



**APPLIED MEASUREMENTS LTD.**  
Transducer Specialists...

+44 (0) 118 981 7339

[info@appmeas.co.uk](mailto:info@appmeas.co.uk)

<https://appmeas.co.uk>

## STALC3 Submersible Load Cell

### Key Features:

- Capacities 0-1kN up to 0-100kN
- Output: 2mV/V
- Maximum Working Pressure: 7000kPa/70bar
- Pressure Compensated Design
- High Accuracy:  $<\pm 0.05\%$  of Rated Capacity
- 3 Year Warranty

*Designed for Load and Force  
Measurement in Triaxial Chambers.*

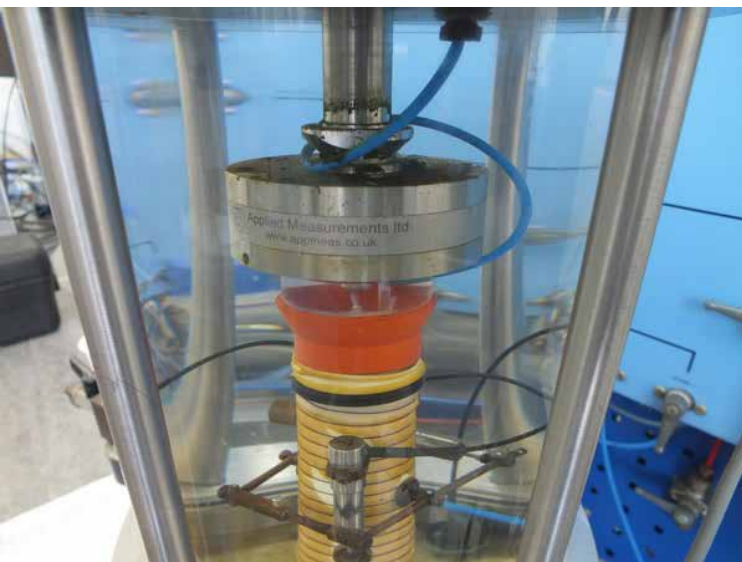


The STALC3 submersible load cell is designed for measuring compressive loads in fully submersible applications in water, with pressures up to 7000kPa. Widely used in new and existing triaxial chambers (pressurised chambers used for testing the shear strength of core samples taken from the earth), they can also be adapted for use in alternate applications where they will be fully submerged in water or oil.

The STALC3 has an internal pressure compensating system which eliminates zero or sensitivity changes when the load cell is subjected to external pressure changes. It also features accurate temperature compensation, excellent accuracy and stability, and with the specially selected heat treated stainless steel and precision strain gauges, ensures optimum performance and excellent long term stability.

Although the STALC3 is designed for measuring compressive loads it can also be used to measure tension. For capacities up to 5kN, tension loads up to the cell's rated capacity can be applied. For higher capacities, tension capacity is limited to 5kN.

## Stalc3 Submersible Load Cell in Triaxial Chamber





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## Options:

- Other Ranges Available on Request
- Equivalents to Other Manufacturers Available on Request
- Alternative Cable Lengths
- Higher Pressure Capability
- Custom Fittings for Stand-Alone Use
- Fatigue-Rated Versions
- USB Version (via DSC-USB)
- Wireless Version (via T24 instrumentation)
- Single or Multi-Channel PC-Based Monitoring & Data Logging System.
- TEDS (Transducer Electronic Data Sheet)
- TEDS Allows Plug & Play with TEDS Enabled Instrumentation.

