OneTemp pty ltd
MEASURE | CONTROL | RECORD
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DS 500 - Intelligent chart recorder for compressed air and gases

Measurement - control - indication - alarm - recording - evaluation



Advantages at a glance:

- **Clear layout:** 7" colour screen with touch panel...
- **Versatile:**Up to 12 optional sensors can be connected
- **Suitable for industrial applications:** Metal housing IP 65 or panel mounting...
- **Data available through world wide web:** Network-compatible and remote transmission via webserver
- **Mathematical function:** for internal calculations
- **Totaliser function:** for analogueue signals
- **...saves time and costs during installation**

DS 500 - the intelligent chart recorder of the next generation

Recording of the measured data, indication on a big colour screen, alerting, storage, not to mention remote read-out via webserver... this is all possible with DS 500.

All measured values, measurement curves and threshold value exceedances are indicated. The curve progressions from the beginning of the measurement can be viewed by an easy slide of the finger.

The big difference to ordinary paperless chart recorders reveals in the easy initiation and in the evaluation of the measured data. All sensors are identified directly and powered by DS 500. Everything is matched and tuned.

Mathematical function for internal calculations, e.g. the typical figures of a compressed air system:

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

Totaliser function for analogueue signals (e.g. 0/4…20 mA, 0…10 V). In case of third-party sensors which e.g. only give a 4...20 mA signal for the actual flow in m³/h, a total counter reading in m³ can be generated by means of the totaliser function.

No time consuming studying of the instruction manual... this saves time. Internal voltage supply of all sensors, no wiring of external mains units ... this saves additional costs.

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, CO_2, 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 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 probe 0-10/16/40/100/250/400 bar 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)



Compressed air quality measurement

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



Current/effective power meters

- CS PM5110 current/effective power meters for panel mounting
- External current transformers for encompassing the phases (max. 2000 A)
- Measures kW, kWh, cos phi, kVar, kVA
- Data transfer DS 500 via Modbus

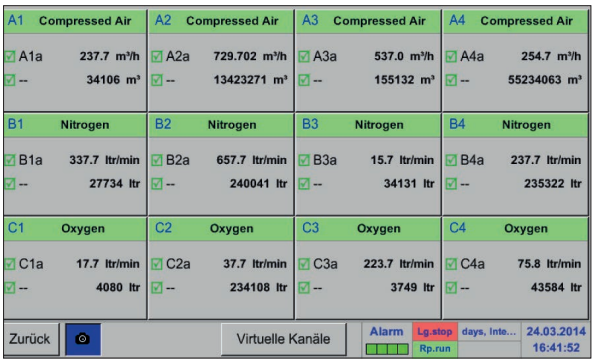


By means of the intelligent chart recorder **DS 500**, all measuring data of a compressor station can be recorded, indicated and evaluated.

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:**

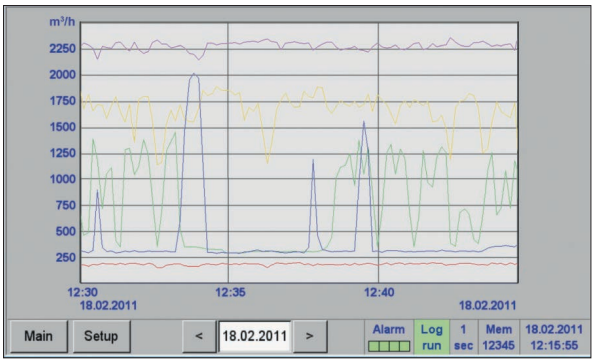
4-20 mA, 0-20 mA I 0-1 V / 0-10 V / 0-30 V I Pt 100 (2- or 3-wire), Pt 1000 (2- or 3-wire), pulse outputs (e.g. of gas meters) I Modbus protocol.

Measured values, statistics, curves with the 7" colour screen with touch panel



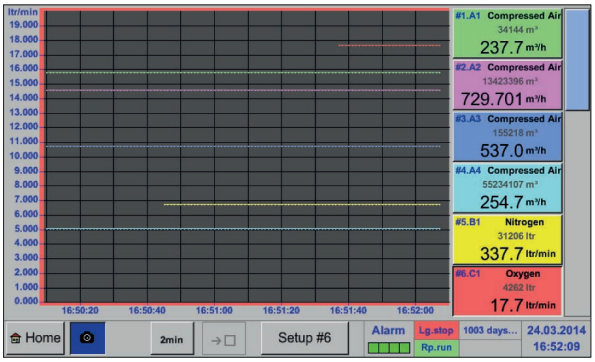
Actual measured values

All measured values can be seen at a glance.
Threshold value exceedances are indicated in red color.
A „measuring site name“ can be allocated to each sensor.



