Carbon Monoxide Detector
Analogue and Relay Output +/-3ppm   COD   Oct.10

COD Display

COD Wall

CE

COD Duct

Features

- **Continuous monotoring**
- **Low zero point drift**
- **Good stability to poisoning**
- **Long life sensor**
- **Modular plug-in technology**
- **Easy maintenance/calibration**
- **Manual adressing for RS485 mode (option)**
- **4-20mA analog input for external transmitter**
- **4-20mA loop-powered or 2-10Vdc output signal**
- **Relay output**
- **Duct mounting**
- **Integrated heating for less degree than specified operating range**

Technical Data

Gas	Carbon Monoxide
Detection principle	Electrochemical, diffusion
Stability & resolution	+/- 3ppm
Repeatability	+/- 3% of reading
Long term output drift	<5% signal loss/year
Response time	t90 <50 sec.
Sensor coverage	400m2 to 930m2
	¨ideal conditions¨ assumed
Storage time	6 months
Mounting height	1,5 to 1,8 metres above floor

Output signal selectable

	(0)4-20mA	load < 500ohm overload
	(0)2-10Vdc	load < 50kohm overload
	Starting point	0/20% prportional, overload and short-circuit proof

Relay Output

	Relay 1	30Vac/dc, 0,5A, pot.free SPDT
	Relay 2	Dito SPNO/SPNC
	Power Cons.	30mA, (0,8VA)
Serial interface		RS485/19200Baud 9600 Modb us

Power supply	18-28Vac/dc (reverse polarity prot.)
Power consumption	22mA, max (0,6VA**)**
Expected lifetime	5 years,normal operating envirom.

Humidity range

	Continuous	15-90% rH non-condensing
	Short time	0-95%RH non-condensing

Operating range

	Continuous	-10 up to +50C
	Short-time	-20 up tp +50C
Rating		IP65 Protection Class
Pressure range		Atmospheric +/-10%

Application

For detection of carbon monoxide (CO) within a wide range of commercial applications such as vehicle exhaust in parking structures (e.g. underground garages) engine repair shops, tunnels, loading bays, engine test benches, shelters, go-kart race courses etc.

Due to the standard analogue signal the CO transmitter is compatible to any electronic analogue control, DDC/PLC control or automation system.

Ordering Codes

Manual calibration via potentiometer

COD 050VC	0-50ppm	4-20mA/2-10Vdc
COD 100VC	0-100ppm	4-20mA/2-10Vdc
COD 150VC	0-150ppm	4-20mA/2-10Vdc
COD 200VC	0-200ppm	4-20mA/2-10Vdc
COD 250VC	0-250ppm	4-20mA/2-10Vdc
COD 300VC	0-300ppm	4-20mA/2-10Vdc
COD 400VC	0-400ppm	4-20mA/2-10Vdc
COD 500VC	0-500ppm	4-20mA/2-10Vdc
COD 1000VC	0-1000ppm	4-20mA/2-10Vdc
COD 2000VC	0-2000ppm	4-20mA/2-10Vdc

Calibration and adressing by service Tool

COD 050VCT	0-50ppm	4-20mA/2-10Vdc
COD 100VCT	0-100ppm	4-20mA/2-10Vdc
COD 150VCT	0-150ppm	4-20mA/2-10Vdc
COD 200VCT	0-200ppm	4-20mA/2-10Vdc
COD 250VCT	0-250ppm	4-20mA/2-10Vdc
COD 300VCT	0-300ppm	4-20mA/2-10Vdc
COD 400VCT	0-400ppm	4-20mA/2-10Vdc
COD 500VCT	0-500ppm	4-20mA/2-10Vdc
COD 1000VCT	0-1000ppm	4-20mA/2-10Vdc
COD 2000VCT	0-2000ppm	4-20mA/2-10Vdc

Automatikprodukter

Ordering Codes

/MOD	Protocol for Modbus
/CUST	Protocol for customers specifications
/GCD	Protocol for GCD-series
/REL CO	Relay pack see below
/DUCT	Duct Mounting

/LCD	Two lines, 16 characters each
/CAL 2	Calibration Kit for Tox-transmitters
/HEAT	Temp.controlled heating element 3C +/-2C0,3VA
/BUZZ	Internal warning summer 85dB
/STAIN	Enclosure of stainless steel

/SERV	Service Tool with Keyapad and LCD-display
/AIN	4-20mA analogue input
GAS 17	Calibration gas 17 liter
REG	Pressure regulator flow adjusted to 0,5 lit/min.

Warning devices	See special datasheet
Warning signs	See special datasheet

Cross sensitivity*	Concentration (ppm)	Reaction (ppm)
Acetone, C_3H_6O	1000	0
Acetylene, C_2H_2	40	80
Ammonia, NH_3	100	0
Carbon dioxide, CO_2	5000	0
Chlorine, Cl_2	2	0
Ethanol, C_2H_5OH	2000	5
Hydrogen, H_2	100	20
Hydrogen Sulphide, H_2S	25	0
Iso Propanol, C_3H_8O	200	0
Nitric oxide, NO	50	8
Nitrogen dioxide, NO_2	50	-1,0
Sulphur dioxide, SO_2	50	< 0,5

Connecting Diagram

O VDC : Two wire mode only with 4 to 20 mA Output signal
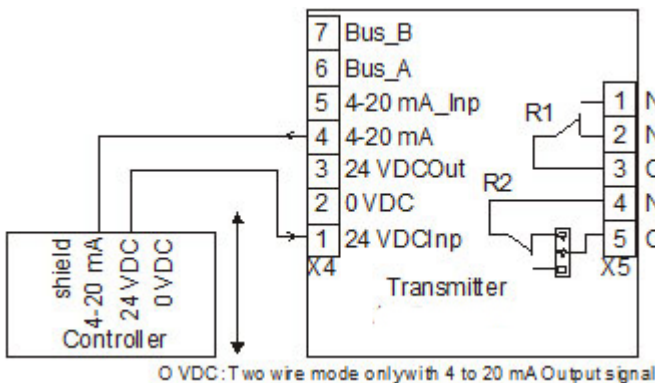
Relay Package

With the COD relay package two potential-free contacts are available for the connection to external devices.

The switching thresholds of these relays are selectable via potentiometer in the range of 10 - 90% of CO concentration.

The hysteresis is programmable via jumpers.

Adddisionally the relay mode, open-circuit or closed circuit, is selectable.

The status of the two relays is displayde via LED
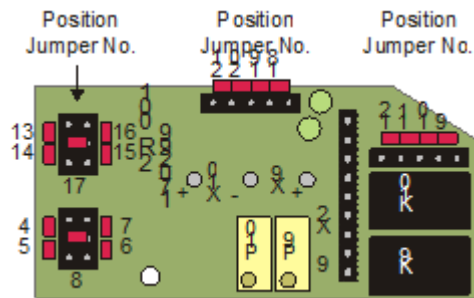
The two relays are activated in dependence of the gas concentration.
If the gas concentration exceeds the adjusted alarm threshold, the corresponding relay switches on.
If the gas concentration falls below the threshold minus hysteresis, the relay switches off again.

The contact function for relay 2, NC (normally closed) or

NO (normally open), can be selected via the jumper

NO/NC.

See fig 1 and 3. Relay 1 is equipped with a change-over contact.

Via the ModBus interface the two alarm thresholds and the hysteresis are freely adjustable at the PC within the measuring range

The procedure can be read from the user manual "ModBus Software"

The following parameters are factory-set.

Alarm threshold 1 = Relay 1: 40 ppm

Alarm threshold 2 = Relay 2: 80 ppm