

Gas Purge Compressor and Bubbler System

WATER LEVEL | SURFACE WATER | GROUNDWATER | WATER STORAGE

General Description

The HS40 Series II **Gas Purge Compressor and Bubbler System** has been designed to replace conventional nitrogen gas bottle supply to bubbler units or gas purge systems. The HS40 is used for **measuring water level in dams, rivers, canals and tanks** with up to 50 mH₂O head.

A **complete system** consists of air compressor, pressure tank, membrane filter dryer, micro mist separator with an auto purge valve and bubbling system. All components are housed in a single small enclosure. Built-in smart pump control monitors the pressure in the system to **optimize power consumption while ensuring best operation and accuracy**.

Models HS40/3100/II and HS40/3100A/II

With the built-in pressure sensors WL3100 or WL3100A an **accuracy of +/-0,02 % FS** is achieved. For this purpose, a pressure and temperature compensation of the measurement via a "user factor" is carried out. The factor is entered by the user as a numerical value in the WL3100, and calculated by the WL3100A from the coordinates, the typical water level, and a reference temperature of the water.

Main Features

- Continuous bubbler: constant pressure keeps water out of the river line - no contamination or clogging, no freezing
- Low power consumption through modern electronics and optimized pump control
- Dessicant and maintenance free
- No need for gas bottles
- Mechanical air drying allows use even in humid (e.g. tropical) conditions.
- Depending on the measuring depth up to 300 m river line possible (gauge house to orifice)
- Robust construction of electromechanical components in industrial quality
- Selection of accessories: orifices in standard size or large volume

Applications

- Standing and running surface waters
- Reservoirs and dams
- Storage and balancing tanks (with minimum fill level)
- Retention basins (with minimum fill level)

Modell HS40/3100/II



Technical Specifications

Power Supply	12 V DC nominal; power consumption: average approx. 20 mA, peak approx. 30 A (pumping process <= 16 sec/18h)
Diagnostics	An extended SDI-12 V1.3 command set allows the control and retrieval of diagnostic data.
Dimensions (WxHxD) and Mass	<ul style="list-style-type: none">■ 405 mm x 620 mm x 220 mm■ 24 kg
Operating Conditions	Temperature <ul style="list-style-type: none">■ -20 °C to +70 °C (HS40/3100/II)■ -40 °C to +70 °C (HS40/II & HS40/3100A/II) Humidity <ul style="list-style-type: none">■ 0-100 %
Measurement Range	Water head above the bubble orifice: 10 m, 20 m, 40 m or 50 m
Sensor Accuracy	With pressure sensor WL3100 or WL3100A and correctly determined compensation factor, an accuracy of +/-0.02 % relative to the full scale value is achieved.
Outputs (for WL3100 / WL3100A models)	Simultaneous data output via 4-20 mA and SDI-12 allows connection of up to two data loggers (redundancy).
Bubble Rate	Factory preset at 26 per minute (at the orifice)
Air Dryer	Auto purge air dryer (solenoid valve) complete with micro mist separator and membrane dryer

Accessories



Polyethylene tubing:

River line connecting the pressure outlet with the gas orifice in the water body. Diameter: 3.175 mm (1/8") (inner) * 9.525 mm (3/8") (outer), available in 100 m, 200 m or 300 m rolls.



BU07 standard orifice fitting:

brass body in a polyethylene cap (reduction of aquatic growth) for 2" GWI standard pipes. Medium bubble rate: max. 26 bubbles/minute.



GC01P gas chamber orifice:

reliably performs with all bubble rates from high to extremely low; increased sensitivity optimizes power consumption; almost no lag between actual level rise and orifice pressure change; polyethylene body and copper coated screen to deter aquatic growth; stable operation even when covered with silt (<=1 m)

iRIS dataloggers and data modems:

- Robust housing
- IP over one or two channels of your choice: xG / GPRS, satellite, IoT
- I/O: analog, digital, SDI-12, Modbus
- iLink software
- Telemetry or cloud app

Spare Parts: compressor assembly, pump, filters, pistons, dry pressure sensors, various nuts, connectors and O-rings

Please ask for details.

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