

# FF04 Membran Füllstandsmelder für Schüttgüter

## Membrane level indicator

### Einsatz

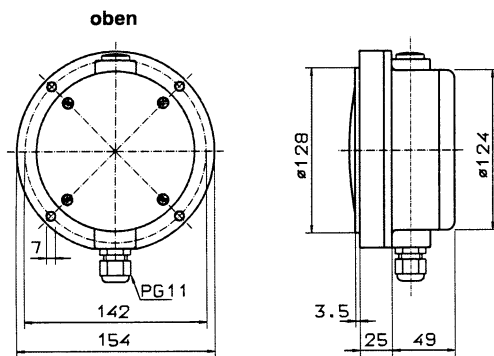
Voll-, Leer- und Bedarfsmelder für staub- und pulverförmige, granuliert sowie körnige Schüttgüter mit einer max. Körnung bis 30 mm und einem Schüttgewicht von 0,3 bis 2,5 t/m<sup>3</sup>

### Use

Level indicator for dusty, powdery, granulated and grain dumping substances with a maximum grain size of 30 mm and a dumping weight of 0.3 to 2.5 t/m<sup>3</sup>.

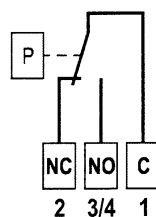
**Empfindlichkeit** von 60 g bis 200 g einstellbar  
**Sensitivity** adjustable from 60 g to 200 g

### Abmessungen/Dimensions



Typ / Type	Membrane	Haltering	Mounting ring
FF04.x.N.N	NBR	Stahl, verz.	galvanized steel
FF04.x.N.E	NBR	1.4301	stainless steel
FF04.x.V.N	Viton	Stahl, verz.	galvanized steel
FF04.x.V.E	Viton	1.4301	stainless steel

### Anschlussbild Connection plan



### Funktionsweise

Das Füllgut drückt mit seinem Gewicht die von einer Feder vorgespannte Membrane bis zur Abstützung durch. Ein an der Membrane befestigter Stößel überträgt den Druck auf den Microschalter mit Wechselkontakt. Sinkt das Schüttgut, so wird die Membrane entlastet und der Kontakt zurückgeschaltet.

### Mode of operation

The weight of the dumping material presses the springtensioned membrane to the support. A tappet attached to the membrane directly transfers the pressure to a microswitch with an alternating contact. When the dumping weight decreases, pressure is taken off the membrane and the contact interconnected.

### Konstruktion

Das Gehäuse aus Glasfaser verstärktem Kunststoff trägt die durch einen aufgeschraubten Ring gehaltene Membrane. Im Gehäuse ist ein Microschalter, auf den die Membrane den Druck des Schüttgutes mittels des Stößels überträgt. Die Empfindlichkeit ist an einer Feder einstellbar.

### Construction

The housing, made of glass-fibre reinforced plastic contains a membrane which is held in place by a ring. A micro-switch is contained in the housing to which the membrane transfers the pressure of the dumping material via a tappet. Sensitivity is adjusted by a spring.

### Technische Daten / Technical data

#### Werkstoffe / Materials

Gehäuse Housing	GFK glass-fibre reinforced plastic
Membrane	-N . NBR -V . Viton
Haltering/Mounting ring	- . N Stahl, verzinkt/galvanized steel - . E 1.4301/stainless steel

#### Temperaturbereich Temperature range

-20 °C bis 70 °C  
-20 °C to 70 °C

#### Wartung Maintenance

keine  
none

#### Kontakt

2 A / 250 V AC  
potenzialfreier Wechsler

#### Capacity of the contact

2 A / 250 V AC  
change-over contact  
no-potential

#### Ansprechverzögerung Response delay

keine  
none

#### Kabeleinführung Cable entry

PG 11  
PG 11

#### Schutzart


DIN EN 60529 IP 65

#### Type of protection

IP 65

# FF04

## Membrane-Level Transmitter for Bunks

- applicable as full or empty indicator
- simple mounting
- requires no room in the bulk tank
- membrane mad of NBR, FKM or stainless steel
- high temperature version up to 200 °C
- output signal: changeover relay with high switching capacity (4 A / 250 V)
-  Ex- version acc. to ATEX optional



### Description:

The membrane-level transmitter of the model series FF04 consists of a plastic- or aluminum housing with a membrane which is held by a fastening ring. The devices get installed flush with the tank wall. So they do not extend into the tank. The bulk material pushes against the membrane, which is pre-stressed by a spring, thereby it activates a micro-switch. Depending on the sort and the weight of the bulk the devices can be delivered with different membrane-diameters and different membrane-materials.

