

PROFILL ARRAY DATASHEET / MANUAL



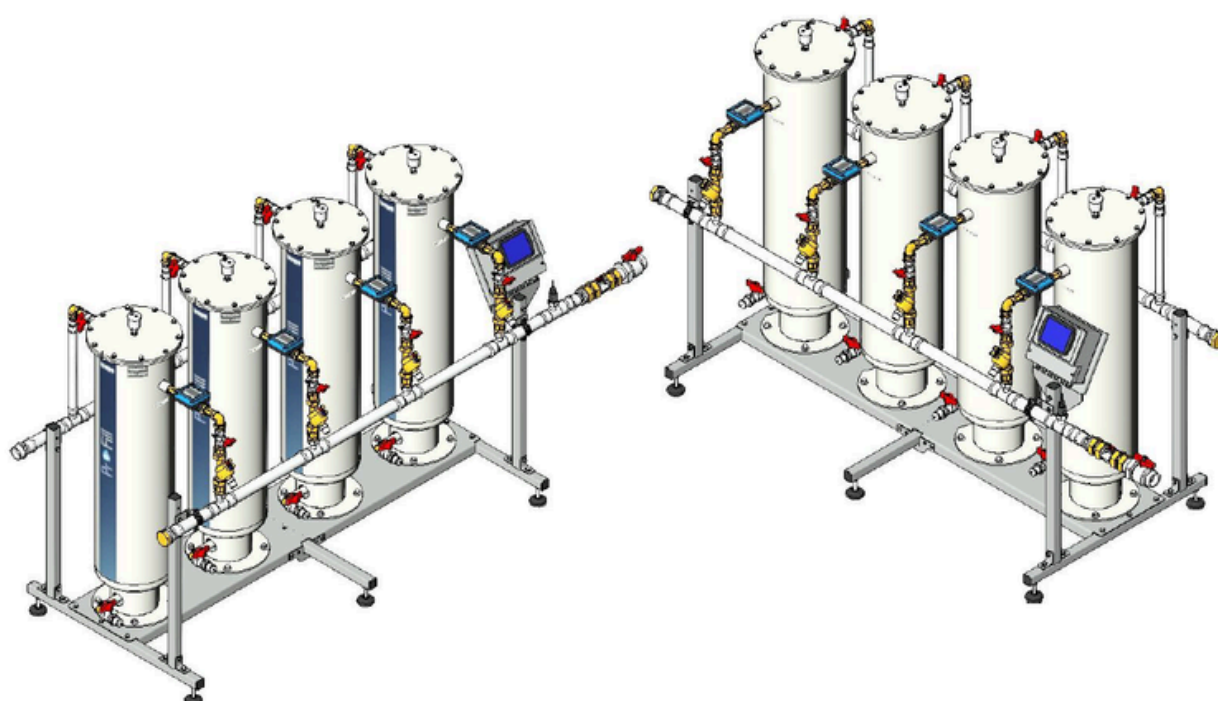
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DESCRIPTION

