



## Carbon monoxide detector with Interchangeable Sensor series **Beta** model **752CO**



Model	Power supply	Detected gas
752CO	230Vac-50Hz	CO

### Sensor Module

Code	Detected gas	Beta
3.752.1634	Carbon monoxide	752CO

## INTRODUCTION

This instrument is intended solely for the detection of carbon monoxide ("CO").

Carbon monoxide is a highly toxic, colourless and odourless gas and combustion pollutant. The very toxic nature of CO is such that its presence in air, even in low concentrations, can cause nausea and cephalaea, or loss of conscience in the case of prolonged exposure. Prolonged exposure to higher concentrations can result in death, as CO is able to bond with blood much easier than oxygen. Below is a table illustrating the danger of CO according to level of concentration and period of exposure:

Concentration of CO in air	Toxic symptoms
100ppm (0,01%)	Slight headache in 2-3 hours
400ppm (0,04%)	Slight headache in 1-2 hours, increased after 2-3 hours
1600ppm (0,16%)	Headache, giddiness and nausea in 20 minutes, death within 2 hours
6400ppm (0,64%)	6400ppm (0.64%) Headache and giddiness in 1 or 2 minutes, death in 10-15 minutes
12800ppm (1,28%)	12800ppm (1.28%) Death in 1-3 minutes

As the data suggests, the CO detector needs to respond instantly and even when the concentration of CO is minimal, in order to give sufficient warning and, therefore, before the amount of CO absorbed by the human organism reaches a dangerous level. The instrument is calibrated at the factory to trigger an alarm when the detected concentration of CO in the air is:

50ppm for 70 minutes

100 ppm for 20 minutes

300 ppm for 1 minute

GECA Srl guarantees these thresholds for a period of 5 years.

The *Sensor module* must be replaced after these 5 years, or when the "FAULT" LED turns on. An adhesive label on the front of the detector indicates the expiry date of the guarantee (5 years from the date of production).

## OPERATION GENERAL

**Beta 752/CO** has an element that is sensitive to the *concentration of carbon monoxide in air*.

When the concentration exceeds one of the alarm thresholds, there is a slight delay and then the red LED on the front of the device starts blinking and the internal buzzer is activated. At the same time, the detector activates any device to which it is connected (electric extractor, fan, buzzer, electric valve, etc.). The detector automatically reverts to normal operating mode as soon as the alarm turns off.

## LEDS AND BUZZER

There are three LEDs on the front of the **Beta 752/CO** gas detector:



- GREEN LED (**LINE**): indicates the instrument is powered. When the instrument is turned on, the LED blinks for about 40 seconds to indicate the sensor is warming up; the detector is not, therefore, ready for use until the LED stops blinking.



- YELLOW LED (**FAULT**) + BUZZER: indicates the sensor is broken.  
- YELLOW LED (**FAULT**) blinking only: indicates the CO sensor needs to be replaced.



- RED LED (**ALARM**): indicates the detector is in alarm mode: it has detected a concentration of more than 50 ppm (1st threshold) within a time-span of 70 minutes, or a concentration of more than 100ppm (2nd threshold) within a time span of 20 minutes, or a concentration of 300 ppm in 1 minute.

The red LED blinks at a different rate according to the threshold concerned:

50 ppm THRESHOLD 1

100ppm THRESHOLD 2

300ppm THRESHOLD 3

The relay and buzzer are activated after the time set for each threshold. The **Beta 752/CO** gas detector has a built-in buzzer that warns people of danger and malfunctioning of the device. The buzzer is sufficiently loud to be heard in rooms adjacent to the one where the detector is installed.

## LIGHTING DELAYS

After turning on the **Beta**, it takes about 90 seconds for the CO sensor in the detector to stabilize (this is the "stabilization time"). In the meantime, the green LED blinks and the alarm control is disabled.

## MALFUNCTIONING

You will need to replace the detector if all three LEDs are still blinking 5 minutes after you turned on the instrument. All three LEDs (RED, YELLOW and GREEN) blink at the same time whenever the detector malfunctions.

## INSTALLATION

**Attention: the instrument must be installed and put out of service by a specialized technician.**

Your gas supply and any shut-off devices must be installed in conformity with the domestic laws in force.

The installation of this instrument does not replace the appropriate installation, use and maintenance of gas appliances and suitable ventilation and extractor systems.

### GENERAL TERMS OF THE GUARANTEE

**THIS CERTIFICATE IS THE ONLY DOCUMENT THAT ENTITLES YOU TO REPAIR OF THE PRODUCT UNDER THE TERMS OF THE GUARANTEE.**

- The product is GUARANTEED for a period of 24 months from the date of purchase.
  - The GUARANTEE does not cover damage caused by tampering, incorrect or improper use and installation.
  - The GUARANTEE is valid only if it is duly compiled.
  - In the event of defects covered by the GUARANTEE, the manufacturer will repair or substitute the product free of charge.
- SERVICING AFTER THE GUARANTEE PERIOD**  
Any repairs after the period of the GUARANTEE will be charged on the basis of the parts substituted and the cost of labour.

