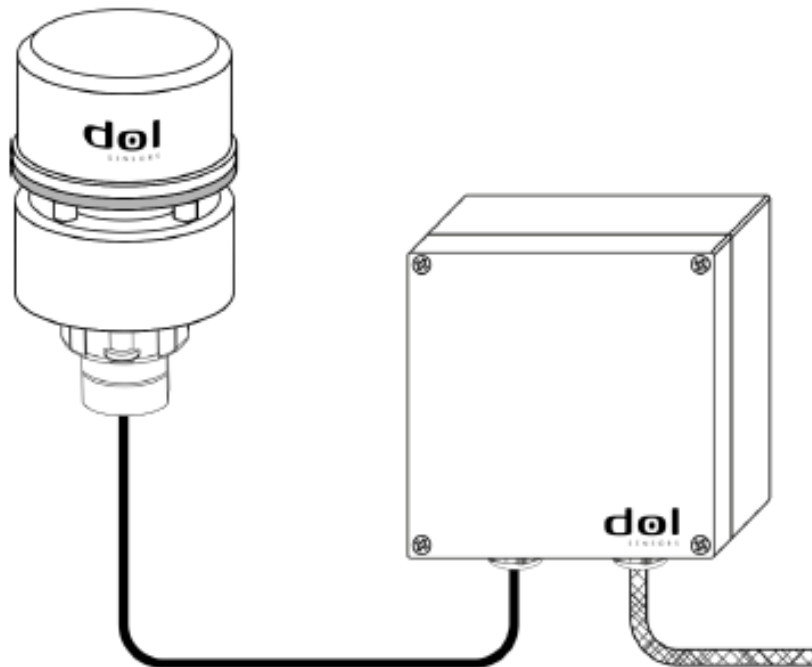


DOL 58

DOL 58 WEATHER SENSOR

EN
Technical User's Guide



DOL 58

ENGLISH

PRODUCT DESCRIPTION

DOL 58 measures wind direction, wind speed and air pressure/temperature (optional). Wind speed and direction are measured with the help of ultrasound. The weather station thus has no movable parts, which means it is extremely reliable and has an exceptionally long lifetime.

DOL 58 comprises:

- Weather sensor
- Connection box
- 5 m/16 feet cable for connection between weather sensor and connection box
- Mounting bracket for the weather sensor

DOL 58's connection box has three analogue outputs:

- Wind direction
- Wind speed
- Air pressure or temperature (supplied upon request)

