# Table of contents

<table>
<thead>
<tr>
<th>Specifications/ Applications</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>MN 4020</td>
<td>4</td>
</tr>
<tr>
<td>Short extension length</td>
<td></td>
</tr>
<tr>
<td>MN 4030</td>
<td>6</td>
</tr>
<tr>
<td>Pipe extension</td>
<td></td>
</tr>
<tr>
<td>MN 4040</td>
<td>8</td>
</tr>
<tr>
<td>Pipe extension (screwed)</td>
<td></td>
</tr>
<tr>
<td>Options</td>
<td>10</td>
</tr>
<tr>
<td>Dimensions</td>
<td>12</td>
</tr>
<tr>
<td>Spare parts</td>
<td>13</td>
</tr>
<tr>
<td>Electrical installation</td>
<td>14</td>
</tr>
</tbody>
</table>

Subject to change.  
Valid: From 01.04.2018 until 31.03.2019, 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 > 20 g/l (1.25 lb/ft³)
- 4 sensitivity settings selectable
- ATEX, IEC-Ex, FM approvals (DustEx)
- 1935/2004/EC Food grade materials
- 2011/65/EU RoHS conform

<table>
<thead>
<tr>
<th>Approvals</th>
<th>CE</th>
<th>Zone 20/21 (Dust Ignition Proof)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATEX/IEC-Ex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FM</td>
<td>Ordinary Locations</td>
<td>Cl. II, III Div. 1 (Dust Ignition Proof)</td>
</tr>
<tr>
<td>TR-CU</td>
<td>Ordinary Locations</td>
<td>Zone 20/21 (Dust Ignition Proof)</td>
</tr>
</tbody>
</table>

| Electro- | Relay DPDT | 21..230 V AC 22..45 V DC ±10% |
| nics     | PNP       | 20..40 V DC ±10%             |

| MN 4020   | Length of extension | 160 mm (6.3”) |
|          | 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 | 1.4301 (304)/1.4541 (321) or 1.4404 (316L) (food grade) |

| MN 4030   | Length of extension | 200 .. 4,000 mm (7.9 .. 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 | 1.4301 (304)/1.4541 (321) or 1.4404 (316L) (food grade) |

| MN 4040   | Length of extension | max. 1,500 mm (59”) or 4,000 mm (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 | 1.4301 (304)/1.4541 (321) or 1.4404 (316L) (food grade) |
Detection of solids

MN 4020

application in down pipe

MN 4030
MN 4040

optional sliding sleeve (MN 4030)
**Materials inside process:** Food grade

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

<table>
<thead>
<tr>
<th>Version:</th>
<th>Cable entries:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE/ ATEX/ IEC-Ex/ TR-CU (pos.2 0,W,A,E)</td>
<td>M20 x 1.5 (1x cable gland + 1x blind plug)</td>
</tr>
<tr>
<td>FM (pos.2 M,N)</td>
<td>NPT ½” tapered ANSI B1.20.1 (1x open conduit + 1x blind plug)</td>
</tr>
</tbody>
</table>

**Dimensions**  see page 12

---

pos.3
Temperature extended shaft

Application up to 150°C (302°F)

1  without
2  with
Basic type

**MN 4020**

**Certificate**

- CE (1)
- ATEX II 1/2D Ex ta/tb IIC T1 Da/Db
- IEC-Ex ta/tb IIC T1 Da/Db
- FM General Purpose
- FM DIP Cl. II, III Div.1 Group E, F, G
- TR-CU Ex ta/tb IIC T1 Da/Db X

**Temperature extended shaft**

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

**Electronic module**

- L Relay DPDT 21 .. 230 V AC 22 .. 45 V DC
- D PNP 20 .. 40 V DC

**Process connection**

- A Thread G 1 1/2" DIN 228
- B Thread G 1 1/4" DIN 228
- C Thread G 1" DIN 228
- F Thread NPT 1 1/4" conical ANSI B1.20.1
- Q Thread NPT 1 1/4" conical ANSI B1.20.1
- G Thread NPT 1" conical ANSI B1.20.1
- P Triclamp 2" (DN50) ISO 2852
- L Flange DN100 PN6, EN 1092-1 (max. 6 bar (87 psi))
- M Flange DN100 PN16, EN 1092-1
- S Flange 2" 150lbs ANSI B16.5
- T Flange 3" 150lbs ANSI B16.5
- U Flange 4" 150lbs ANSI B16.5

