

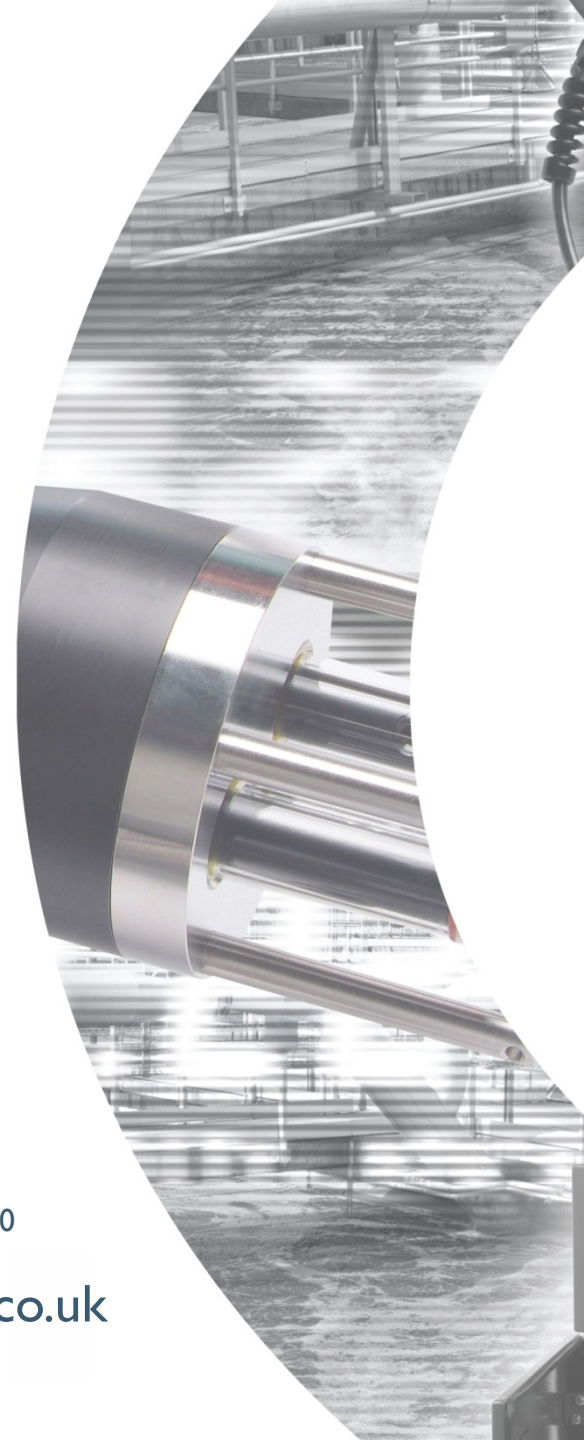
Turbidity

Application and Product Data

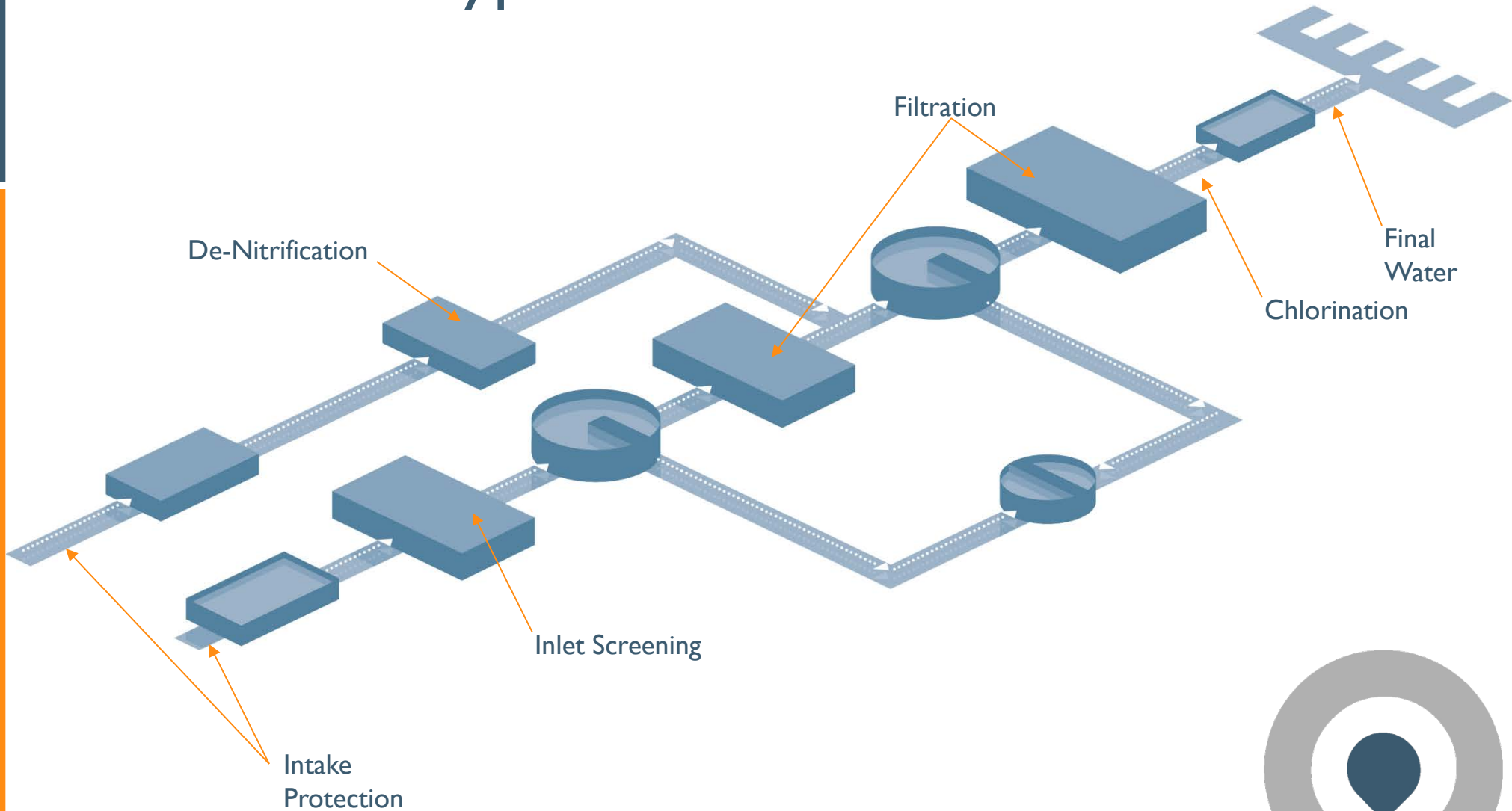


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Typical Treatment Plant



Drinking Water Turbidity Monitoring

- Turbidity is an excellent early indicator of process problems
 - High Intake Turbidity will cause filter problems and possible blockages
 - An increase in Turbidity in the Final Water can indicate filter failure and is an indicator of possible Cryptosporidium in the water
- Dosing and Energy Savings can be made
 - Using Turbidity as a control parameter can reduce dosing levels and hence save money when Turbidity is low, and will also react to changes in the inlet Turbidity automatically
 - Filter Backwashing can be automated by using a Turbidity Monitor to monitor the effectiveness of the backwash process



Measurement Options

- Operator Observation
 - Very operator dependent
- Handheld Turbidity Monitor
 - Small sample, dependent on operator skill
 - Traceable Calibration
 - Available when operator is on site, manual adjustment possible
- Fixed installation Monitor
 - 24/7 monitoring
 - Automated control possible



Benefits of On-Line Monitoring

- Continuous On-Line Monitoring reduces the need for time-consuming laboratory analysis
- Removes operator dependency from the measurement
- Real-time monitoring provides more accurate process control
- Improves plant efficiency by providing stability and continuity to the treatment process



