

NEW!

OIL CHECK 500 - The monitoring system for permanent highly precise measurement of the vaporous residual oil content compressed air, nitrogen and gases



“Forced Pressure Variation” for long-term stable measurement results - Auto-calibration

Thanks to the innovative “Forced Pressure Variation” measuring method, the OIL CHECK 500 generates reference gas internally in different mass concentrations. With the help of this process, which is intellectually protected by CS INSTRUMENTS, components in the measurement signal caused by ageing or contamination, in particular long-term drifts, can be compensated. No wearing parts such as activated carbon filters are necessary for the generation of zero air. The result is a low-maintenance and long-term stable measurement

Service friendly, no downtime

The sensor unit can be replaced by the customer on site. This eliminates the need to return the entire unit for recalibration.

Process safety

All functions / components are monitored internally. A complete function test report can be printed out via the service software.

On-site calibration

Calibration can be carried out in the field using test gas cylinders. With the service software, a verification report (as-found data) and a calibration report (as-left data) can be generated.

Ideal for mobile measurement

Compact device, easy sampling and quickly ready for measurement

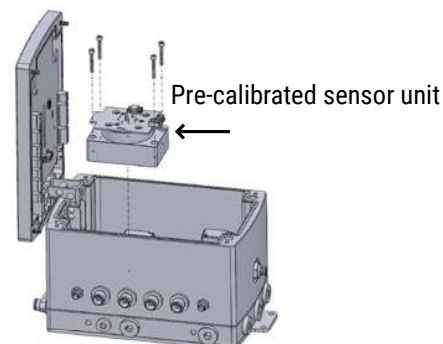
Easy installation

Air inlet / air outlet - sampling via PTFE hose or stainless steel pipe.
Digital and analog interfaces as a standard. Connection via M12 plug



Service friendly – no downtime

Loosen four screws - replace sensor unit. A complete function test is carried out at the push of a button. This means that the measurement can be continued almost without interruption.



TECHNICAL DATA OIL CHECK 500

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|--|--|
| Measured medium: | Compressed air, nitrogen, (free from aggressive, corrosive, acid, toxic, flammable and oxidising components). Further gases on request |
| Measuring unit: | Residual oil content in mg oil/norm m ³ referred to 14.5 psi [abs], +68 F, 0% relative humidity, in accordance with ISO 8573-1 |
| Identifiable substances: | Hydrocarbons, functional hydrocarbons, aromatic hydrocarbons |
| Field of application: | After activated carbon filter, after activated carbon adsorber, after oil-free compressor, always with connected upstream filtration and dryer |
| Ambient temperature: | +68 F ... +113 F, rel. humidity <= 75% without con-densation |
| Compressed air temperature: | +68 F ... +122 F |
| Operational overpressure: | 43.5 ... 130.5 psi, optional pressure reducer connected upstream for up to 4350 psi |
| Humidity of measured gas: | <= 40% rel. humidity, pressure dew point max. +50 F, non-condensable humidity |
| Compressed air connection: | G 1/4" female thread according to ISO 228-1 |
| Measured values: | mg/norm m ³ , pressure and temperature compensated residual oil vapour content |
| Measuring range: | 0,001...5 mg/m ³ (higher measuring ranges on request) |
| Detection limit (residual oil): | 0,001 mg/m ³ |
| Flow of measuring gas: | approx. 0.042 CFM, referred to to 14.5 psi [abs] and +68 F, (atmospheric conditions) |
| Plug-in power supply | 100...240 VAC / 1 Ph. / PE / 50...60 Hz / ± 10% |

| TECHNICAL DATA OIL CHECK 500 | |
|---------------------------------|--|
| Outputs | Digital output: RS 485 interface (Modbus RTU), Ethernet via DS 400 / 500 Analog output: 4...20 mA (electrically isolated) Optional: 2x 4...20 mA analog output (electrically isolated), 2 alarm relays for external alarm unit, alarm values freely adjustable |
| Operating hours counter: | integrated |
| Dimensions (mm): | 7.87 x 5.12 x 4.72 inches (W x H x D) |
| Weight: | approx. 15.4 lbs |

Measure compressed air quality according to ISO 8573

Residual oil - particles - residual moisture

Residual oil content measurement – OIL CHECK 500

For permanent and highly precise measurement of the vaporous oil content from 0.001 mg/m³ to 5 mg/m³. Due to the low detection limit of 0.001 mg/m³, the compressed air quality class 1 (ISO 8573) can be monitored.

Particle counter PC 400

The highly precise, optical particle counter PC 400 measures particles from a size of 0.1 µm and is therefore suitable for monitoring the compressed air quality class 1 (ISO 8573).

