MICROPULS 57S

Radar Level Sensor

4...20mA / HART two wire

Technical Specifications

Measuring range	up to 30 meter
Accuracy	± 10mm
Process connection	Flanged DN50/DN80/DN100
Process pressure	-1 … 5 bar
Process Temperature	-40...100°C / optional -40...200°C
Operating frequency	26 Ghz
Measuring angle	8°/12°/18°(Acc. to antenna size)
Power supply	14...36V DC / optional 220V AC
Protection class	IP67

Application Areas

MICROPULS 57S is an ideal sensor for measurement up to 30 meter of bulk solids under easy conditions. Generally it is preferred for use in less dusty operating conditions. Due to its robust and maintenance-free structure, MICROPULS 57S is used in measuring up to 30m of all bulk solids such as plastic granule, mine, food powder, feed, grain and similar products. Due to the different flange options, the instrument are manufactured suitable for all kind of process connections.

Measuring Principal

Powerful radar waves with short pulses are sent through the antenna system to the product surface. These pulses are reflected by the product surface and received again by the antenna system. The level is measured depending on the period between the time of sending and sensing of the pulses.

Advantages

- Simple mounting
- Non-contact measuring principle
- High sensitivity
- Maintanance-free structure
- Independent of dust, pressure, temperature and gas

Housing and Materials

Sensor bodies are manufactured in accordance with the demands of the customer from single or double chamber plastic, aluminium or stainless steel material. The plastic housing meets the requirements of protection class IP66 and the aluminium and stainless steel housing the protection class IP67. All wet surfaces of the sensor is made from PA66, POM or PTFE material. All sealing gaskets can be manufactured as viton and silicon

Electronic Options

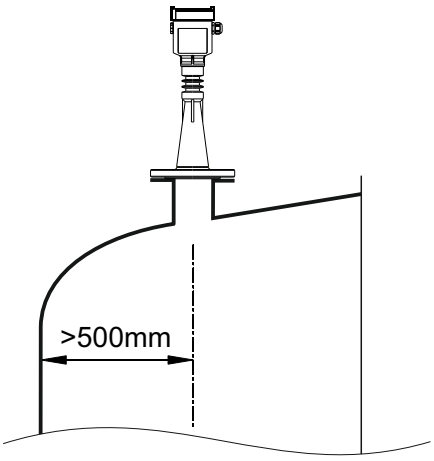
Sensor electronics are available according to customer demands and process requirements as two-wire or four-wire 4…20mA/HART. They're gel filled and protected against moisture and vibration.

Certificates

MICROPULS 57S has an ATEX approval for use in hazardous areas. The instrument also has CE approvals for EMC Directive 2004/108/EC EN61326-1: 2006 EN61326-2-2: 2006 and Low voltage Directive 2006/95/EC EN 61010-1: 2010.

Installation

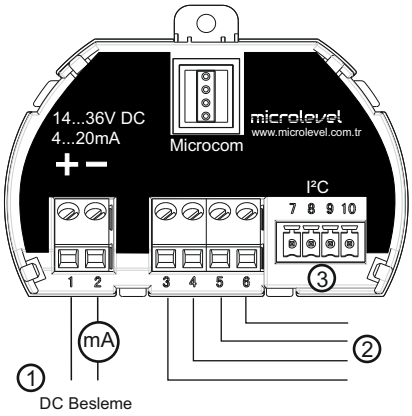
For installation on the silo, the sensor should be placed accurately to the centre of half the diameter of the silo. Furthermore, the mounting axis of the sensor must be at least 500mm from the silo wall. For assemblying closer to the wall, special attention should be paid to any surface that may cause failure signal echos.



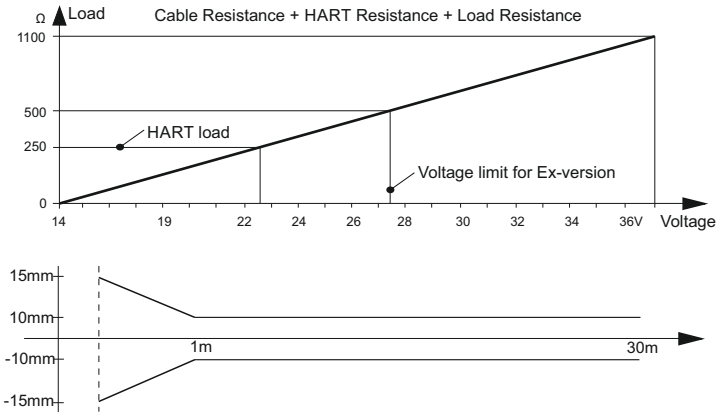
Electrical Connection

The sensor has a system known as two-wire which is operateable with 14..36V DC and which has an 4...20mA output on the same line. The (+) end of the power supply is directly connected to the sensor end 1 and PLC, DCS, indicator and control devices are serially connected to the (-) line 2.

