

The intelligent conductivity sensor CAA2690 is a full programmable electrical conductivity sensor made with graphite electrodes. The sensor delivers a passive isolated 4...20mA signal with a long wiring capability. It includes an integrated temperature sensor which allows to compensate the signal with the temperature water.

The electrodes are integrated into a Plexiglas head which allows a high capacities against corrosion and chemical products.

This sensor is particularly used for measuring water with a high mineralogy, into cooling towers, for salinity measurement or for water with similar conductivity.

### 1. General features of the intelligent conductivity sensor CAA2690



Programmable scale:	0...1mS to 100mS
Output signal:	4-20 mA isolated
Primary power supply:	12 to 36 VDC isolated
4...20mA Loop voltage:	7,5V + (R(Load) x 0,02A) Maximum: 36VDC
Isolation input/output:	10 <sup>9</sup> Ω minimum
Measured value:	Conductivity in mS/cm Salinity en mg/L TDS in ppm
Temp. Compensation type:	Internal programmable as 0.00 - 10.00 % / °C Correction curve (10 points)
Accuracy	+/- 1% of the full scale
Response time	<10s
Nature of the electrodes:	Special graphite
Material of the head:	PMMA (Plexiglas)
Material of the shaft:	Black PVC
Dimensions:	Length std 200 mm Diameter 25 mm
Weigh:	120gr
Pression max d'utilisation :	6 bars
Température d'utilisation :	0 à 50°C
Température de stockage :	-10 à 60°C
Humidité relative	90% maxi sans condensation
Altitude maxi :	<2000m

### 2. Electrical wiring

Turn the upper part of the sensor for one ¼ turn to the left and remove it. Unscrew the PG7 electrical gland and pass the four wires cable (see specification) (be careful: Reserve 5cm of unprotected bare cable for the internal wirings into the upper part of the sensor). Connect the two wires onto the power supply line (1: positive and 2: negative) and two other wires onto the isolated analog signal output (3: and 4: outputs). Replace the upper part on the sensor and turn to the right for fixing it. After locking the PG7 screw on the sensor, put it into the compatible measuring cell.



**Remark :** The output signal and his power supply have an isolation between the electrodes and the primary power supply.

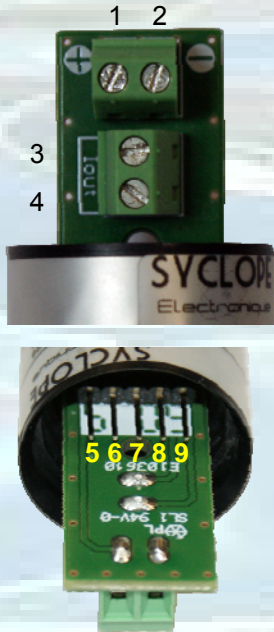
### 3. Assembly / installation



**Remark :** Neither the head, nor the electrodes must be touched or damaged.

Before the assembly of the sensor into the measuring cell, close all the valves upstream and downstream of the sensor. Put the system out of pressure.  
Before assembling in the measuring cell, it is necessary to pass the O-ring by under the graphite head, in lower part of the plain washer positioned in a throat of the shaft.  
Then, slip the nut of tightening over the shaft of the sensor and assemble it thus supplemented in the measuring cell.  
Block the retaining nut until the O-ring ensures the sealing. The correct depth for assembling the probe is determined by the ring of tightening.

#### 4. Identification of connections



Connection of the terminal blocks :

- 1 : Primary power supply +
- 2 : Primary power supply –
- 3 : Signal
- 4 : Signal

Connection of the programming tool :

- 5 : GND
- 6 : NC
- 7 : RXD
- 8 : TXD
- 9 : NC

The mode and the signals of the programming tool are 5V, TTL, RS252, MODBUS RTU. The sensor will have to be programmed with a SYCLOPE owner software using the adequate programming tool.



**Remark :** The programming of the probe can be carried out directly on the sensor already in place.



**Caution :** The update of the software must absolutely be done without primary power supply!  
The power supply is provided by the programming tool.  
Risk of destruction the probe!

#### 5. Maintenance

The graphite electrodes of the sensor should never be abraded.  
Conductivity sensor CAA2690 is “without maintenance”. However, it can be cleaned using an adapted cleaning procedure. In the event of abnormal wear, the sensor must be replaced and the problem must be identified.

#### 6. Setting the sensor in out of service

When not used and according to the installation requirements, it is advised to proceed to disassembling the sensor and setting in its original packaging.  
Generally, the sensor can remain “in dry condition”.

#### 7. Guarantee

The sensor is guaranteed during 1 year, since date of delivery. The guarantee is not ensured any more in the event of bad assembly, misuse or bad connection. The display unit must be in conformity with the use of the sensor.  
The guarantee will be assured only if returned in our laboratories for expertise.