


## ● Characteristics

0620 - STRAIN GAUGE - LOAD MEASUREMENT - FORCE - OVERLOAD

	- Input:	Load suspension device
	- Function load cell:	Tension / Compression / Tension and compression
	- Measuring range:	500 kg / 1000 kg / 1500 kg / 3000 kg
	- Output:	4...20 mA HART / Strain gauge
	- Voltage supply:	Out of current loop / Bridge supply 10 VDC
	- Accuracy:	See technical data
	- Protection class:	IP54
	- Vibration protection:	Electronics completely potted
	- Configuration:	Via superimposed HART communication
	- Material load cell:	Stainless steel / Alloy steel nickel plated
- Accessories:	Rod ends	

## ● Technical Data

### Input

Load suspension device: Tension load, compression load, tension and compression load  
 Ranges: 500 kg / 1000 kg / 1500 kg / 3000 kg

### Output

Strain gauge full bridge:	Output signal:	1...2 mV/V	
	Zero offset:	±3% FS	
	Supply:	1...10 VDC	
	Input resistance:	350 Ω ±10 Ω	
	Output resistance:	350 Ω ±10 Ω	
	Insulation resistance:	>5000 kΩ	
	Cable towards evaluation:	Length:	10 m maximum
		Type:	Double-shielded
	Standard signal:	Current:	4...20 mA HART (superimposed)
		Connection:	in 2-wire current loop
Signal behavior		see page 3	
Overall current range:		3,6...21 mA	
Signal on error:		21 mA: on sensor break, sensor open circuit, sensor short circuit, underflow	

### Measuring Amplifier Specifications

Combined error:	0,3% of range
Resolution:	16 Bit
Filter adjustment:	0...99 s
Transmission behaviour:	Linear with strain gauge signal
Switch-on delay:	<5 s
Measuring rate:	10 Measurements/s
Linearization:	10 calibration points
Configuration:	Via software (HART communication)

## ● Applications

The load cell with optional integrated measuring amplifier HART is for use in applications where dynamic forces have to be measured. Possible are tension, compression and tension / compression loads. The output signal is strain gauge or 4...20 mA. The load cells are available with rod ends.

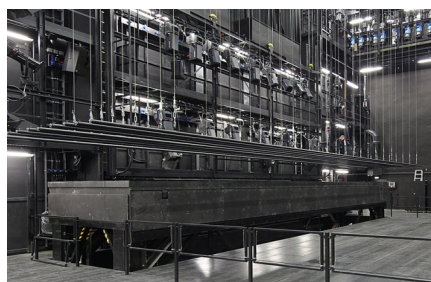


photo: www.pixelquelle.de

## ● Technical Data (Continued)

### Load Cell Specifications

Material:	Stainless steel / Alloy steel nickel plated
Linearity:	0,5% of range
Hysteresis:	0,5% of range
Repeatability:	0,05% of range
Creep:	0,05% of range / 10 min
Temperature drift on zero:	0,05% of range / 10 K
Temperature drift on span:	0,05% of range / 10 K
Safe overload:	150% of range
Ultimate load:	200% of range

### Power Supply (Output 4...20 mA HART)

Current loop:	12...40 VDC
Load:	$R = (U_B - 12 \text{ V}) / 21 \text{ mA}$
Reverse battery protection:	Available (no function, no damage)

### Environmental Conditions

Operating temperature:	-25...+60°C
Storage temperature:	-25...+85°C
Humidity:	96% rH

### Mechanics

Load cell:	Type:	Tension and compression load cell
	Dimensions:	See table page 4
	Material:	Stainless steel / alloy steel nickel plated
	Mounting device:	Rod ends
		Option: without (thread holes of the load cell are used)
Protection class:	IP54	
Weight:		
500/1000 kg:	approx. 343 g (without rod ends and covers)	
1500/3000 kg:	approx. 423 g (without rod ends and covers)	
Vibration protection:	Inside potted	
Electrical connection:	4...20 mA HART:	Male plug M12x1, 4-pole
	Strain gauge:	Male plug M12x1, 5-pole

## ● HART Communication and Configuration

The HART-Tool is a graphical user interface with menu-driven program for configuration. It can be used for start-up, configuration, signal analysis, data backup and device documentation. Operating systems: Windows 2000, Windows XP, Windows 7, 8.1 and 10.

