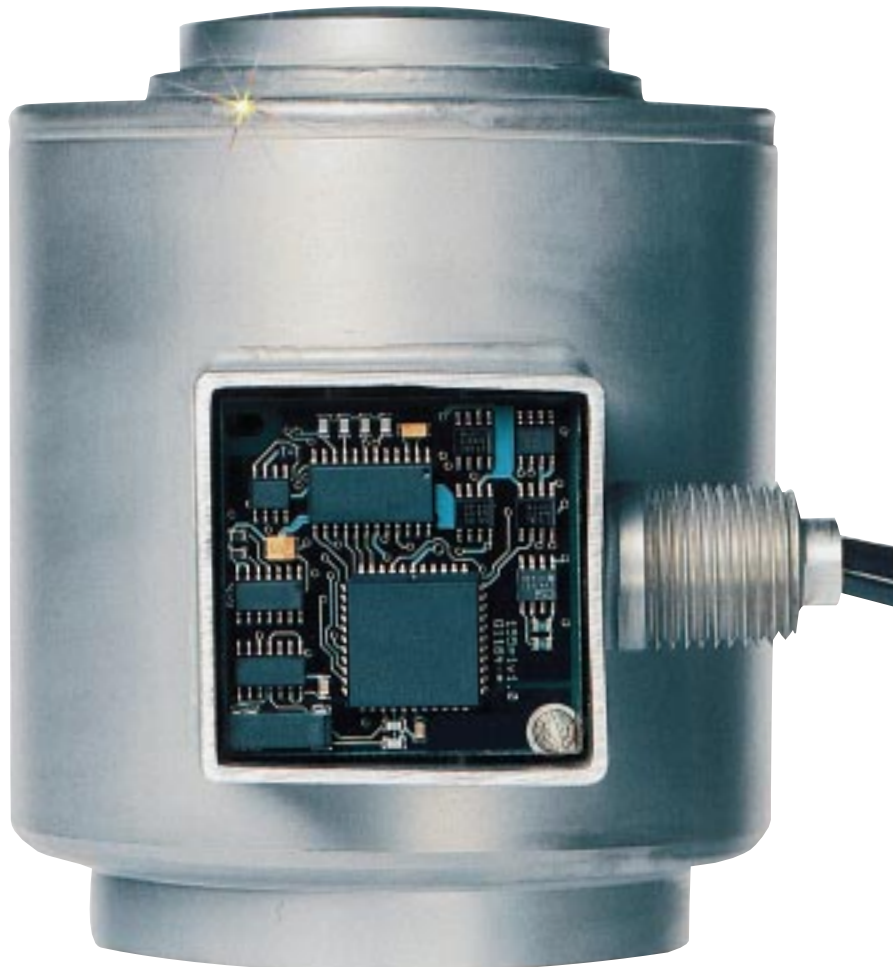




# SMART COMPRESSION LOAD CELLS RS-232 OR RS-484 COMMUNICATIONS



Shown smaller than actual size

## LCSC Series

- ✓ Digital Output Via RS-232 or RS-485 Interface
- ✓ Stainless Steel Construction with Waterblock Cable Entry
- ✓ Hermetically Sealed, IP66/68
- ✓ Certified to OIML R-60, 4000d 
- ✓ Internal Diagnostics
- ✓ 240,000 Counts Resolution
- ✓ NTEP Class III L  10,000 division (pending)

LCSC  
**\$1505**  
Basic Unit

### SPECIFICATIONS

**Standard Capabilities:** (= Emax)  
10, 25, 40, 60, 100 Metric Tons

**Accuracy Class Certified to OIML R-60:** C4

**Max Number of Verification Intervals:**  
4000

**Min Verification Interval:** Emax/10000

**Min Utilization:** 40%

**Combined Error:** ≤ +0.017 (% FS)

**Nonrepeatability:** ≤ +0.009 (% FS)

**Min Dead Load Output Return (% FS):**  
≤ +0.0125

**Creep Error (30 min) (% FS):**  
≤ +0.0184

**Temp Effect on Min Dead Load Output MR (% FS/5°C):** ≤ +0.007

**Temp Effect on Sensitivity:**  
≤ +0.004 (% FS/5°C)

**Minimum Deadload:** 0%

**Maximum Safe Overload:** 150%

**Ultimate Overload:** 400%

**Maximum Safe Sideload:** 10%

**Full Scale Deflection:** 0.36 mm max

**Excitation Voltage:** 11.6 to 17.0 Vdc

**Recommended Excitation Voltage:**  
15 Vdc

**Maximum Current Consumption:**  
80 mA

**Maximum Current:** 150 mA (internal short circuit)

**Rated Output:** 240,000 counts

**Tolerance on Rated Output:**  
≤ +200 counts

**Zero Balance:** ≤ +200 counts

**Insulation Resistance:** ≤ 5000 MΩ

**Element Material (DIN):** Stainless Steel 1.4542

**Sealing:** IP 66/68 (DIN40.050/EN60.529/IEC 529)

**Signal Updated:** 25/sec

**Baud rate:** 9600

**Start Bits:** 1

**Data Bits:** 7

**Stop Bits:** 1

**Parity:** Even

**Maximum Transmission Cable Length:** 1200 meters

**Data Transmission Interface:**

RS-485/RS-422-Full Duplex

**Compensated Temperature Range:**  
-10 to 40°C (14 to 104°F)

**Operating Temperature Range:**  
-40 to 80°C (-40 to 176°F)

**Storage Temperature Range:**  
-40 to 90°C (-40 to 194°F)

*See Page F-81A For Complete Smart Accessories*

## SMART LOAD CELL OPERATION

Within the Smart Compression Cell is a multilayer printed circuit board with a power regulator which supplies an excitation voltage to the Wheatstone bridge. The uncompensated output of the bridge is fed through an A/D converter and digital filter. A microprocessor controls the A/D converter, a temperature sensor and the digital output interface.

