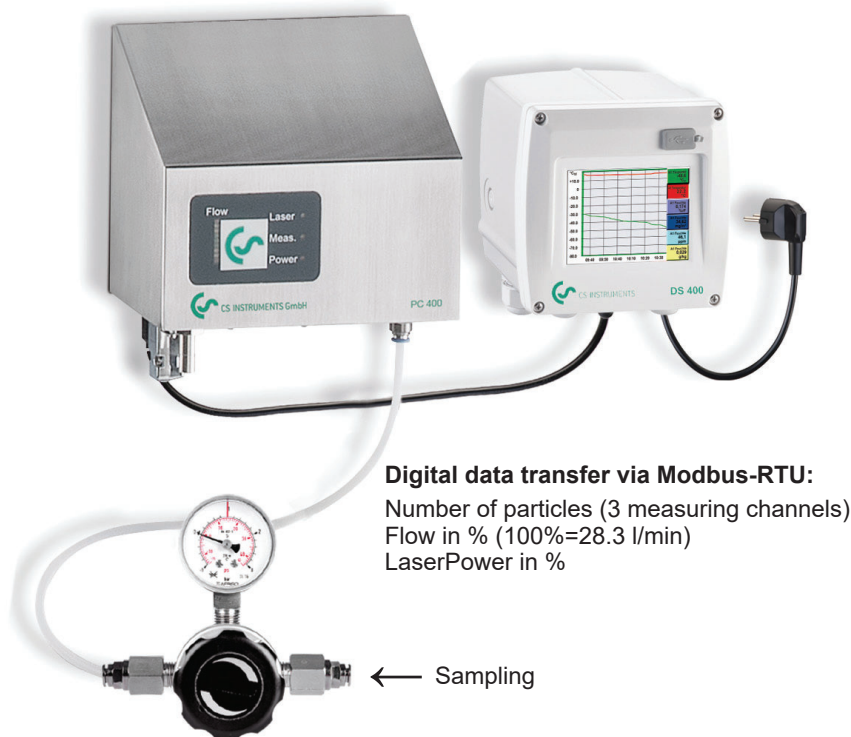




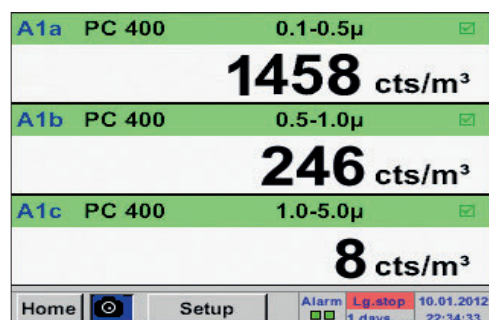
## Particle counter PC 400 and DS 400



**Digital data transfer via Modbus-RTU:**  
Number of particles (3 measuring channels)  
Flow in % (100%=28.3 l/min)  
LaserPower in %

**The DS 400 shows all 3 measuring channels according to ISO 8573-1**

Particle size 0.1...0.5  $\mu\text{m}$ : Number of particles per  $\text{m}^3$   
Particle size 0.5...1.0  $\mu\text{m}$ : Number of particles per  $\text{m}^3$   
Particle size 1.0...5.0  $\mu\text{m}$ : Number of particles per  $\text{m}^3$



### Advantages at a glance:

- Highly precise, optical laser particle counter for use in compressed air and technical gases
- Highly precise optics for detecting the smallest particles up to 0.1  $\mu\text{m}$  and therefore suitable for monitoring the compressed air class 1 according to ISO 8573-1
- The flow rate of 28.3 l/min (1 cfm) is 10 times higher than that of the particle counters generally available on the market (usually 2.83 l/min). Advantage: Counts the smallest particles with high counting accuracy at the same time
- Due to the digital data transfer (Modbus-RTU) to the chart recorders DS 400 or DS 500, 3 measuring channels can be transferred at the same time (without any faults due to check sum)
- The class 1 filter which is included in the scope of delivery can be used for on-site calibration at any time. Contaminations on the optics can therefore be quickly detected or eliminated.

### Advantages of the DS 400

- Data logger for long-term monitoring
- Display shows trend curves (online and history curves available)
- Zoom function directly on the touch screen
- Integrated Ethernet interface (Modbus/TCP) and RS 485 interface (Modbus-RTU) for data transfer to superordinate controls
- 2 alarm relays (changeover contact 230 VAC, 3A) – threshold values freely adjustable
- Easy operation via 3.5" touchscreen

### TECHNICAL DATA PC 400

#### Measured medium:

Compressed air (free from aggressive, corrosive, acid, toxic, flammable and oxidising components) as well as gas types like N<sub>2</sub>, O<sub>2</sub>, CO<sub>2</sub>.  
Further gas types on request

#### Field of application:

In case of compressed air after filtration  
In case of gases / pure gases also without filtration

#### Parameter:

Number of particles per  $\text{m}^3$  (relative to expanded air: 20 °C, 1000 hPa)

Size channels for the PC 400 0.1  $\mu\text{m}$ :

