

# Gas cylinder scale Model GCS-1

WIKA data sheet PE 87.19



## Applications

- Level measurement of liquid gases in gas cabinets and gas distribution systems
- Level measurement in chemical delivery systems
- Industrial weight measurement

## Special features

- High overload safety up to 400 %
- 0.1 % FS accuracy
- Meets the highest EMC requirements
- Measuring ranges 0 ... 60 lbs to 0 ... 300 lbs (0 ... 27.22 kg to 0 ... 136.08 kg)
- High ingress protection, IP 65, for outdoor use and processes with high condensation



Gas cylinder scale model GCS-1

## Description

The model GCS-1 gas cylinder scale has been designed for indoor and outdoor use in gas cabinets or gas containers.

Due to its high IP 65 ingress protection, there is no concern with using the gas cylinder scale for gas cylinders with heavy condensation.

The robust and compact design features high accuracy and temperature stability, meeting the requirements of the semiconductor industry.

The gas cylinder scale meets the highest overload and EMC requirements in order to ensure safe, error-free and accurate operation.

## Measuring ranges

Selectable versions				
lbs	Measuring range	0 ... 60	0 ... 100	0 ... 300
	Overload	0 ... 250	0 ... 300	0 ... 750
kg	Measuring range	0 ... 27.22	0 ... 45.36	0 ... 136.08
	Overload	0 ... 115	0 ... 130	0 ... 340

Other measuring ranges on request.

## Output signal

Selectable versions	
Model	Output signal
GCS-1-A (2-wire)	4 ... 20 mA
GCS-1-G (4-wire)	DC 0 ... 5 V
GCS-1-F (4-wire)	DC 0 ... 10 V

### Load

Model GCS-1-A:  $\leq (\text{power supply} - 10 \text{ V}) / 0.02 \text{ A}$

Model GCS-1-G:  $> 5 \text{ k}\Omega$

Model GCS-1-F:  $> 10 \text{ k}\Omega$

## Voltage supply

### Power supply

DC14 ... 30 V

### Maximum output current

$\leq 35 \text{ mA}$

## Accuracy specifications

### Accuracy of analogue signal

$\leq 0.1 \%$  of span

$\leq 0.05 \%$  of span (BFSL)

### Non-linearity (IEC 61298-2)

$\leq 0.05 \%$  of span

### Long-term stability (per month)

$\leq 0.04 \%$  of span (at reference condition)

### Adjustability of zero point, span

$\pm 5 \%$  through built-in potentiometer

### Temperature coefficients in rated temperature range

Mean TC zero point:  $\leq \pm 0.1 \%$  of span / 10 K

Mean TC span:  $\leq \pm 0.1 \%$  of span / 10 K

## Reference conditions (per IEC 61298-1)

Temperature: 15 ... 25 °C

Atmospheric pressure: 950 ... 1,050 mbar

Humidity: 45 ... 75 % r. h.

Nominal position: Horizontal

Power supply: DC 24 V

Load: see "Output signal"

## Operating conditions

### Free fall

Resistant to impact of 90 kg from a height of 10 cm

### Ingress protection

IP 65 (IEC 60529)

### Ex marking

Selectable versions	
Option 1	without ATEX approval
Option 2	(ATEX) II 3G Ex nA IIC T4/T5 X

### Permissible temperature ranges

Ambient: -20 ... +50 °C (T4)

-20 ... +40 °C (T5)

Storage: -20 ... +60 °C

Operation: -10 ... +50 °C

## Materials

### Sensor

Aluminium

### Case

Stainless steel

### Base plate

Stainless steel

## Safety-related maximum values

(only valid for instruments to ATEX category 3G)