1- Supply / analog output
2- Exterior indicator output
3- Interface connection socket

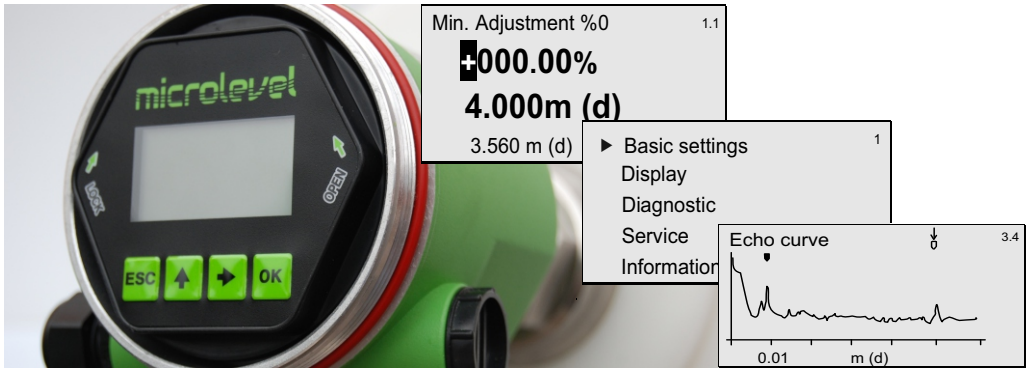


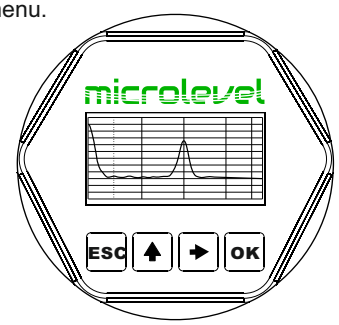
Energy Supply Table / Accuracy Diagram



Adjustment with MICROCOM

The basic settings of the sensor can be easily done via the display and adjustment module MICROCOM with different menu language. The measuring range, the product type and the min. and max. values can be easily set. The space to the surface, fullness from ground to top, volumetric values and scaled data and values can be monitored on the display. Many parameters such as signal strength, error codes, simulation can be set under the diagnostic menu and settings such as suppression of faulty echos, type of current output, distance correction setting, reset, enter the PIN etc. can be adjusted under the service menu.





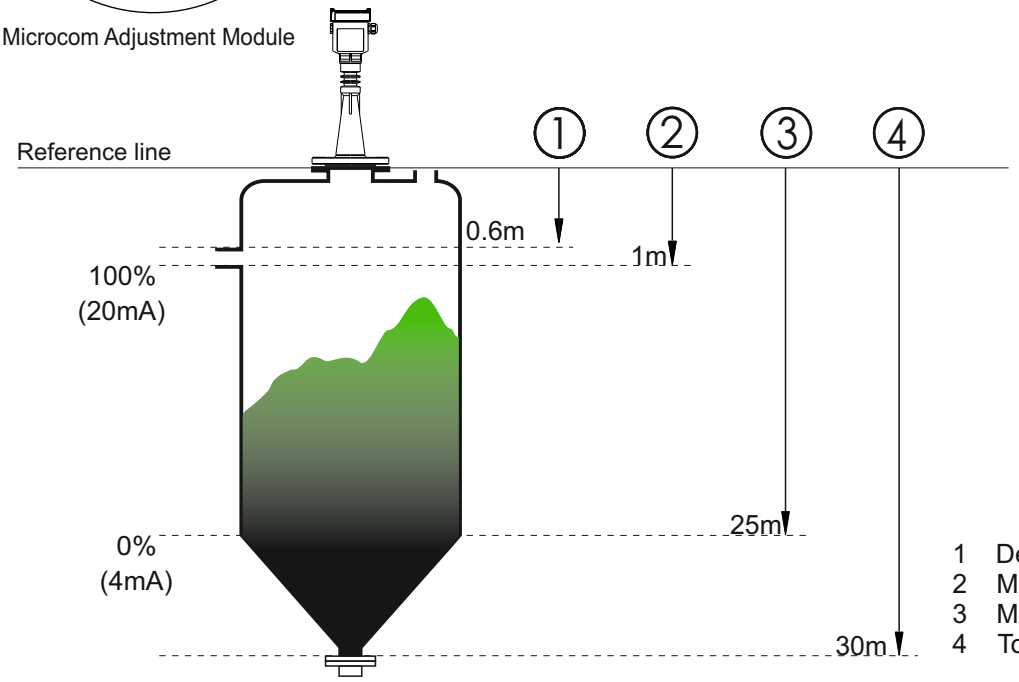
Microcom Adjustment Module

OK allows you to enter into the programming mode and to confirm the programming option and the parameter changes.

allows you to select the programming options and the parameter values to be entered, to read off the parameter contents and to go to the next page.

