

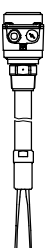


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Subject to change.

All dimensions in mm (inches).

All prices in Euro, excluding VAT.

All prices are EXW Betzigau, excluding packaging costs.

Valid: From 01.04.2016 until 31.03.2017, unless otherwise agreed.

By publishing this selection list all other lists become invalid.

We assume no liability for typing errors.

Different variations to those specified are possible.  
Please contact our technical consultants.

## Specifications

- Level limit detection in bulk goods / solids
- Compact unit
- Die-casted housing aluminium
- Wide range of applications, no maintenance
- Full-, demand-, empty detector
- Sensitivity > 30 g/l (1.9lb/ft³)
- ATEX, IEC-Ex, FM, CSA, TR-CU approvals (DustEx)
- 1935/2004/EC Food grade materials
- 2011/65/EU RoHS conform

|           |               |   |
|-----------|---------------|---|
| Approvals | CE            |   |
|           | ATEX / IEC-Ex | Zone 20/21<br>(Dust Ignition Proof)                       |
|           | FM / CSA      | Ordinary Locations  |
|           |               | Cl. II, III Div. 1<br>(Dust Ignition Proof)               |
|           | TR-CU         | Ordinary Locations<br>Zone 20/21<br>(Dust Ignition Proof) |

|              |            |                                 |
|--------------|------------|---------------------------------|
| Electro-nics | Relay DPDT | 19..230V AC 19..40V DC<br>± 10% |
|              | PNP        | 18..50V DC ± 10%                |

|         |   |  |
|---------|---|--|
| VN 4020 | Length of extension                     | 170mm (6.68")                                |
|         | Ambient temperature                     | -40 .. +60°C (-40 .. +140°F)                 |
|         | Process temperature                     | -40 .. +150°C (-40 .. +302°F)                |
|         | Process pressure                        | -1 .. +16 bar (-14.5 .. +232 psi)            |
|         | Process connection material / Extension | 1.4581 (316) or 1.4541 (321)<br>(food grade) |

|         |   |  |
|---------|---|--|
| VN 4030 | Length of extension                     | 300 .. 4.000mm (11.8 .. 157")  |
|         | Ambient temperature                     | -40 .. +60°C (-40 .. +140°F)   |
|         | Process temperature                     | -40 .. +150°C (-40 .. +302°F)  |
|         | Process pressure                        | -1 .. +16 bar (-14.5 .. +232 psi)  |
|         | Process connection material / Extension | 1.4301 (304)/1.4541 (321) or<br>1.4571 (316Ti)/1.4404 (316L)<br>(food grade) |

|         |   |  |
|---------|---|--|
| VN 4040 | Length of extension                     | max. 1500mm (59") or<br>4.000mm (157")   |
|         | Ambient temperature                     | -40 .. +60°C (-40 .. +140°F)   |
|         | Process temperature                     | -40 .. +150°C (-40 .. +302°F)  |
|         | Process pressure                        | -1 .. +16 bar (-14.5 .. +232 psi)  |
|         | Process connection material / Extension | 1.4305 (303) / 1.4541 (321) or<br>1.4571 (316Ti) / 1.4404 (316L)<br>(food grade) |

