

DATA-COMMUNICATION-MODULE DATACont DC 6000

with Ethernet/IP, Bluetooth, PROFIBUS-DP, Modbus-RTU, Modbus-TCP

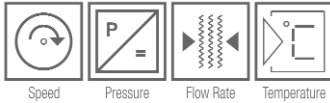


The data communication module DataCont DC 6000 is available with different inputs. The device processes analog signals (0(4) - 20 mA, 2-/3-wire; 0(2) - 10 V and impulse signals up to 150 Hz as well as digital input signals. The recorded measuring values collected through the different inputs can be monitored for limit values and be exported to the SPS by a normed interface (e.g. PROFIBUS-DP).

Up to 12 modules with a maximum of 96 measuring inputs can be networked by the internal CAN-Bus.

The optional available integration of a ring buffer expands (upgrades) the data communication module to a measuring data collection system (data logger). The stored data can be saved in an external SQL-data file directly via USB- or Ethernet/IP-interface and analysed with the free software Esters Efficiency Management and Device Manager (E3DM), using the tables and graphics.

- Integrated recording function to register measurement data (ring buffer 2 GB)
- Individual recording intervals for every measuring channel up to one measuring value per second
- Integration into IT-networks via Ethernet/IP for remote data transmission
- Complete configuration of the device via USB-interface and Ethernet/IP
- Transmission of the logged measuring values in an external SQL-data file (MS-SQL)
- Integration into industry bus systems via PROFIBUS-DP, Modbus-RTU/-TCP
- Up to 12 devices suitable for networking via internal CAN-Bus
- Optional connection of a gas analysis by RS-232 interface (e.g. Awite, Chemec, Pronova, Union Instruments)



Technical Dates

The devices of the series DC 6000 are designed as a modular system. The system enables the configuration of inputs and outputs as well as the relevant interfaces and software options according to the individual requirements of the installation and application.

This section gives an overview of all technical information of the series.

MEASURING INPUTS

mA-INPUTS 2 - 20 mA, 2-wire (temperature) = -100 - 2000 °C (14 bit), input resistance < 100 ohm at 20 mA or 0 (4) - 20 mA, 2-/3-wire (pressure) = 0 - 30 bar (14 bit), input resistance < 100 ohm

V-INPUTS 0 (2) - 10 V, 2 mA

IMPULSE INPUTS 10 Hz - 1 kHz at 5% duty cycle, impulse lengths 2500 ms

DIGITAL INPUTS digital gate input for control signals from the SPS

RELAY

LIMIT VALUE OUTPUT N/O contact (normally open), changer, load 30 V, 1 A induktiv

ALARM INDICATOR OUTPUT N/C contact (normally closed), changer, load 30 V, 1 A induktiv

