

pcm-uk.com communicate

LOAD CELL & STRAIN GAUGING SPECIALISTS

PCM Load cell and strain gauge specialists

At PCM, we provide a comprehensive service for every load cell and strain gauge application for a wide range of industries world-wide.

Established in 1983, we've built a reputation as one of the UK's leading specialists in this field.

Because we're fully independent, we have no ties to any other company. And that means, no matter who the manufacturer, we will always provide the most suitable product to solve your particular problem.

It's all part of the total PCM service ■

WE'VE BEEN CERTIFIED



ISO 9001:2000
Certificate No. 5527

As part of our commitment to our customers, as well as to the quality of our products and services, we now have ISO9001:2000 certification. We achieved this accreditation in 2003.

But we don't believe in standing still... So we're now working towards gaining ISO14001. This environmental standard will underline our commitment to the environment as well as meeting a requirement of the automotive and aerospace industries ■

Strain gauges go down the tubes!



How do you measure the circumferential stress at three points inside a tube while it's being crushed?

That was the problem posed to PCM by an international oil company. The tube bore was 2.3 inches and the length 12 inches. To add to the problem, the test temperature had to be 600°C over a long period.

As we had not carried out such an installation before we built a prototype installation and produced special tooling to weld the three strain gauges in place. Once we had proved it would work and the customer had approved the prototype, we were able to go into production confident that the procedure would be successful.

Mineral insulated cable and weldable strain gauges were preformed and



assembled before installation in the tube. Then, when the fit was correct, they were permanently positioned.

The system went through several cyclic temperature runs from ambient to 625°C to maximise repeatability and minimise hysteresis, providing valuable data and giving our customer confidence about setting up the test ■

Modified shackle load pin

In the interests of cost effectiveness and faster delivery, we've made a few changes to our shackle pin load cell. It's available now and you can find full details and specifications on our website: www.pcm-uk.com.

The new load cell is available on its own or in a rugged carrying case. And we do, of course, build to order, so if you have a preferred type of shackle we can make a cell to suit ■



CHECK OUT OUR WEBSITE

Another area of improvement is our website. We're constantly updating it with new information about our standard products and services, custom design products and news of recent projects. Check it out at:

www.pcm-uk.com

NEW LOGGING SYSTEM EXPANDS THE PCM SERVICE

To complement our existing range of data logging equipment, we've now added a new 32-channel MGC system from HBM. This new system is suitable for quarter, half and full bridge, LVDT and temperature configuration ■

GOING ROUND IN CIRCLES

Measuring stress levels in circular components calls for careful strain gauge selection. But when a Wolverhampton based aerospace company approached us with their problem there were a couple of added difficulties.

First, the component, a hinge joint ring, would be subject to high levels of stress, which made the choice of strain gauge even more critical. And second, the design of the ring meant that the overall height of the gauge, its inter-bridge wiring and the necessary coatings could be no more than 2mm.

To make matters worse, the entire assembly would be submerged in thick hydraulic oil for the whole test term of three years. Several rings at a time were to be gauged for a variety of tests including fatigue life and failure.

Finally, we had a very tight deadline to work to. But we turned the project round within seven working days, to the delight of customer, and it has proved completely reliable in use, meeting all their expectations ■



High temperature, sharp shock

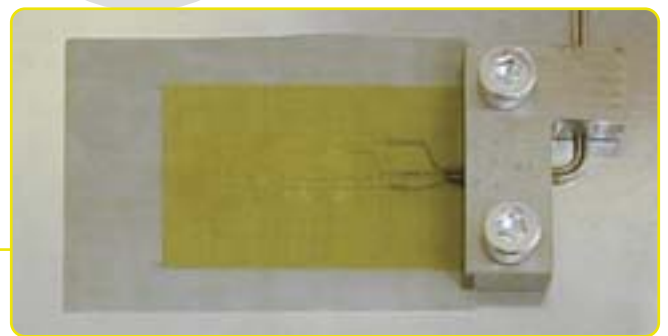
Imagine the effects on an aluminium block heated to 475°C then plunged into cold water.

That's exactly what the University of Limerick wanted to measure for a heat treatment quenching process, and they approached us to see if we could help.

Because of the combination of the material and the high temperature, we had to use a Wheatstone bridge installation made from Hoskins material and bonded in place using a ceramic cement.

Our concern was that the sudden thermal shock to the hot aluminium being dipped into cold water might crack the cement and make the test void. So we carried out a feasibility study and a series of in-house tests to make sure that the service we offered would satisfy the university's needs.

Full details are on our web-site: www.pcm-uk.com ■



PCM provide a small solution

When a well-known aerospace company wanted to monitor the force applied through an actuator during an aircraft simulation test, they brought the problem to us. They were looking for an installation that would withstand a large number of cycles and would be unaffected by hydraulic fluid.

Our solution was to fit the M10 bolt with two independent full Wheatstone bridges to allow for potential failure or damage to the cables. Because of the small size of the bolt the strain

gauges and consumables had to be very compact to give good linear performance. The bolts were calibrated in both tension and compression using our own in-house calibration service.

The company found the performance of our solution to be excellent, giving a combined linearity and repeatability of less than 0.3%, and the customer was absolutely delighted.

Full details are on our web-site: www.pcm-uk.com ■



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YOU WANT IT WHEN?

At PCM we enjoy a challenge. That's why time after time we exceed our customers' expectations by turning round projects ever faster to make sure they meet their deadlines.

No matter if it's building a load cell from scratch, repairing and re-calibrating an existing system, or completing an integrated strain gauging project, we work closely with our customers to ensure complete satisfaction. **So talk to us first** ■