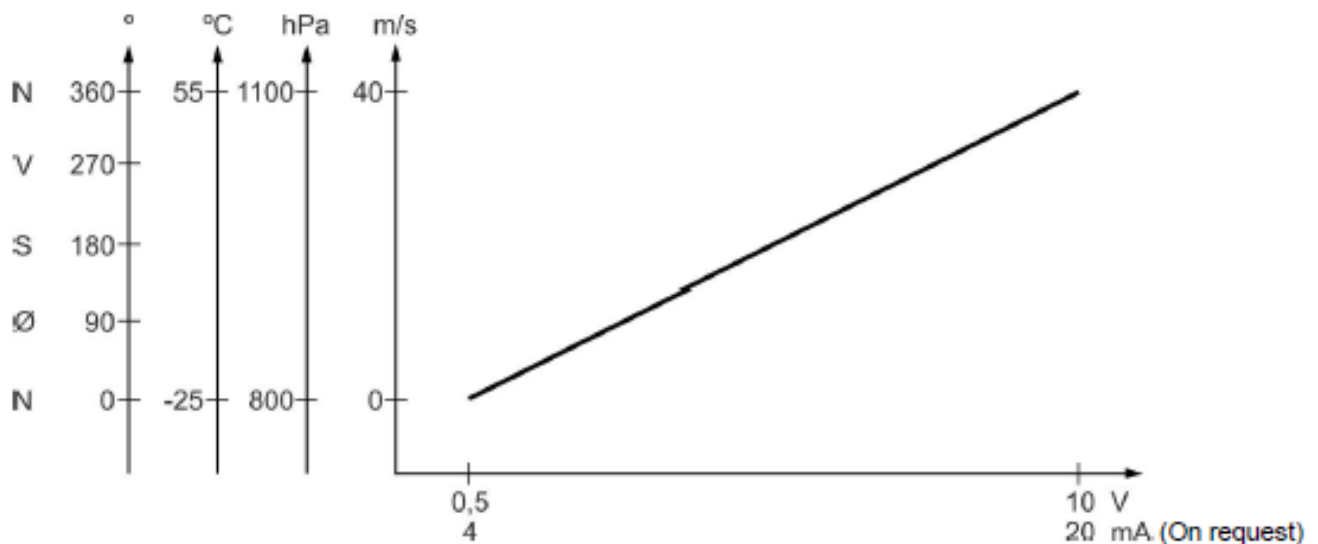


Figure 1: Connection between weather measurement and the analogue outputs

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PLACEMENT AND INSTALLATION

In order to achieve the best possible readings from the weather sensor it is important that the sensor has an "unrestricted view" on all sides. Be careful that rooftops, chimneys, trees, etc. do not block this "unrestricted view" to the weather sensor.

The weather sensor should be mounted on a mast with the accompanying bracket at a minimum of 1.50 m (5 feet) above the ridge of the roof, for example. See . If using the same mast for e.g. the WLAN antenna, then the weather sensor must be placed at the top of the mast and a minimum of 1 m (3.3 feet) above the WLAN antenna. See Figure 4.

It is important:

- that the mast is 100% vertical, as errors will otherwise occur in the readings.
- that the north indicator points northwards.