Particle size 0.1...0.5  $\mu\text{m}$ : Number of particles per  $\text{m}^3$   
Particle size 0.5...1.0  $\mu\text{m}$ : Number of particles per  $\text{m}^3$   
Particle size 1.0...5.0  $\mu\text{m}$ : Number of particles per  $\text{m}^3$

Size channels for the PC 400 0.3  $\mu\text{m}$ :

Particle size 0.3...0.5  $\mu\text{m}$ : Number of particles per  $\text{m}^3$   
Particle size 0.5...1.0  $\mu\text{m}$ : Number of particles per  $\text{m}^3$   
Particle size 1.0...5.0  $\mu\text{m}$ : Number of particles per  $\text{m}^3$

#### Operating pressure:

Max. input pressure on the pressure reducer: 40 bar  
≤ 90% rel. humidity, pressure dew point max. 10 °C, non-condensable humidity

#### Humidity of measured gas:

#### Ambient temperature:

5...40 °C

#### Temperature of the measured medium:

0...40 °C

#### Compressed air connection:

6 mm PTFE-hose incl. quick coupling

#### Flow rate:

28.3 l/min (1 cfm)

#### Interface:

RS 485 (Modbus-RTU)

#### Light source:

Laser diode

#### Power supply:

24 VDC, 300 mA

#### Dimensions:

150 x 200 x 300 mm

#### Weight:

8 kg

#### Housing:

Stainless steel



## Stationary solution with particle counter PC 400 and DS 400



DESCRIPTION	ORDER NO.
PC 400 particle counter up to 0.1 $\mu\text{m}$ for compressed air and gases, incl. pressure reducer and calibration certificate	0699 0040
Connection cable for probes 5 m, with open ends	0553 0104
DS 400 chart recorder with graphic display and touch screen operation	0500 4000 D
<b>Option:</b>	
Integrated data logger for 100 million measured values	Z500 4002
Integrated Ethernet and RS 485 interface	Z500 4004
CS Basic - data evaluation in graphic and table form - readout of the measured data via USB or Ethernet. License for 2 working places	0554 8040
<b>As an alternative to PC 400 up to 0.1 <math>\mu\text{m}</math>:</b> PC 400 particle counter up to 0.3 $\mu\text{m}$ for compressed air and gases, incl. pressure reducer and calibration certificate	0699 0041

## Mobile solution with particle counter PC 400 in a service case and DS 500 mobile



DESCRIPTION	ORDER NO.
PC 400 particle counter up to 0.1 $\mu\text{m}$ for compressed air and gases incl. pressure reducer and calibration certificate in a service case	0699 0042
Connection cable to portable devices, ODU/ M12, 5 m	0553 1503
Chart recorder DS 500 mobile, 4 sensor inputs	0500 5012
CS Basic - data evaluation in graphic and table form - readout of the measured data via USB or Ethernet. License for 2 working places	0554 8040
<b>As an alternative to PC 400 up to 0.1 <math>\mu\text{m}</math>:</b> PC 400 particle counter up to 0.3 $\mu\text{m}$ for compressed air and gases incl. pressure reducer and calibration certificate in a service case	0699 0043

## Re-calibration and accessories particle counter PC 400

CS INSTRUMENTS GmbH  
Am Ober 28  
24553 Harmsen  
Tel. +49 481 700 20 25  
www.cs-instruments.com

**Werkstatt-/Kartierungsprotokoll** Nr. CS\_5882\_05-2017

Gegenstand: DS - CHECK  
Ordnungs-Messgerät

Kunden: BSH - Bosch Power Tools GmbH

Bestell-Nr.: 1580288

Auftraggeber: CS Instruments GmbH  
Zandbergen Straße 15  
76531 Völs-Eisenbach

Auftragsnummer: 711261

Ort der Kartierung: Neuss

Datum der Kartierung: 12.09.2017

Anzahl der Stellen: 6

Vorwinden: Hinweis, dass das oben genannte Produkt unter Beachtung und Einhaltung eines zertifizierten Qualitätsmanagementsystems nach dem internationalen Qualitätsstandard DIN EN ISO 9001:2008 geprüft und kalibriert wurde.

Die für die Kartierung verwendeten Messanordnungen werden regelmäßig geprüft und kalibriert. Die erforderlichen Messdaten sind auf der nachfolgenden Seite dieses Kaliber-Protokolls aufgeführt.

Für die Erhaltung einer angemessenen Frist zur Wiederholung der Kartierung ist der Anwender verantwortlich.

Dieses Kaliberprotokoll darf nur vollständig und unverändert weiterverbreitet werden. Auszüge oder Änderungen infolge der Genehmigung des Ausstellers. Kaliberprotokolle ohne Unterschrift haben keine Gültigkeit.

Datum: 12.09.2017

Leiter Produktion: [Signature]

Bereiter: [Signature]

CS Instruments GmbH

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DESCRIPTION	ORDER NO.
Re-calibration particle counter PC 400 incl. certificate	0699 3304
CS Service Software incl. PC connection set for PC 400	0554 2009