Moisture – dew point sensor FA 510

FA 510 measures the pressure dew point down to -112 Ftd. Also in this case the continuous measurement takes care that alert is triggered immediately if the compressed air dryer breaks down.



DS 500 - the intelligent chart recorder of the next generation

The centerpiece of compressed air quality measurement is the chart recorder DS 500. It measures and documents the measured data of the sensors for residual oil content, particles and moisture. The measured values are indicated on a 7" color screen. The curve progressions from the beginning of the measurement can be viewed by an easy slide of the finger. The integrated data logger stores the measured values safely and reliably.

The threshold value can be freely entered for each measured parameter. 4 alarm relays are available for automatic alarm in case of threshold value exceedance.

Optionally DS 500 can be upgraded with up to 12 sensor inputs. For connection to a PLC DS 500 has an Ethernet interface as well as a RS 485 interface.

The communication is done via the Modbus protocol.

| ISO 8573-1:2010 Class | Solid particles | | | Humidity | Oil |
|-----------------------|---|------------|-----------|----------------------------|--|
| | Maximum number of particles per m³ | | | Pressure dew point °F (C°) | Total share of oil (liquid aerosol and vapor) |
| | 0.1 - 0.5 µm | 0.5 - 1 µm | 1 - 5 µm | | mg/ m³ |
| 0 | In accordance with specification by the device user, stricter requirements than class 1 | | | | |
| 1 | ≤ 20,000 | ≤ 400 | ≤ 10 | ≤ -94°F (-70°) | 0.01 |
| 2 | ≤ 400,000 | ≤ 6,000 | ≤ 100 | ≤ -40°F (-40°) | 0.10 |
| 3 | -- | ≤ 90,000 | ≤ 1,000 | ≤ -4°F (-20°) | 1.00 |
| 4 | -- | -- | ≤ 10,000 | ≤ +37.4°F (3°) | 5.00 |
| 5 | -- | -- | ≤ 100,000 | ≤ +44.6°F (7°) | -- |
| 6 | -- | -- | -- | ≤ +50°F (19°) | -- |
| 7 | -- | -- | -- | -- | -- |
| 8 | -- | -- | -- | -- | -- |
| 9 | -- | -- | -- | -- | -- |
| X | -- | -- | -- | -- | -- |

Stationary solution

| DESCRIPTION | ORDER NO. |
|--|-----------|
| DS 500 – intelligent chart recorder in basic version (4 sensor inputs) | 0500 5000 |
| CS Basic - data evaluation in graphic and table form - readout of the measured data via USB or Ethernet. License for 2 working places | 0554 8040 |
| Residual oil measurement: OIL CHECK 500 – residual oil measurement of the vaporous oil content from 0,001...5 mg/m ³ , 43.5 ... 130.5 psi. High-precision PID-Sensor, innovative "Forced Pressure Variation" measuring method, with integrated display, with 4...20 mA analog output and digital Modbus RTU interface, incl. calibration certificate | 0699 0080 |
| Options: Integrated heating element for the stationary Oil Check 500. Keeps the gas temperature constantly above 68 F. Recommended for installations where the room temperature may fall below 68 F. | Z699 0078 |
| 2x 4...20 mA analog output (electrically isolated) | Z699 0178 |
| Sampling system OIL CHECK 500: Sampling system consisting of ½" ball valve (oil- and grease-free), 3.28 ft stainless steel tube 6x1 mm (oil- and grease-free), clamp screwing (oil- and grease-free) | Z699 0175 |
| Alternative: Portable sampling system consisting of 6.56 ft PTFE hose, quick coupling (oil- and grease-free) | Z699 0174 |
| Options for systems > 130.5 psi: Pressure reducer (oil- and grease-free), input pressure max. 4350 psi, output pressure up to 130.5 psi | Z699 0076 |
| Connection cable for probes 16 ft with open ends | 0553 0104 |
| PC 400 particle counter up to 0.1 µm for compressed air and gases, incl. pressure reducer/sampling hose, calibration certificate, Modbus-RTU interface | 0699 0040 |
| Connection cable for probes, 16 ft with open ends | 0553 0104 |

| DESCRIPTION | ORDER NO. |
|--|-----------|
| FA 510 dew point sensor for adsorption dryers -112 ... 68 Ftd incl. factory certificate, 4...20 mA analog output (3-wire connection) and Modbus-RTU interface | 0699 0510 |
| Standard measuring chamber up to 232 psi | 0699 3390 |
| Connection cable for VA/FA series, 16 ft with open ends | 0553 0104 |

