

CONTHERM SCIENTIFIC LTD

TECHNICAL MEMORANDUM

PRODUCT : PLCS4

No : 0040

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FROM : Russell Kirkwood

DATE : 4/3/93

TO : ALL AGENTS

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=SUBJECT : INTERFERENCE ALARM 09 ON PLCS4 CONTROL SYSTEMS.

We have recently had a spate of problems due to external interference sources with the new PLCS4 series of precision cabinets. The external interference **USUALLY** results in a code 09 alarm, and the parameters effected are the current set points which are usually found to contain garbage instead of the proper values, if these changes have been detected by the controller it will result in the system **turning OFF** (except for co2 controllers which will try to maintain 37oC etc) and the system will remain so until the 09 alarm has been cancelled. Any PLCS4 system in which changes to settings appear to occur without operator action must be considered a possible external interference suspect.

To improve the immunity of the system to outside interference three things can be done and on all future control systems the later two will be fitted as standard.

A) If at all possible ensure that the cabinet is powered from a **dedicated** line back to the main switchboard.

B) Fit a toroid to the mains transformer on the interface pcb, this involves unsoldering the primary wire going to the transformer and wrapping the wires around each side of the toroid to form a noise cancelling input filter.
(Contherm will fit a **14mm 4C65 TOROID (PURPLE) PHILLIPS PT No 4322-020-97183**)

C) Fit an external line filter with an inductor (typ 400uH) in the **EARTH** line. The cabinet already has a line filter fitted but this filter does not prevent noise coming down the earth line.
The filter should be rated to the maximum cabinet loading (on the data plate) but typically a minimum of 10 Amps.
(Contherm will be using a **SCHAFFNER FN 343-10/01** 10A filter).

The combination of the above methods will ensure that the cabinet is free from external interference sources.