1NC<br>FZ 956-W3M2 2NC<br>FZ 1056-W3M2 2NO<br>FZ 2056-W3M2 1NO+2NC<br>FZ 2156-W3M2 3NC<br>FZ 2256-W3M2 2NO+1NC |  | FZ 257-W3M2 2x(1NO-1NC)<br>FZ 657-W3M2 1NO+1NC<br>FZ 957-W3M2 2NC<br>FZ 1057-W3M2 2NO<br>FZ 2057-W3M2 1NO+2NC<br>FZ 2157-W3M2 3NC<br>FZ 2257-W3M2 2NO+1NC |  |
| Max. speed                                       | page 231 - type 1                                                                                                                                                                                                                          |  | page 231 - type 1                                                                                                                                         |  | page 231 - type 1                                                                                                                                         |  | page 231 - type 1                                                                                                                                         |  |
| Actuating 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 231 - group 4                                                                                                                                                                                                                         |  | page 231 - group 4                                                                                                                                        |  | page 231 - group 4                                                                                                                                        |  | page 231 - group 4                                                                                                                                        |  |

### Increased actuating force



The switch can be delivered with increased actuating force (option W4). Ideal for vibration applications.

| Actuators      | Actuating force |
|----------------|-----------------|
| 01, 14, 15, 16 | 7 N             |
| 02, 05         | 6 N             |
| 07             | 3.5 N           |
| 30 ... 57      | 0.08 Nm         |

To order the switch with reset and increased actuating force, replace the -W3 option with -W4 in the order code.

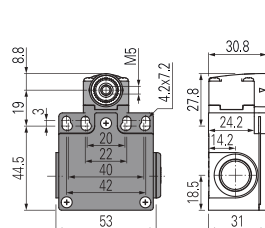
Example: FZ 601-W3M2  $\rightarrow$  FZ 601-W4M2

## Position switches with swivelling lever without actuator

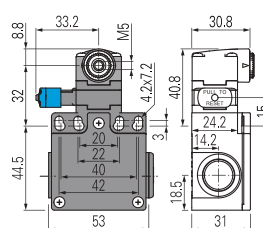
Contact type

- R** = snap action  
**L** = slow action  
**LO** = slow action, make before break  
**LS** = slow action, shifted  
**LV** = slow action, shifted and spaced  
**LI** = slow action, independent  
**LA** = slow action, close  
 = electronic, PNP

Contact block



With manual reset knob



## IMPORTANT

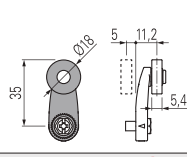
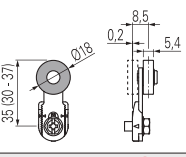
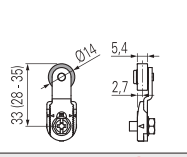
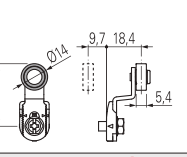
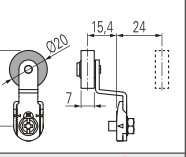
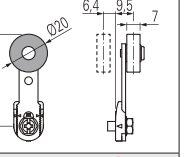
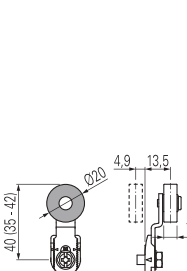
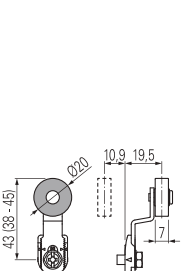
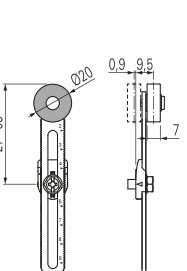
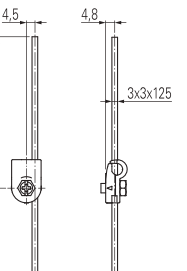
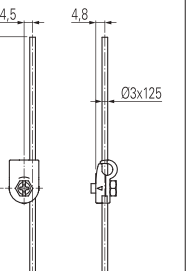
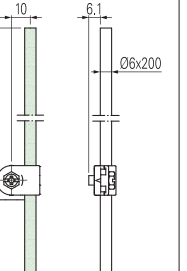
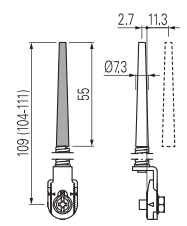
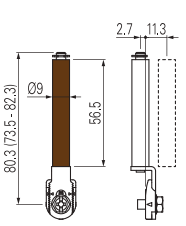
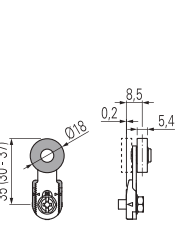
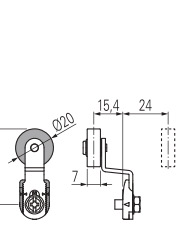
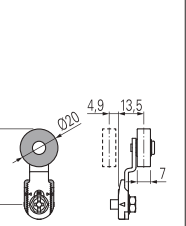
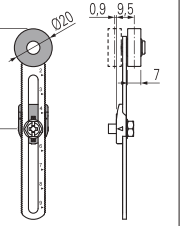
**For safety applications:** join only switches and actuators marked with symbol  next to the product code.

