MICROPULS 51

Radar Level Sensor

4...20mA / HART two wire

Technical Specifications

Measuring range	up to 30 meter
Accuracy	± 10mm
Process connection	Threaded G 1 ½ or flanged
Process pressure	-1 … 3 bar
Process temperature	-40...120°C
Operating frequency	6 Ghz
Measuring angle	24°
Power supply	14...36V DC / optional 220V AC
Protection class	Housing IP67, antenna IP68

Application Areas

MICROPULS 51 is an ideal sensor for measurement of especially aggressive liquids under difficult conditions. The electronic amplifier is configured for particularly difficult measurement conditions. In this way MICROPULS 51 is one of the most useful sensor that is capable of measuring up to 30m of especially challenging liquids, aggressive substances such as acid, caustic and all kind of chemical mixtures. In plastic or derived tanks with low di-electric constant the measurement can be done without drilling the tank.

Measuring Principal

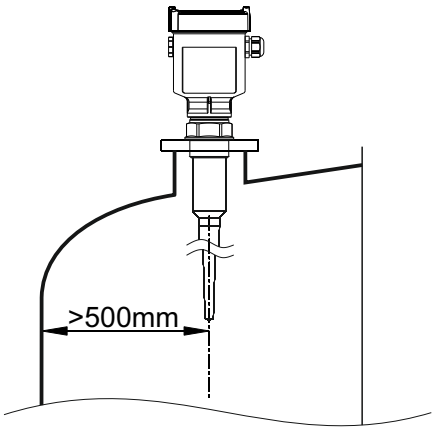
Powerful radar waves with short pulses are sent through the antenna system to the product surface. These pulses are reflected by the product surface and received again by the antenna system. The level is measured depending on the period between the time of sending and sensing of the pulses.

Advantages

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

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 200mm from the silo wall. For assemblying closer to the wall, special attention should be paid to any surface that may cause failure signal echos.



Housing and Materials

Sensor bodies are manufactured in accordance with the demands of the customer from single or dual-cell 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 PP and 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.

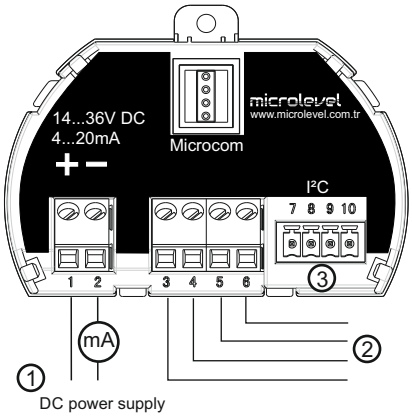
Certificates

MICROPULS 51 has certificates of “Intrinsically Safe” Exia IIC T6 and Exd [ia] IIC T6 for areas with hazardous gas and dust atmosphere. It has also CE for EMC Directive 2004/108/EC EN61326-1: 2006 EN61326-2-2: 2006 ve Low voltage Directive 2006/95/EC EN 61010-1: 2010

