

F6100 Safe-Air Monitor for Breathing-Air Systems



The F6100 Safe Air Monitor is the ideal instrument for those requiring continuous monitoring of their breathing-air supply. Supplied with a wall mounting kit, connection hose and coupling the F6100 is designed to be connected via a T fitting to the breathing-air supply. Once set up the instrument will continue to monitor and data log the air quality at user defined intervals validating the air quality against a range of alternative international standards. In the UK this ensures complete compliance with the relevant requirements of COSHH.



The F6100 is mains powered via an adaptor which is supplied with the instrument, in case of a power failure an inbuilt rechargeable battery back-up system will provide an additional 30 minutes operating time. The instrument has an intuitive touch screen display, making set up and retrieval of previous test results easy and quick to complete.

The F6100 incorporates electronic cells for measuring carbon monoxide, carbon dioxide, and oxygen. Moisture levels within the breathing air are measured by a dewpoint sensor. The instrument then displays the moisture content in pressure or atmospheric dewpoint levels, as well as providing the concentration in mg/m^3 . It also includes digital airline pressure and ambient temperature readings.

Oil measurements are completed using the Draeger Impactor, which is inserted into a test port on the instrument. The F6100 provides a prompt to the user whenever an oil Impactor test is required and the time interval can again be defined by the user in the set up. The Impactor has no glass or hazard components and can test for

all known synthetic and mineral oils. This port is also compatible with a range of additional Draeger chemical reagent tubes, with test times which can be programmed via the menu, to identify other potential contaminants.

The instrument has 2 no. 4-20mA inputs to display and record results from remote sensors (not supplied as standard with the instrument). Factair offers a separate sensor module which can be configured for a range of user defined contaminants. If airflow rate monitoring is required, the unit can be connected to a remote flowmeter and this can then assist with the requirements to audit compressed-air systems for energy efficiency as described in ISO11011.

For those users needing to monitor oil vapour concentrations electronically the F6100 can be supplied with the F6300 Oil Vapour Monitor which has a calibrated range down to $0.01 \text{ mg}/\text{m}^3$. The F6100 is easily configured, using the setup software provided, to display and datalog results from the F6300 as well as alert users whenever readings have exceeded predetermined limits.

Each test, is stored within the F6100's memory and can be retrieved on screen and transferred via a removable SD card. A software program is provided which provides a convenient way to analyse the datalogged results and identify trends and occasions when the breathing-air failed to meet the selected standard. The F6100 also includes a volt free contact which can be connected to a BMS system or a remote alarm to alert users when air quality fails to meet the required standard.

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The instrument is designed to monitor low-pressure airline breathing systems it can also be used with the F3002 high-pressure regulator assembly to monitor HP systems. Factair's quality accredited instrument workshop provides recalibration and servicing for the unit.

The F6100 is provided with easy to configure PC software which allows the user to set up the readings for the instrument. This software is available to download from Factair's website.

The general tab allows you to configure a range of settings, these include: Commissioning delay, which allows you to set a time interval before the instrument first begins to record results; datalogging interval; working hours and how the water readings are displayed i.e. mg/m^3 , atmospheric or pressure dewpoint.

The internal sensors tab allows you to choose the test standard or enter your own custom levels. From this screen you can also choose whether you want to activate the volt free contact which can then be used for an external alarm or to control the shutdown of the compressor

F6100 Online Config - Ver (1.6.0.0)

Device Info
 FW Ver: 1.28
 HW Ver: 1.00
 Serial #: 61004

Read from F6100
 Write to F6100

General Internal Sensors Ext Socket 1 Ext Socket 2

General

Commissioning delay (mins) 0

Datalogging Interval (mins) 60

Time between Oil Test reminders Never Remind

Dim backlight after x minutes 1 minutes

Sound buzzer if mains fails

Remind about oil test Working hours only

Alert on error condition Working hours only

H2O Test Options

Show H, O as mg/m^3

Show H, O as Dewpoint

Show at pressure

Working Hours

Start 09:00

End 17:00

Applied only if firmware Ver 1.20 or newer

Invert Ext Alarm Invert Gas Alarm

Alarm if under pressure for 0 seconds while online

F6100 Online Config - Ver (1.6.0.0)

Device Info
 FW Ver: 1.28
 HW Ver: 1.00
 Serial #: 61004

Read from F6100
 Write to F6100

General Internal Sensors Ext Socket 1 Ext Socket 2

Internal Sensors

Standard BS EN12021

CO Maximum (PPM) 5.0

CO2 Maximum (PPM) 500

O2 Maximum (%) 22.0

O2 Minimum (%) 20.0

H, O Maximum (mg/m^3) 100.0

Dewpoint Max ($^{\circ}\text{C}$) -10.0

Dewpoint Min ($^{\circ}\text{C}$) below ambient 5.0

Alarm Delay (secs) 0

Sound external alarm on error

Sound buzzer on error

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If you connect additional external sensors with 4 to 20mA signals these are configured from the following tabs, in the example below 'Ext Sensor Socket 1' has been configured for the F6300 Oil Vapour Monitor.

F6100 Online Config - Ver (1.6.0.0)

Device Info

FW Ver: 1.28 Read from F6100

HW Ver: 1.00 Write to F6100

Serial #: 61004

General Internal Sensors **Ext Socket 1** Ext Socket 2

External Sensor Socket 1

Enable Socket 1

Parameter Name

Parameter Units

Decimal places

Reading at 20mA

Reading at 4mA

Set an upper limit alarm

Enter upper alarm limit

Set a lower limit alarm

Enter lower alarm limit

Sound external alarm on error

Sound buzzer on error

F6100 Online Config - Ver (1.6.0.0)

Device Info

FW Ver: 1.28 Read from F6100

HW Ver: 1.00 Write to F6100

Serial #: 61004

General Internal Sensors Ext Socket Ext Socket 2 **Ext Socket 2**

External Sensor Socket 2

Enable Socket 2

Parameter Name

Parameter Units

Decimal places

Reading at 20mA

Reading at 4mA

Set an upper limit alarm

Enter upper alarm limit

Set a lower limit alarm

Enter lower alarm limit

Sound external alarm on error

Sound buzzer on error

Also supplied with the F6100 is datalogging software which makes it easy to analyse results, identify trends and exceptions. Results can be imported into the software and then individual or a range of sensor readings reviewed across a selectable date range. The screen dump from the following page is an example of the how the software displays the results.

The results on the instrument's SD card are in a CSV format, which also allows them to be easily read by spreadsheet software such as Microsoft Excel.



Screen dump from F6100 Data Monitoring Software



Model	Width	Height	Depth	Weight	Power	Pressure	External Connections
F6100	210mm	215mm	75mm	1.6 Kg	110-240V, 1ph 50/60Hz	2 – 10 bar	2 no. 4-20mA External Sensors – 2 wire 1 no. Volt Free Contact Test port for Draeger Impactor/Tubes

Other Breathing-Air Quality Test Instruments

F6300 Oil Vapour Monitor

This oil vapour monitor is designed to be used either as a stand-alone instrument or in conjunction with the F6100 Safe-Air Monitor. Featuring a metal oxide sensor which is specially optimised to recognise long chain hydrocarbons this instrument has a calibrated detection range down to 0.01 mg/m³.

F6000 Safe-Air Tester

Designed to provide sample point testing, rather than continuously on-line monitoring, the F6000 features the same key features as the F6100 but with an additional in built electronic flowmeter. Test results can be downloaded via a USB cable to a PC.