

Gas Cylinder Scale Model GCS-1

WIKA Datasheet GCS-1



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 ... 27.2 kg to 0 ... 136.1 kg)
- High ingress protection, IP 65 (NEMA 4), for outdoor use and processes with high condensation

Description

- The model GCS-1 gas cylinder scale has been designed for indoor and outdoor use in gas cabinets or gas containers.
- Due to their high IP 65 (NEMA 4) 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 satisfies high overload and EMC requirements in order to ensure safe, error-free and accurate operation.



Fig. Gas Cylinder Scale GCS-1

Measuring ranges

Weight				
lbs	Measuring range	0 ... 60	0 ... 100	0 ... 300
	Overload	0 ... 250	0 ... 300	0 ... 750
kg	Measuring range	0 ... 27.2	0 ... 45.4	0 ... 136.1
	Overload	0 ... 115	0 ... 130	0 ... 340

Other measuring ranges on request.

Output signal

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

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

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

Power supply

Supply voltage

DC14 ... 30 V

Maximum output current

≤ 35 mA

Accuracy

Analogue signal

≤ 0.1 % of span

≤ 0.05 % of span (BFSL)

Non-linearity (IEC 61298-2)

≤ 0.05 % of span

Long-term stability (per month)

≤ 0.04 % of span (at reference conditions)

Adjustability of zero point / span

±5 % through built-in potentiometer

Temperature effect

Temperature coefficients in rated temperature range

■ Mean TC zero: ≤ ±0.1 % of span / 10 K

■ Mean TC span: ≤ ±0.1 % of span / 10 K

Reference conditions (per IEC 61298-1)

Temperature: 15 ... 25 °C

Atmospheric pressure: 950 ... 1050 mbar

Humidity: 45 ... 75 % relative

Nominal position: Horizontal

Supply voltage: DC 24 V

Load: see output signal

Operating conditions

Mechanics

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

Ingress protection: IP 65 (IEC 60529)

Permissible temperatures

Ambient temperature

■ T4: -20 ... +50 °C

■ T5: -20 ... +40 °C

Storage temperature: -20 ... +60 °C

Rated temperature range: -10 ... +50 °C

Materials

Sensor

Aluminium

Case

Stainless steel

Base plate

Stainless steel

Approvals, directives and certificates

CE conformity

EMC directive: 2004/108/EC

EN 61326 emission (group 1, class B) and
interference immunity (industrial application)

Explosion protection

Directive	Ignition protection type
ATEX category 3G	Ex nL IIC T4, T5 X

Safety-related maximum values

(only valid for devices to ATEX category 3G)

Model GCS-1-A	Ex nL IIC T4, T5 X
Supply voltage:	DC 14 ... 24 V
Current limitation I _i :	30 mA
Power limitation P _i :	1 W
Internal capacitance C _i :	0,1 µF ¹⁾
Internal inductance L _i :	1,2 mH ²⁾

Model GCS-1-G	Ex nL IIC T4, T5 X
Supply voltage:	DC 14 ... 24 V
Current limitation I _i :	30 mA
Power limitation P _i :	1 W
Internal capacitance C _i :	0,1 µF ¹⁾
Internal inductance L _i :	1,2 mH ²⁾
Max. output voltage U _O :	DC 12 V
Max. output current I _O :	35 mA
External capacitance C _O :	4,122 µF
External inductance L _O :	23,4 mH

Model GCS-1-F	Ex nL IIC T4, T5 X
Supply voltage:	DC 14 ... 24 V
Current limitation I _i :	30 mA
Power limitation P _i :	1 W
Internal capacitance C _i :	0,1 µF ¹⁾
Internal inductance L _i :	1,2 mH ²⁾
Max. output voltage U _O :	DC 12 V
Max. output current I _O :	35 mA
External capacitance C _O :	4,122 µF
External inductance L _O :	23,4 mH

1) 56 pF / cable length in m

2) 0.1 µH / cable length in m

Electrical connection

Type of connection: Cable outlet

Cable length: 6 m (\approx 20 ft)

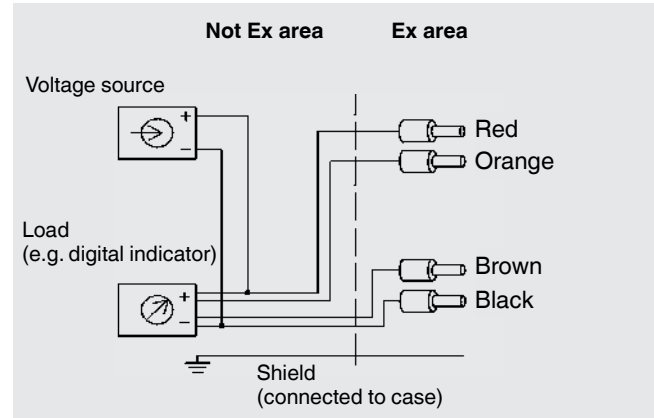
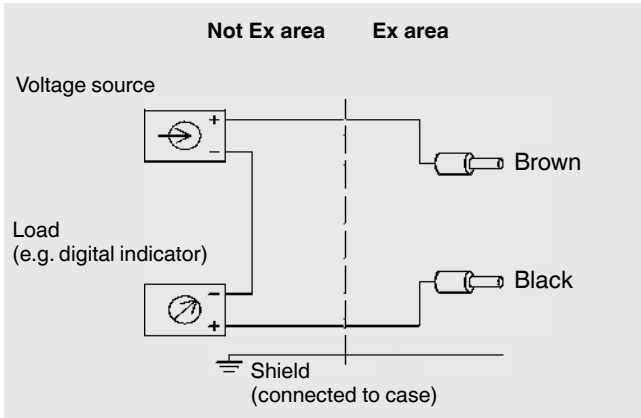
Electrical safety