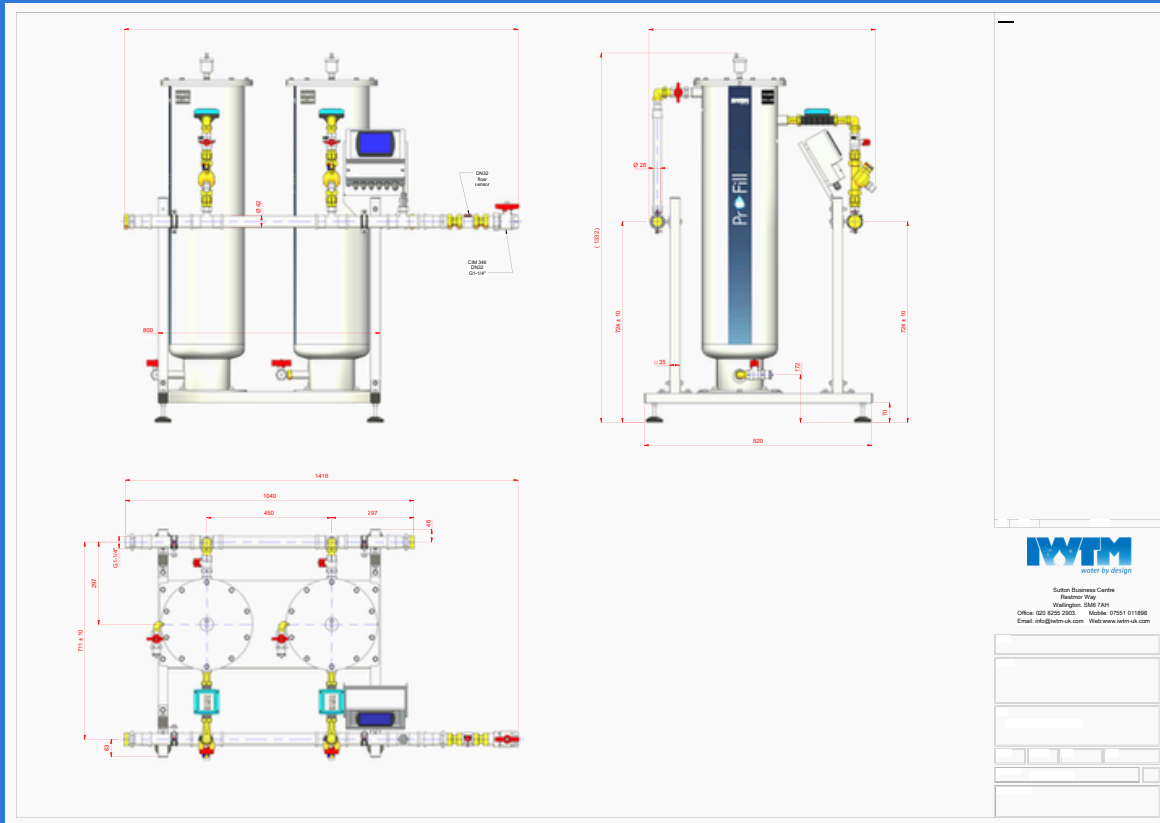
PROFILL ARRAY

Part Number	Item name	Description	Connection size	DFU position
170158	ProFill 50-2 unit Array - Left Handed L>R	ProFill 50 Skid Array_2 Units - Left Handed L>R - PRL50/A2L-R	DN32	Right
170159	ProFill 50-3 unit Array - Left Handed L>R	ProFill 50 Skid Array_3 Units - Left Handed L>R - PRL50/A3L-R	DN32	Right
170160	ProFill 50-4 unit Array - Left Handed L>R	ProFill 50 Skid Array_4 Units - Left Handed L>R - PRL50/A4L-R	DN40	Right
170161	ProFill 50-2 unit Array - Right Handed R>L	ProFill 50 Skid Array_2 Units - Right Handed R>L - PRL50/A2R-L	DN32	Left
170162	ProFill 50-3 unit Array - Right Handed R>L	ProFill 50 Skid Array_3 Units - Right Handed R>L - PRL50/A3R-L	DN32	Left
170163	ProFill 50-4 unit Array - Right Handed R>L	ProFill 50 Skid Array_4 Units - Right Handed R>L - PRL50/A4R-L	DN40	Left

