



CCG Annular Load Cell

Key Features:

- Capacities 0-12.5kN up to 0-540kN
- Low Profile
- Very Compact
- Low Deflection
- Output 1.5mV/V nominal
- Accuracy $< \pm 1.5\%$ /RC typical (improved accuracy versions available)
- Suitable for use with Metric and Imperial Bolt Sizes
- Sealed to IP66
- Robust Construction
- Custom-Sized Versions Available
- 3 Year Warranty



For the measurement of compressive forces

The CCG Series of annular load cells are designed for the measurement of compressive forces, both continually and periodically, and are often used in critical bolted installations to monitor bolt tension. They are also used in cable tension applications where they are mounted at the anchor point. Their low profile makes them ideal for use where space is limited.

The CCG series can be entirely customised to meet your specific requirements, including the IP rating to IP68 for fully submersible applications and temperature range up to 200°C.

The CCG Series can be supplied complete with accompanying instrumentation with a UKAS traceable calibration service, please contact our [technical sales team](#).

Options:

- Submersible & Waterproof Versions
- Can be Entirely Customised
- Shunt Calibration facility
- Non-Standard Sizes Available on Request
- Other Ranges Available on Request
- Special Mounting Adaptors Available on Request
- Miniaturised Version
- High Temperature Versions to 200°C
- TEDS (Transducer Electronic Data Sheet)
- TEDS Allows Plug & Play with TEDS Enabled Instrumentation
- Improved Accuracy Versions
- Vacuum Application Version
- USB Versions (via DSC-USB)
- Single or Multi-Channel PC-Based Monitoring & Data Logging System
- Wireless Version (via T24 instrumentation)

Applications:

- Electro-Mechanical Test Rigs
- Critical Bolted Installations
- Cable Tension Systems
- Cable Stay Monitoring
- Rock Anchor Monitoring

For pricing or any further information, please contact Omni Instruments Ltd.



Specification:

Rated Capacity (RC)	kN	0-12.5, 0-25, 0-35, 0-50, 0-100, 0-160, 0-200, 0-250, 0-300, 0-360, 0-540
Operating Modes	Compression Only	
Sensitivity Range	mV/V	1.5mV/V nominal (see note below)
Zero Balance/Offset	±%/Rated Output	<5
Non-Linearity	±%/Rated Output	<1.5 typical / 5 worst-case
Hysteresis	±%/Rated Output	<1.5 typical / 5 worst-case
Repeatability	±%/Rated Output	<±1% for identical mounting position, <±10% for altered mounting position (see note below)
Temperature Effect on Zero	±%/Rated Output/°C	<0.030
Temperature Effect on Sensitivity	±%/Rated Output/°C	<0.030
Input Resistance	Ohms (nominal)	375 (750 for capacities above 40kN)
Output Resistance	Ohms (nominal)	350 (700 for capacities above 40kN)
Insulation Resistance	Megohms	>5000 @ 50Vdc
Excitation Voltage	Volts AC or DC	10 recommended (2-15 acceptable)
Operating Temperature Range	°C	-20 to +70
Compensated Temperature Range	°C	+10 to +60
Storage Temperature Range	°C	-20 to +70
Safe Overload	% of Rated Capacity	150
Ultimate Overload	% of Rated Capacity	300
Deflection @ Rated Capacity		See dimension table
Fundamental Resonant Frequency*		See dimension table
IP Rating (Environmental Protection)		IP66
Weight (excluding cable)		See dimension table
Fatigue Life		10 ⁸ cycles typical (10 ⁹ cycles on fatigue-rated version)
Cable Length (as standard)	metres	2
Cable Type		4 core + screen, PVC sheath via cable gland
Construction Material		Stainless Steel
Max Resolution		1 part in 250,000 (with appropriate instrumentation)
*The resonant frequency is calculated with the body of the load cell attached to a large plate, ensuring that only the sensing element oscillates: This is vital to achieve the highest natural frequency and subsequent frequency response.		
Note: The sensitivity range stated above is dependent on the selected mounting position. If the mounting position is maintained during operation, then the CCG will be repeatable and linear within the parameters specified above. If the mounting position is altered, then the sensitivity range may change by up to ±10%, as may repeatability.		

