
ABB MEASUREMENT & ANALYTICS | DATA SHEET

9QGPO101

Custom-made load pins



Measurement made easy

CE certified for hoisting applications and lifts

Sturdy design

Easy to install

Material: stainless steel

IP rating IP 65

Cable length: 6 m (19.7 ft)

Complete range of 'CE' certified electronics and load limiters

Available options (non exhaustive list)

- ATEX intrinsic safety
- High service temperature -50 bis 180 °C (-58 bis 356 °F)
- IP rating IP 67(M), IP rating IP 68
- Amplified output (V or mA) and digital output signal (RS-232C, RS-485)
- Dual Wheatstone bridge
- Biaxial measurement
- SIL / PL ready

Applications

Designed to measure a force or constraint, without any change to your mechanical structure, simply replacing your clevis or pivot pins by our custom-made load pin.

The load cells 9QGPO101 are perfectly designed to the following applications:

- **SL-FORCE**
Force measurement on cylinders, industrial weighing.
- **SL-HOIST**
Hoisting devices and crane's security in combination with a load limitation electronics.
- **SL-LIFT**
Load limitation for lifts.

Capacities

0.5 to 2000 t

Explosion protection (Option)

ATEX intrinsic safety:

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

Specification

	SL-FORCE	SL-HOIST	SL-LIFT
Combined error (nonlinearity and hysteresis)	0.25 to 1 % F.S.	0.5 to 2 % F.S.	0.5 to 2 % F.S.
Repeatability error	< ± 0.25 % F.S.	< ± 0.25 % F.S.	< ± 0.25 % F.S.
Creep error over 30 min.	< ± 0.3 % F.S.	< ± 0.3 % F.S.	< ± 0.2 % F.S.
Zero shift after loading	< ± 0.5 % F.S.	< ± 0.5 % F.S.	< ± 0.5 % F.S.
Temperature coefficient of the sensitivity	< ± 0.2 % F.S./10 °C	< ± 0.2 % F.S./10 °C	< ± 0.2 % F.S./10 °C
Temperature coefficient of zero signal	< ± 0.2 % F.S./10 °C	< ± 0.2 % F.S./10 °C	< ± 0.2 % F.S./10 °C
Reference temperature	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)
Service temperature range	-25 to 70 °C (-13 to 158 °F)	-25 to 70 °C (-13 to 158 °F)	-25 to 70 °C (-13 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)
Electrical data			
Zero balance	± 0.02 mV/V	± 0.02 mV/V	± 0.02 mV/V
Input resistance	352 Ω ± 2 Ω	352 Ω ± 2 Ω	352 Ω ± 2 Ω
Output resistance	352 Ω ± 2 Ω	352 Ω ± 2 Ω	352 Ω ± 2 Ω
Insulation resistance (50 V)	> 5000 MΩ	> 5000 MΩ	> 5000 MΩ
Reference excitation voltage	10 V	10 V	10 V
Nominal range of excitation voltage	3 to 12 V	3 to 12 V	3 to 12 V
Nominal sensitivity	1.5 mV/V	1 mV/V	0.5 mV/V
Load limits			
Safe load limit	150 % F.S.	200 % F.S.	300 % F.S.
Breaking load	> 300 % F.S.	> 500 % F.S.	> 1000 % F.S.
Static lateral force limit	100 % F.S.	150 % F.S.	200 % F.S.
Permissible dynamic loading	50 % F.S.	75 % F.S.	100 % F.S.

Table 1: (F.S.: full scale)

