SkyVUE Pro Ethernet Option

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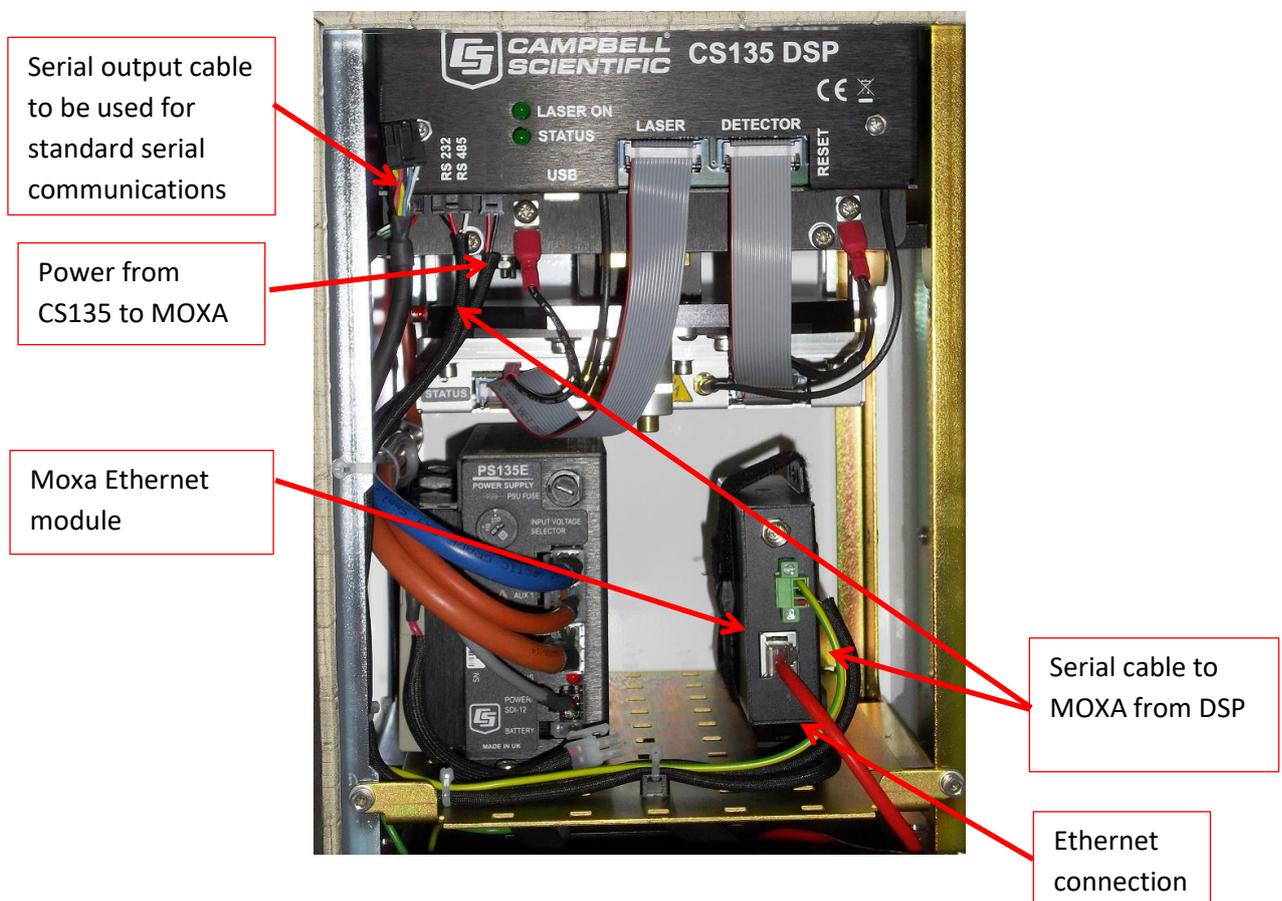Document Issue: 1

CSL I.D - 1337

Summary

This document describes the configuration of a MOXA 5230A-T Ethernet adapter which has been pre-installed in a SkyVUE Pro ceilometer. It should be read in combination with the User Guides for the SkyVUE Pro and MOXA NPort 5000 Ethernet converter.

The Ethernet adaptor is setup as a TCP terminal server, which allows connection to the sensor over an Ethernet connection, using software such as Campbell Scientific's Viewpoint software. Any commands that are described in the SkyVUE Pro that can be sent via the serial output can be sent via the IP socket.

The SkyVUE Pro serial output can be converted back to standard serial (RS232/RS485) use by moving cables inside the sensor as described below. When converted back the standard communications cable at the base of sensor can be used as described in the SkyVUE Pro manual.

