

Level measurement

Guided wave radar **MOLOS_{wave}** **1**

Yo-Yo sensing systems **MOLOS_{bob}** **2**

Visualization **MOLOS_{visu}** **3**

Rotation **MOLOS_{roto}** **4**

Membrane **MOLOS_{membran}** **5**

Level indicator

Vibration **MOLOS_{vibro}** **6**

Microwave barrier **MOLOS_{barrier}** **7**

Pendulum **MOLOS_{pendu}** **8**

Coding **MOLOS_{code}** **9**

Hose couplings

Limit switch **MOLOS_{switch}** **10**

Swivelling lever **MOLOS_{swing}** **11**

Lockable couplings **MOLOS_{lock}** **12**

Overload protection **MOLOS_{safe}** **13**

Silo filling device **MOLOS_{safe}** **14**

Bulk solids handling

Pressure device **MOLOS_{pressdec}** **15**

Microwave flow sensor **MOLOS_{flow}** **16**

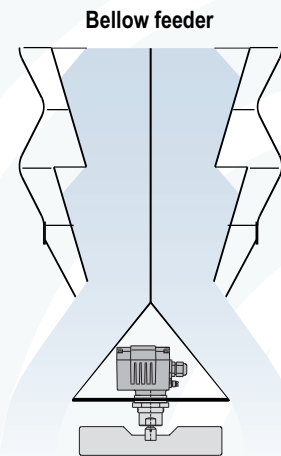
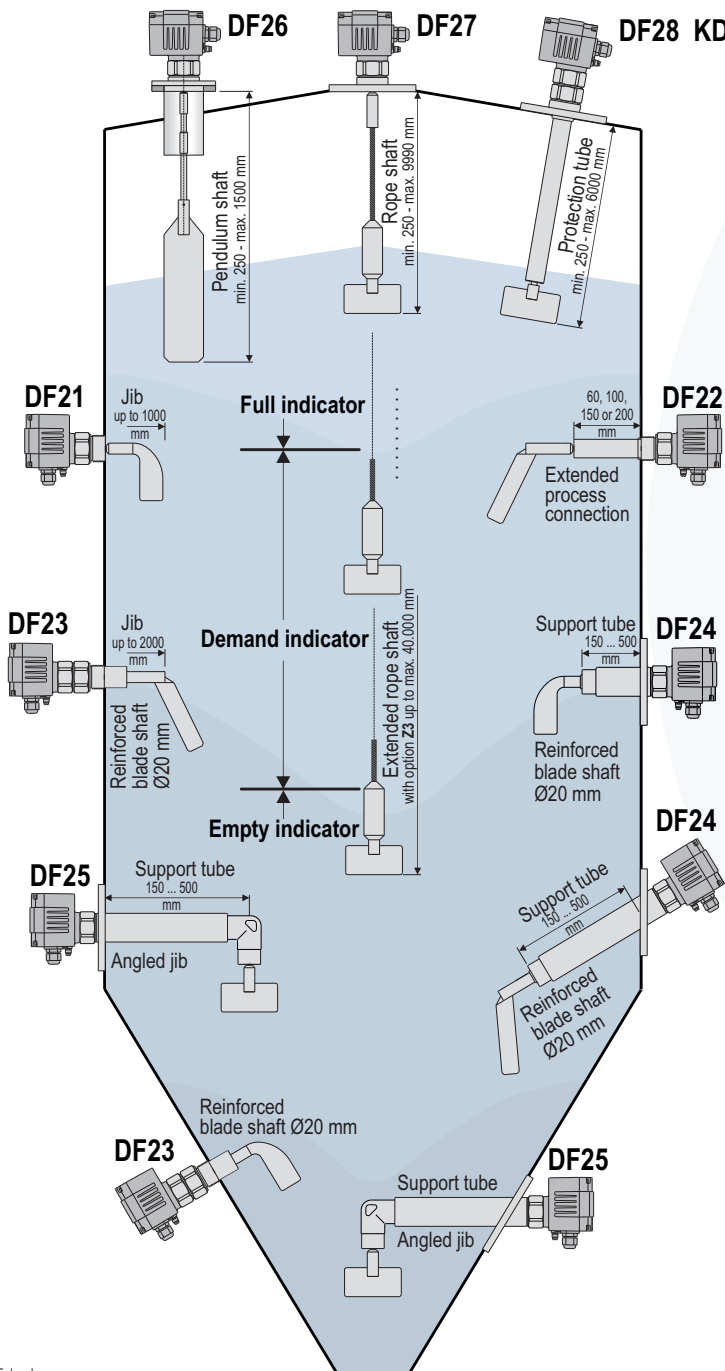
Pinch valves **MOLOS_{valve}** **17**



Advantages of rotary blade level indicators:

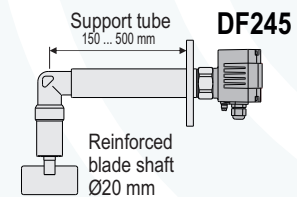
- insensitive against dust, caking and conductivity of bulk goods
- use in potentially explosive gas and dust atmospheres
- versatile applicable also at high temperatures and pressures
- very good price-performance-ratio
- high reliability
- easy installation and maintenance-free operation

4

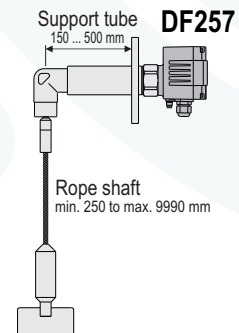


Short process connection

Special level indicator with angled jib



001-1245



001-1257


Design depending on bulk goods and applications, prices on request.


Selection list



Level indicator for bulk solids.

| Content | Page |
|---|-------|
| DF11 for simple applications, inexpensive version with aluminium housing | 4 |
| DF21 for a wide range of applications | 6 |
| DF22 with lengthened process connection, otherwise as DF21 | 8 |
| DF23 with reinforced blade shaft to be given preference as demand and empty indicator | 10 |
| DF24 with reinforced blade shaft and long support tube otherwise as DF23 | 12 |
| DF25 with angled jib, suitable as full, demand and empty indicator | 14 |
| DF26 with pendulum shaft and anti-buckling protection, up to 1.500 mm in length | 16 |
| DF27 with rope shaft and tensioning weight, up to 10.000 mm in length height adjustable with DF-HVP | 18 |
| DF28 with protecting tube, up to 6.000 mm length, mounting as required with built-in bearing KD | 20 |
| DF30 for bellow feeders | 22 |
| DF accessories, spare parts and special devices | 24-39 |

ATEX option
Dust  B1 II 1/2D Ex ta/tb IIIC T80°C Da/Db
B2 II 1D Ex ta IIIC T70°C Da
B3 II 1/3D Ex ta/tc IIIB T80°C Da/Dc

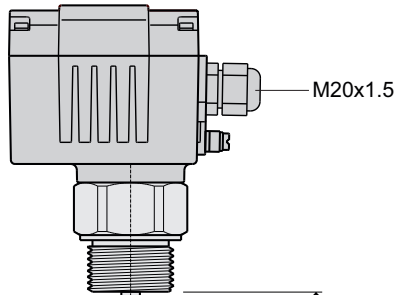
ATEX option
Gas+ Dust  **hybride mixtures**
A3/A4 II 2G Ex db eb IIC T6 Gb
B1 II 1/2D Ex ta/tb IIIC T70°C Da/Db
A3/A4 II 1G Ex h IIC T6/II 2G db eb IIC T6 Ga/Gb
B1 II 1D Ex h IIIC T-25°C...80 °C/II 2D tb IIIC T 70 °C Da/Db

Full, empty and demand indicator for simple applications

| | | |
|-------------------------------|---------------------------|---|
| Materials | Housing | Aluminium pressure casting, RAL 7001 coated |
| | Process connection | Aluminium |
| | Shafts, rope | Stainless steel 1.4301 / 304 |
| | Tensioning weight | Atainless steel 1.4301 / 304 |
| | Blade TK | Plastic PP |
| | Blade TD | Stainless steel 1.4301 / 304 |
| Signal contact | | 2 A / 250V AC potential-free |
| Type of protection | | IP66 in accordance with DIN EN 60529 |
| Ambient temperature | | T _a -20 °C ... +70 °C |
| Bulk goods temperature | | T(Process) -25 °C ... +80 °C |
| Pressure range | | p(Process) -0.5 bar ... 1 bar |
| Maintenance | | none |

Compact aluminium housing

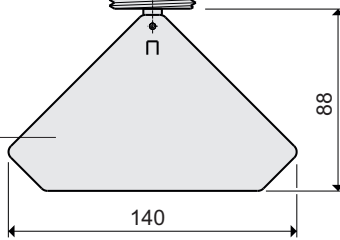
Order code
DF11A1CnG2ATD



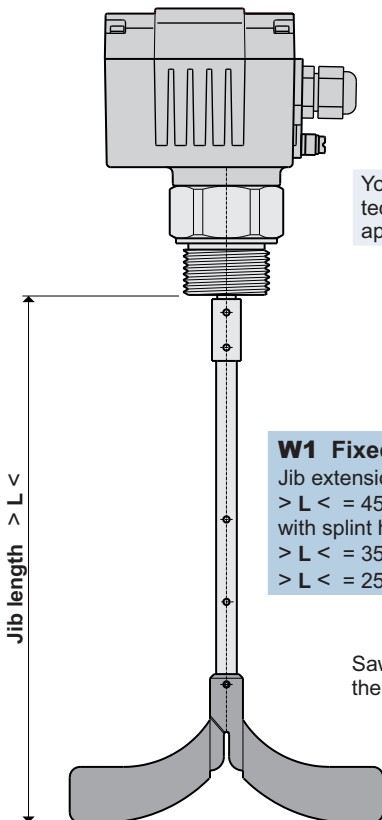
To be used with preference as full indicator!

Measuring blade TD

001-0101



Jib length > L < 13 mm longer by measuring blade TD

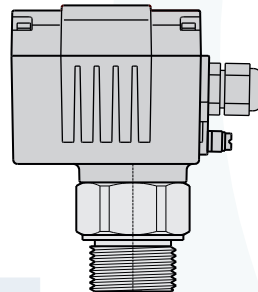


W1 Fixed shaft

Jib extension
> L < = 450 mm
with splint hole for
> L < = 350 and
> L < = 250 mm

Saw off shaft 10 mm behind the used splint hole.

001-0102



Buckling protector

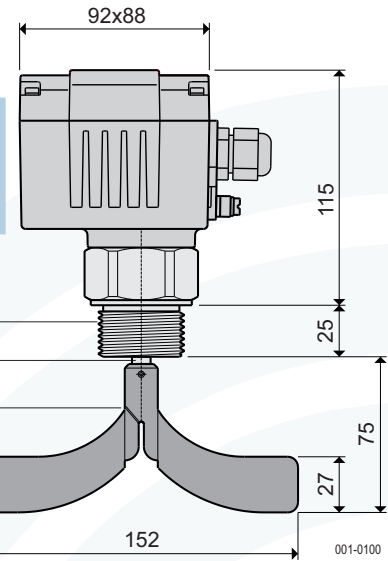
W3 Pendulum shaft

Jib extension
> L < = 500 mm
with splint hole for
> L < = 400 and
> L < = 300 mm

001-0103

Compact aluminium housing

Order code
DF11A1CnG2ATK



Process connection

Blade shaft

Blade can be sawn off here

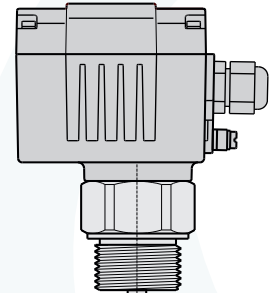
Measuring blade TK

001-0100

We recommend sawing off the plastic blade on one side, when using as empty indicator.

Ex -Info

The measuring blade TK150 is not for use in containers being filled by a pneumatic conveyor.



W6 Rope shaft

Jib extension
> L < = 2000 mm
The rope can be shortened depending on requirement.

Tensioning weight

001-0104

Choice of options with

Certifications, certificates, approvals

Standard = CE conform and **IP66**

- B1** ATEX $\text{\textcircled{II}}$ 1/2D IIIC **Dust**
- B3** ATEX $\text{\textcircled{II}}$ 1/3D IIIB **Dust**
- B9** Further approvals on request

Supply voltage / Supply

- C1** 220...240V AC (50...60Hz)
- C2** 110...120V AC (50...60Hz)
- C3** 48V AC (50...60Hz)
- C4** 24V AC (50...60Hz)
- C5** 24V DC

Signal lamps

Standard = without function LEDs

- H5** with function LEDs
- H6** Functions LEDs with collar ¹⁾

Process connection in aluminium

- G1A** Thread G1 DIN/ISO 228
- G2A** Thread G1¼ DIN/ISO 228
- G3A** Thread G1½ DIN/ISO 228
- G5A** Thread M30x1.5
- G6A** Thread M32x1.5

Measuring blade

M0 **without measuring blade**

>>> inexpensive in plastic

- TK** Blade TK150 150x27.....
- TK3** 3 blades TK150 150x120.....

>>> inexpensive in stainless steel

- TD** Blade TD140 140x85
- S1** Socket blade 100x30 inclined ²

> in stainless steel,
dimensions please see **DF-GI-26**

- X1** Blade X50 98x50
- X2** Blade X100 98x100
- X3** Blade X200 180x100

Jib extension

W0 **Standard** = without extension

- W1** Fixed shaft 450mm ..
- W3** Pendulum shaft 500mm ..
- W4** Pendulum shaft 1000mm ..
- W6** Rope shaft 2000mm

DF11A1

← Order code

Accessories

- SH** Weather protection hood in PVC, RAL 7001
- Certificated only for zone 22 and in non-hazardous areas

Hexagonal nuts in aluminium

- SM1A** Hexagonal nut G1
- SM2A** Hexagonal nut G1¼
- SM3A** Hexagonal nut G1½
- SM5A** Hexagonal nut M30x1,5
- SM6A** Hexagonal nut M32x1,5

- KV1** 2. Standard cable gland
- KV2** 2. Ex cable gland

- MG2** Mounting flange for textile silos with G1¼

4

Delivery from Stock

ordered until 12°° - dispatched at 16°°

- ¹⁾ **not** available together with **B1**
- ²⁾ **not** available together with **W6**

€ Prices on request

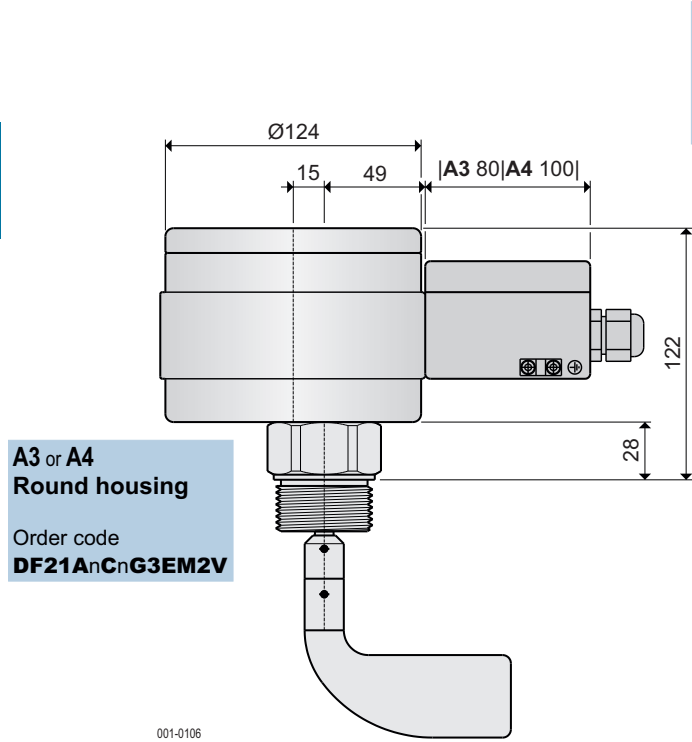


B0, **H9**, **M0** and **W0** are **not needed** for order code.

