



DS 400 - Chart recorder

for all relevant parameters of compressed air



Standard equipment:

- USB interface
- 3.5" graphic display with touch screen
- Integrated mains unit for supply of the sensors
- 4...20 mA output of all connected active sensors
- Pulse output (for total consumption) in case of flow sensors
- 2 alarm relays (pot.-free switch-over contacts, max. 230 V, 3 A)








Software options:

- Integrated webserver
- Mathematics calculation function
- Totalizer function

Hardware options:

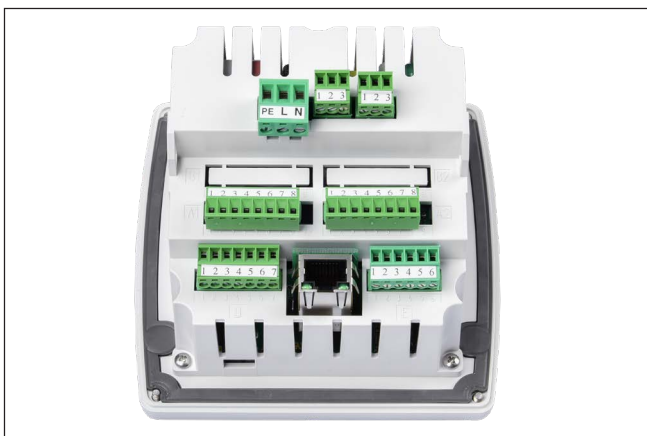
- Integrated data logger
- Ethernet / RS 485 interface
- additional sensor inputs (digital or analogue) selectable

The sensor inputs board 1 and 2 can be selected according to the required sensors (see table pages 16 to 18):

Digital	Digital	Digital	Digital	Analog	Analog	Analog	Analog
m ³ /h, m ³	°Ctd	A, kW/h		bar	A	°C	°C
							
Flow sensor	Dew point sensor	Current/effective power meter	Third-party sensors with RS 485	Pressure sensor	Clamp-on ammeter	Temperature sensor	Third party sensor analog output



Panel mounting



Back view

TECHNICAL DS 400

Dimensions:	118 x 115 x 98 mm IP 54 (wall housing) 92 x 92 x 75 mm (panel mounting)
Inputs:	2 digital inputs for FA 5xx resp. VA 5xx
Interface:	USB
Power supply:	100...240 VAC, 50-60 Hz
Accuracy:	Please refer sensor specification
Alarm outputs:	2 relays, (pot.-free)
Options:	
Data logger:	100 million measuring values start/stop time, measuring rate freely adjustable
2 additional sensor inputs:	for connection of pres- sure sensors, tempera- ture sensors, clamp-on ammeters, third-party sensors with 4...20 mA, 0 to 10 V, Pt 100, Pt 1000

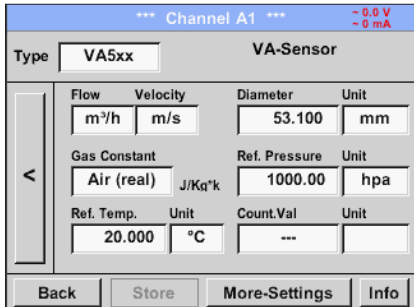
DESCRIPTION			ORDER-NO.
DS 400 - Mobile chart recorder with graphic display and touch screen	Sensor input 1+2	Sensor input 3+4	
	Digital (Z500 4003)	-----	0500 4000 D
	Digital (Z500 4003)	Digital (Z500 4003)	0500 4000 DD
	Digital (Z500 4003)	Analog (Z500 4001)	0500 4000 DA
	Analog (Z500 4001)	-----	0500 4000 A
	Analog (Z500 4001)	Analog (Z500 4001)	0500 4000 AA
Options:			
Option: Integrated data logger for 100 million measured values			Z500 4002
Option: Integrated Ethernet and RS 485 interface			Z500 4004
Option: Integrated webserver			Z500 4005
Option: „Mathematics calculation function“ for 4 freely selectable channels, (virtual channels): addition, subtraction, division, multiplication			Z500 4007
Option: „Totalizer function for analogue signals“			Z500 4006
External Gateway Profibus for RS 485 interface connection			Z500 3008
Future accessories:			
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

INPUT SIGNALS	
Current signal	(0...20mA/4...20mA)
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	
Measuring range	minimum pulse length 500 μs frequency 0 ... 1 kHz, max. 30 VDC



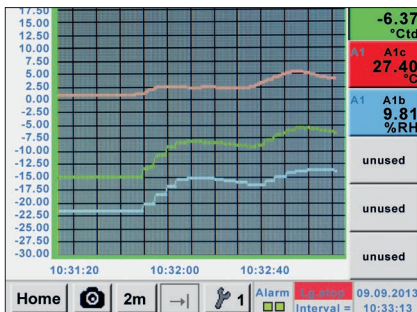
DS 500 / DS 400

Easy operation via touch screen:



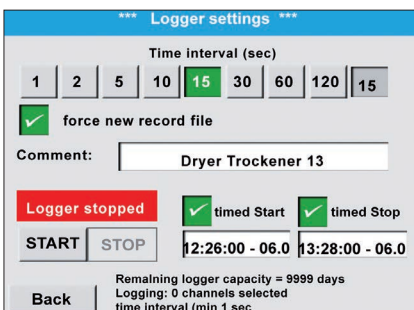
Configuration of flow sensor

In the menu of the DS 500 / DS 400, the flow sensor VA 5xx can be set to the respective pipe inside diameter. Furthermore, the unit, the gas type and the reference condition can be set. The meter reading can be set to „zero“ if necessary.



