

CheckPoint O₂

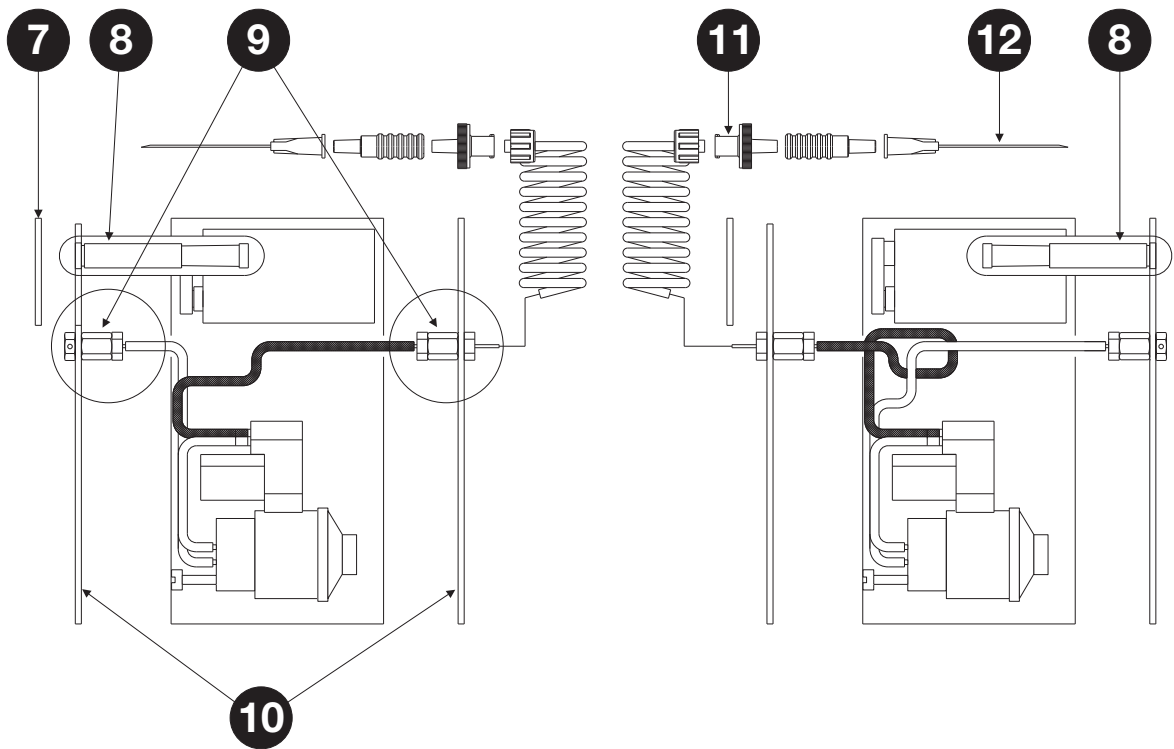
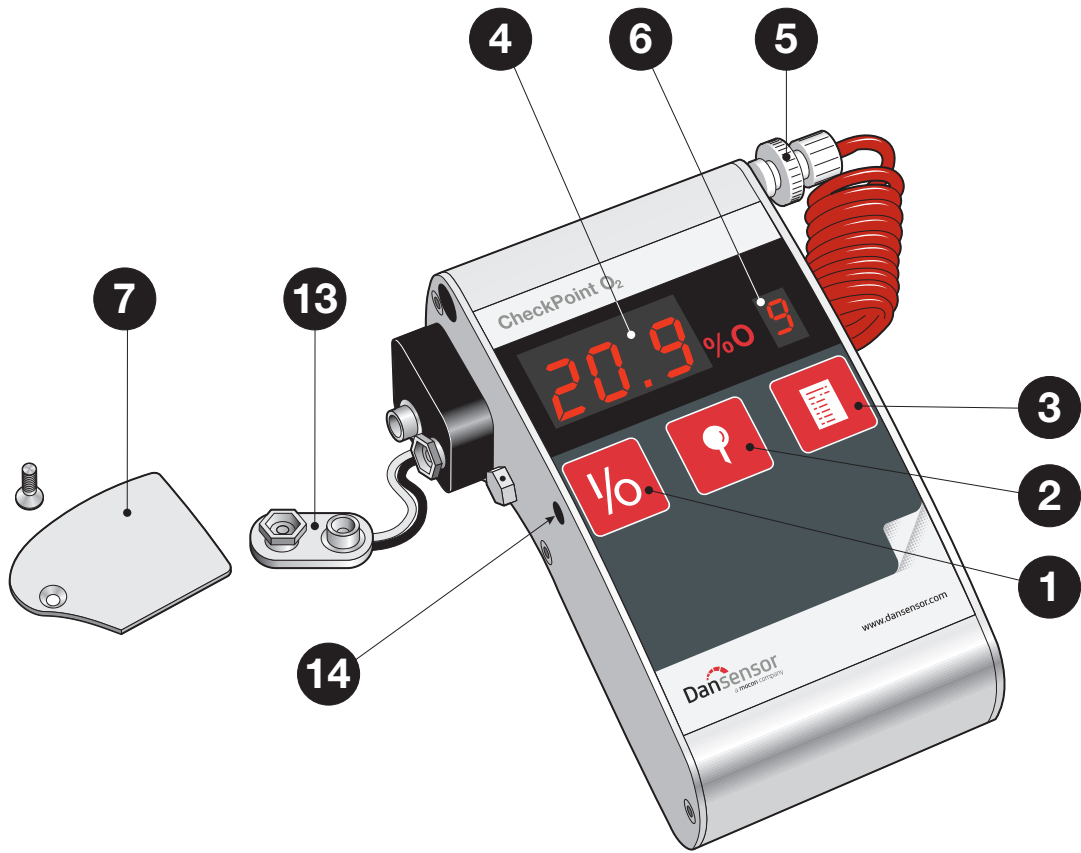
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Checkpoint O 2