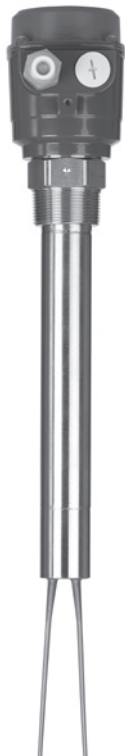
**VN 4020**



**VN 4040**



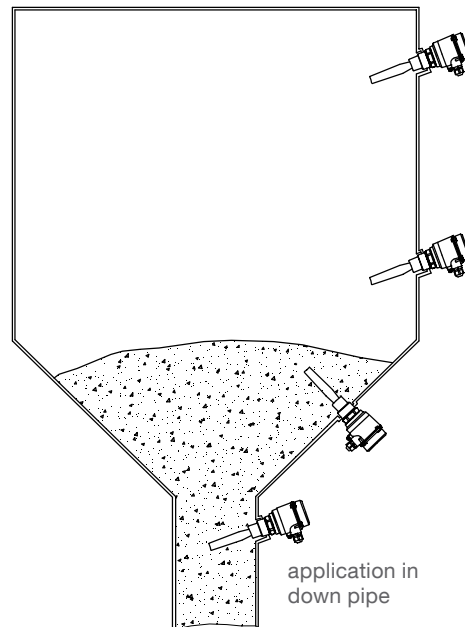
**VN 4030**



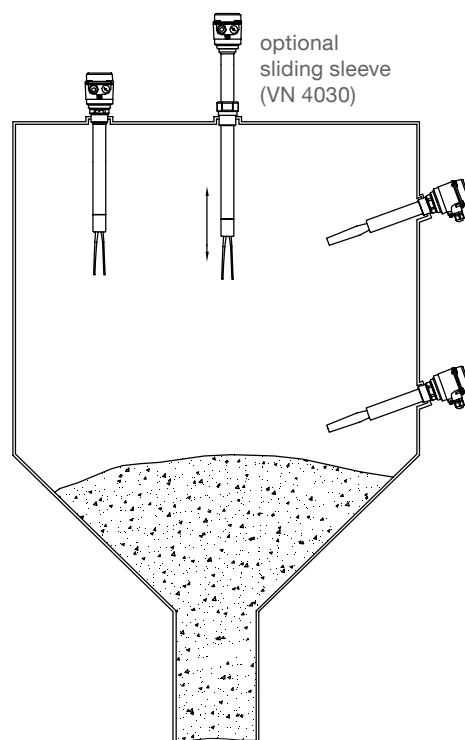
## Applications

### Detection of solids

VN 4020



VN 4030  
VN 4040



VN 4020    Short extension length



Food grade materials

**Cable entries** (by default)  
Depending on model selected the following cable entries are supported (options see pos 23 on page 10):

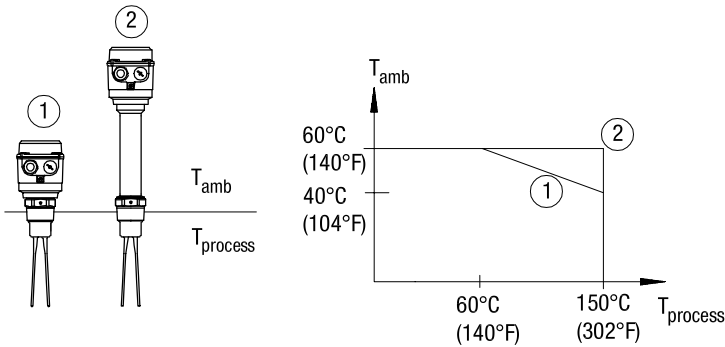
|  |   |
|--|---|
| Version:                                   | Cable entries:  |
| CE / ATEX / IEC-Ex / TR-CU (pos.2 0,W,F,E) | M20x1,5 (1x cable gland + 1x blind plug)                        |
| FM and CSA (pos.2 M,N)                     | NPT 1/2" tapered ANSI B1.20.1 (1x open conduit + 1x blind plug) |

Dimensions    see page 12

pos. 3  
Temperature extended shaft

Application up to 150°C  
(302°F)

- 1        without
- 2        with



## VN 4020 Short extension length

### Basic type

**VN 4020** ..... •

pos. 2      **Certificate**

|   |   |       |   |
|---|---|-------|---|
| 0 | CE <sup>(1)</sup>   | ..... | • |
| W | ATEX II 1/2D Ex t IIIC T! Da/Db IP6X                            | ..... | • |
| A | IEC-Ex t IIIC T! Da/Db IP6X                                     | ..... | • |
| M | FM / CSA General Purpose  | ..... | • |
| N | FM / CSA DIP Cl. II, III Div.1 Group E, F, G and CSA DIP A20/21 | ..... | • |
| E | TR-CU DIP A20/A21   | ..... | • |

pos. 3      **Temperature extended shaft**

|   |   |       |   |
|---|---|-------|---|
| 1 | without (up to T <sub>process</sub> = 150°C (302°F) at T <sub>amb</sub> < 40°C (104°F)) | ..... | • |
| 2 | with (up to T <sub>process</sub> = 150°C (302°F) at T <sub>amb</sub> > 40°C (104°F))    | ..... | • |

pos. 4      **Electronic module**

|   |            |                        |       |   |
|---|------------|------------------------|-------|---|
| L | Relay DPDT | 19..230V AC 19..40V DC | ..... | • |
| D | PNP        | 18..50V DC             | ..... | • |