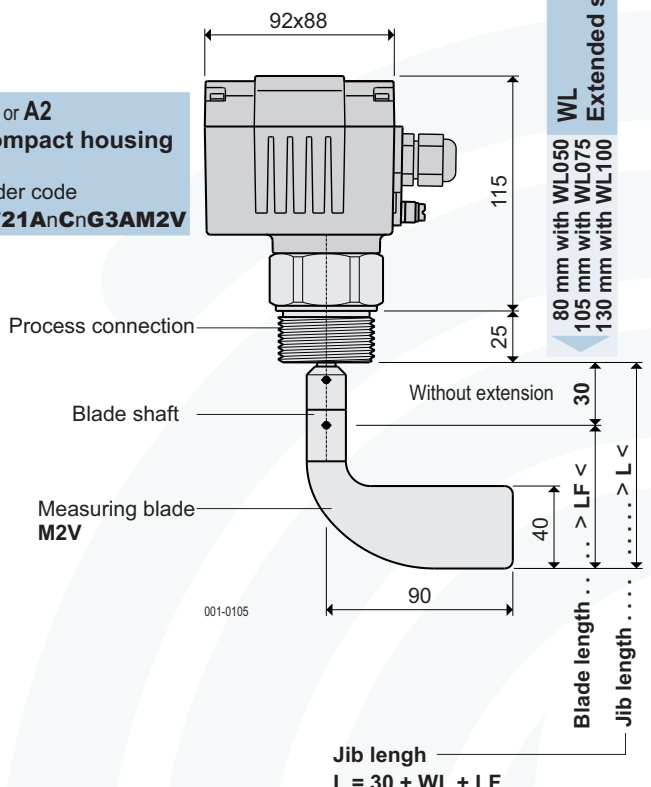
Full, empty and demand indicator for any mounting position, large range of applications

Signal contact 2 A / 250 V AC potential-free
 Type of protection IP66 in accordance with DIN EN 60529
 Maintenance none

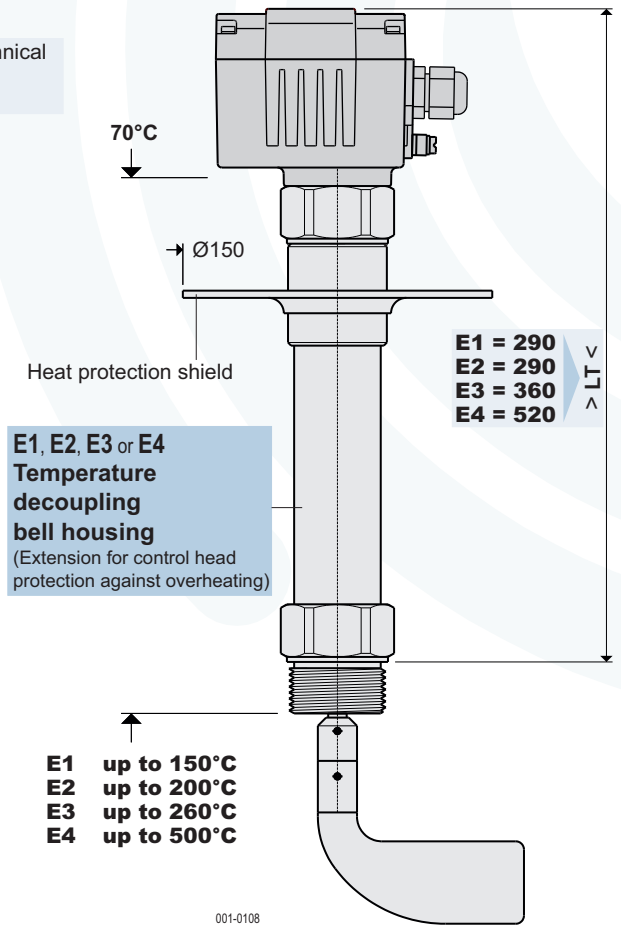
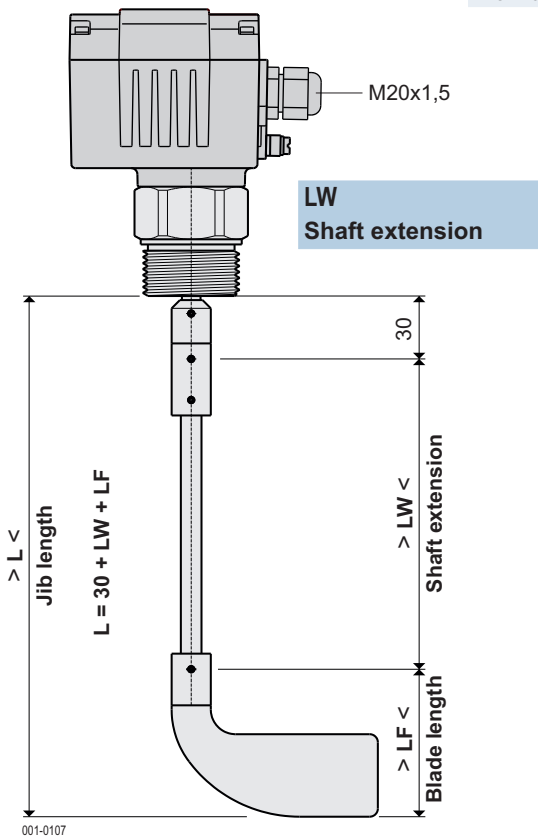
4



**A1 or A2
Compact housing**
Order code
DF21AnCnG3AM2V



You will find further technical details under appliance information DF-GI-

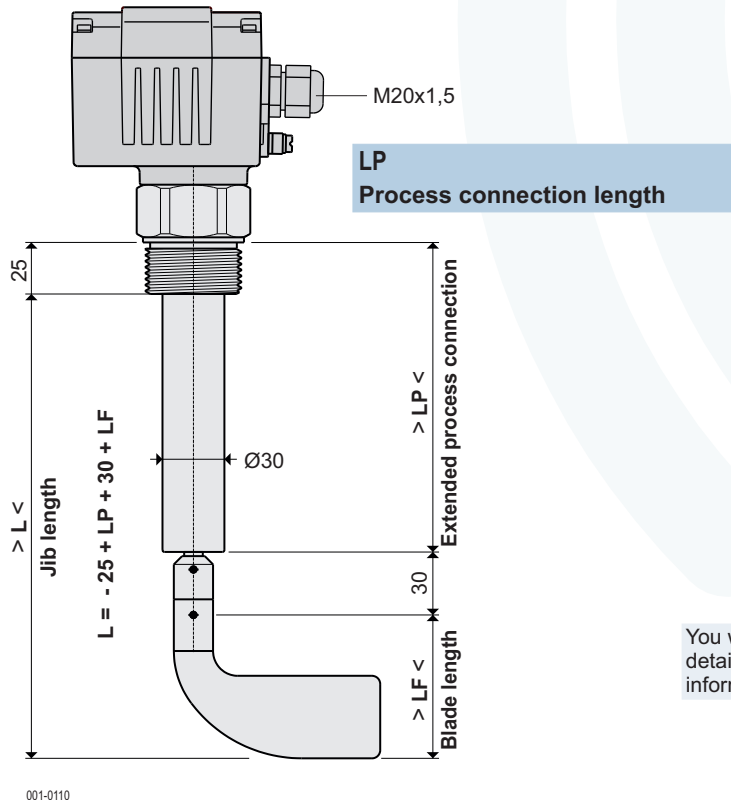
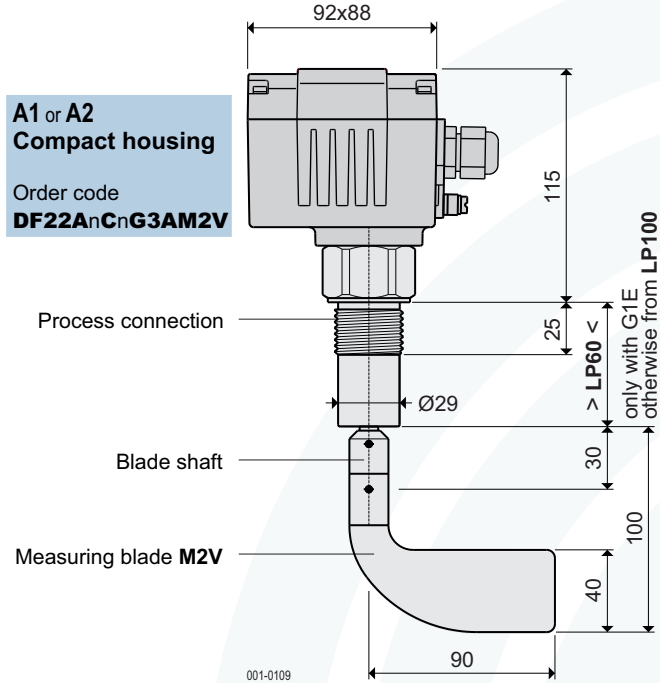


Full, empty and demand indicator for any mounting position with extended process connection

Signal contact 2 A / 250V AC potential-free
 Type of protection IP66 in accordance with DIN EN 60529
 Maintenance none

4

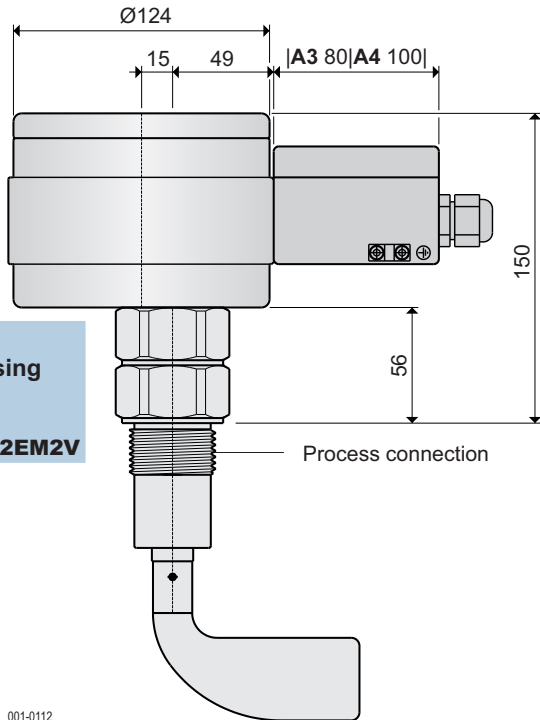
**A1 or A2
Compact housing**
 Order code
DF22AnCnG3AM2V



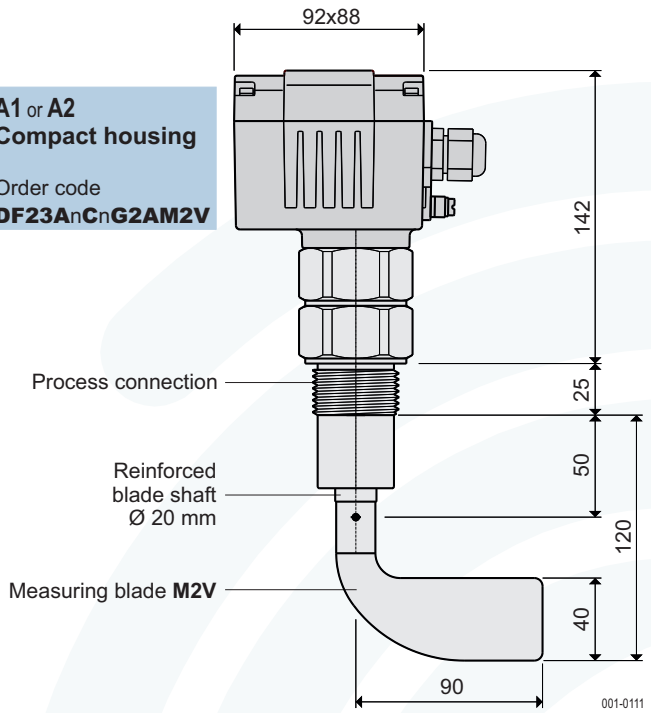
You will find further technical details under appliance information DF-GI-..