For more information about safety applications see details on page 225.

|                 |                                                                                  |                                                                                                        |             |                                                                                                        |             |
|-----------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-------------|--------------------------------------------------------------------------------------------------------|-------------|
| 2               | <b>R</b>                                                                         | FZ 238-M2                                                                                              | 2x(1NO-1NC) | FZ 238-W3M2                                                                                            | 2x(1NO-1NC) |
| 5               | <b>R</b>                                                                         | FZ 538-M2                                                                                              | 1NO+1NC     | /                                                                                                      |             |
| 6               | <b>L</b>                                                                         | FZ 638-M2                                                                                              | 1NO+1NC     | FZ 638-W3M2                                                                                            | 1NO+1NC     |
| 7               | <b>LO</b>                                                                        | FZ 738-M2                                                                                              | 1NO+1NC     | /                                                                                                      |             |
| 9               | <b>L</b>                                                                         | FZ 938-M2                                                                                              | 2NC         | FZ 938-W3M2                                                                                            | 2NC         |
| 10              | <b>L</b>                                                                         | FZ 1038-M2                                                                                             | 2NO         | FZ 1038-W3M2                                                                                           | 2NO         |
| 11              | <b>R</b>                                                                         | FZ 1138-M2                                                                                             | 2NC         | /                                                                                                      |             |
| 12              | <b>R</b>                                                                         | FZ 1238-M2                                                                                             | 2NO         | /                                                                                                      |             |
| 13              | <b>LV</b>                                                                        | FZ 1338-M2                                                                                             | 2NC         | /                                                                                                      |             |
| 14              | <b>LS</b>                                                                        | FZ 1438-M2                                                                                             | 2NC         | /                                                                                                      |             |
| 15              | <b>LS</b>                                                                        | FZ 1538-M2                                                                                             | 2NO         | /                                                                                                      |             |
| 16              | <b>LI</b>                                                                        | FZ 1638-M2                                                                                             | 2NC         | /                                                                                                      |             |
| 18              | <b>LA</b>                                                                        | FZ 1838-M2                                                                                             | 1NO+1NC     | /                                                                                                      |             |
| 20              | <b>L</b>                                                                         | FZ 2038-M2                                                                                             | 1NO+2NC     | FZ 2038-W3M2                                                                                           | 1NO+2NC     |
| 21              | <b>L</b>                                                                         | FZ 2138-M2                                                                                             | 3NC         | FZ 2138-W3M2                                                                                           | 3NC         |
| 22              | <b>L</b>                                                                         | FZ 2238-M2                                                                                             | 2NO+1NC     | FZ 2238-W3M2                                                                                           | 2NO+1NC     |
| E1              |  | FZ E138-M2                                                                                             | 1NO-1NC     | /                                                                                                      |             |
| Actuating force |                                                                                  | 0.06 Nm (0.25 Nm  ) |             | 0.07 Nm (0.25 Nm  ) |             |
| Travel diagrams |                                                                                  | page 232 - group 5                                                                                     |             | page 231 - group 4                                                                                     |             |

