



**CPD-M**  
**DIGITAL LOAD CELL**

**CUTTING-EDGE TECHNOLOGY**

Over 95 years of combined manufacturing experience

# CPD-M DIGITAL LOAD CELL

## FEATURES

### Superior Digital Load Cell Technology

The CPD-M digital load cell has an installed base of more than 200,000 units worldwide and has been in continuous production for more than fifteen years. The CPD-M digital load cell offers robust construction and measurement technology far superior to traditional analog output load cells. Continuous diagnostic self-checks and instantaneous adjustment to environmental changes insures error free performance, superior accuracy and excellent long-term measurement stability. An internal microprocessor runs the high resolution analog to digital conversion process as well as:

- Internal memory to store load cell and scale calibration parameters. Internal calibration data storage allows for the scale indicator to be replaced without the need for complete scale recalibration.

- Continuous diagnostics on the status of each system component and provide measurement of cell supply voltage and internal temperature. The scale indicator is able to display real time diagnostic information from each load cell in a system. This information speeds troubleshooting procedures.
- Output a high resolution numeric representation of the applied force that is not susceptible to external RF interference. The cell output is based on the field proven RS-485 communication protocol.



### Accuracy and Stability

CPD-M digital output is superior to traditional analog output load cells. The onboard microprocessor uses temperature and linearity compensation data stored during production testing to insure accuracy much greater than any analog output load cell.



### Production Testing

The CPD-M load cell is the heart of a scale platform. Robustness and long term reliability of the cell is paramount. That is why every CPD-M cell undergoes many hours of cycle and accuracy test procedures prior to production completion.



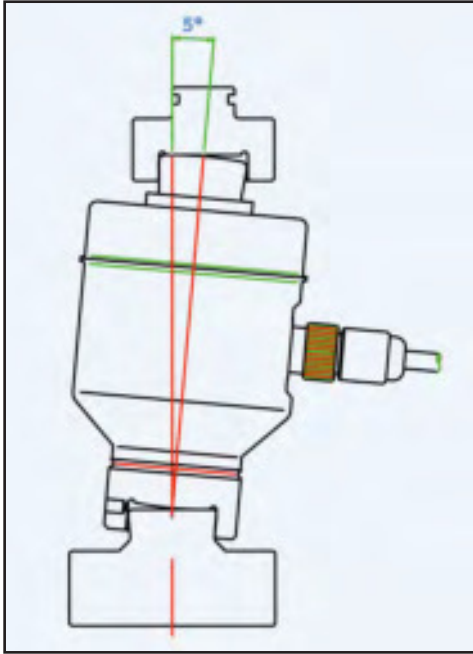
### Produced in Italy

Every CPD-M digital load cell is produced in a state of the art production environment located in Campogalliano, Italy. This facility insures every CPD-M cell meets the highest quality standards.

# FUNCTIONS AND BENEFITS

## Mount Assembly Designed to Minimize Wear

- Corrosion resistant, hardened alloy top and bottom receivers for long life with minimal maintenance



## Self-Restoring Geometry

- Off-axis forces applied to the cell body are precisely compensated

## Heavy Duty Debris Clearing Design

- Thicker stainless and angular shape at bottom of cell housing moves debris during cell oscillation reducing the possibility of binding due to build-up

## Lower Cell Mounting

- No concave mounting cavities eliminates mechanical wear due to dirt and debris

## 8 Strain Gauges

- High precision, compensation when the cell is loaded off-axis
- Better repeatability and measurement accuracy

## Lightning Protection

- A disk made from special insulation material eliminates path to ground through cell body
- Heavy copper bypass ground straps
- Internal electronic components that limit voltage and surge caused by lightning

## Digital Output

- High level output immune to RF interference

## Rodent-Resistant Cable

- Connection cable is protected by a braided metal sheath and poly outer cover

# TESTING PROCESS

## High Added Value Production Process

Each load cell produced undergoes a series of quality tests to guarantee each exceeds accuracy and stability specifications:

- Controls on the materials before they are used in production, with metallurgical tests performed on all individual cell components
- Cell is tested / adjusted for perfect zero balance and linearity with measurements taken in temperature cycle chamber, compensation data stored onto the internal microprocessor
- Cell performance testing with functional load simulation tests up to 120% of maximum capacity
- Testing of every cell, checking output against lab certified / calibrated reference using strength testing machine and direct weight application
- Traceability of each cell by serial number and barcode



# WHY CPD?

## 1. Interchangeable Parts and Software

Since the inception of the CPD-M Digital Load Cell B-TEK has consistently made software updates and aftermarket replacement parts that work seamlessly with the first version of the load cell that was ever produced. B-TEK doesn't believe in obsolescence or "phasing out" technology which leaves the customer stranded with astronomical replacement costs.