Connection via HART interface (modem) with USB interface of a PC or hand-held HART communicator

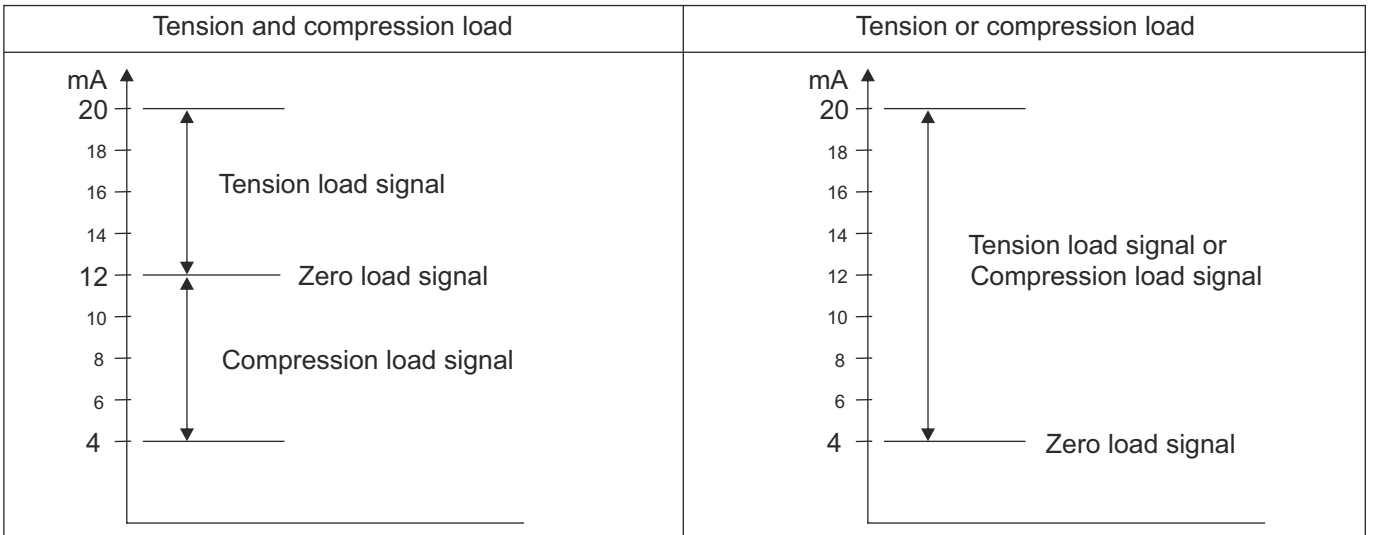
Possible settings are:

- 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

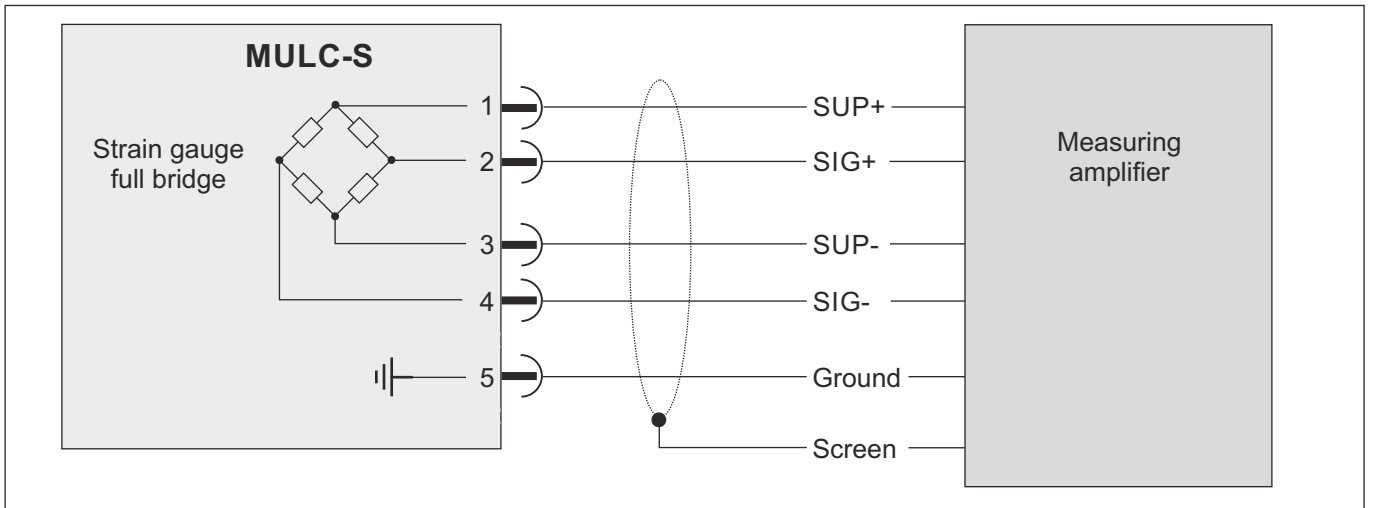
**Please note:** When using communication via a HART modem, a communication resistance of 250 Ω has to be taken into account.

