



## **Installation, operation, and maintenance instructions for the PUROPAL-METER conductivity and flow meter**

### **Function:**

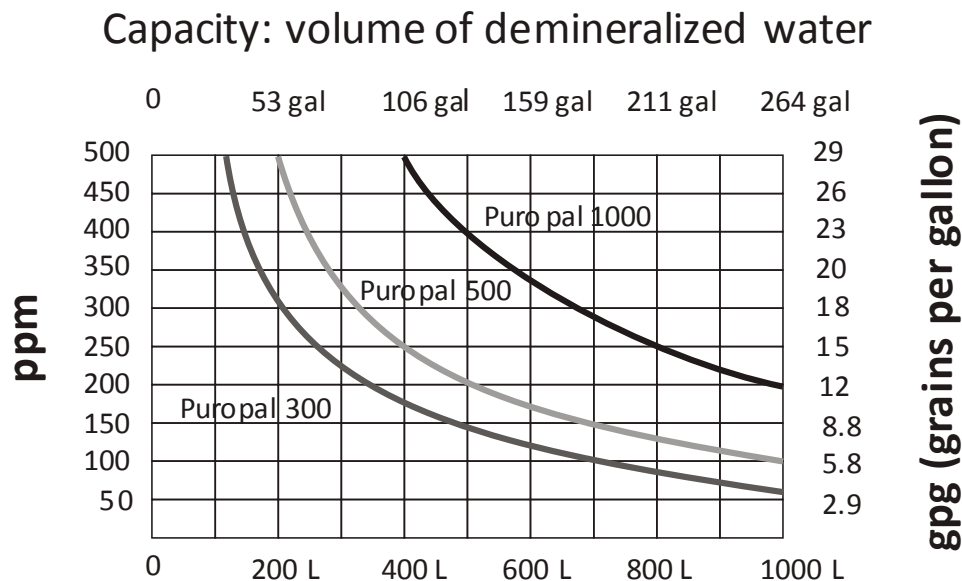
The Puropal cartridge filters lime and aggressive dissolved substances such as sulfates, nitrates and chlorides out of the fill-up water. The device operates on the basis of a mixed bed ion exchanger and provides completely demineralized water. This method does not release any chemical additives into the water. The device operates without an external power supply.

### **Installation:**

The closed loop system is filled using local domestic water which has been run through the Puropal cartridge. In doing so the water is demineralized, meeting fill water specifications of glycol and boiler manufacturers. It is also possible to demineralize an existing “water only” system by circulating the system water through a Puropal demineralizing cartridge.

### **Capacity:**

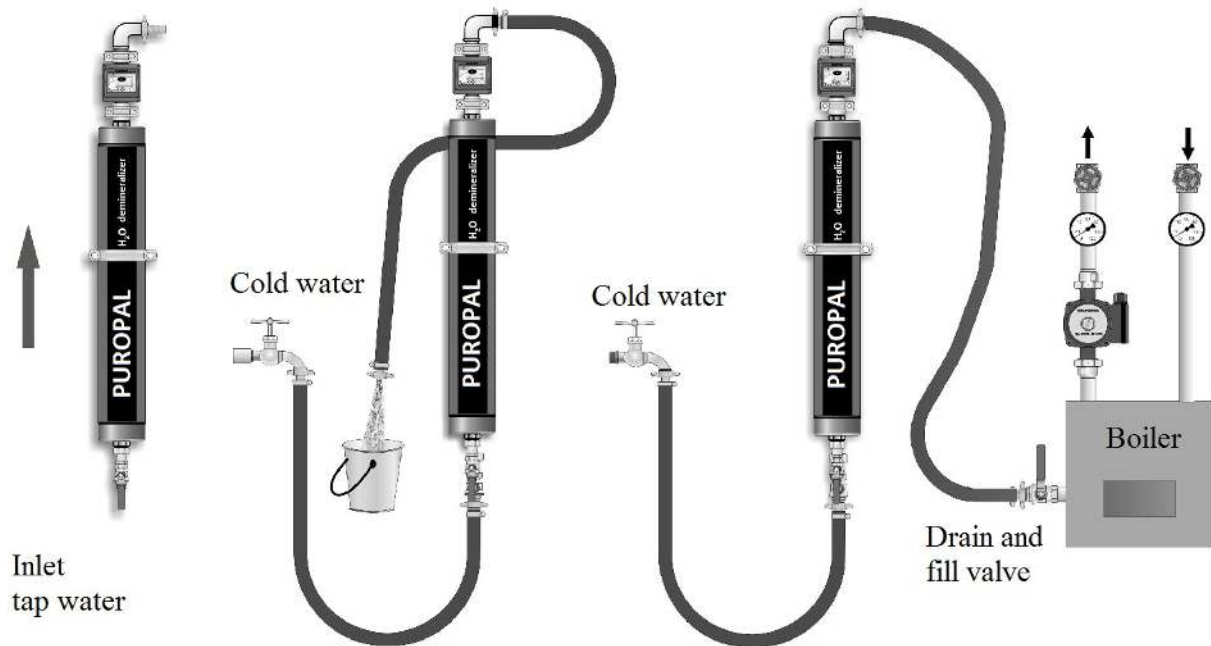
The graph below shows that the capacity of the demineralizing cartridge depends on the total hardness of the domestic water. For example: With a hardness of 11.7 gpg (200 ppm), the Puropal 300 provides 92 gal (350 L) of completely demineralized water, Puropal 500 provides 132 gal (500 L) and Puropal 1000 provides 264 gal (1000 L).



