

TECNOGAS CRD control units are produced in 4 versions:

- CRD/1 with one zone in 3 DIN module box
- CRD/2 with two zones in 3 DIN modules box
- CRD/3 with three zones in 6 DIN modules box
- CRD/4 with four zones in 6 DIN modules box

TECHNICAL FEATURES	CRD 1-2	CRD 3-4
Power supply (see specifications below)	230 Vac - 12 Vac - 12 Vdc	
Sensor lines voltage	12 Vdc	12 Vdc
Number of lines	1-2	3-4
Smoke sensors per line	Max 10	Max 10
Gas detectors per line	Max 1	Max 1
Load limitations	0.6 A	1.1 A
Alarm relay C NO NC 10 A	1	1
Acoustic signal at 1 m	10 db a 12 V a 30 cm	
Alarm LED (red)	2	4
Detector fault LED (yellow)	2	4
Power LED (green)	1	1
System failure LED (yellow)	1	1
End of line resistance*	3300 Ω	3300 Ω

\*Included in the box

FUNCTIONAL DESCRIPTION

The CRD/1-2-3-4 control units are designed to be housed in a DIN bar. They can manage remote detectors for gas detection (methane [CH4] and LPG) or for fire.

They are extremely reliable and easy to use and install.

The CRD control units can be used with remote gas detectors produced by TECNOGAS (RMP) or with any 4÷20 mA sensor.

The CRD control units work with a power supply voltage of:

- 230 Vac with internal stabilized power supply, protected against short-circuits and overloads;
- or 12 Vac (code 554411 - 554413 - 554416 and 554418) with external power supply;
- or 12 Vdc with external power supply (exclusively for codes 554431- 554433 - 554436- 554438).

The CRD control units are managed by a microcontroller. They have been designed to snap action with a 4÷20 mA signal and allow the connection of a remote gas detector or up to ten smoke sensors per line.

They have an alarm relay, a buzzer and two LEDs for visual signals:

- a green LED relating to the power supply (POWER)
- a yellow system FAULT LED, in compliance with the new European standards EN 50271.

The CRD control units have:

- visual reference signal for each connected remote detector: red for ALARM and yellow for FAULT

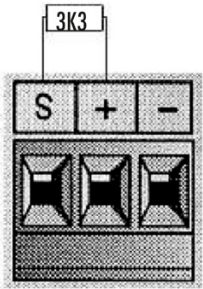
- an overcurrent protection circuit for the power supplies of the remote detectors. This circuit intervenes either on the pair of remote detectors or on the single remote detector, according to the type of control panel. For example: in the CRD/1 control unit the protection intervenes on the single detector; in the CRD/2 control panel it intervenes on the pair of remote detectors, etc.

Note for the installation of remote gas detectors (detector for methane and LPG protected against water splashes IP55): the gas detectors require the connection of a 3.3 KΩ end-of-line resistor between the + and S connections of the terminal board supplied to the same; the latter will serve to avoid a false sensor anomaly being reported. See the diagram below and the remote gas detector documentation. The same caution must be observed if the remote detectors set up for the

chosen control panel model are not connected. In this case, the end-of-line resistor will be positioned between the + and S connections of the terminal board of the control unit itself.

EXAMPLE:

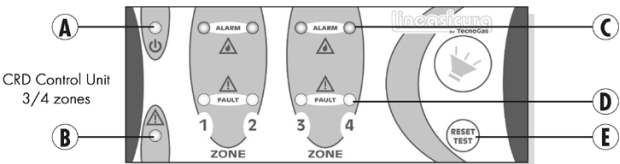
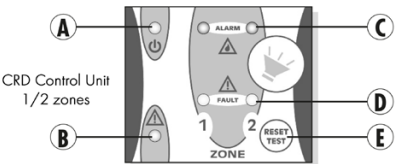
4-zone control unit used with 3 zones (insert a resistance also in the fourth zone).



Gas detection systems: if, following an alarm, the gas concentration returns below the alarm threshold, the CRD control units return to normal working conditions (buzzer and relay at rest) but the alarm signal that occurred with relative ignition remains of the flashing red LED.

VISUAL SIGNALS

On the front of the control units there are the reference visual signals for the control unit itself and for the connected detectors.



LEGEND

A	Green Led POWER
B	Yellow Led FAULT System failure
C	Red Led ALARM
D	Yellow Led FAULT Detector fault
E	TEST/RESET button

# CRD CONTROL UNITS FOR GAS AND FIRE DETECTION

## SIGNALS REFERRED TO CRD 1 - 2 - 3 - 4 CENTRAL UNITS

GREEN LED (POWER) A: indicates the correct power supply of the device.  
YELLOW LED (FAULT [FAULT] SYSTEM) B: indicates a malfunction of the CRD control unit or the microcontroller.