pos. 5      **Process connection**

|   |  |                      |       |   |
|---|--|----------------------|-------|---|
| A | Thread R 1½ inch,                                | conical DIN 2999     | ..... | • |
| B | Thread NPT 1½ inch,                              | conical ANSI B1.20.1 | ..... | • |
| D | Thread NPT 1 ¼ inch,                             | conical ANSI B1.20.1 | ..... | • |
| P | Triclamp 2" (DN50) ISO 2852                      | .....                | •     | • |
| L | Flange DN 100 PN6, EN1092-1 (max. 6 bar (87psi)) | .....                | •     | • |
| M | Flange DN 100 PN16, EN1092-1                     | .....                | •     | • |
| S | Flange 2" 150lbs ANSI B16.5                      | .....                | •     | • |
| T | Flange 3" 150lbs ANSI B16.5                      | .....                | •     | • |
| U | Flange 4" 150lbs ANSI B16.5                      | .....                | •     | • |

pos. 8      **Material of process connection / extension "L"**

|   |  |       |   |
|---|--|-------|---|
| 1 | Stainless steel 1.4541 (321)               | ..... | ↑ |
| 2 | Stainless steel 1.4581 (316)/1.4404 (316L) | ..... | ↑ |

**Further options:** see page 10

|                |          |   |   |   |   |          |          |   |
|----------------|----------|---|---|---|---|----------|----------|---|
| <b>VN 4020</b> | <b>A</b> |   |   |   |   | <b>3</b> | <b>1</b> |   |
| position       | 1        | 2 | 3 | 4 | 5 | 6        | 7        | 8 |

←
**Order code**

All positions are available in special design (use code "Z").

<sup>(1)</sup> TR-CU (Ordinary Locations) included

VN 4030 Pipe extension



Food grade materials

**Cable entries** (by default)  
Depending on model selected the following cable entries are supported (options see pos 23 on page 10):

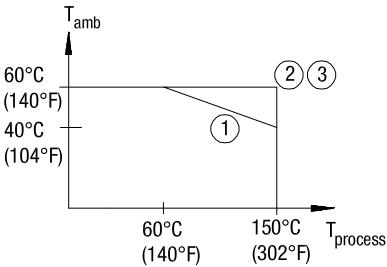
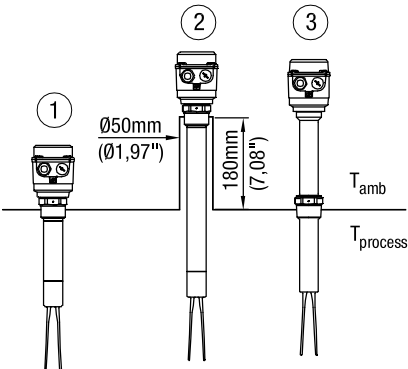
|  |   |
|--|---|
| Version:                                   | Cable entries:  |
| CE / ATEX / IEC-Ex / TR-CU (pos.2 0,W,F,E) | M20x1,5 (1x cable gland + 1x blind plug)                        |
| FM and CSA (pos.2 M,N)                     | NPT 1/2" tapered ANSI B1.20.1 (1x open conduit + 1x blind plug) |

Dimensions see page 12

pos. 3  
Temperature extended shaft

Application up to 150°C (302°F)

- 1 without
- 2 without and with extended socket
- 3 with



## VN 4030 Pipe extension

### Basic type

**VN 4030** ..... •

pos. 2

#### Certificate

- 0 CE <sup>(1)</sup> ..... •
- W ATEX II 1/2D Ex t IIIC T! Da/Db IP6X ..... •
- A IEC-Ex t IIIC T! Da/Db IP6X ..... •
- M FM / CSA General Purpose ..... •
- N FM / CSA DIP Cl. II, III Div.1 Group E, F, G and CSA DIP A20/21 ..... •
- E TR-CU DIP A20/A21 ..... •

pos. 3

#### Temperature extended shaft

- 1 without (up to  $T_{process} = 150^{\circ}\text{C}$  (302°F) at  $T_{amb} < 40^{\circ}\text{C}$  (104°F)) ..... •
- 2 with (up to  $T_{process} = 150^{\circ}\text{C}$  (302°F) at  $T_{amb} > 40^{\circ}\text{C}$  (104°F)) ..... •

