

# Technical specifications:

## IR22 / IR22 D



<b>Measuring principle</b>	Infrared (IR)	
<b>Measuring gas supply</b>	Diffusion	
<b>Measuring range and measuring gas</b>	sensor dependent	
<b>Update time</b>	1s	
<b>Readiness delay</b>	5s plus 60s sensor run-in phase (heating-up)	
<b>Power supply</b>	Operating voltage:	24V DC (12-30V DC allowable)
	Power consumption without display *1:	<u>RS485 and 0.2-1mA version</u> typ. 15/18/21mA @24V/18V/12V
	with display *1:	typ. 20/25/33mA @24V/18V/12V
	with display+horn *1:	max. 30/38/50mA @24V/18V/12V
	Fuses:	250mA (not changeable)
		<u>4-20mA version</u> max. 37/40/43mA @24V/18V/12V
		max. 42/47/55mA @24V/18V/12V
		max. 52/60/72mA @24V/18V/12V
<b>Climatic conditions</b>	Short-term storage temperature:	-25...+60°C
	Recommended storage temperature:	0...+30°C
	Operating temperature:	-25...+50°C
	Humidity:	0...95% r.h.
	Air pressure:	80...120kPa (sensor dependent)
<b>Display &amp; controls</b>	Status-LEDs:	green for operation and yellow for fault or service
	Display:	2,2" graphic display
	Buttons:	3 function buttons (display version only)
	AutoCal button:	for ZERO and SPAN adjustment (inboard)
	Potentiometer:	for ZERO and SPAN adjustment (inboard)
<b>Service connector</b>	Design:	3,5 mm stereo jack socket (internal)
	Analogue output:	0.2-1.0V corresponding to 0-100% MR for sensor calibration
	Digital input:	for configuration and firmware update
<b>Signal output</b>	analogue:	4-20mA (max. load: 400 Ω/650 Ω/150 Ω @24 V/18 V/12 V supply)
		0.2-1mA (max. load: 14K/9K3/4K5 @ 24 V/18 V/12 V supply)
	or digital:	RS-485; Half duplex; 9600/19200/38400 Baud; Modbus protocol, Slide switch for 120 Ω terminating resistor
<b>Connection Cable</b>	Cable glands:	1 or 2 glands M16x1.5 (for cable diameter 4.5-10 mm)
	Connection terminals:	4 double terminals (0.08 mm² to 2.5 mm² conductor cross-section)
	Cable (analogue):	3-core e.g. LiYY 3x0.34...0.75 mm² or LiYCY
	Cable (digital):	4-core e.g. LiYY 4x0.50...1.5 mm² or cable Y(St)Y 2x2x0.8 *
<b>Housing</b>	Protection class:	IP54
	Material:	Plastic
	Dimensions:	96 x 123 x 49 mm (W x H x D) with sensor
	Weight:	120-150g bzw. 170-195g (display version)
<b>Approvals / Tests</b>	Electromagnetic compatibility:	DIN EN 50270:2015      Interference emission: Type class I Interference immunity: Type class II

to \*1: For low-power sensors MK250, MK251, MK252, MK253, MK254 and MK260

to \*2: The bus line Y(St)Y 2x2x0.8 is for the power supply of several bus transmitters via the same cable. only suitable for short cable runs.  
The possible distance depends on the number and the local distribution of the transmitter on the bus cable.



## IR22 Transmitter

For monitoring  
combustible gases (HC)  
and CO<sub>2</sub>



# IR22 Transmitter

For monitoring combustible gases (HC) and CO<sub>2</sub>



The IR22 infrared transmitter uses the adsorption spectra of gases for targeted monitoring of specific combustible gases and CO<sub>2</sub>. The measurement method allows reliable monitoring even under difficult conditions, such as a low percentage of oxygen in the ambient air.

## Selective and insensitive

Not only is the method highly selective, it is also extremely insensitive to sensor toxins and, unlike for example catalytic sensors, can monitor the concentration of combustible gases even when there is little or no oxygen in the gas mixture.

## Communicates analog and digital

The measured values and status information of the IR22 can be transmitted either analog (4-20 mA or 0.2-1 mA) or digital (RS-485). This allows not only the use in combination with any GfG controller,

but also the connection to programmable logic controllers (PLC).

## Smart measured value processing

Industry-wide, the trend is towards smart units, such as the IR22, whose integrated electronics process the data already at the measuring point. The linearization of the measurement signal, compensation of temperature influences, detection of malfunctions and information on the next service or maintenance interval are just some of the advantages that result.

## One-man calibration and adjustment

All service and maintenance work can be performed by a single technician. A calibration adapter facilitates regular function checks. It ensures the safe and steady supply of test gas during maintenance.

## Variants for every requirement

The basic version of the IR22 is sufficient for many applications. If a measured value display on site is desired, there is also a variant with display and acoustic alarm.

