Digital SENSOR

CTZN : INDUCTIVE CONDUCTIVITY

Inductive conductivity no sensitive to the fouling

- Sensor regulated in temperature
- Ranges 0 to 100 mS/cm
- Numerical communication **Modbus** RS-485 and SDI12
- Compact, **robust** and watertight

Paramètres mesurés :

- Conductivity compensated in temperature (mS/cm)
- Conductivity non-compensated in temperature (mS/cm)
- Salinity (g/Kg)
- Temperature (°C)

Applications :

- Urban wastewater treatment
- Industrial effluent treatment
- Surface water monitoring
- Sea water
- Fish farming

Inductive method :

A ring-type coil is excited at fixed intervals and the response is retrieved on a second coil, which is linked to the excited coil. The connectivity between the coils (determined by the degree of conductivity) takes place via the conducting solution. Economic and successful technology that requiring not enough maintenance and not consumable.
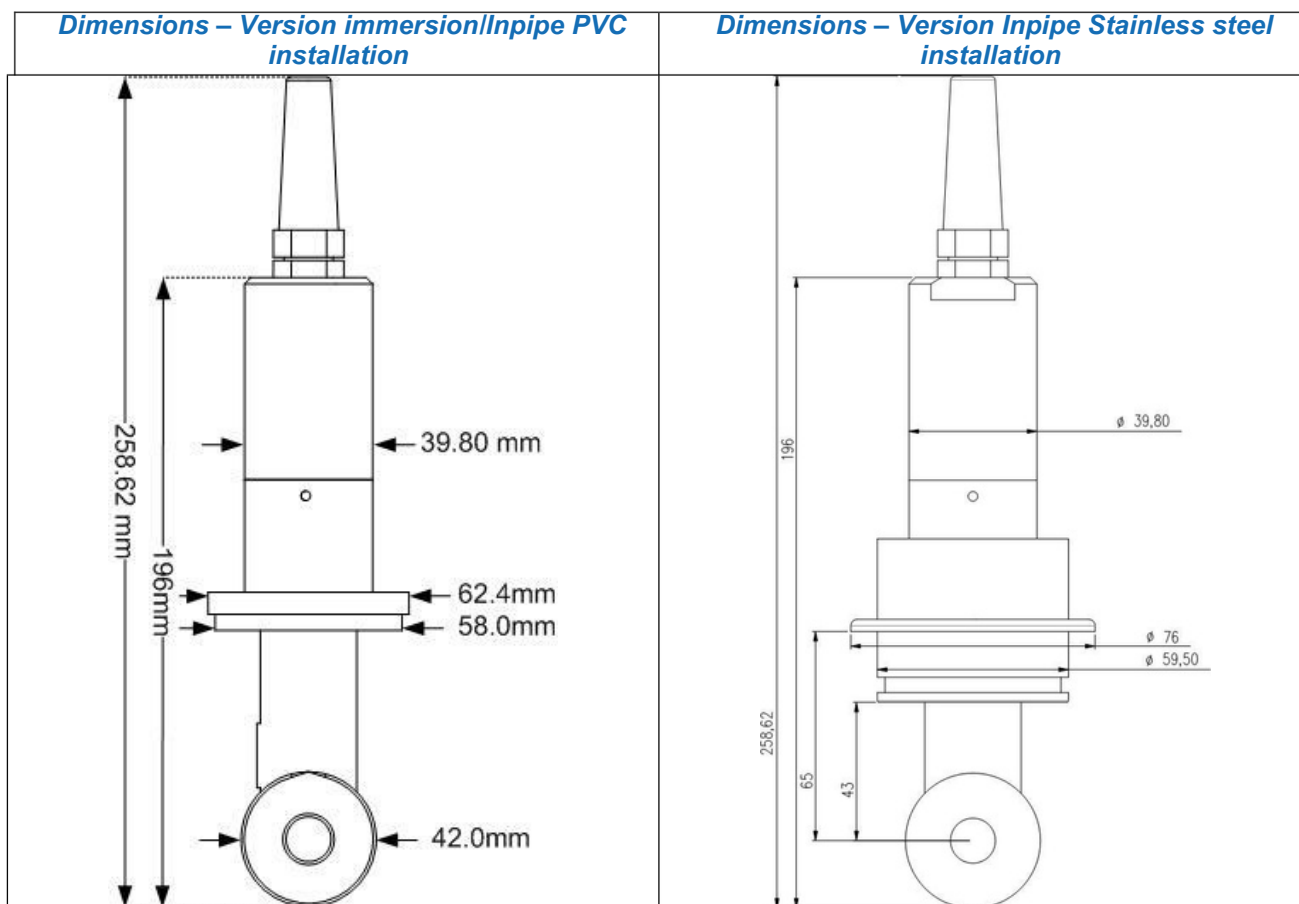
DigitalTechnology :

The "smart" Digital CTZN sensor stores calibration and history data within the sensor. This allows you a "plug and play" system without re-calibration.

