



DS 400 - chart recorder

for all relevant parameters of compressed air

Software options:

- Integrated webserver
- Mathematic calculation function
- Totalizer function

Hardware options:

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



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)

The 2 sensor inputs board 1 and 2 can be selected according to the required sensors:

Digital	Digital	Digital	Digital	Analogue	Analogue	Analogue	Analogue
m ³ /h, m ³	°Ctd	A, kW/h	optional	bar	A	°C	°C
Flow sensor	Dew point sensor	Current meters	Third-party sensors with RS 485	Pressure sensor	Clamp-on ammeter	Temperature sensor	Third-party sensors analogue output

Description	Order No.
DS 400 - Mobile chart recorder with graphic display and touch screen	
2 sensor inputs board 1	2 sensor inputs board 2
Digital (Z500 4003)	-----
Digital (Z500 4003)	Digital (Z500 4003)
Digital (Z500 4003)	Analogue (Z500 4001)
Analogue (Z500 4001)	-----
Analogue (Z500 4001)	Analogue (Z500 4001)
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	Z500 3008
Further accessories	
CS Soft Basic - data evaluation in graphic and table form - reading out of the measured data of DS 400 via USB or Ethernet	0554 7040
CS Soft Network - Database Client/Server Solution (up to 5 DS 400) - database (MySQL) to Server - data evaluation via Client-Software	0554 7041
CS Soft Network - Database Client/Server Solution (up to 10 DS 400) - database (MySQL) to Server - data evaluation via Client-Software	0554 7042
CS Soft Network - Database Client/Server Solution (up to 20 DS 400) - database (MySQL) to Server - data evaluation via Client-Software	0554 7043
CS Soft Network - Database Client/Server Solution (>20 DS 400) - database (MySQL) to Server - data evaluation via Client-Software	0554 7044

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 FA 510 resp. 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

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	1 MΩ
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	min pulse length 500 µs frequency 0...1 kHz max. 30 VDC



Suitable probes from the CS Instruments product range

Flow sensors VA 500:	Order No.	
VA 500 flow sensor in basic version: Standard (92.7 m/s), sensor length 220 mm, without display	0695 5001	
Option for VA 500:		
Max. version (185 m/s)	Z695 5003	
High Speed version (224 m/s)	Z695 5002	
Sensor length 120 mm	ZSL 0120	
Sensor length 160 mm	ZSL 0160	
Sensor length 300 mm	ZSL 0300	
Sensor length 400 mm	ZSL 0400	
Flow meters VA 520:		
Flow meter VA 520 with integrated measuring section, (R 1/4" DN 8)	0695 0520	
Flow meter VA 520 with integrated measuring section, (R 1/2" DN 15)	0695 0521	
Flow meter VA 520 with integrated measuring section, (R 3/4" DN 20)	0695 0522	
Flow meter VA 520 with integrated measuring section, (R 1" DN 25)	0695 0523	
Flow meter VA 520 with integrated measuring section, (R 1 1/4" DN 32)	0695 0526	
Flow meter VA 520 with integrated measuring section, (R 1 1/2" DN 40)	0695 0524	
Flow meter VA 520 with integrated measuring section, (R 2" DN 50)	0695 0525	
Dew point sensors:		
FA 510 dew point sensor, -80...+20 °Ctd incl.inspection certificate	0699 0510	
FA 510 dew point sensor, -20...+50°Ctd, incl.inspection certificate	0699 0512	
Standard measuring chamber for compressed air up to 16 bar	0699 3390	
Connection cables for flow sensors / dew point sensors:		
Connection cable 5 m	0553 0104	
Connection cable 10 m	0553 0105	
Pressure sensors: (further pressure sensors please see page 9)		
Standard pressure sensor CS 16 from 0...16 bar, ± 1 % accuracy of full scale	0694 1886	
Standard pressure sensor CS 40 from 0...40 bar, ± 1 % accuracy of full scale	0694 0356	
Temperature sensors:		
Bendable temperature probe, Pt100 Class B, length 300 mm, 2 m probe connection cable glass fibre/stainless steel open end wires	0604 0107	
Screw-in temperature probe Pt 100 Class A, length: 300 mm with measuring transducer 4 to 20 mA = -50 to +500 °C (2-wire technology)	0693 0002	
Indoor/outdoor temperature probe -50...+100°C	0604 0101	
Temperature probe cable Pt 100, Class A, length: 300 mm, Ø 6 mm, -50...+180°C, with 5 m connection cable with open ends	0604 0102	
Temperature probe cable Pt 100, Class A, length: 150 mm, Ø 6 mm, +50...+180°C with 5 m connection cable with open ends	0604 0100	
Clamp screwing 6 mm, G 1/2", PTFE clamping, pressure-tight up to 6 bar	0554 6003	
Clamp screwing 6 mm, G 1/2", VA clamping, pressure-tight up to 10 bar	0554 6004	
Connection cables for pressure sensors / temperature sensors:		
Connection cable 5 m	0553 0108	
Connection cable 10 m	0553 0109	
Clamp-on ammeters:		
Clamp-on ammeter 0...1000 A TRMS incl. 5 m connection cable with open ends	0554 0518	
Clamp-on ammeter 0...400 A TRMS incl. 3 m connection cable with open ends	0554 0510	
Optional third-party sensors 0/4...20 mA, 0...1/10/30 V, Pt 100 / Pt 1000, KTY, pulse, RS 485 Modbus connectable.		
Current / effective power meter (Further Current transformer please find on page 9)		
CS PM 210 current/effective power meter for panel mounting, current transformer from 100 A to 2000 A connectable	0554 5353	
Current transformer 100/5 A connectable to current/effective power meter for panel mounting (for cables up to Ø 21 mm)	0554 5344	
Current transformer 500/5 A connectable to current/effective power meter for panel mounting (for cables up to Ø 21 mm)	0554 5347	
Connection cable to DS 400, 5 m, with open ends	0553 0108	
Connection cable to DS 400, 10 m, with open ends	0553 0109	