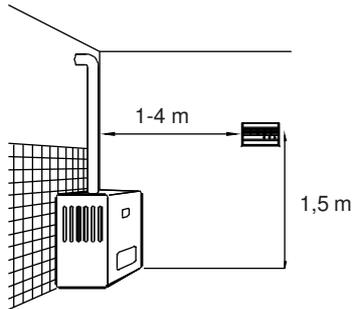
## INSTALLING THE INSTRUMENT

The instrument **MUST BE INSTALLED**:

- Within easy reach (at a height of about 1.5 m), see Fig. 1.
- At a distance of between 1 and 4 metres from the flame that could be a possible source of CO.
- If possible, in every room where there is a combustion appliance (stove, gas boiler, heater with natural draught, etc.).

The instrument **MUST NOT BE INSTALLED**:

- In corners where there is no free circulation of air.
- Near walls or other obstacles that could prevent the flow of gas from the flame to the detector, or extractors and fans that could divert the flow of air.
- In environments where the temperature could exceed 40°C or fall below - 5°C.
- In environments where there is a high level of humidity or steam.



Installation of the Beta 752/CO gas detector

Fig.1

## INSTALLATION INSTRUCTIONS

Use a screwdriver to undo the screw on the right-hand side of the instrument and lift the cover (Fig 2).

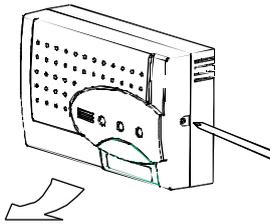


Fig.2

Position the base correctly and fasten it on the built-in 3-module box or on the wall, using the screws and dowels provided. Drill holes in the wall with a 5mm bit for the dowels.

## ELECTRICAL CONNECTION

**Attention: undertrack cables are required to connect the instrument to the mains.**

The **Beta 752/CO** gas detector must be powered at 230 Vac using terminals 1 and 2 (Fig. 3).

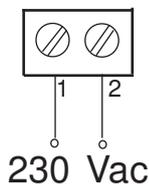


Fig.3

## GUARANTEE CERTIFICATE

TO COMPILE AND SEND IN CASE OF DAMAGE

DEVICE:  Beta 752/CO

Serial number (s.n.) \_\_\_\_\_

DEALER

Stamp: \_\_\_\_\_

Date of purchase: \_\_\_\_\_

USER

Surname and name \_\_\_\_\_

Address \_\_\_\_\_ n° \_\_\_\_\_

Postcode \_\_\_\_\_

Town/city \_\_\_\_\_

Telephone \_\_\_\_\_

The output consists of a relay with exchange contacts to which any suitable load can be connected (Fig. 4).

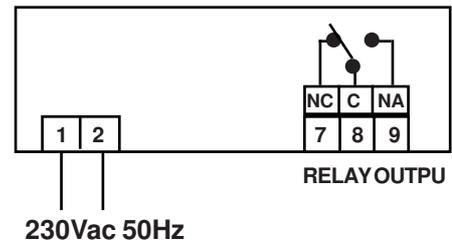


Fig.4

## CHARACTERISTICS OF THE OUTPUT

The **Beta 752/CO** detector has an output relay with voltage free contacts; contact rating 8A 250Vac / 30Vdc.

## CONNECTING LOADS

There is a JUMPER in the **Beta 752/CO** gas detector for selecting the type of load to be used:



**N.O. position pulse output:**

In the event of an alarm, terminals 8 and 9 remain closed for 2 seconds every minute (perfect for normally open electric valves, fig. 5).



**N.C. position constant output:**

In the event of an alarm, terminals 8 and 9 remain closed until the alarm stops (perfect for controlling the Normally Closed electric valve at the same time as an external electric load).

**Do not forget that the electric valve must be installed on the gas pipe outside the room to be controlled as it cannot protect against leaks upstream.**

A circuit breaker must be fitted that is able to disconnect the detector from the power supply, in accordance with the European standard IEC EN 60335-1.

In the event of an alarm, it is possible to control any load powered at 230Vac such as electric extractors, fans, buzzers, etc. (Fig. 5) using the Normally Open contact of the relay output (terminals 8 and 9).

It is also possible to connect an electric valve which cuts off the supply of gas in the event of an alarm. A N.O. 230 Vac electric valve should be connected parallel to the electric load (Fig. 5) while a N.C. 230 Vac electric valve should be connected using the Normally Closed contact of the relay (Fig. 6).



