New Lasers from K-TEK Provide Affordable Level-Measuring Solutions for Bulk Processors

Thanks to advanced technology that overcomes most level-detection challenges, a wide range of industries can now utilize laser level-meters at a cost-effective rate.

K-TEK Corporation of Prairieville, Louisiana—the world's largest manufacturer of magnetic level gauges—has now perfected an inexpensive laser level, distance and position transmitter that accurately measures bulk solids and opaque liquids under the harshest of conditions with unsurpassed accuracy. Offered in two models, the LM4C and its more lightweight cousin, the LM02, K-TEK's Lasermeters bring the physical benefits of laser level measurement to an expanded range of industries that seek an economical solution to measuring the contents of tanks, silos, hoppers, bins, mineshafts, mixing basins, and tubs.

As the only manufacturer of laser level-meters located in the United States, K-TEK is uniquely positioned to deliver lasermeters at one-third to one-half the cost of imported units. Thanks to K-TEK's easily-mounted, power-efficient units, manufacturing and process engineers in plastics, mining, pulp and paper, chemical, food processing, foundry operations, cement, agriculture or biotech industries can now harness the advantages of laser-level measurement to determine the level/height of materials in large containers and storage areas.

Because the K-TEK laser wavelength is only 1 micrometer—as opposed to radar's wavelength of 10,000+ micrometers—it has virtually no beam divergence and can measure to surfaces at an angle. No beam divergence means no false echoes from tank walls and other objects between the lasermeter and the material being measured. False
echoes are common problems for both radar and ultrasonic due to their large beam angle. Whether the material being measured is in a cone-up or cone-down position, the K-TEK Lasermeter still reliably determines the level of these uneven surfaces because all materials look rough to the lasers short wavelength. Lasers far outshine ultrasound measuring devices, in particular, because lasers remain immune to false readings from ambient sounds, weather conditions, and the acoustic properties and surface topology of the material being tested. Unlike radar, laser beams are unaffected by the dielectric properties or angularity of the material.

K-TEK Lasermeters also perform better under adverse conditions. Since the LM4C model can traverse distances up to 120 meters, it can be mounted high enough to avoid damage, or simply located behind heat resistant glass. The confined laser beam allows passage between narrow grids, and can even be programmed to ignore passing objects like rocks coming down a chute. Available dust tubes ensure continuous operation under high-particulate ambient environments.

"We now use a K-TEK Lasermeter to measure resin pellets in a dryer-hopper," says Allen Shumaker, a senior resident engineer at 3M Company in Brookings, South Dakota. "We tried ultrasonic leveling but got too many echoes off the walls of the hopper. It kept giving us false readings."

"Setting up the K-TEK laser is pretty easy—all we had to do is set the low level, set the high level, and the limits," continues Shumaker. "It's worked very well ever since...With some resins we get a lot of dust, but so far it hasn't affected our measurements. I haven't even needed to clean off the lens or anything."

K-TEK's Lasermeters are easily programmed with a PC or palm pilot—no special configuration software is needed. Convenient portable mounting can position the laser in any direction. Additionally, K-TEK utilizes Class 1 lasers, making the Lasermeters completely safe for the human eye—no special safety glasses are required. As the only level-gauge manufacturer in the world to hold ASME code-stamp capability in house,
along with ISO 9001, FM, CSA, and Cenelec certification, K-TEK can assure high quality laser level measurement.

"We have some old Miltronics devices in the field, but they require a lot of maintenance and we have a lot of problems with them in our wood and RDF [refuse dried fuel] bins," says Dave Loberg of Xcel Energy of LaCrosse Wisconsin. "But K-TEK brought their Lasermeter on-site, fit it into our application, and showed us that it can detect levels under our adverse conditions. So we had enough confidence in them to buy several of the units."

K-TEK's LM4C Lasermeter fits most heavy duty applications thanks to rugged housing, integral dust tubes, visible pointers, and a long distance capability of 120 meters. The lightweight LMO2 also features corrosion resistant construction and is ideal for inexpensive level measuring applications up to 40 meters. Both units operate on 24 Volts DC and come equipped with outputs of 4-20 mA, RS232, and two open-collector relay outputs. All K-TEK Lasermeters are immediately available for shipping.

"We're an OSB [oriented strand board] mill, and in part of our process we take a log and shave it into flakes 1.5 x 4.5 inches long and 15 thousands thick," says Dave Skopek, an electrical lead man at Louisiana Pacific in Hayward, Wisconsin. "We put these flakes in a 50 foot-long horizontal bin, and we need a way to accurately measure the level across the entire length of the bin.

"The challenge is that we have moving rakes in there, raking these piles back," continues Skopek. "With equipment moving within the bin, we can't use a sonic device that measures a three-foot square area. We need to look at only a six inch circle or so, and the K-TEK Lasermeter fit our needs...I would definitely recommend that other processors look at the K-TEK meter. I know I've recommended it to a couple of our other plants."

For further information about laser level-meters or distance/position transmitters, contact