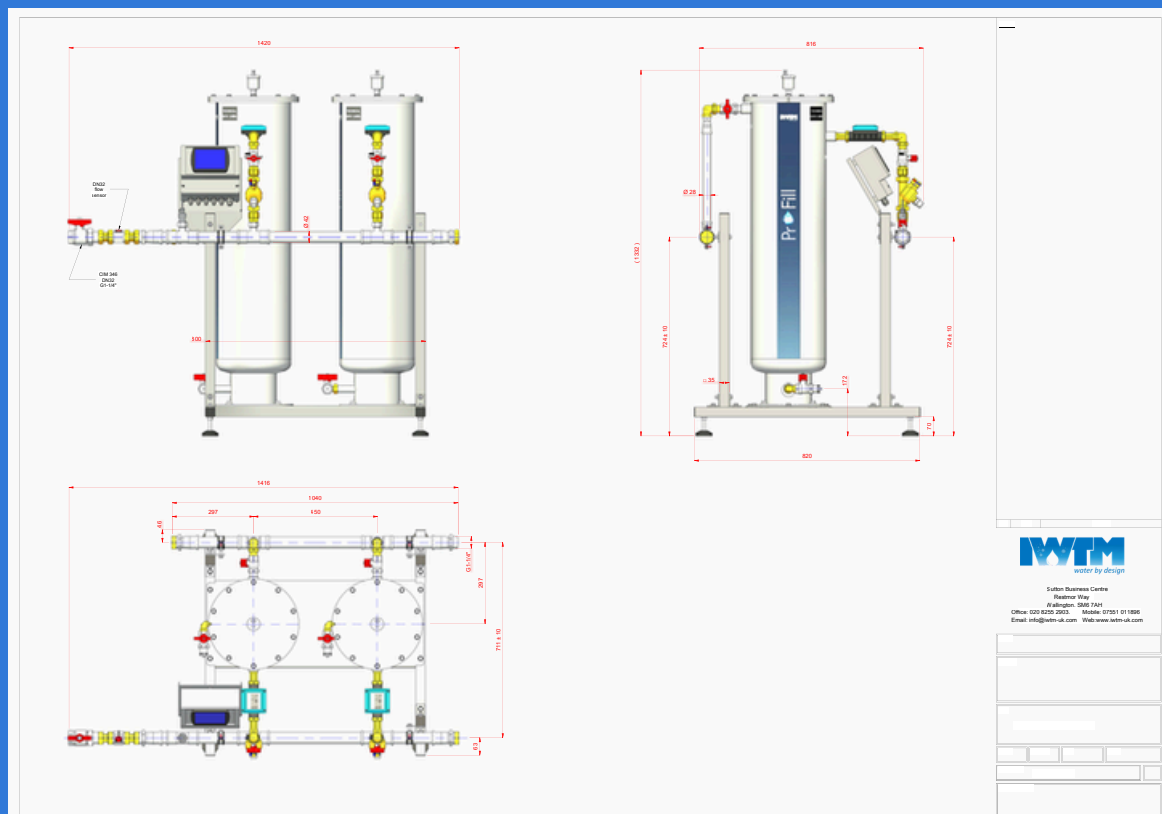
DIMENSIONS



DIMENSIONS

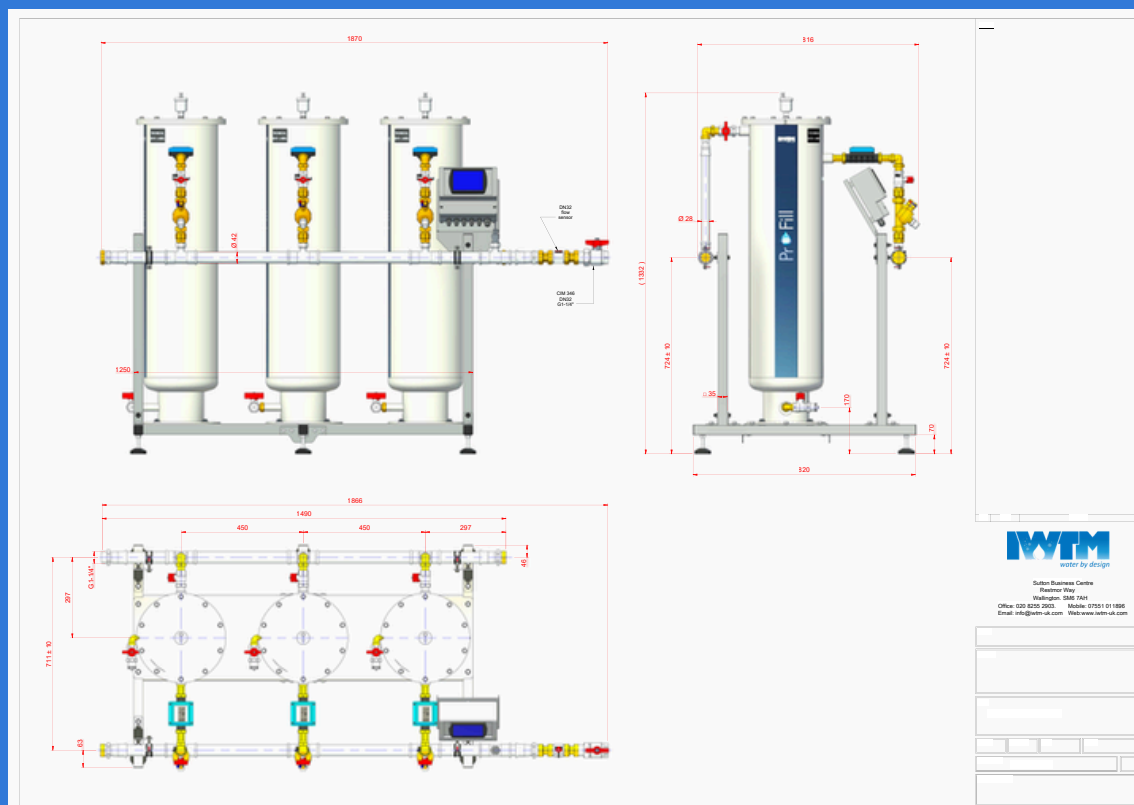


2 ARRAYS - PROFILL 50 - LEFT

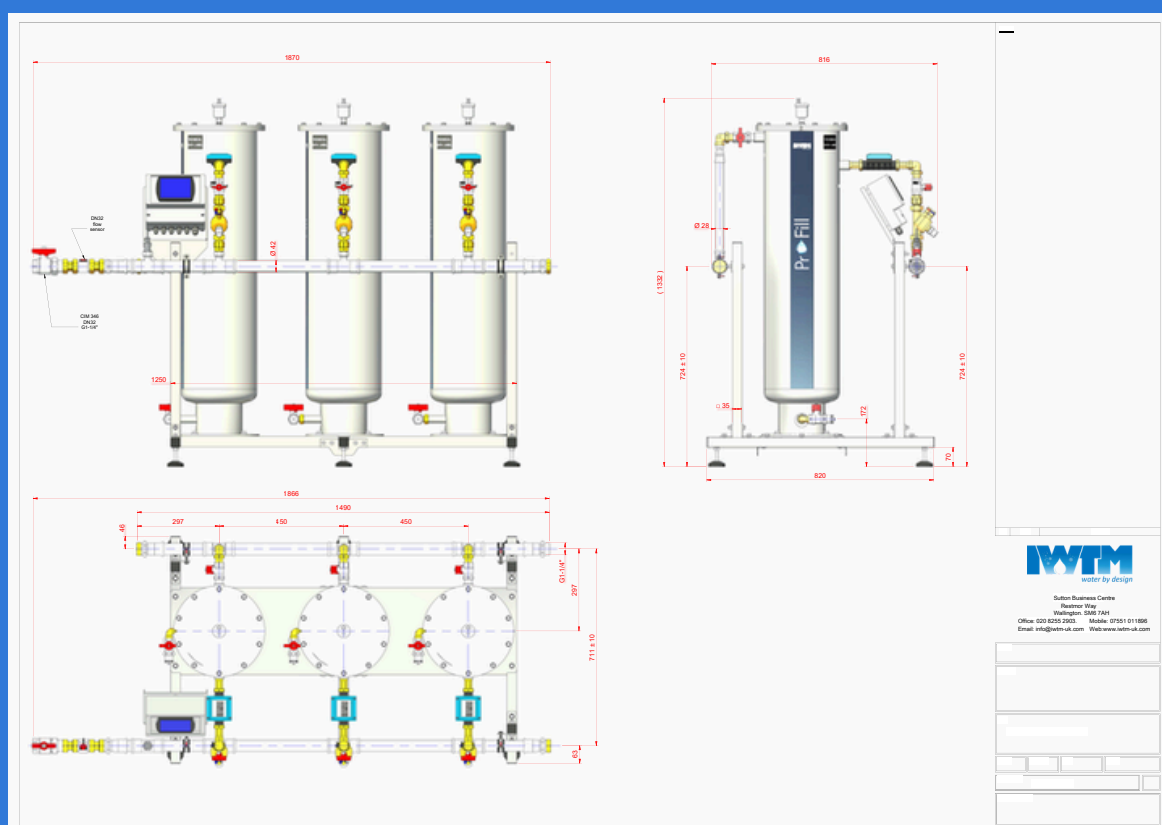


2 ARRAYS - PROFILL 50 - RIGHT

DIMENSIONS



3 ARRAYS - PROFILL 50 - LEFT



3 ARRAYS - PROFILL 50 - RIGHT

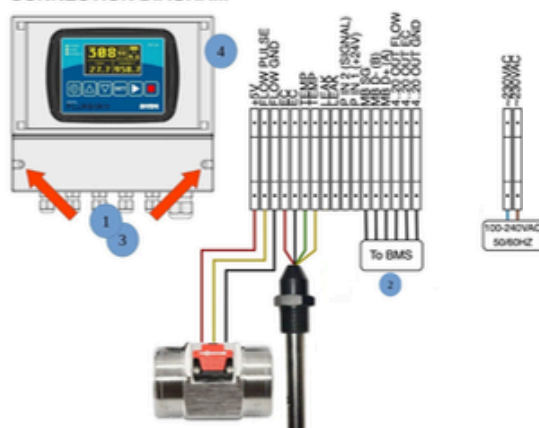
4 ARRAYS - PROFILL 50 - LEFT

4 ARRAYS - PROFILL 50 - RIGHT

DIGITAL FILLING UNIT INDUSTRIAL

QUICK START GUIDE

CONNECTION DIAGRAM



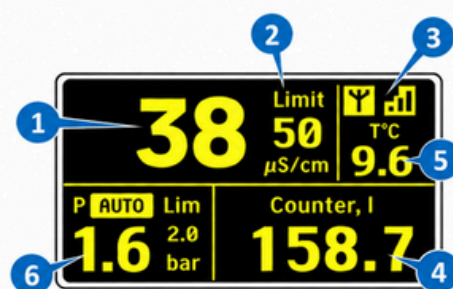
CONNECT

1. Unscrew and remove the lower compartment cover.
2. Make all BMS connections according to the wiring diagram.
3. Put the lower compartment cover back and fix it with the two screws.
4. Turn on the device with the switch on the right side of the case.

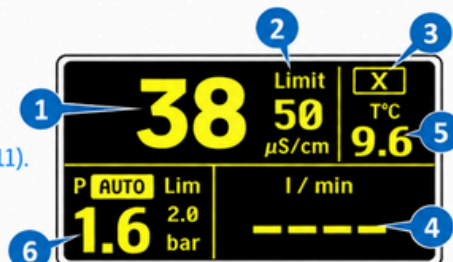
BUTTONS AND ON-SCREEN MENU

MAIN SCREEN

1. Water conductivity
Blinking when over limit.
2. Conductivity limit
3. WiFi status
 -  blinking – connecting to network
 -  stable – connected to network
 -  stable – connected to IoT server over WiFi



4. Flow counter or flow (8).
Press  to switch between counter (8) and flow (11).
5. Water temperature.
6. Battery status.
Flashing battery status indicates that it's time to replace built-in battery. Battery type is CR2032.



DFU / MAIN SCREEN & SETTINGS

BUTTON FUNCTIONS ON THE MAIN SCREEN

Press				
Single	Open "Settings"	-	-	Switch counter/flow
Long	Show QR-code	-	-	Reset main flow counter

SETTINGS

1. Press  button to open the Settings screen.
2. Use  and  buttons to select an item.
3. Press  to open the item.

SETTINGS

> EC limit (alarm)
Modbus settings
Date & Time
Sensors settings
Reset

EC LIMIT