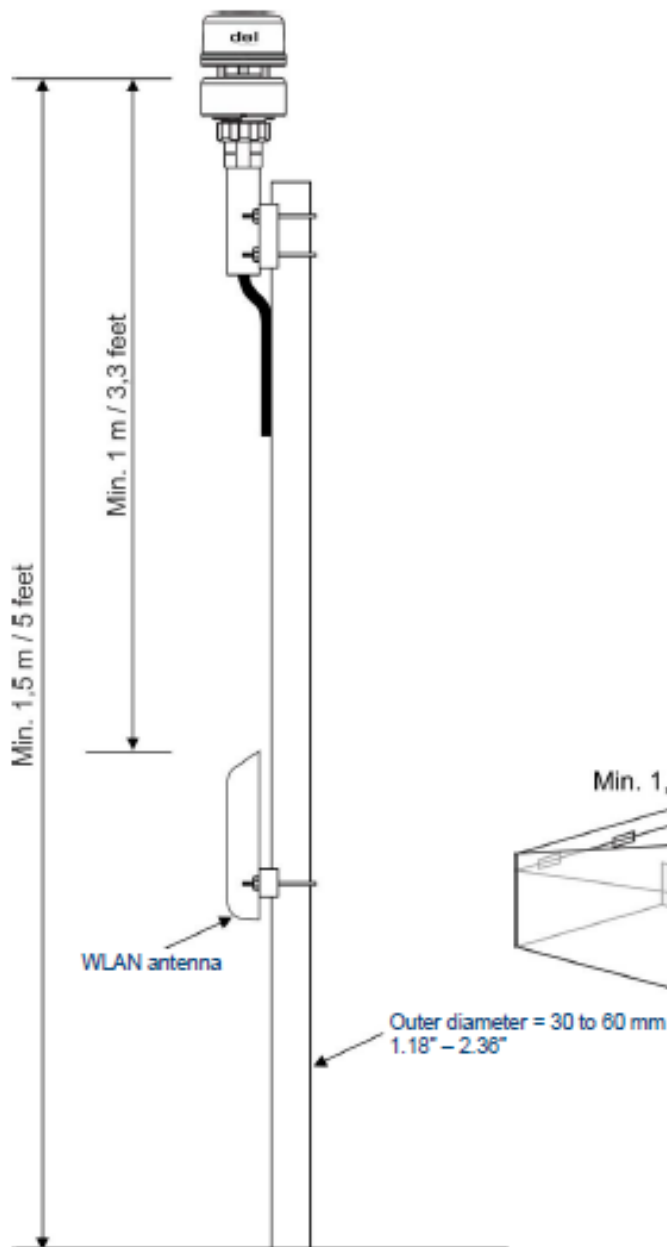


Figure 4: Placing in relation to e.g. the ridge of a roof and any WLAN antenna

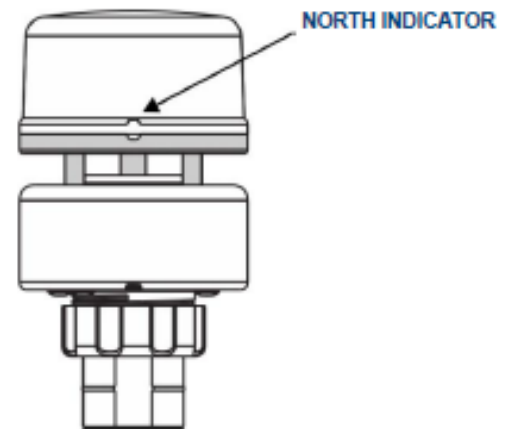


Figure 2: Weather sensor

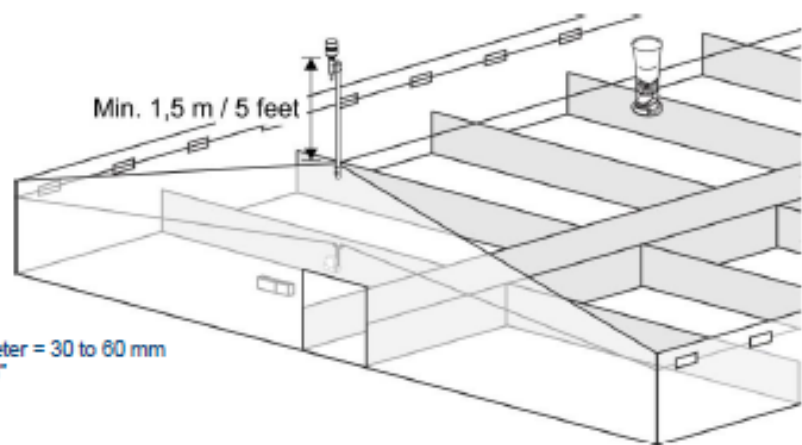


Figure 3: Placing on the house

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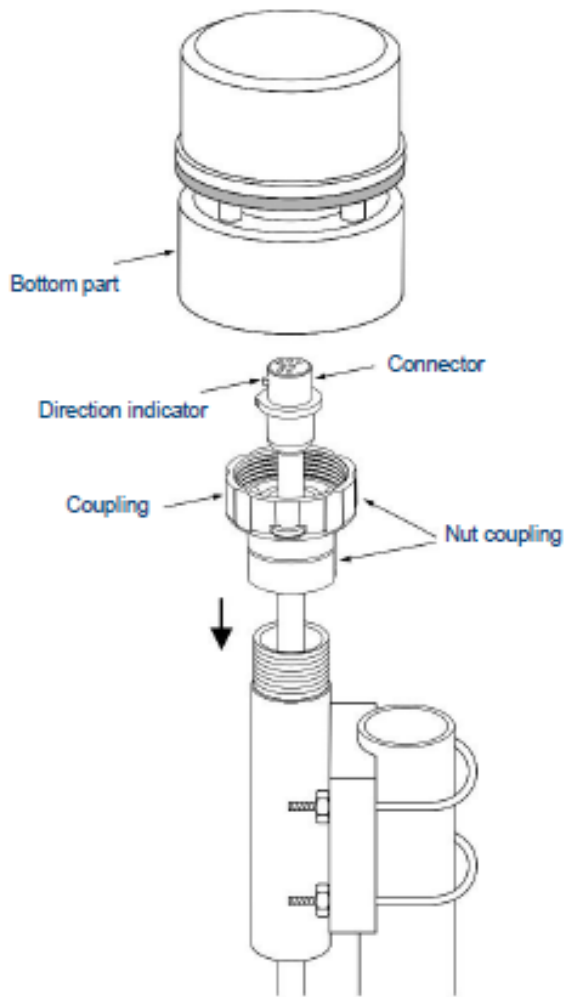


Figure 5

1. Secure the mast bracket to the mast.
2. Pull the cable between the weather sensor and the connection box through the mast bracket. The cable between the weather sensor and the mast bracket is not rodent-protected.
3. Tighten the nut coupling on the mast bracket (*tighten by hand only*).
4. Mount the plug on the weather sensor.
5. Tighten the coupling securely onto the weather sensor. Hold onto the bottom part of the weather sensor only (*tighten by hand only*).
6. The gasket must be adapted to the actual cable with the sealing ring provided.
7. Mount the connection box with the four screws supplied.

See also Figure 10 on page 22.

