

# Silo overflow monitoring system

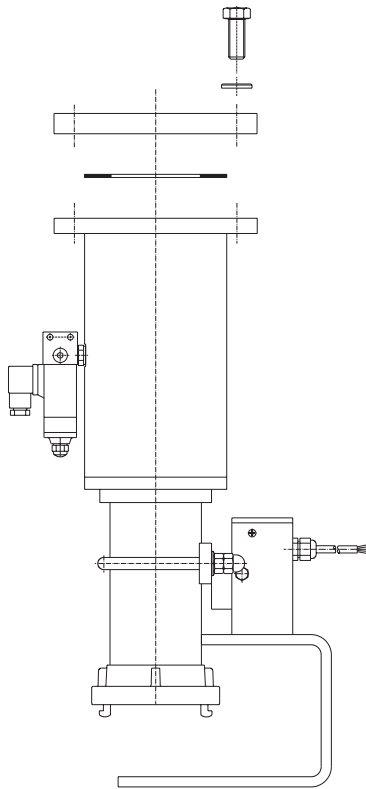
the complete protection for silos and containers



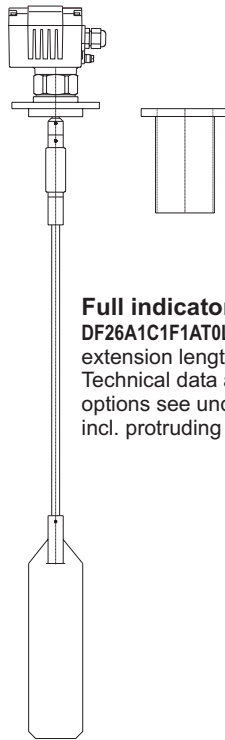
## Appliance information

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## GB Basic module



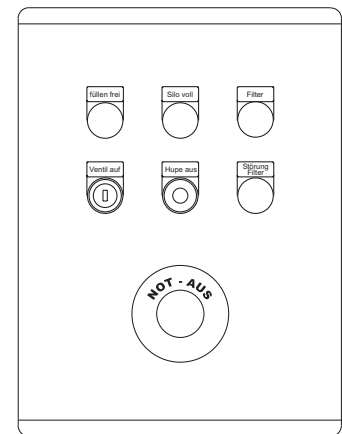
**Silo filling device**  
**SFA-Q... with pinch valve**  
 DN 65, 80, 100, 125 or 150 mm  
 see under **SFA-GI-01**  
 incl. weld-on flange, solenoid valve,  
 swivelling lever with limit switch and  
 hose connection coupling



**Full indicator**  
**DF26A1C1F1AT0LW0630**  
 extension length 900 mm  
 Technical data and  
 options see under **DF-GI-01**  
 incl. protruding nozzle



**Signal horn**  
**HPW11-07**  
 Technical data  
 see under **HP-GI-01**



**Silo filling control**  
**SFS... with pinch valve**  
 type on customer's demand  
 Supply voltage 230/400 V, 24 V DC

ATEX-Option **Dust**  for all devices

ATEX-Option **Gas+Dust**  for a part of devices

## Function sequence

### 1. While coupling the filling pipe, the swivelling lever swivels beside

- the limit switch will be actuated
- the overfill monitoring system will be put into operation
- the full indicator will be switched on
- the jet filter starts the operation and cleans in intervals during the whole filling process
- the blocking valve opens
- the green lamp "filling o.k." lights up

### 2. the filling process can be started

### 3. the filling level reaches the measuring blade of the full indicator:

- the green lamp switches off
- the red lamp "silo full" lights up
- the horn sounds (the signal of the horn can be turned off by pushing the pushbutton "horn off")

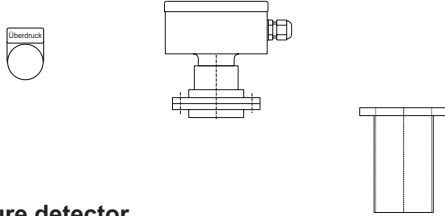
### 4. the filling process will be stopped immediately and the filling pipe will be emptied

### 5. after 30 sec. the blocking valve closes the filling pipe automatically

(under supervision, the blocking valve can be opened with a key-operated switch, to empty the filling pipe or to refill small remaining quantities)