ELECTRICAL VALUES

ACCURACY ± 0,05 % EW ± 1 Digit bei 23°C

POWER SUPPLY (STANDARD) 24 V, DC ± 3 V

POWER SUPPLY (OPTION N2) 230 V, AC, 10 VA

ENVIRONMENTAL INFLUENCES

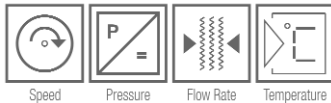
AMBIENT TEMPERATURE -10 to +55°C

STORAGE TEMPERATURE -20 to +85°C

TEST VOLTAGE 3 kV

HUMIDITY CLASS E-DIN 40040

ELECTROMAGNETIC COMPATIBILITY acc. to EN 61000

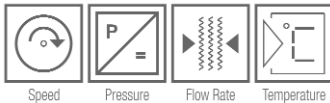


DISPLAY, HOUSING, WEIGHT

| | |
|--|--|
| DISPLAY | 6-digit LCD-display for flow rate in Nm ³ /h 7-digit LCD-display in Nm ³ Display height 8 mm |
| STANDARD HOUSING | Dimensions: 100 mm (W) x 100 mm (H) x 107 (D) mm |
| RAIL MOUNTING | Protection class: IP 20 Net weight: approx. 480 g |
| PROTECTIVE HOUSING (OPTION M104) | Dimensions: 343 mm (W) x 330 mm (H) x 210 mm (D) |
| WALL MOUNTING | with tab and high-strength cable gland Protection class: IP 65 |
| PROTECTIVE HOUSING WITH EX-ZONE (OPTION M105) | Dimensions: 385,5 mm (W) x 487 mm (H) x 210 mm (D) |
| WALL MOUNTING | with tab and high-strength cable gland Protection class: IP 65 |
| SWITCHBOARD HOUSING (OPTION M112) | Switchboard disruption: 151±1 mm x 332,5 ±1 mm |
| SWITCHBOARD DOOR MOUNTING | Front frame: 169,7 mm (W) x 351 mm (H) Front frame height: 51 mm Installation depth: 140 mm Max. wall thickness: 23 mm Protection class: IP 30 |
| PORTABLE HOUSING (OPTION M122) | Dimensions: 147 mm (W) x 364 mm (H) x 261 mm (D) Protection class: IP 30 |
| SWITCHBOARD HOUSING (OPTION M113) | Switchboard disruption: 151±1 mm x 332,5 ±1 mm |
| SWITCHBOARD DOOR MOUNTING | Front frame: 169,7 mm (W) x 351 mm (H) Front frame height: 51 mm Installation depth: 140 mm Max. wall thickness: 23 mm Protection class: IP 65 |
| PORTABLE HOUSING (OPTION M123) | Dimensions: 147 mm (W) x 364 mm (H) x 261 mm (D) Protection class: IP 65 |

SOFTWARE & RECORDER

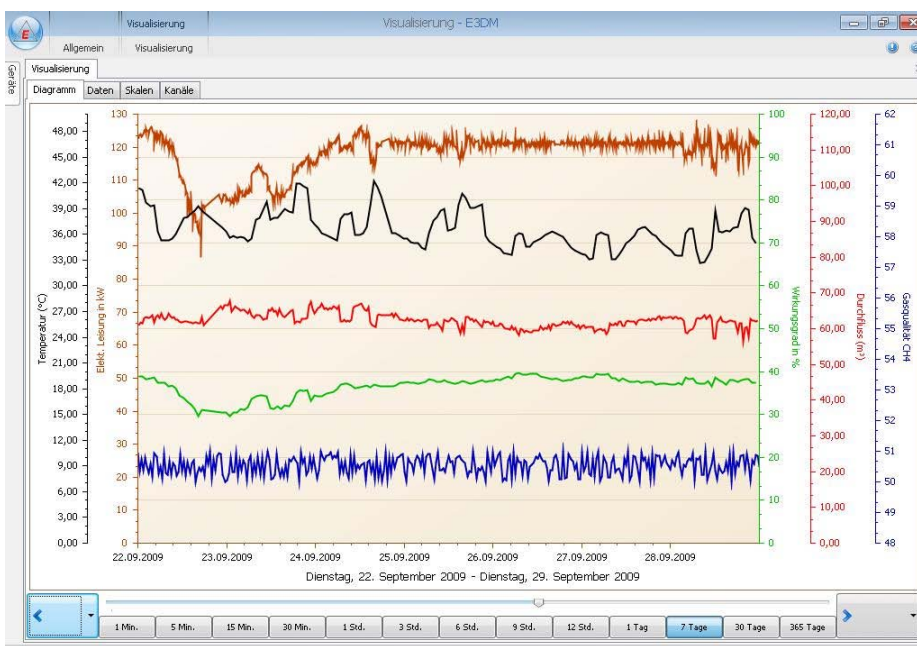
| | |
|----------------------------|---|
| GAS ANALYSIS | Data transmission of connected gas analysis |
| E3DM | Esters Energy Efficiency and Device Manager Energy Management- and Configuration Software for Microsoft Windows (32-Bit) |
| RECORDER (OPTIONAL) | Ring buffer 2 GB Data recorder for logging of measurement values over a period of several years. |



