



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 -80 °Ctd. 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" colour 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
	Number of particles per m ³			Pressure dew point	Total share of oil (liquid aerosol and vaporous) mg/ m ³
	0.1 - 0.5 µm	0.5 - 1 µm	1 - 5 µm		
0	In accordance with specification by the device user, stricter requirements than class 1				
1	≤ 20,000	≤ 400	≤ 10	≤ -70 °C	≤ 0.01
2	≤ 400,000	≤ 6,000	≤ 100	≤ -40 °C	≤ 0.1
3	--	≤ 90,000	≤ 1,000	≤ -20 °C	≤ 1
4	--	--	≤ 10,000	≤ +3 °C	≤ 5
5	--	--	≤ 100,000	≤ +7 °C	--
6	--	--	--	≤ +10 °C	--
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 , 3...9 bar. 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: 2x 4...20 mA analogue output (electrically isolated)	Z699 0178
Sampling system OIL CHECK 500: Sampling system consisting of ½“ ball valve (oil- and grease-free), 1 m stainless steel tube 6x1 mm (oil- and grease-free), clamp screwing (oil- and grease-free)	Z699 0175
Alternative: Portable sampling system consisting of 2 m PTFE hose, quick coupling (oil- and grease-free)	Z699 0074
Options for systems > 16 bar: Pressure reducer (oil- and grease-free), input pressure max. 300 bar, output pressure up to 10 bar	Z699 0076
Connection cable for probes 5 m 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, 5 m with open ends	0553 0104
FA 510 dew point sensor for adsorption dryers -80 °...20 °Ctd incl. factory certificate, 4...20 mA analogue output (3-wire connection) and Modbus-RTU interface	0699 0510
Standard measuring chamber up to 16 bar	0699 3390
Connection cable for VA/FA series, 5 m 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 , 3...9 bar. 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: 0,68 x 1,06 x 0,41 m) (W x H x D) with firmly mounted components of OIL-Check 400, PC 400, FA 510	0554 6017
Mobile sampling system consisting of 2 m PTFE hose, quick coupling (oil- and grease-free)	Z699 7774
Connection cable for probes, 5 m 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, 5 m with open ends	0553 0104
FA 510 Dew point sensor , -80°...+20 °Ctd	0699 0510
Standard measuring chamber	0699 3390
Connection cable for VA/FA series, 5 m with open ends	0553 0104



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



„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



Rua Dr. Afonso Cordeiro, 80
4450-001 MATOSINHOS

Tel. +351. 229 385 139
Fax. +351. 229 385 140

geral@dicofiltro.com

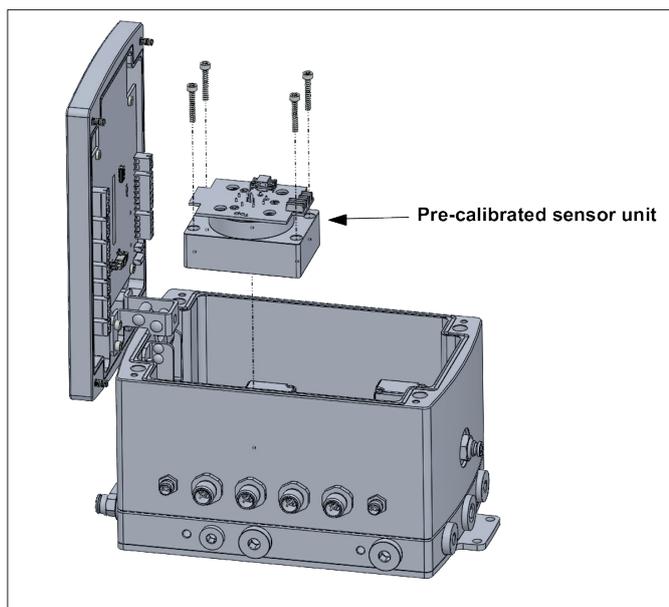
www.dicofiltro.com



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

Measured medium:	Compressed air, free from aggressive, corrosive, acid, toxic, flammable and oxidising components.
Measuring unit:	Residual oil content in mg oil/norm m ³ referred to 1.0 bar [abs], +20 °C, 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:	+20 °C... +45 °C, rel. humidity <= 75% without con-densation
Compressed air temperature:	+20 °C... +50 °C
Operational overpressure:	3...9 bar, optional pressure reducer connected upstream for up to 300 bar
Humidity of measured gas:	<= 40% rel. humidity, pressure dew point max. +10 °C, 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. 0,5 norm litres/minute, referred to to 1.0 bar [abs] and + 20 °C, (atmospheric conditions)
Plug-in power supply	100...240 VAC / 1 Ph. / PE / 50...60 Hz / ± 10%
Outputs	Digital output: RS 485 interface (Modbus RTU), Ethernet via DS 400 / 500 Analogue output: 4...20 mA (electrically isolated) Optional: 2x 4...20 mA analogue output (electrically isolated), 2 alarm relays for external alarm unit, alarm values freely adjustable
Operating hours counter:	integrated
Dimensions (mm):	200 x 130 x 120 (W x H x D)
Weight:	approx. 7 kg



OIL CHECK 500 - Stationary solution



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Residual oil measurement: OIL CHECK 500 – residual oil measurement of the vaporous oil content from 0,001...5 mg/m ³ , 3...9 bar. 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
Option: 2x 4...20 mA analogue output (electrically isolated)	Z699 0178
External alarm unit, wired ready to plug in, for direct connection to the OIL CHECK 500 with 5 m cable (buzzer and continuous red light)	Z699 0077
Sampling system OIL-Check 400: Sampling system consisting of ½" ball valve (oil- and grease-free), 1 m stainless steel tube 6x1 mm (oil- and grease-free), clamp screwing (oil- and grease-free)	Z699 0175
Portable sampling system consisting of 2 m PTFE hose, quick coupling (oil- and grease-free)	Z699 0174
For systems > 16 bar: Pressure reducer (oil- and grease-free), input pressure max. 300 bar, output pressure up to 10 bar	Z699 0076
DS 500 – intelligent chart recorder in basic version (4 sensor inputs)	0500 5000
Connection cable for probes, 5 m 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

OIL CHECK 500 - Portable solution



Flight case

DESCRIPTION	ORDER-NO.
OIL CHECK 500 portable- Residual oil measurement of the vaporous oil content from 0.001...5 mg/m ³ , 3...9 bar. 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 5m	0699 0081
Portable sampling system consisting of 2 m PTFE hose, quick coupling (oil- and grease-free)	Z699 0074
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