## E Supplementary modules

### E1 Limitation of final torrent



#### Silo pressure detector

MSD-070

Technical data see under **MSD-GI-01**

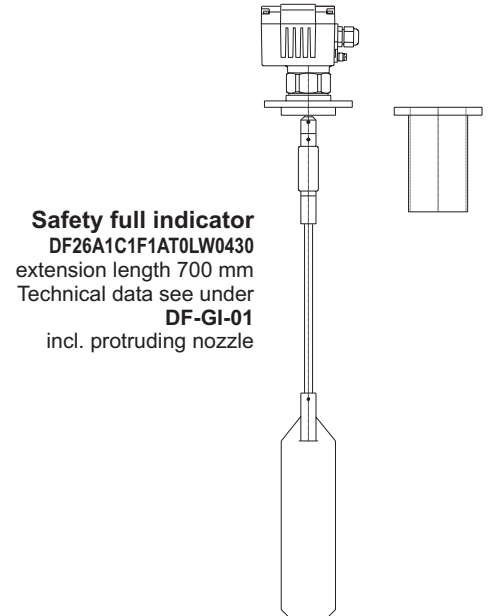
incl. protruding nozzle,  
red lamp "overpressure" and controller part  
are installed in the controller

#### Function

If the pressure increases in the silo, e.g. during the last torrent, the pressure detector will register this depending on the adjusted pressure and will signalise to the controller.

- the blocking valve closes the filling pipe immediately
- the green lamp "filling free" switches off
- the red lamp "overpressure" lights up
- the horn sounds
- the filter is cleaning itself

### E2 Safety full indicator



#### Safety full indicator

DF26A1C1F1AT0LW0430

extension length 700 mm

Technical data see under

**DF-GI-01**

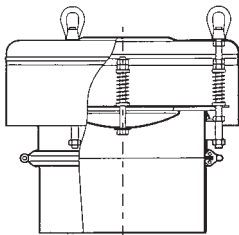
incl. protruding nozzle

#### Function

Second full indicator instead of a timer

- depending on volume, instead of time controlled after-run
- if the filling level reaches the measuring blade of the safety full indicator the blocking valve will close immediately

### E3 Silo-Ex-Impl-Valve



#### Safety valve

SEI-250

Technical data see under **SEI-GI-01**

incl. protruding nozzle

The **Silo-Ex-Impl-Valve** protects silos from overpressure and low pressure while

- pneumatic filling
- sticking of the dust precipitation filter
- fermentation
- temperature variations
- condensation
- high output
- aspiration

### E4 Silo filter



#### Silo jet filter

Silo top filter with purification by compressed air incl. protruding nozzle, time controller and necessary compressed air control valves

Filter area depending on requirement:

**SJF-130** with 13 m<sup>2</sup> filter area,

**SJF-200** with 20 m<sup>2</sup> filter area,

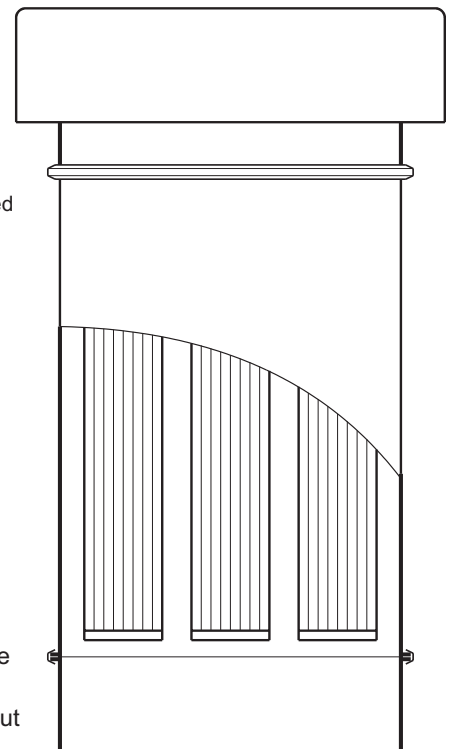
**SJF-240** with 24 m<sup>2</sup> filter area

compressed air switch to control if compressed air is available and in the controller are installed the controller part and a red lamp "no compressed air"