AVOID TIGHTENING OR ADJUSTING THE WEATHER SENSOR BY TURNING THE TOP PART OF THE SENSOR.

| Number | Wire colours | Plug connectors |
|--------|---------------|-----------------|
| 1 | Red (RD) | |
| 2 | Black (BK) | |
| 3 | White (WH) | |
| 4 | Not connected | |
| 5 | Not connected | |
| 6 | Not connected | |
| 7 | Yellow (YE) | |
| 8 | Orange (OG) | |
| 9 | Blue (BU) | |
| 10 | Not connected | |

Table 1

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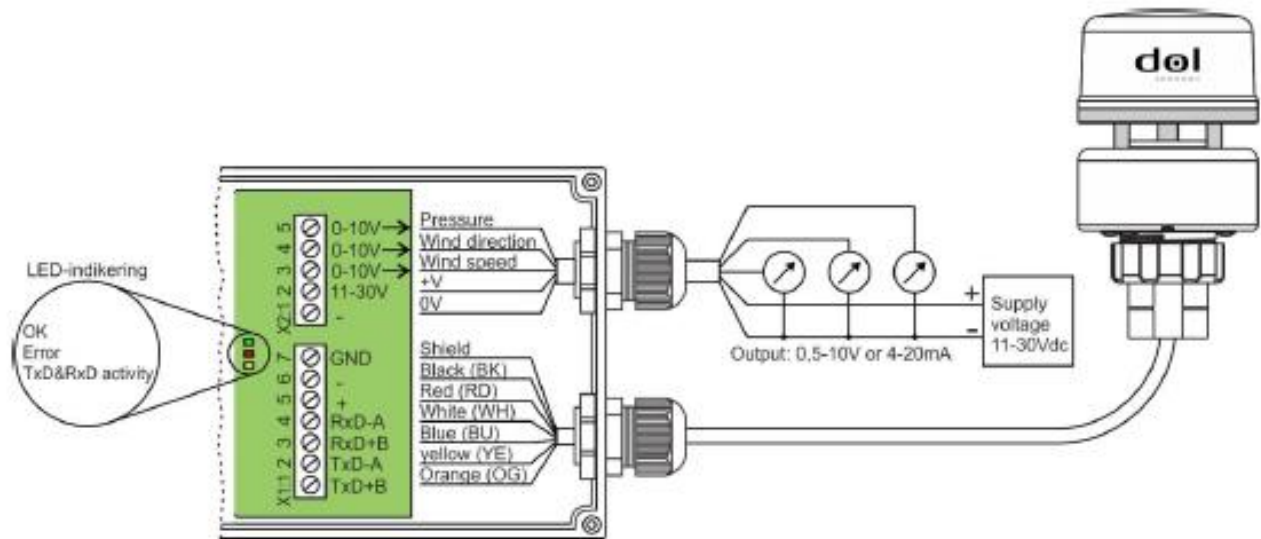


Figure 6: Connection

| LED indicator | LED designation | DOL 58 status |
|---------------|------------------|--|
| Green ON | OK | Operation OK |
| Red Flash | Error | Over/under voltage alarm. Overloading of outputs 1-3 |
| Red ON | | Connection error at outputs 1-3: Voltage output: Load <500Ω Current output: Load – see Fig. 7. |
| Yellow Flash | TxD&RxD activity | TxD/RxD activity |
| Yellow ON | | RxD/TxD error in the communication to the weather sensor |

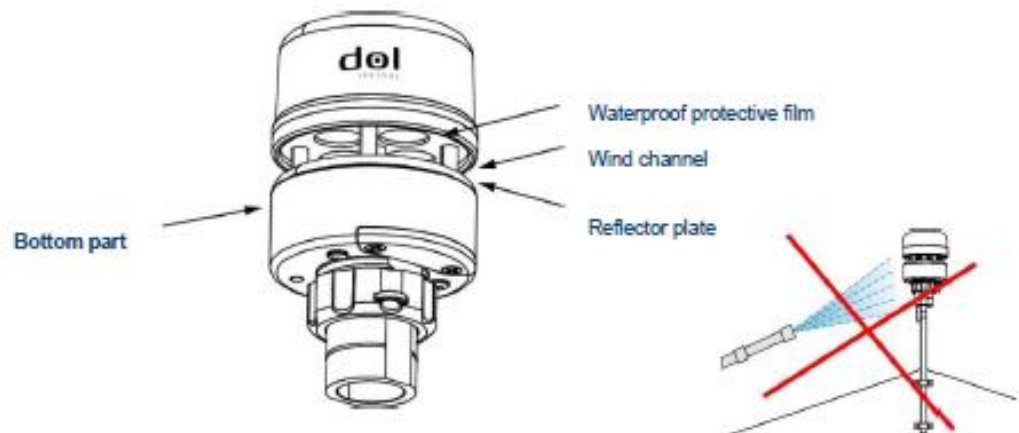
Table 2: LED status indicator

MAINTENANCE

DOL 58 has no movable parts and thus does not require regular maintenance.

