

GENERAL INFORMATION



Developed by ATEK Sensor engineers, this system utilizes capacitive measurement technology and operates based on the principle of accurately detecting changes in capacitance between the measurement probe and the tank wall or reference electrode.

The product inside the tank acts as a dielectric medium, and the change in capacitance resulting from variations in the product level is analyzed by the electronic evaluation unit. The measured data is converted into level information and provided to the user as a percentage (%) level indication or an electrical output signal for use in process control and automation systems.

WARNINGS

- The product must be installed by the customer in accordance with the connection diagrams, installation instructions, and other relevant information provided in this manual.
- Maintenance and repair must only be carried out by technicians authorized by the manufacturer.
- The distance between the sensor and the control unit should be kept as short as possible. Unless necessary, no extensions or splices other than the appropriate connector should be used.
- The system may perform uncontrolled movements during initial commissioning, particularly when it is part of a control system whose parameters have not yet been configured. Therefore, the sensor must not be used in applications where the safety of people or property depends on the operation of the device.
- To prevent damage to the sensor, the correct power supply polarity and voltage range must be observed. Power must not be applied before all connections have been completed.
- The sensor and controller must be connected using a shielded cable. The cable shield must be connected to ground.
- Very strong magnetic fields located in the immediate vicinity of the position marker may cause incorrect signals.
- The product must be transported, shipped, and stored in its original packaging, protected from dust, moisture, impact, falling, and water exposure, and at an ambient temperature of -40°C to +70°C.
- For cleaning by the user, alcohol, thinner, or similar chemical substances must not be used. The product should be wiped with a damp cloth.
- The product may be damaged or become unusable if it is used outside the specifications stated in this user manual. In such cases, the product will be excluded from the warranty.

TECHNICAL SPECIFICATIONS

Mechanical Data

Immersion Length(L)	Between 100 mm and 1400 mm	
Mechanical Connection	M16, G1/2", G1", G1-1/2"	
Cooling	4 Steps(Standard)	
Protection Rating	IP67	
Operating Temperature	Non-cooled Model	-40...+85 °C
	Cooled Model	-40...+150 °C
Storage Temperature	-40°C...+85°C	
Material	Housing: AISI 316L	
	Insulation: FEP	

Electrical Specifications

Measurement Principle	Capacitive	
Output Signal	4-20mA (3 Wire), 0-10 V _{DC} , 0.5-4.5 V _{DC} , 0-5 V _{DC}	
Supply Voltage	4-20mA (3 Wire), 0.5-4.5V _{DC} , 0-5V _{DC}	0...10 V _{DC}
	12...24 V _{DC}	18...24 V _{DC}
Number Of Channel	1	
Resolution	12 Bit	
Measurement Error	%±2 @25°C	
Measurement Range	10-1000 pF	
Operating Frequency	50-400 kHz	
Repeatability	± 0.5 %	
Response Time	1 s	
Overvoltage Protection	33 V _{DC}	
Reverse Polarity Protection	Yes	
Short Circuit Protection	Yes	

ELECTRICAL CONNECTION

S69M Connection					
		M12/5 Pin Male Connector on the Sensor		M12 / 5 Pin Female Connector Extension Cable	
Analog Voltage	Analog Current	Pin No	Cable (Sensor Side)	Pin No	Cable (Cable Side)
+V	+V	1	Red	1	Brown
N/C - Switch	Vout	2	Green	2	White
GND	GND	3	Black	3	Blue
Vout	N/C - Switch	4	Yellow	4	Black
Prog	Prog	5	Pink	5	Gray

Analog Output Adjustment

Under normal operating conditions, the green LED flashes once per second.

Entering Programming Mode

To enter programming mode, the Prog pin (Pin 5) is short-circuited to GND (Pin 3) until the LED on the device starts flashing blue, or a magnet is used to activate programming mode.

Step 1 – Scale Low Setting:

- A magnet is used to enter and adjust the Scale Low menu.
- Hold the magnet for 10 seconds (the Ext each pin is short-circuited to GND).
- The blue LED flashes rapidly → The device enters the Scale Low menu.
- Hold the magnet again for 10 seconds → The device returns to the factory settings, and the green LED remains steadily lit for 2 seconds.
- Hold and release the magnet → Scale Low is set, and the blue LED remains steadily lit for 2 seconds. (If no action is performed for 30 seconds, the device switches to the Scale High menu.)