## 2. Bi-directional Communication



One of the greatest advantages of the digital load cell is its ability to retain calibration data, which can reduce service bills and allow the end user to troubleshoot, and many times fix, his/her own scale. B-TEK takes this a step further, not only do our indicators store calibration data for each individual cell, but our load cells themselves store calibration data as well.

## 3. 10 lb resolution up to 100,000 lb

Since certifying this load cell in North America in 2003, B-TEK has carried a certification on the CPD-M that has distinguished it as the most accurate load cell in the world. Scales using the CPD-M Load Cell have the ability to display weight in 10 lb increments for any weightings up to 100,000 lb.



## 4. The Physical Design of the CPD Digital Load Cell

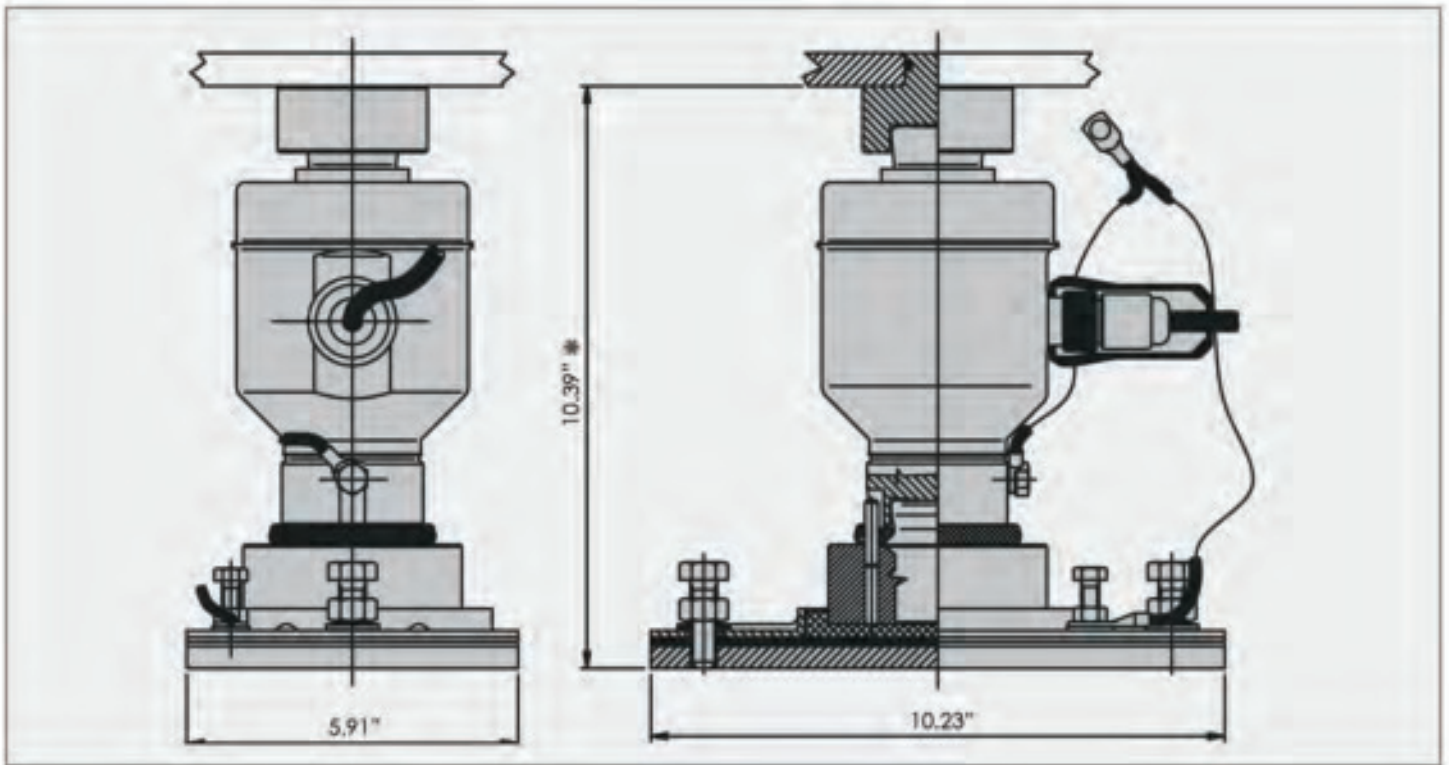


One of the most overlooked aspects of our CPD digital load cell is the shape of the canister and the extensive amount of testing and R&D went into this design. First, the tapered down shape from the middle to bottom portion of the cell body ensures that no dirt, debris, snow, or ice can gather around the cell to effect or influence its performance. Second, the receiving end on the bottom and insertion button being on the top means there is no stripping or wearing of parts that result in load cells spinning out of place and snapping cables.

## 5. Inclusion of a Summing Box

B-TEK has a long history of showing the benefit to using a "gathering box" (or summing box) where all of the load cells come together. A gathering box differs from a junction box in that there is not an active manipulation of the signal when the load cells meet inside of this enclosure. In our testing and R&D we have consistently found that a gathering box provides more clarity when trying to diagnose problems and less places for things to go wrong.





Dimensions in inches

**Technical Specifications:**

NTEP COC:	03-072
Capacity:	77K and 110K
Output:	RS-485 Digital Output
Material:	Stainless Steel
Temperature:	Compensated 14°F to 104°F / -10°C to 40°C
Safe Overload:	150% Full scale
Combined Error:	0.02% Full scale
Maximum Overload:	300%
Compensated Temperature Range:	-10 °C to 40 °C
Operating Temperature Range:	-40 °C to 70 °C
Housing Seal:	Hermetically sealed - IP68 / 69K
Connector Seal:	Glass to metal seal - IP68 / 69K
Cable Protection:	Poly coated stainless steel braided sheath
Cable Length:	Detachable cable lengths - 16' / 40' / 60'
Warranty:	5-years including lightning



