

## Troubleshooting

The following is a list of actions to be taken if the unit is not working properly:

### Screen is blank

Check battery is inserted correctly. Open battery door on the bottom rear of the unit. The battery is inserted with the terminals on the inside. The + and - symbols on the battery should match the corresponding + and - symbols on the inside of the battery compartment.

### Unit does not measure all wires

Ensure that horizontal distances between wires are within the sonic beam, as shown in the performance section at the back of this manual.

### Incorrect readings

Ensure CAL mode switch is on correct position, i.e. WIRE for cable height measurement, and WALL for horizontal distance to object measurement. Ensure no walls or similar obstructions within 2 meters either side of unit, as reflections from these can interfere with correct operation.

## Warranty

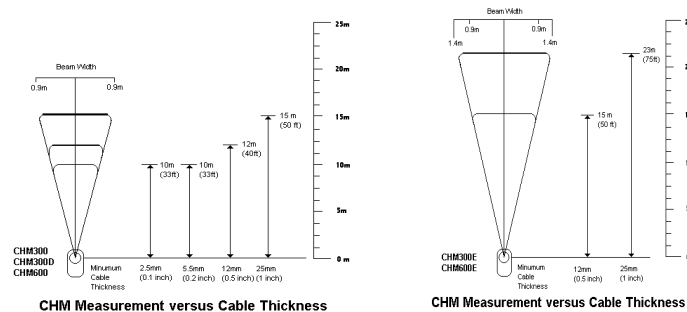
Each unit is guaranteed against malfunction caused by faulty components or manufacture for a period of 12 months from date of purchase (excluding battery). At Suparule Systems sole discretion, it will be decided either to repair, modify, or replace the unit. Should the CHM develop a fault, return the unit to your authorised dealer, with Model, Serial No., and full description of the fault. For further information, contact

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## SPECIFICATIONS

| Ambient Temp = 20 °C      | 300  | 300E                | 600                 | 600E                |
|---------------------------|--|---------------------|---------------------|---------------------|
| Range (25mm cable min)    | 3 -15m<br>(10-50ft)  | 3 -23m<br>(10-75ft) | 3 -15m<br>(10-50ft) | 3 -23m<br>(10-75ft) |
| Range (12mm cable min)    | 3 -15m<br>(10-50ft)  | 3 -15m<br>(10-50ft) | 3 -15m<br>(10-50ft) | 3 -15m<br>(10-50ft) |
| Range (5.5mm cable min)   | 3 -12m<br>(10-40ft)  |                     | 3 -12m<br>(10-40ft) |                     |
| Range (2.5mm cable min)   | 3 -10m<br>(10-33ft)  |                     | 3 -10m<br>(10-33ft) |                     |
| No. of wires measured     | 3  | 3                   | 6                   | 6                   |
| Accuracy                  | 0.5% ± 2 digits  |                     |                     |                     |
| Resolution (range <10m)   | 5 mm   |                     |                     |                     |
| Resolution (range >10m)   | 10 mm  |                     |                     |                     |
| Minimum gap between wires | 150 mm   |                     |                     |                     |
| Operating Temp. Range     | -10 °C to 40 °C  |                     |                     |                     |
| Battery Life              | 50,000 measurements (Long Life Alkaline type)              |                     |                     |                     |
| Measurement units         | Imperial (feet/inches) or metric (meters)                  |                     |                     |                     |
| Auto power off delay      | 3 minutes  |                     |                     |                     |
| Dimensions                | 205 mm X 100 mm X 70 mm (8.5 inches X 4 inches X 3 inches) |                     |                     |                     |
| Weight                    | 0.5kg (1.1lb)  |                     |                     |                     |

## PERFORMANCE



## ORDERING INFORMATION

| Item  | Order No. |
|---|-----------|
| Cable Height Meter, 3 Wire, Range 15m (50ft)                                  | CHM300    |
| Cable Height Meter, 3 Wire, Range 23m (75ft)                                  | CHM300E   |
| Cable Height Meter, 3 Wire, Range 15m (50ft), compatible with DT              | CHM300D   |
| Cable Height Meter, 6 Wire, Range 15m (50ft)                                  | CHM600    |
| Cable Height Meter, 6 Wire, Range 23m (75ft)                                  | CHM600E   |
| Dynamic Target (for use with CHM300D for horizontal distances to 45m (150ft)) | DT        |
| Leather Case (protection against scratching/damage in rugged environment)     | LC        |