Hardware

Serial output cable to be used for standard serial communications

Power from CS135 to MOXA

Moxa Ethernet module

Serial cable to MOXA from DSP

Ethernet connection

The hardware is shown in the internal view above. The Ethernet module is installed within the SkyVUE Pro. It has serial connection (RS485) from the SkyVUE Pro and obtains power from it.

A special cable gland is fitted in the base of the SkyVUE Pro to allow a standard Ethernet cable, pre-fitted with an RJ45 connector to be routed into the enclosure and plugged into the Ethernet adaptor fitted inside the enclosure.

Note: RJ45 connectors which have large over mouldings may not fit through the gland.
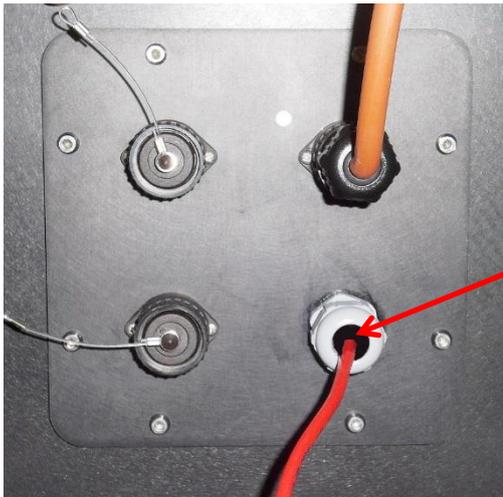
The Ethernet cable should be passed through the cable gland as shown. Note that it may be necessary to increase the diameter of the cable, for example with heat shrink sleeving or rubber sleeves, to ensure a good seal around the cable when the gland is tightened.

To convert the ceilometer back to a standard serial connection swap over the serial to MOXA cable with the serial output cable as shown.
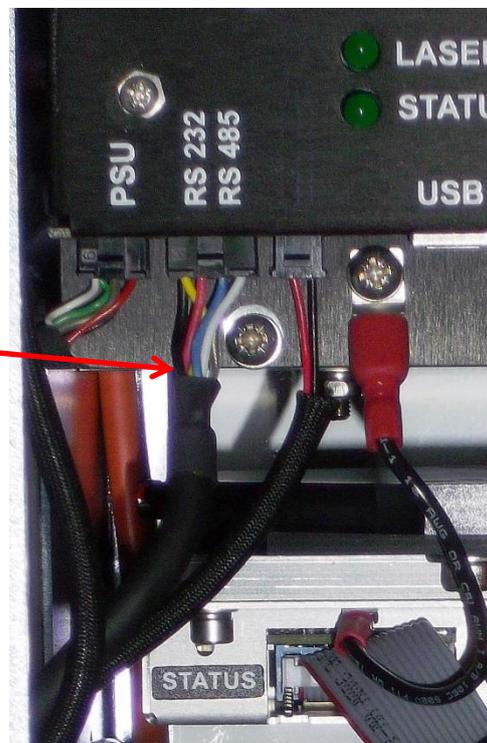
Settings for SkyVUE Pro and Ethernet convertor as shipped

1) As supplied the SkyVUE Pro is connected for Ethernet use. It is setup for connection to the Ethernet convertor using RS485 half-duplex mode, other settings are defaults. RS485 mode is used to allow parallel connection of a local serially connected PC or datalogger, contact Campbell Scientific for more information of these options.

2) The Moxa convertor as supplied is set to operate in "TCP" terminal server mode. The Moxa Interface is set to communicate via serial port 1, using RS-485 2-wire mode. Other settings, which are the defaults match the SkyVUE Pro defaults settings, e.g. baud rate etc.

3) The Moxa Ethernet port is set to its default static IP address of 192.168.127.254 with the SkyVUE Pro connected to serial port 1 which is mapped to TCP port 4001 at that IP address.

4) The user will usually need to change the settings to suit their network. It may be necessary to change the Ethernet mask and enter a gateway too (check with local IT support). It is also possible to configure the Moxa to allow multiple remote connections to be made to the same sensor.

5) To change these settings, connect a PC to the Ethernet socket on the Moxa convertor and communicate with it using a web browser using the address: http://192.168.127.254. The PC will need to be configured so its IP settings allows it to connect to the 192.168.127.254 as a local address. Once connected a web based menu system will be presented which allows you to change the IP address of the box and setup security settings to prevent further unauthorised changes. If you are not familiar with the setup of terminal servers please refer to the Moxa User manual, which can be downloaded from here:

https://www.moxa.com/en/support/product-support/software-and-documentation

The model supplied is normally the 5230A-T. This has a second serial port which can be used to connect other sensors or a datalogger to the same Ethernet connection.

Note: The SkyVUE Pro can be configured for message type, message interval and other parameters using the USB port without disturbing any communications settings.