



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 analog output of all connected active sensors
- Pulse output (for total consumption) in case of flow sensors
- 2 alarm relays (pot.-free changeover contacts, max. 230 V, 3 A)








Software options:

- Integrated webserver
- Mathematics calculation function
- Totalizer function

Hardware options:

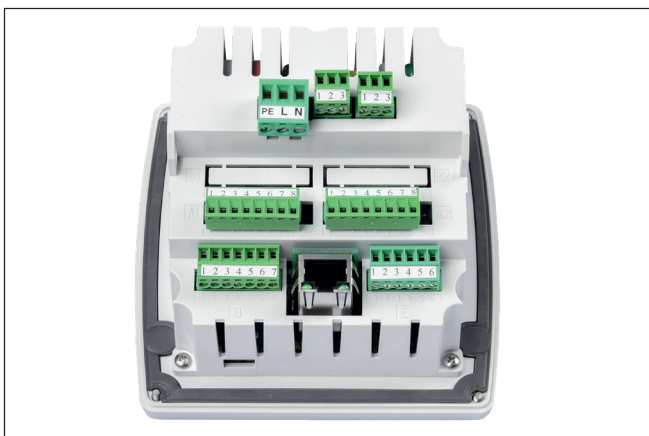
- Integrated data logger
- Ethernet / RS 485 interface
- Additional sensor inputs (digital or analog) selectable

The sensor inputs 1 and 2 and 3 and 4 can be selected according to the required sensors (see table pages 20 to 21):

Digital	Digital	Digital	Digital	Digital	Analog	Analog	Analog	Analog
CFM / CF	°Ftd	A, kWh		psi	A	°F	°F	
								
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

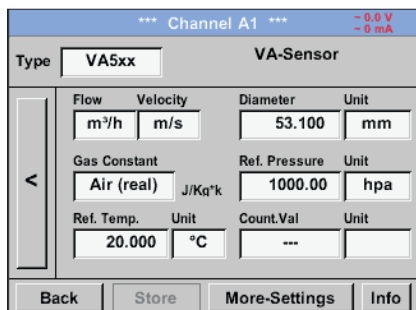
Dimensions:	4.5 x 4.5 x 3.8 inch IP 54 (wall housing) 3.6 x 3.6 x 2.9 inch (panel mounting)
Inputs:	2 digital inputs for FA 5xx resp. VA 5xx
Interface:	USB interface
Power supply:	100...240 VAC, 50-60 Hz
Accuracy:	See sensor specifications
Alarm outputs:	2 relays, (pot.-free)
Options:	
Data logger:	100 million measured values start/stop time, measuring rate freely adjustable
2 additional sensor inputs:	For connection of pressure sensors, temperature sensors, clamp-on ammeters, third-party sensors with 4...20 mA, 0 to 10 V, Pt 100, Pt 1000

DESCRIPTION		ORDER NO.	INPUT SIGNALS	
DS 400 - Chart recorder with graphic display and touch screen	Sensor input 1+2	Sensor input 3+4	Current signals	(0...20 mA/4...20 mA)
	Digital (Z500 4003)	-----	internal or external power supply	
	Digital (Z500 4003)	Digital (Z500 4003)	Measuring range	0...20 mA
	Digital (Z500 4003)	Analog (Z500 4001)	Resolution	0.0001 mA
	Analog (Z500 4001)	-----	Accuracy	$\pm 0.03 \text{ mA} \pm 0.05 \%$
	Analog (Z500 4001)	Analog (Z500 4001)	Input resistance	50Ω
Options:			Voltage signal:	(0...1 V)
Option: Integrated data logger for 100 million measured values		Z500 4002	Measuring range	0...1 V
Option: Integrated Ethernet and RS 485 interface		Z500 4004	Resolution	0.05 mV
Option: Integrated webserver		Z500 4005	Accuracy	$\pm 0.2 \text{ mV} \pm 0.05 \%$
Option: "Mathematics calculation function" for 4 freely selectable channels, (virtual channels): addition, subtraction, division, multiplication		Z500 4007	Input resistance	100 k Ω
Option: "Totalizer function for analog signals"		Z500 4006	Voltage signal	(0...10 V / 30 V)
External Gateway Profibus for RS 485 interface connection		Z500 3008	Measuring range	0...10 V
			Resolution	0.5 mV
			Accuracy	$\pm 2 \text{ mV} \pm 0.05 \%$
			Input resistance	1 M Ω
Further accessories:			RTD Pt 100	
CS Basic – data evaluation graphically and in tabular form - reading of the measured data via USB or Ethernet, license for 2 workstations		0554 8040	Measuring range	-328...1562 °F
CS Network – energy monitoring with client/server solution (max. 20 measured values of different sensors/devices)		0554 8041	Resolution	0.1 °F
CS Network – energy monitoring with client/server solution (max. 50 measured values of different sensors/devices)		0554 8042	Accuracy	$\pm 0.2 \text{ °F} (-148...752 \text{ °F})$ $\pm 0.3 \text{ °F} (\text{further range})$
CS Network – energy monitoring with client/server solution (max. 100 measured values of different sensors/devices)		0554 8043	RTD Pt 1000	
CS Network - Energy Monitoring with Client / Server Solution (max. 200 measured values of different sensors / devices)		0554 8044	Measuring range	-328...1562 °F
			Resolution	0.1 °F
			Accuracy	$\pm 0.2 \text{ °F} (-148...752 \text{ °F})$
			Pulse	
			Measuring range	Min pulse length 500 μs frequency 0...1 kHz max. 30 VDC



