

Control modules

UNIcon sensor control module for differential pressure/air flow (2nd edition)



The sensor control module for differential pressure and volume flow measures and indicates the pressure or, optionally, the volume flow in a ventilation system. The calculation of the volume flow is performed by entering the K-factor of the fan inlet ring.

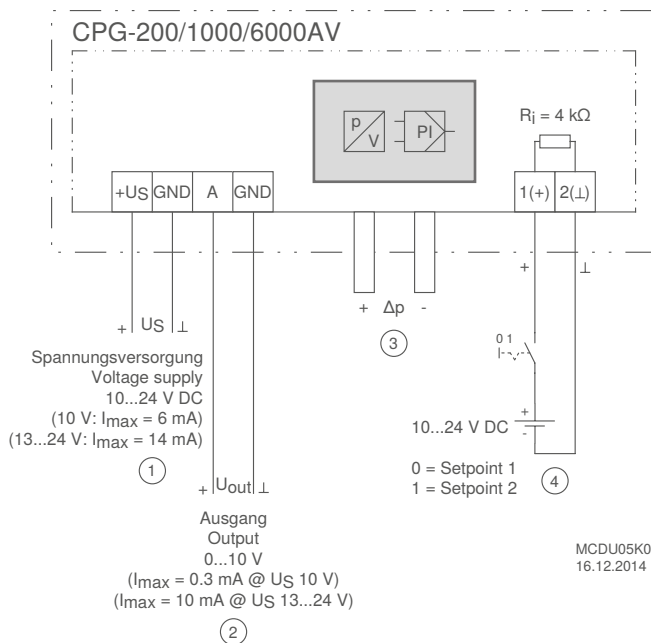
Depending on the desired setpoint and control range, the sensor control module generates 0-10 V to control the EC fan or e.g., a frequency inverter.

The sensor control module is supplied by the fan or frequency inverter which it controls, e.g., with 10-24 V DC. No additional supply voltage is necessary.

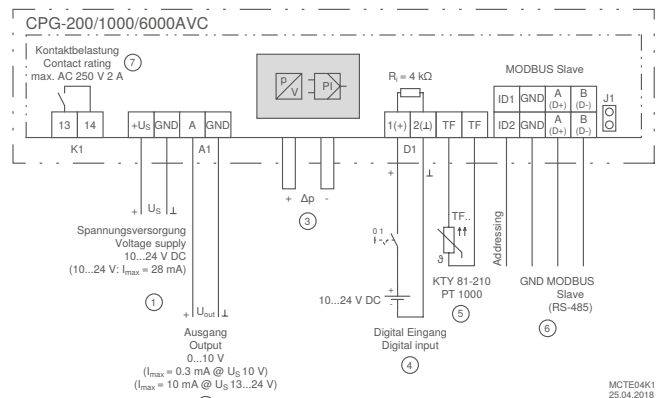
Input for sensors or speed settings through

ΔPa	Pressure sensor and control intelligence are combined in one device
m^3	Air flow sensor (by input of K-factor) and control intelligence are combined in one device

Connection diagram



- ① Line
- ② Outout
- ③ Connection sockets
- ④ Voltage input for switch



- ① Voltage supply 10...24 V DC
- ② Output 0...10 V
- ③ Pressure connections
- ④ Digital input (voltage ON/OFF)
- ⑤ Outdoor temperature sensor KTY81-210 or PT 1000
- ⑥ MODBUS Slave interface RS-485 (J1 plugged = Bus terminating resistor 150 Ω active)
- ⑦ Contact rating max. AC 250 V 2 A

Standard conformity

Interference emission according to EN 61000-6-3 (domestic)
Interference immunity according to EN 61000-6-2 (industrial)

Equipment/properties

Integrated display:

For pressure or volumetric air flow display and for programming
It is possible to switch over the display from SI units to Imperial units.

Simple commissioning by operating modes:

Operation as pressure or volumetric air flow sensor
Operation as pressure or volumetric air flow controller

Simple programmability by 3 buttons:

Selection of measuring range, input of setpoints (1/2),
Control range, K-factor for volumetric air flow determination,
minimum or maximum output signal.

Different measuring ranges can be selected depending on the version:

CPG-200AV(C): 0-50 / 100 / 150 / 200 Pa
CPG-1000AV(C): 0-200 / 300 / 500 / 1000 Pa
CPG-6000AV(C): 0-2000 / 3000 / 4000 / 6000 Pa
Maximum air flow measuring range: 65,000 m³/h

Voltage input D1 (digital input):

Version CPG-...AV: switch over setpoint 1 or 2
Extended versions CPG-...AVC:
Enable, display of external fault, switch over setpoint 1 or 2

1 analog output:

for activation of EC fans, frequency inverters, other devices

Additional CPG-...AVC

Digital output K1 in CPG-...AVC:
Operating indication, fault indication, external fault at digital input,
indication of limits.

Real-time clock with timer in CPG-...AVC:

For example automatic setpoint switch over

Possibility to shift the setpoint depending from outdoor temperature
with CPG-...AVC:

In operation as pressure- or volumetric air flow controller the setpoint can be shifted depending from outdoor temperature (to bring in less air during cold outdoor temperature)

CPG-...AVC with interface RS485 für MODBUS RTU:

Integration into network, manually or automatic addressing possible.

Application/Function

The sensor control module is connected to the ventilation system via 2 pressure ports (pressure socket + and -).
The differential pressure registered on the ventilation system affects the sensor on a silicone membrane in the device. The deformation of the membrane is registered through a measuring element and transmitted to the integrated electronics. Function: Pressure rise on +, compared to pressure on - connection.
Optionally, the device can be operated as a pressure sensor, i.e., pressure indicator and proportional output signal 0-10 V corresponding to the set measurement range.
Optional operation as a volume flow sensor, i.e. volume flow (by entering the K-factor of the centrifugal fans) and 0-10 V proportional output signal corresponding to the set measurement range.
Optional operation as a control module for pressure or volume flow. The entered setpoint is compared to the actual value; the 0-10 V output signal results from that. That is used to trigger EC fans, frequency inverters or other devices.

Information

Motor protection

Fcontrol, lcontrol

UNIcon

Acontrol, Ucontrol, Dcontrol

Transformer

System components

Appendix

UNIcon sensor control module for pressure						
DC 10...24 V						
Type	Article no.	Minimum ambient temperature °C	Maximum ambient temperature °C	Protection class	Weight kg	Dimensions (W x H x D) mm
CPG-200AV	320063	-10	60	IP54	0.23	106.3 x 137 x 56
CPG-1000AV	320064	-10	60	IP54	0.23	106.3 x 137 x 56
CPG-6000AV	320065	-10	60	IP54	0.23	106.3 x 137 x 56
CPG-200AVC	320075	-10	60	IP54	0.25	106.3 x 137 x 56
CPG-1000AVC	320076	-10	60	IP54	0.25	106.3 x 137 x 56
CPG-6000AVC	320077	-10	60	IP54	0.25	106.3 x 137 x 56

Dimensions with cable gland