

## Specifications

### DRIVE CONTROLLER

|                            |  |
|----------------------------|--|
| <b>Enclosure</b>           | IP65 Stainless Steel<br>600 x 600 x 300 mm, ( 24" x 24" 12")   |
| <b>Switching Frequency</b> | 2- 16 KHz  |
| <b>Power Requirement</b>   | 0.8 KW, 110 VAC / 220 VAC (2 separate models)<br>(1000 Watt Generator or Mains Power)                      |
| <b>Overload Capacity</b>   | 150% for 60 S  |
| <b>Maximum Span</b>        | Up to 400 metres typical. For longer spans, please contact our engineering department for technical advice |
| <b>Interlock</b>           | Ultrasonic proximity set to 0.5m   |
| <b>Inclinometer</b>        | ± 45° measurement for main cable sag correction  |

### ELECTRIC MOTOR

|                             |                              |
|-----------------------------|------------------------------|
| <b>Motor Body</b>           | IP65, Geared Motor           |
| <b>Speed</b>                | Up to 1 m/s (3.2 ft/s)       |
| <b>Distance Measurement</b> | 0.01m/0.01ft resolution      |
| <b>Output Torque</b>        | 32 Nm                        |
| <b>Safety Factor</b>        | 1.8                          |
| <b>Power Requirement</b>    | 0.75 KW<br>110 VAC / 220 VAC |

### HOIST

|                          |  |
|--------------------------|--|
| <b>Lifting Capacity:</b> | 135Kg/300 lbs Gauging Weights                      |
| <b>Minimum Power</b>     | - 2 x 12 VDC Batteries, 38Ah<br>- 2 x 50 Amp Fuses |

|                          |   |
|--------------------------|---|
| <b>Requirement</b>       | - 2 x Safety Cut off Switch                                       |
| <b>Cable</b>             | 40m of 1/8" Amegraph Stainless Steel Cable                        |
| <b>Depth Measurement</b> | 0.01m/0.01ft resolution, conforms to USGS Water Supply Paper 2175 |
| <b>Inclinometer</b>      | ± 45° measurement, auto correction of depth                       |
| <b>Current Meter</b>     | Built in signal processor (Homet Plus)                            |

### REMOTE CONTROL (WIRELESS)

|                        |  |
|------------------------|--|
| <b>Controls</b>        | - Raise / Lower Control+ Battery Voltage monitoring<br>Forward/Reverse + Speed control   |
| <b>LCD</b>             | 16 char x 2 line with backlighting   |
| <b>Radio Frequency</b> | - Frequencies available<br>* USA 902.5-914.5 MHz<br>* AUS 915.5-927.5 MHz<br>(26 channels @ 1 MHz spacing)<br>- Operating Range<br>* 1 Km (0.62 miles) |
| <b>Indicators</b>      | - LED for Comms and fault indication<br>- LED for fan revolutions and ground feeler sensing  |
| <b>Outputs</b>         | Current Meter Output – OC<br>Sounder for current meter pulses  |
| <b>Power Source</b>    | 3xNiMh 2.5Ah AA batteries with built-in charger  |

### SAFETY FEATURES

|                         |   |
|-------------------------|---|
| <b>Proximity Sensor</b> | Fitted to inclinometer enclosure to prevent carriage from with motor drive controller |
| <b>Limit Switches</b>   | Fitted inside hoist to prevent cable overrun and maintain cable tension at all times  |
| <b>Electrical Fuses</b> | To protect hoist motor from overload  |

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## HORNET PLUS

### CABLEWAY GAUGING SYSTEM

*Designed & Manufactured By  
Hydrological Services Pty Ltd*



- Fully Controlled System
- Portable 12 VDC powered Hoist can be used on multiple cableways
- No Maintenance Required
- Used with Acoustic Doppler Current Profilers or Mechanical Current Meters
- Maximum Span 400 Metres Typical
- Radio Controlled Hoist, up to 1 Km (0.62 miles) range.
- Wireless Remote Control
- Easily retro-fitted to existing sites
- Ground feeler attachment is standard for hornet plus

## Description

### WHAT IS THE HORNET PLUS?

The Hornet Plus has been developed to perform river and stream discharge measurements from fixed cableways using either conventional Columbus Type Gauging Weights and Mechanical Type Current Meters or Acoustic Doppler Current Profiler (ADCP). The Hornet Plus is an ideal solution for retro fitting to an existing manned cableway system, thus minimising the personal injury risk associated with this type of gauging.