INTERFACES

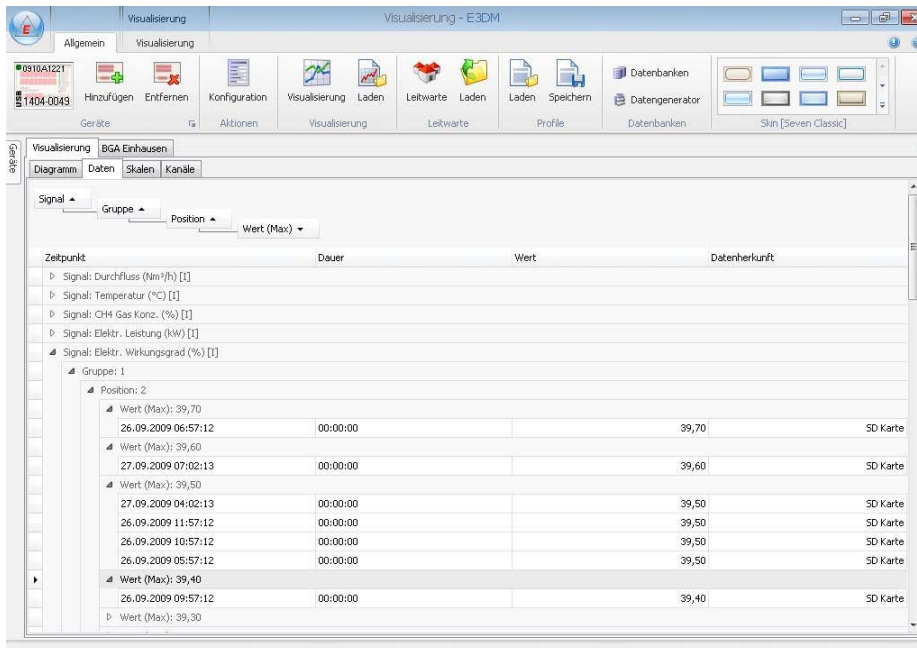
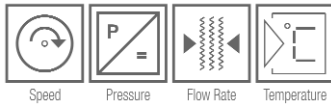
| | |
|------------------------|---|
| RS 232 | 9-pin connection for gas analysis (e.g. Awite, Chemec, Pronova, Union Instruments) |
| USB | Mini USB-connection (5-pin, USB 2.0) for configuration and data transfer through PC |
| CANBUS (OPTIONAL) | Internal communication of up to 12 curable devices |
| PROFIBUS DP (OPTIONAL) | Data transmission via Profibus-DP protocol |
| MODBUS RTU (OPTIONAL) | Data transmission via MODBUS-RTU protocol |
| MODBUS IP (OPTIONAL) | Data transmission via MODBUS-TCP protocol |
| ETHERNET (OPTIONAL) | Integration into the IT-network for configuration and data transfer through PC |

Software E3DM - Esters Energy Efficiency and Device Manager



Graphic visualization of the measured values continuously recorded in the ring buffer. In the illustration the following measured values are displayed:

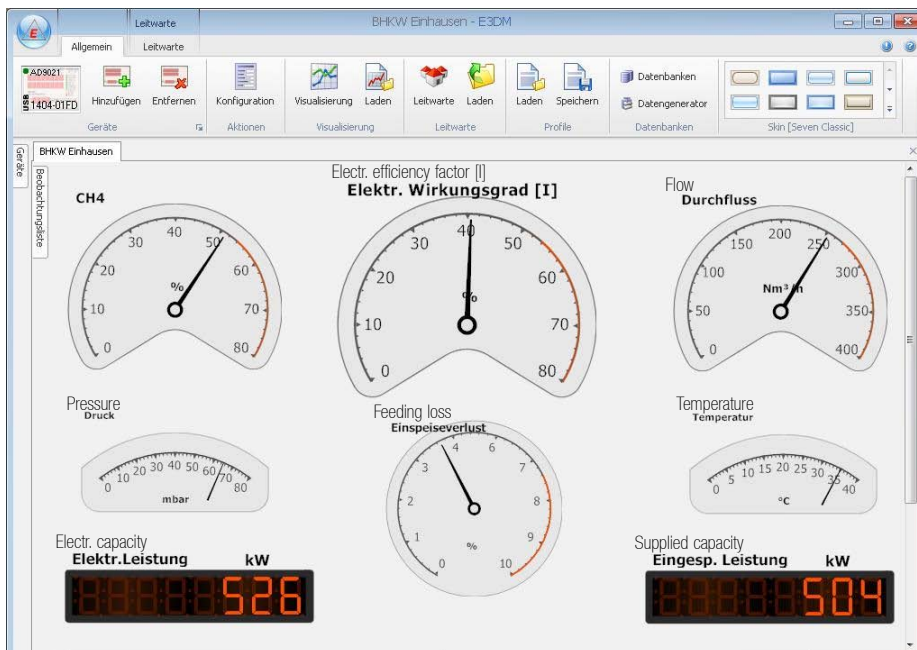
- Efficiency factor in % (Wirkungsgrad in %)
- Flow (m³) (Durchfluss m³)
- Gas quality (CH₄) (Gasqualität (CH₄))
- Electrical capacity in kW (Elektrische Leistung in kW)
- Temperature in °C (Temperatur in °C)



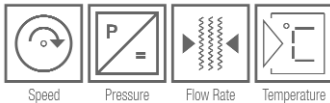
Tabular visualization of the measured values continuously stored in the ring buffer. The reported data can be assorted with multi-level column sort.

