

## Neon Remote and Metering Modules

- Internet enabled
- Automatic transfer of data
- Data stored on secure server
- Automatic reporting and alarm facilities
- Compact case with simplified external
- Up to 5 years battery life depending on schedule
- Built in logger with optional 8Mb on-board volatile flash memory archive
- Almost unlimited data storage
- Expandable via the Starlogger interface
- SDI-12 interface for connection to low-power instruments
- On-board digital and analogue interfaces connection to sensors / instruments
- Integrated status display and operating



The 2013D NRM is a small self-contained unit in a compact case which connects to sensors in the field, collects readings from those sensors, and transmits the collected data to a central server via a cellular telephone network.

The 2013D NRM has a small LCD display and buttons to check signal strength and perform limited functions including initialization.

The Neon central server system is provided on a Neon Data Service basis and on a Neon Client System basis and provides a central computer system to monitor and receive data from many NRM units in the field.

The 2013D NRM terminal is designed to automate collection of remote data from environmental monitoring, industrial measurements, and utility metering via 3G /WCDMA/ GPRS cellular networks from any location within the cellular network coverage area.

Fully bi-directional communications are possible via the Neon server. Data can be collected directly and the 2013D NRM can be programmed from any internet connection.

The 2013D NRM supports integrated logging or automated collection of data from an external datalogger.

It's built-in modem supports packet data, and SMS communications. It has long battery life and low operating costs through use of advanced microcontroller technology.

Supports GSM 850/ 900/ 1800/ 1900Mhz and 3G 850/ 900/ 1900/ 2100Mhz.



### Physical specifications

<b>Material:</b>	Polycarbonate
<b>Size:</b>	85 mm x 165 mm x 56 mm (HxWxD)
<b>Weight:</b>	350 grams (including battery pack)
<b>Operating temperature:</b>	-20°C to 60°C. Not affected by humidity
<b>Antennae:</b>	Internal stub, optional external whip antenna

### Electrical specifications

<b>Battery:</b>	3.6V 13Ah lithium (non-rechargeable)
<b>Battery life:</b>	5 years (based on daily schedule).
<b>External power:</b>	6V to 24V DC input available if required
<b>Instrument power:</b>	5V unregulated supply (5mA max) plus 2.5V ref (5mA max)
<b>I/O:</b>	4 x analog inputs – 12 bit resolution 1 x counter input – 16 bit/3kHz, 3–5V DC signal (included) 3 x counter inputs 8 bit/300Hz, 3–5V DC signal (option) 1 x open collector output, 250mA maximum 1 x HSIO (16 x 16 bit bi-directional, synchronous data) channel
<b>SDI-12:</b>	SDI-12V 1.3 recorder (1200 baud smart instrument channel)
<b>Modbus:</b>	Optional RS485 RTU Protocol, 19200 baud max, Functions 01, 02, 03, 04, 05/15, 06/16

### Integrated logger specifications

<b>Storage memory:</b>	30kB/15,000 readings – non-volatile flash memory
<b>Optional storage memory:</b>	8MB/4,000,000 readings – non-volatile flash memory
<b>Time clock:</b>	Crystal regulated, +/- 10 seconds/month – automatically network synchronised
<b>Scan rates:</b>	Programmable from 1 second to 5 minutes
<b>Log intervals:</b>	Programmable from 1 second to 24 hours