## JUMPER WITH N.O. CONTACT (PULSE OUTPUT)

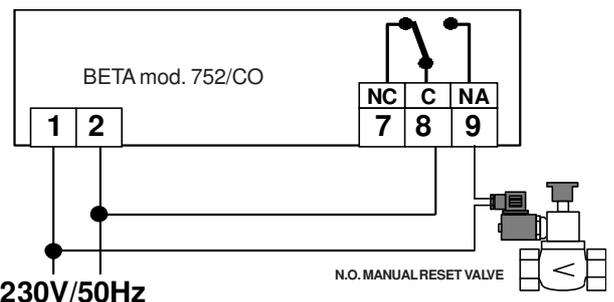


Fig.5 - Example of jumper with N.O. contact (**PULSE OUTPUT**) and Normally Open electric valve.



**JUMPER WITH N.C.  
(CONSTANT OUTPUT)**

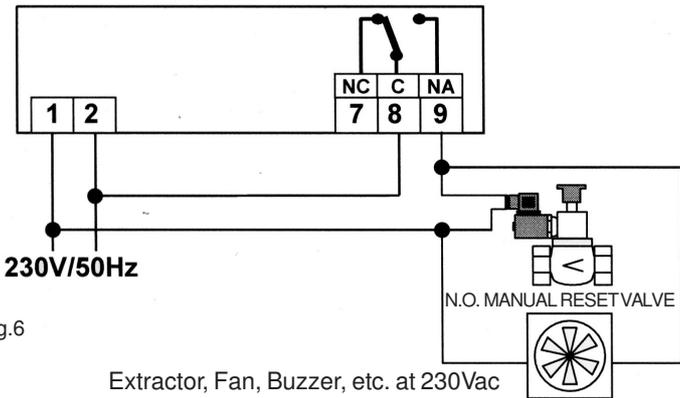
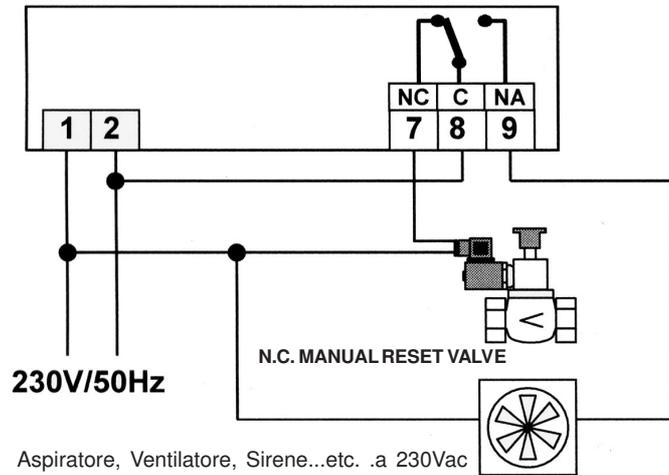


Fig.6

Extractor, Fan, Buzzer, etc. at 230Vac

Fig. 6 Example of jumper with N.C. contact (**CONSTANT OUTPUT**) and **Normally Open** electric valve with load at 230Vac.



Aspiratore, Ventilatore, Sirene...etc. a 230Vac

Fig.7 Esempio jumper su N.C. (**USCITA COSTANTE**) ed elettrovalvola **Normalmente Chiusa** con carico a 230Vac.

**ELECTRICAL CONNECTION WITH SEVERAL  
DETECTORS:**

Connection of two detectors with a single electric valve (Fig. 8-9) is shown in the diagrams below. It is possible to connect more than two detectors, repeating the same connections.

**TO BE COMPILED BY THE INSTALLER:**

Date of installation \_\_\_\_\_

Date of replacement \_\_\_\_\_

**Attention: the detector must be replaced 15 years after the date of installation on this voucher**

Site of installation \_\_\_\_\_

Serial number (s.n.) \_\_\_\_\_  
(Written on the inside of the plastic container).