Full, empty and demand indicator for any mounting position with reinforced blade shaft

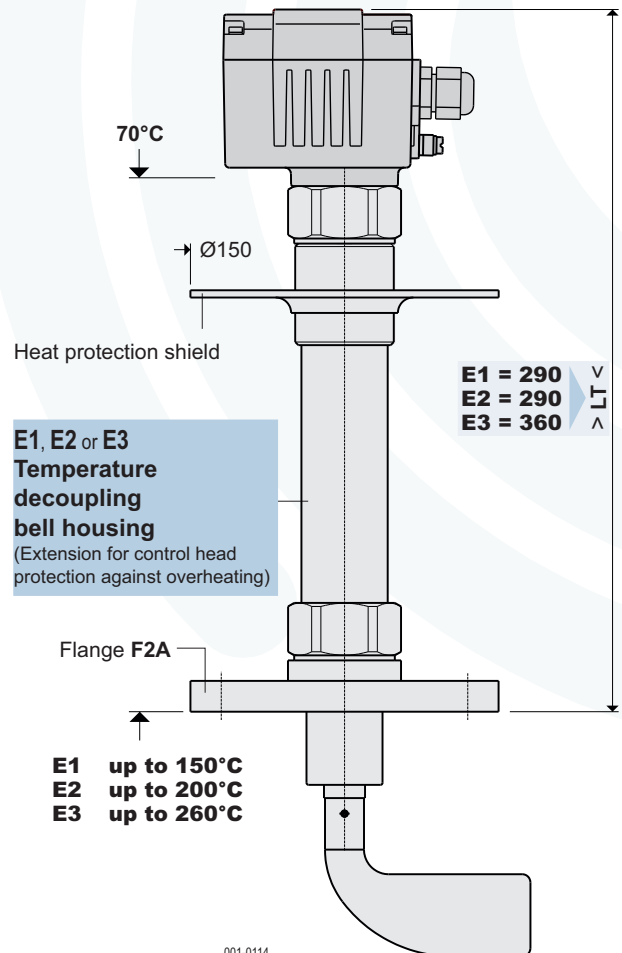
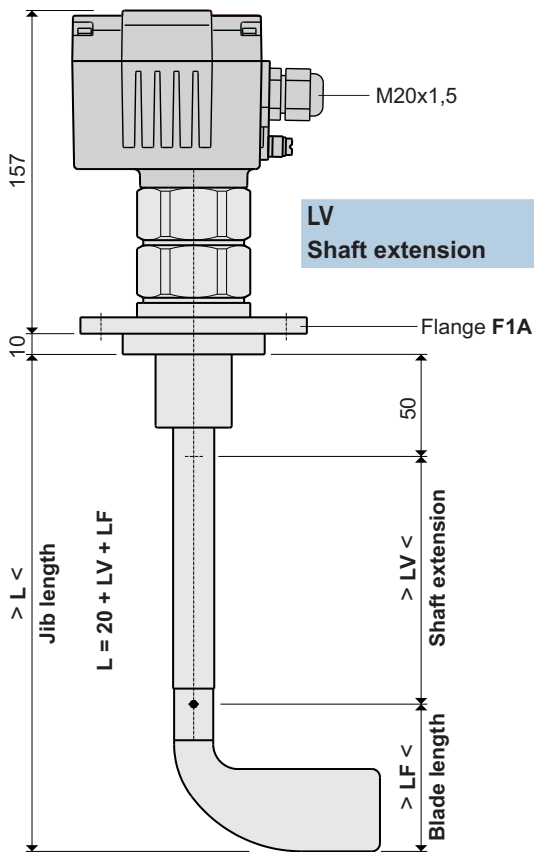
Signal contact 2 A / 250V AC potential-free
 Type of protection IP66 in accordance with DIN EN 60529
 Maintenance none



A1 or A2 Compact housing
 Order code **DF23AnCnG2AM2V**



You will find further technical details under appliance information DF-GI-..



4 housing versions to choice

Housing selection
A1 Standard Compact aluminium housing ... CE conform and ATEX Dust
A2 Stainless steel compact housing ... CE conform and ATEX Dust
A3 Aluminium round housing ... ATEX II 2G IIC
A4 Stainless steel round housing ... ATEX II 2G IIC

Choice of options with

- Certifications, certificates, approvals**
Standard = CE conform and IP66
- B1** ATEX II 1/2D IIC Dust
 - B2** ATEX II 1D IIC Dust^{D2)}
 - B3** ATEX II 1/3D IIB Dust
 - B9** Further approvals on request

- Supply voltage / Supply**
- C1** 220...240V AC (50...60Hz)
 - C2** 110...120V AC (50...60Hz)
 - C3** 48V AC (50...60Hz)
 - C4** 24V AC (50...60Hz)
 - C5** 24V DC
 - C6** 12V DC
 - C7** 48V DC
 - C9** Special voltages on request

- Self-monitoring**
- D0** Standard = without monitoring
 - D1** Function monitoring
 - D2** Voltage monitoring

- Signal lamps¹⁾**
- H0** Standard = with function LEDs
 - H1** Collar for function LEDs
 - H2** Signal lamp, LED green
 - H8** Large signal lamp, LED green

- Bulk goods temperature/T_(process)**
- E0** Standard = -25°C...+80°C²⁾
 - E1** -40°C...+150°C only with R7
 - E2** -25°C...+200°C only with R7
 - E3** -25°C...+260°C only with R7
 - E7** Device heating 2.5 Watt

- Container pressure / p_(process)**
- P0** Standard = -0.5...5 bar³⁾
 - P1** -0.5 bar...10 bar
 - P2** -0.95 bar...25 bar⁴⁾
 - P6** -0.9 bar...10 bar
 - P7** -0.9 bar...10 bar⁵⁾

- Process connection**
- | | | |
|---|---|------------|
| G2 Thread G1¼ DIN/ISO 228 | X | X |
| G3 Thread G1½ DIN/ISO 228 | X | X |
| G4 Thread G2 DIN/ISO 228 | X | X |
| F1 Flange F70 Ø110, 4xØ9, Lk90 | X | X |
| F2 Flange F100 150x150, 4xØ18, Lk170 | X | X |
| F6 Flange DN100 PN 6 | | X |
| F7 Flange DN100 PN 16 | | X |
| F9 Other flanges | | on request |

- Material of process connection**
- | | | |
|---------------------------------------|--|--|
| A Aluminium | | |
| E Stainless steel 1.4301 / 304 | | |
| X Other materials | | on request |
| Z Bearing in stainless steel | | add as suffix to selected connection e.g. G4EZ |

- Seal ring**
- R6** Standard = Seal ring in NBR, black
 - R7U1X** Seal ring in PTFE, white FDA
- suitable for the majority of bulk goods
only for special applications

- Measuring blade**
- M0** without measuring blade
 - S2V** Socket blade 130x30 inclined
 - M1V** Socket blade 90x28
 - M2V** Socket blade 90x40
 - T1V** Blade T50 98x50
 - T2V** Blade T100 98x100
 - SG** Socket blade 126x8
 - M9** other measuring blades.... on request

Measuring blade passes through tight hole of:
G2, G3, G4and all flanges
G2, G3, G4and all flanges
G3, G4 and all flanges
F2, F6, F7
F2, F6, F7
G2, G3, G4and all flanges

All larger dimensioned blades **can not** be inserted through the tight holes and must be mounted from the inside.

- Jib extension**
Standard = Shaft length (LV0000 not applicable)
LV Shaft extension, reinforced shaft

0 0 0 0 enter required length, up to max. 2000 mm in 100 mm steps

Accessories

- SH** Weather protection hood in PVC, RAL 7001
Certificated only for zone 22 and in non-hazardous areas
 - SM2** Hexagonal nut G1¼
 - SM3** Hexagonal nut G1½
 - SM4** Hexagonal nut G2
- | | | |
|--|---|---|
| | X | X |
| | X | X |
| | X | X |
- Material of nuts**
- | | |
|---------------------------------------|--|
| A Aluminium | |
| E Stainless steel 1.4301 / 304 | |
- KV1** 2. Standard cable gland
 - KV2** 2. Ex cable gland

Delivery from Stock

ordered until 12⁰⁰ - dispatched at 16⁰⁰

- D2)** delivery only together with D2 or D1
- 1) not available with ATEX - exception: H1 and H2 with B3 deliverable
 - 2) max. bulk goods temperature at B2 = -20°C...+45°C
 - 3) container pressure at B1, B2 and B3 = -0.08bar...+0.08bar (-80...+80mbar)
 - 4) with area separating element DF-P2 (gas-tight and leakproof)
 - 5) with pressure decoupling bell housing DF-P7 (pressure separating)
- 5) !!! usage for differences in pressure within ATEX areas !!!

€ Prices on request

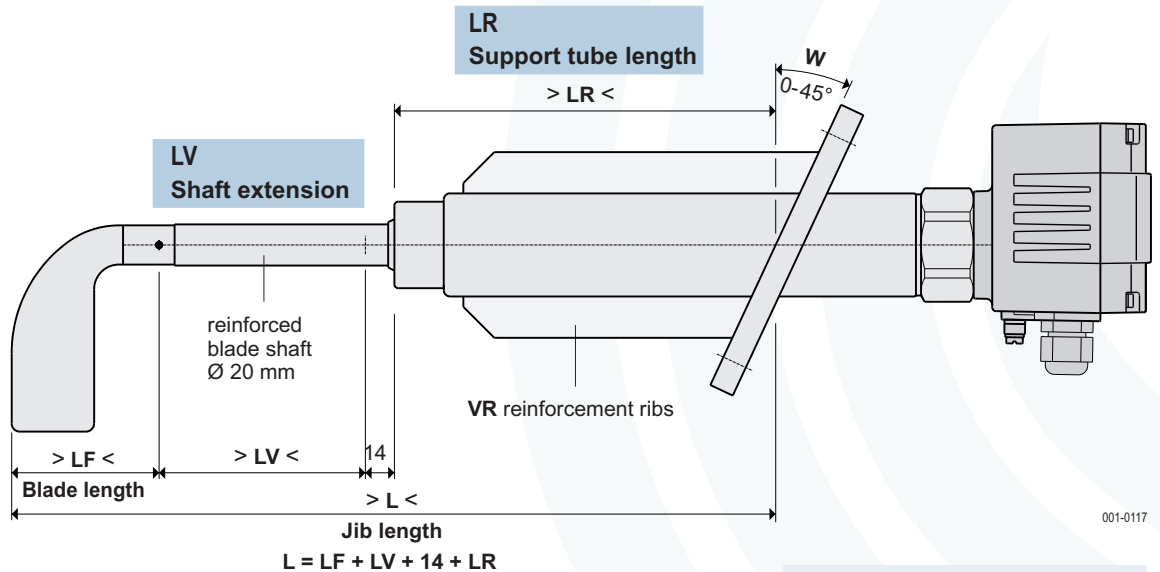
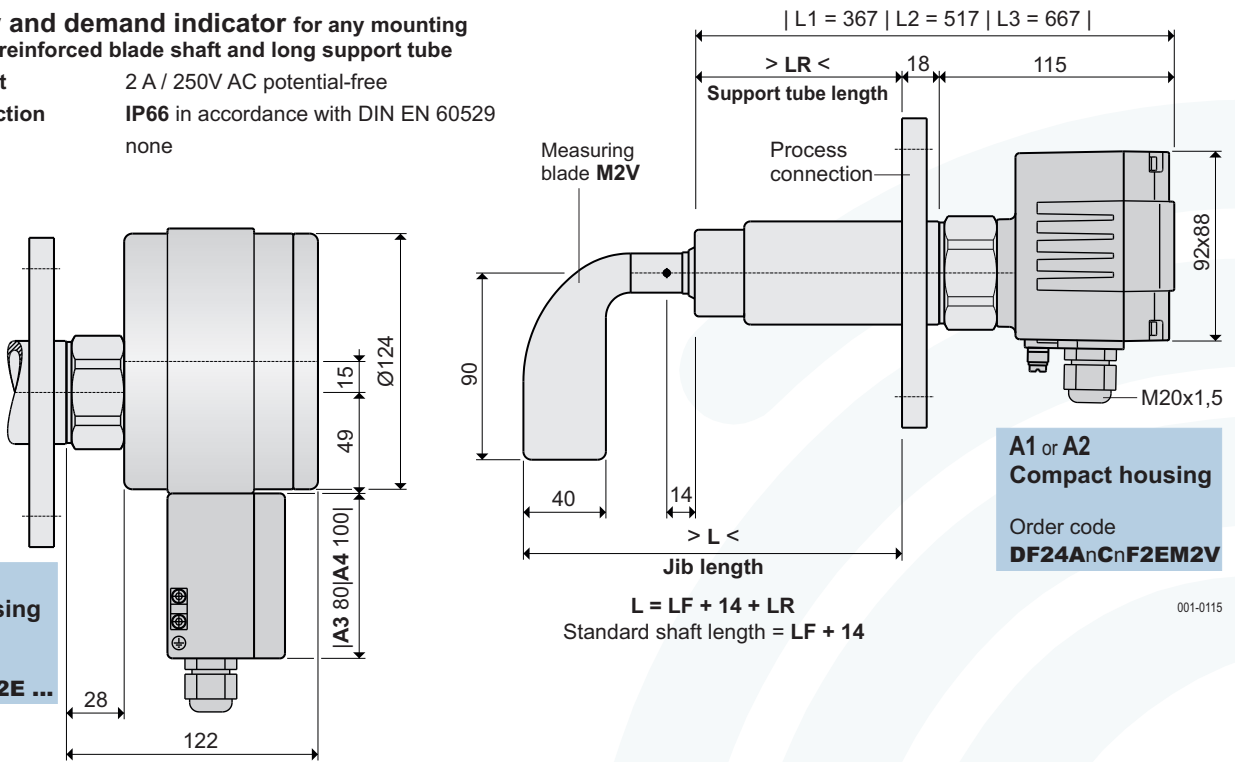


D0, H0, E0, P0 and M0 are **not needed** for order code

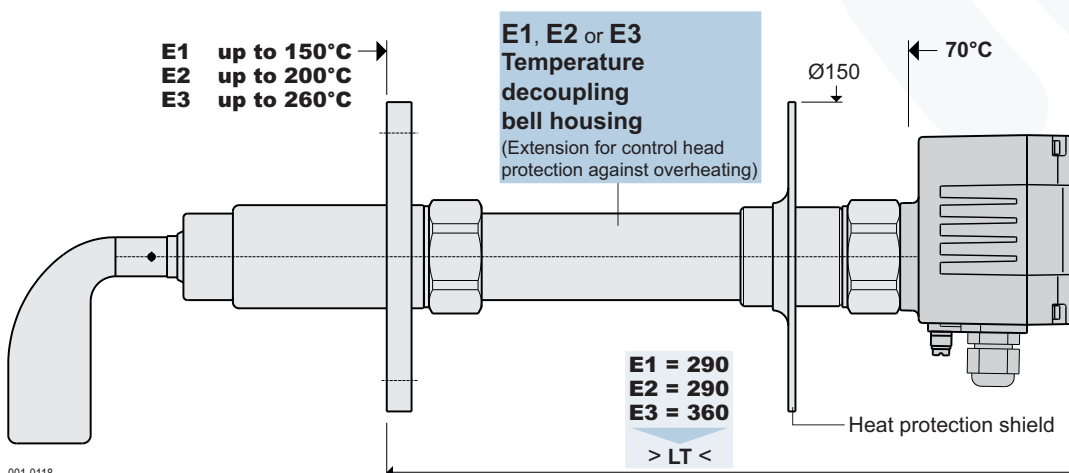
DF23 0 0 0 0 ← Order code

Full, empty and demand indicator for any mounting position with reinforced blade shaft and long support tube

Signal contact 2 A / 250V AC potential-free
 Type of protection IP66 in accordance with DIN EN 60529
 Maintenance none



You will find further technical details under appliance information DF-GI-..