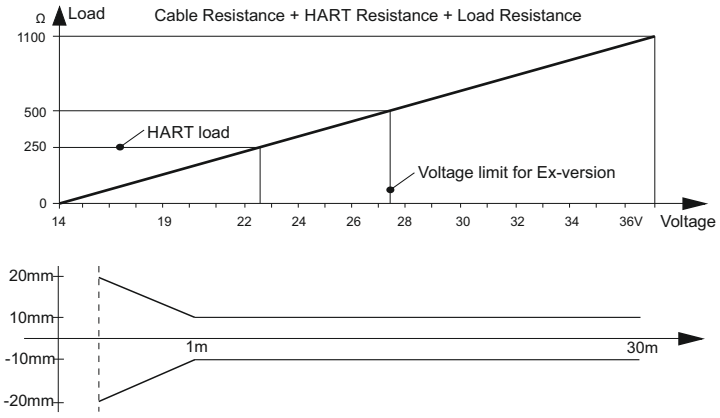
Electrical Connection

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

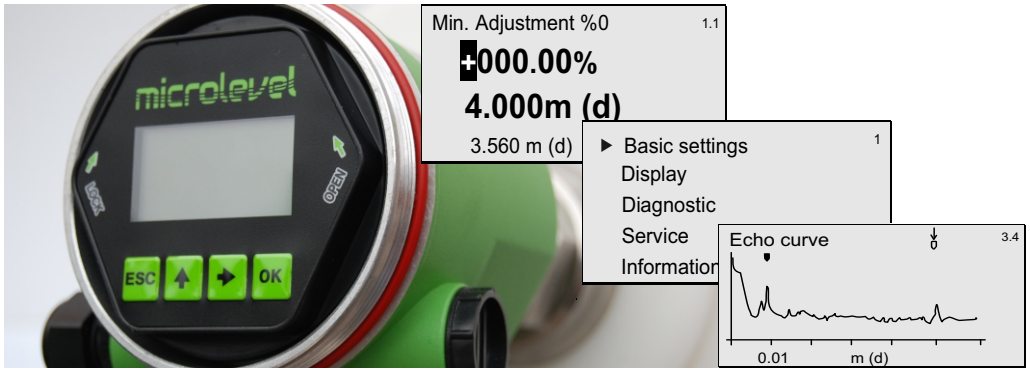


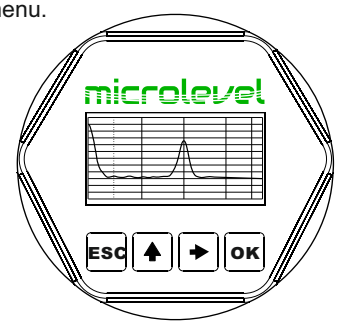
Energy Supply Table / Accuracy Diagram



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.





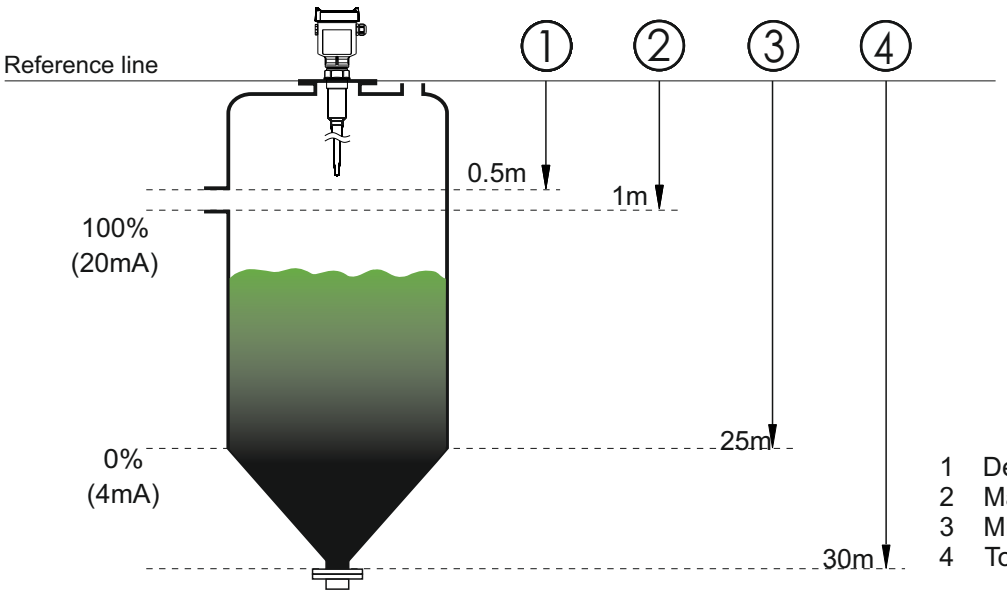
Microcom Adjustment Module

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.

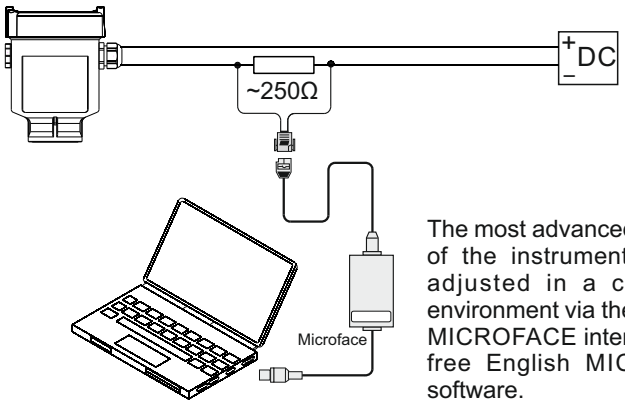
allows you to change the parameter values.