**IR22** Basic variant

**IR22 D** with display to show the current measured value

In combination with GfG's powerful controllers, both variants are the right choice for a wide range of use cases.

## Overview of the gases and measuring ranges:

Other gases on request.

» Carbon dioxide (CO <sub>2</sub> )	0 to 1.0 % by volume 0 to 5.0 % by volume 0 to 10.0 % by volume 0 to 25.0 % by volume 0 to 50.0 % by volume
» Methane (CH <sub>4</sub> )	0 to 100 % LEL 0 to 5.0 % by volume
» Difluormethane/R32 (CH <sub>2</sub> F <sub>2</sub> )	0 to 100 % LEL 0 to 14.0 % by volume
» Propane (C <sub>3</sub> H <sub>8</sub> )	0 to 100 % LEL 0 to 2.0 % by volume

*IR22 transmitter with one cable entry for analog connection*



# IR22 Technical Data:

**Measuring principle:** infrared (IR)

**Measuring ranges <sup>1</sup>:** 0 to 100 % LEL  
0 to 50 % by volume

**Gas supply:** Diffusion or gassing  
per calibration adapter

**Lifetime of the sensor:** > 5 years

**Response time:** t<sub>90</sub> < 50 s

**Temperature:**

**Humidity:**

**Air pressure:**

**Output signal:**

Analog:

Digital:

**Power supply:**

-25 to +50 °C  
0 to 95 % r. h.  
(non-condensing)  
80 to 130 kPa

0.2-1 mA or 4-20 mA

RS-485

12 to 30 V DC

**Housing:** Plastic

**Protection class:** IP54

**Dimensions:** 96 x 123 x 49 mm  
(W x H x D)

**Weight:** 125 - 150 g<sup>1</sup>

**Approvals / Certifications:**

Functiona  
Safety (SIL):

DIN EN 61508-2: 2011

<sup>1</sup> Sensor dependent

GfG Gesellschaft für Gerätebau mbH



## Transmitter IR22 D with display and horn

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and CO<sub>2</sub>



# Transmitter IR22 D with display and horn

For monitoring combustible gases (HC) and CO<sub>2</sub>



The IR22 D infrared transmitter uses the adsorption spectra of gases for targeted monitoring of specific combustible gases and CO<sub>2</sub>. The measurement method allows reliable monitoring even under difficult conditions, such as a low percentage of oxygen in the ambient air.

## Selective and insensitive

Not only is the method highly selective, it is also extremely insensitive to sensor toxins and, unlike for example catalytic sensors, can monitor the concentration of combustible gases even when there is little or no oxygen in the gas mixture.

## Communicates analog and digital

The measured values and status information of the IR22 D can be transmitted either analog (4-20 mA or 0.2-1 mA) or digital (RS-485). This allows not only the use in combination with any

GfG controller, but also the connection to programmable logic controllers (PLC).

## Protection level and display elements

The compact housing for wall mounting is protected against splash water and dust (IP54). It has a 2.2" display with integrated horn and two status LEDs. The display shows the gas type and unit as well as the current measured value. Backlit green in measuring mode, the display changes to red in the event of an alarm. An acoustic warning signal sounds at the same time. The status LEDs are used to indicate operational readiness (green) and special states (yellow).

## One-man calibration and adjustment

All service and maintenance work can be performed by a single technician. A calibration adapter facilitates regular function checks. It ensures the safe

and steady supply of test gas during maintenance.

## Variants for every requirement

The basic version of the IR22 is sufficient for many applications. If a measured value display on site is desired, there is also a variant with display and acoustic alarm.

**IR22** Basic variant

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» Difluormethane/R32 (CH <sub>2</sub> F <sub>2</sub> )	0 to 100 % LEL 0 to 14.0 % by volume
» Propane (C <sub>3</sub> H <sub>8</sub> )	0 to 100 % LEL 0 to 2.0 % by volume

*IR22 D transmitter with one cable entry for analog connection*



## IR22 D Technical Data:

**Measuring principle:** infrared (IR)

**Measuring ranges <sup>1</sup>:** 0 to 100 % LEL  
0 to 50 % by volume

**Gas supply:** Diffusion or gassing  
per calibration adapter

**Lifetime of the sensor:** > 5 years

**Response time:** t<sub>90</sub> < 50 s

**Temperature:** -25 to +50 °C  
**Humidity:** 0 to 95 % r. h.  
(non-condensing)

**Air pressure:** 80 to 130 kPa  
**Output signal:**  
Analog: 0.2-1 mA or 4-20 mA  
Digital: RS-485  
**Power supply:** 12 to 30 V DC

**Housing:** Plastic  
**Protection class:** IP54  
**Dimensions:** 96 x 123 x 49 mm  
(W x H x D)  
**Weight:** 170 - 195 g<sup>1</sup>  
**Approvals / Certifications:**  
Functiona  
Safety (SIL): DIN EN 61508-2: 2011

<sup>1</sup> Sensor dependent

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