

S-MULC Modular universal load cell SIL3 | PLe

Modular Universal Load Cell SIL3 and PL „e“

S-MULC

● Characteristics

0620 - LOAD MEASURING - FORCE - OVERLOAD

	- Input:	1x strain gauge full bridge (350 Ω)
	- Function load cell:	Compression / Tension / Tension & Compression
	- Measuring range:	500 kg / 1000 kg / 1500 kg / 3000 kg
	- Analog output:	2x 4...20 mA
	- Voltage supply:	24 VDC ±10%
	- Accuracy:	See technical data
	- Protection class:	IP54
	- Vibration protection:	Electronics completely potted
	- Test input:	Pulse of 24 VDC, ≤250 Hz
	- Material load cell:	Stainless steel / Nickel-plated alloy steel
	- Certificates:	SIL3 and Performance level „e“

● Technical Data

Input

Strain gauge: 1x strain gauge full bridge 350 Ω

Output

Analog output A:	Nominal operation range:	8...16 mA
	Valid current range:	4...20 mA
	Zero point:	8 mA (compression load / tension load) 12 mA (tension & compression load)
	Load resistance:	maximum 500 Ω
	Other:	galvanical isolation from supply voltage and output B
Analog output B:	Nominal operation range:	8...16 mA
	Maximum operation range:	4...20 mA
	Zero point:	8 mA (compression load / tension load) 12 mA (tension & compression load)
	Load resistance:	maximum 500 Ω

Interface

I2C bus: Use: Calibration by manufacturer

Performance Measuring Amplifier

Accuracy: Balance of current: ±5% channel A / channel B deviation of current (0,8 mA)
 Temperature coefficient.: <50 ppm/K
 Test input: current jump analog output channel B: 1 mA, ≤250 Hz

● Applications

The load cell with integrated safety measuring amplifier is for use in applications where dynamic forces have to be observed because of reasons of safety, eg for stage technology. The evaluation of the load cell has to be done with a control system which is approved for SIL3 / Performance Level „e“.

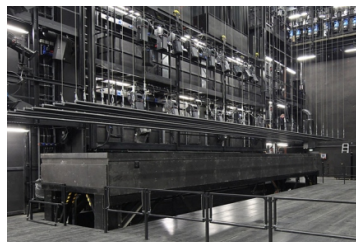


photo: www.pixetquelle.de

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● Technical Data (Continued)

Performance Load Cell

Measuring ranges:	500 kg / 1000 kg / 1500 kg / 3000 kg
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

Voltage:	24 VDC, $\pm 10\%$
Current consumption:	Maximum 100 mA
Sensor supply:	5 VDC
Test input:	Pulse of 24 VDC $\pm 20\%$

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:	Electronics completely potted
Electrical connection:	
	Connector 1: Male plug M12x1, 4-pole (analog output A, diagnostic signal)
	Connector 2: Male plug M12x1, 8-pole (analog output B, supply, factory calibration)

