

# 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 limit up to 400 %
- 0.1 % FS accuracy
- Meets the highest EMC requirements
- Measuring ranges 0 ... 27.22 kg to 0 ... 136.08 kg [0 ... 60 lbs to 0 ... 300 lbs]
- High ingress protection, IP65, 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 ingress protection of IP65, 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.

## Specifications

Accuracy specifications	
Non-linearity per BFSL per IEC 61298-2	≤ 0.05 % of span
Accuracy	→ See "Max. measured error per IEC 61298-2"
Max. measured error of the analogue signal per IEC 61298-2	≤ 0.1 % of span
Adjustability	
Zero point	±5 % through built-in potentiometer
Span	±5 % through built-in potentiometer
Mean temperature coefficient between -20 ... +50 °C [-4 ... +122 °F]	
Zero point	≤ ±0.1 % of span / 10 K
Span	≤ ±0.1 % of span / 10 K
Long-term stability (per month)	≤ 0.04 % of span (at reference condition)
Reference conditions	Per IEC 61298-1

## Measuring ranges

kg	
0 ... 27.22	0 ... 45.36
0 ... 136.08	

lbs	
0 ... 60	0 ... 100
0 ... 300	

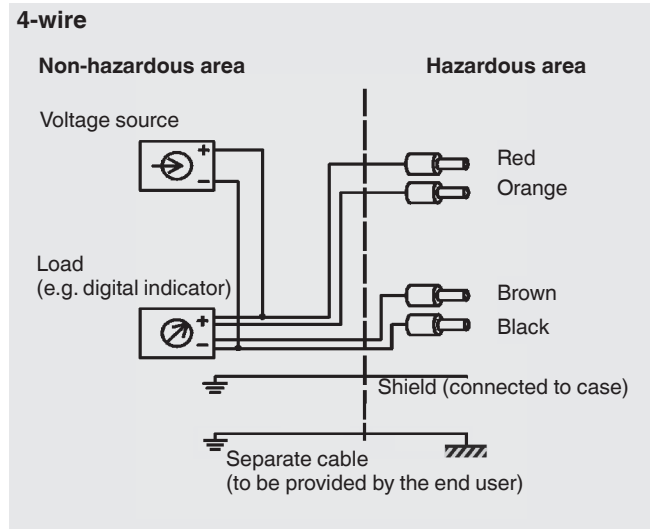
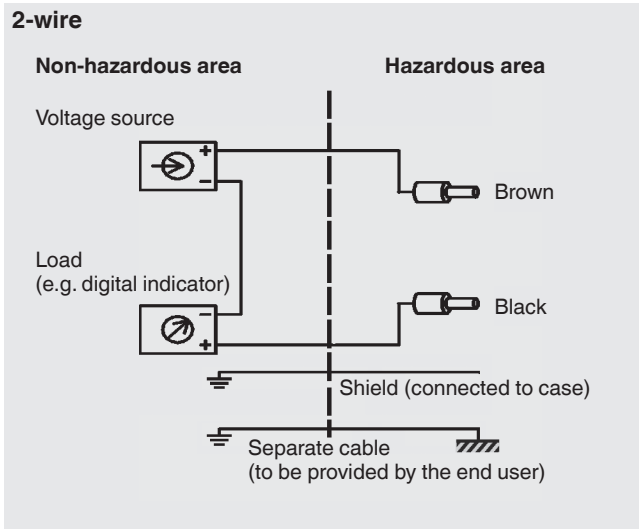
Other measuring ranges on request.

Further details on: Measuring range	
Overpressure limit	
Measuring range 0 ... 27.22 kg [0 ... 60 lbs]	4 times
Measuring range 0 ... 45.36 kg [0 ... 100 lbs]	3 times
Measuring range 0 ... 136.08 kg [0 ... 300 lbs]	2.5 times

Output signal	
Signal type	
Model GCS-1-A (2-wire)	4 ... 20 mA
Model GCS-1-G (4-wire)	DC 0 ... 5 V
Model GCS-1-F (4-wire)	DC 0 ... 10 V
Load in Ω	
Model GCS-1-A	≤ (supply voltage - 10 V) / 0.02 A
Model GCS-1-G	> 5 kΩ
Model GCS-1-F	> 10 kΩ
Voltage supply	
Supply voltage	DC 14 ... 30 V
Max. output current	≤ 35 mA