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



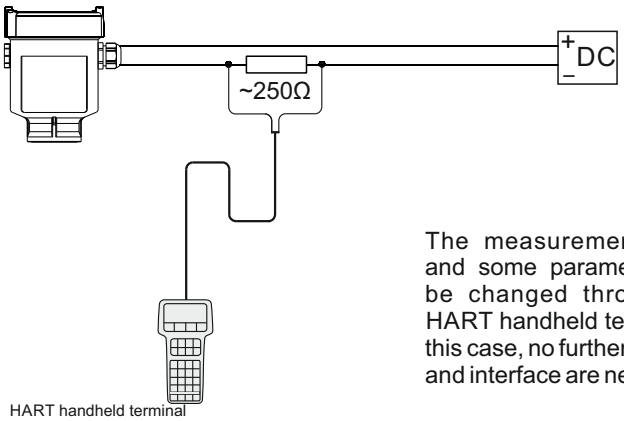
1 Dead zone (Menu 1.9)
2 Max. set point (Menu 1.2)
3 Min. set point (Menu 1.1)
4 Total blank height (Menu 1.8)

Connection and Adjustment via PC



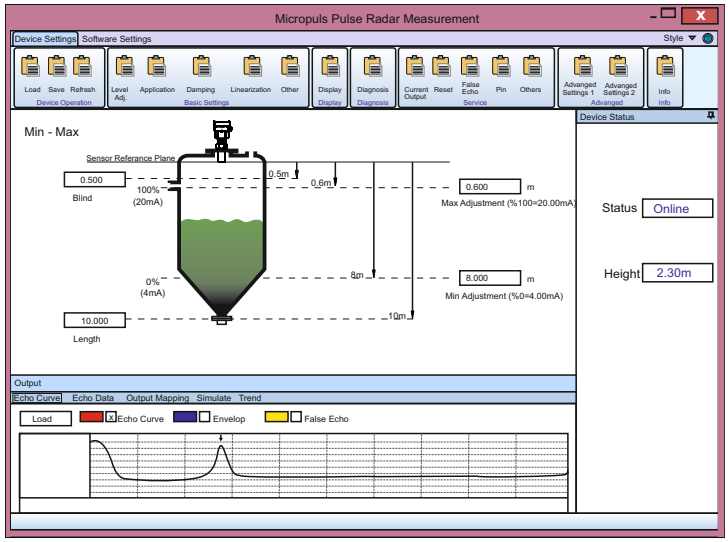
The most advanced settings of the instrument can be adjusted in a computer environment via the optional MICROFACE interface with free English MICROWIN software.

Adjustment with HART Handheld Terminal

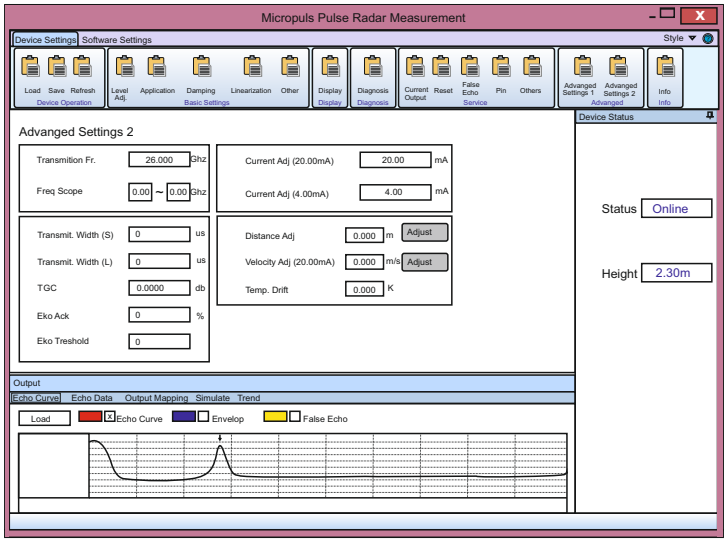


The measurement range and some parameters can be changed through the HART handheld terminal. In this case, no further software and interface are needed.

