

Aanderaa Instruments develops and manufactures automatic field stations for remote areas with no electricity supply as well as moored data buoys.

The need for a reliable power source for these installations is essential and the combination of rechargeable Nickel Cadmium batteries and solar cells has proven to be the best solution. As all the stations and data buoys use low power electrical components, a single module, integrated in the hardware, has been designed.

The power module is built into a one meter long, 2" OD, aluminum tube. A male cone at one end and a female cone at the other, together with two 18-pin receptacles, ensure mechanical and electrical connections to other units and measuring systems. Inside the tube is a NiCd battery pack consisting of seven RSH7 cells in a shrink hose giving 8.4V, 7Ah, when fully charged. The charging current is supplied by 5 rows of solar cells placed in slots on the outside of the tube and along its whole length. A durable transparent polycarbonate tube protects the cells.

The charging current in full daylight is more than 100mA which is normally sufficient to supply power to an Automatic Weather Station, operating at ten minute intervals, for prolonged periods of time. However, due to internal discharge after a long storage period in darkness, it is recommended that the power module be charged before installation, see charging procedure overleaf.

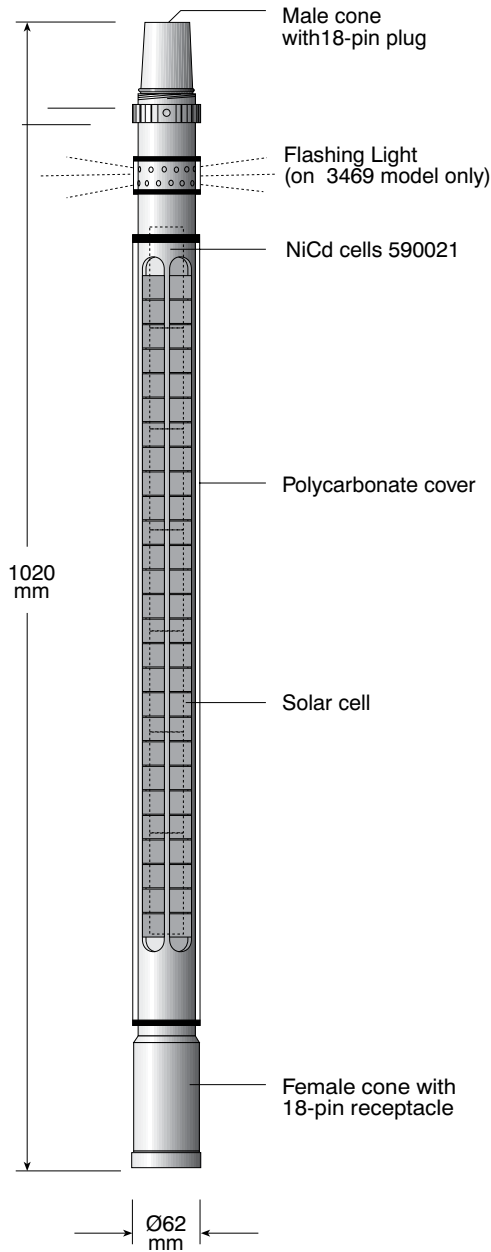
For use on data buoys, a power module with flashing light is available. This version, designated 3469, has 16 super-bright light emitting diodes placed in two rows around the upper surface of the tube, which they pierce. The light, controlled by a photocell, is only operated when necessary. The unit must be connected to a Sensor Scanning Unit 2800 or a 3010 unit to be activated.

When used in especially cold climates, the capacity of the batteries is considerably reduced and the use of an extra battery should then be considered. Increased power capacity is achieved by using two or more power modules for the same installation.



# Specifications

D272, Sep 2008



<b>Voltage:</b>	8.4V DC
<b>Capacity:</b>	7 Ah when fully charged (at -20°C the capacity is reduced by 20%)
<b>Operating Temperature:</b>	-40 to + 50°C
<b>Internal Battery:</b>	7 each NiCd Cells in shrink hose, Stock no. 590021
<b>Solar Cells:</b>	5 rows of 27 cells, total 135 cells (20x20 mm Kyocera PSC 2020)
<b>Mechanical Connection:</b>	Male and female cones
<b>Electrical Connection:</b>	
<b>Upper End:</b>	18-pin receptacle mating Sensor Cross-Arms 3415 and 3435
<b>Lower End:</b>	18-pin receptacle mating Plug 2931, Mast Cable 2933 and Sensor Scanning Unit 2800
<b>Net Weight:</b>	4.5 kilograms
<b>Dimensions:</b>	Length 1020 mm, diameter 62 mm
<b>Warranty:</b>	Two years against faulty materials and workmanship

## Additional Specifications for Solar Cell Power Module 3469 with Flashing Light

<b>Light Source:</b>	16 ea. high power, T-1 (5 mm) Al 2nGaP LEDs, HLMA-CLOO
<b>Light Color:</b>	Amber
<b>Wave Length:</b>	590 nm
<b>Pulse Rate:</b>	2 seconds
<b>Pulse Length:</b>	Approximately 40 ms
<b>Visible Range:</b>	More than 1 km
<b>Current Consumption:</b>	Approx. 1 mA when operating
<b>Light Control:</b>	Automatic on/off by photocells
<b>Net. Weight:</b>	5.0 kilograms

## CHARGING PROCEDURE

1. Disconnect the module from the Automatic Weather Station or Data Buoy.
2. Apply 12-14V DC, 700mA, to plug upper end, positive to pin 17, negative to pin 16. After 14 hours the module will be fully charged.

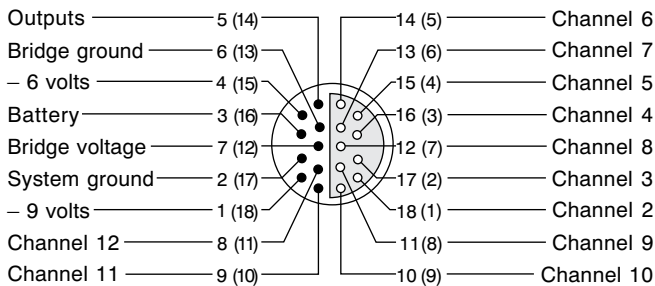
Necessary equipment:

12-14V DC power supply with adjustable current limits and Charging Cable 3643.

## PIN CONFIGURATION

exterior view; pin = ●; bushing = ○

### Lower receptacle, Upper plug(-)



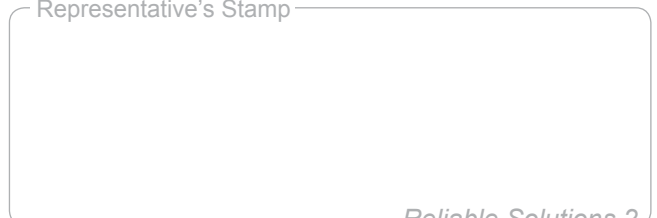
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