## SIGNALS REFERRED TO RMP REMOTE DETECTORS

RED LED (ALARM) C: turns on when the alarm threshold is exceeded and stays on until the control unit is reset by pressing the TEST / RESET key.  
YELLOW LED (FAULT [FAULT] SYSTEM) D: lights up in case of faulty sensor, interrupted line (open circuit); blinks 6 months before the sensor reaches its expiration date and stays on steadily after expiration. The sensors have an end of life after 5 years from installation, an expiration that is anticipated by the system in the event of premature deterioration of the sensor due to humid, greasy and dusty environments.  
The CRD control units signal the achievement of an alarm threshold as soon as the sensor reaches the alarm state. Following the signal, the red ALARM LED relating to the sensor in alarm will light up, the relay will activate, blocking the gas flow and a buzzer will emit an intermittent sound. The acoustic and visual signals and the relay will remain active until the TEST / RESET button is pressed. If the alarm conditions remain after pressing the key, the control unit goes back to the alarm state.  
The TEST / RESET key has two functions:

- if it is simply pressed and released, it allows the alarms to be reset;
- if it is pressed for 5 seconds, the control unit checks its operation and for 1 second all the anomaly and alarm signalling LED and the buzzer light up.

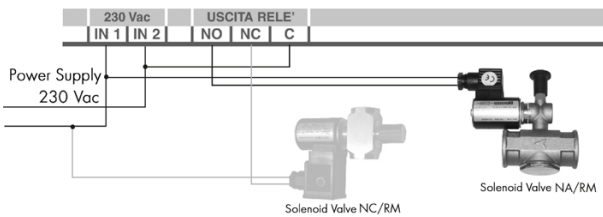
In case of persistence of an alarm or a fault, the signals will return to highlight the alarm or fault even after the memory has been cleared.

### NOTE FOR INSTALLERS:

After 5 years of installation (a date that can be anticipated due to premature deterioration of the sensor in humid, greasy and dusty environments), the sensors reach the end of their life. Approaching the deadline is signalled 6 months earlier with the flashing of the FAULT LED (yellow). On expiry the LED remains always on. To clear the sensor expiration memory, perform the following operations:

- all sensors connected to the control unit and any “plug” resistors are disconnected;
- press the TEST / RESET button for 5 seconds;
- the FAULT LEDs will flash quickly for a few seconds to indicate that the sensor expiration memory has been cleared and then they will remain on because the sensors are disconnected;
- connecting the new sensors and any “plug” resistors, the “FAULT” LEDs will switch off.

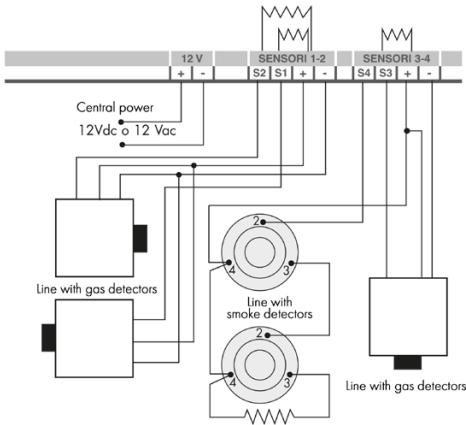
## ELECTRICAL CONNECTIONS



### TERMINAL BOARDS

230Vac: 230Vac power supply input  
12Vac: 12Vac power supply input  
12Vdc: 12Vdc power supply input  
C NO NC / ALARM: free exchange alarm relay output (max 10 A)  
S1 ... S4 / DETECTORS: S inputs for detections from the detectors  
+ / - DETECTORS: 12 Vdc detector power supply  
(these outputs should only be used to connect the detectors).  
To connect the detectors, refer to the table for the section of the cables to be used:

line conductor section table		
Cable section mm <sup>2</sup>		
M line	Smoke detectors	Gas detectors
50	0.50	0.75
100	0.75	1
200	1	1.50
300	1.50	2.50



Note for the installation of smoke detectors:  
smoke detectors require the connection of a 3.3 KΩ end-of-line resistor; the latter will serve to avoid a false sensor anomaly being reported. The diagram shown above is a principle diagram, for more details please refer to the document on the packaging of the smoke detectors you will install.

## WARRANTY

The equipment is guaranteed for a period of 12 months from the date of purchase.  
CONDITIONS: free replacement of components recognized as defective by the factory. The equipment must be sent to the retailer or alternatively directly to TECNOGAS srl Viale L. da Zara 10 - 35020 Albignasego (PD), carriage paid. The warranty excludes failures due to tampering by unauthorized personnel, carelessness in use or resulting from incorrect or improper installations and caused by phenomena unrelated to the normal operation of the appliance. We are not liable for any damage, direct or indirect, caused to people or things by damage to the product or consequent to the forced suspension of use of the same. For any dispute, the competent court is that of Padua.