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CheckPoint O₂ specifications

General:

- Min. 2000 measurements on new alkaline batteries.
- Sample flow 90 - 140 ml/min standard.
- Auto power-off after 1 minute.
- Memory function for 10 measurements (also after battery replacement).
- Display hold function (also after power off).
- Charging time for NiMH-batteries: 3 hours (auto off)
- Operational temperature: 0 - 40°C
- Humidity: <95% RH (non-condensing)

O₂ Sensor:

- Electrochemical
- Range: 0 - 100%
- Resolution: 0.1%
- Accuracy: 0.25% abs. + 2% rel.
- Temperature compensation:
< 2% rel. (steady state)
- Response time (T₉₅): ≤ 15 sec.
- Expected sensor lifetime: 9 months
Recommended calibration interval: 6 months

Measuring system:

- Measuring time: 15 sec.
- Sample volume: approx. 23 ml
- Built-in pump max. -200 mbar vacuum, expected life-time > 500 hours (120.000 measurements)
- Calibration: Air (20.9 % O₂)

Cabinet:

- Weight: 0.5 kg
- Size: 74 x 63 x 135 mm (W x H x D)
- Class: IP53
- Material: Anodized aluminium

EN

Safety precautions



WARNING!

Due to safety considerations the needle (5) + (12) should always be placed in the retainer on the CheckPoint unit after measuring.

Use only the original external power supply unit / charger when connecting to mains.


Using the wrong type can destroy the CheckPoint unit. Use only the specified battery type or an original rechargeable battery pack.

If rechargeable batteries have been installed in the CheckPoint, they must not be replaced by ordinary batteries.


CheckPoint should be cleaned with a mild detergent solution.

Operation



Start-up (1)

Press the  key to switch on the CheckPoint. When the CheckPoint switches on, the version number of the installed software is shown briefly, followed by the result of the latest measurement (4).


Start/Stop measuring (2)

Press  to start measuring. The built-in pump starts to suck measuring gas through the needle. The pump stops after 15 seconds, and the result is shown.

Extended measuring

If a measuring period of more than 15 seconds is required, it can be extended by pressing  before the current measurement is complete. Each time you press , a 15 second measuring period is started.


Reduced measuring time

The measuring period can be reduced by pressing  while measuring is in progress.





Memory function

CheckPoint remembers up to 10 measurements, including the latest one. The small display (6) shows the number of measured values stored. If the display is off, 9 measurements and the latest one are stored.


Clear memory

If the memory is full, it must be cleared before new values can be stored. Press  and keep it down. After 2 seconds the memory is cleared, and "0" is shown in the display (6), indicating that the memory is empty.

Show collected measurements

Press , and the first collected measurement is shown. Press  again to show subsequently collected measurements. While measurement values are being shown, the display (6) flashes, indicating the number of the collected measurement. To leave the display of collected measurements, press  until all measurements have been shown, or press  to return directly to the latest measurement. The display (6) stops flashing when you leave the "show collected measurements" function.

