
ABB MEASUREMENT & ANALYTICS | DATA SHEET

9QGPS3110

Heavy compression load cell
(very high capacities)



Measurement made easy

High capacity compression load cells

Material

- Nickel plated steel
- Stainless steel

IP rating IP 65

Also available as standard reference load cells following ISO 376 (EN10002/3) (Class '0.5' and '00')

A whole range of mounting accessories available

Available options (non exhaustive list)

- ATEX intrinsic safety
- High service temperature (up to 180 °C [302 °F])
- Redundant dual Wheatstone bridge
- Amplified (0 to 10 V, 4 to 20 mA) and digital output signal (RS-232C, RS-485, USB)

Applications

The load cells 9QGPS3110 and 9QGPS3115 are perfectly designed to the following applications:

- Industrial force measurement, industrial process control (ISO 9000, ...)
- Structure weighing, calibration of testing machines

Materials

Model 9QGPS3110	Model 9QGPS3115
Stainless steel	Nickel plated alloy steel

Capacities

30 - 50 - (75) -100 - (150) - 200 - 300 - 500 kN
(0.75) - 1 - 1.5 - 2 - 3 - 5 - 7.5 - 10 - 15 - 20 - 30 - 40 - 50 MN

Explosion protection (Option)

ATEX intrinsic safety:

- Ex II 1GD Ex ia IIC T6 or T4 Ga Ex ia IIIC T80°C Da

Electrical connections

Input resistance

Capacities	R Input (Ω)
30 to 50 kN	±350 Ω
75 to 200 kN	±350 Ω (0.25, 0.1 %)
300 to 500 kN	
0.75 to 1 MN	±700 Ω (0.05 %, 0.03 %) or
1.5 to 2 MN	cl 1, cl 0.5, cl 00 to ISO 376
3 MN	
5 MN	
7.5 to 10 MN	
15 MN	
20 MN	
30 MN	
40 MN	
50 MN	

Specification

	0.25	0.1	0.05	0.03
Measuring accuracy				
Accuracy class	0.25 % F.S.	0.1 % F.S.	0.05 % F.S.	0.03 % F.S.
Combined error	< ±0.25 % F.S.	< ±0.10 % F.S.	< ±0.05 % F.S.	< ±0.03 % F.S.
Repeatability error	< ±0.1 % F.S.	< ±0.03 % F.S.	< ±0.02 % F.S.	< ±0.15 % F.S.
Creep error over 30 min.	< ±0.1 % F.S.	< ±0.06 % F.S.	< ±0.04 % F.S.	< ±0.025 % F.S.
Sensitivity tolerance	< ±0.3 %	< ±0.3 %	< ±0.3 %	< ±0.2 %
Temperature coefficient of the sensitivity	< ±0.05 % F.S./10 °C	< ±0.05 % F.S./10 °C	< ±0.035 % F.S./10 °C	< ±0.015 % F.S./10 °C
Temperature coefficient of zero signal	< ±0.035 % F.S./10 °C	< ±0.035 % F.S./10 °C	< ±0.03 % F.S./10 °C	< ±0.023 % F.S./10 °C
Reference temperature	23 °C (73.4 °F)	23 °C (73.4 °F)	23 °C (73.4 °F)	23 °C (73.4 °F)
Temperature data				
Compensated temperature range	−10 to 45 °C (14 to 113 °F)	−10 to 45 °C (14 to 113 °F)	−10 to 45 °C (14 to 113 °F)	−10 to 45 °C (14 to 113 °F)
Service temperature range	−30 to 70 °C (−22 to 158 °F)	−30 to 70 °C (−22 to 158 °F)	−30 to 70 °C (−22 to 158 °F)	−30 to 70 °C (−22 to 158 °F)
Storage temperature range	−50 to 85 °C (−58 to 185 °F)	−50 to 85 °C (−58 to 185 °F)	−50 to 85 °C (−58 to 185 °F)	−50 to 85 °C (−58 to 185 °F)
Electrical Data				
Input resistance	350 to 702 Ω ±2 Ω	350 to 702 Ω ±2 Ω	350 to 702 Ω ±2 Ω	350 to 702 Ω ±2 Ω
Output resistance	350 to 702 Ω ±2 Ω	350 to 702 Ω ±2 Ω	350 to 702 Ω ±2 Ω	350 to 702 Ω ±2 Ω
Insulation resistance (50 V)	> 5000 MΩ	> 5000 MΩ	> 5000 MΩ	> 5000 MΩ
Reference excitation voltage	10 V DC	10 V DC	10 V DC	10 V DC
Nominal range of excitation voltage	3 to 12 V DC	3 to 12 V DC	3 to 12 V DC	3 to 12 V DC
Zero balance	±0.02 mV/V	±0.02 mV/V	±0.02 mV/V	±0.02 mV/V
Nominal sensitivity	1.5 mV/V	1.5 mV/V	1.5 mV/V	1.5 mV/V
Load limits				
Safe load limit	150 % F.S.	150 % F.S.	150 % F.S.	150 % F.S.
Breaking load	> 300 % F.S.	> 300 % F.S.	> 300 % F.S.	> 300 % F.S.
Static lateral force limit	15 % F.S.	15 % F.S.	15 % F.S.	15 % F.S.
Permissible dynamic loading	50 % F.S.	50 % F.S.	50 % F.S.	50 % F.S.