Wiring Diagram:

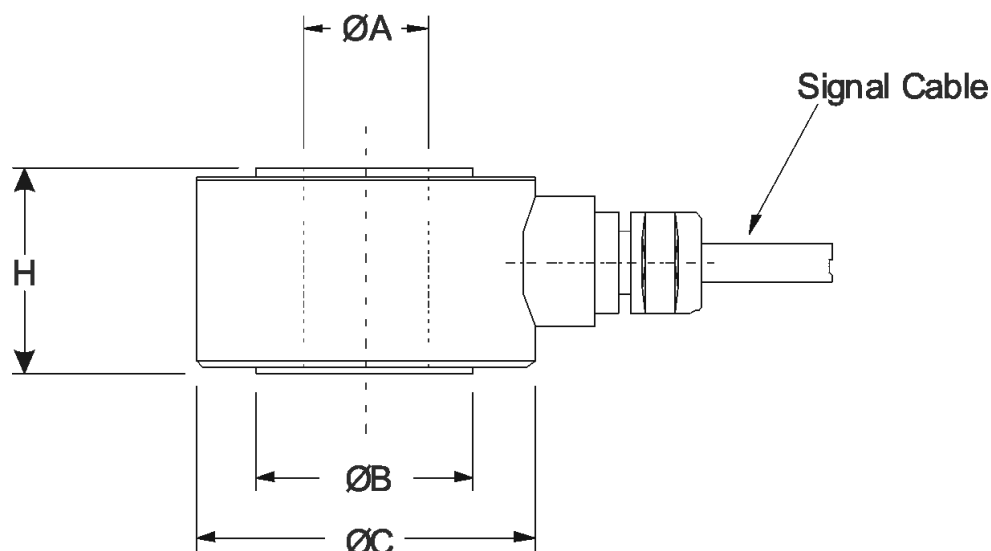
Wire	Designation
 Red	+ve excitation
 Blue	-ve excitation
 Green	+ve signal
 Yellow	-ve signal
 Screen	To ground - not connected to load cell body

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Dimensions (mm):

Capacity (kN)	ØA	ØB	ØC	H	Deflection	Resonant Frequency (kHz) @ zero load	Weight (kg) exc. Cable
0-12.5	6.1	10.4	25	12	0.01	25	0.05
0-25	8.2	14	25	12	0.01	33	0.06
0-35	10.2	17.7	32	12	0.01	31	0.1
0-50	12.2	21.3	38	15	0.02	21	0.2
0-100	16.3	29	48	20	0.025	19	0.3
0-160	20.3	36.3	50	20	0.025	24	0.3
0-200	22.3	40.4	55	25	0.03	20	0.4
0-250	24.3	43.5	60	25	0.03	20	0.5
0-300	27.3	49.6	63	25	0.03	22	0.5
0-360	30.5	54.9	75	30	0.035	17	0.9
0-540	36.5	65.5	88	50	0.06	10	2.0



Ordering Codes:

Core Product	Capacity (inc Engineering Units)	Cable Length (m)	Specials Code	Example Result
CCG	12.5kN	002	000	CCG-12.5kN-002-000
CCG	25kN	002	000	CCG-25kN-002-000
CCG	35kN	002	000	CCG-35kN-002-000
CCG	50kN	002	000	CCG-50kN-002-000
CCG	100kN	002	000	CCG-100kN-002-000
CCG	160kN	002	000	CCG-160kN-002-000
CCG	200kN	002	000	CCG-200kN-002-000
CCG	250kN	002	000	CCG-250kN-002-000
CCG	300kN	002	000	CCG-300kN-002-000
CCG	360kN	002	000	CCG-360kN-002-000
CCG	540kN	002	000	CCG-540kN-002-000

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