IMPORTANT

Possible reduced function can be caused by spider webs, insects or dirt in the wind channel. The wind channel can be cleaned carefully with a damp cloth. During cleaning, it is important not to damage the reflector plate or the protective film in the wind channel, as these are important for optimal function of the weather sensor.



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TEKNISKE DATA / TECHNICAL DATA / TECHNISCHE DATEN / DATOS TÉCNICOS

| Input measuring range | | | Voltage output | | Current output | | |
|------------------------------|------------|--|----------------|--|----------------|------------------------------------|----|
| Wind speed @ 0 - 55°C | Range | 0 - 40 | m/s | 0,5 - 10 | VDC | 4 - 20 | mA |
| | Resolution | 0,05 | m/s | 11,88 | mVDC | 20,00 | µA |
| | Accuracy | 0 - 5m/s: 0,50 + 10% of reading | m/s | 0 - 5m/s: 11,88 + 10% of reading | mVDC | 0 - 5m/s: 200 + 10% of reading | µA |
| | | 5 - 40m/s: 1,00 or 5% of reading | m/s | 5 - 40m/s: 23,75 or 5% of reading | mVDC | 5 - 40m/s: 400 or 5% of reading | µA |
| Wind direction @ 0 - 55°C | Range | 0 - 360 | ° | 0,5 - 10 | VDC | 4 - 20 | mA |
| | Resolution | 0,1 | ° | 2,63 | mVDC | 4,44 | µA |
| | Accuracy | 2 - 5m/s: 5,00 | ° | 2 - 5m/s: 131,66 | mVDC | 2 - 5m/s: 222,22 | µA |
| | | >5m/s: 2,00 | ° | >5m/s: 52,67 | mVDC | >5m/s: 88,89 | µA |
| Barometric pressure | Range | 800 - 1100 | hPa | 0,5 - 10 | VDC | 4 - 20 | mA |
| | Resolution | 0,1 | hPa | 3,17 | mVDC | 5,33 | µA |
| | Accuracy | +/- 1,00 | hPa | +/- 31,67 | mVDC | +/- 53,33 | µA |
| Air temperature | Range | -25 - 55 | °C | 0,5 - 10 | VDC | 4 - 20 | mA |
| | Resolution | 0,1 | °C | 11,88 | mVDC | 20,00 | µA |
| | Accuracy | >2m/s: +/- 1,1 | °C | >2m/s: +/- 130,63 | mVDC | >2m/s: +/- 220,00 | µA |
| Load | | | | 500Ω - 10MΩ Recommended load ≥ 100 kΩ | | See Figure 7 | |
| Output impedance | | | | <1Ω | | n/a | |
| Output current | | | | <20mA per output (current limited) | | n/a | |
| Max. Cable lenght | | | | 100m @ 0,75 mm2, AWG18 200m @ 1,50 mm2, AWG15 | | n/a | |
| Common | | | | | | | |
| Supply | Voltage | 11 - 30VDC | | | | | |
| | Current | @ 12 V DC Typ. 70mA, max. 130 mA @ 24 V DC Typ. 50mA, max. 110 mA | | | | | |
| Operating temperature | | -25 - 55°C | | | | | |
| Shipment weight, kg | | 1,9 | | | | | |
| Measure, shipment, mm | | 380x185x165 | | | | | |
| Protection class | | Interface box IP65, weather station IPX8 (Relative humidity/IPX4) | | | | | |
| Approval | | CE | | | | | |
| Mounting | | Mast outer diameter Ø 30 to 60 mm (1.18" to 2.36") | | | | | |

* When the wind speed is less than 2 m/s and/or the temperature is below 0 °C, the readings will be less accurate.