The SCC offers an extensive diagnostics structure which verifies the integrity and operation of the strain gauge circuit, power supply, EEprom, A/D converter and temperature sensor.

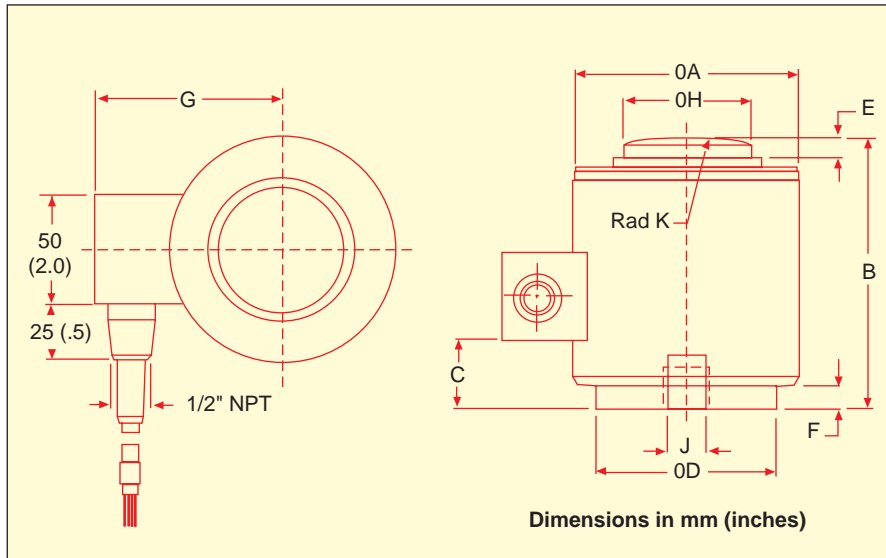
Smart Compression Cells produce a strong output signal, which is unaffected by electrical noise and temperature fluctuations on field cabling, thereby enabling the use of cable lengths up to 1200m. A surge protection device has been integrated to protect against overvoltages, such as lightning strikes.

## SYSTEM OPERATION

In a Smart Load Cell system each load cell operates as a stand alone device. The user can, therefore, communicate directly with a particular load cell, by means of its' serial number or a user designated address. This characteristic enables corner correction to be performed more efficiently. Faults or overloads on individual load cells can also be detected.

The digital output from the SCCs can be processed by a computer, PLC or a dedicated indicator, e.g. the SLD (Smart Load Cell Display). Multiple systems containing up to 32 load cells may be connected to one control unit. Software drivers are available for the user to develop their own system software.

A rationalized output of 240,000 counts means that, within a system, any load cell can be replaced without the need for re-calibration. Low and medium accuracy systems can be automatically calibrated without the need for dead weights.



**Attention:** Dimensions: mm. All dimension tolerances according to DIN 7168; middle accuracy unless otherwise specified  
All specifications subject to change without notice

**Wiring:**

Excitation+	Green
Excitation-	Black
Rx-	Grey/Pink
Rx+	Brown/Orange
Tx-	Yellow/Blue
Tx+	Red/White
Shield	Clear

### Dimensions in mm (inches)

CAPACITY	10, 25	40, 60	100*
A	73.0 (2.87)	105.0 (4.13)	152.4 (5.98)
B	82.5 (3.25)	127.0 (5.00)	184.2 (7.25)
C	7.0 (0.27)	29.0 (1.14)	67.5 (2.66)
D	58.0 (2.28)	82.5 (3.25)	123.8 (4.87)
E	6.5 (0.25)	8.0 (0.31)	23.6 (0.93)
F	1.5 (0.05)	11.0 (0.43)	21.8 (0.85)
G	78.6 (3.09)	98.2 (3.86)	124.0 (4.88)
H	31.8 (1.25)	58.7 (2.31)	79.2 (3.12)
J	M12 x 1.75 (11 Deep)	M20 x 2.5 (20 Deep)	
K Rad	152.0 (5.98)	152.0 (5.98)	432.0 (17.00)

\*100 metric ton range available on special order

### To Order (Specify Model Number)

MODEL NO.	CAPACITY METRIC TONS (LB)	PRICE
LCSC-10MT	10 (22 k)	\$1505
LCSC-25MT	25 (55 k)	1505
LCSC-40MT	40 (88 k)	1600
LCSC-60MT	60 (132 k)	1685

**Ordering Example:** LCSC-10MT is a smart load cell with a range of 10 metric tons (10,000 kg, 22,000 lb), \$1505  
See page F-81A for Smart Load Cell accessories



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