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

- 1 Stainless steel 1.4301 (304)/ Flange 1.4541 (321)
- 2 Stainless steel 1.4404 (316L)

**Further options**: see page 10

**Order code**

```
MN 4020 A 3 1
```

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

(1) TR-CU (general purpose) included
Materials inside process: Food grade

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

<table>
<thead>
<tr>
<th>Version</th>
<th>Cable entries:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE/ ATEX/ IEC-Ex/ TR-CU (pos.2 0,W,A,E)</td>
<td>M20 x 1.5 (1x cable gland + 1x blind plug)</td>
</tr>
<tr>
<td>FM (pos.2 M,N)</td>
<td>NPT ½” tapered ANSI B1.20.1 (1x open conduit + 1x blind plug)</td>
</tr>
</tbody>
</table>

Dimensions  see page 12

pos.3
Temperature extended shaft
Application up to 150°C (302°F)
Basic type

MN 4030

Certificate

pos. 2

- 0  CE 
- 1  ATEX II 1/2D  Ex ta/tb IIIC T1 Da/Db 
- A  IEC-Ex ta/tb IIIC T1 Da/Db 
- M  FM  General Purpose 
- N  FM  DIP Cl. II, II Div.1 Group E, F, G 
- E  TR-CU Ex ta/tb IIIC T1 Da/Db X

Temperature extended shaft

pos. 3

1  without (up to Tprocess = 150°C (302°F) at Tamb < 40°C (104°F))
2  with (up to Tprocess = 150°C (302°F) at Tamb > 40°C (104°F))

Electronic module

pos. 4

- L  Relay DPDT  21 .. 230 V AC  22 .. 45 V DC 
- D  PNP  20 .. 40 V DC

Process connection

pos. 5

- A  Thread G 1½"  DIN 228 
- B  Thread G 1¾"  DIN 228 
- C  Thread G 1"  DIN 228 
- F  Thread NPT 1½"  conical ANSI B1.20.1 
- Q  Thread NPT 1¾"  conical ANSI B1.20.1 
- G  Thread NPT 1"  conical ANSI B1.20.1 
- P  Triclamp 2" (DN50) ISO 2852 
- L  Flange DN100 PN6, EN 1092-1 (max. 6 bar (87 psi)) 
- M  Flange DN100 PN16, EN 1092-1 
- S  Flange 2½" 150lbs ANSI B16.5 
- T  Flange 3½" 150lbs ANSI B16.5 
- U  Flange 4½" 150lbs ANSI B16.5

Length of extension "L"

pos. 7

- Z  from 0 mm per 100 mm (3.94") and part thereof; min. 200 mm (7.9"), max. 4,000 mm (157")

Material of process connection/ extension "L"

pos. 8

1  Stainless steel 1.4301 (304)/ Flange 1.4541 (321) 
2  Stainless steel 1.4404 (316L)

Further options: see page 10

MN 4030  B  3  Z - L = mm  Order code

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

TR-CU (general purpose) included
**MN 4040  Pipe extension (screwed)**

**Materials inside process:** Food grade

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

<table>
<thead>
<tr>
<th>Version:</th>
<th>Cable entries:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE/ ATEX/ IEC-Ex/ TR-CU (pos.2 0,W,A,E)</td>
<td>M20 x 1.5 (1x cable gland + 1x blind plug)</td>
</tr>
<tr>
<td>FM (pos.2 M,N)</td>
<td>NPT ½” tapered ANSI B1.20.1 (1x open conduit + 1x blind plug)</td>
</tr>
</tbody>
</table>

**Dimensions**  
see page 13

Application up to 150°C (302°F)

1  without extended socket
2  with extended socket
# MN 4040 Pipe extension (screwed)

## Basic type
**MN 4040**

<table>
<thead>
<tr>
<th>pos.2</th>
<th>Certificate</th>
<th>0</th>
<th>CE (i)</th>
<th>1</th>
<th>ATEX II 1/2D Ex ta/tb IIIC T4 Da/Db</th>
<th>2</th>
<th>IEC-Ex ta/tb IIIC T4 Da/Db</th>
<th>3</th>
<th>FM General Purpose</th>
<th>4</th>
<th>FM DIP Cl. I, II, III Div.1 Group E, F, G</th>
<th>5</th>
<th>TR-CU Ex ta/tb IIIC T4 Da/Db X</th>
</tr>
</thead>
</table>