In the illustration the data is arranged according to signal and height of the measured value.

Rev.-Nr.: DS 509 E V.0.3-2011-11-02



In the master display the actual measured value is pictured. The amount of the displayed values and the graphic illustration can be adjusted individually.



Order information and type overview

The ordering code consists of the device type DC 6000 and an 8-digit code, which itself is divided into 2 sections with four points.

DC 6000-xxxx-00yy

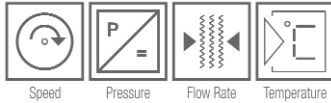
In the following tables the first four points are defined according to the desired equipment. It is to be noted, that the fifth and sixth positions are already defined by digit sequences. The last two digits define the content of functions (such as ring buffer, interfaces for industrial bus systems).

Example: DC 6000-0670-001C M104

The DC 6000 has 8 mA-inputs, 6 digital inputs and 2 limit monitors. The unit is also equipped with the optional functions Profibus-DP interface, Ethernet TPC/IP interface, a 2 GB ring buffer and is built into a field housing for wall mounting.

mA-input

| DC 6000-xxxx-00yy | 0410 | 0418 | 0430 | 0438 | 0470 | 0478 | 0670 | 0678 | 0730 | 0738 |
|--------------------------------|------|------|------|------|------|------|------|------|------|------|
| INPUTS | | | | | | | | | | |
| 1: 0 (4) - 20 mA, 2/3-wire | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 2: 0 (4) - 20 mA, 2/3-wire | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 3: 0 (4) - 20 mA, 2/3-wire | | | ● | ● | ● | ● | ● | ● | ● | ● |
| 4: 0 (4) - 20 mA, 2/3-wire | | | ● | ● | ● | ● | ● | ● | ● | ● |
| 5: 0 (4) - 20 mA, 2/3-wire | | | | | ● | ● | ● | ● | | |
| 6: 0 (4) - 20 mA, 2/3-wire | | | | | ● | ● | ● | ● | | |
| 7: 0 (4) - 20 mA, 2/3-wire | | | | | ● | ● | ● | ● | | |
| 8: 0 (4) - 20 mA, 2/3-wire | | | | | ● | ● | ● | ● | | |
| DIGITAL INPUTS | | | | | | | | | | |
| Number of digital inputs | | | | | | | 6 | 6 | 10 | 10 |
| LIMIT MONITORS (RELAYS) | | | | | | | | | | |
| Number of N/O | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| SOFTWARE | | | | | | | | | | |
| Integration of gas analysis | | ● | | ● | | ● | | ● | | ● |
| Power supply: 24 V, DC | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| USB & RS 232 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Software E3DM | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |



mA-input and pulse-input

| DC 6000-xxxx-00yy | 0014 | 0034 | 0074 |
|---------------------------------|------|------|------|
| EINGÄNGE | | | |
| 1: 0 (4) - 20 mA, 2/3-Leiter | ● | ● | ● |
| 2: Impuls | ● | ● | ● |
| 3: 0 (4) - 20 mA, 2/3-Leiter | | ● | ● |
| 4: Impuls | | ● | ● |
| 5: 0 (4) - 20 mA, 2/3-Leiter | | | ● |
| 6: Impuls | | | ● |
| 7: 0 (4) - 20 mA, 2/3-Leiter | | | ● |
| 8: Impuls | | | ● |
| DIGITALE EINGÄNGE | | | |
| Anzahl der digitalen Eingänge | | | |
| GRENZWERTMELDER (RELAYS) | | | |
| Anzahl: Schliesser | | | |
| Power supply: 24 V, DC | ● | ● | ● |
| USB & RS 232 | ● | ● | ● |
| Software E3DM | ● | ● | ● |