**● Output Signal and Connection**

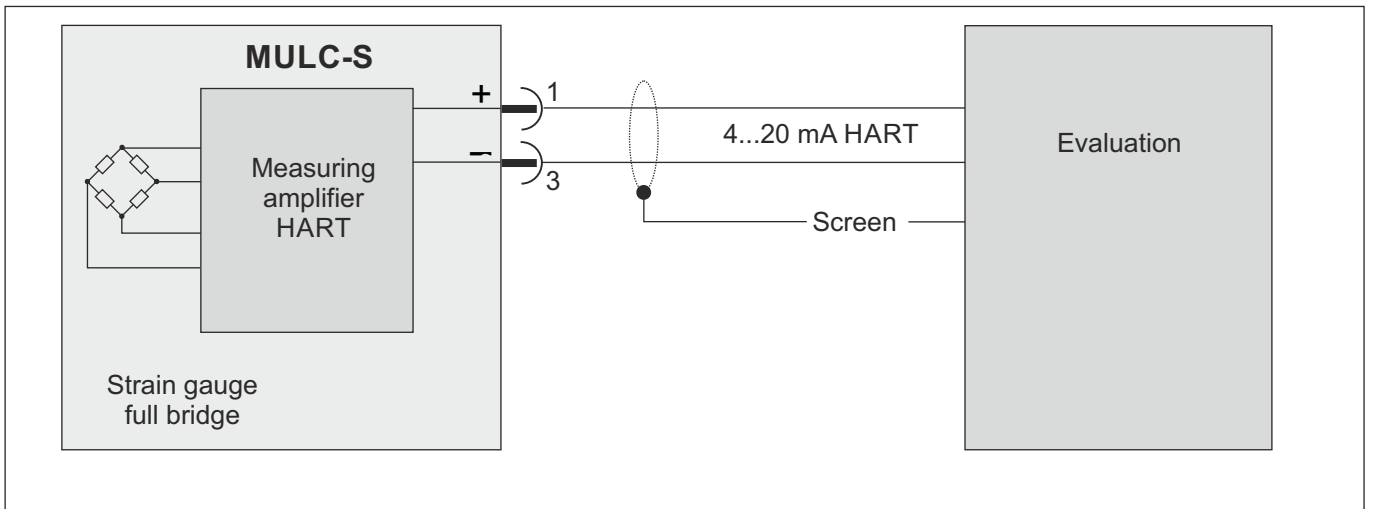
**Signal Behavior Output 4...20 mA HART**