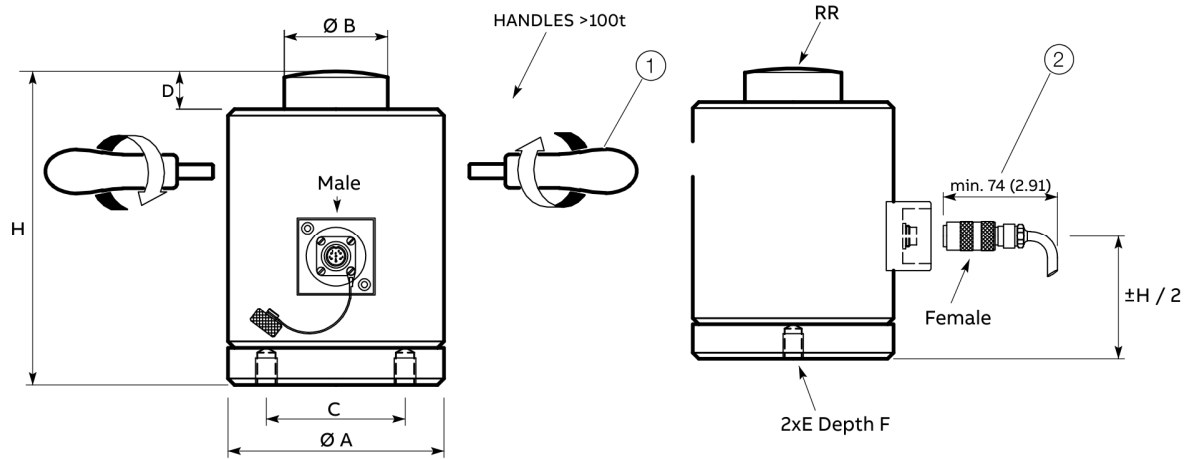
F.S.: Full scale- Specifications subject to change without notice

Dimensions

Load cells model 9QGPS3110, model 9QGPS3115

Compression, Range 30 kN to 50 MN

All dimensions in mm (in)



① Handles > 1 MN

② Cable length: 6 m (19.7 ft) or 12 m (39.37 ft)

Figure 1: Load cells model 9QGPS3110, model 9QGPS3115

Capacities	Ø A	Ø B	C	D	E	F	H	RR	CL m (ft)	Max deflexion	Weight kg (lb)
30 to 50 kN	64 (2.52)	36 (1.42)	45 (1.77)	20 (0.79)	M10	12 (0.47)	135 (5.31)	250	6 (19.68)	0.12 (0.0047)	2 (4.4)
75 to 200 kN										0.16-0.18 (0.0063-0.0071)	2.2 (4.9)
300 to 500 kN	89 (3.50)	56 (2.20)	60 (2.36)	30 (1.18)	M12	15 (0.59)	160 (6.30)	300		0.18-0.20 (0.0071-0.0079)	4.5 (9.9)
0.75 to 1 MN	99 (3.90)	64 (2.52)	65 (2.56)		M16	16 (0.63)	190 (7.48)	400		0.33-0.34 (0.0130-0.0134)	6 (13)
1.5 to 2 MN	119 (4.69)		90 (3.54)				225 (8.86)			0.29-0.35 (0.0114-0.0138)	20 (44)
3 MN	159 (6.26)	125 (4.92)	100 (3.94)	40 (1.57)	M20	20 (0.79)	270 (10.63)	450	12 (39.37)	±0.4 (0.0157)	42 (93)
5 MN	205 (8.07)	160 (6.30)	125 (4.92)	50 (1.97)		35 (1.38)	350 (13.78)	500		±0.5 (0.0197)	90 (198.42)
7.5 to 10 MN	294 (11.57)		200 (7.87)	60 (2.36)	M30	40 (1.57)	460 (18.11)	600		±0.7 (0.0276)	243 (535.72)
15 MN	330 (12.99)	250 (9.84)	250 (9.84)	65 (2.56)			510 (20.08)	800		±0.75 (0.0295)	330 (727.52)
20 MN	364 (14.33)		270 (10.63)	75 (2.95)	M36	50 (1.97)	550 (21.65)	800		±0.8 (0.0315)	446 (983.26)
30 MN	445 (17.52)		300 (11.81)				660 (25.98)	1000		±1 (0.0394)	770 (1697.56)
40 MN	495 (19.49)	360 (14.17)	330 (12.99)	90 (3.54)			730 (28.74)	1200		±1.1 (0.0433)	1060 (2336.90)
50 MN	540 (21.26)	430 (16.93)	360 (14.17)				900 (35.43)	2000		±1.2 (0.0472)	1587 (3498.73)

Note

2 to 50 MN (200 to 5000 t) usually according to customer's design specifications.

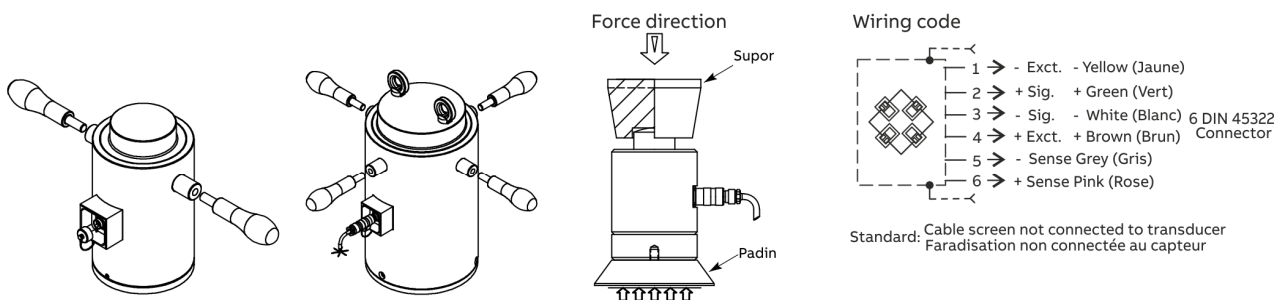


Figure 2: Other views



Notes

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