Thanks to the Universal Modbus RS485 protocol, the PONSEL Digital CTZN can be connected to all devices commonly used (Datalogger, Controller, Automat, Remote System…).
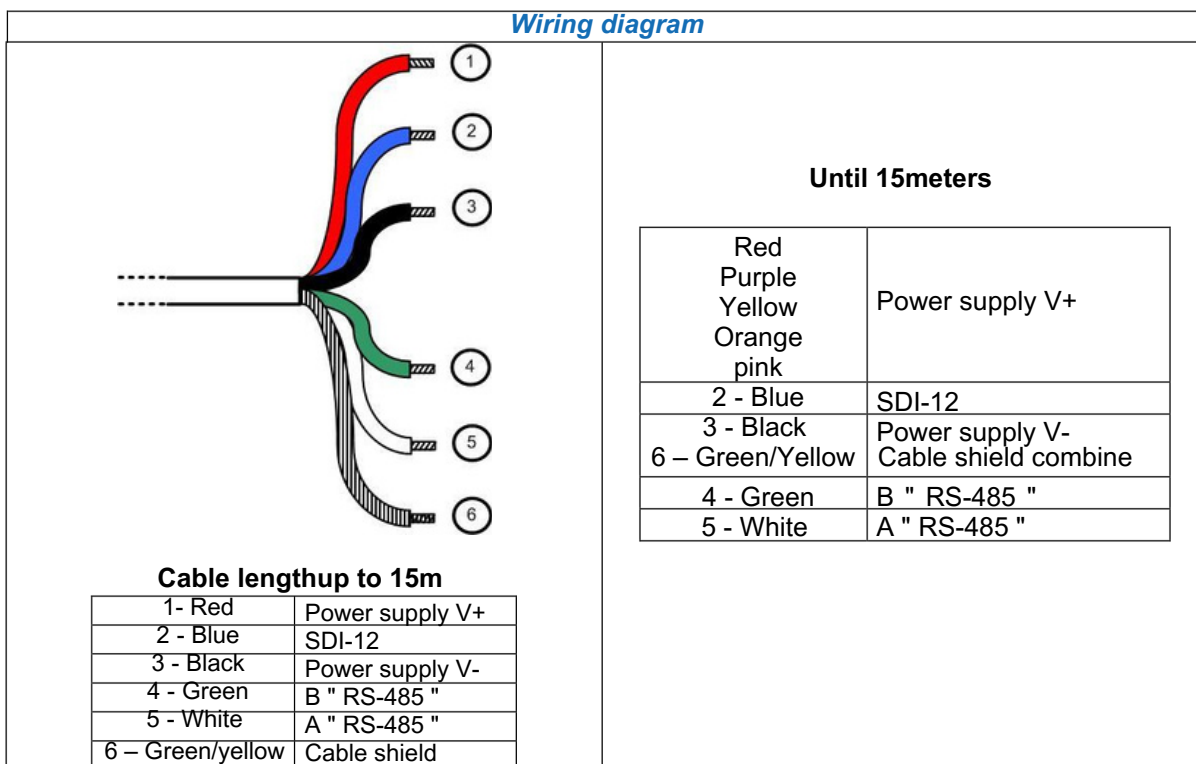
Datasheet: digital sensor CTZN
Applications: wastewater, seawater, natural water
Last Update: October 2024

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CTZN Specifications :

Measures	
Measure principle	Inductive conductivity sensor regulated in temperature
Measure ranges conductivity	0,0 –100,0 mS/cm 0-750 µS/cm non-optimal accuracy (not recommended application)
Resolution	0,1
Measure ranges salinity	5-60 g/Kg
Measure range Temperature	0 to 50 °C
Resolution Temperature	0.01°C
Accuracy Temperature	± 0,5 °C
Temperature compensation	With NTC or external measure
Accuracy T°C	± 0.5 °C range 0-40 °C
Response time	90% of the value in less than 30 seconds
Stocking temperature	-10°C à + 60°C
Signal interface	Modbus RS-485 en standard et SDI-12
Maximum refreshing time	Maximum < 1 seconde
Sensor power-supply	5to28 volts, max 30 V
Electric consumption	**Automatic Standby < 50 µA, Heating time 100 mS** **Average Modbus RS485/ Range 0-100 mS/cm**

	Vin 5V	Vin 12V	Vin 24 V
1 measure/s	31 mA	15,5 mA	11,5 mA

Max current pulse 700 mA during 2 mS, 350 mA during 150 mS

Sensor	
Dimensions	Diameter max. 62,4 mm, Lenght : 196 mm
Weight	700 g
Material	EPDM, PVC, Stainless steel
Maximum pressure	5 bars
Connexion	9 armoured connectors, polyurethane jacket, bare-wires or waterproof Fisher connector
Protection	IP68

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Dimensions – Version immersion\Inpipe PVC installation	Dimensions – Version Inpipe Stainless steel installation

Wiring diagram

Cable lengthup to 15m

1- Red	Power supply V+
2 - Blue	SDI-12
3 - Black	Power supply V-
4 - Green	B " RS-485 "
5 - White	A " RS-485 "
6 – Green/yellow	Cable shield

Until 15meters

Red Purple Yellow Orange pink	Power supply V+
2 - Blue	SDI-12
3 - Black 6 – Green/Yellow	Power supply V- Cable shield combine
4 - Green	B " RS-485 "
5 - White	A " RS-485 "

Note:

Never exceed a voltage of 10VDC (absolute maximum rating) on communication lines RS485, A or B, under penalty of irreversible destruction of the transceiver component RS 485.

SDI-12: respect the voltage value described in the associated standard (nominal: 5 VDC)

Always connect ground + shield first.