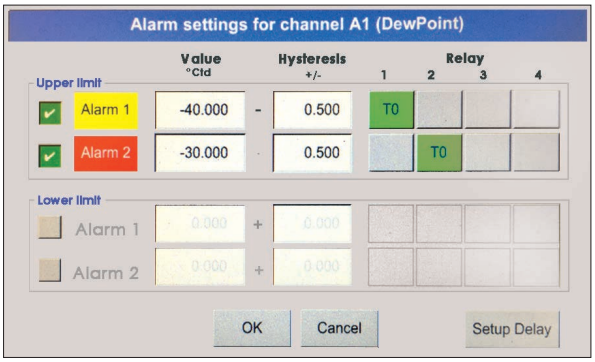
Graphic display

This display replaces the former evaluation of ordinary paper chart recorders and offers lots of advantages. The time axis can be moved by a finger slide.
The „zoom function by finger movement“ which enables an analysis of peak values is unique.



Actual measured values and graphic

Additionally to the measurement curves, the current measured values are indicated as well.



Adjustment of the alarm relays

Each one of the four alarm relays can be allocated individually to a connected sensor. The alarm thresholds and the hysteresis can be freely adjusted.
New: It is possible to set an alarm delay for each alarm relay so that the relay is only triggered after that period of time.

Technical data of the DS 500

TECHNICAL DATA DS 500	
Dimensions of housing:	280 x 170 x 90 mm, IP 65
Connections:	18 x PG for sensors and supply
Version panel mounting:	Cutout panel 250 x 156 mm
Weight:	7.3 kg
Material:	Die cast metal, front screen polyester
Sensor inputs:	• 4/8/12 sensor inputs for analogueue and digital sensors; freely allocatable. See options • Digital CS sensors for dew point and consumption with SDI interface FA/VA series, • digital third-party sensors RS 485 / Modbus RTU, other bus systems realizable on request. • Analogue CS Sensors for pressure, temperature, clamp-on ammeters pre-configured. • Analogue third-party sensors 0/4...20 mA, 0...1/10/30 V, pulse, Pt 100 / Pt 1000, KTY
Voltage supply for sensor:	24 VDC, max. 130 mA per sensor, integrated mains unit max. 24 VDC, 25 W. In case of 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 optional
Outputs:	• 4 relays (changeover contact 230 VAC, 6 A), alarm management, relays freely programmable, collective alarm • Analog output, pulse in case of sensors with own signal output looped, such as e.g. VA/FA series
Memory card:	Memory size 8 GB Micro SD card
Power supply:	100...240 VAC / 50-60 Hz, special version 24 VDC
Colour screen:	7" touch panel TFT transmissive, graphics, curves, statistics
Accuracy:	see sensor specifications
Operating temperature:	0…50 °C
Storage temperature:	-20…70 °C
Optional:	Web server

DESCRIPTION	ORDER NO.
DS 500 - intelligent chart recorder in basic version (4 sensor inputs)	0500 5000
Option: 4 additional sensor inputs for DS 500 V2	Z500 5501
Option: 8 additional sensor inputs for DS 500 V2	Z500 5502
Option: Integrated webserver	Z500 5003
Option: version for panel mounting	Z500 5006
Option: Power supply 24 VDC (instead of 100…240 VAC)	Z500 5007
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
External Gateway Profibus for connecting an integrated RS 485 interface	Z500 3008
CS Basic – data evaluation graphically and in tabular form - reading of the measured data via USB or Ethernet, license for 2 workstations	0554 8040
CS Network – energy monitoring with client/server solution (max. 20 measured values of different sensors/devices)	0554 8041
CS Network – energy monitoring with client/server solution (max. 50 measured values of different sensors/devices)	0554 8042
CS Network – energy monitoring with client/server solution (max. 100 measured values of different sensors/devices)	0554 8043
CS Network - Energy Monitoring with Client / Server Solution (max. 200 measured values of different sensors / devices)	0554 8044

Matching sensors can be found on pages 18 to 20

INPUT SIGNALS	
Current signals	(0…20 mA/ 4…20 mA)
Internal or external power supply	
Measuring range	0…20 mA
Resolution	0.0001 mA
Accuracy	± 0.03 mA ± 0.05 %
Input resistance	50 Ω
Voltage signal:	(0…1 V)
Measuring range	0…1 V
Resolution	0.05 mV
Accuracy	± 0.2 mV ± 0.05 %
Input resistance	100 kΩ
Voltage signal	(0...10 V / 30 V)
Measuring range	0…10 V
Resolution	0.5 mV
Accuracy	± 2 mV ± 0.05 %
Input resistance	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	Min pulse length 500 µs frequency 0...1 kHz max. 30 VDC
Measuring range	