



NIEUWKOOP

METEN.NL

USER MANUAL



EC5500

EC-transmitter

“electrodeless” conductivity



TO MEASURE  TO KNOW



Available ranges:

- ST3254.1 : 0-10 mS
- ST3254.2 : 0-100 mS
- ST3254.3 : 0-1000mS

Temperature sensor: Pt100

Power: 11/30 Vdc

Version: 280153254 Rev.B

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1 CE MARKING

This sensor is manufactured according to the following European Community directives:

- 2011/65/EU "Restriction of the use of certain hazardous substances in electrical and electronic equipment"
- 2014/30/EU "Electromagnetic compatibility" EMC
- EN 61326-2-3/2013 "Electromagnetic compatibility" EMC
 - Controlled electromagnetic environment
- EN 55011/2009 "Radio-frequency disturbance characteristics"
 - Class A (devices for usage in all establishment other than domestic)
 - Group 1 (Industrial equipment that do not exceed 9kHz)

2 DESCRIPTION

This conductivity monitoring system consists of a loop powered transmitter and an electrodeless conductivity sensor in a single compact package.

Temperature compensation is accomplished with a RTD Pt100 built in to sensor.

The calibration of the transmitter is factory made.

Applications include water treatment, cooling tower water monitoring.

3 PRINCIPLE OF OPERATION

When the electrodeless conductivity sensor is immersed in the solution to be measured a conductive loop is created through the two toroidally wound coils.

An alternating current is applied to one of the coils which induces a current in the conductive loop. The second coil is used to measure the solution conductivity which is proportional to the induced current.

The advantages of the electrodeless method are more apparent in measurement applications in which electrodes contamination and polarization of a conventional conductivity system can lead to erroneous readings.

This electrodeless probe contains:

- two measuring toroidal coils.
- RTD Pt100 temperature sensor.
- 4/20 current loop amplifier.



4 SPECIFICATIONS

| | |
|--------------------------|-------------------------------|
| Range ST3254.1 | 0/10 mS |
| Range ST3254.2 | 0/100 mS |
| Range ST3254.3 | 0/1000 mS |
| Power supply | : 11/30 Vdc |
| Load | : 600 Ω max. at 24 Vdc |
| Installation | : in-line or immersion |
| Cell | : inductive type |
| Temperature compensation | : automatic by Pt100 |
| Temperature reference | : 25 °C |
| Temperature coefficient | : 2.2 %/°C |
| Length | : 207 mm |
| Thread | : 1.5" MNPT |
| Materials | : C-PVC |
| Operating Temperature | : 50 °C max. |
| Max. Pressure | : 10 bar 25 °C |
| Cable length | : 3 m (other on request) |

5 INSTALLATION

The conductivity cell must be mounted properly if the system is to operate accurately and efficiently. It must meet the following requirements:

- the sample in the cell must be representative of the whole solution;
- the solution must circulate continuously through the cell;
- the flow velocity in the cell must not be so high as to cause cavitations;
- the position and orientation of the cell must not trap air-bubbles near the electrode area;
- sediments must not accumulate within the electrode area;
- in the immersion installations the water must be continuously agitated;
- in the applications in-line the cell must be installed in 100 mm pipes minimum.

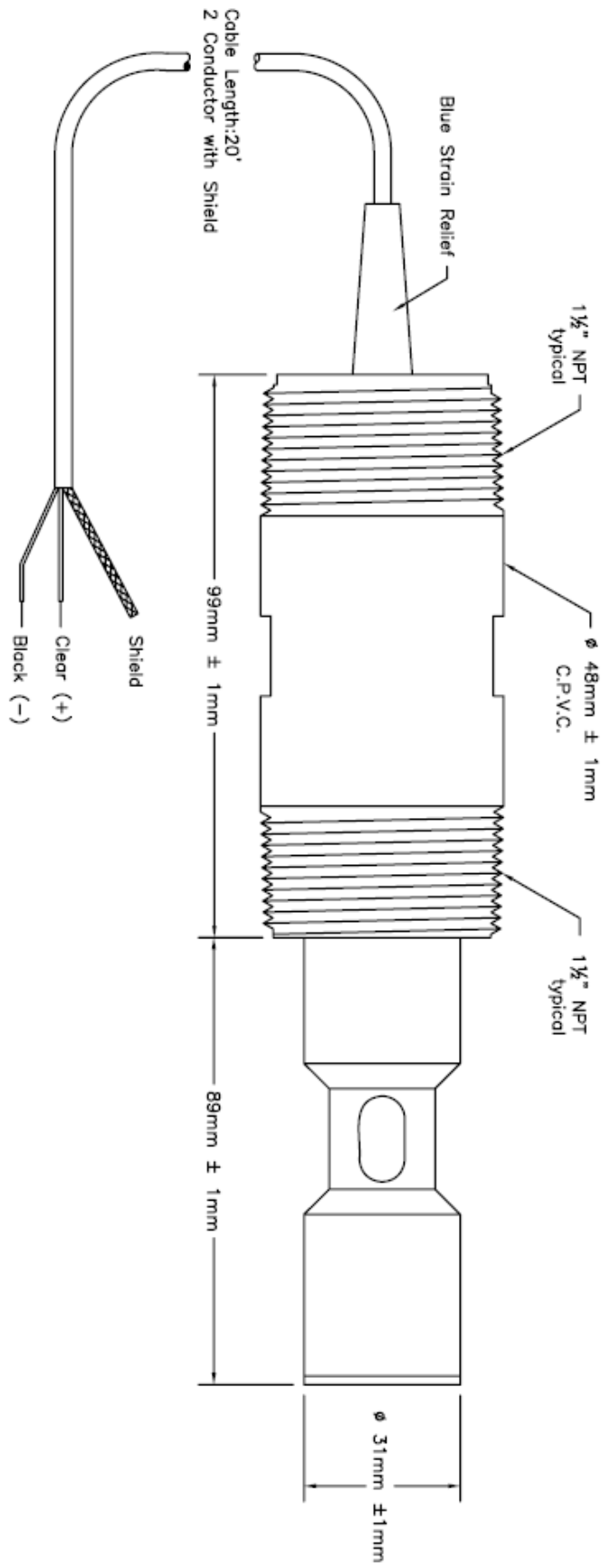
Keep the cable away from power wires on the overall length

6 ELECTRICAL INSTALLATION

Connect the cable as follows:

- Black wire power (-)
- White wire power (+)

Note: the internal circuit is protected against inversion of the power supply.





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