Replace collected measurement with new measurement

When showing the collected measurements (the display (6) is flashing), the measurement shown can be overwritten by a new measurement. While the collected measurement is shown, press  to start measuring. After measuring, the measurement is stored in the memory location shown.

What does “Response time (T₉₅)” mean

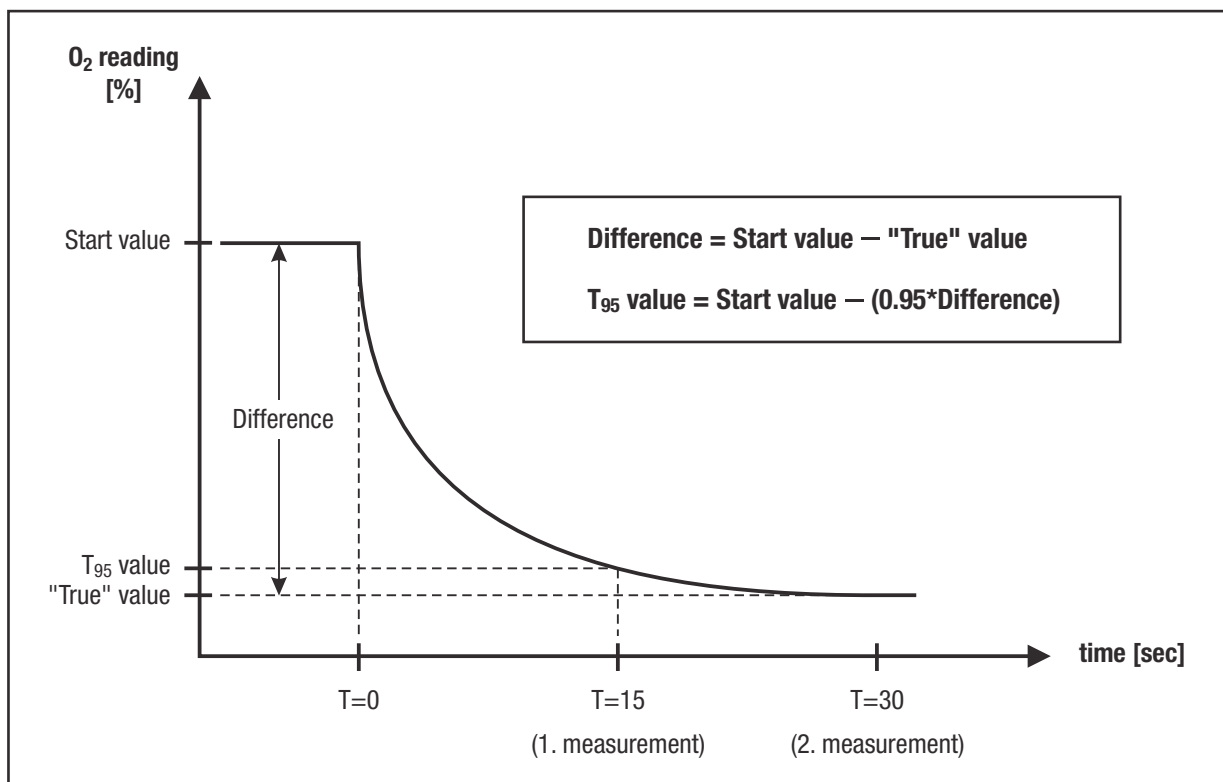
According to the specifications on page 3 the O₂ sensor has a Response time (T₉₅) of 15 sec.

This means that when performing consecutive measurements in areas with large differences in the O₂ concentrations, the device will reach 95 % of the “true” value during the first measurement (15 sec.).

Example:

(See illustration below):

- Last measurement was performed in i.e. **20.9 % O₂**
- The following value to be measured is **1.0 % O₂**
- Difference is:
20.9 - 1.0 = 19.9 % O₂
- The expected read-out value after first measuring is:
20.9 - (0.95 * 19.9) = 2.0 % O₂



Consequently this means that if there is a large difference in the O₂ concentrations between two consecutive measurements, multiple measurements must be performed to obtain the most accurate result.

O₂ sensor temperature sensitivity

Due to the sensor design the readout will be affected when moving the device from cold to warm temperatures or vice versa.



Normally for compensation to work properly the device must be stabilized at the current ambient temperature for some time (up to 1-2 hours). However if you cannot wait for this time, use short stabilizing time, for example 10-15 min., and perform an offset (20.9%) calibration of the O₂ sensor right before each measurement series until device has stabilized.