## Electronic module
<table>
<thead>
<tr>
<th>pos.4</th>
<th>Relay DPDT</th>
<th>0</th>
<th>21 .. 230 V AC</th>
<th>4</th>
<th>22 .. 45 V DC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PNP</td>
<td>0</td>
<td>20 .. 40 V DC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Process connection
| pos.5 | A Thread G 1 1/2" DIN 228 | 1 | * |
|       | F Thread NPT 1 1/4" conical ANSI B1.20.1 | 2 | * |
|       | P Triclamp 2" (DN50) ISO 2852 | 3 | * |
|       | L Flange DN100 PN6, EN 1092-1 (max. 6 bar (87 psi)) | 4 | * |
|       | M Flange DN100 PN16, EN 1092-1 | 5 | * |
|       | S Flange 2" 150lbs ANSI B16.5 | 6 | * |
|       | T Flange 3" 150lbs ANSI B16.5 | 7 | * |
|       | U Flange 4" 150lbs ANSI B16.5 | 8 | * |

## Length of extension "L"
| pos.7 | L 1,500 mm (59") (cutable cable length) | 0 | * |
|       | M 4,000 mm (157") (cutable cable length) | 1 | * |

## Material of process connection/ extension "L"
1. Stainless steel 1.4301 (304)/ Flange 1.4541 (321)
2. Stainless steel 1.4404 (316L)

**Further options:** see page 10

### Order code

<table>
<thead>
<tr>
<th>MN 4040</th>
<th>C</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>position</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

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

(i) TR-CU (general purpose) included
Options

**Level limit switch**

**Series MN 4000**

**Selection list**

---

### Options

**pos.11 x**

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

<table>
<thead>
<tr>
<th>process connection/for counter flange with</th>
<th>consists of</th>
<th>screws*</th>
<th>nuts*</th>
<th>washers*</th>
<th>sealing**</th>
</tr>
</thead>
<tbody>
<tr>
<td>pos.22 c</td>
<td></td>
<td>4x M16 x 60</td>
<td>4x M16</td>
<td>4 pcs</td>
<td>1 piece</td>
</tr>
<tr>
<td>pos.22 d</td>
<td></td>
<td>4x M16 x 40</td>
<td>4 pcs</td>
<td>1 piece</td>
<td></td>
</tr>
<tr>
<td>pos.22 e</td>
<td></td>
<td>8x M16 x 60</td>
<td>8 pcs</td>
<td>1 piece</td>
<td></td>
</tr>
<tr>
<td>pos.22 f</td>
<td></td>
<td>8x M16 x 40</td>
<td>8 pcs</td>
<td>1 piece</td>
<td></td>
</tr>
</tbody>
</table>

* 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.23 x**

M20 x 1.5 2x screwed cable gland

---

**pos.23 y**

M20 x 1.5 1x screwed cable gland +1x blind plug

---

**pos.23 a**

NPT ½" tapered ANSI B1.20.1 (1x conduit + 1x Ex-d blind plug)

---

**pos.23 b**

NPT ½" tapered ANSI B1.20.1 (1x conduit + 1x Ex-d blind plug) on request

---

### Sliding sleeve

Process connection as follows or flange as chosen:

**pos.25 a**

G 1½" * DIN 228 material 1.4301 (304)

---

**pos.25 b**

NPT 1½ inch ANSI B1.20.1 material 1.4301 (304)

---

**pos.25 c**

Flange 5 material 1.4301 (304)/1.4541 (321)

---

For applications with overpressure max. 16 bar (232 psi), max. 150°C (302°F)

**pos.25 e**

G 1½" * DIN 228 material 1.4404 (316L)

---

**pos.25 f**

NPT 1½ inch ANSI B1.20.1 material 1.4404 (316L)

---

**pos.25 g**

Flange 5 material 1.4404 (316L)

---

### Signal lamp

**pos.27 a**

Bulb, mounted in cable entry M20 x 1.5, 2 W green

---

**pos.27 c**

Bulb, mounted in cable entry M20 x 1.5, 2 W red

---

**pos.27 b**

LED (glass window in lid)

---

**pos.29**

Plug 4-pole (incl. PE)

---

1 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 (24 V, 115 V and 230 V) will be delivered. For PNP (pos.4 D) a 24 V bulb will be delivered.