1. Appliance positioning

2. Flushing the cartridge

3. Filling the heating system



### Safety instructions

Flush the cartridge with approx. 2.6 gal (10 L) of water before each use. Flush for longer in the case of algae growth. The cartridge must not be allowed to dry out.

The cartridge must only be subject to pressure during the short period of use.

The ion exchange resin in the cartridge must not enter the heating system. As a precaution, a fine filter is fitted which must not be removed.

After use, always close the freshwater tap, the shut-off valve on the Puropal and the boiler fill valve.

As a point of safety, always remove the hoses after filling.

The entire cartridge is made from PE and can be disposed of as household waste.

### Operating the combined meter

The combined meter is battery-operated. It measures the flow rate in L/min, the total volume in litres and the concentration of dissolved minerals in either micro siemens or TDS. In addition, a limit can be set for the maximum concentration of minerals tolerated in the demineralized water (appliance outlet). The limit and overall total can both be reset.

The meter has a max. pressure of 87 psi (600 kPa) at 194 °F (90 °C).

### Getting started:

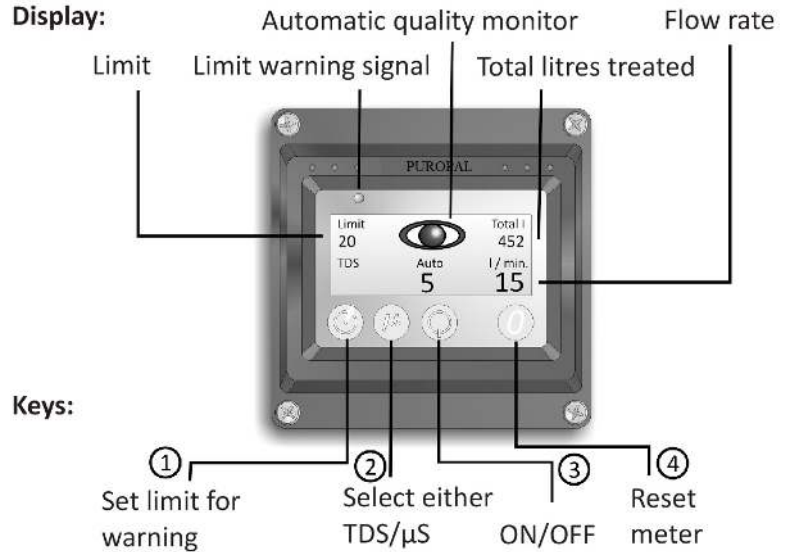
Set the limit to 30  $\mu\text{S}/\text{cm}$ .

Before and while filling the heating system, press the ON key for individual measurements every 1.3-2.6 gal (5-10 litres) (3).

Only enable auto mode with water volumes > 13 gal (50 L).

A red LED warns if the cartridge is spent (limit reached).

Insert a new cartridge and reset the total litres (4).



1. Every time this key is pressed, the limit is increased by 10 TDS or 15  $\mu\text{S}/\text{cm}$ . Pressing the key for 3 seconds resets the limit to zero. Programming the limit ensures that a warning is issued when the ion exchange resin is spent.
2. Select either TDS/ $\mu\text{S}$ . The water hardness at the outlet of the refill appliance can be calculated using the following rule of thumb: **1 gpg equals approx. 33.6  $\mu\text{S}/\text{cm}$ ; 1 gpg equals approx. 17 ppm (TDS)**
3. If the ON key is pressed once, the water quality is measured for 10 seconds and compared to the set limit. The measured value is shown. If it is above the limit, the LED glows red; if it is below, the LED glows green while the measurement is being taken. If required, the measurement can be repeated manually.

**Auto mode:** If the ON key is pressed for a second time, the combined meter begins automatic monitoring. The eye symbol appears to indicate that monitoring has been enabled. In auto mode, the meter only takes measurements when water is actually passing over it. If the water draw-off is interrupted, the meter continues to show the last captured value. While water is being drawn off, the combined meter measures the water quality every 40 litres. If the limit is exceeded in two successive measurements, the display continuously flashes red. This indicates that the ion exchange resin is spent and needs replacing. If the ON key is pressed for a third time, the meter exits auto mode.

4. Pressing the reset key for 3 seconds resets the overall total on the meter. This is recommended every time the resin is replaced, as it gives a reference point for the remaining capacity of the ion exchange resin.

### Changing the batteries

Change the batteries when the battery warning symbol appears or the display is faint or blank. Undo the 4 screws on the front and carefully open the device. Change the batteries. 3 x AAA.