Full, empty and demand indicator for horizontal mounting with angled jib

Signal contact

2 A / 250V AC potential-free

Type of protection

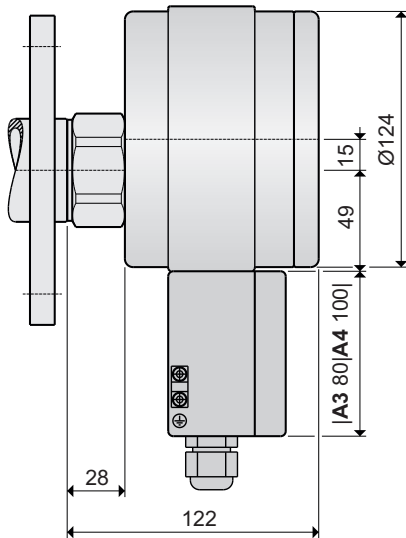
IP66 in accordance with DIN EN 60529

Maintenance

none

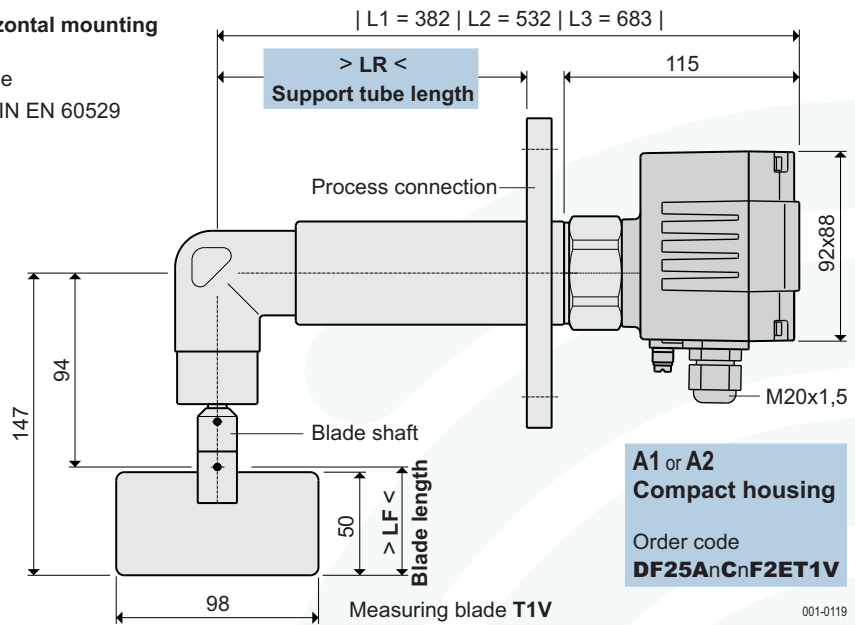
**A3 or A4
Round housing**

Order code
DF25AnCnF2E ...



001-0116

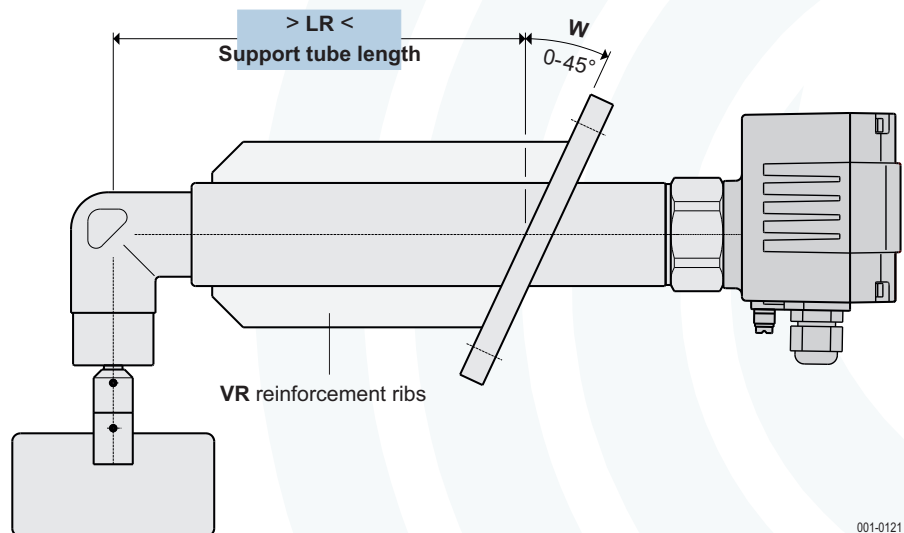
You will find further technical details under appliance information **DF-GI-..**



**A1 or A2
Compact housing**

Order code
DF25AnCnF2ET1V

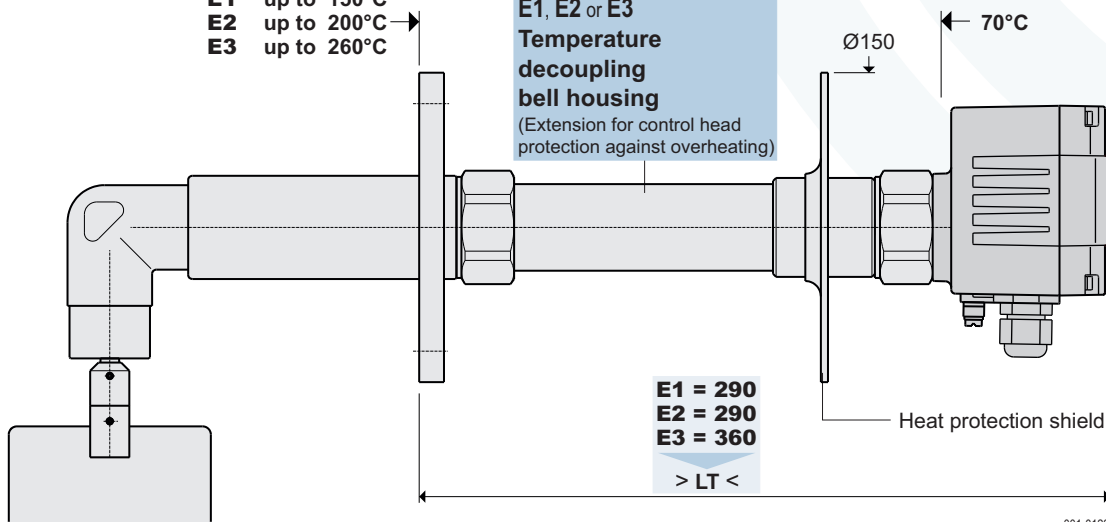
001-0119



001-0121

E1 up to 150°C
E2 up to 200°C
E3 up to 260°C

**E1, E2 or E3
Temperature
decoupling
bell housing**
(Extension for control head
protection against overheating)



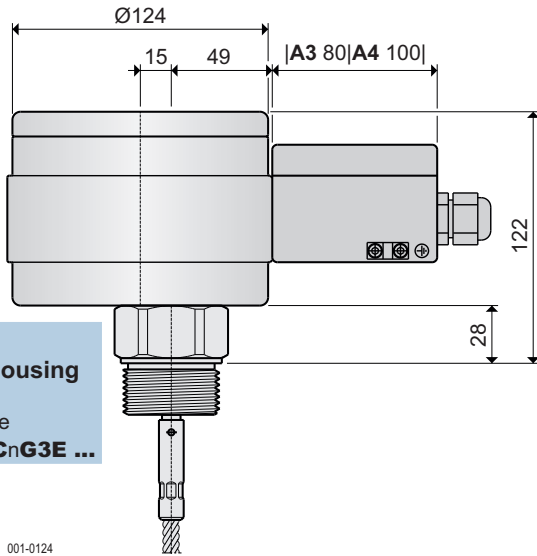
**E1 = 290
E2 = 290
E3 = 360**

001-0122

Full, empty and demand indicator for vertical mounting with pendulum shaft

Signal contact 2 A / 250V AC potential-free
 Type of protection IP66 in accordance with DIN EN 60529
 Maintenance none

4



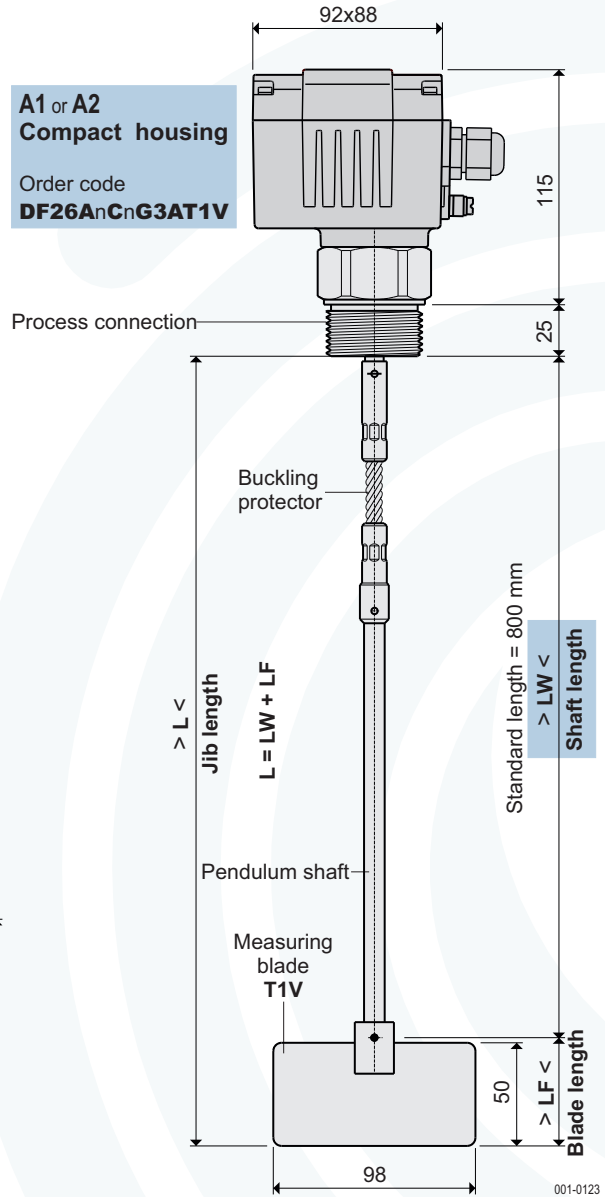
**A3 or A4
Round housing**

Order code
DF26AnCnG3E ...

001-0124

**A1 or A2
Compact housing**

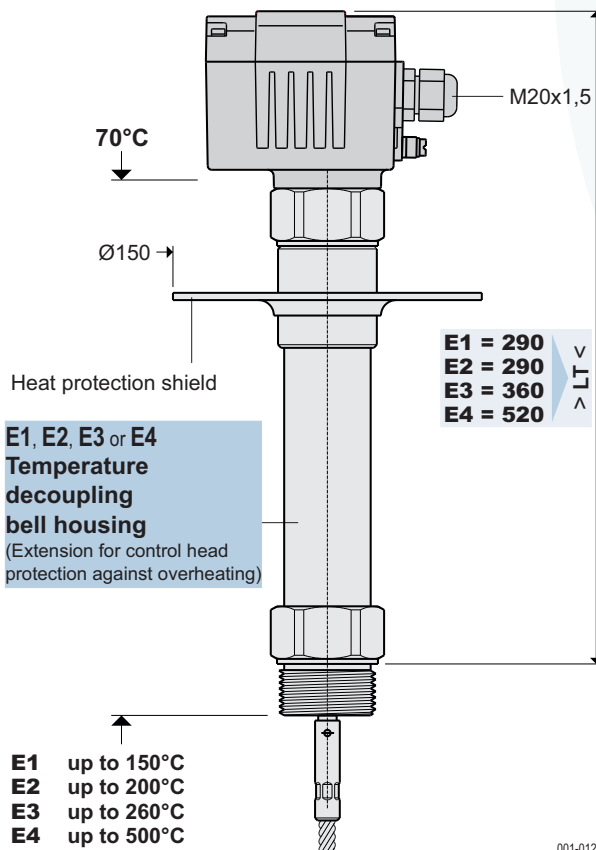
Order code
DF26AnCnG3AT1V



Jib length
 $L = LW + LF$

Standard length = 800 mm
 $> LW <$
Shaft length

001-0123



**E1, E2, E3 or E4
Temperature
decoupling
bell housing**
(Extension for control head protection against overheating)

E1 = 290
E2 = 290
E3 = 360
E4 = 520

E1 up to 150°C
E2 up to 200°C
E3 up to 260°C
E4 up to 500°C

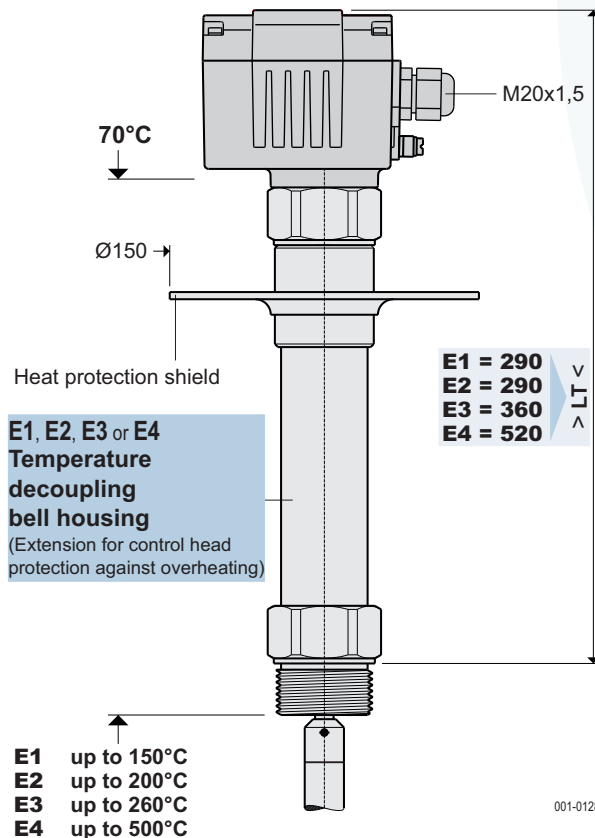
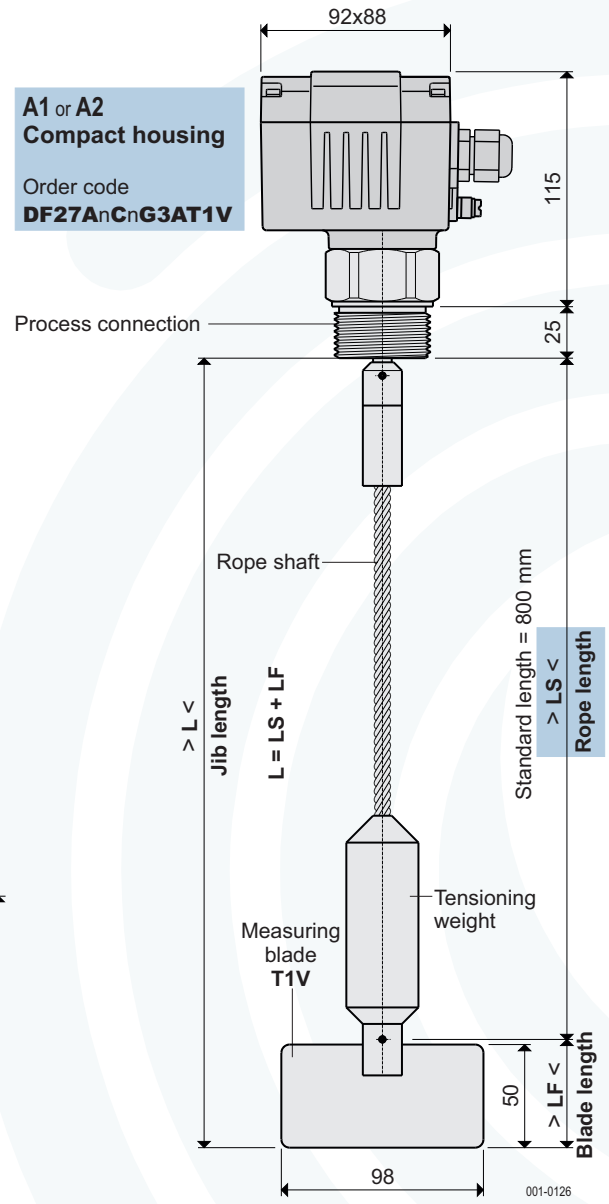
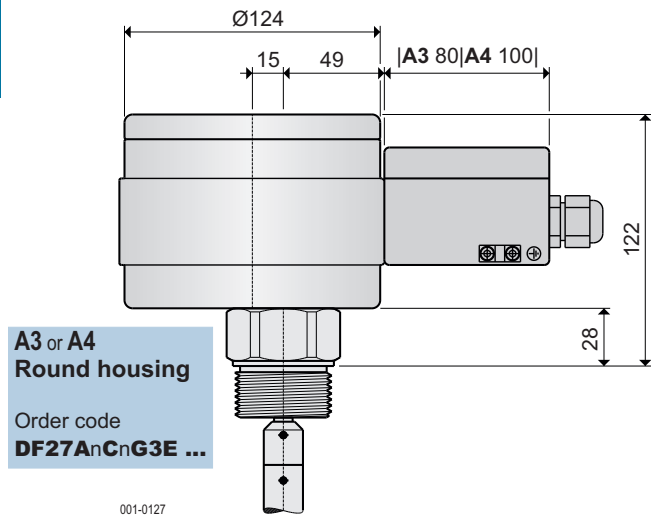
001-0125

You will find further technical details under appliance information **DF-GI-..**

Full, empty and demand indicator for vertical mounting with rope shaft

Signal contact 2 A / 250V AC potential-free
 Type of protection IP66 in accordance with DIN EN 60529
 Maintenance none

4



You will find further technical details under appliance information DF-GI-..