### HOW DOES THE HORNET PLUS OPERATES?

The Hornet Plus is operated from the bank of the stream. Using a wireless remote control (see Figure 1), which incorporates the latest state of art electronics and Radio Controlled Systems, the operator can manoeuvre the Mechanical Current Meter by the push of a switch to traverse across the span to be measured. Once into position, the meter is lowered to commence measurement.

The Control System operates an electric motor fitted with incremental encoder to drive the carriage and hoist from the operating side to the far side of the river and back to the start point (see Figure 2-3). The operator uses the Remote Controlled Hoist to raise and lower the Mechanical Current Meter into and out of the water. (See Figure 2-3).

#### Prior to Discharge Measurements:

The Hornet Plus takes a few minutes to set up and become operational.

The operator needs to do the following:

- a) Attach the Hoist to the Carriage

- b) Attach the Gauging Weight and Mechanical Current Meter to the Hoist
- c) Connect the Current Meter to the Amergraph cable
- d) Switch power on to operate the Hoist
- e) Connect to 1000Watt Generator or Mains to power Control System

#### To Commence Discharge Measurements:

Once the system is ready to use, the operator can lower the Current Meter in the water, and carry out accurate measurements.



Figure 1: Wireless Remote Control

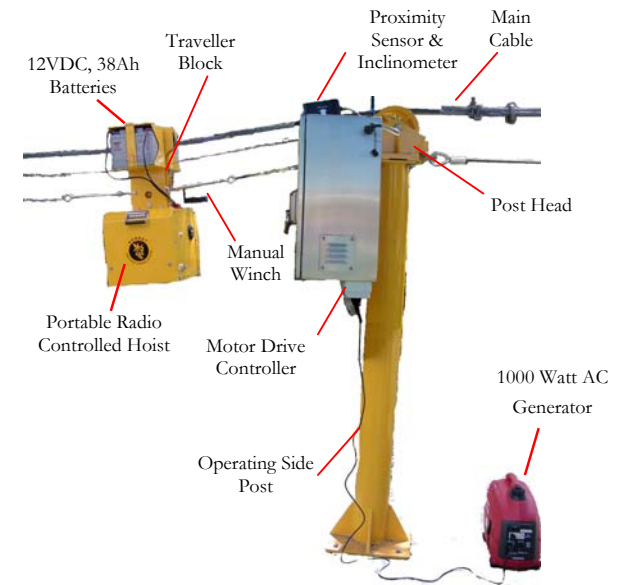


Figure 2: Operating Side

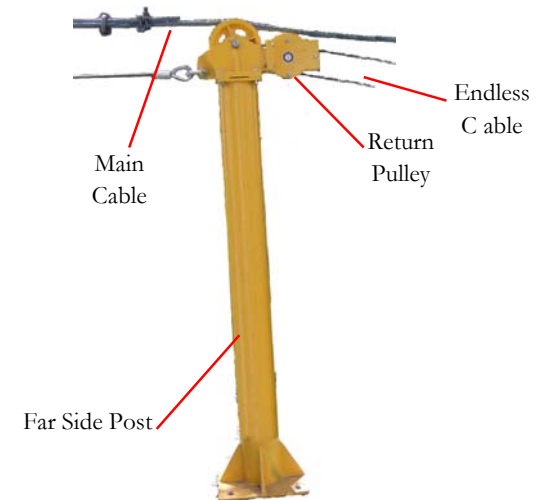


Figure 3: Far Side