1. Use  and  buttons to change value.
2. Press  to save and return to the main screen.

EC LIMIT (ALARM)

Current settings: 98 $\mu\text{S}/\text{cm}$

50 $\mu\text{S}/\text{cm}$

UP/DOWN: change, SET: save

MODBUS SETTINGS

1. Use  and  to change current field (blinking).
2. Press  to save value and select next field.
3. Press  button to exit to the main screen.

MODBUS SETTINGS

Address: 101
Speed: 19200

UP/DOWN: change, SET: select

DATE & TIME

If DFU is connected to the Internet it will take exact time from the net, so there is no need to set it manually.

1. Use  and  to change current field (blinking).
2. Press  to save value and select next field.
3. Press  button to exit to the main screen.

DATE & TIME

2022-01-01
08:30

UP/DOWN: change, SET: select

SENSOR SETTINGS

1. Use  and  to change current field (blinking).
2. Press  to save value and select next field.
3. Press  button to exit to the main screen.

SENSORS SETTINGS

Flow const: 71.0
EC type: EC-FLOW
Leak wire: ON
Leak flow: OFF

UP/DOWN: change, SET: select

For "EC type" select "EC+FLOW" for a combined EC-flow-temperature sensor (default), or "EC only" for any other combination of EC and flow sensors.

DFU / REMOTE CONTROL

REMOTE CONTROL

DFU can be controlled remotely from Android or iOS mobile application called "DFUremote". The unit has to be connected to the internet via WiFi or cellular network. Download the application from Play market or AppStore:

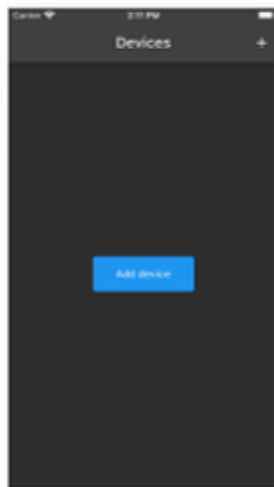


On DFU press  for 2 seconds to show QR-code



NB! Treat the QR-code as a password! Don't share it with unauthorized persons. Anyone who has the code can control your filling system.

