DS 400 Flow station for compressed air and gases
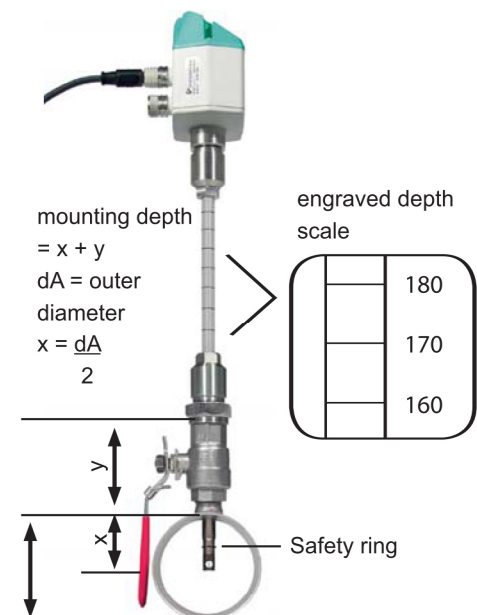
Chart recorder DS 400

- 3.5" graphic display with touch screen - shows the progression of the measured values in graphic form

- 2 sensor inputs for flow sensors/ dew point sensors

- USB interface for reading out the data logger via USB stick

- 2 additional sensor inputs for pressure sensors, current meters and so on

- Option: Data logger for 100 million measured values (2 GB SD card)

- Option: Ethernet and RS 485 interface (Modbus protocol)

- Option: Webserver

- Option: CS Soft Basic - comfortable evaluation of the measured data
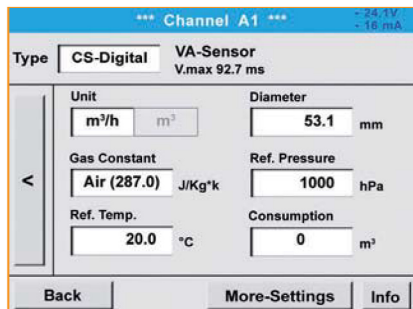
Flow sensor VA 500

- Easy installation and removal under pressure via 1/2" ball valve

- Several gas types - freely adjustable at DS 400

- Usable from 1/2" to 12" DN 1000

- Diameter freely adjustable at DS 400

- Output for 4...20 mA for m³/h

- Pulse output for m³ (total flow)

Flow measuring ranges VA 500 for compressed air (ISO 1217:1000 mbar, 20 °C)

Inner diameter of pipe			VA 500 Standard (92.7 m/s)	VA 500 Max. (185.0 m/s)	VA 500 HighSpeed (224.0 m/s)
Inch	mm		Measuring range from to	Measuring range from to	Measuring range from to
1/2"	16.1	DN 15	2.5...760 l/min	3.5...1516 l/min	6.0...1836 l/min
3/4"	21.7	DN 20	0.3...89 m³/h	0.4...178 m³/h	0.7...215 m³/h
1"	27.3	DN 25	0.5...148 m³/h	0.6...295 m³/h	1.1...357 m³/h
1 1/4"	36.0	DN 32	0.9...280 m³/h	1.2...531 m³/h	2.5...644 m³/h
1 1/2"	41.9	DN 40	1.2...365 m³/h	1.5...728 m³/h	3.0...886 m³/h
2"	53.1	DN 50	2...600 m³/h	2.5...1198 m³/h	4.6...1450 m³/h
2 1/2"	71.1	DN 65	3.5...1096 m³/h	5...2187 m³/h	7...2648 m³/h
3"	84.9	DN 80	5...1570 m³/h	7...3133 m³/h	12...3794 m³/h
4"	110.0	DN 100	9...2645 m³/h	12...5279 m³/h	16...6391 m³/h
5"	133.7	DN 125	13...3912 m³/h	18...7808 m³/h	24...9453 m³/h
6"	159.3	DN 150	18...5560 m³/h	25...11097 m³/h	43...13436 m³/h
8"	200.0	DN 200	26...8786 m³/h	33...17533 m³/h	50...21230 m³/h
10"	250.0	DN 250	40...13744 m³/h	52...27429 m³/h	80...33211 m³/h
12"	300.0	DN 300	60...19815 m³/h	80...39544 m³/h	100...47881 m³/h
....					

