OneTemp pty ltd
MEASURE | CONTROL | RECORD
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DS 500 mobile - intelligent mobile chart recorder

The intelligent chart recorder of the future - energy analysis according to DIN EN 50001
Energy analysis - consumption measurement - leakage calculation at compressed air systems

Advantages at a glance:

- Easy operation via 7" colour screen with touch panel

Versatile:

- Up to 12 sensors / meters can be connected, including third-party sensors / counters incl. power supply

Reliable:

- Reliably stores all measured values on a memory card. Easy reading out via USB stick possible

Intelligent energy analysis:

- costs in € per generated m³ air
- kWh/m³ generated air
- consumption of single lines including summation





Easy & intuitive in its operation

Saves time & costs on installation

Technical data of DS 500 mobile

TECHNICAL DATA DS 500 MOBILE	
Case dimensions	360 x 270 x 150 mm
Weight:	4.5 kg
Material:	Diecast, front foil polyester, ABS
Sensor inputs:	4/8/12 sensor inputs for analogueue and digital sensors; freely allocatable. See options Digital CS sensors for dew point and flow with SDI interface FA/VA series, digital third-party sensors RS485 / Modbus RTU. Analogue CS Sensors for pressure, temperature, clamp-on ammeters preconfigured. Analogue third-party sensors 0/4...20 mA, 0...1/10/30 V, pulse, Pt 100 / Pt 1000, KTY, counter
Voltage supply for sensor:	24 VDC, max. 130 mA per sensor, integrated mains unit, max. 24 VDC, 25 W. For version 8/12 sensor inputs 2 integrated mains units, each max. 24 VDC, 25 W
Interfaces:	USB stick, Ethernet / RS 485 Modbus RTU / TCP, SDI other bus systems on request, webserver optionally, GSM module
Memory card:	Memory size 8 GB Micro SD memory card
Power supply:	100…240 VAC, 50-60 Hz
Colour screen:	7" touch panel TFT transmissive, graphics, curves, statistics
Accuracy:	Please see sensor specifications
Operating temperature:	0…50 °C
Storage temperature:	-20…70 °C

INPUT SIGNALS	
Current signal internal or external power supply	(0…20 mA/4…20 mA)
Measuring range	0…20 mA
Resolution	0.0001 mA
Accuracy	± 0.03 mA ± 0.05 %
Input resistance	50 Ω
Voltage signal	
Measuring range	(0…1 V)
Resolution	0…1 V
Accuracy	0.05 mV
Input resistance	± 0.2 mV ± 0.05 % 100 kΩ
Voltage signal	
Measuring range	(0...10 V / 30 V)
Resolution	0…10 V
Accuracy	0.5 mV
Input resistance	± 2 mV ± 0.05 % 1 MΩ
RTD Pt 100	
Measuring range	-200…850 °C
Resolution	0.1 °C
Accuracy	± 0.2 °C (-100…400 °C) ± 0.3 °C (further range)
RTD Pt 1000	
Measuring range	-200…850 °C
Resolution	0.1 °C
Accuracy	± 0.2° (-100…400 °C)
Pulse	
Measuring range	Min pulse length 100 µs frequency 0...1 kHz max. 30 VDC

DESCRIPTION	ORDER NO.
Intelligent chart recorder DS 500 mobile, 4 sensor inputs	0500 5012
Intelligent chart recorder DS 500 mobile, 8 sensor inputs	0500 5013
Intelligent chart recorder DS 500 mobile, 12 sensor inputs	0500 5014
Option: “Integrated webserver”	Z500 5003
Option: “Mathematics calculation function” for 4 freely selectable channels, (virtual channels): addition, subtraction, division, multiplication	Z500 5008
Option: “Totaliser function for analogue signals”	Z500 5009
CS Basic - data evaluation in graphic and table form - read-out of the measured data via USB or Ethernet. License for 2 working places	0554 8040
CS Soft Energy Analyzer for energy and leakage analysis of compressed air stations	0554 7050
Connection cable for pressure, temperature and third-party sensors to mobile devices, ODU/open ends, 5 m	0553 0501
Connection cable for pressure, temperature and third-party sensors to mobile devices, ODU/open ends, 10 m	0553 0502
Connection cable for VA / FA sensors to mobile devices, ODU/M12, 5 m	0553 1503
Extension cable for mobile devices, ODU/open ends, 10 m	0553 0504
Case for all sensors (dimensions: 500 x 360 x 120 x mm)	0554 6006

