

INDUSTRY ► LEVEL

FMM50

DESCRIPTION



The FMM50 electromechanical level works independently of physical properties such as density.

It allows the level to be measured in bunkers or silos with powdered, fine or coarse grain bulk solids or in vessels containing liquids.

Separation layer detection in liquids is also possible when using suitable sensing weights.

Your benefits:

- Suitable for process conditions in which classic ultrasonic or radar level gauges do not work reliably
- Precise detection of the level (accuracy of ± 5 cm or ± 1 pulse)
- Compact device with 0/4 - 20 mA current output as well as further free programmable signal outputs (for example counter pulse)
- Quick menu-guided local operation using a 4-line text display
- Fully electronic digital minimum fail-safe control, therefore no running down of the sensor weight into the silo outlet and no risk to the conveying systems

A complete description of all device features can be found in the corresponding operating manual. → ba042000en

- Measuring range:
Max. 90 m
- Protection (according to EN 60529):
 - With closed enclosure IP67
 - With closed enclosure and with the use of the external start button IP65
 - With open housing IP20
- Supply voltage:
 - 180 to 253 V AC, 50/60 Hz
 - 90 to 127 V AC, 50/60 Hz
- Output signals:
 - Current output 0/4 to 20 mA (active, 0 to 20 mA / 4 to 20 mA programmable)
 - Relay outputs (2, optional 6) max. 250 V AC / 6 A
 - Programmable relay output functions:
 - Counter pulse
 - Reset pulse
 - Band return
 - Running up
 - Top position
 - Measuring
 - Alarm
 - Service interval
 - Threshold
- Input signals:
 - Active (input voltage range 12 to 24 V DC)
 - Passive
 - Input polarity: Normally open or normally closed
- Process connection:
Flange DN100 PN16 (hole sizes as per EN 1092-1)
- Process temperature:
Max. -20 ... +230 °C
- Process pressure:
Max. 0.8 to 3.0 bar (12 to 43 psi) absolute
- Weight:
22 to 28 kg (depends on the selected type of device, without sensing weight)
- Approval:
ATEX

10	Approval
A	Ex-free area
B	ATEX II 1/2D Ex ta/tb IIIC T99°C Da/Db ATEX II 2D Ex tb IIIC T99°C Db
Y	Special version, to be specified

20	Housing
1	Aluminum
2	Aluminum, coated
9	Special version, to be specified

30	Motor traction power
A	Max. 250 N, bulk density low
B	Max. 500 N, bulk density high
Y	Special version, to be specified

40	Measuring range
1	25 m, stainless steel (301, modified)
2	35 m, stainless steel (301, modified)
3	50 m, stainless steel (301, modified)
4	70 m, stainless steel (301, modified)
5	90 m, stainless steel (301, modified)
6	15 m, Plastic (PE, PP coated)
9	Special version, to be specified

50	Max. nozzle height; tape wiper
A	230 mm, aluminum/steel
B	230 mm, stainless steel
C	500 mm, aluminum/steel
D	500 mm, stainless steel
E	1000 mm, aluminum/steel
F	1000 mm, stainless steel
Y	Special version, to be specified

60	Supply voltage
1	180 to 253 V AC, 50/60 Hz
2	90 to 127 V AC, 50/60 Hz
9	Special version, to be specified

70	Output
A	0/4 to 20 mA + 2x relay, adjustable
B	0/4 to 20 mA + 6x relay, adjustable
Y	Special version, to be specified

80	Ambient temperature
A	-20 to +70 °C
B	-40 to +70 °C + heater
C	-20 to +70 °C + extended climate resistance
D	-40 to +70 °C + extended climate resistance + heater
Y	Special version, to be specified

90	Process temperature
1	-20 to +70 °C
2	-20 to +150 °C
3	-20 to +230 °C
9	Special version, to be specified

100	Process pressure
1	0.8 to 1.1 bar (12 to 16 psi) absolute
2	0.8 to 3.0 bar (12 to 43 psi) absolute
9	Special version, to be specified

110	Sensing weight
A	Without
B	Steel
C	Stainless steel
D	Steel + umbrella
E	Stainless steel + umbrella
G	Medium bag
J	Stainless steel cage
L	Stainless steel bell
M	Oval float (PVC)
N	Oval float (316Ti)
Y	Special version, to be specified

