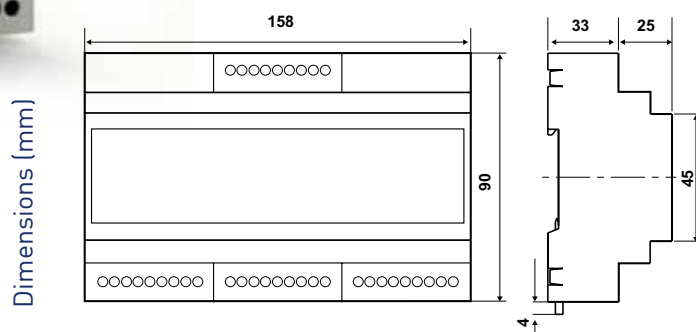


P82

Electronic control unit for gas leak detection with 4 detection zones

Electronic control unit for gas leak detection in industrial environment, suitable for controlling and signaling dangerous gas concentration in the air, specifically for detecting methane gas, LPG and carbon monoxide.



	Power supply	Contacts rating	Connected sensors	Operating ambient temperature °C	Protection degree
P82	12Vac/dc ± 10%	8A - 250V	4	- 10 ÷ 50	IP40

ELECTRICAL CHARACTERISTICS

Power supply: 12Vac/dc ± 10%.

Absorption with 1 probe approximately 160mA (320mA).
Absorption with 4 probes approximately 280mA (920mA).

Connection with 2 terminals of 2,5 mm².

Input - fuse power supply 1A 5x20mm.

4 inputs for sensors S81, S82, S83, or probes ATEX S84, S85, S86 (different gas types).

Connection to the probe with 3 terminals of 2,5 mm², for each probe: C (-12...24V); S (+4...20mA); A (+12...24V).

Maximum connection length 50 m, for each probe.

Section of 3 conductors: 1,5 mm².

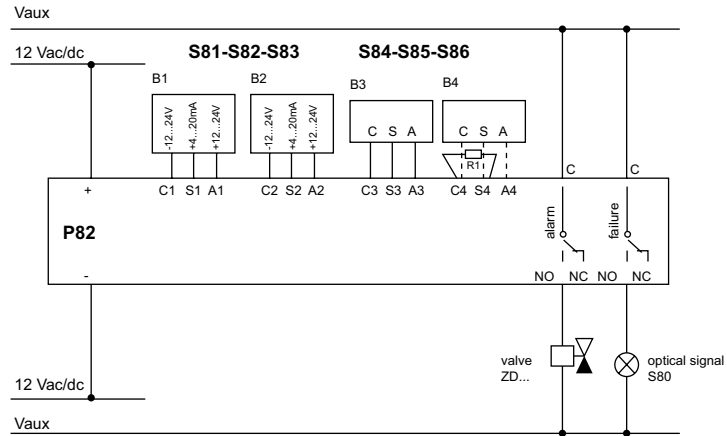
Alarm output: n.1 relay with 1 SPDT contact 8A 250Vac.

Failure output: n.1 relay with 1 SPDT contact 8A 250Vac.

Outputs connections: n.3 terminals of 2,5 mm² for relay C-NC-NO.

WIRING DIAGRAM

B1 – B2 Probes S84-85-86
 B3 – B4 Probes S81-82-83
 R1 Resistance 18 KOhm ¼W (if probe A4 is missing)



STANDARDS AND APPROVALS

In conformity with the standards EN 61779-1-4; CEI 216-5/1; EMC 89/336/CEE; EN 50270.

INSTALLATION

Rear panel mounting on Omega DIN EN 50022 rail.

It can be installed on the bottom panel or DIN modular panels.

To ensure the proper protection degree of the device is necessary to install the unit in an electric box created according to current regulations for the workplace and within which can also be housed the power supply system.

OPERATION

P82 control unit allows you to connect up to 4 probes of model S81-82-83 or ATEX S84, S85, S86 probes for the construction of gas detection systems in environments such as boiler rooms, garages, warehouses, workshops, etc.. with the possibility to control a solenoid valve or an auxiliary device (siren, flashing light, extractor, etc..) through inside alarm relay.

The installation of a gas leak detection system or the presence of carbon monoxide, do not exempt from compliance with all rules for installation and use of gas appliances and from the corresponding safety standards and law in force for this type of systems.

The control unit must be powered at 12 Vac/dc.

To connect the relay outputs use cables with a minimum section of 1,5 mm².

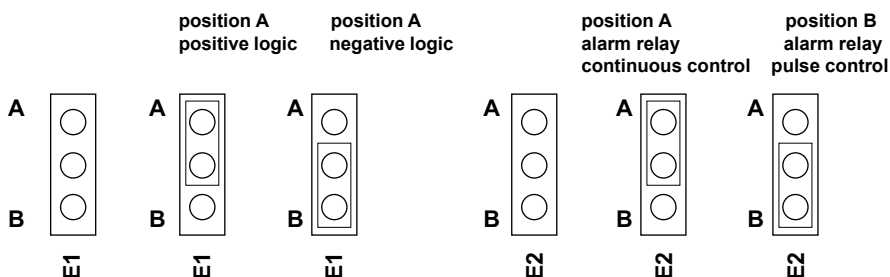
The operation logic, selected by means of jumper E1, can be either positive or negative.