#### Function

If the compressed air sinks under approx. 5 bar

- after 30 seconds the blocking valve closes the filling pipe
- the green lamp "filling free" goes out
- the red lamp "no compressed air" lights up
- the horn sounds



## E Supplementary modules

### E5 Controller for vibrating filter



**SRS Controller for vibrating filter of the silo**  
Controlling of a vibrator 0,18 up to 0,25 kW,  
installed in the controller, with white lamp "filter"  
and red lamp "failure filter"

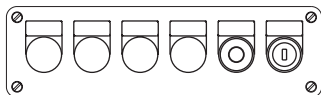


#### Function

- the filter will be vibrated (cleaned) before and after the filling process

### E7 Operator panel

**SVB Silo operator panels**  
in various models for mounting  
next to the filling pipe and  
for operation directly on-site



### E9 Pinch valve monitoring



**Q-DS17.04-3 Pressure switch**  
installed at the pinch valve  
with corresponding controller part  
installed in the controller

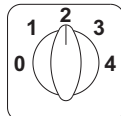


#### Function

Monitoring of pinch valve functions

- E9.0 signalises "valve defect" with yellow light
- E9.1 signalises "valve closed" with white light
- E9.2 signalises "valve closed" - "valve open" with two white lights

### E6 Selection switch for silos



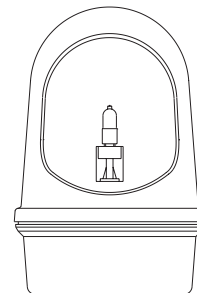
**SFG Selection switch for silos**  
Switch to select the silo filling and to avoid  
the false filling.  
Optional installed in the controller or for  
installation in the control room of the plant.

#### Function

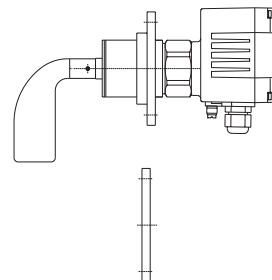
- Setting "0" - all silos inaccessible
- Setting "1" - silo 1 may be filled, all the other silos are inaccessible
- Setting "2" - silo 2 may be filled, all the other silos are inaccessible etc.

### E8 Rotating mirror beacons

**HLD Rotating mirror beacons**  
yellow with halogen lamp  
additional to the horn or  
instead of the horn



### E10 Demand and empty indicator



**DF23A1C1F1AM2V**  
with protruding nozzle  
white light "silo demand"  
or "silo empty"  
and controller part  
installed in the controller