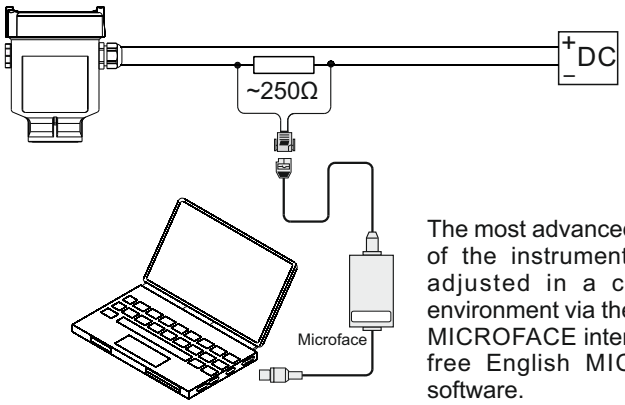
allows you to change the parameter values.

ESC allows you to revert from the programming mode to the upper menu.



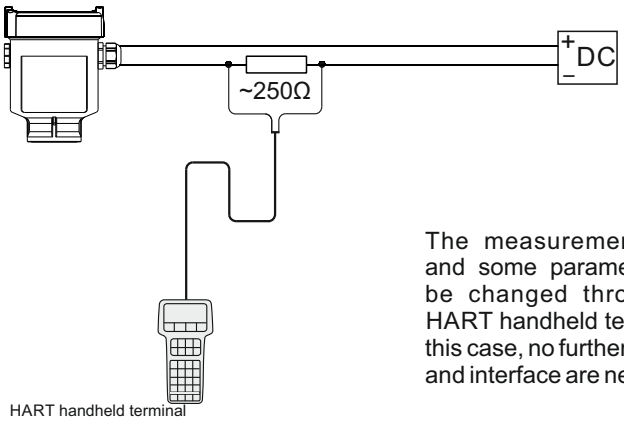
1 Dead zone (Menu 1.9)
2 Max. set point (Menu 1.2)
3 Min. set point (Menu 1.1)
4 Total blank height (Menu 1.8)

Connection and Adjustment via PC



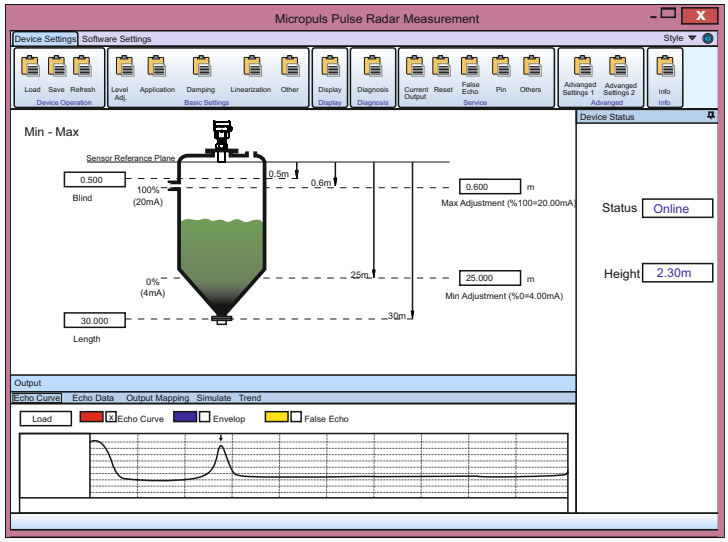
The most advanced settings of the instrument can be adjusted in a computer environment via the optional MICROFACE interface with free English MICROWIN software.

Adjustment with HART Handheld Terminal

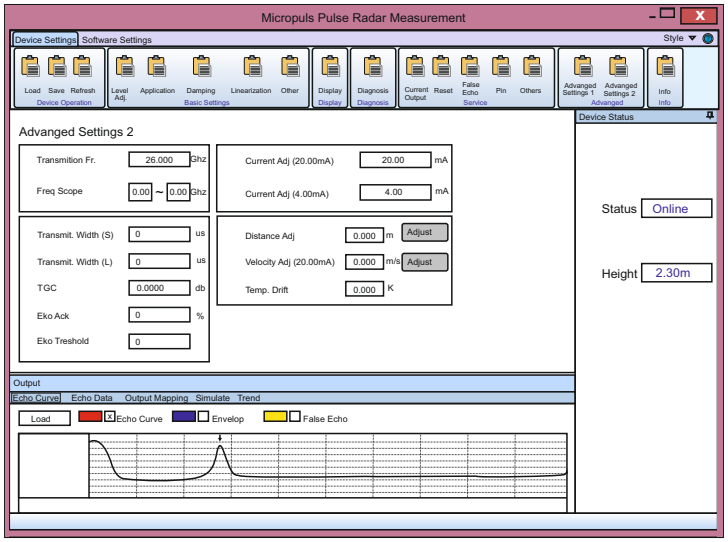


The measurement range and some parameters can be changed through the HART handheld terminal. In this case, no further software and interface are needed.

