



Features

- Digital measurement value processing incl. temperature compensation
- Internal functional control with integrated Hardware Watchdog
- Data / measured values in μ C Sensor, therefore simple exchange of sensor uncalibrated <> calibrated
- Software according to SIL2 compliant development process
- Modular technology (plug-in and replaceable)
- Easy maintenance and calibration by exchange of the sensor cartridge or by comfortable on-site calibration
- Serial RS 485 interface with protocol for CGD06. Modbus and BacNet.

Technical Data

Sensor Board

Electrical

Power supply

16 – 29Vdc, reverse-polarity protected

Power consumption

100mA (2.4 VA), 24Vdc

Analog input signal

4 -20mA, overload and short-circuit proof, input resistance 200 Ω

Voltage for external analog sensors

24 Vdc, max. 100 mA

Digital input signal

Potential-free contact

Function

Acknowledge or test function

Analog output signal

Proportional, overload and short-circuit proof, load \leq 500 Ohm

4-20 mA or 2-10V = meas. range
3.2 < 4 mA = underrange
>20- 21.6 mA = overrange
2.5 mA = fault
>21.8 mA = fault high

Output for local sensor

5 Vdc, 250 mA max. Overload, short-circuit and reverse-polarity protected"

Temperature range

-20 $^{\circ}$ C to +50 $^{\circ}$ C (-31 $^{\circ}$ F to 122 $^{\circ}$ F)

Humidity range

15 - 95 % r.H non-condensing

Storage temperature

5 $^{\circ}$ C to 30 $^{\circ}$ C (41 $^{\circ}$ F to 86 $^{\circ}$ F)

Storage time

6 months

Serial interface

Local bus

1-wire / 19200 Baud

Field bus

RS 485 / 19200 Baud

Tool bus

2-wire / 19200 Baud

Mounting Height

0.2m above floor

Protection class

IP 65

Wire connection:

Field bus

Screw-type terminal min. 0.25 mm², max. 2.5 mm²

Local bus

3-pin connector

Digital input, analog output

Screw-type terminal min. 0.25 mm², max. 1.5 mm²

Power supply, relays

Screw-type terminal min. 0.25 mm², max. 2.5 mm²

Application

The Combi Detector is used as a stand-alone unit with its relay outputs or alternatively with its analog output signal.

It is also used as a two-wire connection and contact anywhere in the building network.

Design Features

Sensor board with RS 485 interface, 4 – 20 mA output and further options for integration of the sensor and/or for connection of analog sensors.

The Combi Detector provides the power supply of the sensor and makes the measured data available for digital communication and for the 4 to 20 mA output.

Communication with the CGD06 controller takes place via the RS 485 field bus interface with CGD06 protocol.

The optional alarm relays can be controlled both via the CGD 06 controller and locally via the measurement signals.

The digital input for acknowledgment or test function and other options such as various communication protocols for direct connection to superordinate BMS ensure the adaptation to the wide range of applications in gas detection technology.

The sensor is connected to the local bus via a plug connection enabling simple SC exchange instead of an on-site calibration.

The internal X-Change routine recognizes the exchanged sensor after the exchanging process and starts the measurement mode automatically.

An LED indicates the correct procedure of the exchange operation. As an alternative, the on-site calibration via the CGD06 Service Tool can be used with the integrated, comfortable calibration routine.

Ordering Codes on next page



Methyl Ethyl Ketone, Combustible gas Combi Detector - Analog, Fieldbus, Relays

CMEK

Mar. 16

Directives "EMC directives 2004/108/EC CE
Conformity to: EN 50271
EN 61010-1:2010
ANSI/UL 61010-1
CAN/CSA-C22.2 No. 61010-1"

Options

Power relays (3) 250 V AC, 5 A, potential-free, change-over contact (SPDT)

Modbus protocol RTU RS-485 Transmission of current measured values & alarm stages

Technical Data	Sensor
Electrical	
Power supply	5 Vdc from sensor board, reverse polarity protected
Power consumption:	200 mA, max. (1.0 VA)
Serial interface local bus	1-wire / 19200 Baud
Sensor element	
Sensor element	Pellistor (catalytic bead sensor)
Measuring range	0 – 100 % LEL
Accuracy	± 1 % LEL
Resolution	0.2%
Repeatability	< 1 % sig.
Response time t_{90}	10 sec.
Zero point variation	0.5 %
Long-term zero-point drift	< 0.3 % LEL / month
Long-term sensitivity drift	< 1 % LEL / month
Temperature range	-20 to +50 °C (-4 to 122 °F)
Humidity range	5 - 95 % r.H non-condensing
Pressure range	Atmospheric ± 20 %
Sensor life time	> 36 months / normal ambient conditions
Calibration interval¹	6 months
Storage temperature range	+ 5 to + 30 °C (41 to 86 °F)
Storage time	6 months
Poisoning	The sensitivity of Pellistor sensors can be influenced by substances containing silicon compounds and even poisoned and destroyed by them.
Warranty	1 year on material (without sensor element)

¹ Manufacturer-recommended calibration interval for normal environmental conditions.