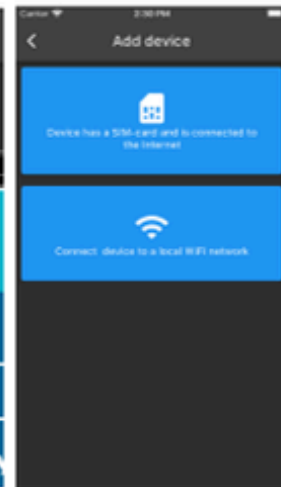
On mobile run the app and tap the "Add device"



Scan the QR-code with device camera.



Select connection type: cellular or WiFi.

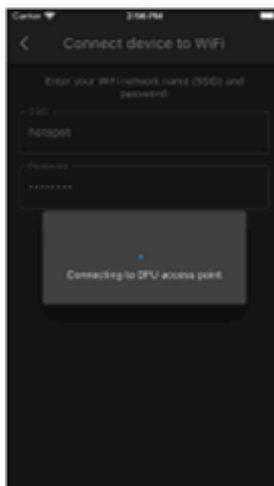


WIFI CONNECTION

Enter your local WiFi name and password.



Wait until the DFU is configured



If connected the app will show list of devices.



In case of a single device the app will switch to it.

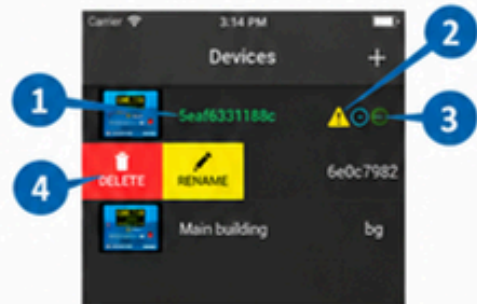


DFU / MOBILE APP

MOBILE APP

Device list

1. Device UUID or name (if set)
2. Alarm indicator
3. Online indicator
4. Rename/Delete buttons (swipe to the right to see)



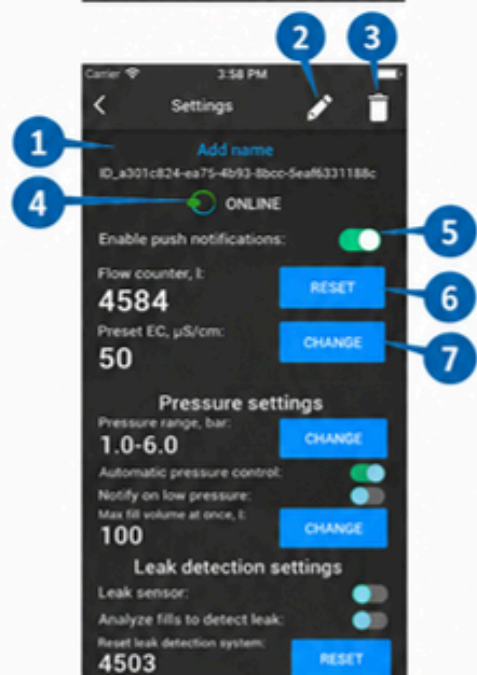
Device details

1. Conductivity
2. Conductivity limit
3. "Settings" button (opens device settings page)
4. Water temperature
5. Pressure, bar
6. Pressure limit, bar
7. Flow counter, liters
8. Flow, liter per minute



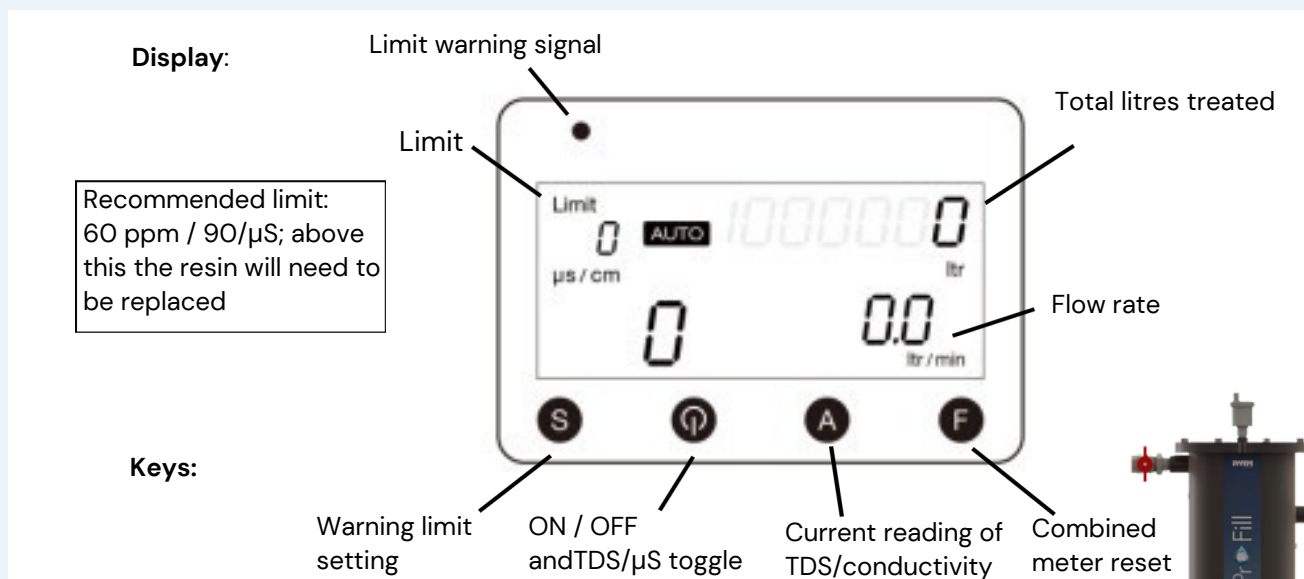
Device settings

1. Device name
2. Edit device name
3. Delete device
4. Online indicator
5. Push notifications switch.
If off, the device will not send any notifications to any mobiles.
6. Reset flow counter
7. Change conductivity limit



OPERATING THE COMBINED METER

The combined meter is battery-operated and measures the flow rate in litres per minute (l/min), the total volume in litres, and the concentration of dissolved minerals (electrical conductivity) in $\mu\text{S}/\text{cm}$ or ppm. A limit can also be set for the maximum allowable mineral concentration in the demineralised water at the ProFill outlet, and both the limit and the flow rate total can be reset as needed.