Description	Order No.
Flow measurement DS 400 for installation into existing pipelines consisting of: Chart recorder DS 400 and flow sensor VA 500 in basic version, Standard (92,7 m/s), sensor length 220 mm	0601 4006
Options for DS 400	
Option: Integrated data logger for 100 million measured values	Z500 4002
Option: Integrated Ethernet and RS 485 interface	Z500 4004
Option: 2 additional sensor inputs for analogue sensors (pressure sensors, temperature sensors etc.)	Z500 4001
Option: Integrated webserver	Z500 4005
Options for flow sensor VA 500 (see page 81)	
Max. version (185 m/s)	Z695 5003
High Speed version (224 m/s)	Z695 5002
Option 1 % Accuracy of m.v. ± 0,3 % of f.s.	Z695 5005
Sensor length 120 mm	ZSL 0120
Sensor length 160 mm	ZSL 0160
Sensor length 300 mm	ZSL 0300
Sensor length 400 mm	ZSL 0400
Further accessories	
CS Soft Basic - data evaluation in graphic and table form - reading out of measured data via USB or Ethernet	0554 7040
Calibration	
5 point precision calibration including ISO certificate	3200 0001

mounting depth
$= x + y$
dA = outer diameter
$x = \dfrac{dA}{2}$

engraved depth scale
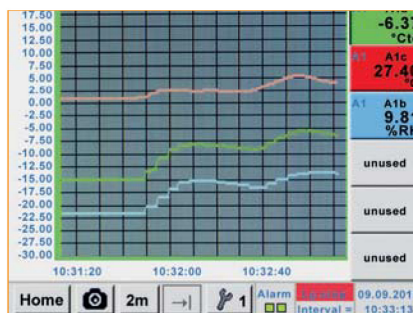
180

170

160

Safety ring

Easy operation via touch screen

Configuration of flow sensor

The flow sensor VA 500 can be adjusted to the respective inner diameter of the pipe in the menu of DS 400.

Furthermore, the unit, the gas type as well as the reference conditions can be entered. The counter can be set to „zero" if required.


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).
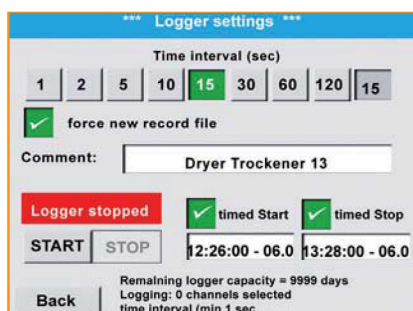

Data logger

Measured values are stored in DS 400 by means of the option „integrated data logger". 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. Readout of the measured data via USB interface or via the optional Ethernet interface.
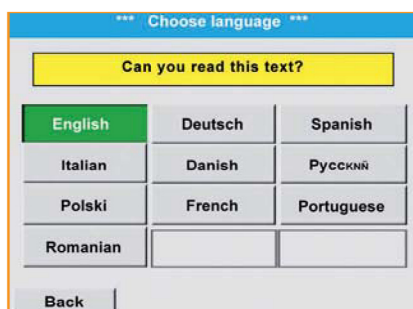
Selection of the language

DS 400 „speaks" several languages. The required language can be selected by means of the select button.
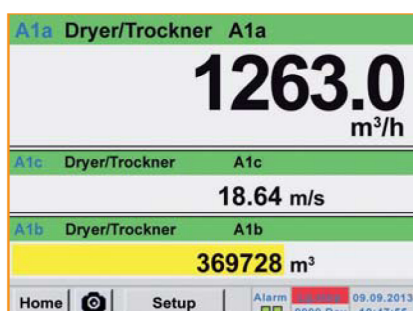
All relevant parameters at a glance

In addition to the flow in m³/h DS 400 shows further parameters like the total flow in m³ and the velocity in m/s.

Technical data VA 500

Parameters:	m³/h, l/min (1000 mbar, 20°C) in case of compressed air resp. Nm³/h, Nl/min (1013 mbar, 0°C) in case of gases
Units adjustable via keys at display:	m³/h, m³/min, l/min, l/s, ft/min, cfm, m/s, kg/h, kg/min
Adjustable via keypad:	diameter for volume flow calculation, counter resettable
Meas. principle:	calorimetric measurement
Sensor:	Thermal mass flow sensor
Meas. medium:	air, gases
Gas types adjustable via external device DS 400, DS 500, PI 500	air, nitrogen, argon, nitrous oxide, CO2, oxygen
Accuracy: (m.v.: of meas. value) (f.s.: of full scale)	± 1.5 % of m.v. ± 0.3 % of f.s. on request ± 1.0 % of m.v. ± 0.3 % of f.s.
Operating temp.:	-30...110 °C probe tube -30...80 °C housing
Operating pressure:	up to 50 bar
Digital output:	RS 458 interface, Modbus RTU, M-Bus (optionally)
Analogue output:	4...20 mA for m³/h resp.l/min; on request: scaling for cfm,m³/min, l/min, l/s, ft/min, m/s
Pulse output:	1 pulse per m³ resp. per liter galvanically separated
Power supply:	18...36 VDC, 5 W
Burden:	< 500 Ω
Housing:	polycarbonate
Probe tube:	stainless steel, 1.4301 mounting length 220 mm, Ø 10 mm
Mounting thread:	G 1/2"

Technical data 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 VA 500/520
Interface:	USB
Power supply:	100...240 VAC, 50-60 Hz
Accuracy:	please see VA 500
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 pressure sensors, temperature sensors, clamp-on ammeters, third-party sensors with 4...20 mA 0 to 10 V, Pt 100, Pt 1000