

PLCSCOMM Communication Protocols

The computer must connect to the cabinet and use the following basic protocol for communication.

Baud Rate = 2400 Baud.
Data Bits = 8
Stop Bits = 1
Parity = none.

There are currently only six commands that the cabinet will respond to:

- '1' - Request current readings from cabinet.
- '2' - Request current SETTINGS from cabinet
- '3' - Ask to USE SETTINGS just sent Cabinet.
- '4' - Monitor commands - reserved for Contherm use only.
- '5' - Upload SETTINGS into a selected Cabinet program.
- '6' - SETUP to Run from a selected Cabinet program.

ie to request current readings from the cabinet command '1' would be sent, eg: "1+CR+LF" (where CR=carriage return & LF = line feed)

The cabinet would typically reply thus :

```
"0750022007500000000011013300000001"
```

This is in the form [TEMP][TIME][RH][CO2][O2][LIGHT]
[PROG][CYCLES][ALARM][STATUS][N/A][RAMP]

the first reading of 0750 represents a temperature of 25.0oC the next reading of 0220 represents time of 02:20, 0750=Relative Humidity of 75.0%, The CO2 and O2 readings are only applicable for CARBON DIOXIDE and OXYGEN cabinets and are thus normally ZERO's, the LIGHT = 11 (11=On,00=OFF) then program number (01), number of cycles (33), any alarm (ie 01=over/under temperature) the only other relevant number is the measured RAMP Rate (01=+0.1oC/min).

To obtain the current cabinet settings you would send command '2' ("2+CR+LF").

The cabinet would typically reply thus : "07500220075000000022110100360000"

This is in the form [TEMP][TIME][RH][CO2][O2/RAMP]
[LIGHT][PROG][CYCLES][VERSION][RESERVED]

The VERSION (36)= Firmware V3.6. RESERVED = 0000

CHANGING THE CURRENT CABINET SETTINGS

To CHANGE the current cabinet settings you would send the ASCII string as follows:

```
"%0750022007500000002211000001%"
```

This is in the form %[TEMP][TIME][RH][CO2][O2/RAMP]
[LIGHT][RESERVED][PROG]%

Then send command '3' ("3+CR+LF") to request that the cabinet operate at the settings you have just sent.

Command '4' : Monitor Commands: - These perform operations on the internal status of the cabinet CPU and RAM and their use is reserved for Contherm's testing purposes only.

Command '5' Allows a SPECIFIC program number's SETTINGS to be Uploaded to the cabinet to run at a later time.

To CHANGE a cabinets specific program setting you would first send an ASCII string as follows:

```
"%075002200750000000221111000401%"  
This is in the form %[TEMP][TIME][RH][CO2][O2/RAMP]  
[LIGHT][LIGHT][MAXPROG][THISPROG][CYCLES]%
```

Then send command '5' ("5+CR+LF") to request that the cabinet UPDATE the desired program (THISPROG=01..09) to SETUP at the settings you have just sent.

Command '6' Allows a the cabinet to START operating from a SPECIFIC program to be Selected and run now.

To Run the Cabinet from a SPECIFIC Program number you would first send an ASCII string as follows:

```
"%093304%"  
This is in the form %[RUNMAX][RUNCYCLES][RUNSTART]
```

Then send command '6' ("6+CR+LF") to request that the cabinet Setup the Maximum number of Program to run, the number of cycles and the program number to START running from.

RUNNING CABINET UNDER CONTROL OF PC

To run the cabinet under the control of a PC you would typically do something like the following:

- 1) Send an ASCII string "%010001%" such as
%[RUNMAX][RUNCYCLES][RUNSTART]% to put the cabinet into a
'single program' mode.
- 2) Change the current settings to those desired and use the command '3'
to update them.
- 3) REPEAT step 2 above when you want to change the
cabinet settings (Set the time to an amount larger than the time
to the next program change).