

Using an LCD Reader to test systems that are deployed in stages



Introduction

When large datalogging systems are constructed in phases, the need to test the system at the completion of each stage can be facilitated with the use of an LCD databus reader.

This procedure is particularly useful when sections of a system become inaccessible once the next phase of the system construction is initiated. An example of this would be when sensors are buried at various depths in the soil profile of a landfill monitoring experiment. When the scale of the experiment means that a significant volume of soil will cover the sensors at the lower layers, then it becomes prudent to have a means of checking that these sensors are functioning correctly before the next layer of soil/fill is applied. A landfill experiment is a good example of this requirement due to the fact that the movements of large earth-moving equipment can mean that it is not possible to setup or connect to the datalogger until the final stages of the system are completed.

The following procedure will allow customers to check the progress of their system construction without the need to connect to the datalogger. This procedure assumes the customer has pre-configured all sensor addresses such that there are no address conflicts.

Parts Required

- 1 x LCD Databus reader (Part No. LCD2)
- 1 x CBEXIB Battery to Databus cable (optional) (Part No. CBEXIB)
- 1 x Auxiliary 12V battery (Customer to supply battery if applicable) (Part No. LC-X1242/P)

Procedure

The customer first needs to determine whether an auxiliary 12V battery is required. While most ICT smart sensors will communicate with the LCD databus reader when powered from the reader's internal battery, many of these sensors require a minimum of 12V, hence external battery, to make accurate measurements. A common example of this is the SMD4-P interface for MP406. If in doubt, contact ICT for further information.

1. Connect the installed sensor interfaces to a system databus hub.
2. If applicable, connect the 12V auxiliary battery to the databus hub using the CBEXIB cable.
3. Connect the LCD databus reader to the databus hub.
4. If the databus has the 12V battery connected, then the LCD reader will now automatically search the databus for valid addresses and display the current value. If there is no 12V battery and the sensors are to be powered from the LCD reader battery then press and hold the button on the side of the LCD databus reader to initiate the sensor search.
5. If forced changes of the sensor outputs are to be simulated for subsequent readings, then after noting the current values of the sensors, the 12V battery and LCD reader will need to be disconnected from the databus hub to initiate a power reset of all connected sensor interfaces. The power reset is required for the sensors to take new readings due to the factory default setting for interfaces to be supplied in Economy mode.
6. Simulate the change in the sensors measurement medium. (eg, add water to soil around MP406 soil moisture sensor.)
7. Reconnect the LCD reader and 12V battery if applicable.
8. As in step 4, press and hold the button if applicable and note the new values.