1 Installing battery - take out the screws of the front case, and put three AA alkaline batteries into the battery holder. The front case can be rotated from 90, 180 to 270 degree for better reading.

2 Setting litre or gallon mode - The default setting of the meter is litre. You can switch the mode from litre to gallon by the keep pressing the button "F" when install battery. When a beep sound heard, the setting is switched. The screen shows "gal / min".

3 To turn on and turn off, keep pressing the "ON / OFF" button for three seconds.

4 Setting TDS or conductivity - The default setting of the meter is a conductivity mode. The screen shows " $\mu\text{S}/\text{cm}$ ". You can switch the mode between the conductivity and TDS (Total Dissolved Solid) by the pressing the button "A".

5 Measuring flow - The meter shows real time flow rate and accumulated volume. The maximum accumulated volume is 1999999 litres (gallons).

6 Manual measuring TDS / Conductivity - Press the button "A" can measure the TDS or conductivity and keep showing the value on the screen. The maximum TDS and conductivity can be measured is 1999 ppm and 1999 $\mu\text{S}/\text{cm}$.

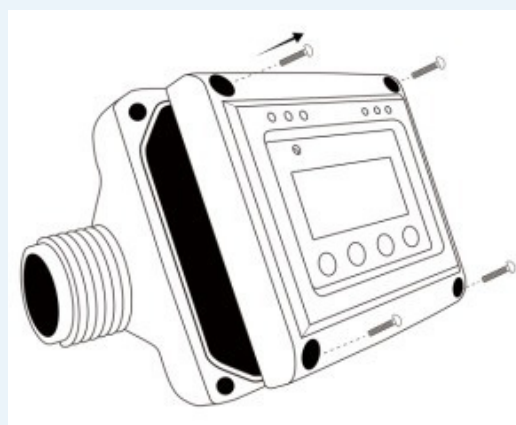
7 Automatic TDS/Conductivity monitoring - Press the button "S" can set the TDS or conductivity value to monitor. The increment is 10 ppm for TDS and 15 $\mu\text{S}/\text{cm}$ for conductivity. Keep pressing the button "S" can reset the setting to be zero.

Once the setting is done, then go to set automatic monitoring function. Press the button "A" to do manual test first, then press the button "A" again, the meter get into automatic monitoring function. The screen shows "AUTO" in the middle. The meter measure the TDS / conductivity for every 10 litres. If the measured value is under the setting value, the green light blinks 30 seconds. If the measured value is over the setting value, the red light keeps blinking, and the alarm generated.

8 Automatic / Manual mode - Press the button "A" can switch between the automatic and manual mode for the TDS/Conductivity measuring.

9 Release the alert - By pressing the button "A" to choose the mode to be manual mode will release the alert status.

10 Low battery power alert - When the battery power is low, the empty battery symbol on the screen blinks. Replacing the battery by new ones can release the alert. The last data will be memorized and restored when battery power is off.

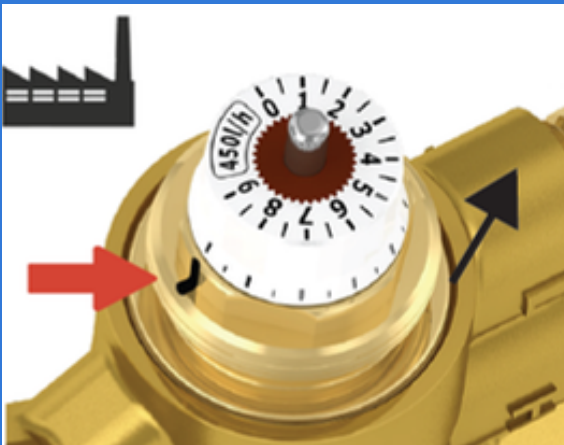


INSTALLATION

INSTALLATION & COMMISSIONING INSTRUCTIONS - PETTINAROLI VALVE

- Close the outlet valve.
- Keeping outlet closed whilst opening the inlet valve.
- Open the automatic air vent.
- Fill the Protector unit once the automatic air vent has dispensed all of the air.
- Open the outlet valve so water flows through the Protector.
- Check the water meter is rotating.

Set PIC valve as below:



- Remove the handwheel. default setting: position 9

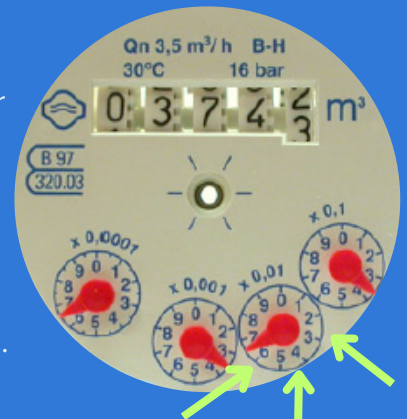


- Turn the selector to the target position to set the flow rate, the settings should be:

Setting 5 for 30l/min

Once you have set this up check the flow rate on the water meter corresponds to required settings on the PICV:

by reading the 0.01 cubic meter dial (=10 litres), which corresponds to litres per minute.