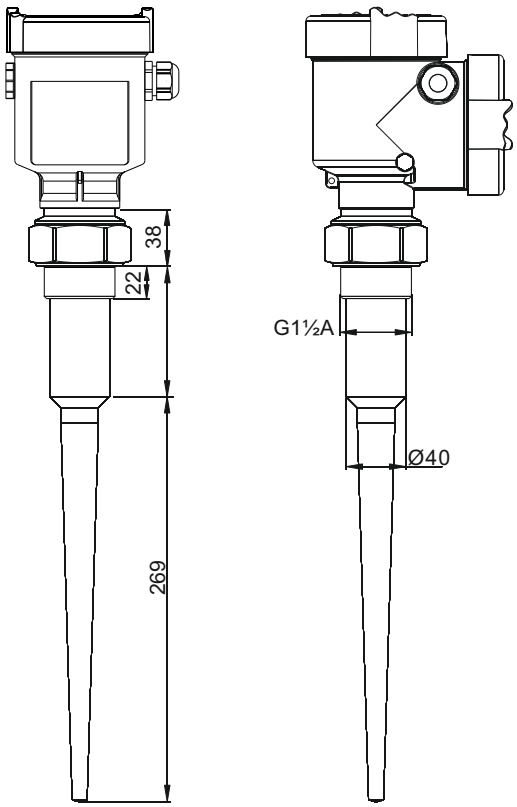
Adjustment with Software



Advanced Parameter Setting

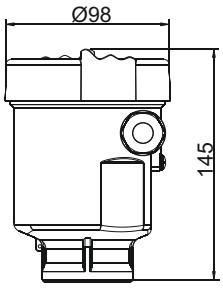


Technical Dimensions

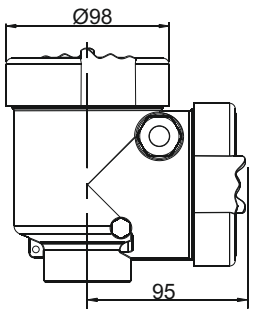


Technical Dimensions (Housing)

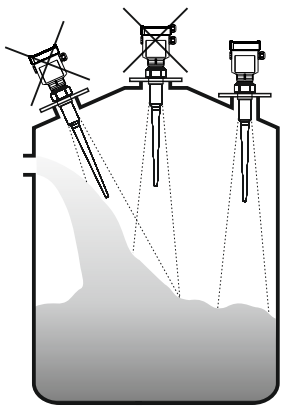
Single Chamber Housing

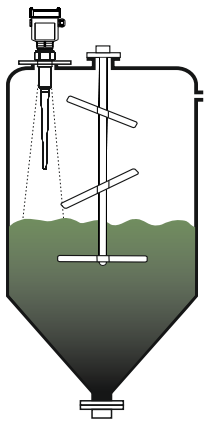


Double Chamber Housing



Appications





Selection Table

Model: MICROPULS 51 (30m)

Explosion Proof Approval
- P - Standard (Without Approval)
- I - Intrisically safe (Ex ia IIC T6)
- G - Intrisically safe + Flameproof (Exd ia IIC T6)

Types of Antenna / Material
- A - Plastic Rod /PP (IP68)
- B - Plastic Rod /PTFE (IP68)

Process Connection / Material
- GDX - Thread G 1 1/2
- NDX - Thread 1 1/2 NPT
- FCT - Flange DN50 / PTFE
- FDT - Flange DN80 / PTFE
- FXX - Special Connection

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

MP51							

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

Microlevel Ölçü ve Kontrol Cihazları A.Ş.
Acıbadem Mh. Sarayardı Cd. Şemibey Sk.No:23/A Kadıköy / İstanbul
Tel / Faks: +90 216 338 30 00
www.microlevel.com.tr / info@microlevel.com.tr