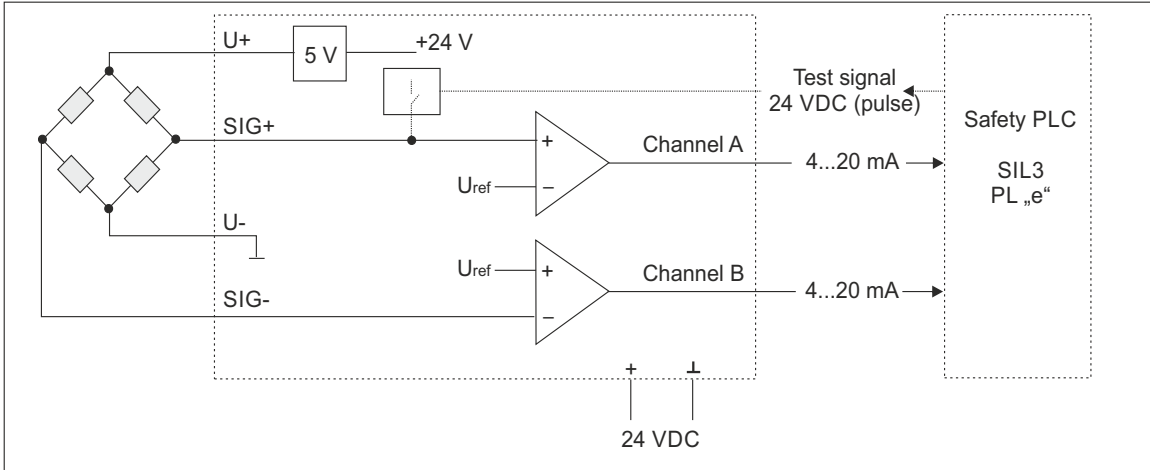
Safety Specifications

Certificates:	SIL3 (IEC 61508, EN 62061) Performance Level „e“, Category 3 (EN13849-1)
EMC:	EN 61326-1, EN 61326-2-1, EN 61326-3-1
Environment:	EN 60068-2-1, EN 60068-2-2, EN 60068-2-6, EN 60068-2-30, EN 60068-2-31 EN 60592
Evaluation:	The evaluation of both analog signals has to be done with a safety control system (Safety PLC). The program concept for the safety control system (Safety PLC) is specified by the manufacturer.

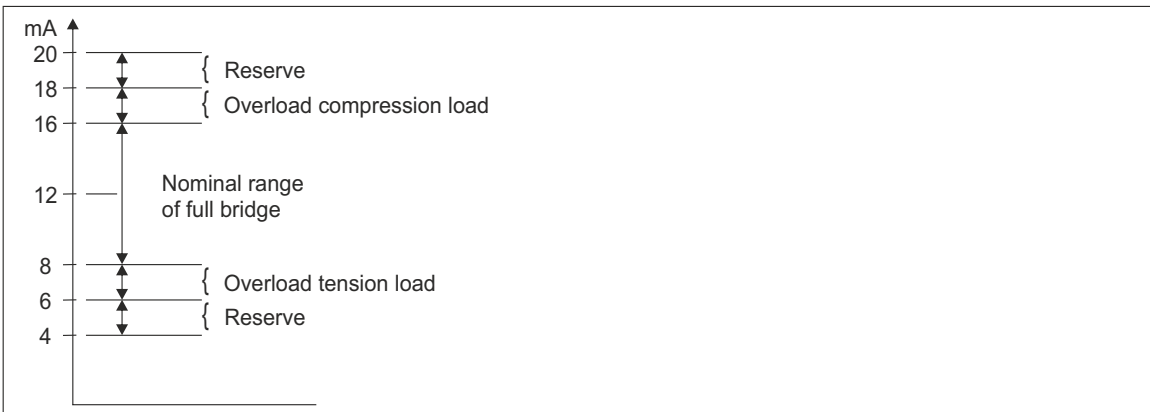
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Electrical Connection

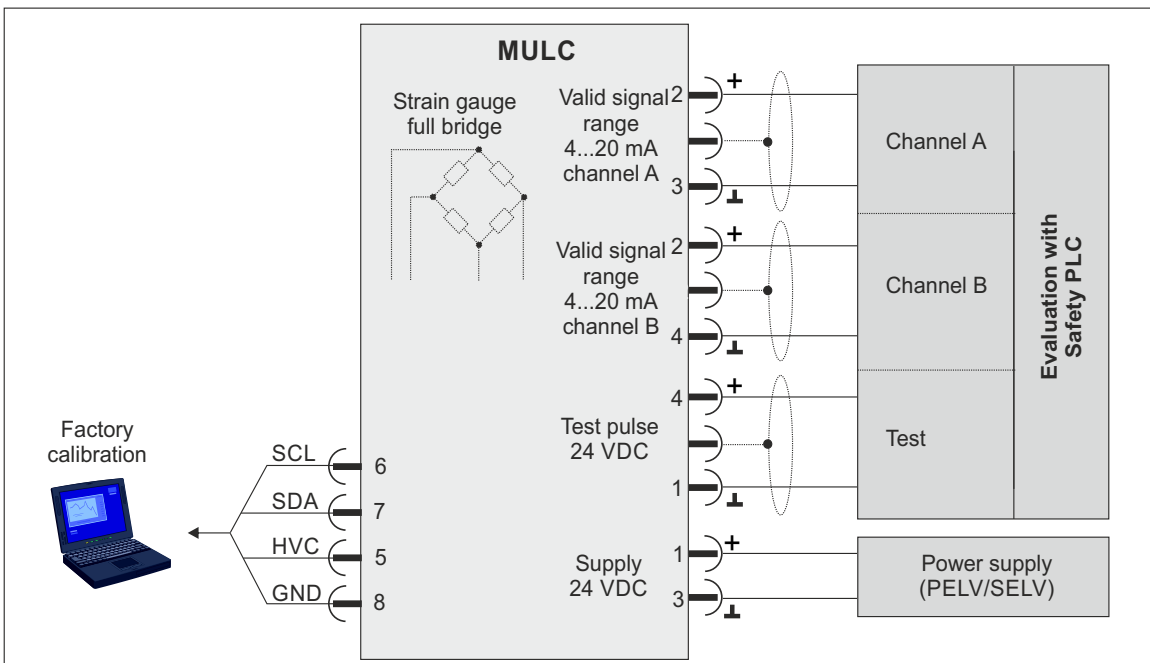
General Principle



Output Signal Channel A and Channel B



Principle of Connection of Plug M12x1 (4-pole) and Plug M12x1 (8-pole)