120	Additional equipment
1	Basic version
2	Sight glass + start button (external)
9	Special version, to be specified

→ Technical Information ti042000en

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FMM50

FEATURES

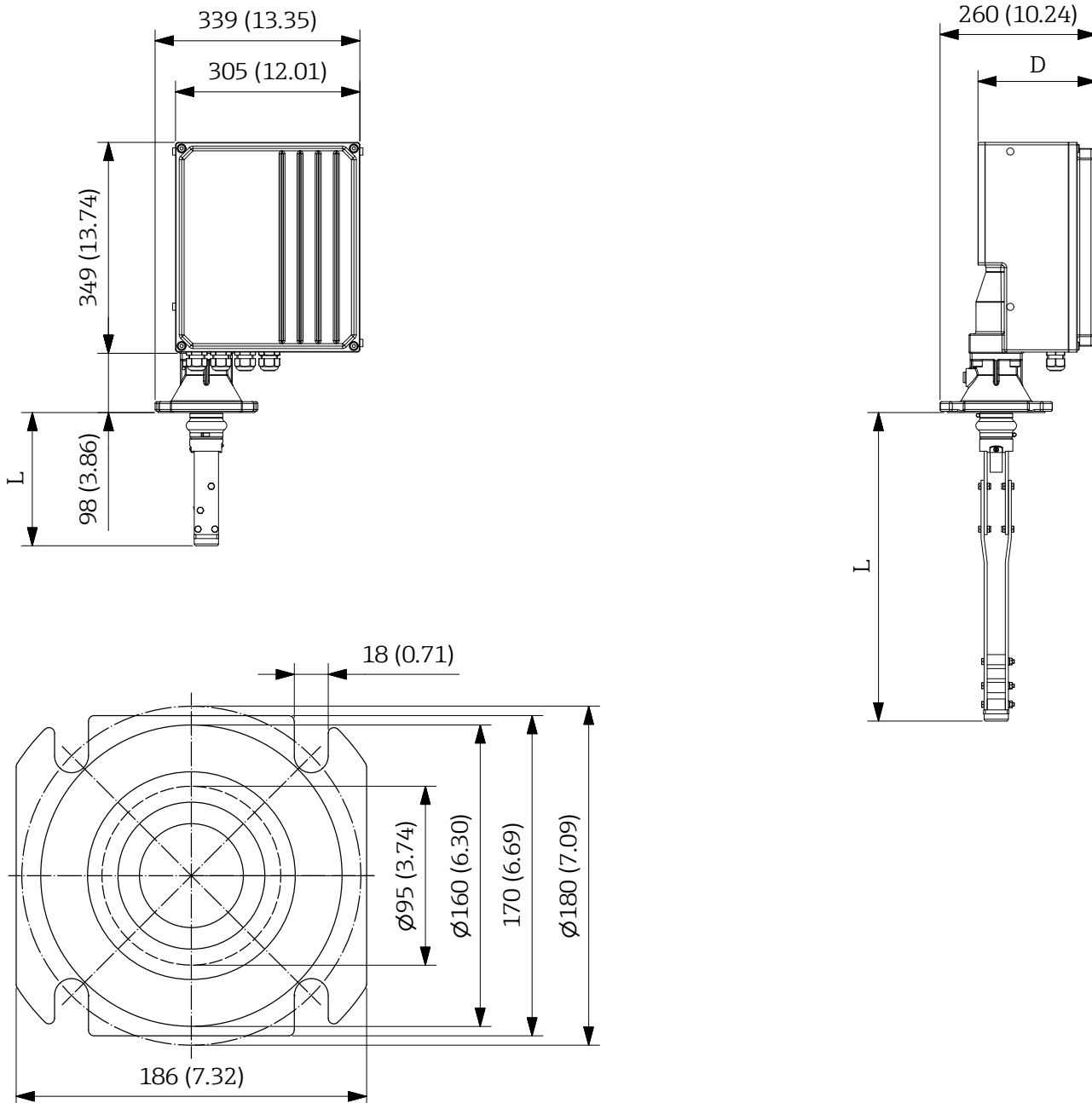
- The diagram illustrates the HMI interface for a filling station, organized into four main functional areas:

 - Measured value display:** This section shows a screen with the text "measured value" followed by "000". Below this, there is a large "54" with a small "t" superscript, and a percentage "63.42 %". At the bottom, there is a row of 12 black squares followed by a dashed line.
 - Navigation view:** This section shows a screen with the text "empty calibr." followed by "001". Below this, there is "35 m", "distance flange to", and "min. filling".
 - Entering a value:** This section shows a screen with the text "present error", "simulation", and "activated". At the bottom right, there is "W 621".
 - Selecting a value:** This section shows a screen with the text "group selection" followed by "00" and a right-pointing arrow. Below this, there is "✓basic setup", "inputs and outputs", and "measurement param."

Below these four sections, there is a section titled "Diagnostic messages" which shows a screen with the text "input 1" followed by "010". Below this, there is "✓not used", "bolting", and "start measurement".

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DIMENSIONS



The wiper length (L) depends on the selected maximum nozzle height:

- 225 mm (8.86 in), Ordering code „**maximum connection height; wiper**“, option **A** or **B**
- 515 mm (20.28 in), Ordering code „**maximum connection height; wiper**“, option **C** or **D**
- 1015 mm (39.96 in), Ordering code „**maximum connection height; wiper**“, option **E** or **F**

The housing depth (D) depends on the selected process pressure:

- 196 mm (7.72 in), Ordering code „**process pressure**“, option **1**
- 211 mm (8.31 in), Ordering code „**process pressure**“, option **2**