

Grad-01-1000L and DL601 in NMEA Mode with Non-Magnetic Cart

The non-magnetic cart is designed to carry up to 12 Grad-01-1000L gradiometer sensors together with all related batteries and data logging equipment. Increasing the number of sensors proportionately reduces the number of time that a survey will take. Because cart surveys are only performed in NMEA mode, this also saves time by removing the need to lay out a grid in advance.

Dataloggers and battery cassettes are mounted on a bracket located ahead of the sensors. This bracket will also support the GPS antenna (see operation manual).

Depending on the required spacing between the sensors, 1.5m or 3m sensor cables are recommended. The drawing below suggests cable length with respect to the position of the sensors on the cart. Supports for the sensor bar are spaced 1.8m apart and can accommodate 4 sensors at 0.5m separation.

Other equipment required includes:

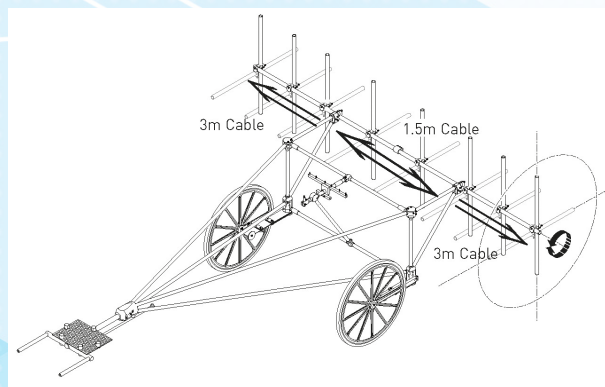
- A DL601 datalogger, 1 for every 2 sensors, booted into NMEA mode. (Bartington Instruments can update older dataloggers to the latest version with electronics that support dual boot mode.)
- A battery cassette. Each can power up to 3 dataloggers and 6 sensors. Suitable twin or triple extension cables are available.
- Long RS232 cables to connect the DL601 to the laptop (or alternatively to a multiple port RS232-to-USB converter supplied with the logging software).

The MLGrad601 software will operate on a Windows-based laptop and will allow both GPS

and gradiometer data to be logged. Input to the PC is via a 4 port RS232-to-USB converter.

The sensors are set up using the same adjustment procedure as with the Grad601. This can be done with the equipment mounted on the cart (external green and red push buttons can be provided with long cables to commence the procedure) in a suitable location. An area of $\sim 2\text{m}^2$ with stable readings will need to be found so that the cart with attached sensors can be rotated in the appropriate N-S-E-W directions. The sensor bar locking mechanism can be slackened to allow the sensors to be rotated for the inverted measurements. Alternatively, customers with the Grad601-2 carry beams can set up the equipment individually prior to assembly on the cart.

Once ready, the dataloggers can be set to run, and data acquisition can begin. They will start streaming immediately, but logging will only commence when initiated via the MLGrad601 software.



Use this Application Note in conjunction with the Non-Magnetic Cart Operation Manual (OM3228), available from the the Bartington Instruments website at bartington.com.