



Greenspec EC sensor  
 IND50 conductivity measurement  
 Art. nr. 4203.1  
 IND50S conductivity measurement  
 Art. nr. 4201.1  
**VERSION 0-10 mS**

Data sheet of Greenspec product with instruction on connection to the Greenspec AFP, AFP63 or AFP light

## Greenspec EC sensor

**IND50 Conductivity Measurement , art. nr. 4203.1 for tube mounting**

**IND50S Conductivity Measurement , art. nr. 4201.1: sensor only**

The Greenspec EC Sensor is a compact electrical conductivity transmitter with an inductive sensor and integrated temperature compensation. The good features are: The sensor is small, is not soiled as it is not in direct contact with the water, installation in a water tube is very easy.

The transmitter can be used in temperature ranges of up to 50 °C with an automatic compensation by an inbuilt PT100 sensor.

This sensor replaces the former product that is no longer available, it has a faster reaction time and fits in the present holders. The electronics are housed away from the sensor in a closed element in the cable. The IND50 is provided with a cable 4 meter long.

### Application

Measurement of electrical conductivity of water used in fertigation systems.

### Set up the system:

Electrical connection to AFP, programming details and calibration see rear side

### Installation on tube of the IND50:

The compact device IND50 can be installed very easily: all the elements are provided. You must order the correct type of support. A PVC adhesive support is available (art. Nr. 442105). A support with thread is also available. (art. Nr. 442106). (The standard pipe dimension is 2 ¼ "). Adaptation to larger pipe available. See below for the installation sequence.

### Warning!

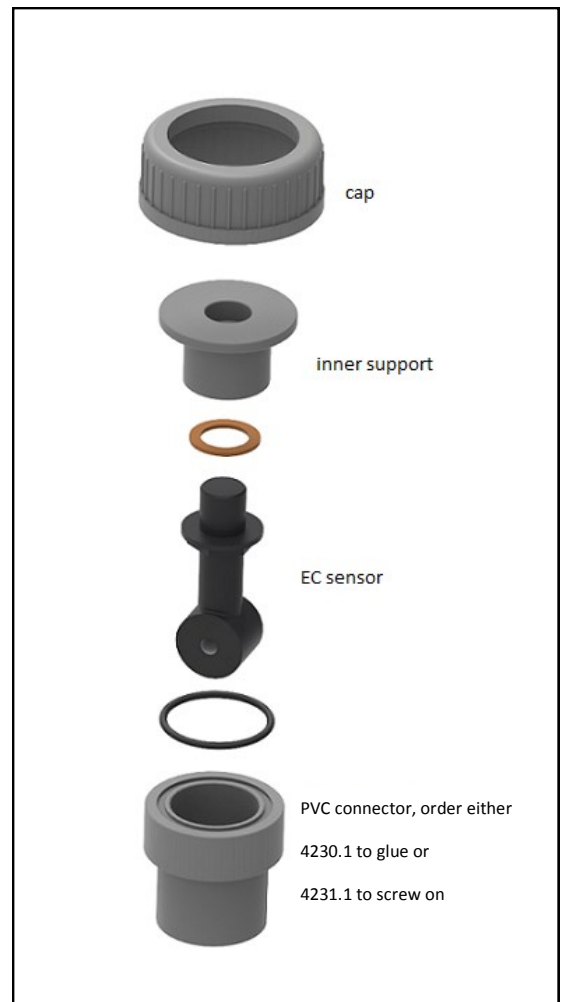
Make sure your installation is straight. We provide a sticker on the inner support ring to help you with orientation. Take care that after you fix the inner support ring the arrow points in the direction of the pipe.

Make sure the sensor opening is situated in the middle of the pipe. With the holder you will have a correct distance from the pipe wall.

Check for coatings on sensor in coating media at regular intervals. Coatings will not occur if the sensor is always in a flowing ferti water stream.

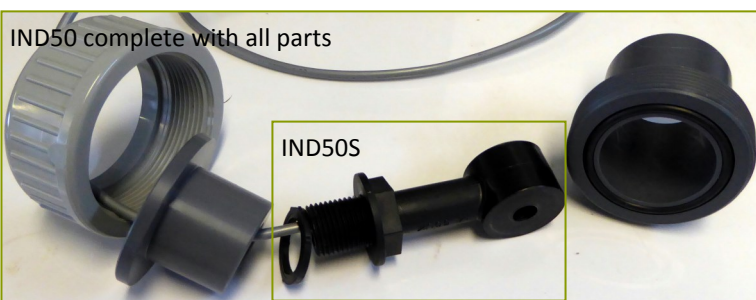
**Installation pressure free of the IND50S:** The sensor can be mounted alone on a plate for pressure free applications. A screw is provided. The cap and the inner support are not needed.