For additional information: www.dol-sensors.com

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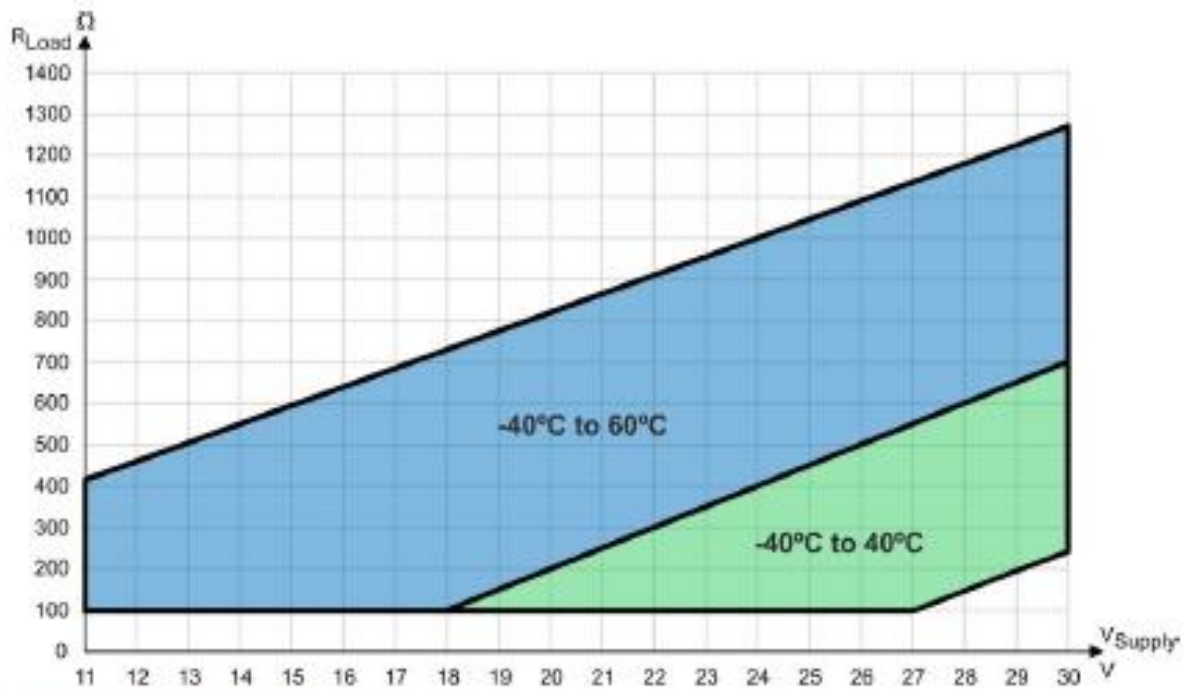


Fig. 7: Load resistance and Supply voltage

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DIMENSIONER / DIMENSIONS / DIMENSIONEN / DIMENSIONES MM (INCH)

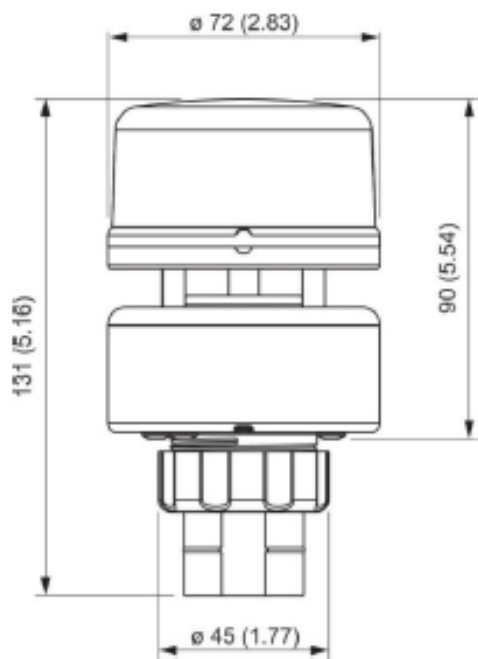


Fig. 8: Sensor dimensions

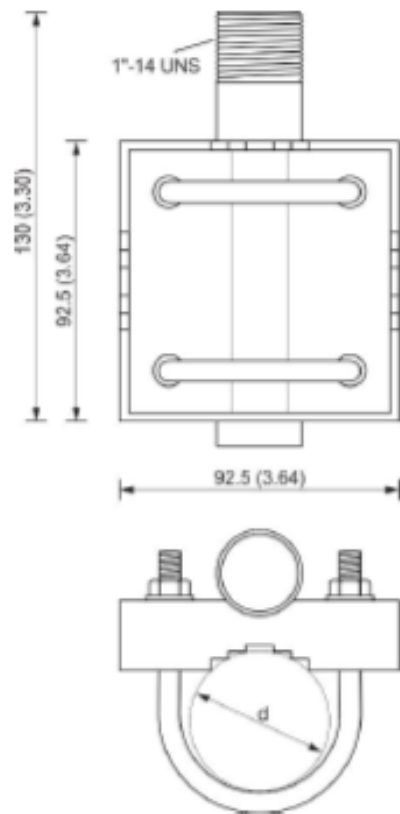


Fig. 9 Bracket dimensions

$d = 30$ to 60 mm (1,18" – 2,36")