Load pins range

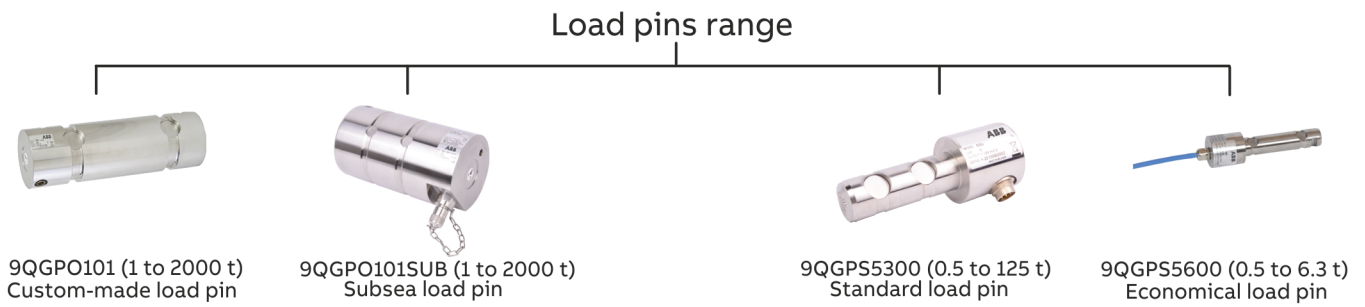


Figure 1: Load pins range

Load-diameter relationship

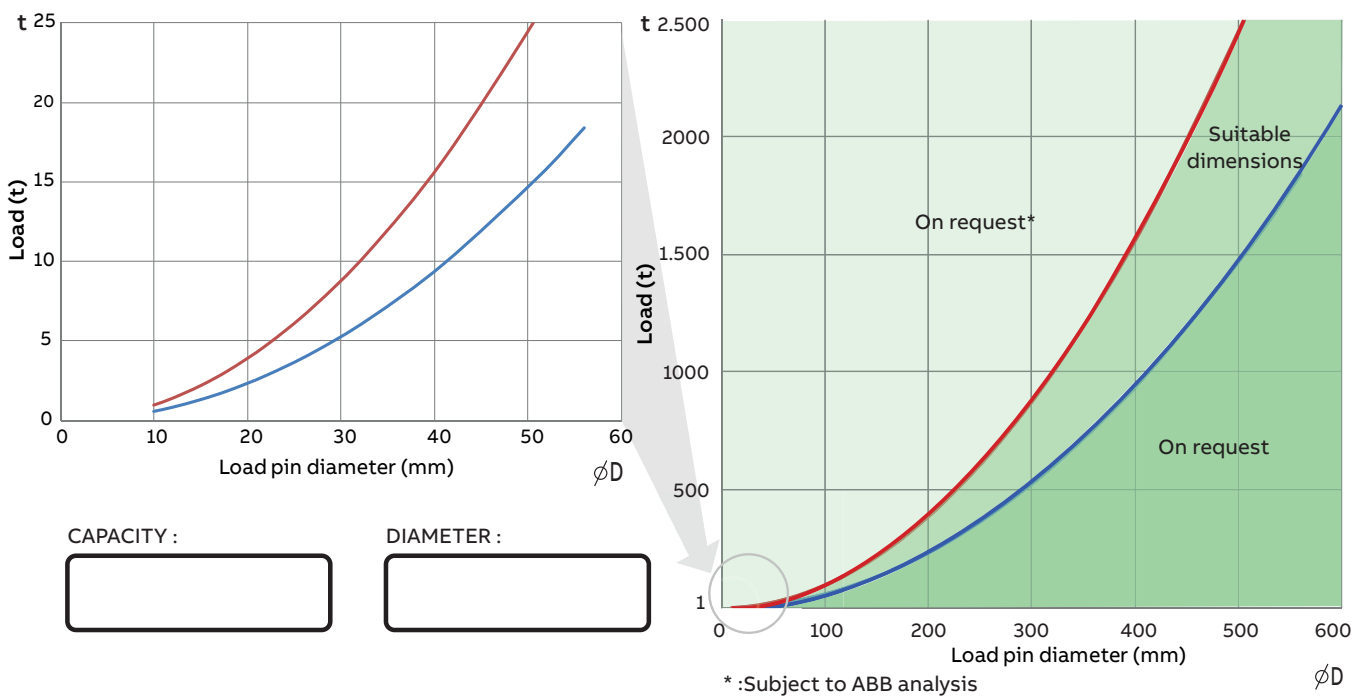


Figure 2: Load diameter relationship

Dimensions

All specified dimensions are in mm (in.)

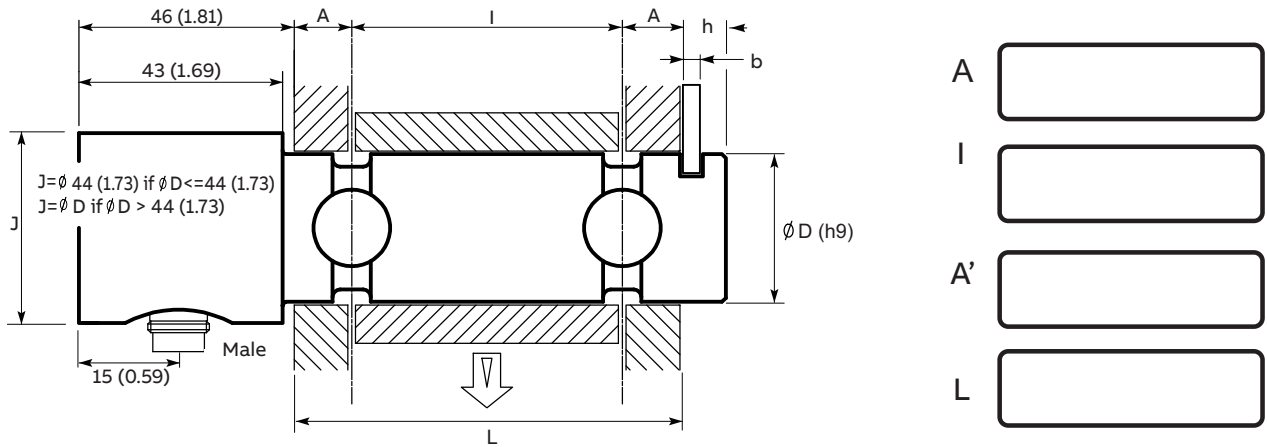
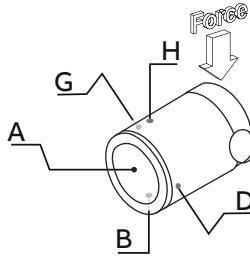


