

Technical Bulletin

Cig-Arrête System Troubleshooting Guide

Following installation, if your system does not perform as detailed in the user manual supplied, or appears to be unstable, the following test procedure should be followed:

Testing/troubleshooting a Cig-Arrête system can only be carried out effectively if a multi-meter is available, capable of reading DC voltages of at least 20V (to 1 decimal place) and DC current of at least 20mA (to 1 decimal place).

1. Measure the incoming supply voltage and make a note in the table below (column 3, line 1)
2. Power the system down by switching off at the mains power supply unit.
3. Disconnect the +Ve incoming supply wire inside the controller and connect in series with a multi-meter as shown in figure 1 - which should be set to read milliamps (mA). **Then wait 5 minutes.**
4. Power the system up, wait 2 minutes for all detectors to complete their normalization routine, then make a note of the final current (line 2).
5. If a second meter is available, leave the system powered up and make a note of all DC voltages between terminals, B&A, B&C and B & D1 - D5. If only one meter is available, it will be necessary to power the system down, reconnect the +ve power connection, wait 5 minutes then re-power the system.
6. Make a note of the voltages recorded in Table 1
7. If all readings taken are within the limits given for a healthy system (above), contact Radal Technology for further advice. Otherwise proceed as below
8. If the readings are not as expected, the cause is either due to faulty wiring, equipment or both, and it will be necessary to fault-find using a process of elimination as follows:
 9. Power the system down then disconnect all external wiring except for the 6V incoming supply.
 10. Connect a shorting link between terminals C and D1 to D5 as shown in figure No. 2.
 11. Repeat steps 5 & 6 above, making a note of the new readings.
 12. If all readings are correct, continue. If readings are NOT correct, replace controller and repeat steps 1 to 6.
 13. By reaching this stage it is assumed that the controller is operating correctly and the fault lies in the field; and is either wiring or detector related.
 14. Inspect ALL field wiring to ensure that there are no cross connections or short circuits. A high system current is often due to cross wires at the detector terminals e.g. 'A' crossing over to 'B' or 'C' to 'B', etc.
 15. If cross wire(s) are found, correct and repeat steps 3 to 6, otherwise continue. If no cross wires or obvious faults are found, it will be necessary to disconnect all external wiring, then re-connect one detector into the system at a time whilst observing the system current (step 3 to 5). **Note: remember to fit shorting links between terminals controller terminal 'C' and any unused 'D' connector - otherwise the controller will be in a fault condition and the current measurement invalid.**
 16. Replace any detector that is found to increase the system current above the levels specified.
 17. Once all detectors have been fitted and the system voltage/current is normal, activate ALL installed detectors by applying a small amount of smoke or test gas (a delay of up to 20s for an alarm to occur is normal - so be patient!).
 18. Measure ALL alarm voltages and use table 2 to note your results:
 19. If all readings are within the limits specified, your system is now operational. Otherwise, contact Radal Technology for further advice.

Table 1

Parameter	Terminal	Healthy Reading
Voltage (DC)	6V Supply In	5 to 6V
Current (mA)	6V Supply In	Less than 5mA
Voltage (DC)	B - A	13.5 to 14.5V
Voltage (DC)	B - C	5 to 6V
Voltage (DC)	B - D1	5 to 6.5V
Voltage (DC)	B - D2	5 to 6.5V
Voltage (DC)	B - D3	5 to 6.5V
Voltage (DC)	B - D4	5 to 6.5V
Voltage (DC)	B - D5	5 to 6.5V

Table 2

Parameter	Terminal	Healthy Reading
Voltage (DC)	6V Supply In	5 to 6V
Voltage (DC)	B - A	13.5 to 14.5V
Voltage (DC)	B - C	5 to 6V
Voltage (DC)	B - D1	5 to 12V
Voltage (DC)	B - D2	5 to 12V
Voltage (DC)	B - D3	5 to 12V
Voltage (DC)	B - D4	5 to 12V
Voltage (DC)	B - D5	5 to 12V

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Issue No: RTB-Trouble Guide

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