#### Function

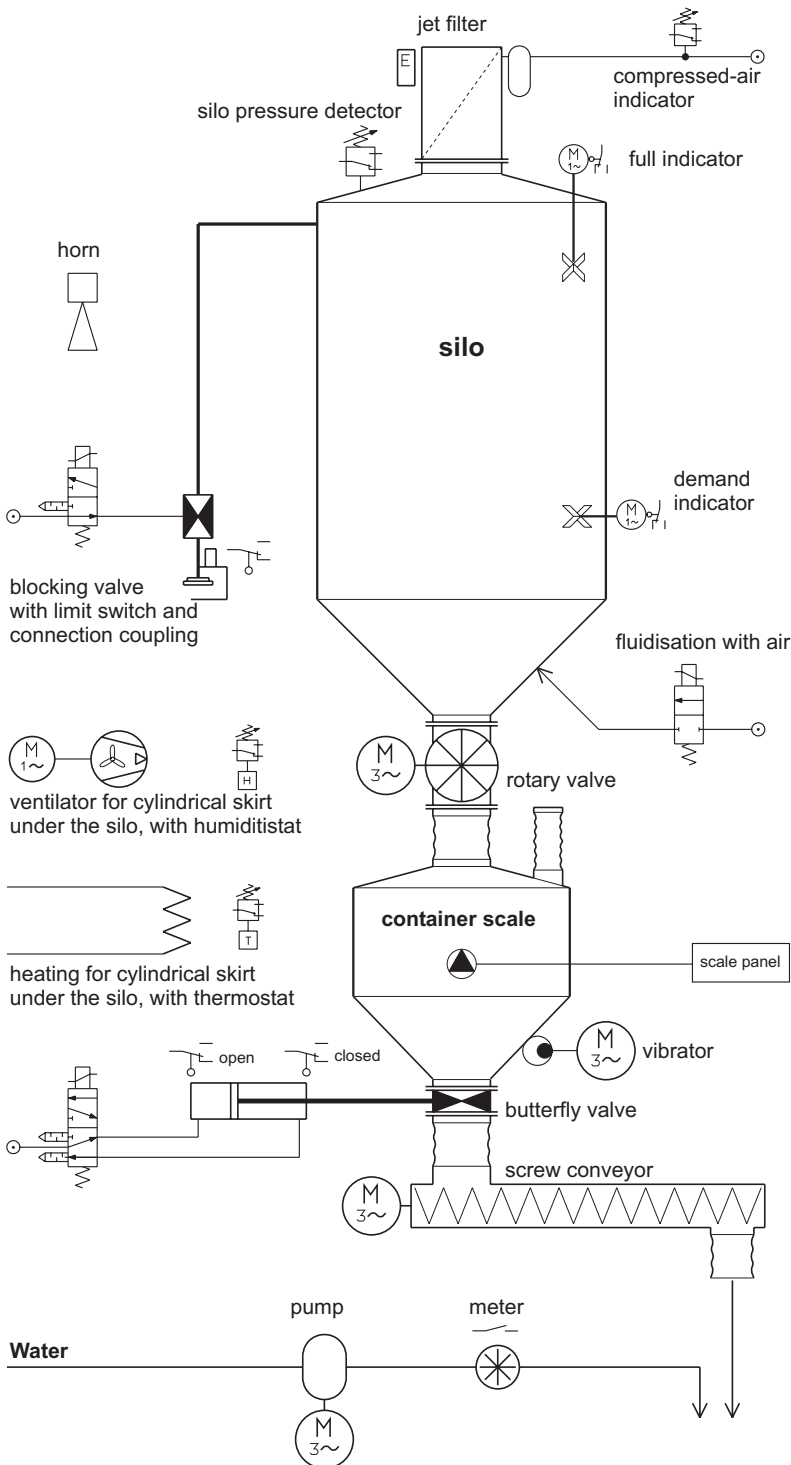
- E10.1 signalises "silo empty" with white light
- E10.3 signalises "silo demand" with white light  
other functions on customer's wish

## E Supplementary modules

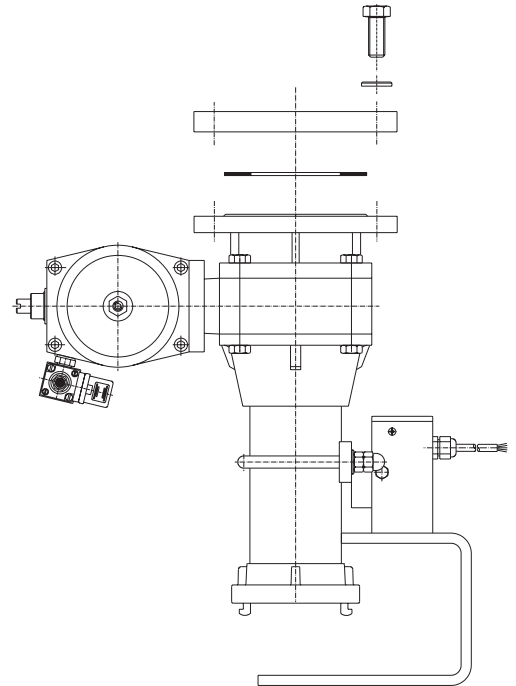
### E11 Electric control

Supplementation of the electric control for further silo components e.g. as like as shown in the diagram.

On customer's request, other models possible also.



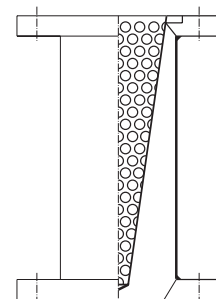
### E12 Ball valve



#### Silo filling device SFA-K... with ball valve

DN 80 or 100 mm  
see under SFA-GI-01  
incl. weld-on flange, solenoid valve, swivelling lever with limit switch and hose connection coupling

### E13 Control sieve



#### SKS-080-010 Silo control sieve

Nominal diameter 80 mm with hole size 10 mm for mounting in the filling pipe