

## Application Note Monitor and control a furnace system

**Customer Requirements** The client manufactures and installs custom control systems for furnaces. Their end-user is a metal processing company operating 24hours, 7days a week. One of the requirements was the raising of an alarm via SMS when the furnace temperature fell outside it's required operating temperatures. Another requirement was the ability to turn burner One or Two on or off as necessary or to reset the complete system using SMS messages.

### Equipment

*dataTaker DT80*  
*dataTaker SMSX Modem*  
USB Memory stick  
DeView™

### Sensors

Thermocouples  
Mechanical relays



### Datataker Solution

The control system was set up in a secure location. The *dataTaker DT80* was programmed to record temperatures of the flue and the product every 10 minutes. When any of the digital inputs change, the status of the power switches are checked. The time and the day of the week are recorded for use in the SMS reports.

The *dataTaker SMSX* modem is connected via data logger's serial sensor port. If power is lost, a burner 1 or 2 fault occurs, or if the furnace is too high or too low alarms are initiated and an SMS message with the current status is sent to the first mobile phone number in the SMS unit.

If this message is not responded to in 10 minutes a message is sent to the second mobile phone number in the SMS module. If there is still not response in a further 10 minutes the SMS message to the second mobile phone is repeated.

The following SMS commands can be sent to the logger:

1. Reset - The reset switch is held for 5 seconds. The logger then waits 10 minutes and replies with the status of the system.
2. 1on - This command turns burner One on then waits 1 minute and replies with the system status.
3. 1off - This command turns burner One off, then waits 1 minute and replies with the system status
4. 2on - This command turns burner Two on then waits 1 minute and replies with the system status.
5. 1off - This command turns burner Two off, then waits 1 minute and replies with the system status.
6. Status - This command replies with the current system status.  
ANY SMS message to the logger is acknowledged with an SMS message received response. This will stop repeated alarms being sent.

Downloading of data is simplified by using the USB memory module. The data can be viewed using DeView™.

The ability to communicate, monitor and control has been welcomed by the manufacturer with reduced downtime, less wastage and increased productivity.

## Other applications

Monitoring control of unattended processes  
Refrigeration  
Refrigeration Storage  
Compressors  
Pumping stations  
Standby Generators

[If you need more detail on this application please contact joyce.reid@datataker.com.au](mailto:joyce.reid@datataker.com.au)

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