For example it should take 1 minute for the red arrow to read 4 if the setting on the PICV is 6.5 for 40 litres a minute.



- Re-assemble the hand wheel cap with a ¾" turn to protect the spindle – do not turn more than this or you will push the spindle down and effect the flow rate.

SIZING



ProFill Array	Max Pressure	Max Temp	Delivery Capacity	Total Height	Overall Depth	Overall length	Dry Weight	Shipping Weight	Pressure Drop
2 Array	10 Bar	95°C	60 l/min	1332mm	820mm	1420mm	140kg	200kg	1bar
3 Array	10 Bar	95°C	90 l/min	1332mm	820mm	1870mm	200kg	270kg	1.5 bar
4 Array	10 Bar	95°C	120 l/min	1332mm	820mm	2318mm	260kg	350kg	2 bar

SIZING

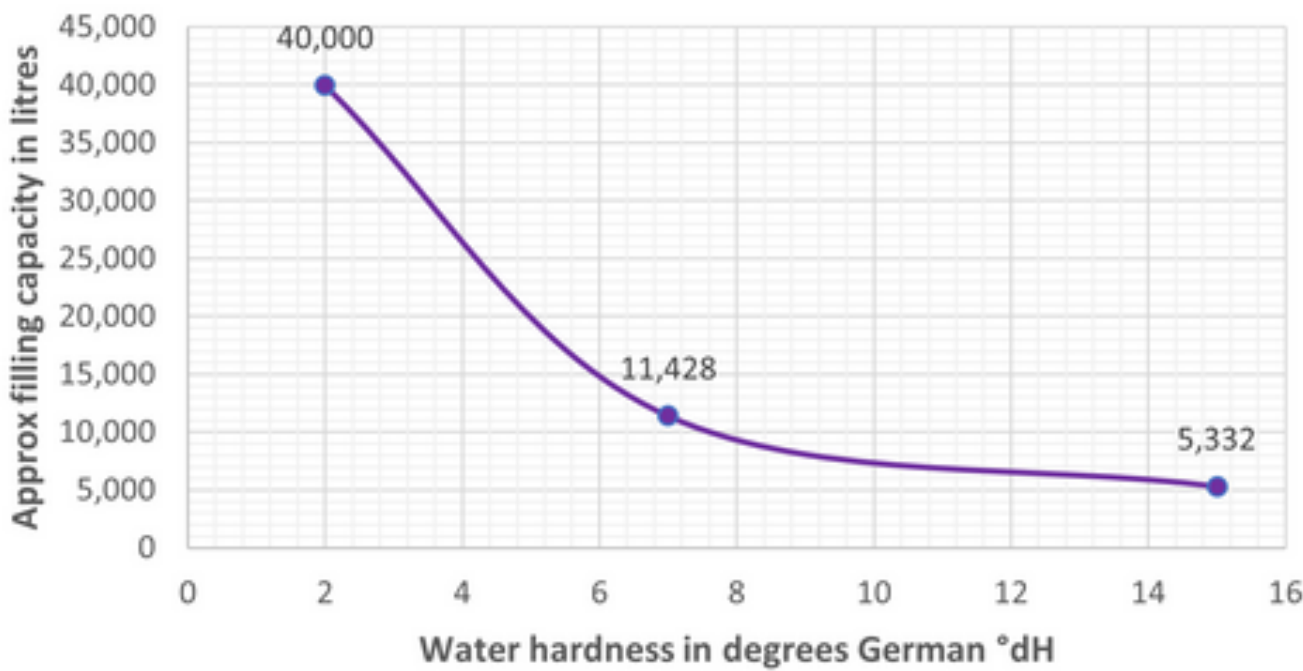
SIZING GUIDE REQUIREMENTS

A ProFill should ideally be sized to accommodate 1% of the system water volume being replenished per annum for a good heating or cooling installation. The size will depend on the incoming water hardness where the ProFill is being installed. The annual fill rate of the system can be more than 1% in some circumstances and this will affect the selection as a larger unit may be required to accommodate system issues. You can find your water company and then your water hardness guide from your local water provider. <https://www.water.org.uk/advice-for-customers/find-your-supplier/>

	2 dh	7 dh	15 dh	Max flow rate
2 Array	80,000	22,856	10,664	60 l/min
3 Array	120,000	34,284	15,996	90 l/min
4 Array	160,000	45,712	21,328	120 l/min

Table showing what the approximate filling capacity in litres is with different water hardness in degrees German °dH , for the ProFill range.