Date of initial replacement of sensor module: \_\_\_\_\_

Date of second replacement of sensor module: \_\_\_\_\_

**Attention: the entire detector must be replaced five years after second replacement of the sensor module.**

Stamp

Signed \_\_\_\_\_

**OPERATION WITH NORMALLY  
OPEN (N.O.) VALVE**

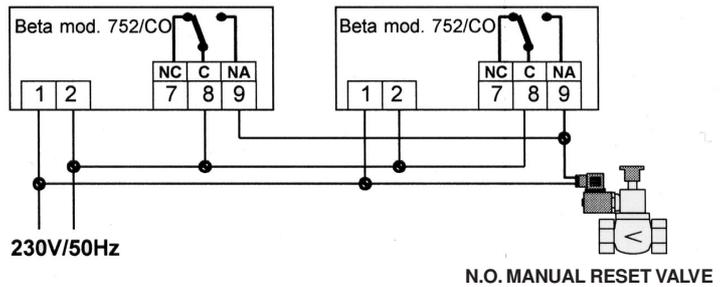


Fig.8

N.O. MANUAL RESET VALVE

**OPERATION WITH NORMALLY  
CLOSED (N.C.) VALVE**

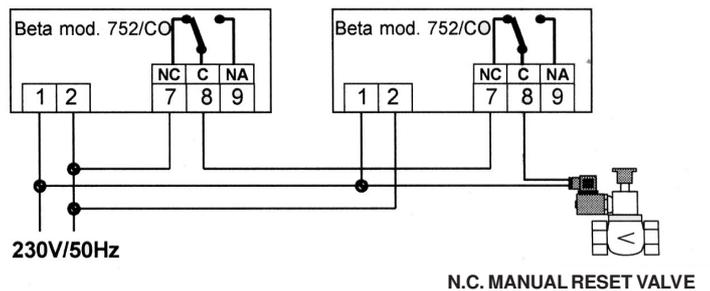


Fig.9

N.C. MANUAL RESET VALVE

**OPERATION TEST**

Before carrying out the operation test, open the cover under the three LED lights (Fig. 10) with a flat-headed screwdriver.



Fig.10

When this is done, it is possible to test operation of the instrument by pressing and holding the little button on the **Sensor module** (Fig. 11) for at least 2 seconds; all the LEDs turn on and the buzzer and relay output are activated for 5 seconds.

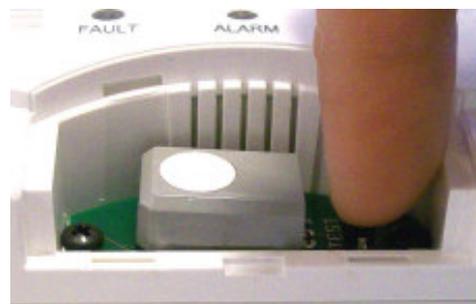


Fig.11

You will then need to re-engage the electric valve connected to the output of the gas detector (if present).

**ROUTINE TESTING**

You are advised to ask the installer to give the detector a general test at least once a year.

**IMPORTANT: Do not use pure gas, such as that in a lighter, directly on the sensor since the sensor could be irretrievably damaged.**

## REPLACING THE SENSOR

**N.B. The Sensor module must be replaced by a specialized technician.** Replace the Sensor module if the "FAULT" LED starts blinking when there is no alarm, or by the expiry date on the label on the cover.

**N.B.** Make sure the **code** of the new **Sensor module** matches the code on the **Sensor module** to be replaced.



1\_ Turn off the detector, unplug it from the mains and use a screwdriver to lever off the little cover under the three LEDs (Fig. 12).

Fig.12

2\_ Undo the two screw fasteners on the **Sensor module** to be replaced (Fig. 13)



Fig.13



3\_ Remove the **Sensor module** to be replaced (Fig. 14).

Fig.14

4\_ Check the new **Sensor module** is compatible with the one to be replaced (if the sensor module is not compatible, the YELLOW LED and BUZZER turn on) and carefully insert the 4 connectors in the correct place (Fig. 15).



Fig.15



Fig.16

Fasten the **Sensor module** with the two screws and close the cover, first inserting the two tabs at the bottom (Fig. 16). The instrument can now be turned on.

After the instrument is turned on, the electrochemical **CO** sensor in the detector takes about one and a half minutes to 'warm up' (the 'stabilization time'), during which time the green LED blinks to indicate the alarm is disabled.

You will need to replace the detector if all three LEDs are still blinking 5 minutes after you have turned on the instrument.

## WARNING

Remove any dust on the surface of the instrument with a cloth. Do not attempt to open or dismount the gas detector since this could result in electric shock and damage to the product. Bear in mind that the sensor is also sensitive to commonly used products such as sprays, detergents, alcohol, glue and paint. These products can contain substances which, in high quantities, could trigger the sensor and cause false alarms.

It is advisable to ventilate the room when using these products. The detector does not work when there is a power cut.

**ATTENTION!** In the event of an alarm:

1) **Open the doors and windows to increase ventilation in the room.**

**If the alarm stops, find the cause and take appropriate action.**

**If the alarm continues and you cannot find and eliminate the cause of the leak, vacate the premises and, when you are outside, contact the gas emergency service.**

## TECHNICAL CHARACTERISTICS

- Power supply: 230Vac, 50 Hz
- Power consumption: 20mA max
- Rating of relay contacts: 8A 250Vac/30Vdc
- Operation temperature: -10°C... +40°C
- Relative humidity : 30%.... 90% RH
- Alarm thresholds:

50ppm for 70 minutes  
100ppm for 20 minutes  
300ppm for 1 minute

- Warming up period after the instrument is switched on: about 1 minute 30 seconds
- Acoustic level of buzzer: 85 dB (A) at 1 metre
- Electrical self-diagnosis with signal to indicate malfunction or failure of the sensor
- Rated to IP42



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