Full, empty and demand indicator with protecting tube for vertical mounting

With KD (bearing and seal ring at the end of the tube) for any mounting position

Signal contact 2 A / 250V AC potential-free

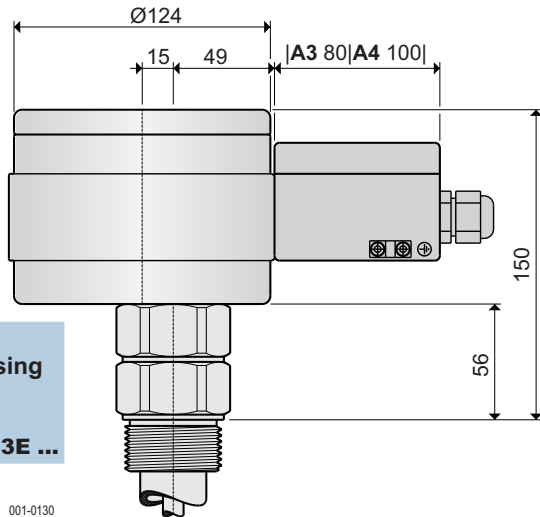
Type of protection IP66 in accordance with DIN EN 60529

Maintenance none

4

A3 or A4
Round housing

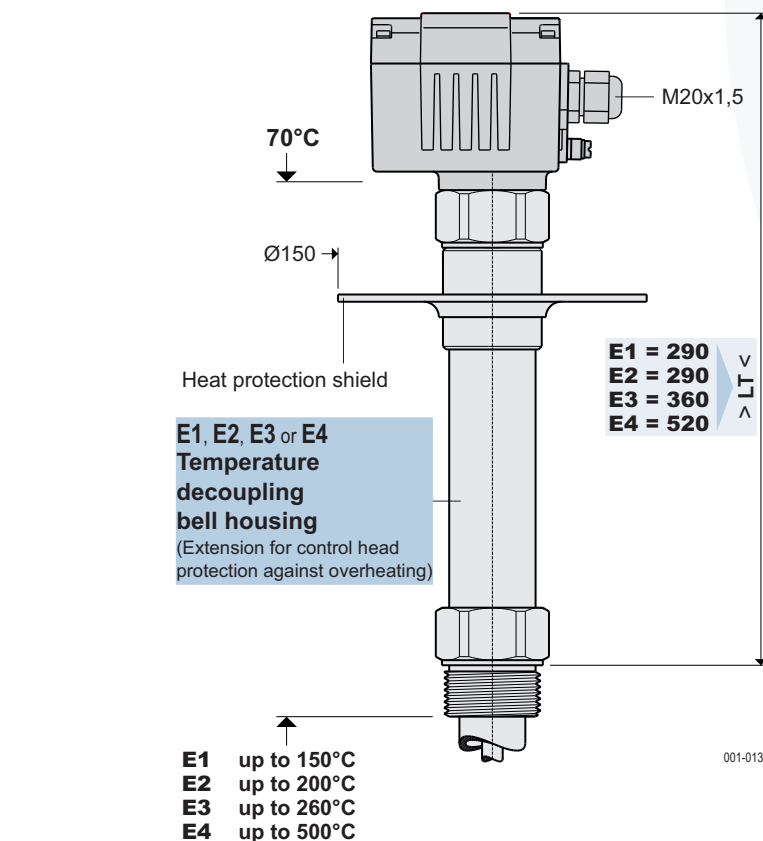
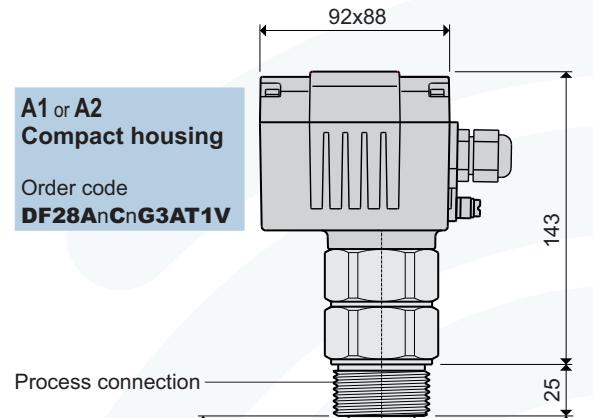
Order code
DF28AnCnG3E ...



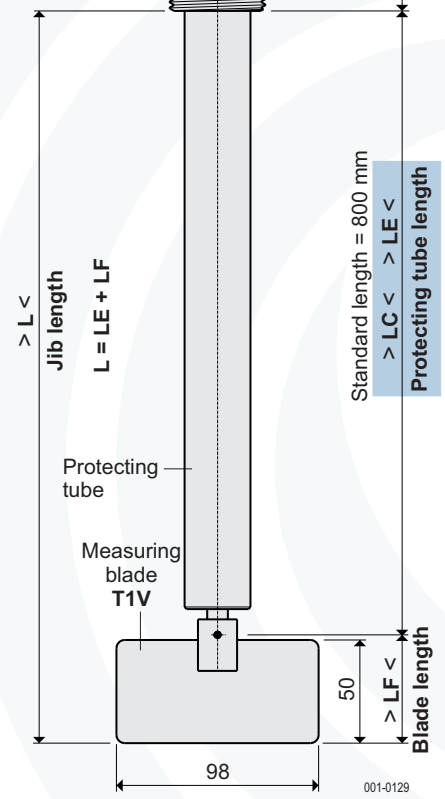
001-0130

A1 or A2
Compact housing

Order code
DF28AnCnG3AT1V



001-0131



001-0129

You will find further technical details under appliance information DF-GI-..

Full, empty and demand indicator for vertical mounting
with short process connection for reduced installation height
for installation in the discharge taper of bellow feeders

| | |
|---------------------|--------------------------------------|
| Signal contact | 2 A / 250V AC potential-free |
| Ambient temperature | 70 °C at the housing |
| Type of protection | IP66 in accordance with DIN EN 60529 |
| Maintenance | none |

The compact
DF30 fits in every
discharge taper !

We deliver any form of
measuring blade
as per your
request.

Rotation speed
of measuring blade 5 rpm
(short response times)

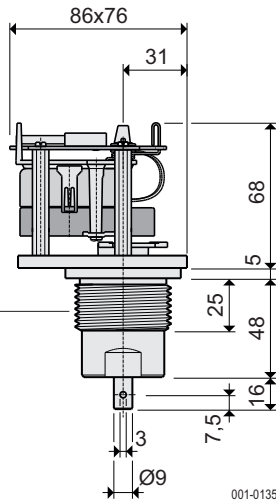
4

without housing
(on mounting plate)

Order code
DF30CnG3A

Process connection G1½

without measuring blade



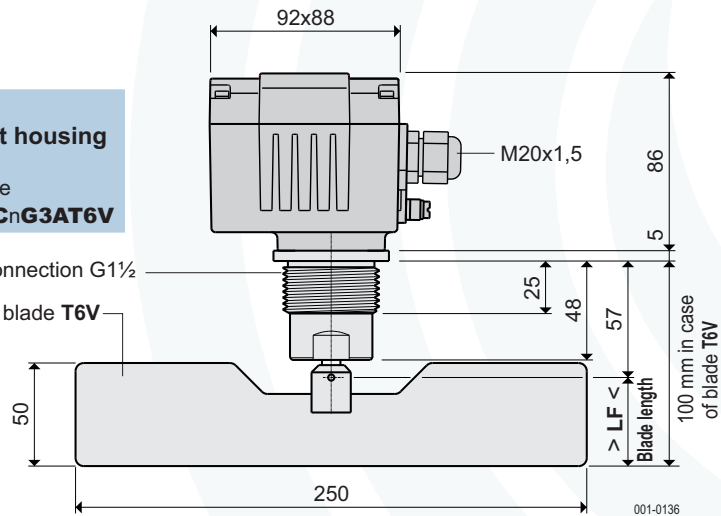
001-0135

A1 or A2
Compact housing

Order code
DF30AnCnG3AT6V

Process connection G1½

Measuring blade T6V



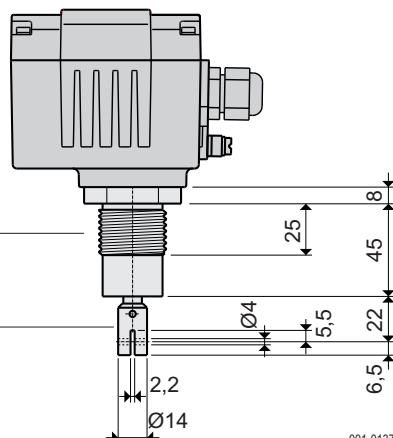
001-0136

A1 or A2
Compact housing

Order code
DF30AnCnG1EM7

Process connection G1E

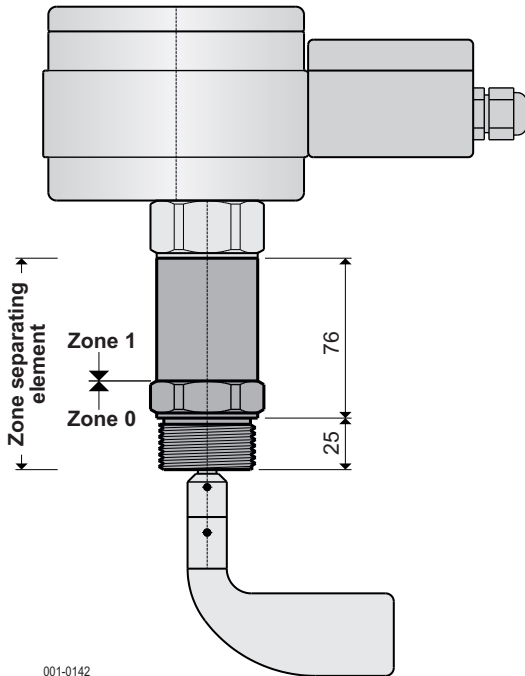
Measuring blade adapter M7



001-0137

You will find further technical details
under appliance information DF-GI-..

Zone separating element



001-0142

The Technical Data presented here are to be considered as maximum values, relating only to the equipment described herein. Depending on the selection of options and instruments used, these data must be considered or reduced correspondingly.

Basic device

Selection

Process connection / Material

- G2E Thread G1¼ DIN/ISO 228 / 316 Ti
- G3E Thread G1½ DIN/ISO 228 / 316 Ti

DF-ZTP7

Order code

- Type of protection: II 1D/- IIIC
- II 1G/- IIB

DF-ZTCP7

Order code

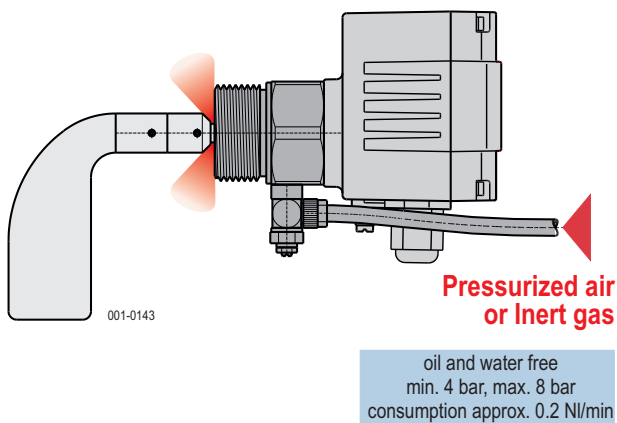
- Type of protection: II 1D/- IIIC
- II 1G/- IIC

with seal ring R1, R5, R6 and R7

-Info
More details under Explosion protection information DF-El...