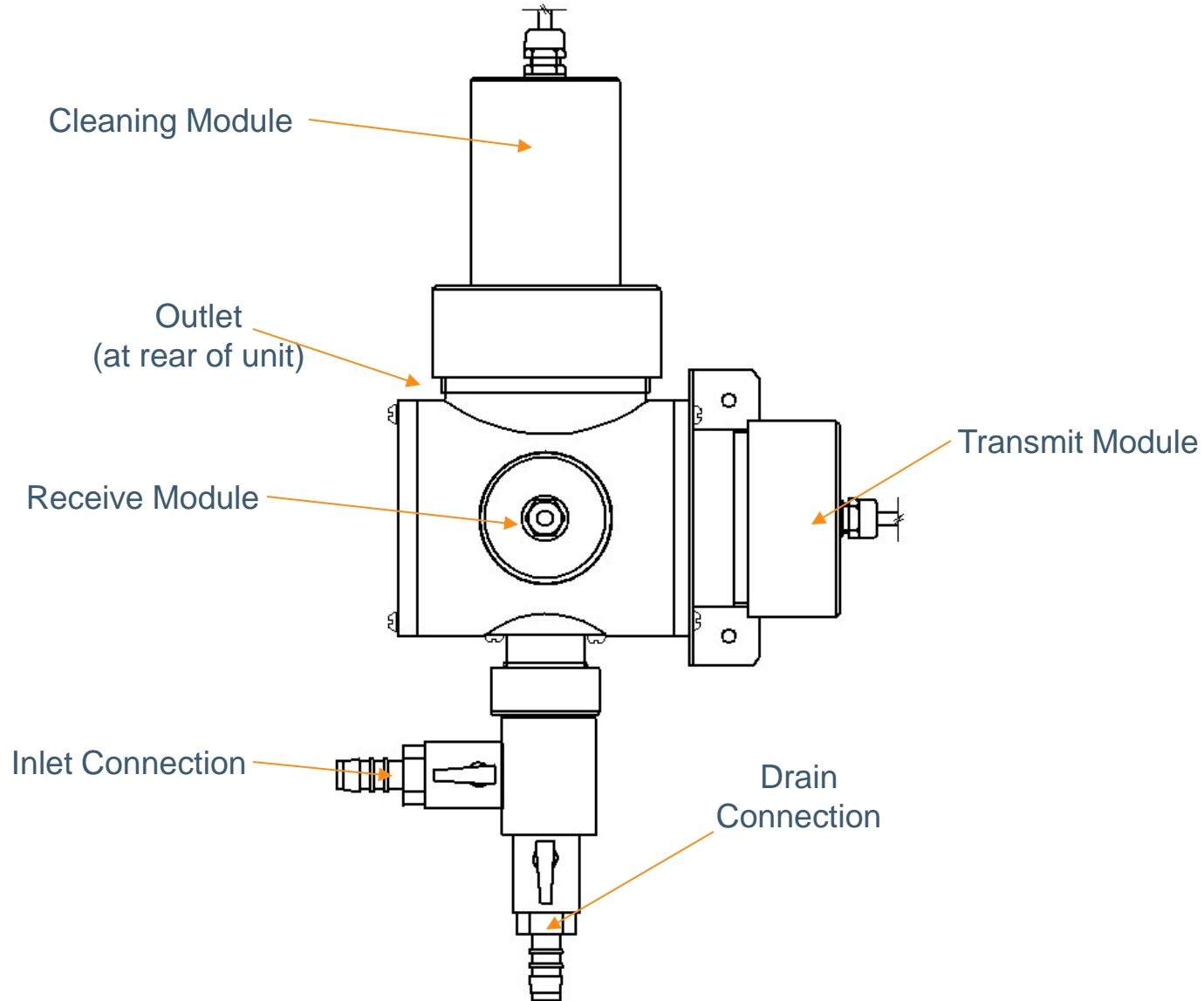
Partech's Products



7300w² Monitor with TurbiTechw² LR Sensor



The TurbiTechw² LR Sensor



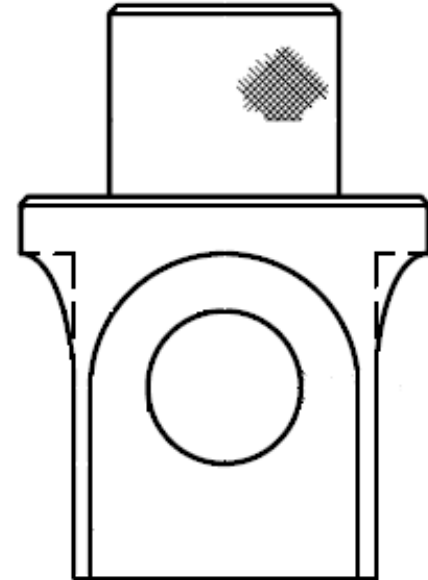
Principle of Operation

- Compliant with ISO7027
 - 90 Light Scatter (Nephelometric)
- Back scatter minimised by flow cell design
 - Detection limit less than 0.1 NTU
- Ranges
 - Nominal 0-5 (can measure upto 30 NTU)
 - Nominal 0-500 (can be ranged down to 0-50 NTU)
- Self Cleaning System
 - Wiper removes biofouling from optical surfaces
 - Ensure bubbles do not stay in flowcell



Dry Calibration Standard

- Used to check performance of the system
 - an alternative to Formazin
 - No Health and Safety issues
 - Repeatable
 - Can be made traceable by use of a reference instrument
- Cal standards are sensor specific
- Can check zero and span values



Materials and Specification

- **Materials**
 - Black Acetal Housing
 - Nitrile Wiper
 - PVC and Stainless Steel Fittings
- **Temperature**
 - Sensor: 0° to 50° C
- **Pressure**
 - 1 Bar
- **Flowrate**
 - 0-5 to 5 litres/minute



Possible Interferences

- **Sensor Fouling**
 - The TurbiTechw² LR Sensor has an integral automatic self-cleaning system
- **Sample Colour**
 - Use of infrared light sources reduces the effect
- **Photo Detector Ageing**
 - Modern LED light sources do not suffer from ageing
 - Emit intensity is monitored and any drift is automatically compensated
- **Air Bubbles**
 - Good installation practice reduces problems, high damping on the reading further reduces the problem
 - A De-Bubbler is available if required