Figure 3: Mechanical dimensions

Options for custom made load pins

Type of application	☐ Force, static (BL* > 300 %)	☐ Force, dynamic (BL* > 300%)	☐ Hoisting (BL* > 500 %)	☐ Lift (BL* > 1000 %)		
Environment	☐ IP65 ☐ IP66	☐ IP67	☐ IP68	☐ Other:		
	☐ Normal	☐ Marine	☐ Subsea	☐ Corrosive		
	☐ Industrial	☐ Nuclear	☐ Aeronautics	☐ Other:		
	☐ Immersion depth:		☐ Immersion time:			
Output signal	☐ mV/V ☐ 4 to 20 mA ☐ 0 to 10 V (force)	☐ RS-232	☐ RS-485			
	☐ 2 wires ☐ 3 wires					
	☐ Other:					
Service temperature range	☐ Standard temperature range: -20°C to 70°C (-4°F to 158°F)					
	☐ Available temperature range (option): -50°C to 200°C (-58°F to 392°F):					
Output	☐ Connector	☐ Cable gland	☐ Wireless			
				☐ Industrial version		
				☐ Explosion proof and hazardous version		
Dual bridge circuit	☐ NO					
	☐ YES	☐ Redundancy				
		☐ SIL 3				
		☐ Biaxial load pin, directions X and Y				
Cable length m (ft)	☐ 6 (19.68)	☐ 12 (39.37)	☐ 20 (65.62)	☐ 50 (164)	☐ 100 (328.1)	☐ Other:
Intrinsically safe	☐ Not applicable	☐ ATEX	☐ IECEx / ATEX	☐ CSA (US / Canada)	☐ Triple certification	



Locking plate

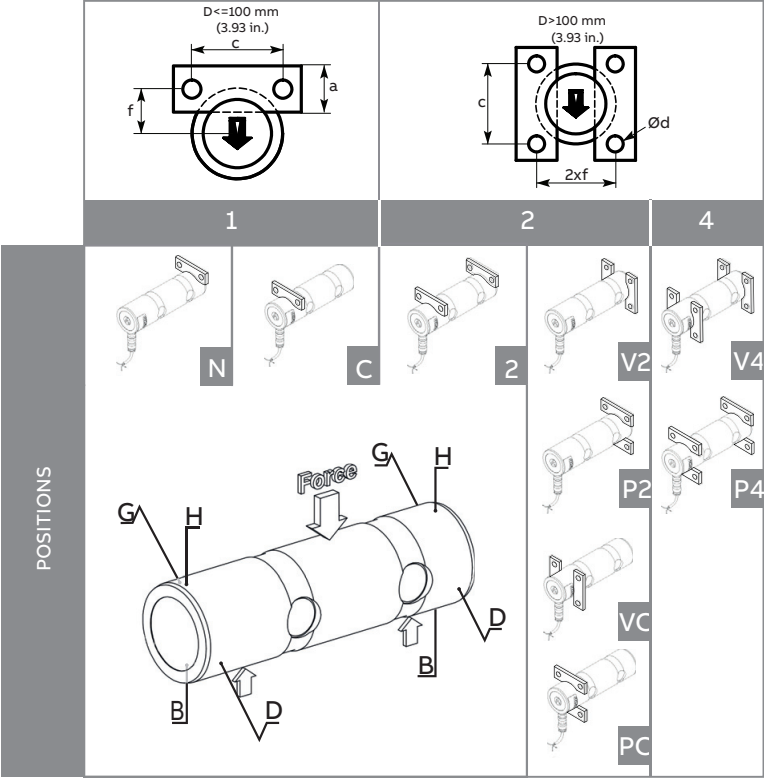
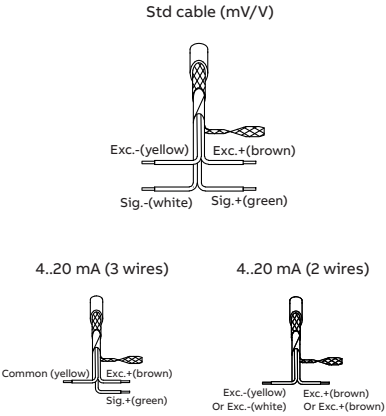
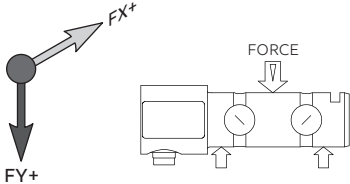


Figure 4: Locking plate

Wiring code



Load direction



Examples

9QGPO101

HOIS003158-12 t - SIL3



FORC000678-12 t



HOIS003629-60 t



HOIS003043-15 klb, 5000-HOIS003053-3.5 klb



FORC000474-778 t



HOIS003025-16 t



FORC003812-8 t



FORC000025-150 kg



FORC000492-226 t



HOIS001860-105 t



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