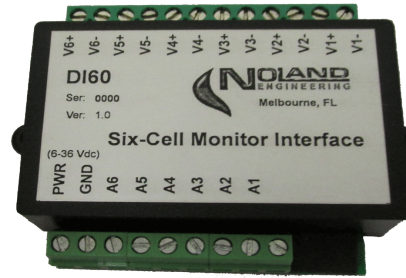




DI60 Six-Cell Monitor Interface



The DI60 Cell Monitor Interface is a six channel differential converter unit. Its primary purpose is to convert battery stack cell voltages into ground referenced voltages for Analog-Digital Conversion (ADC). When used with the RS11 Data Converter, a wide range of cell voltages (1-20V) and a stack limit of 68V are supported.

The DI60 converts six individual cell voltages into single-ended ('Ground' referenced) voltages via unity gain differential amplifiers. The measured cell voltages can then applied to the inputs of an RS11 to produce a NMEA 2000 "Battery Status" message (PGN 1F214) for each cell. Battery stacks with more than 6 cells are supported using additional DI60's and RS11's. A typical installation is shown in Fig 1. Note that the Ground ('GND') terminals of the RS11 and the DI60 are the same. This is important for accurate cell voltage measurement. The Power ('PWR') connections may be different as they do not affect the measurement accuracy.

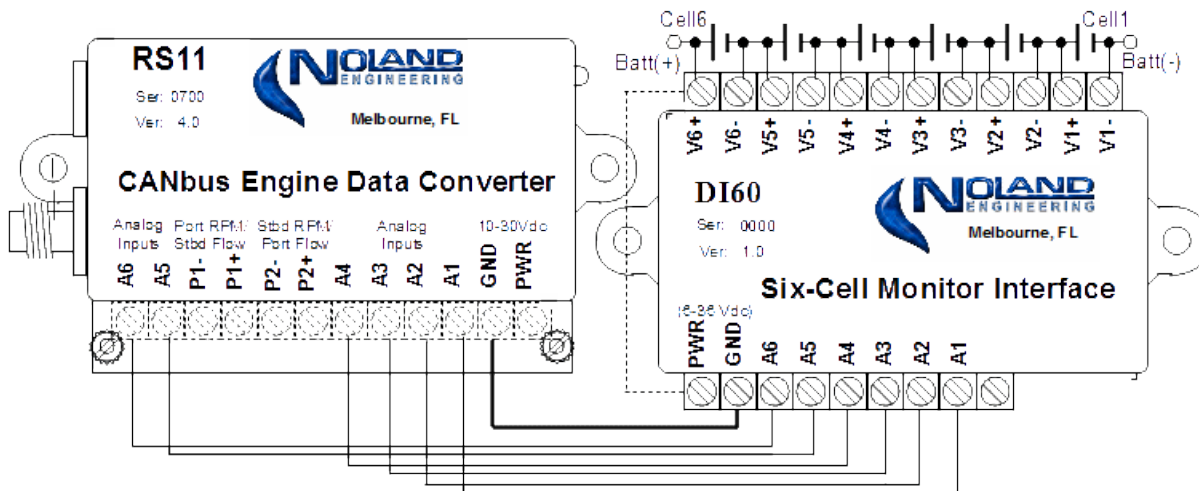


Figure 1. Typical Installation with 6-Cell Battery Stack

Smaller stacks can be measured by using only some of the inputs. For example, a 32V stack of four 8V batteries, would use four channels. The DI60 power must be at least 2V more than half the stack voltage to prevent compression of its internal amplifiers. Therefore a maximum stack voltage of 40V requires the DI60 DC power to be at least 22V. Since the input power limit of the DI60 is 36 Vdc, the maximum stack voltage supported is 68V. In general, the stack voltage ('Batt +') can be used to power the DI60 as long as it does not exceed 36V (see dashed line in Figure 1).

The DI60 draws very little current (<10 ma. typical), which is less than an indicator LED consumes. Therefore no indicator LED is included on the unit, and it can be left connected to the Battery Stack almost indefinitely without significant discharge.

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