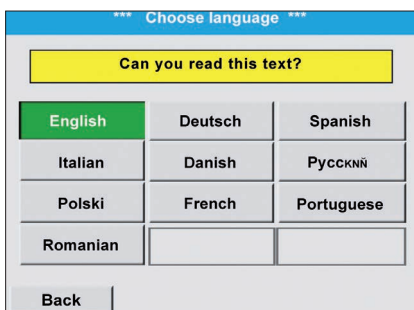
Graphic view

In the graphic view all measured values are indicated as curves. It is possible to browse back on the time axis by a slide of the finger (without data logger maximum 24 h, with data logger back to the start of the measurement).



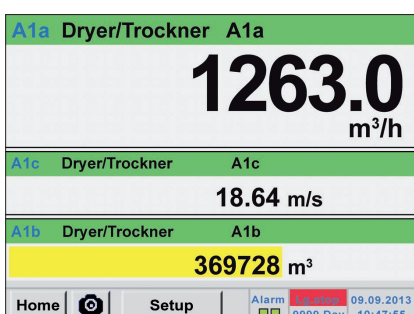
Data logger

With the option „integrated data logger“ the measured values are stored in the DS 500 / DS 400. The time interval can be determined freely. It is also possible to set the start time and end time of the data recording. Reading the measured data via USB interface or via the optional Ethernet interface.



Selection of the language

Many languages are already stored in every DS 500/DS 400. The desired language can be selected via the selection button.



All relevant parameters at a glance

In addition to the flow rate in m³ / h, the DS 500 / DS 400 also displays other parameters such as total consumption in m³ and speed in m/s.



Webserver

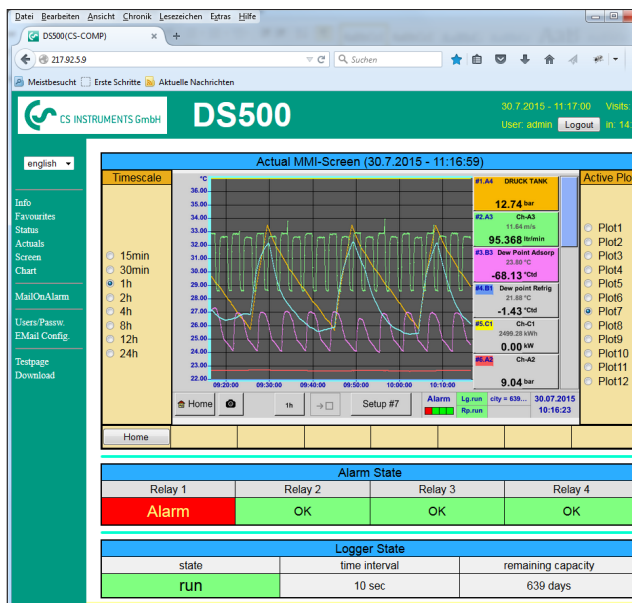
The new webserver with extended features for the chart recorders DS 500 and DS 400 is available with immediate effect. Users can get direct access to their measured values worldwide (current and historic ones) and display them on their smart phone, tablet or computer. For monitoring of threshold values users can receive an automated „alarm E-mail“.

The new webserver can be ordered as an option with each stationary DS 500/400, but also for their mobile devices. For using the features of the webserver, the DS 500/400 must be set up with it's own IP address within the network.

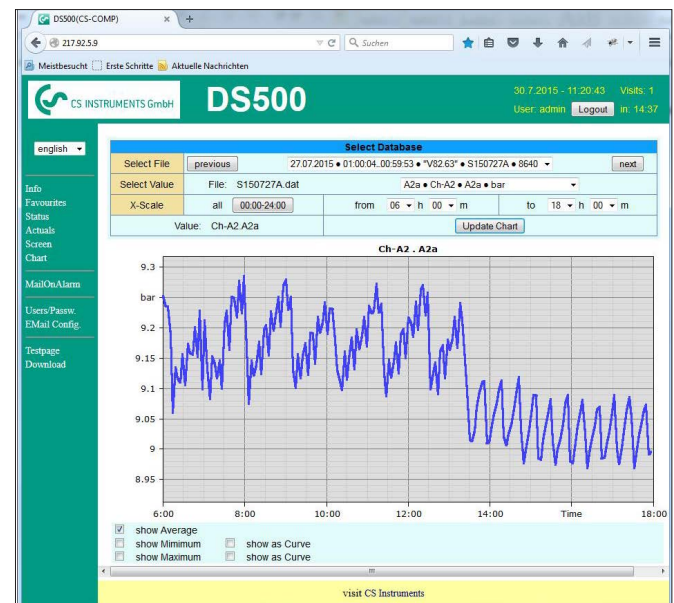
The webserver provides a website, which displays the measuring values. This website can be accessed from any web browser on each smart phone, tablet or computer via it's unique IP address. This is all possible without the installation of any new or additional software.



View of the real time measured values (graphic table view)



View of the historic measured values as a single chart (time period freely selectable)



Automated „alarm e-mail“ for threshold value exceedance:

Access authorization

Different groups with different users/passwords can be assigned to different access levels.

Starting the data logger

In case of a stopped data logger the group operator or administrator can start the data logger remotely, via the web server.

PS: The new webserver can be retro fitted to any DS 500/ DS 400 already in use.