Ordering Codes

CPEN 100		0-100%LEL 4-20mA 16-29Vdc
CPEN 100M	ModBus	0-100%LEL 4-20mA 16-29Vdc
PEN 100	Sensor Head	0-100%LEL för utbyte (3-year life span)
CPS 230	Power Supply 90-240Vac/15VA	
CRELMEK	3 st relay outputs for different alarm levels, standard 20% / 30% / 100% LEL	
CSTOP	Reset button with external input, incorporated in detector	
CBUZ LED	Buzzer with LED indication in 3 colours, incorporated in detector	
CDUCT	Kit for duct mount	
DR 24/30	Power Supply 24Vdc	
CSTAIN	Option for stainless housing	
REG	Pressure regulator, flow adjustment to 0.5 l/min	
GAS	Calibration Gas 17 liter	
GKIT	Calibration Kit	
Alarm Units		
AAW 24	Warning Horn 24Vdc 98dB	
AAW 230	Warning Horn 230Vac 98dB	
OA 24	Flashlight 24Vdc, red	
OAW 24	Combined Warning Horn/Flashlight, 24Vdc 98dB	
OAW 230	Combined Warning Horn/Flashlight, 230Vac 98dB	
OAW 24T	Combined Warning Horn/Flashlight with reset button, 24Vdc 98dB	
Warning Plate		
Gas Alarm	Flashing gas alarm plate "GASALARM" 24Vac/dc	

Set-up and Standard Alarm Levels

0 - 100% LEL

- Early alarm level set at **10% LEL**
- Emergency alarm level set at **20% LEL**

Special protection for people and buildings. The units are manufactured in accordance with the rules and directives such as EN50545.

Products delivered by the AP meets and exceeds the requirements of the new European standard EN50545.

Safety functions control devices for connection warnings regarding functionality and open circuit - day and night.
Level SIL2 according to EN 50271.

Set-up:

At 4mA the detector indicates that the sensor's service life has ended and links the fault indication to a relay output for alarm or similar.

3.2 mA and 21,6mA indicate sensor error.

This is nonetheless an error and these values can be used for diagnostics as an internal check on functionality.

Electrical Connection

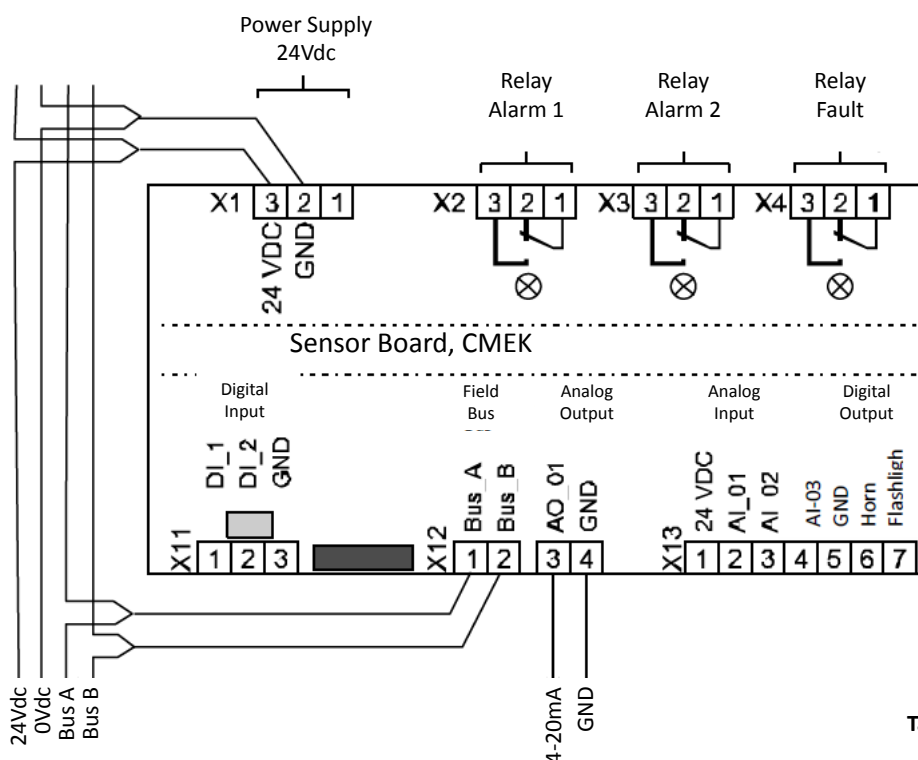


Table: Connection options for sensors

Connection to CPEN	Sensors via local bus	Analog sensors with 4-20 mA signal
Number	0	1 - 3
Number	1	0 - 2
Number	2	0 - 1

Field Bus