**UNMATCHED EXCELLENCE.** B-TEK manufactures a full line of the longest lasting truck scales, rail scales, and floor scales on the market. B-TEK also manufactures industry-leading industrial scales and weighing equipment for any application. Due to B-TEK's wide range of options and materials, we are a leading provider of high quality industrial scales.

**EXPERIENCE.** B-TEK has a proud history that reaches back further than its 1994 inception. With multi-generational trade experience, the B-TEK team brings over 75 years of industry know-how to the table. This long-term knowledge of the weighing industry enables B-TEK Scales to focus on innovation and developing high quality solutions for our customers.

**TECHNOLOGY.** In 2003, B-TEK announced a joint venture with the Bilanciai Group of Modena, Italy, the largest truck scale manufacturer in the world. The Bilanciai Group's advanced manufacturing techniques, combined with B-TEK's outstanding product lines, provides customers with the highest quality and longest lasting scales in the world.

**EXTENSIVE PRODUCT LINE.** B-TEK offers an extensive line of truck scales spanning across all industry applications and sizes. As a comprehensive scale manufacturing company, B-TEK designs and builds solutions for a wide range of industries such as agricultural, logistics, industrial, steel, coal, waste, recycling, and aggregate. B-TEK has the ability to manufacture standard and custom scales in full electronic digital, analog, and electro-mechanical configurations.

**CUSTOMIZATION.** B-TEK is proud to be known for its ability to manufacture high quality, custom scale platforms. From nonstandard sizes to retrofitted components, B-TEK's commitment to quality and service will deliver a product that fits seamless within our customers' current configurations

**ADVANCED MANUFACTURING.** Through the use of cutting-edge manufacturing techniques truck scales continue to set the standard of quality within the truck scale industry. From B-TEK's plasma cutting table designed to hold aircraft quality tolerances to our steel cleaning and painting line, each and every operation is designed to build the most reliable truck scales on the market.

**HIGH QUALITY CRAFTSMANSHIP.** B-TEK's truck scales are assembled by highly skilled individuals who bring decades of experience to each operation. Combine these individuals with a culture dedicated to high quality and the result is a weighbridge constructed with a level of accuracy that cannot be matched.

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