**Connection Principle Strain Gauge with Plug M12x1 (5-Pole)**



**Connection Principle 4...20 mA HART with Plug M12x1 (4-Pole)**

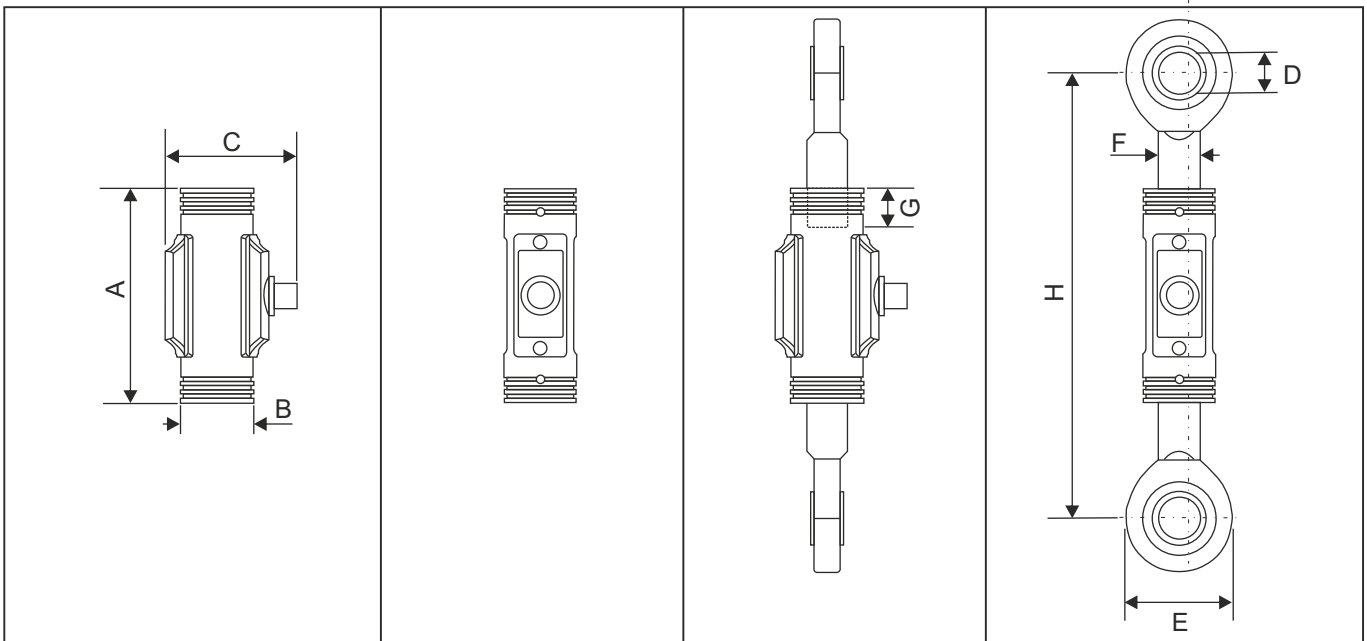


**● Order Code**

**C H X X X X X X - X X X X**

<b>Function load cell:</b>	Tension load cell Compression load cell Tension and compression load cell	A B C																
<b>Output:</b>	4...20 mA HART (12...40 VDC) Strain gauge (10 VDC)	0 1																
<b>Supply:</b>	12...40 VDC current loop (HART) 1...10 VDC (Strain gauge)	0 1																
<b>Vibration protection:</b>	With (inside potted)	1																
<b>Range load cell:</b>	500 kg 1000 kg 1500 kg 3000 kg	3 0 1 2																
<b>Material load cell:</b>	Stainless steel Alloy steel nickel plated	0 1																
<b>Mounting device:</b>	Rod ends Without (thread holes of the load cell are used by customer)	0 1																
<b>Electrical connection:</b>	M12x1, 4-pole (4...20 mA HART) M12x1, 5-pole (strain gauge)	1 2																
<b>Configuration:</b>	Without (strain gauge) Factory setting (4...20 mA HART) Customized (please specify, 4...20 mA HART)	0 1 2																
<b>Special model:</b>	No Yes (please specify)	0 1																

**● Dimensions (in mm)**



Range	A	B	C	D	E	F	G	H
1000 kg	90	Ø35	64	Ø17	35	M16	18	198 ±2
1500 kg	90	Ø35	64	Ø17	35	M16	17	198 ±2
3000 kg	105	Ø35	64	Ø20	53	M20x1,5	23	218 ±1,5

\* Dimensions for 500 kg = dimensions for 1000 kg

Subject to change, version 44-888