Flow Calibrator CF1

dado lab

Flow Calibrator mod. CF1

Description

CF1 is a flow calibrator specifically designed for the verification and calibration of personal, environmental and stack emissions samplers, compliant with EN12341 and EN16450 standards.

Thanks to the flow measurement system based on a laminar flow cell sensor, CF1 grants an exceptional measurement range, from 0,45 to 45 l/min, or 0,05 to 5,0 l/min (LF version) which allows its application to a wide range of sampling systems dedicated to different applications, all with a single instrument, without the need to have, and certify, multiple measuring cells.

CF1 is also available in the CF1-UR version.
Tis model is equipped with an external sensor for ambient temperature and air relative humidity.

Calling it flow calibrator is reductive.
CF1 can be ISO17025 certified for flowrate, volume, ambient temperature, ambient pressure and relative humidity readings, and it also measure the sampling line pressure drop, all with one instrument.

CF1 is compact and weighs only 500 g, therefore easy to carry in its practical case and, thanks to the very short warm-up time, of immediate use.

Equipped with 4000 mA rechargeable lithium polymer batteries, CF1 is able to operate with an autonomy of about 8 hours. In addition, thanks to the USB Type-C power port, it is directly rechargeable in the field or can be connected to a power bank to extend its autonomy.

Characteristics

CF1 measures the flow rate in real time, both in suction and in delivery, indicating on the display and acquiring the data both at gas conditions (Pamb and Tgas) or normalized.

The UR version is equipped with a combined external sensor for relative humidity and ambient temperature, is able to provide the flow rate data under current and even anhydrous conditions.

As with all Dado lab instruments, CF1 has also been designed to stand out from other solutions available on the market, in fact CF1 is designed both to be a flow calibrator but, being equipped with ambient temperature and pressure sensors, it can be used to calibrate these parameters on samplers.
Not only that, CF1 integrates the flow rate reading over time, returning the volume data of the gas sampled during the test, under normal or current conditions.
This feature also allows you to use CF1 to check the reading of volumetric meters.

CF1 is supplied with CF1-Link communication software and USB key for wireless connection to a windows PC. CF1-Link allows both the download of the acquired data and the visualization of instantaneous data.

In addition to the transport case, the supply also includes adapters for connection to sampling systems for PM10 / 2.5 type EN / EPA and quick couplings for silicone tubes.

Technical Specifications

General

Principle of measurement	Anular laminar flow cell
Range	0.45 ÷ 45 Nl/min 0.05 ÷ 5.0 Nl/min (LF version)
Flowrate standard accuracy	±1.5% f.s.
(opt) Flowrate high accuracy	0.8% of the reading ±0.1% f.s.
Volume accuracy	1.5%
Flowrate indication	Actual conditions (Pamb - Tgas) Normalized conditions Dry normalized conditions (UR version)
Operative pressure	0 ÷ 105 kPa
Operative Temperature	0 ÷ 40°C
Response time	500 ms

CF1 Sensors

Pressure:	
Barometric Pressure	50 ÷ 115 kPa (1150 mBar)
Hysteresis and Linearity	0.25 % f.s.
Resolution	0.01 kPa (0.1 mBar)
Accuracy	Better than 1% (± 0.25 kPa)
Temperature:	
Range	-10 ÷ 60 °C
Resolution	0.1 °C
Accuracy	1% (± 0,4 °C)

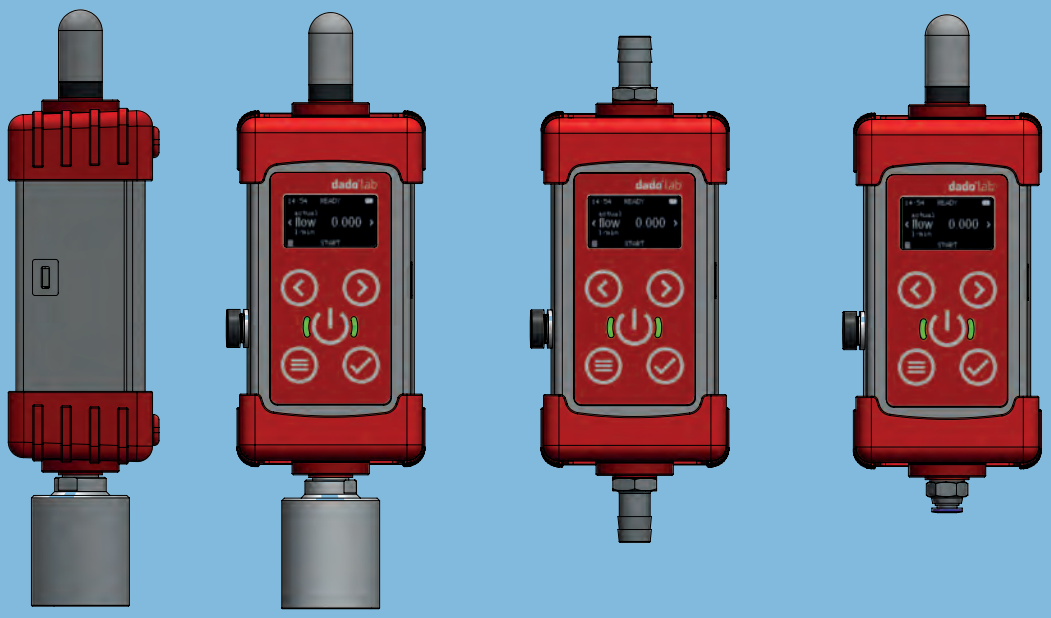
Temp - UR Sensor (with UR probe)

Cable lenght	1 m
Temperatura range	-10 ÷ 60 °C
Resolution	0.1 °C
Accuracy	1% (± 0.4 °C)
rH% range	0 ÷ 100% UR
Resolution	0.5 %
Accuracy	±2% between 10% ÷ 90% UR at 25°C

Construction

Fittings	1/4"gas
Operative conditions	-10 ÷ 40°C 95% UR
Stock conditions	-10 ÷ 50°C 95% UR
Display	1.3" Oled
Communication	Wireless
Data output	Continuous for Flowrate/temperature/pressure/volume/rH%
Internal memory	8 MB
Battery	LiPo 4000 mA
Power	5V/1000mA USB Type-C
Materials	ABS w/ rubber protections
Keyboard	Polycarbonate, tactile effect
Dimensions	145x73x58 mm
Weight	500 gr

Included options



Inlet fittings
EPA/EN PM10/2.5

hosebarb connectors

Models and certifications

300 104 1101	CF1 Digital Flow calibrator (0.45÷45 Nl/min)
300 104 1111	CF1-UR Digital Flow calibrator w/ rH/T probe (0.45÷45 Nl/min)
300 104 1201	CF1-LF Digital Flow calibrator (0.05÷5 Nl/min)
300 104 1211	CF1-LF-UR Digital Flow calibrator (0.05÷5 Nl/min) w/ rH/T probe
300 104 2001	High accuracy calibration
200 110 1031	ISO17025 Flowrate on 5pts certification
200 110 1001	ISO17025 volume certification on 5 points
200 110 1011	ISO17025 Temperature sensor certification on 5 pts
200 110 1023	ISO17025 pressure sensor certification on 5 pts
200 110 1051	ISO17025 rH sensor certification on 3 pts from 10 ÷ 95%