Electrical connection	
Connection type	Cable outlet
Cable length	6 m [20 ft]
Short-circuit resistance	S <sub>+</sub> vs. U <sub>-</sub>
Reverse polarity protection	U <sub>+</sub> vs. U <sub>-</sub>
Insulation voltage	DC 500 V

## Pin assignment



Pin assignment (2-wire)	
U <sub>+</sub> / S <sub>+</sub>	Brown (BN)
U <sub>-</sub> / S <sub>-</sub>	Black (BK)

Pin assignment (4-wire)	
U <sub>+</sub>	Red (RD)
S <sub>+</sub>	Orange (OG)
U <sub>-</sub>	Black (BK)
S <sub>-</sub>	Brown (BN)

Material	
Sensor	Aluminium
Case	Stainless steel
Base plate	Stainless steel



Operating conditions	
Operating temperature range	-20 ... +50 °C [-4 ... +122 °F]
Ambient temperature range	
T4	-20 ... +50 °C [-4 ... +122 °F]
T5	-20 ... +40 °C [-4 ... +104 °F]
Storage temperature range	-20 ... +60 °C [-4 ... +140 °F]
Free fall	Resistant to impact of 90 kg from a height of 10 cm
Ingress protection (IP code) per IEC 60529, industrial quality	IP65

## Approvals

### Approvals included in the scope of delivery

Logo	Description	Country
	<b>EU declaration of conformity</b>	European Union
	EMC directive	
	EN 61326 emission (group 1, class B) and immunity (industrial application)	
	RoHS directive	

### Optional approvals

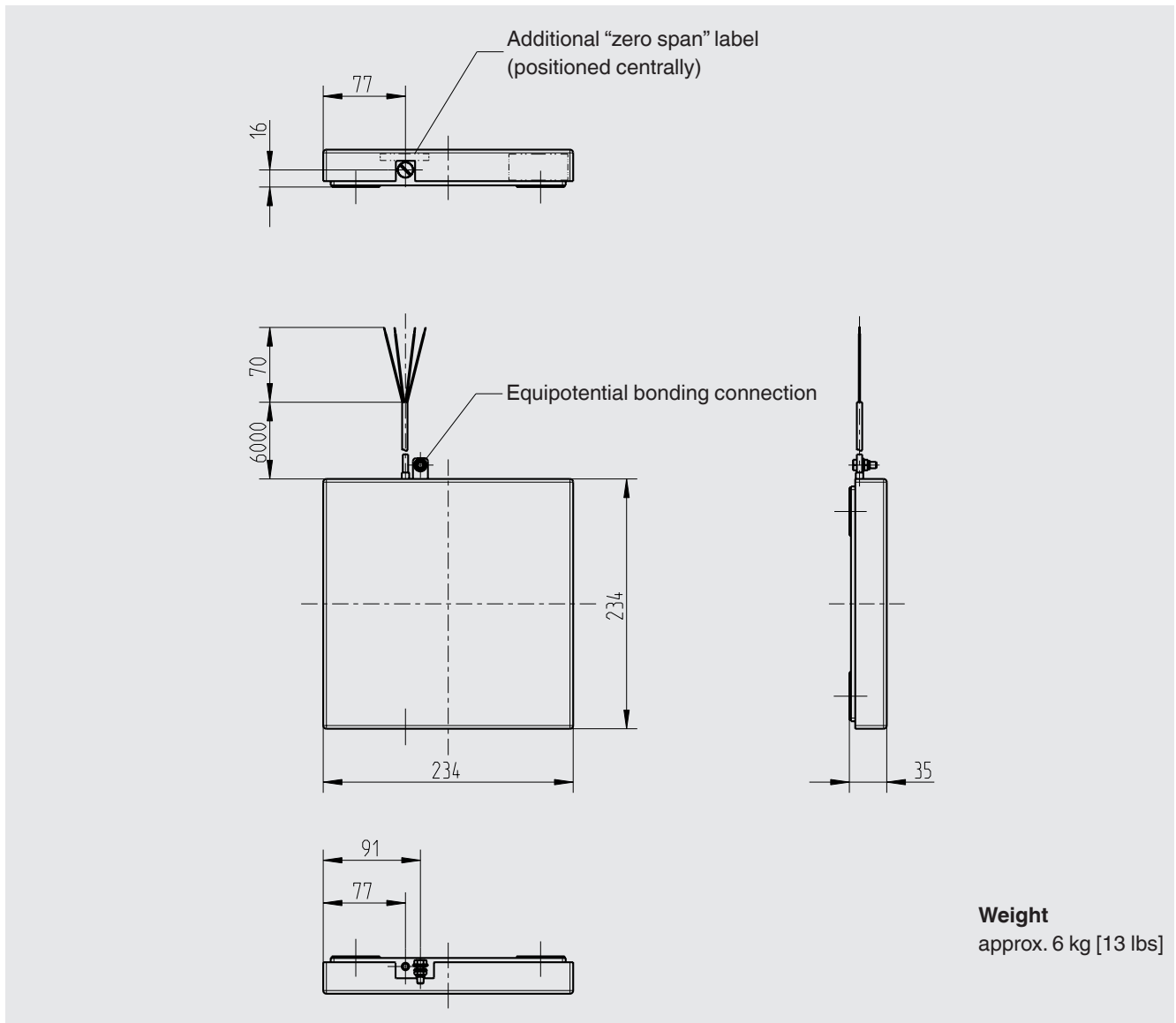
Logo	Description	Country
	<b>EU declaration of conformity</b>	European Union
	ATEX directive	
	Hazardous areas - Ex n Zone 2 gas [II 3G Ex nA IIC T4/T5 Gc X]	
	<b>IECEX</b> Hazardous areas - Ex n Zone 2 gas [Ex nA IIC T4/T5 Gc]	International