	Model GCS-1-A (4 ... 20 mA)	Model GCS-1-G (DC 0 ... 5 V)	Model GCS-1-F (DC 0 ... 10 V)
Power supply	DC 14 ... 24 V	DC 14 ... 24 V	DC 14 ... 24 V
Current limitation $I_i$	-	-	-
Power limitation $P_i$	1 W	1 W	1 W
Internal capacitance $C_i$	-	-	-
Internal inductance $L_i$	-	-	-
Max. output voltage $U_o$	-	-	-
Max. output current $I_o$	-	-	-
External capacitance $C_o$	-	-	-
External inductance $L_o$	-	-	-

## Electrical connection

Type of connection: Cable outlet

Cable length: 6 m ( $\approx$  20 ft)

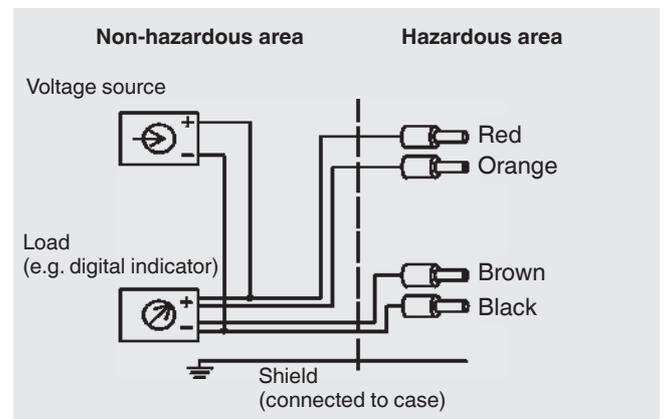
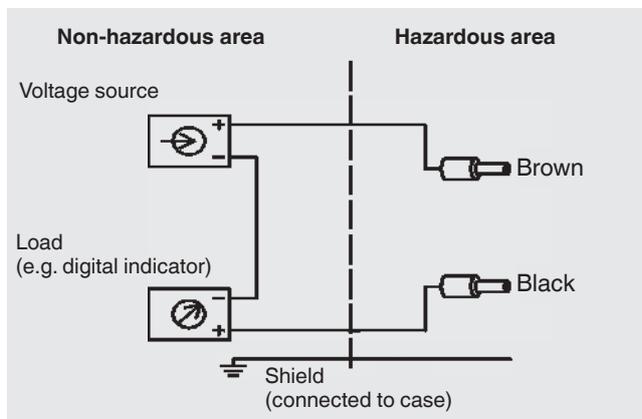
### Electrical safety

