General considerations:

- For sensor probe manipulation always use the Sensor tip protective sleeve (SR-CUS-PS) to avoid unexpected damage to the probe. See an example reference in Figure 1.

Figure 1. Example of the sensor tip protective sleeve

- Use each sensor probe with its corresponding sensor electronics, the matching probe and electronics Serial Numbers are defined in the sales order and can be checked on the units. Do not mix up the sensor electronics and the probes. See how to identify the Serial Number here.
- Make sure that each sensor probe is properly connected to the Sensor electronics and has a constant 24 VDC. See more information here: https://support.rheonics.com/en/support/solutions/articles/81000393097-sensor-electronics-sme-wiring-drawing
- If there's a problem with the sealing do not immerse the probe in the pond since it can lead to irreparable damage to the sensor. Have sealing spare parts for change when needed, a **seal** that has been removed from the assembly can not be reused. See the required seals for the installation in Figure 2 below.

Figure 2. Required Seals for the installation

- The external pipe should have "end stops" at the desired insertion point to prevent more insertion than required, as shown in Figure 4.

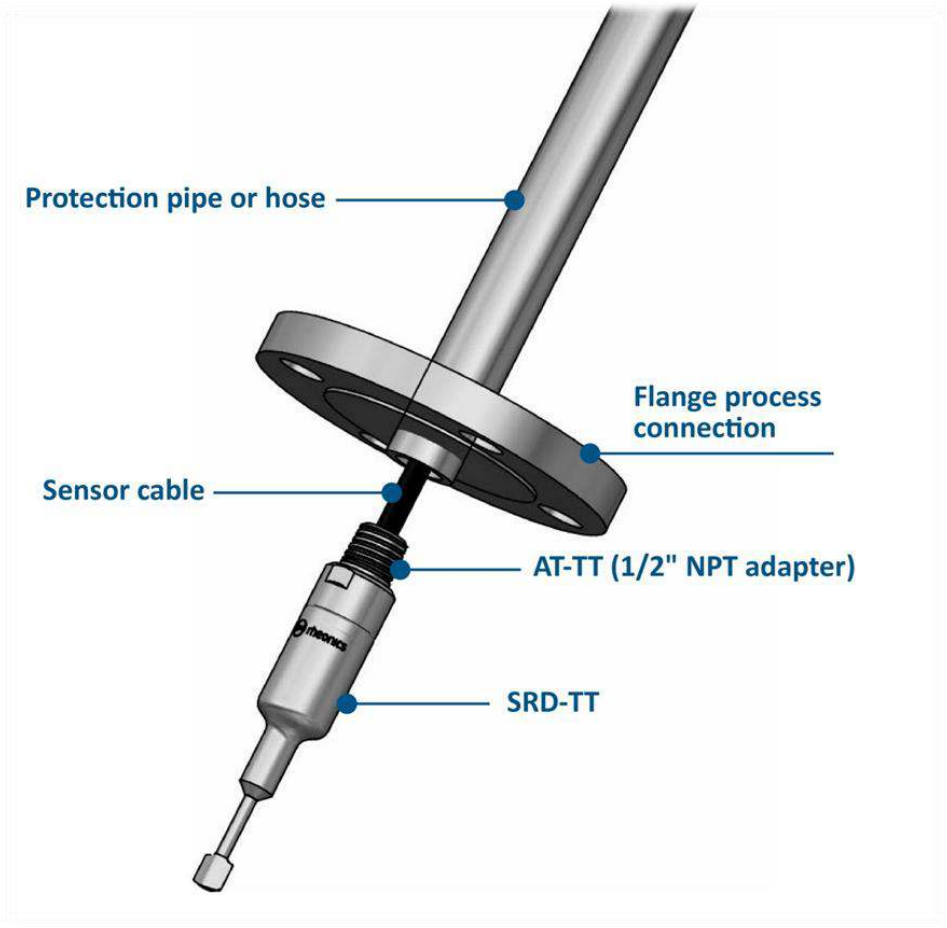

Figure 3. Probe parts

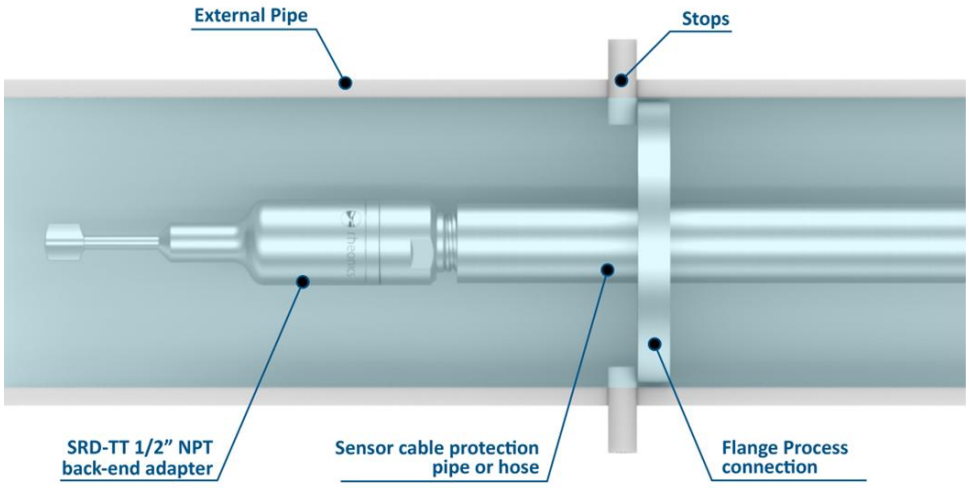

Figure 4. Installation parts detailed

Mounting (Assembly) procedure:

See parts reference in Figures 2, 3 and 4.

1. Pass the sensor cable through the **AT-TT** adapter and connect it to the sensor probe back end, if not already done.
2. Ensure that the sensor **M12 cable connector** is properly fixed to the probe and that the **O-Ring elastomer** (Ø27X1.5 mm) is correctly placed in the probe groove.
3. Thread firmly the **AT-TT** to the G3/4" back end thread of the probe, hand tight is enough to ensure that the piece is properly fixed.
4. Add Teflon tape to the **NPT 1/2" thread** of the AT-TT adapter and thread the **hose or pipe protection**, use a wrench to ensure the joint.
