

CO MONITORING SYSTEM FOR CAR PARKING

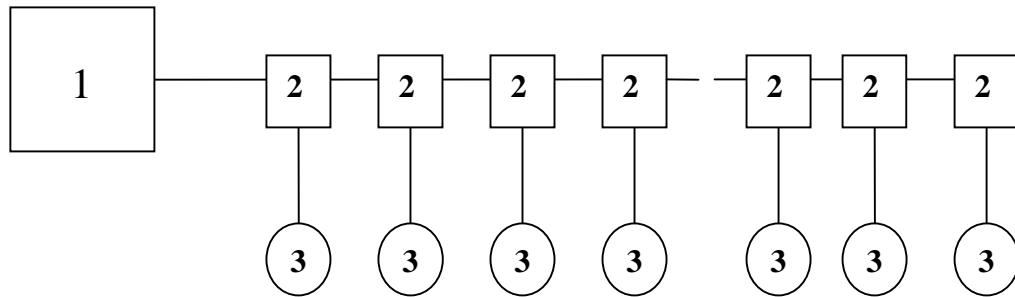


Fig.1 Example of a Monitoring System with Relay Unit (1), Junction Boxes (2) and CO Detector Heads (3)



(1) Relay Unit
Part no: 2112BGMS-RZ



(2) Junction Box
as an example



(3) CO Detector
Head in housing
Part no:
2112BGMS-TLR



(3) CO Detector
Head without
housing

The CO Monitoring System with two alarm levels is designed for Carbon Monoxide monitoring in underground car parks. The System can accommodate a maximum of 20 CO Detector Heads with one common Relay Unit.

The specific advantage of this System is that the low cost Relay Unit, (1) - Part no. 2112BGMS-RZ, replaces the need for a high cost control unit. There is also the added advantage of reduced cabling requirements.

On the front of the Relay Unit, three LEDs are visible :

LED1 (green): B Operation

LED 2 (red): AI Alarm level 1: for example: 30 ppm CO (adjustable)

LED 3 (red): AI Alarm level 2: for example: 70 ppm CO (adjustable)



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A four core cable should be installed from the Relay Unit (1) via Junction Boxes (2) to the individual CO Detector Heads (3). If the CO concentration at one or more of the CO Detector Heads matches the concentration level for alarm 1 (eg. 30ppm CO) or alarm 2 (eg. 70ppm), a dedicated relay switches inside of the Relay Unit. Both alarm relays are working in Transistor-Resistor-Logic (TRL).

The relays for first and second alarm levels work as common relays – ie. the equivalent relay switches if one or more CO Detector Heads reaches the relevant alarm concentrations.

The system is not able to distinguish which of the connected CO Detector Heads is under alarm condition, only that either alarm level 1 or alarm level 2 has been reached, which then triggers the associated relay contacts.



(1) Relay Unit



(2) Junction Box



(3) CO Detector
Head in housing



(3) CO Detector
Head without
housing

SPECIFICATION

(1) RELAY UNIT

Part no: 2112BGMS-RZ

Power supply:

via terminal screws
supply voltage: 18 – 28 V d.c.
power consumption: $I_{typ.} = 20 \text{ mA}$ at 10 ppm CO; $I_{max.} = 50 \text{ mA}$

Ambient temperature:

-10°C to +50°C

Protection:

IP 65

Weight:

approx. 150g

Dimensions:

95 x 44 x 60 mm (Width x Length x Height)

Connection cable:

4 x 1.5 mm²

Signal LEDs:

green: operation
A1: alarm level 1
A2: alarm level 2

Alarm Relay 1 + 2:

Potential free: maximum 250 V a.c. 1A



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(1) Relay Unit



(2) Junction Box



(3) CO Detector
Head in housing



(3) CO Detector
Head without
housing

SPECIFICATION

(3) CO DETECTOR HEAD	Part no: 2112BGMS-TLR
Gas entry:	by diffusion
Monitored gas:	Carbon Monoxide CO
Monitoring range:	0-300ppm
Monitoring accuracy:	< 2% FSD (FSD = Full scale deflection)
Reproducibility:	< 0.5% FSD
Response time t_{90}:	< 90 sec
Linearity:	< 2% v. FSD
Zero drift:	< 2% v. FSD
Cross sensitivity:	< 2% v. FSD with: 1000ppm Benzene 5000ppm Carbon Dioxide 20ppm Nitric Oxide 50ppm Sulphur Dioxide 11mg/l Water
Sensitivity adjustment:	via potentiometer
Sensitivity measurement:	via test pins: 0.4 – 2.0 V equivalent 4-20mA
Installation in underground car parks:	1.5m above floor level: according to VDI 2053
Monitoring area in underground car parks:	maximum 400m ² per CO Detector Head: according to VDI 2053