pos. 4

#### Electronic module

- L Relay DPDT 19..230V AC 19..40V DC ..... •
- D PNP 18..50V DC ..... •

pos. 5

#### Process connection

- A Thread R 1½ inch, conical DIN 2999 ..... • •
- B Thread NPT 1½ inch, conical ANSI B1.20.1 ..... • •
- D Thread NPT 1 ¼ inch, conical ANSI B1.20.1 ..... • •
- P Triclamp 2" (DN50) ISO 2852 ..... • •
- L Flange DN 100 PN6, EN1092-1 (max. 6 bar (87psi)) ..... • •
- M Flange DN 100 PN16, EN1092-1 ..... • •
- S Flange 2" 150lbs ANSI B16.5 ..... • •
- T Flange 3" 150lbs ANSI B16.5 ..... • •
- U Flange 4" 150lbs ANSI B16.5 ..... • •

pos. 7

#### Length of extension "L"

- Z from 0mm per 100mm (3.94") and part thereof; min. 300mm (11.8"), max. 4.000mm (157") ..... • •

pos. 8

#### Material of process connection / extension "L"

- 1 Stainless steel 1.4301 (304)/1.4541 (321) ..... • •
- 2 Stainless steel 1.4571 (316Ti)/1.4404 (316L) ..... • •

**Further options:** see page 10

|          |   |   |   |   |   |   |   |   |
|----------|---|---|---|---|---|---|---|---|
| VN 4030  | B |   |   |   |   | 3 | Z |   |
| position | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

-

**L=**      **mm**

← **Order code**

All positions are available in special design (use code "Z").

<sup>(1)</sup> TR-CU (general purpose) included

VN 4040 Pipe extension (screwed)



Food grade materials

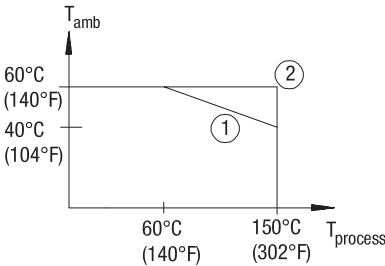
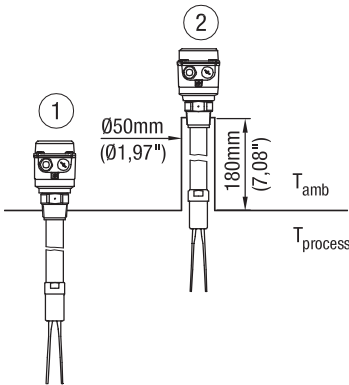
**Cable entries** (by default)  
Depending on model selected the following cable entries are supported (options see pos 23 on page 10):

| Version:                         | Cable entries:  |
|----------------------------------|---|
| CE / ATEX / IEC-Ex (pos.2 0,W,F) | M20x1,5 (1x cable gland + 1x blind plug)                        |
| FM (pos.2 M,N)                   | NPT 1/2" tapered ANSI B1.20.1 (1x open conduit + 1x blind plug) |

**Dimensions** see page 13

Application up to 150°C (302°F)

- 1 without exteded socket
- 2 with extended socket





## VN 4040 Pipe extension (screwed)

### Basic type

**VN 4040** ..... •

pos. 2

#### Certificate

0 CE ..... •  
 W ATEX II 1/2D Ex t IIIC T! Da/Db IP6X ..... •  
 A IEC-Ex t IIIC T! Da/Db IP6X ..... •  
 M FM General Purpose ..... •  
 N FM DIP Cl. II, III Div.1 Group E, F, G ..... •

pos. 4

#### Electronic module

L Relay DPDT 19..230V AC 19..40V DC ..... •  
 D PNP 18..50V DC ..... •

pos. 5

#### Process connection

|   |  |                      |       |   |   |
|---|--|----------------------|-------|---|---|
| A | Thread R 1½ inch,                                | conical DIN 2999     | ..... | • | • |
| B | Thread NPT 1½ inch,                              | conical ANSI B1.20.1 | ..... | • | • |
| P | Triclamp 2" (DN50) ISO 2852                      |                      | ..... | • | • |
| L | Flange DN 100 PN6, EN1092-1 (max. 6 bar (87psi)) |                      | ..... | • | • |
| M | Flange DN 100 PN16, EN1092-1                     |                      | ..... | • | • |
| S | Flange 2" 150lbs ANSI B16.5                      |                      | ..... | • | • |
| T | Flange 3" 150lbs ANSI B16.5                      |                      | ..... | • | • |
| U | Flange 4" 150lbs ANSI B16.5                      |                      | ..... | • | • |

pos. 7

#### Length of extension "L"

L 1500mm (59") (cutable cable length) ..... •  
 M 4000mm (157") (cutable cable length) ..... •

pos. 8

#### Material of process connection / extension "L"

1 Stainless steel 1.4305 (303) / 1.4541 (321) .....  
 2 Stainless steel 1.4571 (316Ti) / 1.4404 (316L) .....

**Further options:** see page 10

|         |   |  |   |  |  |   |  |  |
|---------|---|--|---|--|--|---|--|--|
| VN 4040 | C |  | 1 |  |  | 3 |  |  |
|---------|---|--|---|--|--|---|--|--|

position 1 2 3 4 5 6 7 8

← **Order code**

All positions are available in special design (use code "Z").