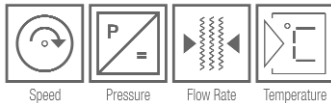
mA-input and Volt-input

| DC 6000-xxxx-00yy | 0672 |
|--------------------------------|------|
| INPUTS | |
| 1: 0 (4) - 20 mA, 2/3-wire | ● |
| 2: 0 (4) - 20 mA, 2/3-wire | ● |
| 3: 0 (4) - 20 mA, 2/3-wire | ● |
| 4: 0 (4) - 20 mA, 2/3-wire | ● |
| 5: 0 (2) - 10 V, 2 mA | ● |
| 6: 0 (2) - 10 V, 2 mA | ● |
| 7: 0 (2) - 10 V, 2 mA | ● |
| 8: 0 (2) - 10 V, 2 mA | ● |
| DIGITAL INPUTS | |
| Number of digital inputs | 6 |
| LIMIT MONITORS (RELAYS) | |
| Number of N/O | 2 |
| Power supply: 24 V, DC | ● |
| USB & RS 232 | ● |
| Software E3DM | ● |

Volt-Eingänge

| DC 6000-xxxx-00yy | 0411 | 0431 | 0473 | 0731 | 0673 |
|--------------------------------|------|------|------|------|------|
| INPUTS | | | | | |
| 1: 0 (2) - 10 V, 2 mA | ● | ● | ● | ● | ● |
| 2: 0 (2) - 10 V, 2 mA | ● | ● | ● | ● | ● |
| 3: 0 (2) - 10 V, 2 mA | | ● | ● | ● | ● |
| 4: 0 (2) - 10 V, 2 mA | | ● | ● | ● | ● |
| 5: 0 (2) - 10 V, 2 mA | | | ● | | ● |
| 6: 0 (2) - 10 V, 2 mA | | | ● | | ● |
| 7: 0 (2) - 10 V, 2 mA | | | ● | | ● |
| 8: 0 (2) - 10 V, 2 mA | | | ● | | ● |
| DIGITAL INPUTS | | | | | |
| Number of digital inputs | | | | 10 | 6 |
| LIMIT MONITORS (RELAYS) | | | | | |
| Number of N/O | 2 | 2 | 2 | 2 | 2 |
| Power supply: 24 V, DC | ● | ● | ● | ● | ● |
| USB & RS 232 | ● | ● | ● | ● | ● |
| Software E3DM | ● | ● | ● | ● | ● |

Rev.-Nr.: DS 509 E V 0.3-2011-11-02



Relay input

| DC 6000-xxxx-00yy | 0000 | 0400 | 0C00 | 0C08 | 1C00 | 1C08 | 6400 | 6408 | 4008 | C000 | C008 | 0780 |
|--------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| DIGITAL INPUTS | | | | | | | | | | | | |
| Number of digital inputs | | | | | | | | | | | | 14 |
| LIMIT MONITORS (RELAYS) | | | | | | | | | | | | |
| Number of N/C | | | | | | | 2 | 2 | | | | |
| Number of N/O | 2 | | 4 | 4 | 8 | 8 | 2 | 2 | | | | 2 |
| Number of changers | | | | | | | 2 | 2 | 2 | 4 | 4 | |
| SOFTWARE | | | | | | | | | | | | |
| Integration of gas analysis | | | | ● | | | ● | ● ● | | ● | | |
| Power supply: 24 V, DC | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| USB & RS 232 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Software E3DM | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |

Optional device functions and housings

| GDR 1404-xxxx-00 | |
|------------------|--|
| 0 | no selection |
| 1 | Interface PROFIBUS-DP |
| 2 | Interface Modbus-RTU |
| 4 | Interface Modbus-TCP |
| 0 | no selection |
| 1 | Interface CAN-Bus |
| 4 | Interface Ethernet TCP/IP |
| 5 | Interface CAN-Bus, Interface Ethernet TCP/IP |
| 8 | Ring buffer 2 GB (data recorder) |
| 9 | Ring buffer 2 GB (data recorder), Interface CAN-Bus |
| C | Ring buffer 2 GB (data recorder), Interface Ethernet TCP/IP |
| D | Ring buffer 2 GB (data recorder), Interface CAN-Bus, Interface Ethernet TCP/IP |

| POWER SUPPLY | |
|--------------|------------------|
| N2 | 230 V, AC, 10 VA |

| HOUSING | |
|---------|--|
| M104 | Field housing for wall mounting, protection class IP 65 |
| M105 | Field housing with Ex-Zone for wall mounting, protection class IP 65 |
| M112 | Switchboard door housing, protection class IP 30 |
| M122 | Portable housing, protection class IP 30 |
| M113 | Switchboard door housing, protection class IP 65 |
| M123 | Portable housing, protection class IP 65 |