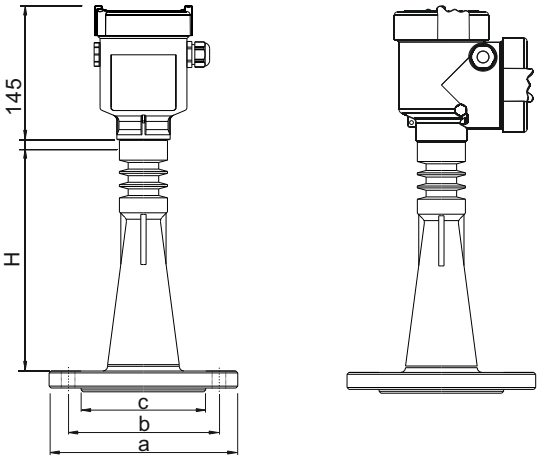
Adjustment with Software



Advanced Parameter Setting



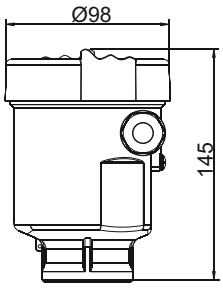
Technical Dimensions



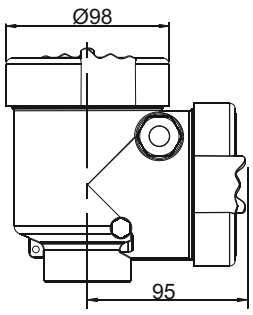
	a	b	c	H
DN 50	Ø165	Ø125	Ø99	120
DN 80	Ø200	Ø160	Ø132	174
DN 100	Ø220	Ø180	Ø156	260

Technical Dimensions (Housing)

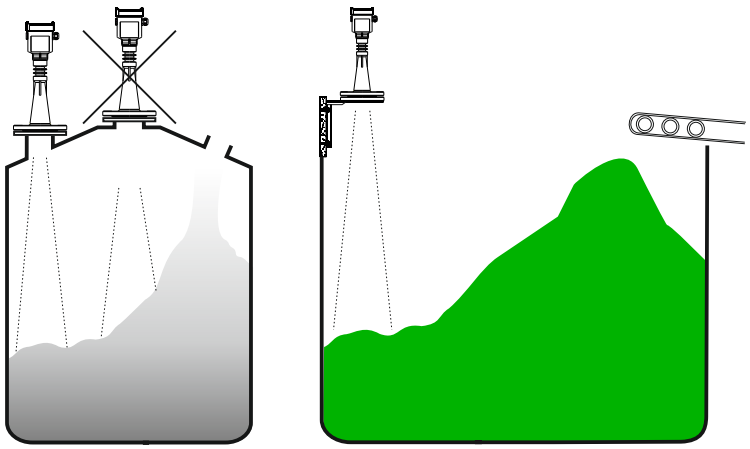
Single Chamber Housing



Double Chamber Housing



Various Applications / Considerations



Model: MICROPULS 57S (20/30m)

Explosion Proof Approval
- P - Standard (Without Approval)
- G - ATEX II 1G Ex ia IIC T6...T3 Ga
- D - ATEX II 1D Ex ia IIIC T76°C...T146°C Da

Process Connection / Material
- FC4 - Stainless Steel 304 / PTFE / Flange DN50
- FD4 - Stainless Steel 304 / PTFE / Flange DN80
- FE4 - Stainless Steel 304 / PTFE / Flange DN100
- FCX - Stainless Steel 316L / PTFE / Flange DN50
- FDX - Stainless Steel 316L / PTFE / Flange DN80
- FEX - Stainless Steel 316L / PTFE / Flange DN100
- FXX - Special Type

Antenna Sealing / Temperature
- 1 - PA66 / 100ºC
- 2 - POM / 100ºC
- 3 - PTFE / 200ºC

Electronic
- B - 4...20mA / Hart Two wire 14...36VDC
- C - 4...20mA / Hart Four wire 14...36VDC
- D - 4...20mA / Hart Four wire 198...242VAC

Housing / Protection
- A - Aluminium / IP67
- B - Plastic / IP66
- D - Aluminium Two Chamber / IP67
- G - Stainless Steel 316L / IP67

Cable Entry
- M - M20x1.5
- N - 1/2 NPT

Display / Programming
- A- Yes
- X- No

Measuring Range
- 2 - Up to 20m
- 3 - Up to 30m

MP57S									

Notes:
-ATEX instruments can be used with only “B” Electronic and “A” “G” Housing
-Four wire is only used with “D” Housing

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