Ammoniak (NH_3), Combustible gas
Combi Detector - Analog, Fieldbus, Relays

CAMM

Mar. 16

Features

- **Digital measurement value processing incl. temperature compensation**
- **Internal functional control with integrated Hardware Watchdog**
- **Data / measured values in µC 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 ≤ 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 °C to +50 °C (-31 °F to 122 °F)
Humidity range	15 - 95 % r.H non-condensing
Storage temperature	5 °C to 30 °C (41 °F to 86 °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 below ceiling**
Protection class	IP 65
Wire connection:	
Field bus	Screw-type terminal min. 0.25 mm^2, max. 2.5 mm2
Local bus	3-pin connector
Digital input, analog output	Screw-type terminal min. 0.25 mm^2, max. 1.5 mm^2
Power supply, relays	Screw-type terminal min. 0.25 mm^2, max. 2.5 mm^2

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

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	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 interval[1]	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

CAMM 100		0-100%LEL 4-20mA 16-29Vdc
CAMM 100M	ModBus	0-100%LEL 4-20mA 16-29Vdc
AMM 100	Sensor Head	0-100%LEL för utbyte (3-year life span)

CPS 230	Power Supply 90-240Vac/15VA
CRELAMM	3 st relay outputs for different alarm levels, standard 10% / 10% of 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 ser 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

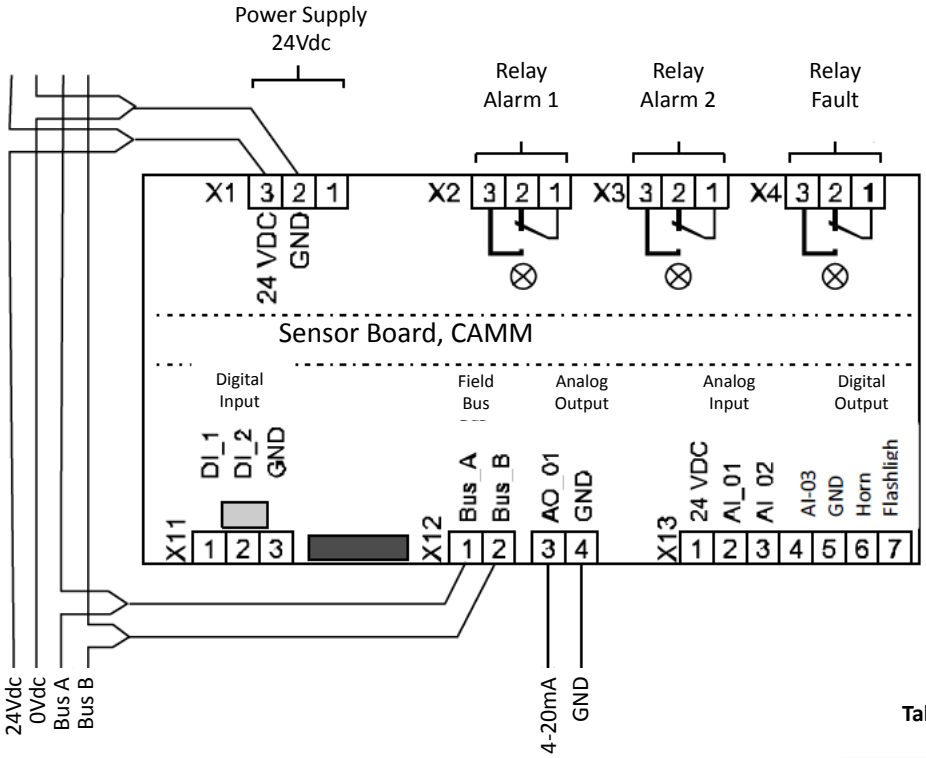

Table: Connection options for sensors

Connection to CAMM	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