This will bring the calibration back in line with current response.


Calibration

CheckPoint O₂ only has to be calibrated with atmospheric air. If CheckPoint does not show approx. 20.9 % O₂ (between 21.3 % and 20.5 %) when measuring atmospheric air, it must be calibrated with atmospheric air. Make sure that only atmospheric air is sucked during calibration.

Start calibration (2) + (3) :

Press the  key and hold it down. Press  and release both keys. During calibration the display alternately shows "CAL." and "20.9" for 45 seconds. CheckPoint has now been calibrated.

Stop calibration

Press  to interrupt the calibration process.

External power supply/charger (14)

CheckPoint can be connected to an external power supply/charger. When the power supply is connected/disconnected, the display shows "P.On" and "P.OF.", respectively. If CheckPoint is fitted with ordinary batteries, they will be disconnected. If CheckPoint is fitted with rechargeable batteries, they will be recharged automatically.



WARNING! Only connect the original power supply.

CheckPoint messages

"P.On "	Power on. External power supply connected.
"P.OF. "	Power off. External power supply disconnected.
"Lo./BAt."	Low battery voltage. Replace the batteries, or connect the external power supply/charger.



WARNING! When rechargeable batteries are installed in the CheckPoint, ordinary batteries must NOT be installed.

CheckPoint error messages

"P.Er.	"Power error. Error in the external power supply. Power supply with incorrect output voltage connected. Remove the power supply immediately. CheckPoint cannot be switched off before the incorrect power supply has been removed.
"Er.x "	Internal error. CheckPoint must be forwarded for service.

Moving the measuring hose inlet

Any technically gifted user can convert the unit from a right-handed into a left-handed model and vice versa.

Note: Handle the sensitive internal mechanical and electronic components with care when converting the unit.

Do as follows to convert the CheckPoint from a right-handed model into a left-handed model or vice versa:

1. Remove the two side plates (10) and the battery cover (7).
2. Remove the needle retainer (8).
3. Switch the gas in and gas out screw joints (9) without dismounting the hoses (remember to fasten the joints using a tool)
4. Mount the side plates (7) and (10), starting with the right-hand plate (be careful not to squeeze the hoses)
5. Mount the needle retainer (9) in the opposite side, and press it down until flush with the side plate
6. Test/control: Switch on the CheckPoint, and start measuring with atmospheric air (20.9 %). Block the gas inlet while measuring (e.g. by removing the needle and putting your finger on the end of the needle pen). The O₂ value must not increase by more than 1 %. If this is the case, check that the hoses have been mounted correctly in accordance with the drawing.

Battery replacement

When the CheckPoint using ordinary batteries shows "Lo./BAt.", the batteries must be replaced.

1. Unscrew the screw that secures the battery cover (7) on the left side, and dismount the cover.
2. Disconnect the connector (13) on the battery pack.
3. Take out the battery pack, and replace the batteries with 4 new alkaline batteries (type AA).
4. Mount the battery pack again (lower/left connector).
5. Connect the connector to the battery pack.
6. Mount the cover and screw (be careful not to squeeze the wire)

Spare parts and accessories

Consumables

200717	Kit, needle pen incl. hose and fittings, Ser. Cpl.
200719	Kit, batteries, 4 pcs., type AA, Ser. Cpl.
200726	Kit, rechargeable battery pack, CheckPoint, Ser. Cpl.
220121	Needle kit, 0.5 mm (10 pcs.), Ser. Cpl.
280205	Needle kit, 0.5 mm (100 pcs.), Ser. Cpl.
280167	Needle kit, blunt (10 pcs.), Ser. Cpl.
310335	Filter, sample gas, 0.2 μ , water trap (10 pcs.), Ser.Cpl.

Spare parts

200720	Pump, CheckPoint, Ser. Cpl.
200721	Kit, hoses, internal, Ser. Cpl.
200725	Kit, fittings, CheckPoint, Ser. Cpl.
330016	Sensor, O ₂ EC, Ser. Cpl.
330021	Kit, adapter, Ø3.1/Ø2.2, Sensor O ₂ EC Ser. Cpl.
330034	Hose, silicone, Ø4/7mm (10 pcs. x 70mm) Ser. Cpl.
330035	Tape, glazing (10 pcs. x 70mm) Ser. Cpl.

Optional equipment

310341	Adapter, AC/DC 7,5VDC, Multi, Ser. Cpl.
200678	Option, arm strap, CheckPoint