### IND50 Conductivity Measurement



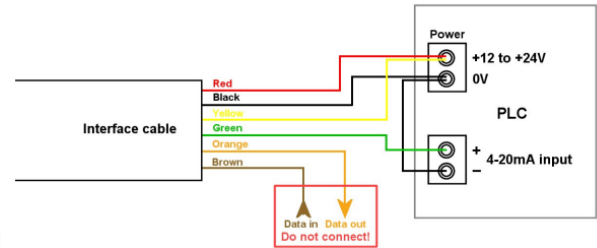
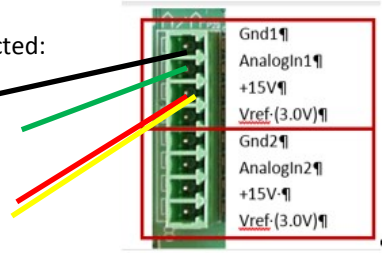
Mount the hardware of the **IND50**: Slip all elements over the cable as indicated here. See also the exploded view on the right sight, do not forget the two rubber rings. First fix the inner support with the sticker aligned to the toroid. Then glue or fix the outer support, push in the sensor and fix the top screw. Just before you finish this, keep the sticker with the arrow in the flow direction of the pipe.

For the **IND50S**: fix it with the screw and the o-ring on a plate with a hole of 30-34 mm.



### Electrical connection to AFP:

Of the 6 wires 4 must be connected: you need only 1 input.  
 Black to ground.  
 Green to the signal input on the AFP.  
 Red and yellow to the 15V.  
 Do not connect the orange and brown wire



Set the dipswitch to 4-20 mA.



### Software configuration in the AFP input menu and calibration

7	8
1:New	1:Ne
0:Ana	0:An
7	8
0:Default	0:De
0:Default	0:De
EC IND50	
-5.0	0.0
32.5	110.
4095	4095
0.0000	0.00
0.1000	-5.0
0:Direct	0:Di
00:00:00	00:0
0	0
0	0
00:00:00	00:0

#### Identify the sensor in AFP config:

Select type Analog, select the correct input number, give the name EC.

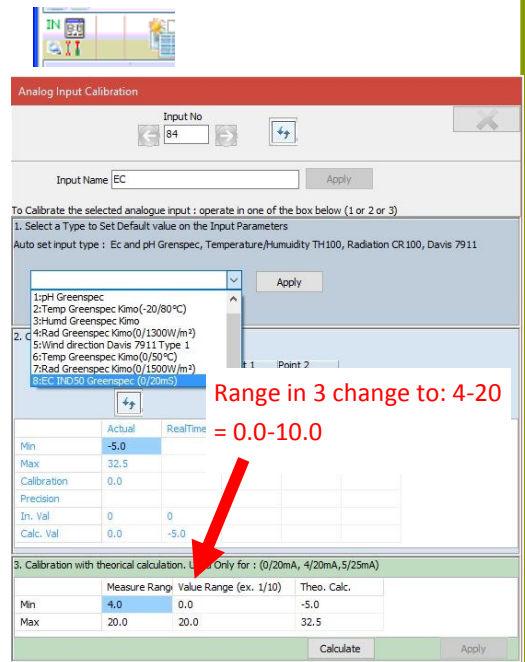
#### Adjusting the EC sensor: it is precalibrated at the factory

But it can be calibrated for accuracy.  
 First set it for the IND50:  
 In the AFP input menu select the column of the EC and then click on the Adjustment button on the left side of the bar.  
 The calib menu appears, select EC IND 50Greenspec.  
 The standard settings appear in box 3. You can now check this.  
 Put the sensor in the first vessel and read the measured EC value.  
 Put the sensor in the second value and read the measured EC value.  
 The values should be the same as the given values on the bottles.

**ALWAYS WAIT 10 MIN BEFORE READING THE FIRST VALUE WHEN CHANGING MEDIUM TO STABILISE THE TEMPERATURE**

#### Calibration with 2 solutions

If the values are not correct, calibrate in box 2: Write down the theoretical values of the solutions in the boxes at Point 1 and Point 2. Put the sensor in solution 1, wait until stable and click save. Repeat for solution 2. **Then click calculate**  
 Use commercial standard solutions, distilled water and a 10 mS solution.  
 Put the solutions in 2 vessels.



### Technical specifications

#### General data

Greenspec EC sensor IND50 and IND50S

#### Mechanical construction

Dimensions (L x B) version IND50: total unit 80 x 113 mm, weight approx. 0.4 kg,  
 Dimensions (L x B) version IND50S: sensor head 25 mm x 32 mm Ø, weight sensor 0.2 kg,

#### Materials

Sensor black PP, Cap, inner support and outer support grey PP

#### Input parameters

Measuring range 0-10 mS conductivity temperature 0 ... 50 °C  
 Repeatability 0,1 mS

#### Output parameters

Current range 4 ... 20 mA,  
 Measuring error 5% of current output range

#### Electrical connection data

Power supply 24 VDC  
 Power consumption 5 W

#### Process conditions

Operating temperature range 0 ... +50 °C  
 Operating pressure range 10 bar / 40 °C, 3 bar / 50 °C

#### Ambient conditions

Storage temperature -10 ... +70 °C Ingress protection IP 68  
 Electromagnetic compatibility acc. to EN 61326:1997 / A1:1998 Subject to modification.



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