5. The **external pipe** should be clean, without dirt or deposits that can transfer to the sensor probe sensing element when inserted. Otherwise, this can lead to inaccurate measurements (higher/unstable values).
6. Check if the sensor cable is correctly connected to the **Sensor electronics** and to the probe.
7. Before immersing, remove the **Sensor tip protective sleeve (SR-CUS-PS)** and test it in air, the density and viscosity **measurements should be zero**. Also, this test checks if the probe is correctly connected to its sensor cable and electronics. after the test, the sensor should be **turned off**.
8. Gently slide the SRD probe through the immersion tube, until it touches the end stops.
9. **Turn on** the sensor by connecting the power source, the sensor will start to get measurements. Wait until the temperature and density measurements are stable before considering it as a representative value.

Removing procedure:

See parts reference in Figures 2, 3 and 4.

1. **Turn off** the **sensor** by disconnecting the power source and gently **pull off the sensor** from the external pipe.
2. If the **sensor tip** is dirty or has some deposits **clean it with a wipe or a bit of water.**
3. Once the sensor probe is off from the external pipe and clean, put the **Sensor tip protective sleeve (SR-CUS-PS)** on to avoid unexpected damage.

Maintenance:

1. Check if the **sensor cable** is correctly connected to the **Sensor electronics**. If you will move the sensor electronics too handle it carefully and avoid damage the sensor connectors and pins.

2. Unthread the **AT-TT** adapter from the probe to check the **O-ring elastomer** (Ø27X1.5 mm) status. If it is damaged, change it for a new one. **The O-ring inspection is only visual**, you do not need to remove the O-ring from the groove since once it is removed has to be replaced with a new one.

3. Do the same as **step 5** for the protection hose or pipe **NPT joint** (always use Teflon tape for NPT threads).

4. Check the status of the **M12 connector**, it should be completely dry and without signs of damage. If it has some damage, contact the **Rheonics support team** for further assistance.