



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
							4...20 mA 0...20 mA 0...10 V Pulse Pt 100 Pt 1000
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)	-----	0500 4000 D
	Digital (Z500 4003)	Digital (Z500 4003)	0500 4000 DD
	Digital (Z500 4003)	Analogue (Z500 4001)	0500 4000 DA
	Analogue (Z500 4001)	-----	0500 4000 A
	Analogue (Z500 4001)	Analogue (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
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°C (-100...400°C)
Pulse	
Measuring range	min pulse length 500 µs frequency 0...1 kHz max. 30 VDC



Suitable sensors for DS 400

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
Options for VA 500: (see page 81)	
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 on page 9)	
Standard pressure sensor CS 16 from 0...16 bar, $\pm 1\%$ accuracy of full scale	0694 1886
Standard pressure sensor CS 40 from 0...40 bar, $\pm 1\%$ accuracy of full scale	0694 0356
Temperature sensors:	
Screw-in temperature probe PT 100 class A, length: 300 mm, d=6mm, with integrated transducer 4...20 mA = -50°C...+500°C (2-wire)	0604 0201
Outdoor temperature probe, PT 100 class B (2-wire) in wall housing (82x55x33 mm), temperature range: -50°C to +80°C	0604 0203
Indoor temperature probe, PT 100 class B (2-wire) in wall housing (82x55x33 mm), temperature range: -50°C to +80°C	0604 0204
Temperature probe PT 100 class A (4-wire) with cable, length: 300 mm, d=6 mm, -70°C to +260°C, 5 m connection cable (PFA) with open ends	0604 0205
Temperature probe PT 100 class A (4-wire) with cable, length: 100 mm, d=6 mm, -70°C to +260°C, 5 m connection cable (PFA) with open ends	0604 0206
Temperature probe PT 100 class A (4-wire) with cable, length: 200 mm, d=6 mm, -70°C to +260°C, 5 m connection cable (PFA) with open ends	0604 0207
Surface temperature probe, magnetic, magnet dimensions 39x26x25 mm, PT 100 class B (2-wire), -30 to +180°C, 5 m connection cable (PFA) with open ends	0604 0208
Clamp screwing 6mm; G 1/2" PTFE clamp ring pressure tight up to 10 bar material: stainless steel, temperature range: max. +260°C	0554 0200
Clamp screwing 6mm; G 1/2" stainless steel clamp ring pressure tight up to 16 bar, material: stainless steel, temperature range: max. +260°C	0554 0201
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
Current / effective power meter (further current transformer please see on page 10)	
CS PM 210 current/effective power meter for panel mounting, current transformer from 100 A to 2000 A connectible	0554 5353
Current transformer 100/5 A connectible to current/effective power meter for panel mounting (for cables up to Ø 21 mm)	0554 5344
Current transformer 500/5 A connectible 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

