

Constant Flow Samplers QB1





QB1 Constant Flow Samplers

Description

QB1 is a line of portable constant flow samplers designed and built for applications that require air sampling.

Simple to use and extremely reliable, the QB1 samplers also integrate protection solutions, such as the internal water collection tank, designed to prevent any damage resulting from the accidental aspiration of dust, silica gel, absorbent solutions or water, which in some cases they could damage the instrument.

Greater protection means greater availability, reduced operating and maintenance costs.

The presence of the automatic pressure loss compensation device guarantees the constancy of the flow set even for long-lasting sampling.

QB1 samplers are equipped with a dry volumetric counter, a precision flow meter, a thermometer for normalizing the aspirated volumes as required by the regulations.

The pneumatic circuit has been designed to attenuate the pulsations on the aspirated flow until they are removed.

The QB1 line is available in multiple configurations to meet and excel all air sampling needs.



Main Characteristics

- Constant flow sampler with automatic pressure drop compensation
- Great versatility of use in all applications from emissions to industrial hygiene
- Use of “leak free” diaphragm pumps resistant to aggressive compounds. Rotary pumps available
- Protective device against accidental aspiration of liquids and particulates
- Meets and exceeds all the requirements defined by the UNI EN 12919 standard for environmental samplers and for ISO EN 9096, EN 14385 and EN 13649 emission sampling methods.
- Compact, ergonomic design, exceptional strength and low weight

QB1 - constant flow samplers

Each sampler of the QB1 line is made with quality materials that guarantee strength and resistance.

The frame is made of AISI 304 stainless steel, the non-structural components are made of Peralluman aluminum alloy (light and robust) powder-coated or anodized.

The absence of sharp corners and the presence of sturdy rubber fenders make it safe to transport and handle.

The sturdy side handles in technopolymer make it easy to handle and allow it to be handled with lifting equipment at height such as ropes and hooks.

The internal components guarantee long service activities and the possibility of being able to operate continuously in any environmental condition.

The samplers can be stacked rationalizing use, transport and storage.

All QB1 samplers are equipped with a thermometer for measuring the temperature of the DGM, a vacuum gauge for measuring the pressure drop in the line.



Each QB1 sampler manufactured is thoroughly tested and its calibration verified through certified references traceable to international standards.

The instrument is equipped with a complete test and calibration report.

The use of a flow meter and a volumetric meter meets the requirements of the methods for sampling emissions.

The flow meter reading field is equipped with an expanded scale for a more precise and simple regulation of flows.

All pump models used are guaranteed vacuum tight.

QB1 V1.5

Model equipped with a 1.5 m³/h pump which, thanks to the stability at low flow rates, makes it ideal for withdrawing gaseous species at low flow rates as well as withdrawing dust or asbestos fibers.

QB1 V3.0

The most versatile model of the line, equipped with a 3 m³/h pump, it can be used both for sampling in the environment for total dust and gas, and for emissions for particulate sampling.

QB1 V5.0

Model equipped with 5 m³/h rotary pump is able to sample up to 75 l/min with free mouth. Ideal for PM_x sampling with EN-LVS heads or for emissions sampling at high flow rates.

QB1 - "e" series

Precise and reliable like the classic QB1 cline of which it shares the robustness, the pneumatic circuit and the performance characteristics, it is equipped with dedicated electronics for sampling management and related data processing.



Control Panel

Simple to use, the panel allows you to view the operating data, to program immediate or timed samplings, to decide the termination conditions and to browse the memory of the stored reports.



- High contrast 2.5 "OLED display
- Polycarbonate keyboard with tactile effect
- Operation and alarm LEDs

Isokinetic sampling



The QB1e line can be synchronized with the Dado Lab Mod. ST2 speed and flow meter, allowing manual isokinetic sampling.

The Dado Lab Companion App for Android smartphones, available for free on the Google playstore, allows you to easily program sampling, to instantly obtain the isokinetic report having full traceability of the sampling data and to be able to transmit it in a format compatible with LIMS and Excel systems.

Measurement reports

Data from each sample includes:

- Sample start date and time
- Duration of sampling
- Ambient pressure
- Gas meter temperature
- Volume at normal and gas meter conditions

Measurement data and reports, accessible directly on the instrument, can be downloaded via the Dado Lab Companion App, or through the use of the dedicated PC software.

Sensor calibration

The gas meter, temperature, ambient pressure can be characterized by 5-point correction curves using software on a Windows PC via wireless connection.

QB1 - battery versions-220V

QB1 V1.5BT / V2.0BT

Constant flow samplers equipped with internal lithium polymer batteries that can also be used directly connected to the mains power supply.

Our Li-Po batteries are light, compact, support high charging speeds, have long autonomy and do not undergo alterations in case of deep discharge compared to lead batteries.

This allows the QB1 V1.5BT to sample for about 24 hours with a flow rate of 10 l/min and a pressure drop of 20 kPa, ideal for sampling of particulate matter or asbestos in areas with no power supply.

The two versions available differ for the type of pump installed.

When transported by air, the battery can be removed and secured.

QB1 V2x5DC

The solution for the sampling of gaseous species in the environment and emissions, suitable for branch lines thanks to the high prevalence.

Incorporates two independent low-flow pick-up lines.

Each line is equipped with a protection filter, double scale flow meter and volumetric meter.

Two programmable timers allow you to manage withdrawals on each line independently.

Particularly suitable for use with vials and impinger.

The power supply can take place from the mains or from the built-in batteries.