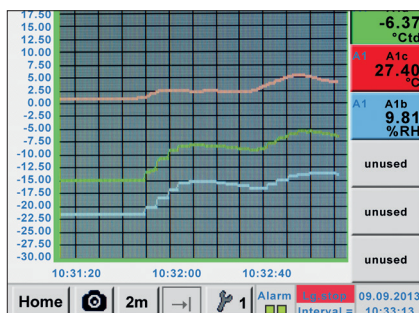
DS 500 / DS 400

Easy operation via touchscreen:



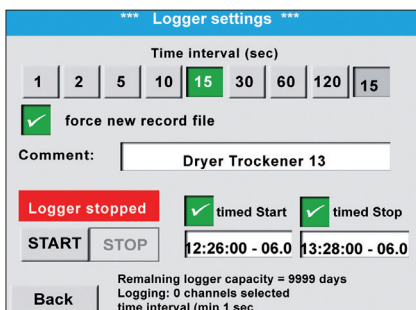
Configuration of flow sensor

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).



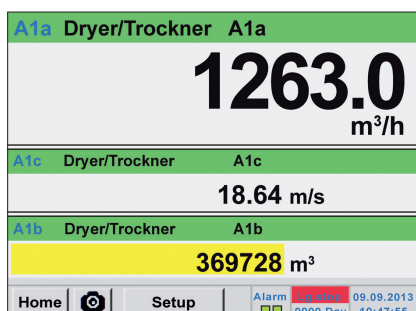
Data logger

With the option „integrated data logger“ the measured values are stored in the DS 500 / DS 400. The time interval can be freely set. Furthermore there is the possibility to fix the starting time and the end time of the data recording. Read-out of the measured data via USB interface or via the optional Ethernet interface.



Selection of the language

DS 500 / DS 400 "speaks" several languages. The desired language can be selected via the selection button.



All relevant parameters at a glance

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



Web server

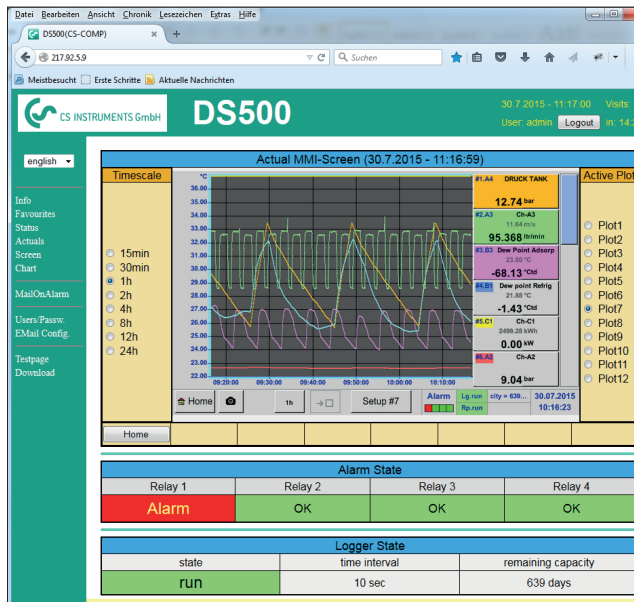
The new webserver with substantially extended features for the chart recorders DS 500 and DS 400 is available with immediate effect. Users can thereby get direct access to their measured data worldwide (current and historic ones) and display them on their smart phone, tablet or computer.

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 corporate network.

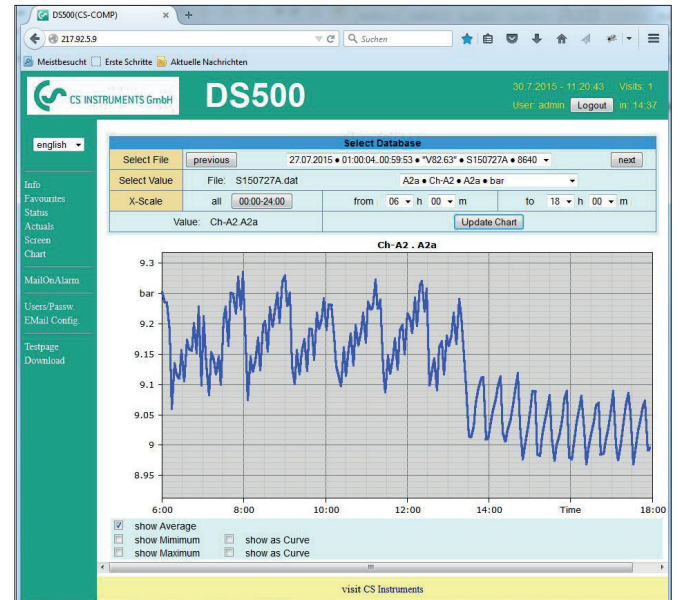
The web server in the DS 500/400 provides a website, which displays the measured values. This website can be accessed from smartphones, tablets and computers via the respectively installed browser. Advantage: This is all possible without the installation of any new or additional software.



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



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



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 retrofitted to any DS 500/DS 400 already in use.