- Housing material 1.4571 / 316 Ti
- Process connection G1¼ (G2I) or G1½ (G3I) and all Flanges
- Bulk goods temperature -25 °C ... +180 °C
- Pressure in the vessel -0.95 bar ... 10 bar
- Response delay U1 (Standard) approx. 3.00 sec.
U5 approx. 0.60 sec

Annular gap flushing and overpressure enclosing

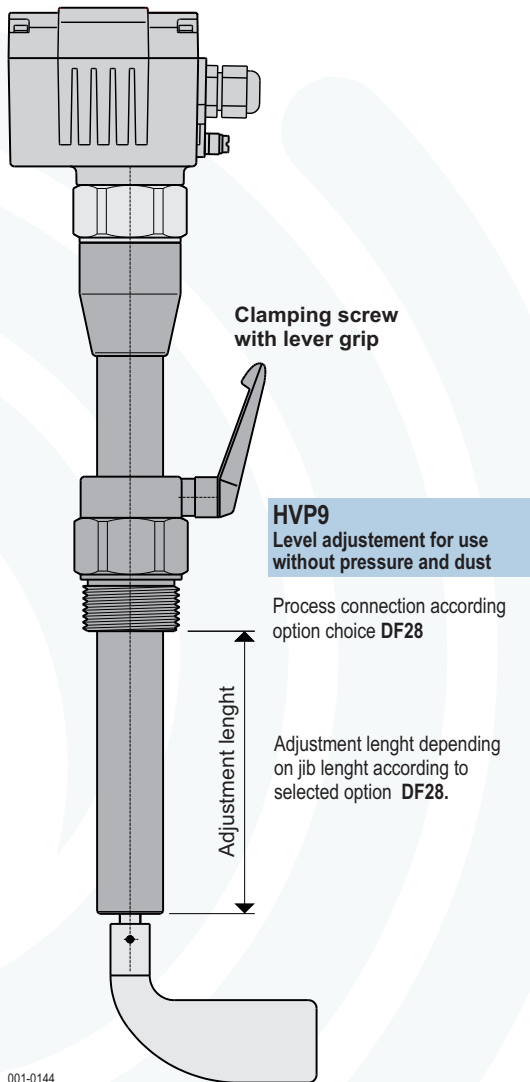


001-0143

oil and water free
min. 4 bar, max. 8 bar
consumption approx. 0.2 NI/min

- R1DS for all DF but not for DF23 and DF24
- R5DS white FDA for all DF but not for DF23 and DF24
- R7DS white FDA for DF23 and DF24
- R8DS for E4 (High temperature)

Level adjustment for level indicator DF28



HVP8 Level adjustment for pressure-tight and dust-proof use in stainless steel and thread G1½ (high overpressure and vacuum on request)

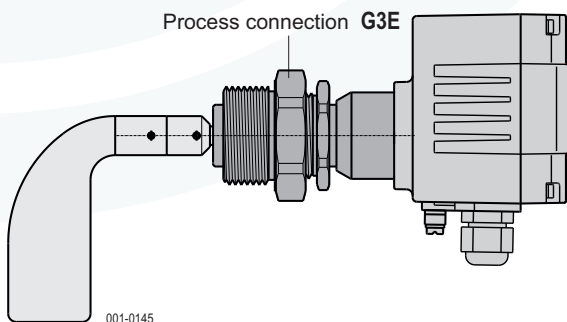
HVP9 Level adjustment for use without pressure and dust (Process Connection and material according to option choice **DF28**)

Inclined or horizontal mounting only with option **KD** and only up to 1000 mm jib length.

Ex -Info

The level adjustment is certified for use in hazardous locations

Vibration dampening for level indicator DF22 / DF28



VDN Vibration dampening in 1.4301 / 304 with seal in NBR for **bulk goods temperature E0** -25 °C ... +80 °C

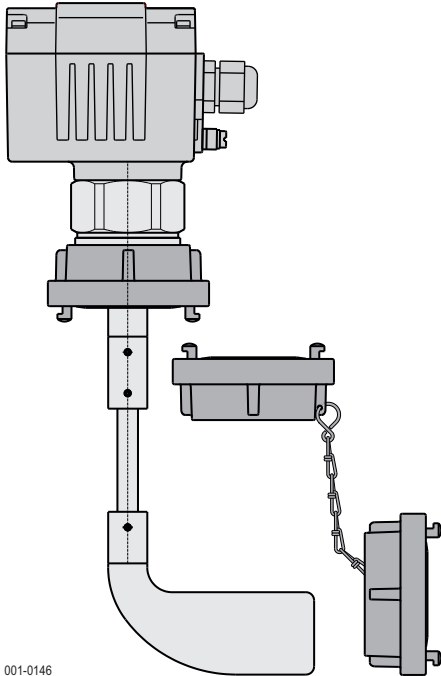
VDE Vibration dampening in 1.4301 / 304 with seal in silicon for **bulk goods temperature E1** -40 °C ... +150 °C higher temperatures on request
made of 1.4571 / 316 Ti on request

Option to choice for DF22 and DF28 up to 500 mm length

Vessel pressure max. -0.5 bar ... 2 bar (higher pressures on request)

Quick couplings system Storz

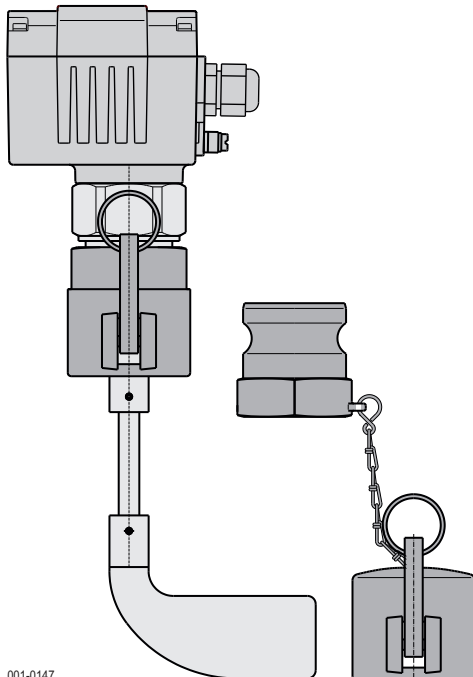
4



- DF-SZ50** Quick coupling (Storz) with bayonet
- K-FSZ052IG2 AL** Coupling with internal thread for the vessel
- K-BSZ052-00-AL** Blank cap

Material AIMgSi1 (Stainless steel on request)
Seal ring NBR, white FDA
Vessel pressure -0.9 bar ... 10 bar
Bulk goods temperature -25 °C ... +80 °C

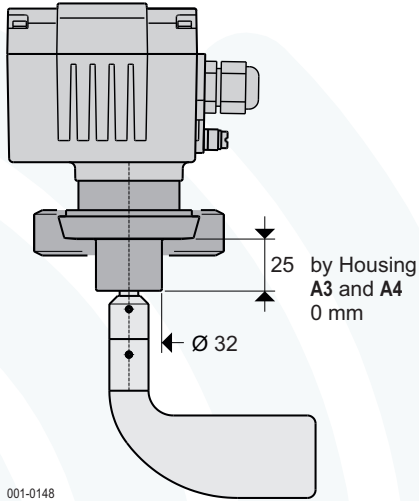
KAMLOK couplings



- DF-AK50** Mother coupling (KAMLOK) with lever arm
- K-AVKI 050 VA** Coupling with internal thread for the vessel
- K-AMB 050 VA** Female blank cap

Material 1.4401 / 316
Seal ring VITON
Vessel pressure -0.9 bar ... 10 bar
Bulk goods temperature -25 °C ... +150 °C

Dairy couplings



F42 Process connection - Dairy coupling DN50 / 2
delivery incl. grooved nut in 1.4404 / 313 L

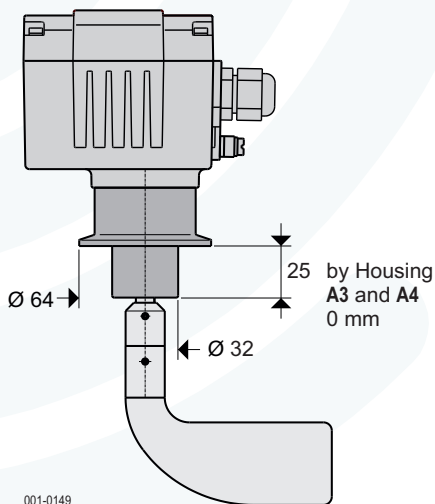
Material Conical standpipe 1.4571 / 316 Ti
Grooved nut 1.4404 / 313 L

Connection size Dairy coupling DN50 / 2

Vessel pressure -0.9 bar ... 10 bar

4

Clamp coupling

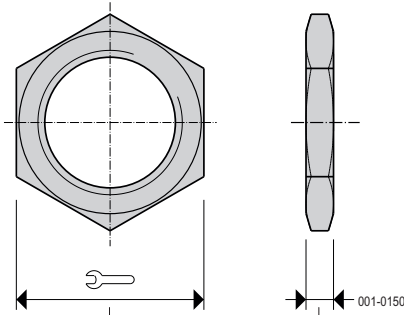


F46 Process connection - Clamp coupling DN50 / 2

Material 1.4571 / 316 Ti

Vessel pressure -0.9 bar ... 10 bar

Hexagonal nuts



| | | | | |
|-----|---------|----|----|----|
| SM1 | G1 | 41 | 6 | G1 |
| SM2 | G1¼ | 50 | 8 | G2 |
| SM3 | G1½ | 55 | 8 | G3 |
| SM4 | G2 | 70 | 10 | G4 |
| SM5 | M30x1,5 | 41 | 6 | G5 |
| SM6 | M32x1,5 | 41 | 6 | G6 |



Selection

Hexagonal nuts

| | | | |
|---|------------------------------|---|---|
| 1 | Hexagonal nut,thread G1 | X | X |
| 2 | Hexagonal nut,thread G1¼ | X | X |
| 3 | Hexagonal nut,thread G1½ | X | X |
| 4 | Hexagonal nut,thread G2 | X | X |
| 5 | Hexagonal nut,thread M30x1.5 | X | X |
| 6 | Hexagonal nut,thread M32x1.5 | X | X |

Material

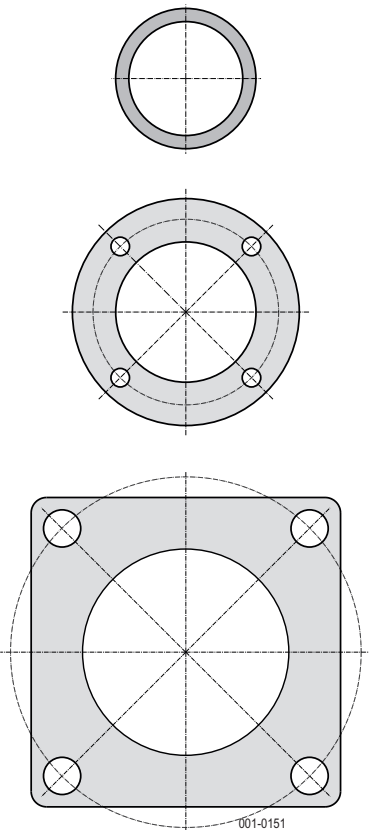
| | |
|---|---------------------------------|
| A | Aluminium |
| E | Stainless steel 1.4301 / 304 |
| X | other materialson Request |

SM ← Order code

Spanner wrench for process connection and nuts

| Art.-No. | | Material | Steel, galvanized |
|----------|----|----------|-------------------|
| GS41 | 41 | | |
| GS46 | 46 | | |
| GS50 | 50 | | |
| GS55 | 55 | | |

Seals for process connections



Selection

Process connection

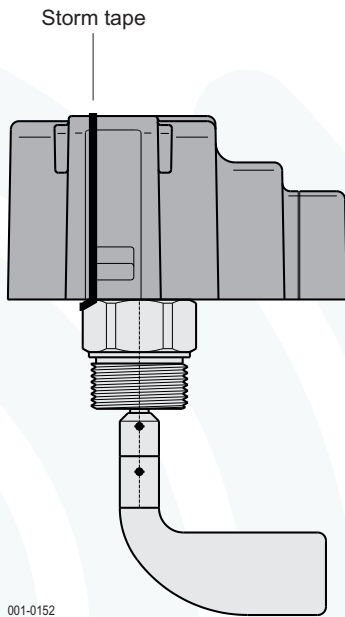
| | | |
|----|----------------|-----------------------|
| G1 | Thread G1 | DIN/ISO 228 |
| G2 | Thread G1¼ | DIN/ISO 228 |
| G3 | Thread G1½ | DIN/ISO 228 |
| G4 | Thread G2 | DIN/ISO 228 |
| G5 | Thread M30x1.5 | |
| G6 | Thread M32x1.5 | |
| F1 | Flange F70 | Ø110, 4xØ9, Lk90 |
| F2 | Flange F100 | 150x150, 4xØ18, Lk170 |
| F5 | Flange DN32 | PN 6 |
| F6 | Flange DN100 | PN 6 |
| F7 | Flange DN100 | PN 16 |

Temperature / Seal compounds

| | | |
|----|----------|---|
| E0 | Standard | = ...+80°C / NBR, white FDA |
| E2 | | ...+200°C / VITON, black |
| E4 | | ...+350°C / Klingersil, green |
| E7 | | ...+1000°C / Stainless Steel only for G2 and G3 |
| E9 | | High temperature on request |

DR ← Order code

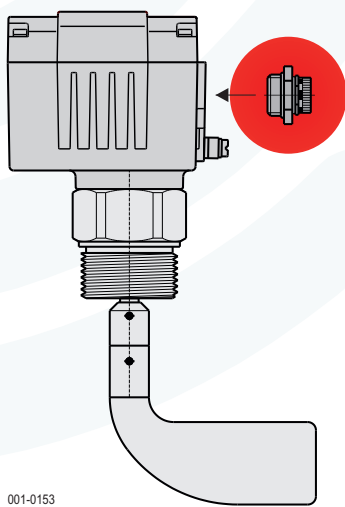
Weather protection hood for outdoor use



SH Weather protection hood with storm tape
Material PVC, RAL 7001

4

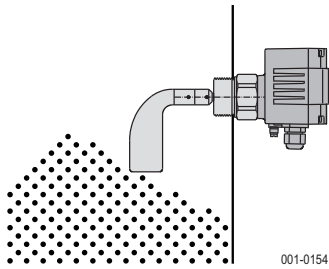
Protection of condensation with special blocking foil



SDK Condensation protection
SDE Condensation protection, stainless steel
RST-DAE-SSM12Ex Condensation protection, stainless steel, ATEX

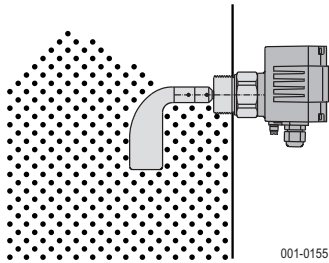
Ex-Info
Protection of
Condensation
is certified
for use in
zone 22