2 Available for CE (pos.2 0)

3 Available for CE and FM general purpose (pos.2 0,M)

4 Not in combination with weather protection cover (pos.21)

5 Flange as selected in pos.5

6 Available for MN 4030

7 Not for FM (pos.2 M,N)
Options

pos.21
Weather protection cover

pos.25
Sliding sleeve

pos.29
Plug 4-pole

Signal lamp
pos.27 a,c
Bulb, mounted in cable entry M20 x 1.5

pos.27 b
LED (glass window in lid)

Mononivo®
Series MN 4000
Selection list

Mononivo®
MN 4000 pl010418

100 mm (3.94")
A

88 mm (3.46")
C

165 mm (6.5")
B
Dimensions

**MN 4020**

- **Thread**: Ø28mm (Ø1.1”)
- **Triclamp**: 150mm (5.9”)
- **Flange**: 138mm (5.4”)
- **Temperature extended shaft (pos.3 2)**: 175mm (6.9”)

**MN 4030**

- **Thread**: L-200, 4,000mm (1.2 - 15’’)
- **Triclamp**: 150mm (5.9”)
- **Flange**: 138mm (5.4”)
- **Temperature extended shaft (pos.3 2)**: 175mm (6.9”)
Dimensions / Spare parts

**MN 4040**

Flanges

<table>
<thead>
<tr>
<th>code</th>
<th>type</th>
<th>number of holes</th>
<th>d2</th>
<th>Lk</th>
<th>D</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>flange DN100 PN6</td>
<td>4</td>
<td>18 mm (0.71&quot;)</td>
<td>170 mm (6.69&quot;)</td>
<td>210 mm (8.27&quot;)</td>
<td>16 mm (0.63&quot;)</td>
</tr>
<tr>
<td>M</td>
<td>flange DN100 PN16</td>
<td>8</td>
<td>18 mm (0.71&quot;)</td>
<td>180 mm (7.09&quot;)</td>
<td>220 mm (8.66&quot;)</td>
<td>20 mm (0.79&quot;)</td>
</tr>
<tr>
<td>S</td>
<td>flange 2&quot; 150lbs</td>
<td>4</td>
<td>19.1 mm (0.75&quot;)</td>
<td>120.7 mm (4.75&quot;)</td>
<td>152.4 mm (6.01&quot;)</td>
<td>19.1 mm (0.75&quot;)</td>
</tr>
<tr>
<td>T</td>
<td>flange 3&quot; 150lbs</td>
<td>4</td>
<td>19.1 mm (0.75&quot;)</td>
<td>152.4 mm (6.0&quot;)</td>
<td>190.5 mm (7.5&quot;)</td>
<td>23.9 mm (0.94&quot;)</td>
</tr>
<tr>
<td>U</td>
<td>flange 4&quot; 150lbs</td>
<td>8</td>
<td>19.1 mm (0.75&quot;)</td>
<td>190.5 mm (7.5&quot;)</td>
<td>228.6 mm (9.0&quot;)</td>
<td>23.9 mm (0.94&quot;)</td>
</tr>
</tbody>
</table>

**Spare parts**

<table>
<thead>
<tr>
<th>Electronic board</th>
<th>Article number</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relais DPDT</td>
<td>pl405265</td>
<td></td>
</tr>
<tr>
<td>PNP</td>
<td>pl405266</td>
<td></td>
</tr>
</tbody>
</table>
**Universal voltage**

Relay DPDT

**Power supply:**
21 .. 230 V 50 - 60 Hz  ±10%*  22 VA
22 .. 45 V DC  ±10%*  2 W
*incl. ±10% of EN 61010

Fuse on power supply:
max. 10 A, fast or slow, HBC, 250 V

**Signal output:**
Floating relay DPDT

AC max. 250 V, 8 A, non inductive
DC max. 30 V, 5 A, non inductive

Fuse on signal output:
max. 10 A, fast or slow, HBC, 250 V

---

**3-wire**

**PNP**

**Power supply:**
20 .. 40 V DC  ±10%*  *incl. ±10% of EN 61010
Input current: max. 0.5 A

Fuse:
max. 4 A, fast or slow, 250 V

**Signal output:**
max. 0.4 A
Output voltage equal to input voltage, drop <2.5 V

Load for example:
PLC, relay, contactor, bulb

---

**Mononivo®**

Level limit switch
Series MN 4000
Selection list

---

**Electrical installation**

---

**Mononivo®**

MN 4000 pl010418