## Options

pos. 11x **Guarantee extension to 5 years** ..... •

pos. 21 **Weather protection cover** ..... •  
(for Ex only approved for Zone 22 or Div. 2)

### Mounting set for flange mounting

|          | process connection flange | for counter flange with | consists of |         |          |           |   |
|----------|---------------------------|-------------------------|-------------|---------|----------|-----------|---|
|          |                           |                         | screws*     | nuts*   | washers* | sealing** |   |
| pos. 22c | L                         | hole ø18                | 4 x M16x60  | 4 x M16 | 4 pcs    | 1 piece   | • |
| pos. 22d | L                         | thread M16              | 4 x M16x40  |         | 4 pcs    | 1 piece   | • |
| pos. 22e | M                         | hole ø18                | 4 x M16x60  | 8 x M16 | 8 pcs    | 1 piece   | • |
| pos. 22f | M                         | thread M16              | 4 x M16x40  |         | 8 pcs    | 1 piece   | • |

\* material stainless steel A2 \*\*max. 125°C (256°F), material not food grade

### Cable entry

Selection of the following options only necessary, if a deviation from the default cable gland / conduit is required:

pos. 23x M20x1.5 2x screwed cable gland ..... •  
pos. 23y M20x1.5 1x screwed cable gland +1x blind plug ..... •  
pos. 23a NPT 1/2" tapered ANSI B1.20.1 (1x conduit + 1x Ex-d blind plug) ..... •  
pos. 23b NPT 3/4" tapered ANSI B1.20.1 (1x conduit + 1x Ex-d blind plug) ..... on request

### Sliding sleeve <sup>6</sup>

Process connection as follows or flange as choosen

<sup>3</sup> For applications without overpressure, max. 150°C (302°F)  
pos. 25a R 1½ inch DIN 2999 material 1.4301 (304) ..... •  
pos. 25b NPT 1½ inch ANSI B1.20.1 material 1.4301 (304) ..... •  
pos. 25c Flange <sup>5</sup> material 1.4301 (304)/1.4541 (321) ..... •

For applications with overpressure max. 16bar (232psi), max. 150°C (302°F)  
pos. 25e R 1½ inch DIN 2999 material 1.4571 (316 TI) ..... •  
pos. 25f NPT 1½ inch ANSI B1.20.1 material 1.4571 (316 TI) ..... •  
pos. 25g Flange <sup>5</sup> material 1.4571 (316TI)/1.4404 (316L) ..... •

### Signal lamp

pos. 27a Bulb in cable gland, 2W green <sup>1</sup> ..... •  
pos. 27c Bulb in cable gland, 2W red <sup>1</sup> ..... •  
pos. 27b LED (glass window in lid)<sup>4</sup> ..... •

pos. 29 **Plug 4-pole <sup>2</sup> (incl. PE)** ..... •

<sup>1</sup> Available for CE (pos. 2, 0), not in combination with weather protection cover (pos. 21) and cable entries pos.23 x,a,b.

For electronic module Relais DPDT (pos. 4.L) three bulbs (24V, 115V and 230V) will be delivered. For PNP (pos.4.D) a 24V bulb will be delivered.

<sup>2</sup> Available for CE (pos. 2, 0)

<sup>3</sup> Available for CE and FM/CSA general purpose (pos. 2, 0, M)

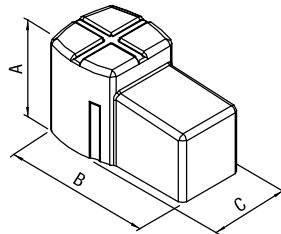
<sup>4</sup> Not in combination with weather protection cover (Pos. 21)

