

Compact Gas Purge Compressor and Bubbler System

WATER LEVEL | SURFACE WATER

General Description

The Model HS40AFC Compact is the **small and lightweight** version of the proven HS40 Series II gas purge compressor constant bubble system. It has been designed to replace a conventional dry nitrogen gas bottle supply to a bubble unit. The HS40 Compact is used for **measuring water level in dams, rivers, canals and tanks** with up to 40 mH₂O (130 ft) head. It provides very accurate and reliable measurements.

The 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**. The HS40 Compact is a fully self-contained and user-friendly system that requires no regular maintenance and no special software.

The HS40AFC can be fitted with the tried and proven **pressure sensor** WL3100 or WL3100A (accuracy +/-0.02 % FS) with full temperature compensation. The HS40 Compact is available either as a complete unit with in-built HyQuest Solutions' pressure sensor of choice or as a stand-alone system for deployment with the user's own pressure sensor.

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
- Desiccant and maintenance free
- No need for gas bottles
- Mechanical air drying allows use even in humid (e.g. tropical) conditions.
- Maximum head (40 m) with 200m of river line (gauge house to orifice)
- Robust construction of electromechanical components in industrial quality ensures many years of trouble-free operation
- Selection of accessories: orifices in standard size (e.g. BU07) or large volume (e.g. GC01P/SS)

Applications

- Surface Water, Ground Water, Waste Water
- Reservoirs and Dams
- Storage and Balancing Tanks
- Retention Basins



Technical Specifications

Ranges	0-5 m (16 ft), 0-10 m (33 ft), 0-15 m (49 ft), 0-20 m (66 ft), 0-30 m (98 ft), 0-40 m (131 ft), 0-50 m (164 ft)
Accuracy	With pressure sensor WL3100: ± 0.02 % FS
Output	With pressure sensor WL3100: SDI-12 and 4-20 mA or RS232
Type	Continuous
Bubble Rate	Adjustable (factory preset at 26 per minute at the orifice)
Manual Purge	Standard option
Orifice Type	Optional small diameter (BU07) or large volume (GC01P/SS)
Operation	When the in-built 750 cc tank pressure falls to 400 kPa, the pump repressurises it to 750 kPa with dried air
Temperature Range	-20 °C to +70 °C, (-40 °C to +70 °C with WL3100A)
Power Supply and Specifications	<ul style="list-style-type: none"> ■ Power Supply: 12 VDC, 38 Ah (minimum) ■ Current Draw Quiescent: 25 mA with WL3100 ■ Peak Current Draw: 30 Amps (during compressor operation)
Enclosure	Corrosion resistant powder coated metal enclosure
Packed Dimensions (WxHxD) and Weight	450 mm x 620 mm x 250 mm, 22 kg
Options	<ul style="list-style-type: none"> ■ Dual instrument feature ■ Dual orifice feature ■ LCD display: WL3100 option only

Accessories



Polyethylene tubing:

River line connecting the pressure outlet with the gas orifice in the water body.

Diameter: 1/8" (inner) * 3/8" (outer), available in 100 m, 200 m or 300 m rolls.



BU07 standard orifice fitting:

copper body (to deter aquatic growth) in a polyethylene cap (to reduce 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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