Signal delay - empty indication



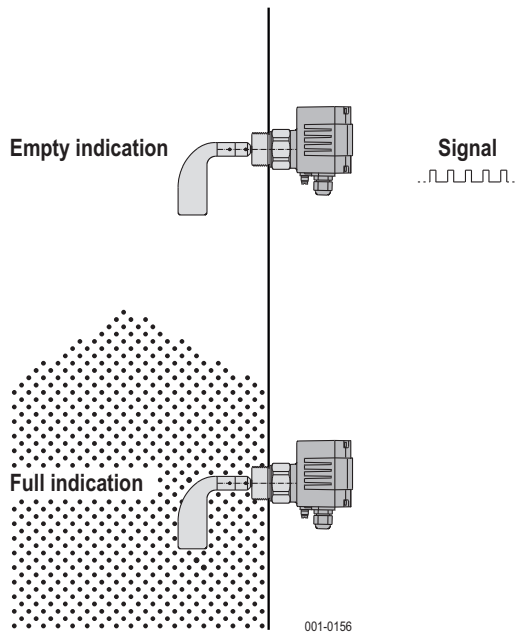
D3 Signal delay - empty indication

Signal delay - full indication



D4 Signal delay - full indication

Function control with pulsating signal

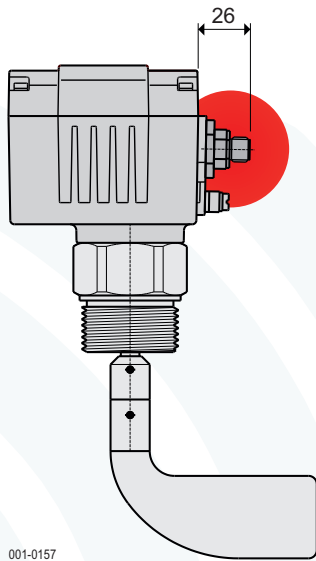


D9 Function control with pulsating signal

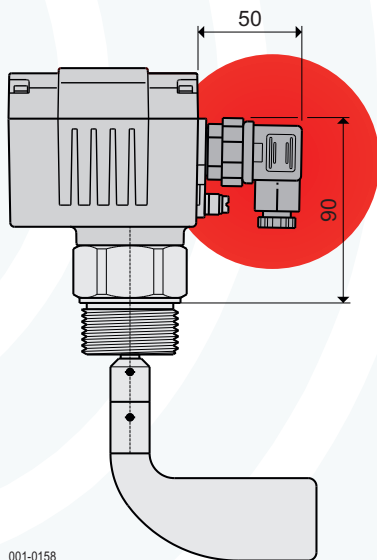
Error alarm



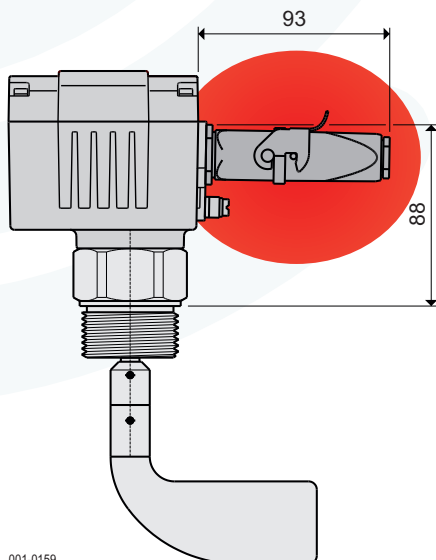
Connection plugs



001-0157



001-0158



001-0159

ST1 Connector RSFM 4, 3-pin + PE
(Sensor plug M12x1)
Housing material Brass, nickel plated
Type of protection **IP68** according to DIN EN 60529
Wiring according to circuit diagram 3-pin+PE
Voltages up to 240 V AC

ST2 Connector RSFM 5, 4-pin + PE
(Sensor plug M12x1)
Housing material Brass, nickel plated
Type of protection **IP68** according to DIN EN 60529
Wiring according to circuit diagram 4-pin+PE
Voltages max. 240 V AC

ST3 Connector GDM, 3-pin + PE
with socket connector and seal
Housing material Plastic, black
Type of protection **IP65** according to DIN EN 60529
Wiring according to circuit diagram 3-pin+PE

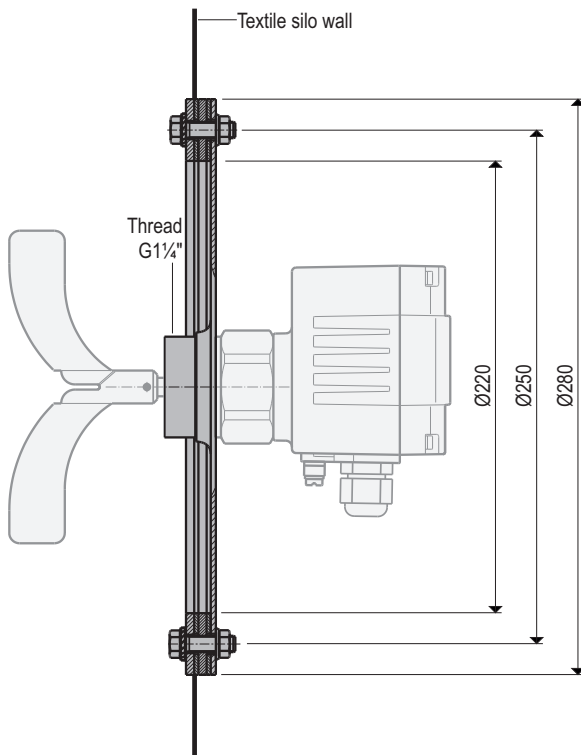
Ex -Info

The connector
DF-ST3
is certified for
use in **zone 22**

B3

ST5 Connector HTS, 5-pin + PE
with socket connector and seal
Housing material Aluminium, hammer-effect varnish
Type of protection **IP66** according to DIN EN 60529
Wiring according to circuit diagram 5-pin+PE

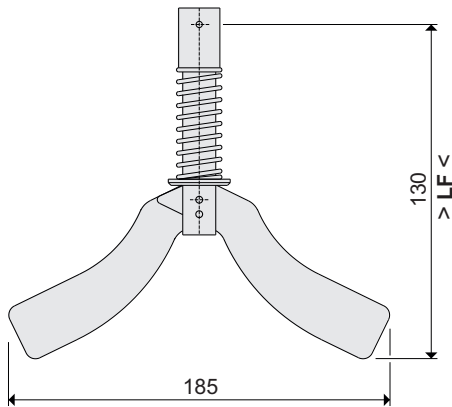
Mounting flange, for flexible textile silos



- MG2** Mounting flange for bag silos
- Material** Steel, coated
Stainless steel on request

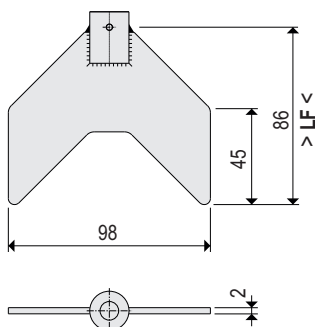
4

Hinged blade, reinforced



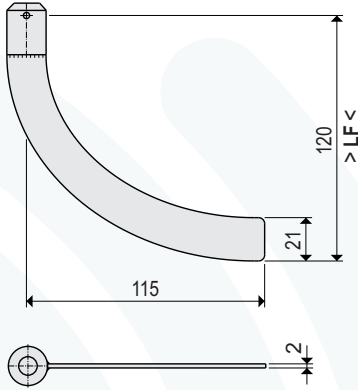
- K3V** Hinged blade Y183 180x28
- Material** 1.4301 / 304

Measuring blade, reinforced for small round bins



- Y3V** Measuring blade 98x45
- Material** 1.4301 / 304

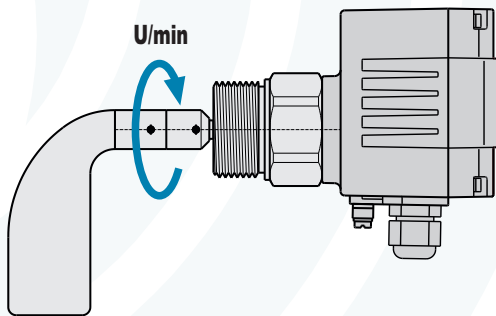
Socket blade, reinforced for very small process connections



M8V Socket blade 115x21
Material 1.4301 / 304

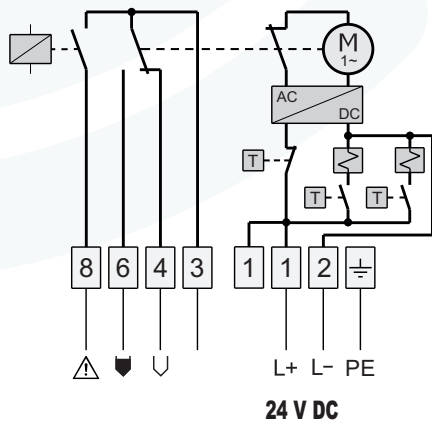
4

Blade speed, increased

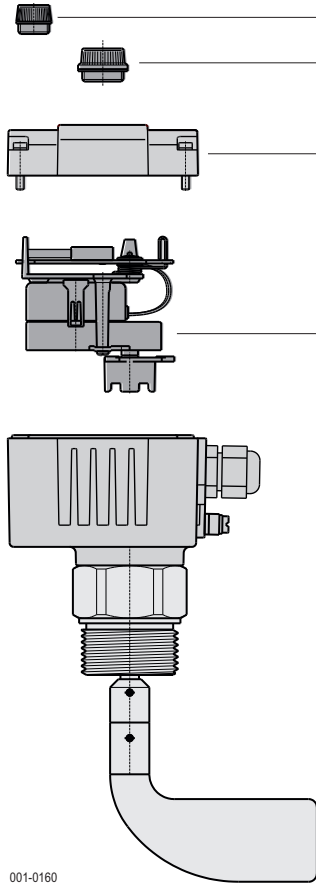


U5 Blade speed 5 rpm
(all configurations with exception of R5 and R7)

Heating for device, 3.5 Watt for temperatures up to -40 °C



E74 Heating for device 3.5 Watt



001-0160

Collars and housing covers

- DF-KL1 Collar with seal ring for function LEDs
- DF-KL2 Collar with seal ring for signal lamp
- DF-GD0 Housing cover
- DF-GD1 Housing cover for function LEDs
- DF-GD2 Housing cover for signal lamp
- DF-GD3 Housing cover for function LEDs and signal lamp
- DF-GD8 Housing cover for large signal lamp

Printed circuit boards with motor

Selection of options

Supply voltage

- C1 220...240V AC (50...60Hz)
- C2 110...120V AC (50...60Hz)
- C3 48V AC (50...60Hz)
- C4 24V AC (50...60Hz)
- C5 24V DC
- C6 12V DC
- C7 48V DC
- C9 Special volatges on request

Self-monitoring

Standard without monitoring

- D1 Function monitoring
- D2 Voltage monitoring
- D3 Signal delay - Empty indication
- D4 Signal delay - Full indication
- D9 Function monitoring with pulsating signall

Signal lamps

- H0 with functions LEDs (**H5 to be selected with DF11**) ..
- H2 Signal lamp LED, green
- H7 Signal lamp LED, yellow/green (**only for DF11**)
- H8 Connection for large signal lamp
- H9 without function LEDs (**Standard with DF11**).....

Heating system

Standard without heating

- E7 Appliance heating 2.5 Watt
- E74 Appliance heating 3.5 Watt

Measuring blade speed

- U1 **Standard** = 1 rpm
- U5 5 rpm

DFPM - - - - - ← Order code

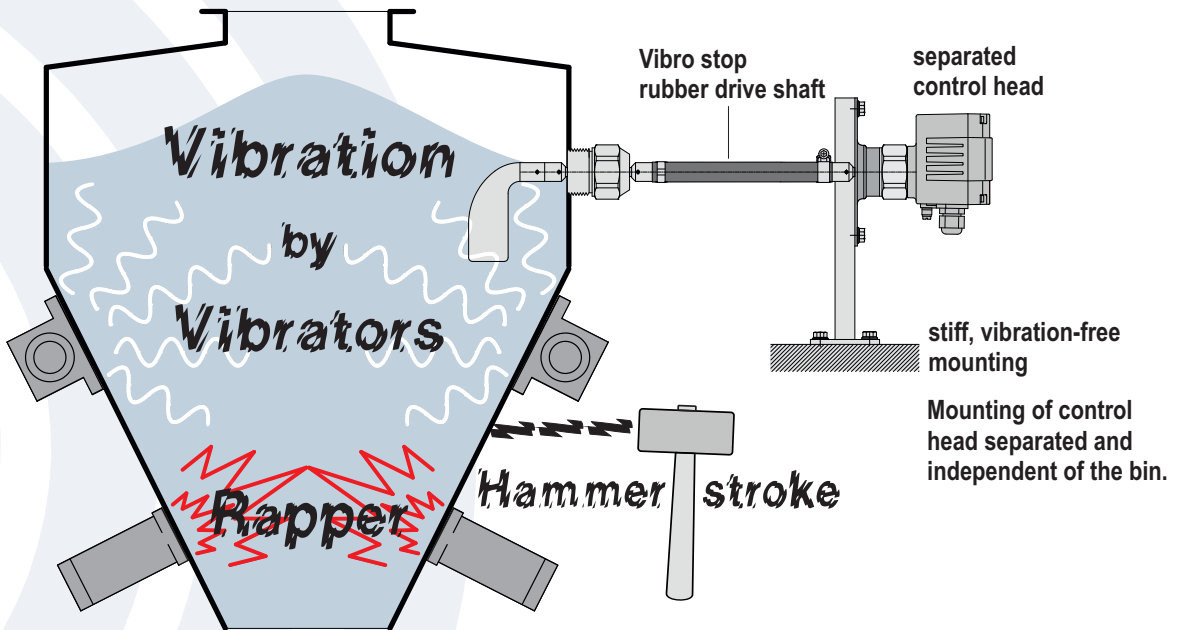
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Separated control head for protection against strong vibrations

The vibro-stop rubber drive shaft avoids transmission of vibrations to the separated control head.