Step 2 – Scale High Setting:

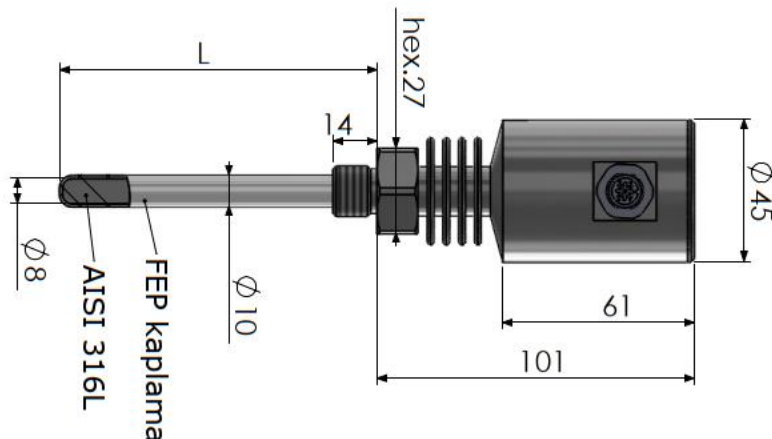
- The white LED flashes → The device is in the Scale High menu.
- Hold the magnet for 10 seconds → The device returns to the factory settings, and the green LED remains steadily lit for 2 seconds.
- Hold and release the magnet → Scale High is set, and the white LED remains steadily lit for 2 seconds. (If no action is performed for 30 seconds, the device switches to the Switch Out menu.)

Step 3 – Switch Out Setting:

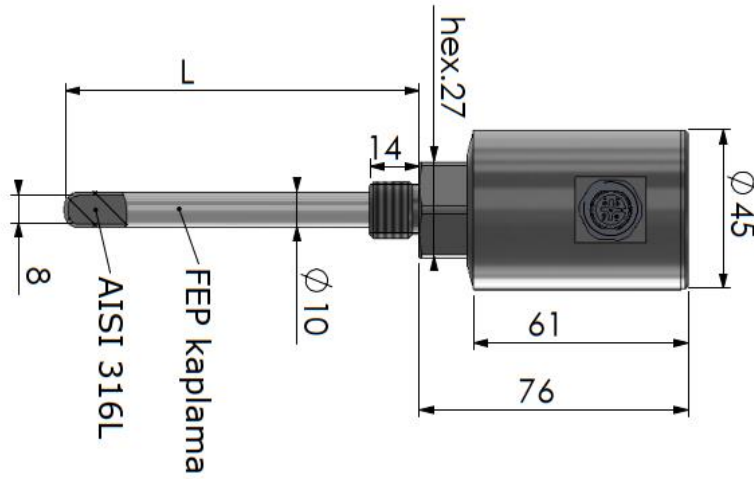
- The turquoise LED flashes → The device is in the Switch Out menu.
- Hold the magnet for 10 seconds → The device returns to the factory settings, and the green LED remains steadily lit for 2 seconds.
- Hold and release the magnet → Switch Out is set, and the turquoise LED remains steadily lit for 2 seconds. (If no action is performed for 30 seconds, the device exits the adjustment menu.)

MECHANICAL DIMENSIONS (mm)

Cooled Model



Non-Cooled Model



Immersion Length(L)

0100:	100 mm	0325:	325 mm	0575:	575 mm	0825:	825 mm
0125:	125 mm	0350:	350 mm	0600:	600 mm	0850:	850 mm
0150:	150 mm	0375:	375 mm	0625:	625 mm	0875:	875 mm
0175:	175 mm	0400:	400 mm	0650:	650 mm	0900:	900 mm
0200:	200 mm	0425:	425 mm	0675:	675 mm	0925:	925 mm
0225:	225 mm	0450:	450 mm	0700:	700 mm	0950:	950 mm
0250:	250 mm	0500:	500 mm	0725:	725 mm	0975:	975 mm
0275:	275 mm	0525:	525 mm	0750:	750 mm	1000:	1000 mm
0300:	300 mm	0550:	550 mm	0800:	800 mm	1400:	1400 mm

* Thread is included in the insertion length.