The device reports its operation status through the LED.

According to the selected logic through the jumper E1, in normal situation (no alarm), the led, the failure signaling output and the relay, are:

- positive logic: led switched on, relays energized;
- negative logic: led switched off, relays not energized.

In case was selected the negative operation logic, the alarm relay can be controlled continuously or pulsed, depending on Jumper E2 position:



Once it was received the proper power supply, the control unit performs in sequence the following steps:

TESTING THE LED AND THE BUZZER (APPROXIMATELY 5 SECONDS)

Whatever the selected logic, the LEDs are starting to light in sequence and the buzzer emits a short beep.

PROBES PREHEATING (APPROXIMATELY 1 MINUTE)

During this phase, which allows the probes to reach the correct operation temperature, the detection system is not functioning.

FUNCTIONAL TEST (ABOUT 3 MINUTES)

Once the probes preheating phase has finished, the device enters under functional test phase. During this phase all internal timings are resetted in order to facilitate probes operation verification (alarm simulation).

During normal operation of the control unit is activated the gas alarm monitoring, as well the self-diagnoses for installation failures (probes) and of the system (control units). In this phase and in the absence of the alarm and the anomaly, the control unit is presented as shown in the table on the right.

INTERFACE		POSITIVE LOGIC	NEGATIVE LOGIC
power supply led	green	switched on	switched on
general anomaly led	yellow	switched on	switched off
probe anomaly led	yellow	switched on	switched off
alarm and faulty line led	red	switched on	switched off
alarm buzzer		no sound	no sound
alarm relay		energized	not energized
anomaly relay		energized	not energized

In the presence of dangerous gas concentrations, the unit enters in gas alarm phase and performs the following operations, indicated in the table on the right.

INTERFACE		POSITIVE LOGIC	NEGATIVE LOGIC
alarm led for interested probe	green	switched off	switched on
alarm buzzer	yellow	continuous sound	continuous sound
alarm relay	yellow	not energized	energized (continuously or pulsed according to E2)

Once the gas alarm condition was surmounted is necessary to bring the control unit in normal operation condition. For this purpose must be pressed the "RESET/TEST" button, situated on the front.

In the presence of a failure (probes and/or control units) the control units will be represented like in the table on the right.

INTERFACE		POSITIVE LOGIC	NEGATIVE LOGIC
general anomaly led (for the faulty control unit)	yellow	switched off	switched on
probe anomaly led (for the faulty probe)	yellow	continuous sound	continuous sound
alarm buzzer	yellow	intermittent sound	intermittent sound
anomaly relay		not energized	energized

Once the possible failure was eliminated, is necessary to bring the control unit in normal operation condition.

For this purpose must be pressed the "RESET/TEST" button, situated on the device front.

It is recommended to repeat the procedure of operation verification at least once a year, or after a prolonged shutdown period, and anytime when is replaced the probe.

The average life time of S81-S82-S83 probes and S84-S85-S86 is 5 years from date of installation. It is mandatory to replace them before the expiry of 5 years of use.

The average life time of the probes is calculated taking into consideration a typical use in a normally free of contaminants (gases, thinners, etc.) environment. A more frequent presence and in higher concentrations of these substances can accelerate the normal oxidation process of the sensing element, resulting with its life time decrease.

TECHNICAL FEATURES

Light signals:

- 1 red LED, power supply on;
- 1 yellow LED, general failure;
- 4 yellow LED, failure for each probe series;
- 4 red LED, gas alarms for each probe series.

Acoustic signals:

- 1 buzzer with sound intensity > 60db at 1m.
- 1 button to reset the alarms and for testing the probes.

Self-extinguishing plastic housing.

Dimensions: 158 x 90 x 58 mm – 9 modules in conformity with DIN 43880 standard.

Unit weight: 0,25 kg.

Rear panel mounting on Omega DIN EN 50022 rail.

Protection: IP20; IP40 when is properly installed in an electrical box.

Environment temperature: 0 ÷ 50 °C.

Environment humidity ±90% U.R. without condensation.

ACCESSORIES



S81
Sensor for methane gas detection.



S84
Probe for methane gas detection, certified with ATEX II 2G Ex d IIC T6.



S82
Sensor for LPG gas detection.



S85
Probe for LPG gas detection, certified with ATEX II 2G Ex d IIC T6.



S83
Sensor for carbon monoxide detection.



S86
Probe for carbon monoxide detection, certified with ATEX II 2G Ex d IIC T6



S80
Emergency signaling device with fixed light and continuous sound.



ZD...
Normally closed electromagnetic valves, with quick closing and opening, class A with approval.