<sup>5</sup> Flange as selected in pos.5

<sup>6</sup> Available for VN 4030

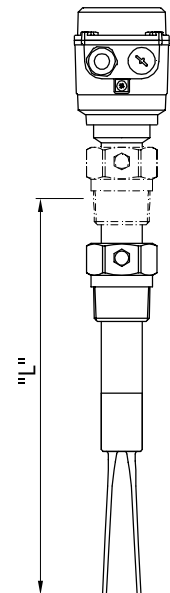
## Options

pos. 21  
**Weather protection cover**

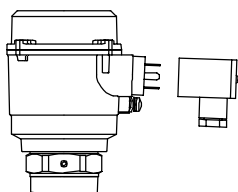


|   |               |
|---|---------------|
| A | 100mm (3.94") |
| B | 165mm (6.5")  |
| C | 88mm (3.46")  |

pos. 25  
**Sliding sleeve**

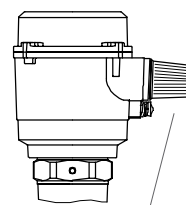


pos. 29  
**Plug 4-pole**



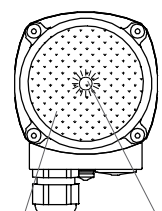
**Signal lamp**

pos. 27a, c  
Bulb in cable gland



bulb

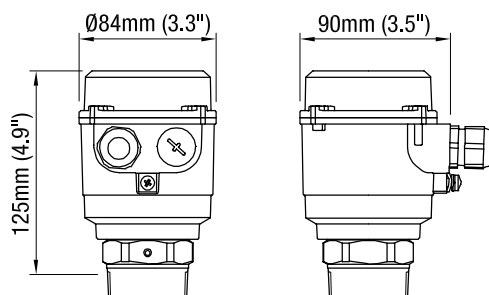
pos. 27b  
LED (glass window in lid)