## Separate actuators

**IMPORTANT:** These separate actuators can be used only with items of the FR, FM, FX, FZ and FK series.

|                                                                                              |                                                                                                  |                                                                                                  |                                                                                                  |                                                                                                    |                                                                                                    |
|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Technopolymer roller<br>Ø 18 mm                                                              | Technopolymer roller<br>Ø 18 mm                                                                  | Technopolymer roller<br>Ø 14 mm                                                                  | Technopolymer roller<br>Ø 14 mm                                                                  | Technopolymer roller<br>Ø 20 mm                                                                    | Technopolymer roller<br>Ø 20 mm                                                                    |
|            |               |               |               |               |               |
| VN A00KA  | VN A00KB      | VN A00KC      | VN A00KD      | VN A00KE      | VN A00KF      |
| Technopolymer roller<br>Ø 20 mm                                                              | Technopolymer roller<br>Ø 20 mm                                                                  | Adjustable safety actuator<br>with technopolymer roller                                          | Adjustable square rod,<br>3x3x125 mm                                                             | Adjustable round rod<br>Ø 3x125 mm                                                                 | Adjustable glass fibre rod                                                                         |
|            |               |               |               |               |               |
| VN A00KG  | VN A00KH      | VN A00KP      | VN A00LB                                                                                         | VN A00LE                                                                                           | VN A00LH                                                                                           |
| Spring rod with plastic tip                                                                  | Porcelain roller                                                                                 | Technopolymer roller<br>Ø 14 mm                                                                  | Technopolymer roller<br>Ø 14 mm                                                                  | Technopolymer roller<br>Ø 20 mm                                                                    | Adjustable safety lever with<br>technopolymer roller Ø 20 mm                                       |
|            |               | With metallic parts in stainless steel                                                           |                                                                                                  |                                                                                                    |                                                                                                    |
|           |               |             |             |                                                                                                    |                                                                                                    |
| VN A00LL                                                                                     | VN A00LP  (2) | VN A00KB-V38  | VN A00KE-V38  | VN A00KG-V38  | VN A00KP-V38  |

All values in the drawings are in mm

Accessories See page 207

## Special separate actuators

**IMPORTANT:** These separate actuators can be used only with items of the FR, FM, FX, FZ and FK series.

### Steel rollers, Ø 20 mm, with self-lubrication

|                    |                    |                    |                    |                    |                    |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                    |                    |                    |                    |                    |
| VN A00KB-R24 → (1) | VN A00KE-R24 → (1) | VN A00KF-R24 → (1) | VN A00KG-R24 → (1) | VN A00KH-R24 → (1) | VN A00KP-R24 → (1) |

**Note:** To order with 316L stainless steel roller: replace R24 with R41 in the order numbers.

### Technopolymer rollers, Ø 35 mm

|                    |                    |                    |                    |                    |                    |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                    |                    |                    |                    |                    |
| VN A00KB-R25 → (1) | VN A00KE-R25 → (1) | VN A00KF-R25 → (1) | VN A00KG-R25 → (1) | VN A00KH-R25 → (1) | VN A00KP-R25 → (1) |

### Rubber rollers, Ø 40 mm

|                   |                   |                   |                   |                   |                   |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|                   |                   |                   |                   |                   |                   |
| VN A00KB-R5 → (1) | VN A00KE-R5 → (1) | VN A00KF-R5 → (1) | VN A00KG-R5 → (1) | VN A00KH-R5 → (1) | VN A00KP-R5 → (1) |

### Rubber rollers, Ø 50 mm

|                    |                    |                    |                    |                    |
|--------------------|--------------------|--------------------|--------------------|--------------------|
|                    |                    |                    |                    |                    |
| VN A00KE-R26 → (1) | VN A00KF-R26 → (1) | VN A00KG-R26 → (1) | VN A00KH-R26 → (1) | VN A00KP-R26 → (1) |

### Protruding rubber rollers, Ø 50 mm

|                    |
|--------------------|
|                    |
| VN A00KP-R27 → (1) |

(1) The actuator cannot be rotated to the inside because it will hit the switch head upon actuation.

(2) The position switch obtained by assembling switch FZ •38-M2 (e.g. FZ 538-M2, FZ 638-M2, ...) with actuator VN A00LP will not present the same travel diagrams and actuating forces as switch FZ •53-E0M2V9 (e.g. FZ 553-E0M2V9, FZ 653-E0M2V9, ...).

**Note:** To check the correspondence with previous lever codes, please consult the table "Changed article codes" on page 289. Example: VF LE30 -> VN A00KA.



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