## Applications:

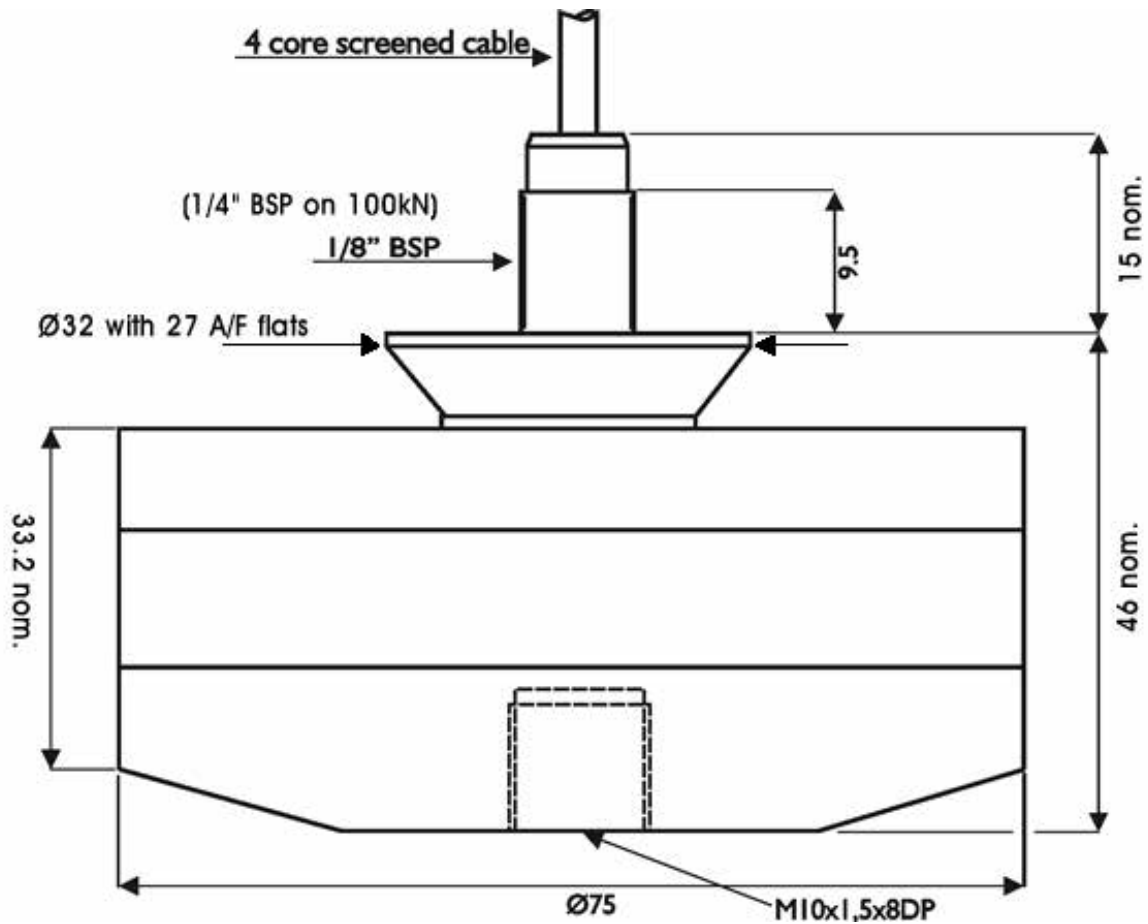
- Triaxial Chambers
- Fully Submersible Applications
- Buoyancy Testing
- ROV Applications

## Specification:

Rated Capacity (RC)	kN	0-1, 0-3, 0-5, 0-10, 0-25, 0-50, 0-100
Operating Modes	Tension/Compression / Tension & Compression	
Sensitivity (RO)	mV/V	2.0 nominal (1.4 nominal on 1kN)
Zero Balance/Offset	±%/Rated Output	<1
Output Symmetry (tension vs. compression)	±%/Rated Output	<0.5 typical
Non-Linearity	±%/Full Scale	<0.05
Hysteresis	±%/Full Scale	<0.10
Repeatability	±%/Rated Output	<0.05
Temperature Effect on Zero	±%/Full Scale Output/ °C	<0.02
Temperature Effect on Sensitivity	±%/Full Scale Output/ °C	<0.01
Input Resistance	Ohms	750 nominal
Output Resistance	Ohms	700 nominal
Insulation Resistance	Megohms	>2000 (bridge to ground) & >1000 (shield to ground) @ 50Vdc
Excitation Voltage	Volts AC or DC	10 recommended (2-15 acceptable)
Operating Temperature Range	°C	+5 to +50
Compensated Temperature Range	°C	+10 to +50
Storage Temperature Range	°C	-10 to +70
Safe Overload	% of Rated Capacity	150
Ultimate Overload	% of Rated Capacity	300
Deflection @ Rated Capacity	mm	<0.05
IP Rating (Environmental Protection)		IP68 to 7000kPa/70bar
Weight (excluding cable)	kg	0.85
Fatigue Life		10 <sup>8</sup> cycles typical (10 <sup>9</sup> cycles on fatigue-rated version)
Cable Length (as standard)	metre	3
Cable Type		4 core screened, PUR sheath, Ø4.6
Construction/Wetted Parts		Stainless Steel and Nitrile (NBR)
Resolution		1 part in 250,000 (with appropriate instrumentation)
Pressure Effect	%/Rated Output/100kPa	<0.005 typical



### Dimensions (mm):



### Wiring Diagram:

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



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## Ordering Codes:

Core Product	Capacity (inc Engineering Units)	Cable Length (m)	Specials Code	Example Result
STALC3	1kN	003	000	STALC3-1kN-003-000
STALC3	3kN	003	000	STALC3-3kN-003-000
STALC3	5kN	003	000	STALC3-5kN-003-000
STALC3	10kN	003	000	STALC3-10kN-003-000
STALC3	25kN	003	000	STALC3-25kN-003-000
STALC3	50kN	003	000	STALC3-50kN-003-000
STALC3	100kN	003	000	STALC3-100kN-003-000

## Associated Products:



[TR150 Handheld Indicator](#)



[T24 Wireless Telemetry Range](#)



[Intuitive4-L Panel-Mount Indicator](#)



[DSC-USB USB Signal Digitiser](#)



[ICA Miniature Strain Gauge Amplifier](#)



[SGA Signal Conditioner/Amplifier](#)