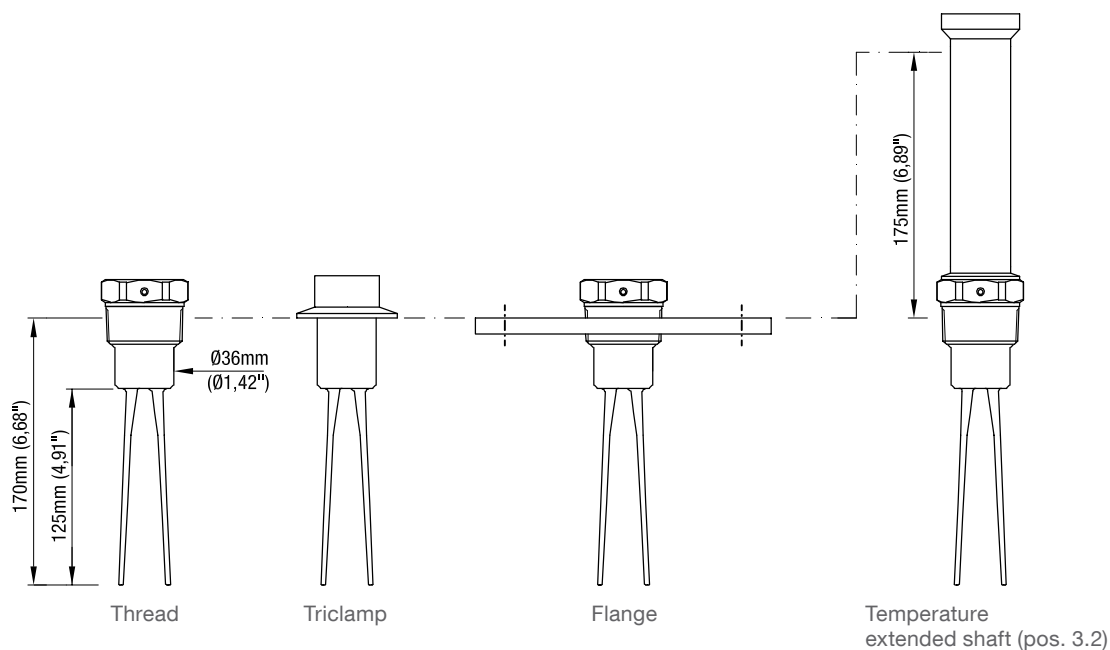
glass window

LED

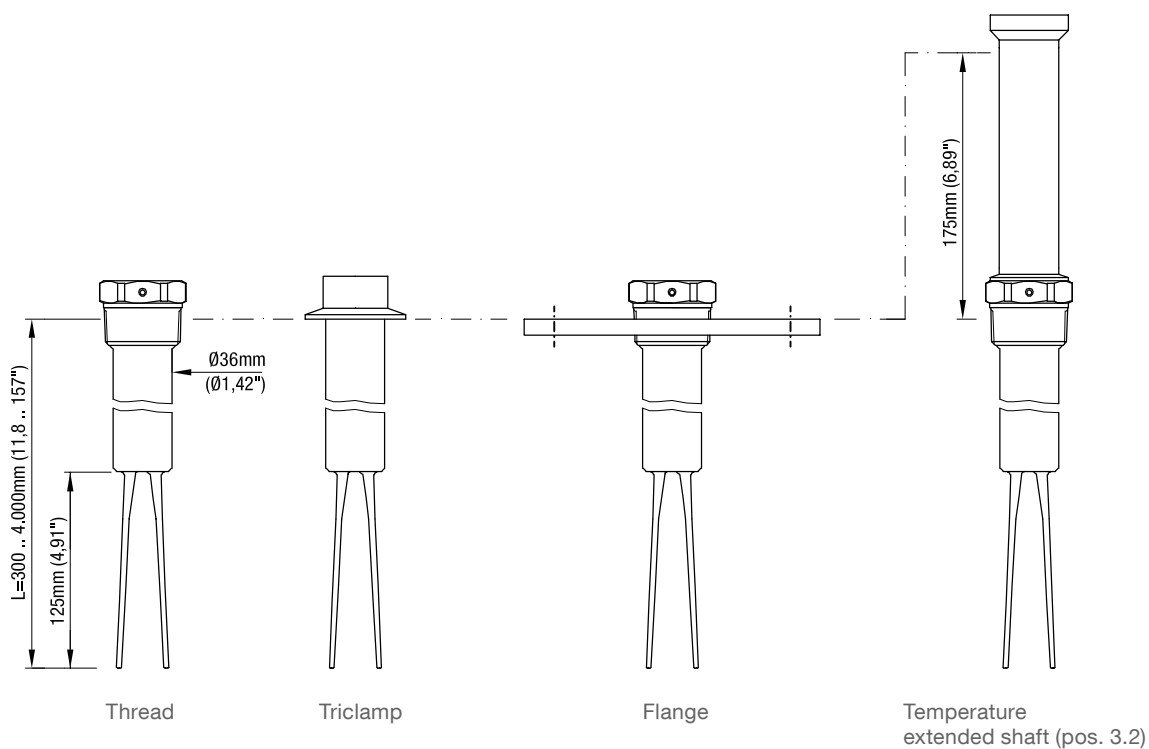
## Dimensions



### VN 4020

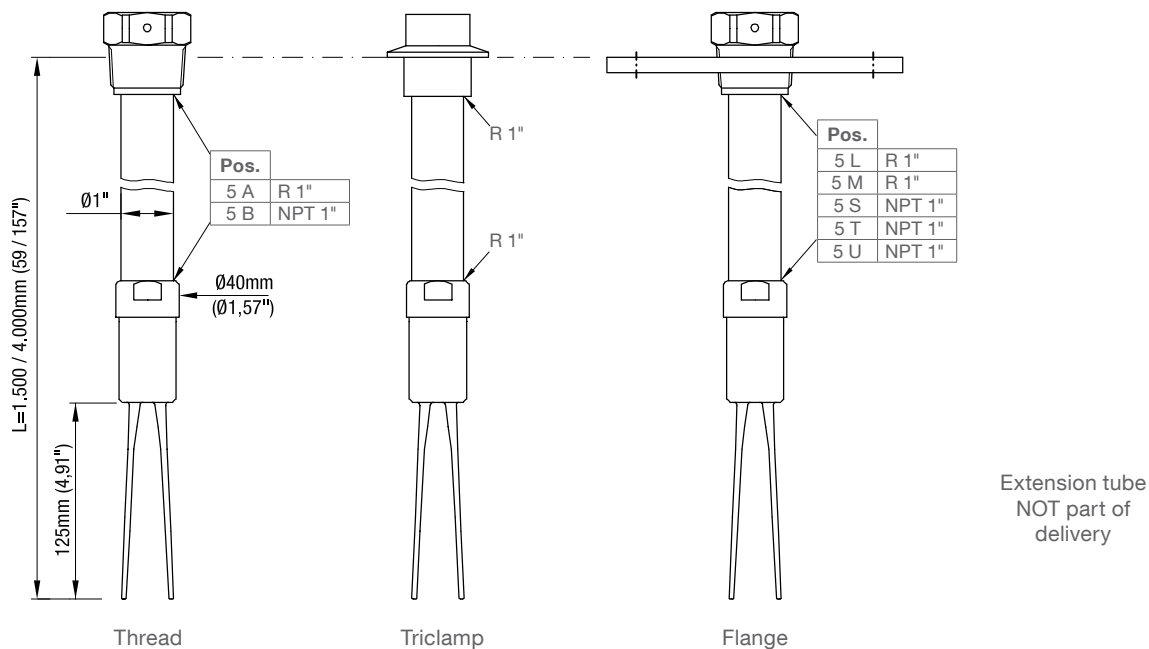


### VN 4030



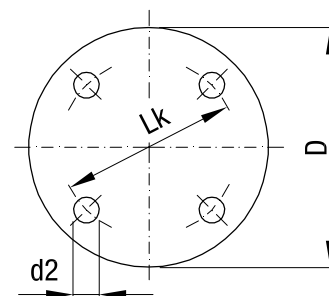
## Dimensions / Spare parts

### VN 4040



### Flanges

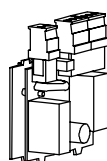
| code | type                    | number of holes | d2                | Lk                 | D                  | T (thickness)     |
|------|-------------------------|-----------------|-------------------|--------------------|--------------------|-------------------|
| L    | flange<br>DN100 PN6     | 4               | 18mm<br>(0.71")   | 170mm<br>(6.69")   | 210mm<br>(8.27")   | 16mm<br>(0.63")   |
| M    | flange<br>DN100<br>PN16 | 8               | 18mm<br>(0.71")   | 180mm<br>(7.09")   | 220mm<br>(8.66")   | 20mm<br>(0.79")   |
| S    | flange<br>2" 150lbs     | 4               | 19.1mm<br>(0.75") | 120.7mm<br>(4.75") | 152.4mm<br>(6.01") | 19.1mm<br>(0.75") |
| T    | flange<br>3" 150lbs     | 4               | 19.1mm<br>(0.75") | 152.4mm<br>(6.01") | 190.5mm<br>(7.5")  | 23.9mm<br>(0.94") |
| U    | flange<br>4" 150lbs     | 8               | 19.1mm<br>(0.75") | 190.5mm<br>(7.5")  | 228.6mm<br>(9")    | 23.9mm<br>(0.94") |