Short-circuit resistance: S+ vs. U-

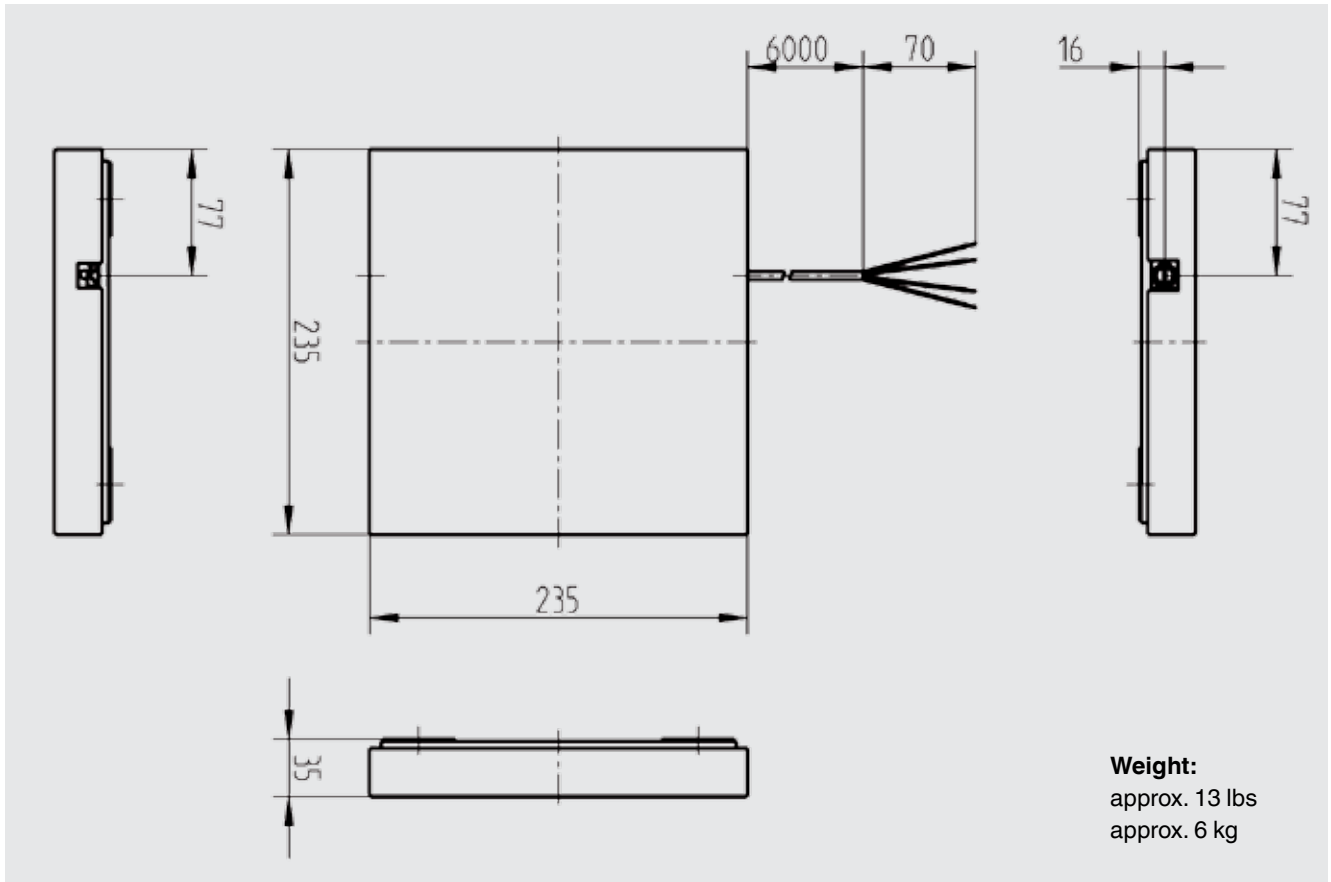
Reverse polarity protection: U+ vs. U-

Insulation voltage: DC 500 V

Connection diagram



Dimensions in mm



Order numbers

With ignition protection type Ex nL 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 ... 27.2 kg	12364453	13471172	13471318
0 ... 100 lbs / 0 ... 45.4 kg	12364445	13471181	13471326
0 ... 300 lbs / 0 ... 136.1 kg	12359794	13471201	13471342



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