### Typical application:

For all bunks, from free flowing till hardly flowing, in pressureless tanks.

## Models:

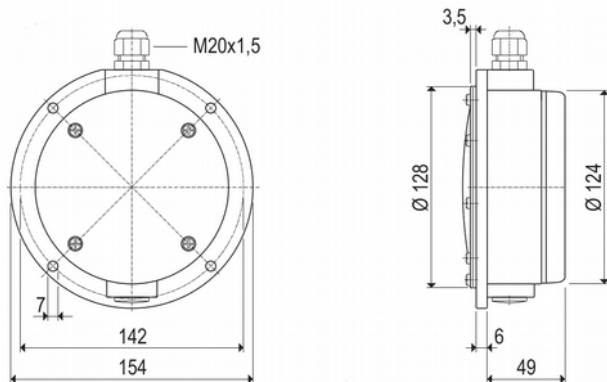
- E:** standard version  
membrane diameter 128 mm
- D:** standard version, protection class IP65  
membrane diameter 128 mm
- F:** for greater wall thickness  
membrane diameter 128 mm
- B:** aluminum housing, high temperature version  
membrane diameter 187 mm

## Range of application:

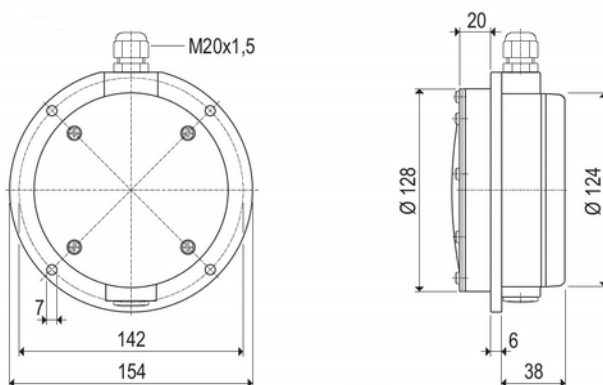
Type	Membrane	Operating temperature	Application:
FF04.E	NBR / FKM	-20...+60 °C	simple, grain-type
FF04.D	NBR / FKM	-20...+60 °C	simple, grain-type
FF04.F	NBR / FKM	-20...+60 °C	bis 30 mm grit
FF04.B	NBR FKM st. steel	-20...+60 °C -20...+150 °C -20...+200 °C	bis 100 mm grit

## Dimensions:

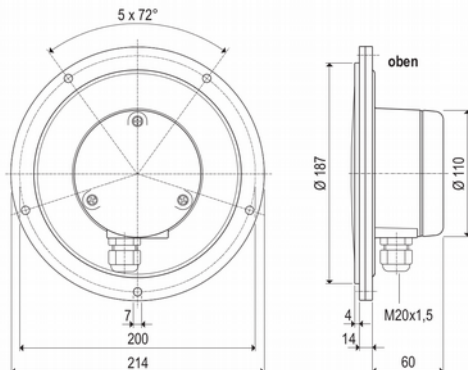
### FF04.E / FF04.D:



### FF04.F:



### FF04.B:



## Order Code:

Order number: **FF04.** **E.** **N.** **N.** **0**

Membrane-level transmitter  
for bulks

### Housing type:

E = plastic housing  
D = plastic housing, IP65  
F = for greater wall thickness, plastic housing  
B = aluminum housing

### Membrane material:

N = NBR  
V = FKM  
E = stainless steel (not for FF04.D)

### Supporting ring:

A = aluminum (FF04.B only)  
N = steel, galvanized (not for FF04.B)  
E = stainless steel

### Options:

0 = without  
9 = please specify in plain text

## Technical Data:

### Material:

**Housing:** plastic, glass fiber reinforced  
(FF04.B: aluminum)

**Membrane:** NBR, FKM or stainless steel

**Supp.- ring:** aluminum, steel, galvanized  
or stainless steel

### Installation position:

optional

### Sensitivity:

60...200 g (FF04.E/D/F)  
100...500 g (FF04.B)

### Bulk weight:

0,3 t/m<sup>3</sup> bis 2,5 t/m<sup>3</sup> (FF04.D/B)

### Temperature range:

see table „range of application“

### Pressure range:

for pressureless tanks

### Contact rating:

potential free SPDT  
4 A / 250 VAC

### Cable entry:

M20x1,5

### Protection class:

housing type E + F: IP40 (DIN EN 60529)  
IP53 (if screwing on top)  
IP 65 (with st. steel membrane)

housing type D:  
IP 65

housing type B:  
IP40 (DIN EN 60529)  
IP 53 (if screwing at the bottom)  
IP 65 (with st. steel membrane)

## Electrical connection:

