ME - Gas Cylinder Scales ME-GFWx

● **Characteristics**

- Type:	ME-GFW1
- Input:	Weight 250 kg
- Output:	4...20 mA HART
- Supply:	12...40 VDC current loop
- Accuracy:	see technical data
- Electr. connection:	2x M12x1, 5-pole
- Overload protection:	adjustable via 3 locking rings
- Temperature range:	-20...+55 °C (ambient)
- Limit value contacts:	2x electronically (PNP)
- Configuration:	Keys / Software (single device)
- Protection:	at least IP65
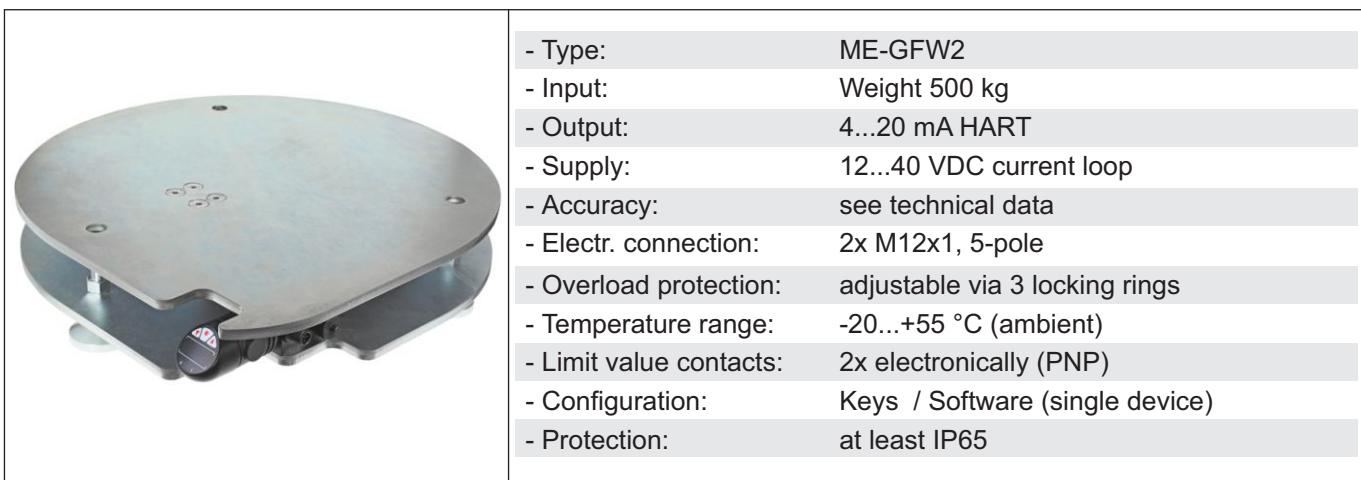
- Type:	ME-GFW2
- Input:	Weight 500 kg
- Output:	4...20 mA HART
- Supply:	12...40 VDC current loop
- Accuracy:	see technical data
- Electr. connection:	2x M12x1, 5-pole
- Overload protection:	adjustable via 3 locking rings
- Temperature range:	-20...+55 °C (ambient)
- Limit value contacts:	2x electronically (PNP)
- Configuration:	Keys / Software (single device)
- Protection:	at least IP65

● **Applications**

The gas cylinder scales is designed for continuous operation so that the liquefied gas cylinders stay permanent on the scales. It is suitable for e.g. measuring of weight or level in the industrial sector. Available are an integrated display, limit value contacts and an overload protection.

● *Technical data*

Input

Measurand:	Weight
Application of force:	Weighing platform

Output

Output:	Current signal:	4...20 mA with superimposed communication signal HART
	Type:	2-wire current loop
	Current range:	3,8...20,5 mA
	Signal on error:	3,6 mA (sensor short circuit, underflow)
		21 mA (sensor break, sensor open circuit, overflow)

Limit value contacts

Electronically:	2x PNP (30 VDC, 200 mA)
Indication:	1 LED red for each limit value
Voltage across:	<1 V
Settings:	with 3 keys (TouchM-Technology)
Setting range:	switch point and hysteresis: any value within measuring range
Switching delay:	0,0...999,9 s
Failsafe function:	adjustable
Galvanical insulation:	switching outputs are separated from measuring amplifier

Performance

Measuring amplifier:	Accuracy:	0,3% of range
	Resolution:	16 Bit
	Filter setting:	0...99 s
	Transmission behaviour:	linear with strain gauge signal
	Turn-on delay time:	<5 s
	Measuring rate:	10 measurements / s
	Linearization:	10calibration points
	Configuration:	via software (HART-communication)
	Response time:	20 ms
Indicator / limit values:	Resolution:	-9999...9999 digit
	Error of measurement:	±0,2% of range, ±1 digit
	Temperature drift:	100 ppm/K
	Features, operation:	according VDMA 24574-1 up to 24574-4
Load cell ME-GFW1:	Measuring range:	250 kg
	Combined error:	0,02% of range
	Isolation resistance:	>5000 MΩ (50 VDC)
	Nonlinearity:	0,02% of range
	Hysteresis:	0,02% of range
	Repeatability:	0,02% of range
	Creep:	0,02% of range / 10 min
	Zero point error:	1,5% of range
	Overload:	120%
	Ultimate overload:	150%
	Temperature error zero:	0,03% of range / 10 °C
	Temperature error range:	0,02% of range / 10 °C
Load cell ME-GFW2:	Measuring range:	500 kg
	Combined error:	0,02% of range
	Isolation resistance:	>5000 MΩ (50 VDC)
	Nonlinearity:	0,02% of range
	Hysteresis:	0,02% of range
	Repeatability:	0,02% of range
	Creep:	0,02% of range / 10 min
	Zero point error:	1,5% of range
	Overload:	120%
	Ultimate overload:	150%
	Temperature error zero:	0,03% of range / 10 °C
	Temperature error range:	0,02% of range / 10 °C

● *Technical data (continued)*

Programmable features

Measuring amplifier:	measuring range start / measuring range end /
Display:	range of indication / time of indication / decimal point / units / stabilisation of zero point / locking of programming / calibration points / TAG number
Limit value contacts:	limit value 1 and 2 / hysteresis 1 and 2 / delay times 1 and 2

Indication

Display:	7 segment, 8,5 mm, red, 4 digits, representation mirror-inverted 180° possible
Head of display:	rotatable approx. 330°
Memory:	minimum / maximum values
Indication:	- measuring value - unit of measurement - control menu
Decimal point:	automatically or manually, dependent on measuring range / unit
Representation:	xxxx / xxx.x / xx.xx / x.xxx

Supply

|	
Voltage:	HART current loop: 12...40 VDC
	Load: $R = (U_B-12\ V)\ /\ 22\ mA$
Reverse battery protection:	available (no function, no damage)

Ambient conditions

Temperature:	Operating range: -20...+55 °C
	Compensated: -10...+40 °C
	Storing: -20...+80 °C
Condensation:	uncritical

### Mechanics

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Dimensions:	see page 5
Electrical connection:	Load cell: M12x1, 4-pole (in factory)
	Limit contacts, 4...20 mA: 2x M12x1, 5-pole
Material:	Weighing platform: Steel 1.0037 (zink plated)
	Base platform: Steel 1.0037 (zink plated)
	Flexible foot: Steel zink coated, blue chromated
	Load Cell: Aluminium alloy
	Body: PTB GF30
	Head of display: polycarbonate (makrolon)
Overload protection:	adjustable via 3 locking rings
ME-GFW1:	adjusted to ca. 250 kg
ME-GFW2:	adjusted to ca. 500 kg
Weight:	ME-GFW1: ca. 7 kg
	ME-GFW2: ca. 19 kg
Mounting:	on level
Protection:	at least degree IP65 (when electrical connection is plugged)

● *Electrical connection*

Pin assignment plugs 2x M12x1, 5-pole

12...40 VDC
current loop

4...20 mA
HART

Electronical
Limit value contacts

1	3		2	4	5		1	3		2	4	5
U+	U-		S2	S1	C		U+	U-		S2	S1	C

Plug 1

Plug 2
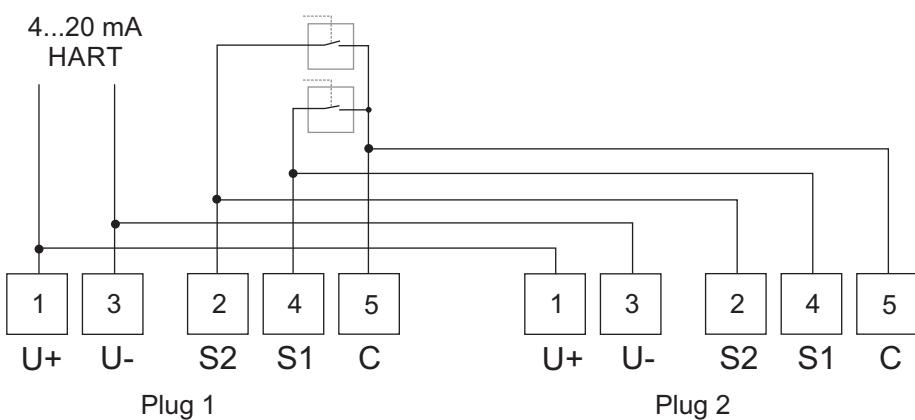
Pin assignment single device

1	3		2	4	5		1	3		2	4	5
U+	U-		S2	S1	C		U+	U-		S2	S1	C
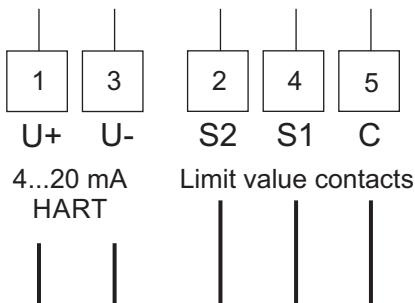
4...20 mA
HART

Limit value contacts

Not used

Pin assignment 4...20 mA each device, Limit value contacts in parallel

1	3		2	4	5		1	3		2	4	5
U+	U-		S2	S1	C		U+	U-		S2	S1	C
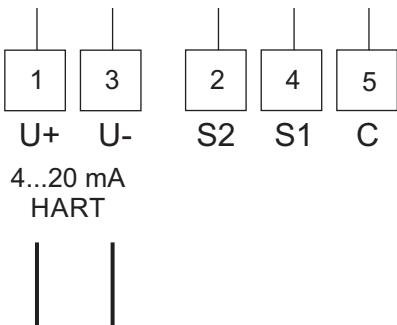
4...20 mA
HART

Limit value contacts
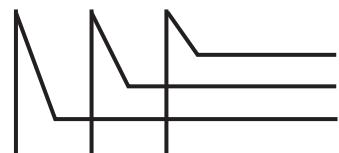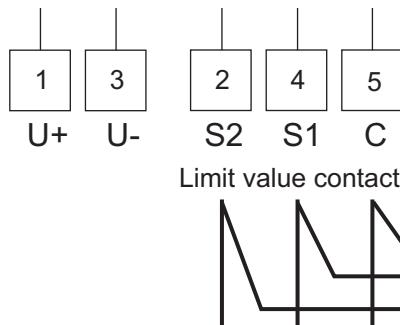
Supply and limit value contacts in parallel

1	3		2	4	5		1	3		2	4	5
U+	U-		S2	S1	C		U+	U-		S2	S1	C
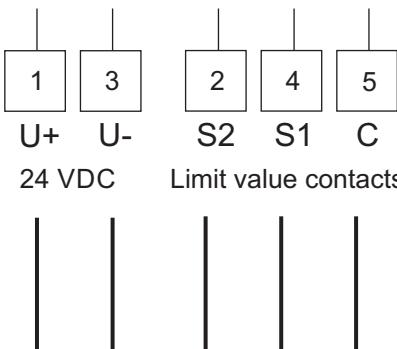
24 VDC

Limit value contacts
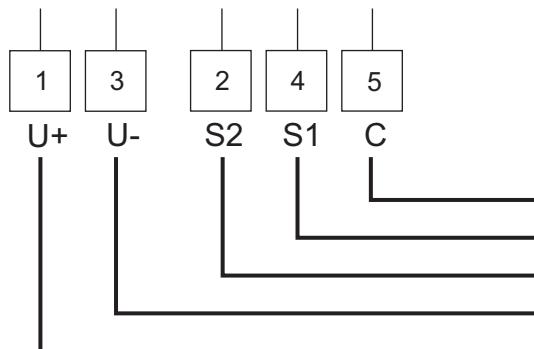
● *Electrical connection*

ME-GFW1

View top

View side

Ø245

ca. 80

ME-GFW2

View top

View side

Ø410

ca. 95
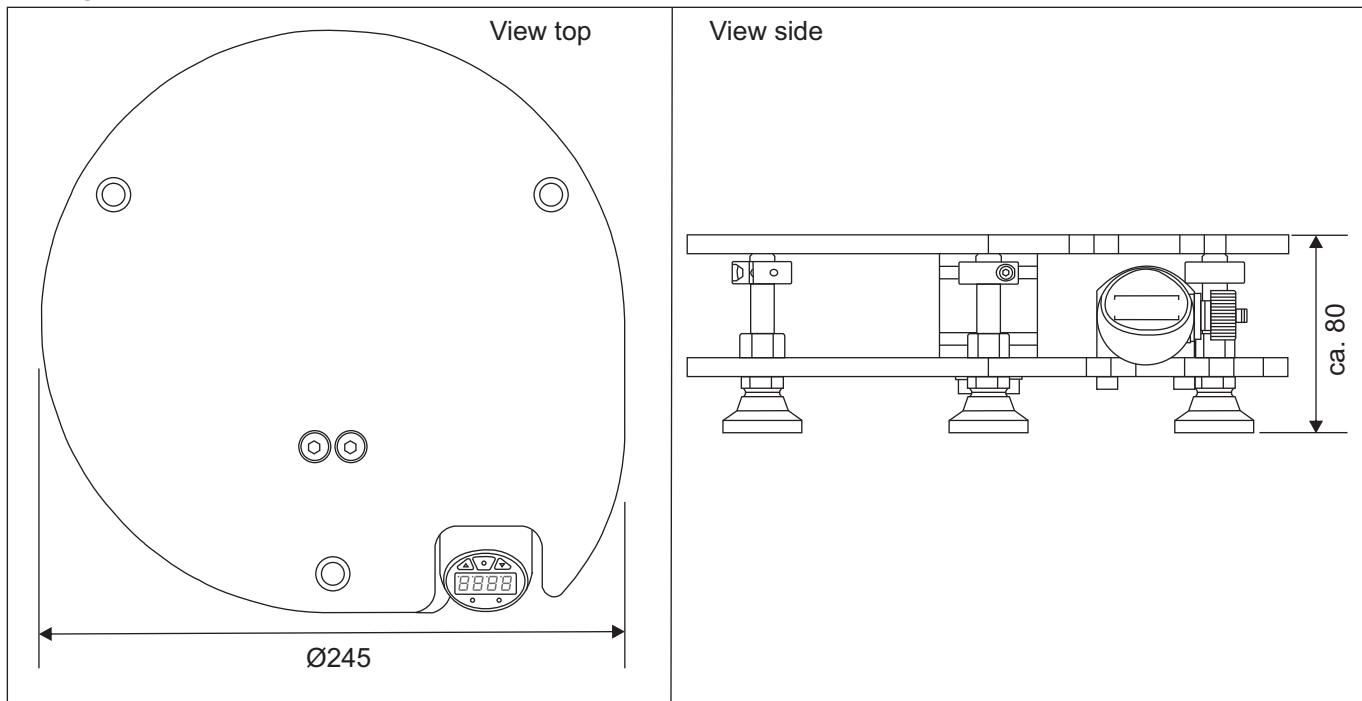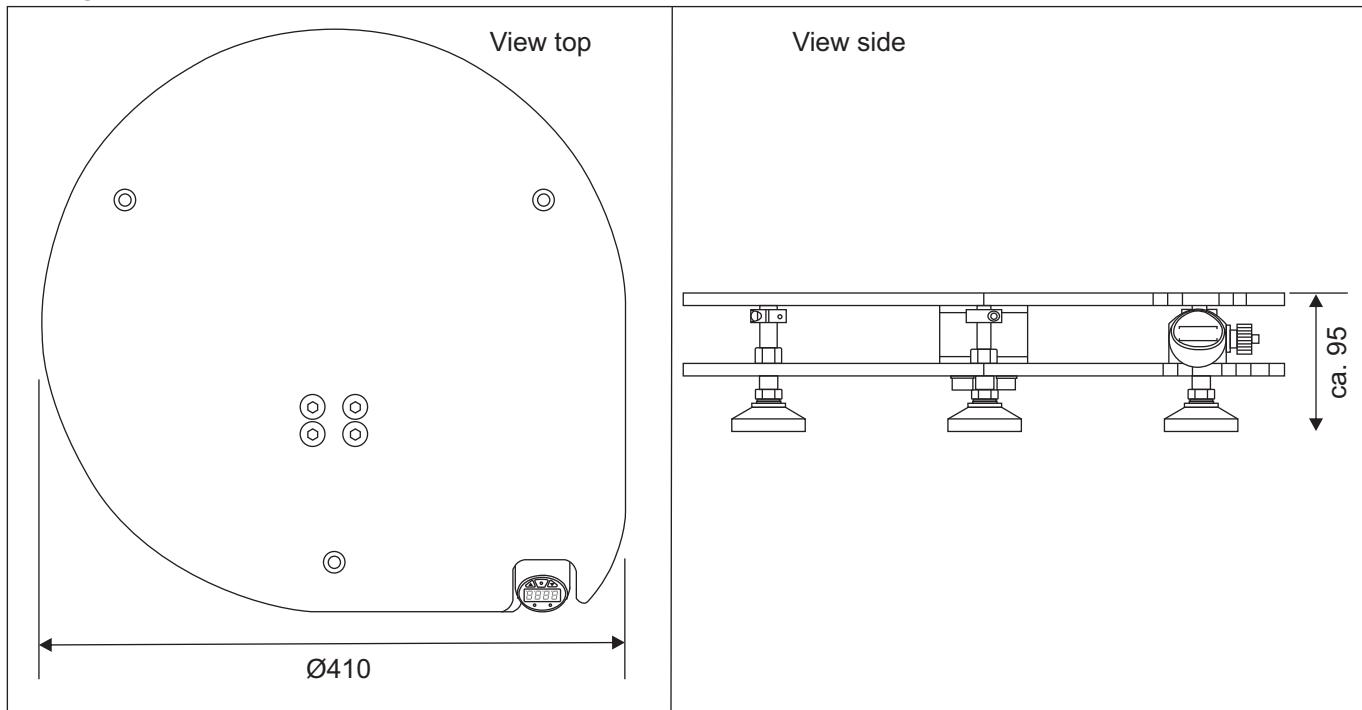
	C	Z	X	X	X	X	X	X	-	X	X	X

Input:	Weight	0
Range:	250 kg (ME-GFW1) 500 kg (ME-GFW2)	0 1
Output:	4...20 mA HART	0
Limit value contacts:	2x PNP, 30 VDC, 200 mA	0
Electr. connection:	2x M12x1 (5-pole)	0
Supply:	12...40 VDC current loop	0
Weighing platform:	Ø245 mm / Ø410 mm	0
Configuration:	Factory configuration[1)] Customized (please indicate)[2)]	0 1
Special model:	No Yes (please indicate)	0 1

1) Measuring range: / Indicating range

2) For possibilities see technical data.

● *HART Communication*

The HART-Tool is a graphical user interface for the ME series with menu-driven program for configuration. It can be used for putting into operation, configuration, analysis of signals, data backup and documentation of the device.
Operating systems: Windows 2000, Windows XP, Windows 7 and 8.1
Connection via HART interface (modem) with USB interface of a PC or hand-held HART communicator

Possible settings are:
- Adjustment of output current
- Limits of nominal measuring range (URL, LRL)
- Limits of measuring range (LRV, URV)
- 10-point calibration (linearization)
- Simulation of output current
- Linear output signal
- 2-point calibration
- Filter function
- HART address

Please note: When using communication via a HART modem, a comunication resistance of 250 Ω has to be taken into account.

Accessories:

DEV-HM (Interface HART, USB, software)   Order No.:

Subject to change, version 42-198