



**T**techrentals

## Remote Concrete Pour Temperature Sensing and Sample Control Using Modbus

TechRentals have developed a simple solution for the monitoring of the concrete curing process that also provides 'matched temperature' control of the concrete pour samples. The benefits include a more accurate estimation of concrete strength and potential shortening of the period before additional construction can commence.



An application of the Modbus protocol has enabled the efficient implementation of concrete pour temperature remote monitoring and also control of the storage environment of concrete test. The system is sufficiently undemanding in installation for it to be supplied as a rental system however many users would find it practical to have it as a standard tool.

A dataTaker model DT80M logger is used to gather 30 channels of thermocouple data at the concrete pour and the data is linked to a second DT80M at a remote office location. The site data is monitored for obvious errors and faulty thermocouple data is automatically rejected. The office logger controls a thermal bath and maintains this as an accurate analogue of the site concrete pour temperature. Site samples are placed in the bath and thereby are maintained in closely matched conditions to those in the construction. The samples can therefore be subjected to mechanical testing with a high degree of confidence. This together



**dataTaker DT80M**

with the precise monitoring of the site curing process considerably increases the confidence in the state of the concrete. This allows for earlier formwork striking times with an earlier start to prestressing and consequently significant savings. This system is simple to implement with the baths currently in use.

The first implementation of the system was in a remote location in Queensland.

The dataTaker loggers and associated hardware are available from TechRentals who also wrote the associated software. TechRentals sales engineers are always ready to offer advice on any aspect of test and measurement instrumentation selection and use.

### For more information contact:

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