MOUNTING WARNINGS

Correct Mounting Method

- The product is installed away from the material inlet points. It is not affected by turbulence or fluctuations caused by material entry, ensuring stable measurement.
- The product is installed in a vertical position.

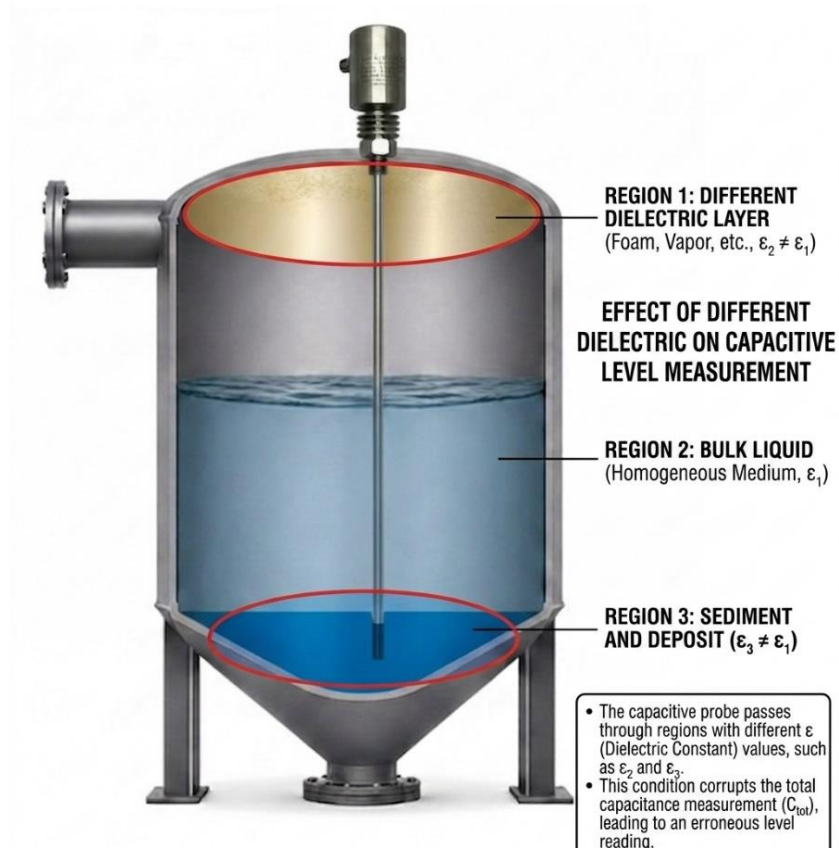


Incorrect Mounting Method

- The product is installed too close to the material inlet. Turbulence and fluctuations caused by material entry may result in measurement errors.
- The product is installed at an angle.



EFFECT OF DIFFERENT DIELECTRIC CONSTANTS ON CAPACITIVE LEVEL MEASUREMENT



- Care must be taken to prevent damage to the measurement probe. Accurate measurement cannot be ensured if the measurement probe is damaged.
- The connector/cable pins must be checked to ensure that they are clean and properly aligned.
- The connector/cable connection must be made as specified in the technical specifications.
- To prevent damage to the sensor, the specified power supply polarity and voltage must be observed.
- To prevent water from entering the device, the cable gland must be positioned downward during installation.
- If there are any elements in the application area that may damage the product, it is recommended to install a protective shield at the measurement point.

LED FUNCTION

Led Color	Description
Off	Sensor not operating / No power supply
Green	If the sensor is operating, the green LED flashes once per second.
Yellow	If the measurement is outside the measuring range, the yellow LED flashes every 500 ms.
Red	If the sensor detects an analog output error, the red LED flashes every 500 ms.



Disposal of Packaging: The packaging materials are made of recyclable materials. To ensure proper recycling, please dispose of them at authorized collection points.

Disposal of Old Devices: This device complies with the WEEE Regulation and is made of recyclable materials. Do not dispose of the device with household waste, as this may have adverse effects on the environment and human health. To ensure proper recycling, please deliver the device to authorized collection points. For further information, please contact the relevant authorized authorities.

Atek Alfa

Manufacturer and Authorized Service Provider: Company Name, Address, Telephone Number, and Other Contact Information

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