Further sensors can be found on pages 32 to 35

DS 500 mobile - intelligent mobile chart recorder

The intelligent chart recorder of the future - energy analysis according to DIN EN 50001

If we talk about operating costs in compressed air systems, we are actually talking about the energy costs, because the electricity costs make up about 70-80% of the total cost of a compressed air system.

Depending on the size of the system, this means considerable operating costs. Even in smaller systems, this may quickly add up to €10,000 to 20,000 per year. This is an amount which can be considerably reduced - even in the case of well operated and maintained plants.

Does this also apply to your compressed air system? Which are your actual costs per generated m³ air? Which energy is gained due to the waste heat recovery? What is the total performance balance of your plant? How high are the differential pressures of single filters, how high is the humidity (pressure dew point), how much compressed air is used?

By means of the new intelligent chart recorder DS 500 mobile and the suitable sensors and meters all these questions can be answered easily. For example by means of a long-term measurement over 7 days, data recording and evaluation on the PC.



Touch screen



12 sensor inputs

Including voltage supply for all sensors



USB stick



Ethernet connection



Sensors for DS 500/DS 400 mobile

Flow meters for compressed air and gases

- Installation and removal under pressure via standard 1/2" ball valve
- A safety ring prevents the uncontrolled ejection in case of installation/removal under pressure
- Usable for different gases: Compressed air, nitrogen, argon, CO2, oxygen



Dew point sensors

- Extremely stable in the long term
- quick adaption time
- Large measuring range (-80° to +20 °Ctd)
- For all dryers: (Adsorption dryers, membrane dryers and refrigeration dryers)
- easy installation under pressure via the standard measuring chamber with quick coupling



Pressure sensors

- large selection of pressure sensors with different measuring ranges for each measuring purpose
- Quick installation under pressure by quick coupling
- Pressure sensor 0-10/16/40/100/250/400 overpressure
- Pressure probe -1 to +15 bar (underpressure/overpressure)
- Differential pressure 0...1.6 bar
- Absolute pressure 0 - 1.6 bar (abs)



Temperature sensors

- Large selection of temperature sensors e.g. for measurement of the ambient temperature or gas temperature
- Pt100 (2-wire or 3-wire)
- Pt1000 (2-wire or 3-wire)
- Temperature sensors with measuring transducer (4-20 mA output)



- Monitoring of compressed air quality according to ISO 8573
- Residual oil, particles, residual moisture



Compressed air quality measurement

- Particle counter PC 400 in a service case
- up to 0.1 µm or
- up to 0.3 µm



Compressed air quality measurement

- For the analysis of compressors (load and idle times, energy consumption, on/off cycles) the current consumption of up to 12 compressors is recorded by clamp-on ammeter
- Measuring range of the clamp-on ammeters:

0 - 400 A

0 - 1000 A



Clamp-on ammeters

- **CS PM 600** mobile current/ effective power meter with external current transformers for large machines and systems
- external current transformers for encompassing the phases (100 A or 600 A)
- External magnetic measuring tip for measuring the voltage
- measures KW, kWh, cos phi, kVar, kVA
- Data transmission **DS 500 mobile** via Modbus



Current/effective power meters

By means of the mobile chart recorder **DS 500 mobile**, all measuring data of a compressor station can be recorded, indicated and evaluated.

At **12 freely assignable sensor inputs**, all our sensors can be connected as well as any optional **third-party sensors and meters with the following signal outputs:**

4-20 mA, 0-20 mA I 0-1 V / 0-10 V / 0-30 V I Pt 100 (2- or 3-wire), Pt 1000 (2- or 3-wire), KTY I pulse outputs (e.g. of gas meters) I Modbus protocol