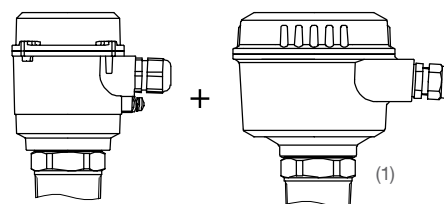
### Spare parts

| Electronic board                             | Article number | Price |
|--|----------------|-------|
| <b>Relais DPDT</b><br>19..230V AC 19..50V DC | pl408265       | •     |
| <b>PNP</b><br>18..50V DC                     | pl408266       | •     |

#### Electronic board



#### Fitting for housing



(1) Adapting plate included

## Electrical installation

### Universal voltage

Relay DPDT

#### Power supply:

19..230V 50-60Hz  $\pm 10\%^*$  22VA  
 19..40V DC  $\pm 10\%^*$  2W  
 \*incl.  $\pm 10\%$  of EN 61010

#### Fuse on power supply:

max. 10A, fast or slow, HBC, 250V

#### Signal output:

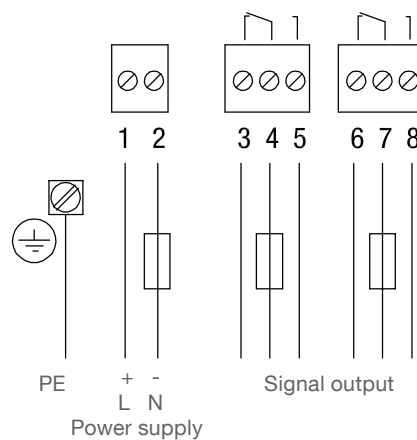
Floating relay DPDT

AC max. 250V, 8A, non inductive

DC max. 30V, 5A, non inductive

#### Fuse on signal output:

max 10A, fast or slow, HBC, 250V



### 3-wire

PNP

#### Power supply:

18 .. 50V DC  $\pm 10\%^*$   
 \*incl.  $\pm 10\%$  of EN 61010  
 Input current: max. 0.5A

#### Fuse:

max. 4A, fast or slow, 250V

#### Signal output:

max. 0.4A

Output voltage equal to input  
 voltage, drop  $< 2.5V$

#### Load for example:

PLC, relay, contactor, bulb

