INTO THE VOID

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THE PROCESS BEHIND CARDINAL SCALE'S PATENT-PENDING SCBD LOAD CELL POTTING METHOD

The SCBD SmartCell's patent-pending potting method —illustrated in red— completely seals every void and channel inside the load cells to lock out any possible moisture ingress.

There are a number of innovations in ARMOR® SmartCell® digital truck scales, but probably the most unheralded is Cardinal Scale's proprietary, patent-pending load cell potting process in its SCBD series digital load cells. The stainless steel load cell's IP69K rating provides the highest level of protection against sediment and pressurized high-temperature water ingress from damaging internal circuitry. This special potting process completely seals SCBD load cells inside and out in a way that is unmatched in the heavy-capacity market.

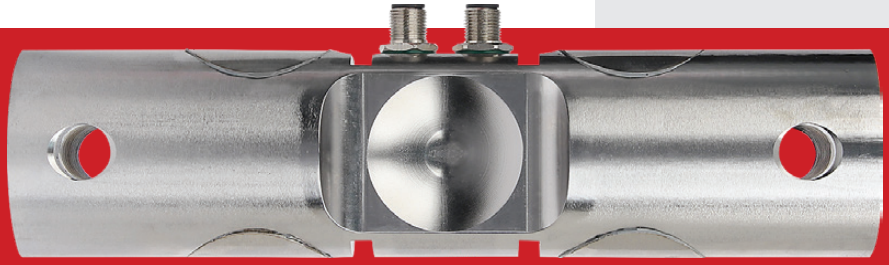
Cardinal Scale's load cell potting delivers an impregnable defense needed to prevent moisture ingress from the elements and keeps cells performing at a high rate out in the field, under the most punishing circumstances. Through temperature fluctuations, moisture has a tendency to wick up through load cell cable and into strain gauges inside analog load cells, but Cardinal Scale's SCBD digital cells are completely protected against this common problem due to the patent-pending potting method described below that completely encapsulates all voids in every internal cavity around the wiring circuitry.

First, extra care is taken to remove all moisture from the SCBD's stainless steel load cell cavity and internal electronics to allow for proper adhesion of Cardinal Scale's potting compound. Load cells are placed in drying ovens at 95® Fahrenheit to help dry out the load cell and internal electronics.

A primer is then placed on the load cell covers, strain gauge compartments, and digital compartments to promote complete adherence between load cell covers and load cell cavities. Load cell covers are held in place with vinyl tape to strengthen the bond between cell covers and the load cell. Load cells are then placed vertically in injection fixtures to apply the potting compound.

Shown here at the factory in Webb City, MO, Cardinal Scale's proprietary polyurethane potting compound is injected into the load cell, which completely seals every possible void against moisture problems.

Cardinal Scale's stainless steel SCBD digital SmartCells are IP69K rated for optimal protection in rugged environments and they use a patent-pending potting method to completely seal the load cell inside and out.

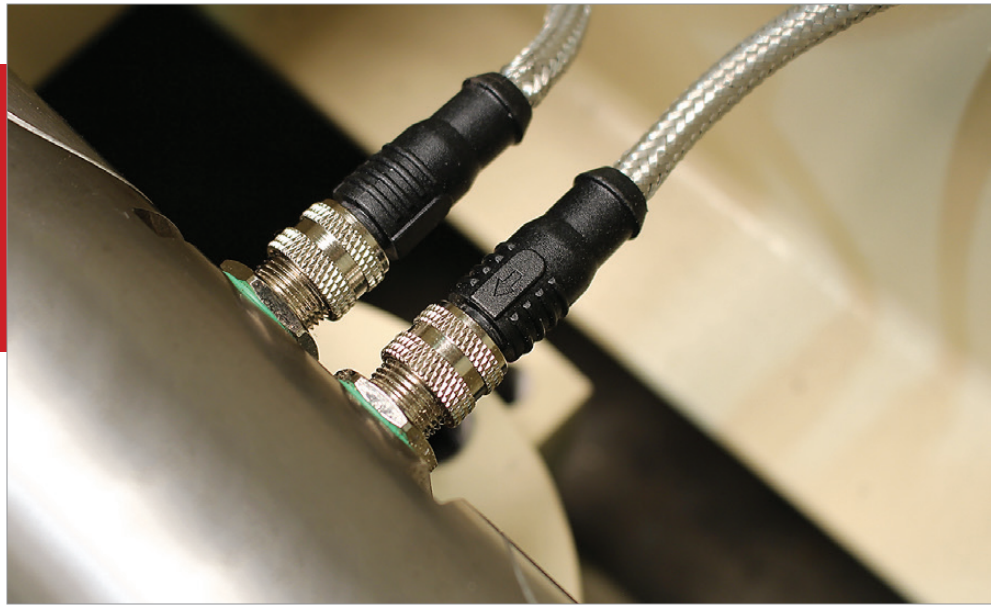


Cardinal Scale's proprietary polyurethane potting compound is injected into the bottom of the load cell. The polyurethane compound is mixed just before injection and added slowly to insure complete and even distribution within the load cell cavity. Once the load cell cavity is completely filled, excess potting is allowed to exit the top of the load cell via tubing segment reservoirs. This measure allows any excess air to exit the load cell cavity and for gravity to pull excess potting compound into the cavity to displace escaping air.

Once the load cell has been allowed to set up, it is placed in a drying oven to cure. The curing process takes 2 hours in a drying oven and 24 hours to fully cure at room temperature. This ensures the potting compound is completely hardened and serves as a bonding agent to the load cell covers. Cardinal Scale's potting compound is specifically developed to stay consistent with fluctuations in temperature extremes and to harden correctly during curing.

With the load cell cavity completely filled, the load cell covers are durably bonded to the load cell body. This cell-to-cover bond has been tested and shown to withstand up to 500 lbs pulling on the load cell covers! Cardinal Scale's load cell potting compound gives ARMOR® digital truck scale customers the highest protection possible to prevent damage to load cell gauging and circuitry.

Through temperature fluctuations, moisture has a tendency to wick up through load cell cable and into strain gauges inside analog load cells, but Cardinal Scale's SCBD digital cells are completely protected against this common problem.



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