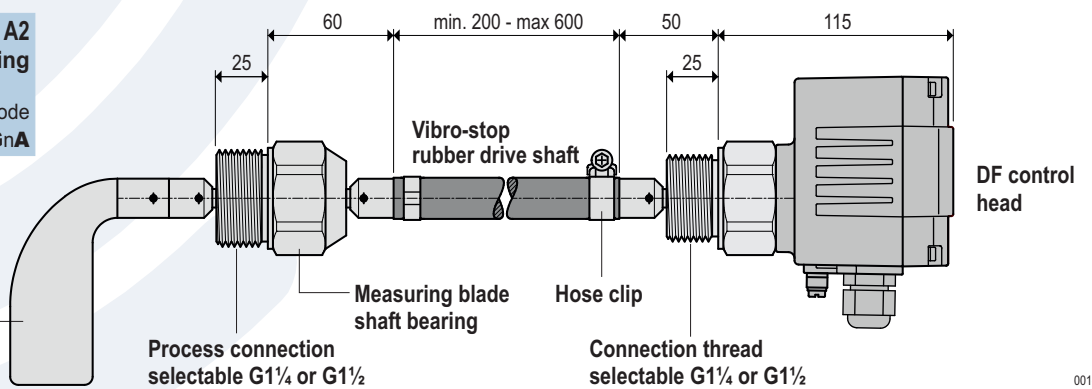
4



001-0802

A1 or A2
compact housing
Order code
DF21AnCnGnERn...ASGnA

Measuring blade M2V
other measuring blades
see selection list

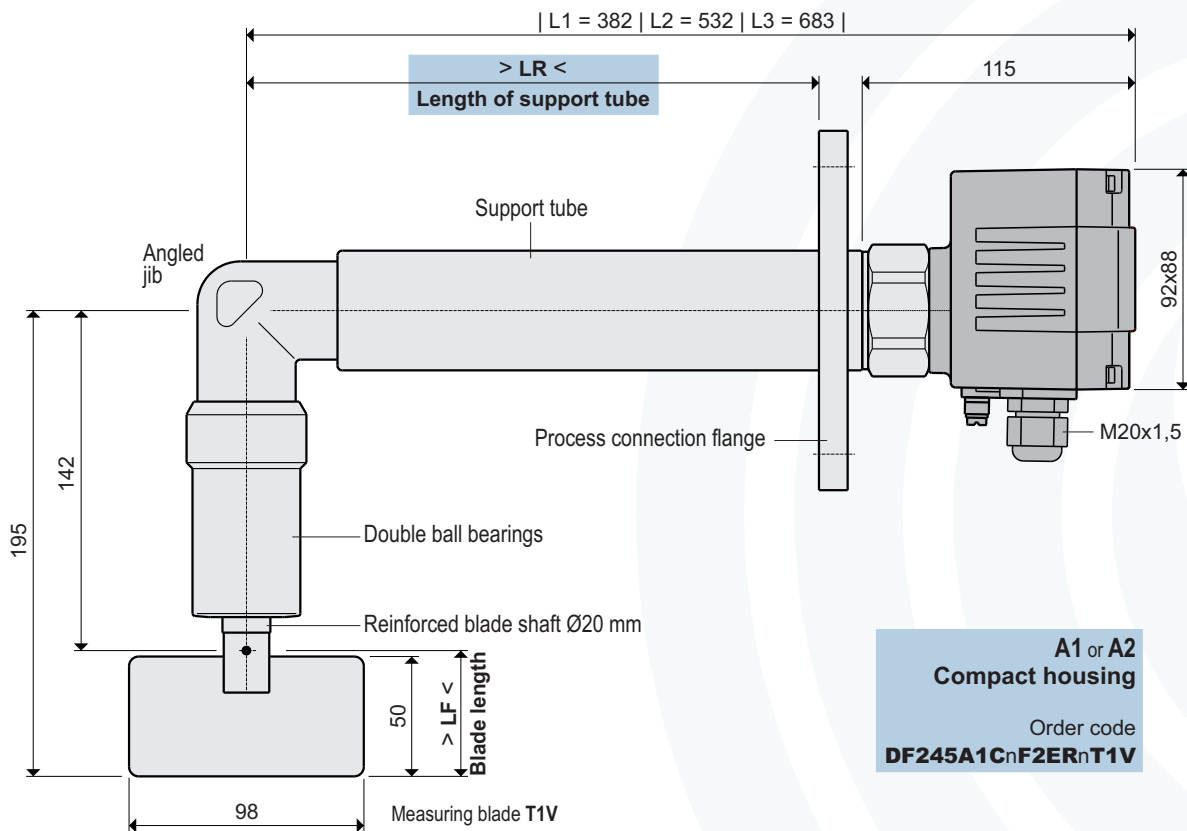


001-0801

Special level indicator with angled jib

The reinforced blade shaft $\varnothing 20$ mm with double bearings at the angled jib resist high lateral forces.

4



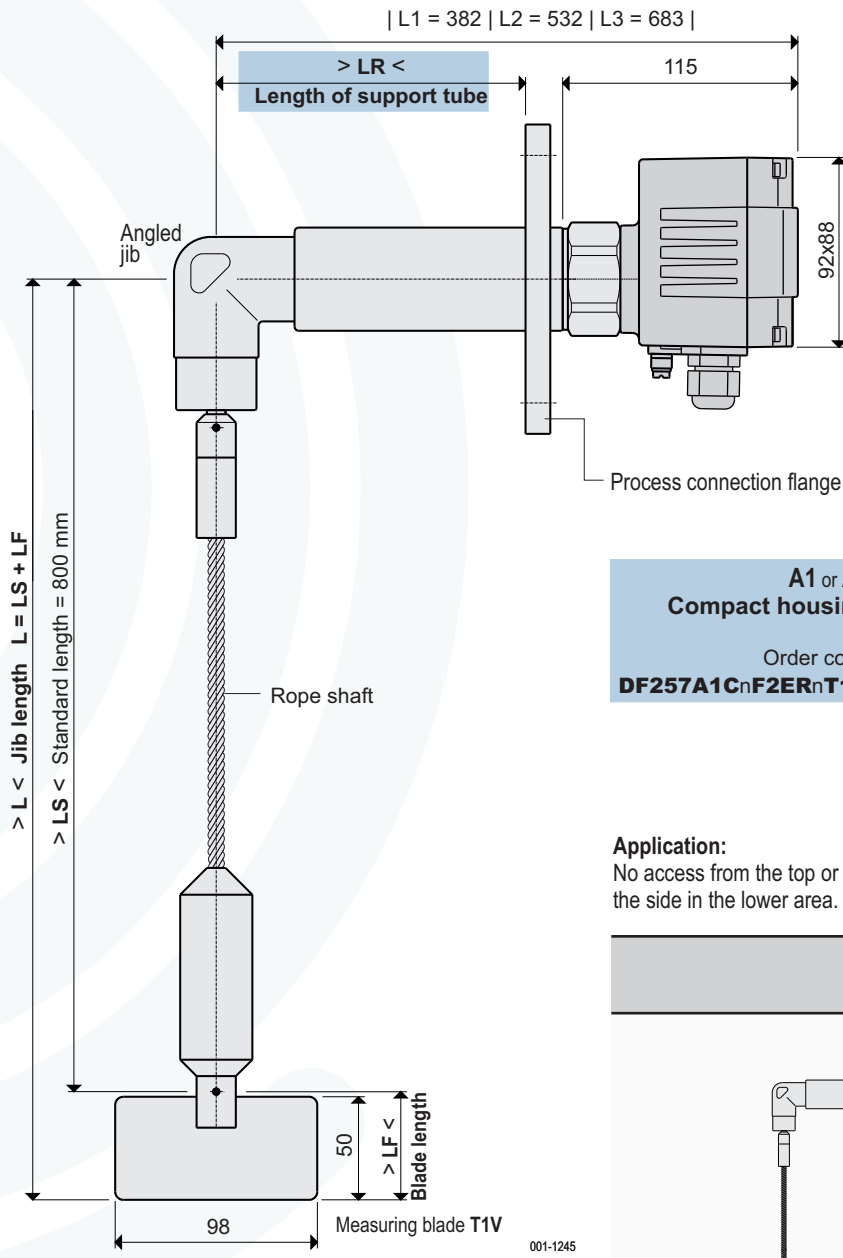
001-1245

Full-, empty- and demand indicator for horizontal mounting with angled jib and reinforced blade shaft

| | |
|---------------------|--------------------------------|
| Signal contact | 2 A / 250V AC potential-free |
| Ambient temperature | 70 °C at the housing |
| Type of protection | IP66 according to DIN EN 60529 |
| Maintenance | none |

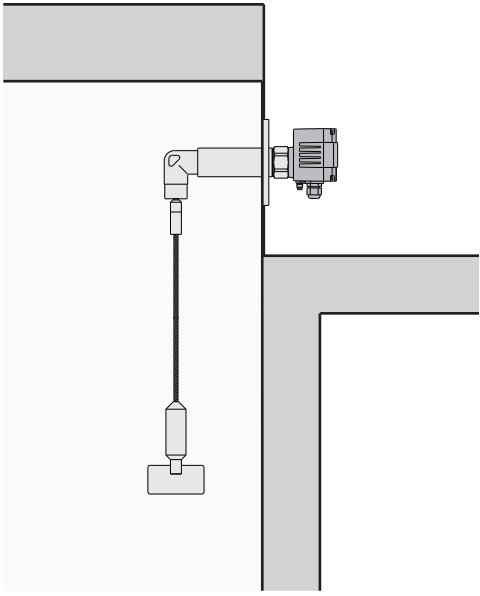
Special level indicator with angled jib

Angled jib with rope shaft and tensioning weight.



A1 or A2
Compact housing
Order code
DF257A1CnF2ERnT1V

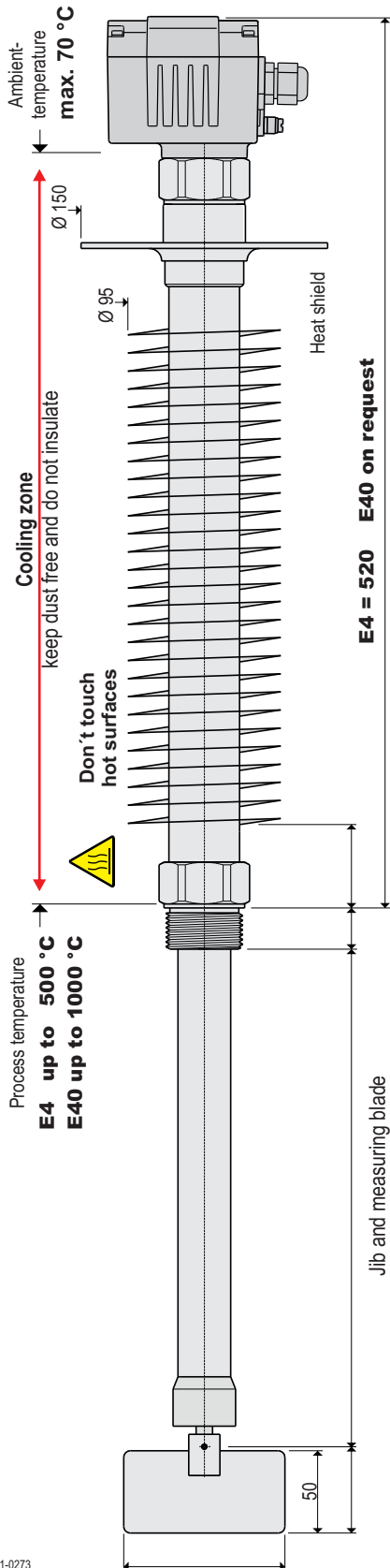
Application:
No access from the top or from the side in the lower area.



Full-, empty- and demand indicator for horizontal mounting with rope shaft and tensioning weight
Signal contact 2 A / 250V AC potential-free
Ambient temperature 70 °C at the housing
Type of protection IP66 according to DIN EN 60529
Maintenance none

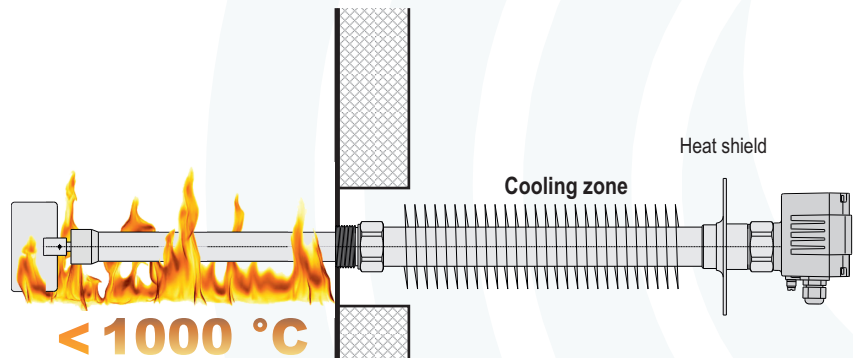
Special level indicator for high temperatures of bulk goods

4



Jib and blade made of heat-resistant steel plus a high temperature sealing enable filling level measurement up to 1.000 °C.

A1 or A2
Compact housing
Order code
DF28A1CnEnGnERnT1V



Full-, empty- and demand indicator for any mounting position with temperature decoupling bell housing

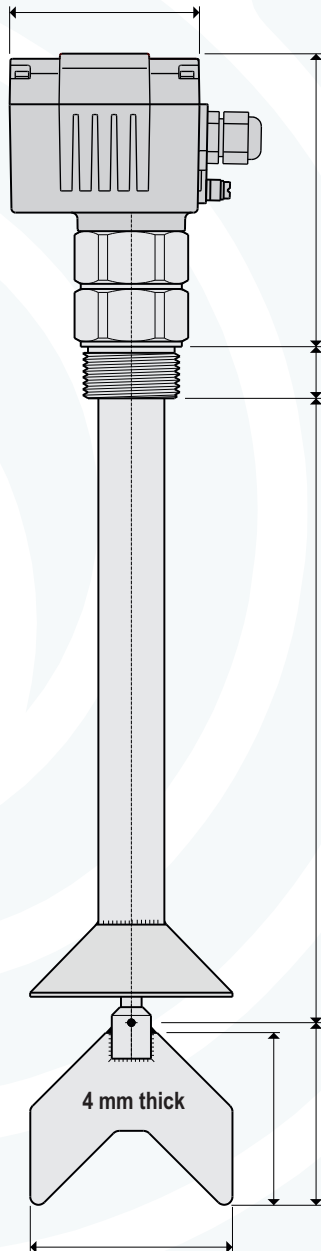
| | |
|---------------------|--------------------------------|
| Signal contact | 2 A / 250V AC potential-free |
| Ambient temperature | 70 °C at the housing |
| Type of protection | IP66 according to DIN EN 60529 |
| Maintenance | none |

001-0273

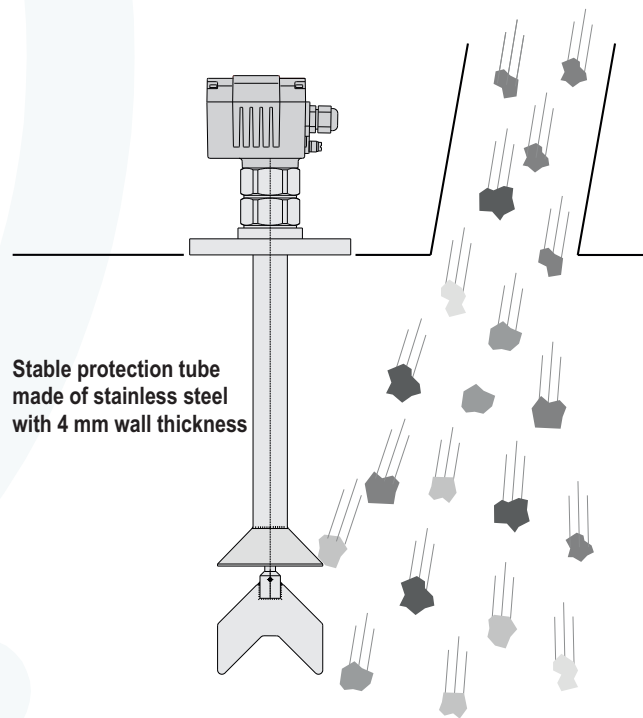
Special, reinforced level indicator for measuring within the filling stream

Protection tube and blade made of 4 mm thick stainless steel plus a protective roof enable filling level measurement within the filling stream of heavy bulk goods.

4



A1 or A2
Compact housing
Order code
DF28VA_nC_nG_nER_nY3V



Stable protection tube
made of stainless steel
with 4 mm wall thickness

Protection of the blade against impinging bulk solids

Full-, empty- and demand indicator for vertical mounting with protective roof plus reinforced blade and protection tube

| | |
|---------------------|--------------------------------|
| Signal contact | 2 A / 250V AC potential-free |
| Ambient temperature | 70 °C at the housing |
| Type of protection | IP66 according to DIN EN 60529 |
| Maintenance | none |