Short-circuit resistance:  $S_+$  vs.  $U_-$

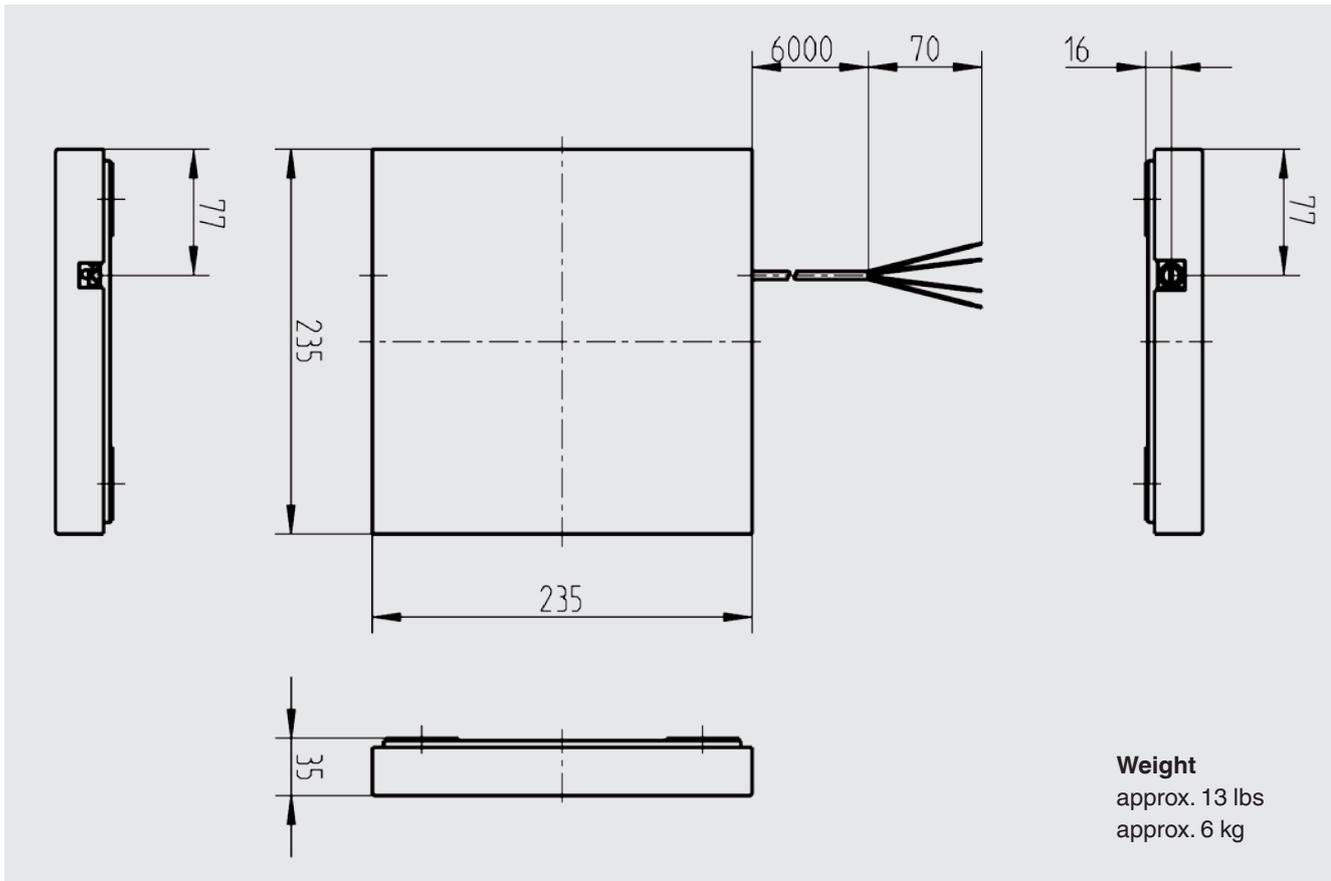
Reverse polarity protection:  $U_+$  vs.  $U_-$

Insulation voltage: DC 500 V

### Connection diagram



## Dimensions in mm



## CE conformity

### EMC directive

2004/108/EC, EN 61326 emission (group 1, class B) and interference immunity (industrial application)

### ATEX directive

94/9/EC, ignition protection type "n"

## Order numbers

### Without ATEX approval

Measuring range	Order number		
	GCS-1-A (4 ... 20 mA)	GCS-1-G (DC 0 ... 5 V)	GCS-1-F (DC 0 ... 10 V)
0 ... 60 lbs / 0 ... 27.22 kg	13470273	12489540	12716121
0 ... 100 lbs / 0 ... 45.36 kg	13470302	12489612	12716171
0 ... 300 lbs / 0 ... 136.08 kg	13470311	12489621	12716201

### ATEX II 3G Ex nA IIC T4/T5 X

Measuring range	Order number		
	GCS-1-A (4 ... 20 mA)	GCS-1-G (DC 0 ... 5 V)	GCS-1-F (DC 0 ... 10 V)
0 ... 60 lbs / 0 ... 27.22 kg	13470116	13471148	13471253
0 ... 100 lbs / 0 ... 45.36 kg	13470257	13471156	13471261
0 ... 300 lbs / 0 ... 136.08 kg	13470265	13471164	13471288

## Accessories

### Digital indicators

Designation	Order number	
	AC 230 V	AC 110 V
 Digital indicator DI30 in wall-mount enclosure	12458741	12489841
 Digital indicator DI30 panel mounting	7539422	12489825

For operation in accordance with the ATEX directive an isolated barrier is required.

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