**MANUAL**

# MODEL XP15H
# NMEA 0183 Hi-Speed
# Expander

**DESCRIPTION**: The XP15H Expander is a hi-speed version of the XP15 intended primarily for AIS (Automatic Identification System) signal distribution. It provides a differential RS-422 input and four independent differential RS-422 outputs plus a fifth RS-232 output for driving single-ended listeners such as PC's. Although intended for 38,400 baud, it will also operate at any lower data rate. The XP15H has a differential receiver as its input, which allows it to operate at higher data rates than opto-isolated inputs.

The XP15H accepts any DC voltage from 10-30 Vdc. An LED on the unit flashes green when input data is detected, but will turn red or yellow if a supply current overload occurs. A pair of test terminals, **test+/test-** can be used to determine supply current by connecting them to an external voltmeter.

**TYPICAL INSTALLATION:** The XP15H accepts one talker input, usually an AIS. The input signal is split into 5 outputs, four RS-422 and one RS-232. Multiple listeners

can be connected to each output as long as the yellow or red LED does not appear. When connecting to the XP15H input and outputs, observe the following:

*Only connect the XP15H RS-422 outputs to RS-422 or opto-isolated listeners. If any **OUT–** terminal is connected to a single-ended (grounded) listener, the red LED will turn on indicating an overload. In such cases, listeners with their (-) input grounded such as PC's, should use the XP15H RS-232 output (**TXD**) for the listener's "Data In" or leave the **OUT–** disconnected. (See "Single-ended Hookups.")*
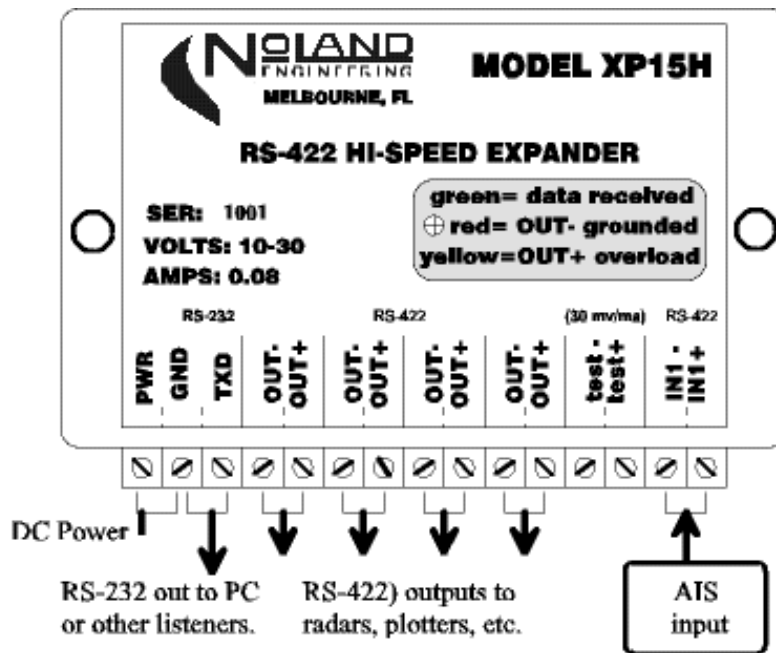


*If a single-ended talker must be connected to the XP15H input (**IN+/IN-**), leave the **IN–** terminal disconnected and connect the talkers' "Data Out" signal to **IN+** terminal (see figure, next page).*

An LED is included on the XP15H to aid in installation and troubleshooting. Whenever input data is detected, the LED will momentarily flash green. A yellow LED usually occurs when too many outputs are connected. The LED will turn red whenever the DC current draw exceeds 80 milliamps. This can occur if any **OUT–** terminal is grounded. Listeners should be connected to the XP15H outputs one at a time, while observing that the LED never turns red. If one or more of the listeners causes the red LED to turn on, it is probably because a minus (-) listener input is actually grounded. In this case, you can either use the RS-232 output to drive that listener or leave the minus (-) input to that listener disconnected from the XP15H. (See figure above.)

The **test+/test-** terminals are useful for measuring load current. Connect a voltmeter across these terminals and measure the voltage. The scale factor is 20 mv/ma (0.05a/v),

so that a 1.6 volt reading indicates 80ma of load current.



Single-ended hookups
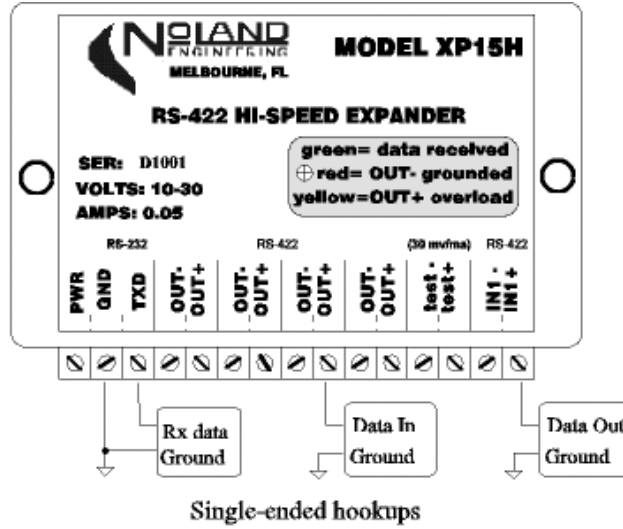
# Specifications

| | |
|---|---|
| Supply Voltage | 10-30 Vdc |
| Input Impedance | >1K ohm |
| RS-422 Outputs | 2.5V typ. into 150 ohms |
| RS-232 Output | +/- 8V @ 10ma typ. |
| Data Rate | 38,400 baud max. |
| Overload Indicator | >80ma (V_test = 1.6 volts) |
| Size | 3.75 x 2.75 x 1.0 in. |
| Weight | 4 oz. |
| Warranty | 2 years |
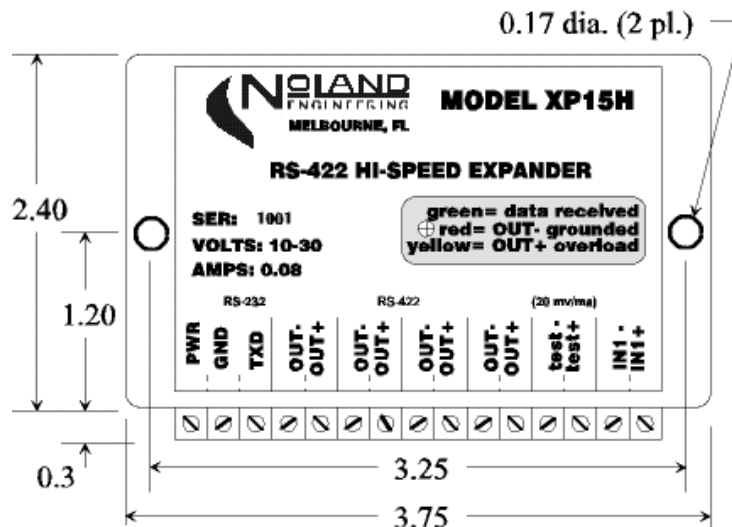
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