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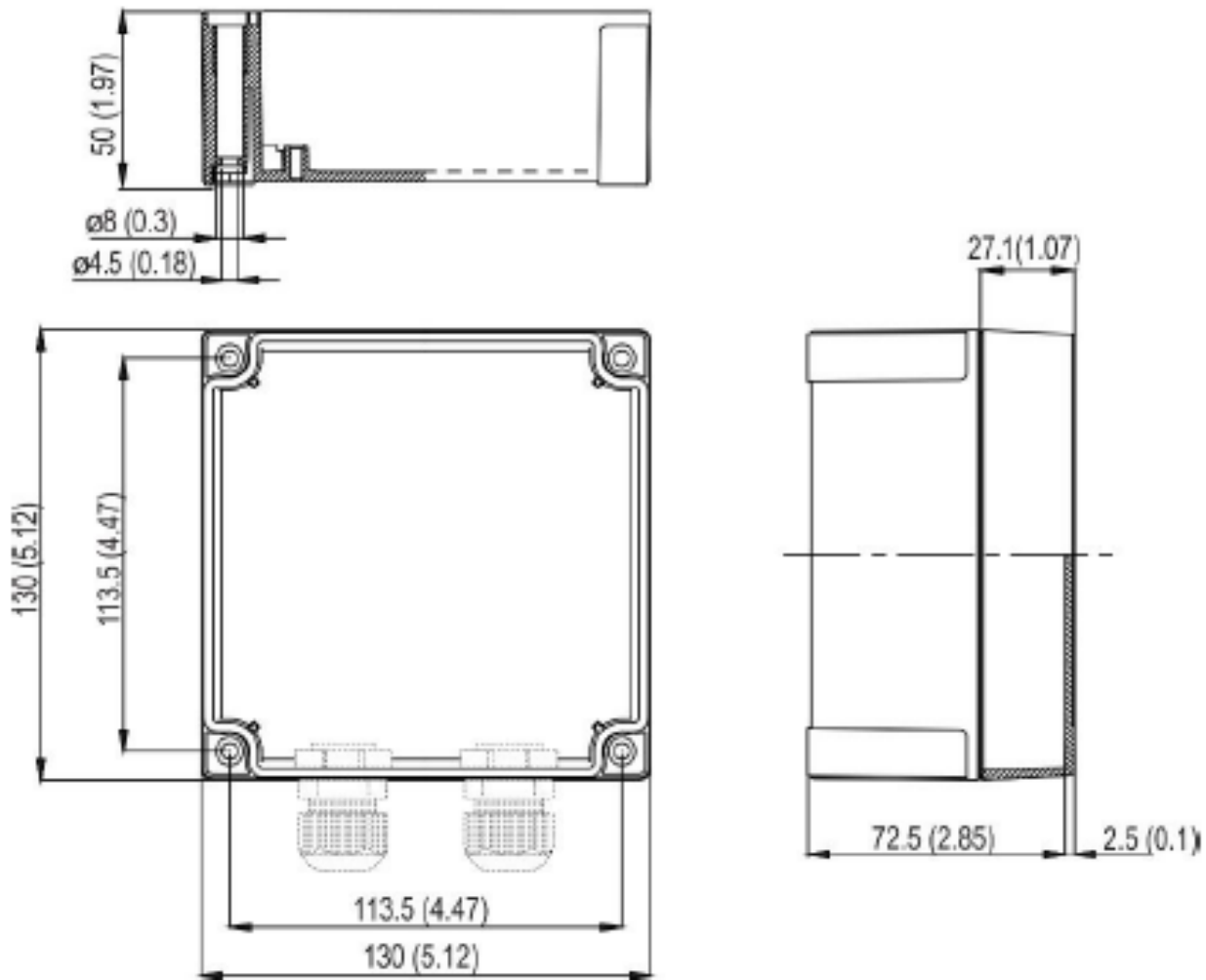


Fig. 10: Dimensions interface box