## Manufacturer's information

Logo	Description
-	China RoHS directive

→ Approvals and certificates, see website

## Dimensions in mm



### Safety-related characteristic values (Ex)

#### Ex marking

Without Ex approval

(ATEX) II 3G Ex nA IIC T4/T5 Gc X

(IECEX) BVS 16.0001X Ex nA IIC T4/T5 Gc

#### Safety-related maximum values <sup>1)</sup>



Supply voltage	Model GCS-1-A (4 ... 20 mA)	DC 14 ... 24 V
	Model GCS-1-G (DC 0 ... 5 V)	DC 14 ... 24 V
	Model GCS-1-F (DC 0 ... 10 V)	DC 14 ... 24 V
Power limitation P <sub>i</sub>	Model GCS-1-A (4 ... 20 mA)	1 W
	Model GCS-1-G (DC 0 ... 5 V)	1 W
	Model GCS-1-F (DC 0 ... 10 V)	1 W

1) Only valid for instruments to ATEX category 3G

## Order numbers

Designation		Order number
<b>Without Ex approval</b>		
Measuring range 0 ... 27.22 kg [0 ... 60 lbs]	Model GCS-1-A (4 ... 20 mA)	14196214
	Model GCS-1-G (DC 0 ... 5 V)	14196221
	Model GCS-1-F (DC 0 ... 10 V)	14196228
Measuring range 0 ... 45.36 kg [0 ... 100 lbs]	Model GCS-1-A (4 ... 20 mA)	14196215
	Model GCS-1-G (DC 0 ... 5 V)	14196223
	Model GCS-1-F (DC 0 ... 10 V)	14196229
Measuring range 0 ... 136.08 kg [0 ... 300 lbs]	Model GCS-1-A (4 ... 20 mA)	14196216
	Model GCS-1-G (DC 0 ... 5 V)	14196224
	Model GCS-1-F (DC 0 ... 10 V)	14196230
<b>IECEX Ex nA IIC T4/T5 Gc ATEX II 3G Ex nA IIC T4/T5 Gc X</b>		
Measuring range 0 ... 27.22 kg [0 ... 60 lbs]	Model GCS-1-A (4 ... 20 mA)	14196208
	Model GCS-1-G (DC 0 ... 5 V)	14196217
	Model GCS-1-F (DC 0 ... 10 V)	14196225
Measuring range 0 ... 45.36 kg [0 ... 100 lbs]	Model GCS-1-A (4 ... 20 mA)	14196210
	Model GCS-1-G (DC 0 ... 5 V)	14196213
	Model GCS-1-F (DC 0 ... 10 V)	14196226
Measuring range 0 ... 136.08 kg [0 ... 300 lbs]	Model GCS-1-A (4 ... 20 mA)	14196218
	Model GCS-1-G (DC 0 ... 5 V)	14196220
	Model GCS-1-F (DC 0 ... 10 V)	14196227

## Accessories

Designation		Order number	
	Digital indicator DI30 in wall-mount enclosure	AC 230 V	12458741
		AC 110 V	14170428
	Digital indicator DI30 panel mounting	AC 230 V	7539422
		AC 110 V	12489825

The digital indicators are not suitable for use in a hazardous area, nor for use with model GCS-1 gas cylinder scales located in a hazardous area.

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