# SupaRule

SYSTEMS LTD

## CABLE HEIGHT METER



## OPERATING INSTRUCTIONS

### Models

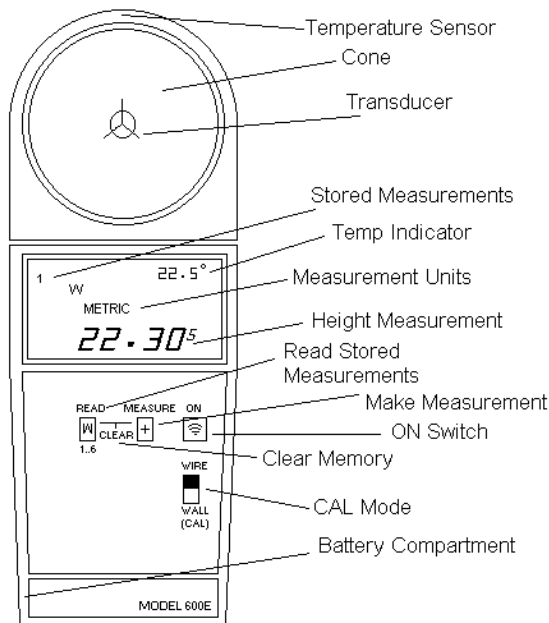
CHM 300  
CHM 300E  
CHM 600  
CHM 600E

## Introduction

The Suparule™ Cable Height Meter is a unique, handheld instrument, primarily used for the measurement of the height of overhead cables.

The Cable Height Meters come in two models: the 300 Series, for measuring the height of up to 3 overhead cables, and the 600 Series for measuring 6 cables.

The basic 300/600 models measure to a height of 15m (50ft). The 300E and 600E versions have an increased range to 23m (75ft).



## To make a cable height measurement

1. Select the required measurement units by setting the switch at the back of the unit to either M (Metric), or I (Imperial). Set the CAL mode switch to the WIRE position.
2. Press the **ON** key to power on the unit
3. Stand directly underneath the cable(s) to be measured.

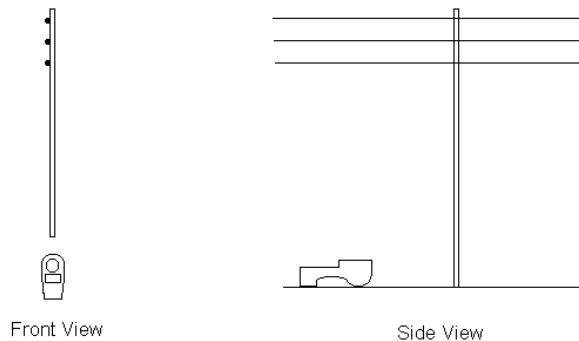
4. Press the **MEASURE** key to take a measurement. The distance to the first cable is shown in the **Height Measurement** location in the display. If there is more than one cable present, the difference in height between each cable is stored in memory.

5. Press the **READ** key to display each of the stored cable height differences (**Stored Measurements**).

The unit will automatically switch itself off 3 minutes after the last key has been pressed.

## Hints & Guidelines

Position the unit on the ground, directly underneath the cable to be measured. Align the unit in the direction of the cable, with the cone pointing towards the cable, as shown.



When taking wire measurements, ensure that there are no walls or buildings within a distance of 2 m (7 ft) either side of the meter, as reflections from these will distort the readings. Also ensure there are no trees or similar overhanging objects in the vicinity.

When measuring more than one wire, ensure that none of the wires is outside the sonic beam, as shown in the performance diagram on the back of this manual. If the wires are not vertically above one another, this could be the case. In this instance, it will be necessary to take a number of separate readings from different positions.

Water and moisture can cause the sensor to malfunction. Therefore, the meter should not be used in rain or snow. If water does get into the cone, leave it upside down in a dry, warm area.

If the display shows - - - - -, this indicates a “poor target”, and normally happens when the cables are moving due to wind, etc. Wait until the wind dies down, to get an accurate reading.

The unit operates by transmitting an ultra-sonic signal towards the wires, and measuring the time it takes to pick up the echo from that signal. It automatically compensates for the fact that the speed of sound varies with temperature, by monitoring the ambient temperature using the internal temperature sensor. The display continuously shows the ambient temperature reading. Because the temperature sensor reacts relatively slowly to large temperature changes, it is necessary to wait a minute or so after taking the meter suddenly from a warm to a cold environment, e.g. from inside a warm vehicle to a cold outside, before taking a measurement.

## CAL Mode (600/600E Models only)

The CAL mode switch allows the user to periodically check the unit, to ensure that it is still operating within specification. For cable height measurement, this switch should be in the WIRE position. When the switch is put to the WALL (CAL) position horizontal measurements to large objects, e.g. walls, can be taken.

When the unit is first used, a horizontal reading to an object, e.g. wall, from a fixed position should be taken. The reading should be entered, together with the date, into the table below. Whenever the unit is to be checked for accuracy, a reading should be taken from the same point, noting the result and date in the table. If the reading is outside of specification, the unit should be returned to your Suparule dealer for calibration adjustment.

| Date    |  |  |  |  |  |
|---------|--|--|--|--|--|
| Reading |  |  |  |  |  |