

RDCP 600 Usage Considerations

Surface Referred Columns

In order to utilize the surface referred columns feature, the tide measurement option must be installed. Two depth ranges are available:

- The 60m range allows for both tide measurements and surface referred columns down to installation depths of 60m.
- The 340m range allows for tide measurements down to 340m and surface referred columns down to 100m.

The surface referred columns technique relies on being able to measure current speeds all the way up to the surface. This means that the maximum installation depth when using this feature also depends on the scatter conditions in the installation environment.

Surface referred columns are not available when the instrument is mounted in a downward looking installation as the surface then will be out of reach for the instrument.

Measurement Range

The measurement range depends on scatter conditions and power setting. Scatter conditions will typically vary from place to place and time to time. At high scatter levels, such as often found in harbor waters and similar with a high degree of erosion content, the measurement can exceed 80m when high power level is used.

At low scatter levels, such as found in clean waters at deep depths or in the Arctic, the measurement range would be limited to approximately 40m or even less if the water has extremely low scattering conditions.



Maximum Number of Columns and Cells

The RDCP 600 has a few, memory based, limitations that influences the maximum number of columns and cells that may be used in a deployment:

- Maximum range (software limitation) is 100m
- Maximum number of cells in a column is 100
- Maximum total number of cells for all columns combined is 150

Usually one would not use 100 cells in one column alone, and the maximum number of columns that could be used therefore usually varies between 3 and 6.

Tide Measurements

Tide measurements are either done with a 60m or a 340m meter pressure gauge. When one of these is installed, the maximum depth capability is limited to the specification of this sensor unless a pressure blocking cap is installed and the pressure measurement is omitted.

Wave Measurements

In order to perform wave measurements, the 60m quartz based pressure sensor must be installed. Wave measurements relies on fluctuations in pressure caused by the waves. These fluctuations are heavily attenuated with distance. The high frequency components are attenuated more than the low frequency components.

This means that the installation depth influences the wave measurement result. We do not recommend that wave measurements are performed if the installation depth is

more than 15m. Since the attenuation also is frequency dependent, the smallest wave period measured will also depend on the installation depth (refer graph on page 3 in this document). At 6m installation depth, the minimum wave period measured is approximately 3 seconds.

Power Consumption

Power consumption is highly dependent on configuration. It is influenced by power level, ping count, profile length and recording interval. Power consumption will also increase with the number and type of optional sensor installed.

An estimate of the average power drain is provided by the embedded configuration program. A special spread sheet for calculating power consumption is also available, please contact info@aadi.no. External battery containers may be used to extend battery capacity.

When using external power supply please also take into account the instrument's peak current drain that take place during pinging.