ProFill 50



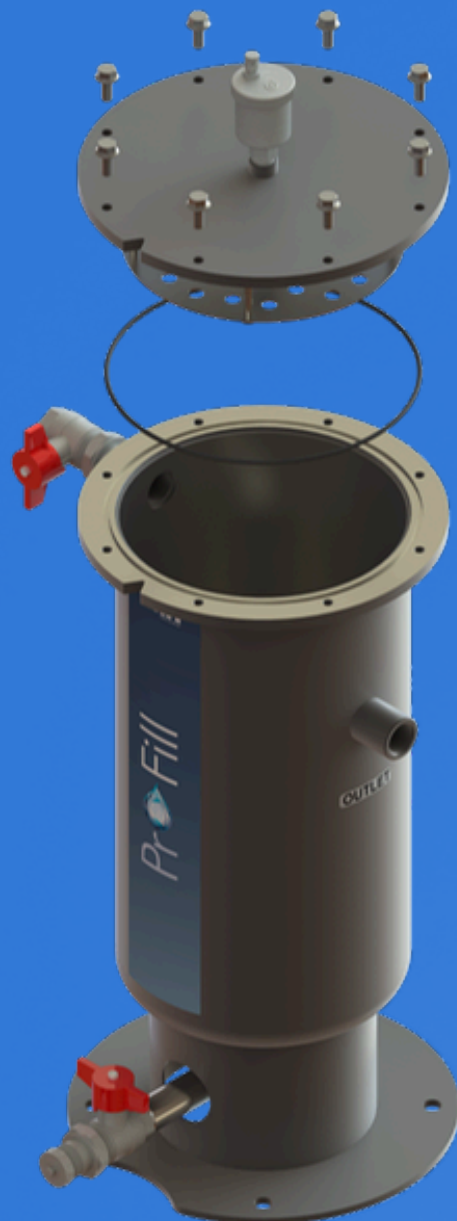
INITIAL FILLING & REPLACING THE RESIN

INITIAL FILLING

1. Undo bolts and remove the lid and seal.
2. Pour in the new resin. Replace the seal ensuring there is no resin on the seal.
3. Replace the lid and tighten the bolts.
4. Reset the meter to 0.
5. Open the inlet valve and automatic air vent. When all air is dispensed open the outlet valve.
6. Check the lid is sealed and water tight.

REPLACING THE RESIN

1. Close ball valve in the outlet, connect a hose at the drain valve and route into the supplied collection sack; flush out the resin at mains pressure. Close the inlet valve and drain water, and close drain valve.
2. Continue by following the steps from 'Initial Filling'



Installer:

Project:

Date of installation:

Device No:

Mains water hardness:

° fH / ° dH /TDS

Calculated capacity:

litres

[illegible]

ACCESSORIES

Part No.	Description
ProFill - Complete Units	
101540	ProFill Meter
200007	DFU, Head Only
200009	1.25" flow meter
200010	1.5" flow meter
200008	1/2" Conductivity sensor for DFU
PEB92H.08	1" PICV
2044 38	3/8" AAV

WARRANTY CONDITIONS

The stainless steel tank assembly for IWTM IWTM Protector® units, including the IWTM Protector® and ProFill, and the marine units, models T50/T100/T260/T500/T800 and T1000, is guaranteed for a period of 25 years against rusting through. This warranty is subject to the following conditions:

IWTM Protector®/Industrial unit warranties will only be validated if the system is installed, in line with manufacturers recommendations, with an appropriate ProFill demineralising device ensuring that all manual or automatic make up and refill water is demineralised in accordance with VDI2035.

Periodic maintenance must be undertaken at least every 12 months in accordance with our manuals, proven to have been carried out by a specialist service company with clear, documented evidence.

This 25-year warranty only extends to the main tank and not to any supplied accessories, meters, AAV's, anodes, filters, etc. The warranty provides for a replacement unit only and not for labour or any other costs associated with the replacement of the equipment.

PLEASE SEE OUR FULL TERMS AND CONDITIONS ON YOUR
QUOTATION FOR FURTHER DETAILS



Founded in 1992, IWTM have been working with chemical free water treatment using electrochemistry for over 30 years and have offices in Norway, UK, Finland, Sweden, Canada, USA and a worldwide presence in the Marine sector.

We have developed models specifically suited to the higher demands of the marine industry operating at higher pressures and higher temperatures.

The marine products are provided worldwide on the world's largest cruise ships working with the leading operators in this sector.

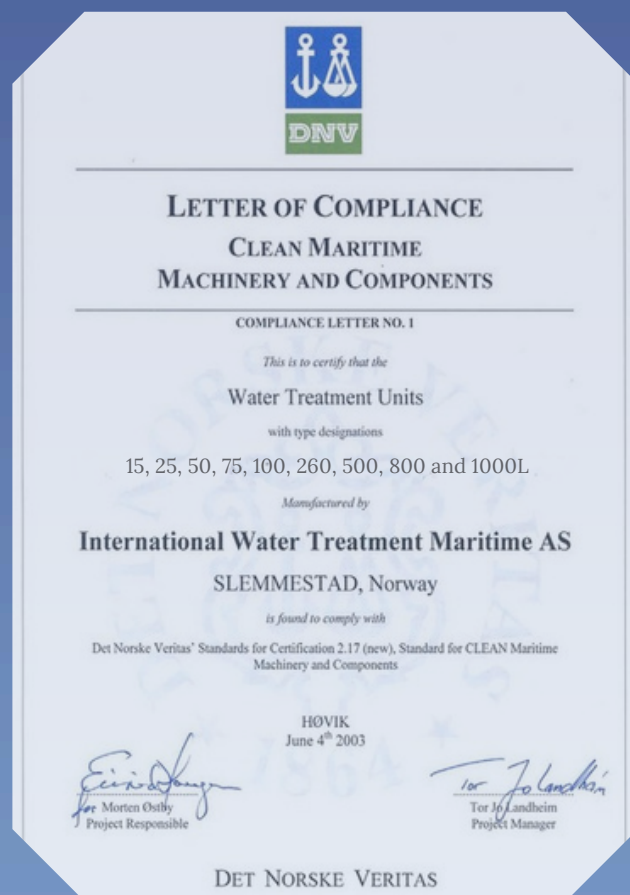
Having secured DNV approval in 2003, we are still the only chemical free water treatment manufacturer to have this certification and approval. DNV is a globally leading quality assurance and risk management company operating in more than 100 countries.

The IWTM Protector™ is our most recently developed product. The Protector range is now available to our land-based customers.

October 2026

In line with continued product development we reserve the right to make any changes to this document without any given notice.

PROTECTOR



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