



**CHURCHILL CONTROLS**

# Data\_Link 2000

## ALPHANUMERIC DISPLAY MODULE



The Alphanumeric Display Module is an accessory specifically designed for use with *Nano\_Link* and *Micro\_Link*. Its main application is as a diagnostic tool, but it also provides a user interface for use with the *Nano\_Link* shaft encoder interface, and a user interface for radio path testing equipment.

The display connects to the host via the standard *I/O\_Link* connector, just like any other expansion module, and is powered by the host. Its pushbuttons allow the user to scroll through menu items, select and modify parameters, and disable the display for low-power applications.

It can be used either as a fixed installation or as a portable tool to be plugged into working equipment as and when needed.

When used with *Nano\_Link*, the display forms a very useful battery-powered radio path test set, allowing the integrity of communication to be evaluated before incurring the expense of installing a radio telemetry system.

The display can also be used with a battery-powered *Nano\_Link* to interface to one or two incremental shaft encoders, allowing water levels to be measured with extreme accuracy.

Application Notes are available which describe the Radio Path Test Set and incremental shaft encoders in detail.

## Operation

When used with *Micro\_Link*, the UP and DOWN buttons allow the user to scroll through the following menu options:

LOGO  
INPUT STATUS  
OUTPUT STATUS  
PATH TEST

Each menu option automatically scrolls through a number of display modes, as illustrated. Pressing SELECT will freeze the display mode, allowing a particular parameter to be continuously monitored.

When used with *Nano\_Link* the following menu options are presented:

LOGO  
INPUT STATUS  
OUTPUT STATUS  
ENABLE SHAFT ENCODER(S)  
ZERO SHAFT ENCODER(S)  
PATH TEST  
RADIO CHANNEL

For compatibility with the low power requirements of battery-powered *Nano\_Link* outstations, the display enters a power-down mode if the ENABLE button is not pressed. This may be over-ridden by an internal switch in parallel with the button, or an external switch connected via integral screw terminals. This may typically be a magnetically-operated reed switch, allowing the display to be activated without breaching the seal of a watertight enclosure. The display activates in the INPUT STATUS mode, so in many instances the user does not need to access the pushbuttons.

## Radio Path Testing

Any combination of *Nano\_Link* and *Micro\_Link* can be used in a point-point link to perform a radio path test. This mode is particularly applicable to *Nano\_Link*, since both ends can be battery-powered.

The display shows the radio Receive Signal Strength Indicator (RSSI) simultaneously. It also provides a convenient means to change the *Nano\_Link* radio channel without the need to access its switches.

## SPECIFICATIONS

Dimensions: 112 x 62 x 31mm  
Power: 5V @ 10mA (active)  
5V @ 20µA (asleep)

## Display Formats:

LOGO:

Churchill  
Controls

Nano\_Link  
Software v1.41

INPUT STATUS:

Alarms :cb11  
Dig i/p:10010000

Count 1:4763  
Count 2:96

Count 3:132  
Count 4:60658

An i/p1:3.55%  
An i/p2:45.32%

Batt :4.25V  
RSSI :-2.3dBuV

OUTPUT STATUS:

An o/p1:42.47%  
An o/p2:86.82%

Dig o/p:01000000

ENABLE SHAFT ENCODER:

shaft encoder  
Enabled. OK?

Set 0 for shaft  
Encoder 1?

ZERO SHAFT ENCODER:

Set 0 for shaft  
Encoder No?

PATH TEST:

RSSI:-2.3dBuV  
Remote:-1.9dBuV

Dig i/p:10010000  
Dig o/p:01000000

Batt:4.25V  
Remote:4.09V

RADIO CHANNEL:

Radio channel:31  
Change?

## NOTE:

*The display is only compatible with Nano\_Link and Micro\_Link software version 1.40 or later*

Churchill Controls Ltd, Unit 2, Station Industrial Estate, Wokingham, Berkshire, RG41 2YQ  
Tel: 0118-9892200, Fax: 0118-9892007, e-mail: sales@churchill-controls.co.uk  
website: <http://www.churchill-controls.co.uk>