Mobile solution with DS 500, OIL CHECK 500, PC 400, FA 510

| DESCRIPTION | ORDER NO. |
|---|-----------|
| DS 500 – intelligent chart recorder in basic version (4 sensor inputs) | 0500 5000 |
| CS Basic - data evaluation in graphic and table form - readout of the measured data via USB or Ethernet. License for 2 working places | 0554 8040 |
| Residual oil measurement: OIL CHECK 500 – residual oil measurement of the vaporous oil content from 0,001...5 mg/m ³ , 43.5 130.5 psi. High-precision PID-Sensor, innovative "Forced Pressure Variation" measuring method, with integrated display, with 4...20 mA analog output and digital Modbus RTU interface, incl. calibration certificate | 0699 0080 |
| Mobile transport trolley including roles (outer dimensions: 26.77x 41.73x 16.14 inch) (W x H x D) with firmly mounted components of OIL Check 400, PC 400, FA 510 | 0554 6017 |
| Options: Integrated heating element for the stationary Oil Check 500. Keeps the gas temperature constantly above 68 F. Recommended for installations where the room temperature may fall below 68 F. | Z699 0078 |
| Mobile sampling system consisting of 6.56 ft PTFE hose, quick coupling (oil- and grease-free) | Z699 7774 |
| Connection cable for probes, 16 ft with open ends | 0553 0104 |
| PC 400 particle counter up to 0.1 µm for compressed air and gases, incl. pressure reducer/ sampling hose, calibration certificate, Modbus-RTU interface | 0699 0040 |
| Connection cable for probes, 16 ft with open ends | 0553 0104 |
| FA 510 Dew point sensor , -112 ... +68 Ftd | 0699 0510 |
| Standard measuring chamber | 0699 3390 |
| Connection cable for VA/FA series, 16 ft with open ends | 0553 0104 |



OIL CHECK 500 - Stationary solution

| DESCRIPTION | ORDER NO. |
|--|-----------|
| Residual oil measurement: | 0699 0080 |
| OIL CHECK 500 – residual oil measurement of the vaporous oil content from 0,001...5 mg/m ³ , 43.5 ... 130.5 psi. High-precision PID-Sensor, innovative "Forced Pressure Variation" measuring method, with integrated display, with 4...20 mA analog output and digital Modbus RTU interface, incl. calibration certificate | |
| Options: | Z699 0078 |
| Integrated heating element for the stationary Oil Check 500. Keeps the gas temperature constantly above +68 F. Recommended for installations where the room temperature may fall below +68 F | |
| 2x 4...20 mA analog output (electrically isolated) | Z699 0178 |
| External alarm unit, wired ready to plug in, for direct connection to the OIL CHECK 500 with 16 ft cable (buzzer and continuous red light) | Z699 0077 |
| Sampling system OIL-Check 500: | Z699 0175 |
| Sampling system consisting of ½" ball valve (oil- and grease-free), 3.28 ft stainless steel tube 6x1 mm (oil- and grease-free), clamp screwing (oil- and grease-free) | |
| Portable sampling system consisting of 6.56 ft PTFE hose, quick coupling (oil- and grease-free) | Z699 0174 |
| For systems > 130.5 psi: Pressure reducer (oil- and grease-free), input pressure max. 4350 psi, output pressure up to 130.5 psi | Z699 0076 |
| DS 500 – intelligent chart recorder in basic version (4 sensor inputs) | 0500 5000 |
| Connection cable for probes, 16 ft with open ends | 0553 0104 |
| CS Basic - data evaluation in graphic and table form - readout of the measured data via USB or Ethernet. License for 2 working places | 0554 8040 |



| DESCRIPTION | ORDER NO. |
|---|-----------|
| OIL CHECK 500 portable - Residual oil measurement of the vaporous oil content from 0.001...5 mg/m³, 43.5 ... 130.5 psi. High-precision PID sensor, innovative "Forced Pressure Variation" measuring method, with integrated display, with 4...20 mA analog output and digital Modbus RTU interface, incl. calibration certificate, in a robust flight case. Connection cable ODU/ODU 16 ft | 0699 0081 |
| Portable sampling system consisting of 6.56 ft PTFE hose, quick coupling (oil- and grease-free) | Z699 0174 |
| DS 500 mobile - intelligent chart recorder with 4 sensor inputs | 0500 5012 |
| CS Basic - data evaluation in graphic and table form - readout of the measured data via USB or Ethernet. License for 2 working places | 0554 8040 |



| DESCRIPTION | ORDER NO. |
|---|-----------|
| Replacement OIL CHECK 500 for the period of re-calibration | 0699 3930 |
| Pre-calibrated sensor unit for the OIL CHECK 500, incl. certificate | 0699 8080 |
| Re-calibration OIL CHECK 500 incl. certificate | 0699 3405 |
| As-Found-Data OIL CHECK 500 with certificate | 9999 3501 |