Technical specifications

QB1 V5.0 / QB1e V5.0

Pump
5 m³/h rotary vanes
Nominal flowrate 75 l/min

Flow meter scale indication
2 ÷ 30 / 2 ÷ 30 nl / min

Total weight
13 Kg

Power
230Vac ± 10% 50/60Hz - 150W

QB1 V3.0 / QB1e V3.0

Pump
twin diaphragm pump
Nominal flowrate 55 l/min

Flow meter scale indication
0.2 ÷ 3.0 / 2 ÷ 30 nl/min

Total weight
11 Kg

Power
230Vac ± 10% 50/60Hz - 100W

QB1 V1.5 / QB1e V1.5

Pump
diaphragm pump
Nominal flowrate 32 l/min

Flow meter scale indication
0.2 ÷ 3.0 / 2 ÷ 30 nl/min

Peso complessivo
9 Kg

Alimentazione e potenza
230Vac ± 10% 50/60Hz - 50W

QB1 V1.5BT

Pump
diaphragm pump
Nominal flowrate 16 l/min

Flow meter scale indication
0.2 ÷ 3.0 / 2 ÷ 30 nl/min

Total weight
12.5 Kg

Power
230Vac ± 10% 50/60Hz - 50W

Battery
15 Ah built-in
more than 24h battery life

QB1 V2.0BT

Pump
diaphragm pump
Nominal flowrate 30 l/min

Flow meter scale indication
0.2 ÷ 3.0 / 2 ÷ 30 nl/min

Total weight
13 Kg

Power
230Vac ± 10% 50/60Hz - 50W

Battery
15 Ah built-in
more than 6h battery life

QB1 V2x5DC

Pumps
N° 2 diaphragm pumps
Nominal flowrate 11 l/min

Flow meter scale indication
0.2 ÷ 5.0 / 0.2 ÷ 5.0 nl/min

Total weight
13 Kg comprese batterie

Power
230Vac ± 10% 50/60Hz - 50W

Battery
24Vdc 2.3 Ah built-in
more than 4h battery life 1 line
more than 2h battery life 2 lines

Characteristics

Condition of the sampled gas	Anydrous, max temp 45°C
Gas inlet	filter protection against liquids and particulate matter
Operative conditions	Quick connectors fittings
Stock conditions	-10 ÷ 40°C 95% UR
Power	-10 ÷ 50°C 95% UR
Materials	230 Vac ±10% 50/60Hz
Size (WxDxH)	24 Vdc (per versioni DC)
	Composite AISI steel/aluminum
	330 x 310 x 360 mm
Digital Timer (V2x5 and BT version only)	Program ON/OFF
Digital Timer digitale (*)	Date/hour
	Resolution of 1 min
	Automatic restart in case of power failure

Characteristics and accuracy of measurements

Volume

Gas meter	G1.6 class
Flow range	0.016 m³/h 2.5 m³/h
Accuracy	2% of measure
Resolution	0.1 l

Flowmeter

Rotameter	
Range	see available version table
Accuracy	5% f.s.

Gas meter temperature

Range	-50 ÷ 70°C
Accuracy	± 1°C
Resolution	0.1°C

Perdita di carico in aspirazione

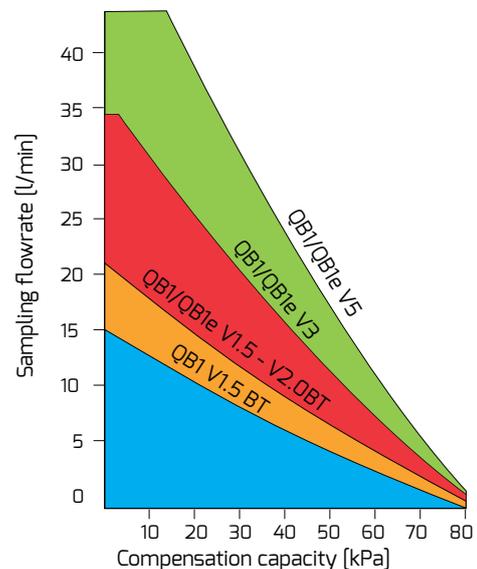
vacuum gauge	Range 0 ÷ 1 Bar
Accuracy	± 5%

(*) ON/OFF switch only, available on request

Dimensions QB1 [mm]



Operative pumps range



Models, accessories and spare parts



101 110 1101 QB1 V1.5 with standard equipment
suction protection for liquids and solids
test and calibration report
quick couplings for suction connection
power cord

101 110 1201 QB1e V1.5 with standard equipment

101 110 1102 QB1 V3.0 with standard equipment

101 110 1202 QB1e V3.0 with standard equipment

101 110 1103 QB1 V5.0 with standard equipment

101 110 1203 QB1e V5.0 with standard equipment

101 110 1013 QB1 V1.5BT with standard equipment

101 110 1014 QB1 V2.0BT with standard equipment

101 110 1005 QB1 V2x5DC with standard equipment
As above but with 2 pumps 11 l/min 24Vdc



101 110 4004 Sampling media support stand 47mm



101 110 4005 47mm open filterholder HB

101 110 4006 Pack of 5 47mm open filterholder cassettes



101 101 3010 Inlet gas protection filter
Box of 10 pcs



101 110 4001 QB1 Spare DGM



101 101 4002 Silica gel/Charcoal trap
100cc

101 101 4003 Silica gel/Charcoal trap
1L



300 104 1111 CF1-UR Digital Flow calibrator 0,4-45 l/min w/ rH/T probe



101 107 1001 ST2 Velocity/Flowrate meter