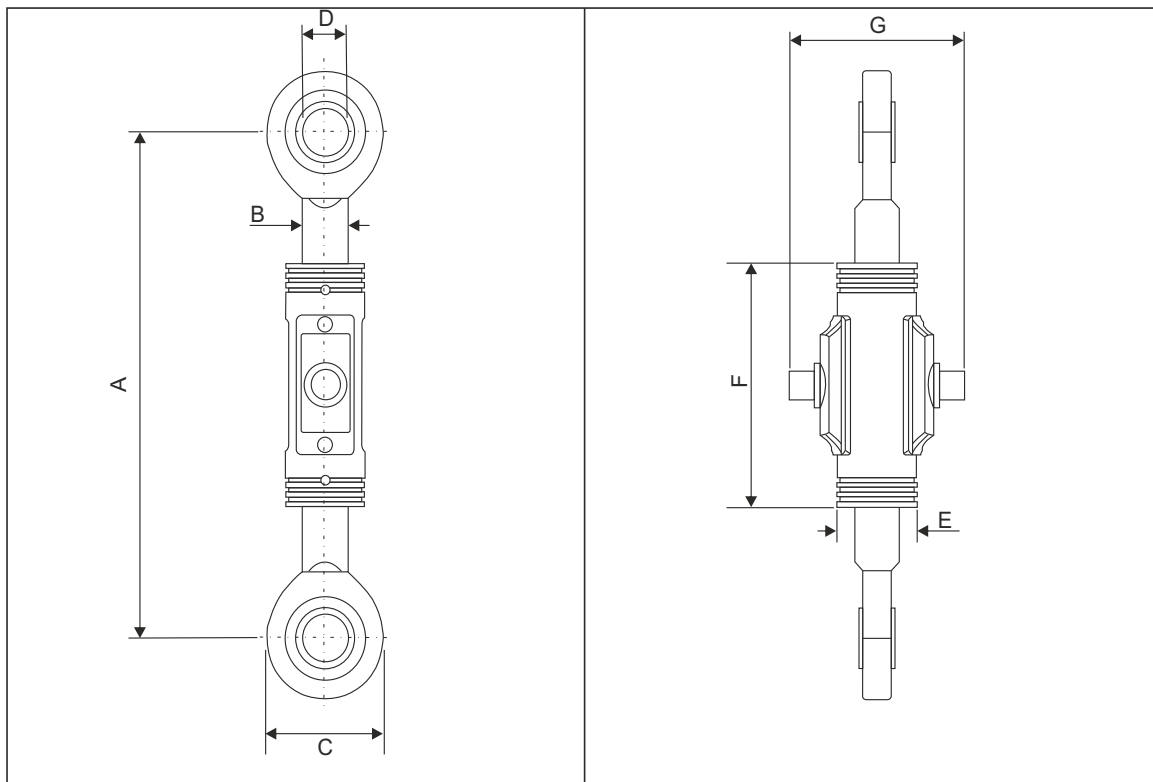
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● **Order Code**

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Function load cell:	Compression load cell	1
	Tension and compression load cell	2
	Tension load cell	3
Output:	2x 4...20 mA	0
Supply:	24 VDC	0
Vibration protection:	With (electronics potted)	1
Range load cell:	500 kg	3
	1000 kg	0
	1500 kg	1
	3000 kg	2
Material load cell:	Stainless steel	0
	Alloy steel nickel plated	1
Mounting device:	Rod ends	0
	Without (thread holes of the load cell are used by customer)	1

● **Dimensions (in mm)**



Range*	A	B	C	D	E	F	G
1000 kg	168	M12	34	Ø12	Ø35	90	77,5
1500 kg	198	M16	35	Ø17	Ø35	90	77,5
3000 kg	218	M20x1,5	53	Ø20	Ø35	105	77,5

* Dimensions for 500 kg = dimensions for 1000 kg

S-MULC Modulare Universal Kraftmesszelle SIL3 | PLe

S-MELS-FT Füllstandssensor mit Schwimmer HART

S-MELS-FT Füllstandssensor mit Schwimmer HART

S-MEUS Ultrasonic Sensor HART

S-MEUS Ultrasonic Sensor HART