

## TECHNICAL SPECIFICATION

	<b>ST979</b>
Range	0 to 110 Deg
Over-range	+/- 5 Deg
Resolution	> 1 Deg
Accuracy	2.0%
Accuracy/Temp	3.0%
Output Resistance	0 to 5K Ohms
Working Temp	-20 to +80 Deg C
Vibration	20G, 50 to 2000 Hz, 1 Octave / min, 12 Hours
Humidity	0 to 95% Non-condensing
Immersion	IP67
Dimensions (mm)	L50 x W46 x H29
Weight	70 Grams

**STACK**  
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**ST979**

**THROTTLE / BRAKE POSITION SENSOR**

**USER INFORMATION**

**(ST541103-001)**

## INSTALLATION

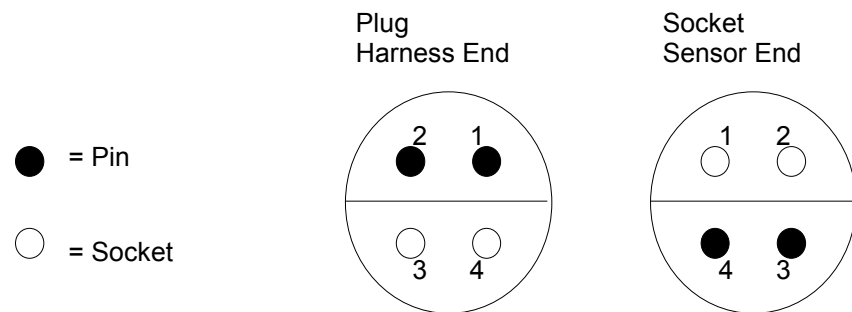
It is essential to ensure that these sensors are **NOT** mounted in a position, which is close to any devices, or associated wiring, similar to the following:

Suggested Wiring Clearances	Min space ST979
Ignition HT & coil leads	100mm (4")
Radio transmitters	75mm (3")
Fast switching inductive loads like fuel injectors, hydraulic solenoids.	75mm (3")
Any powerful source of heat	Shield with reflective material

### Sensor Connections

The ST979 connects into the ST800 system CPU via a four way, ITT Cannon Mini Sure Seal (MSS) connector. Ensure the following when installing the sensor:

- . Bending loads are not applied to the mini-sure seal connectors.
- . The Sensor wires must not be routed over sharp edges.
- . Tight radius bends should be avoided.
- . The following polarity is observed:



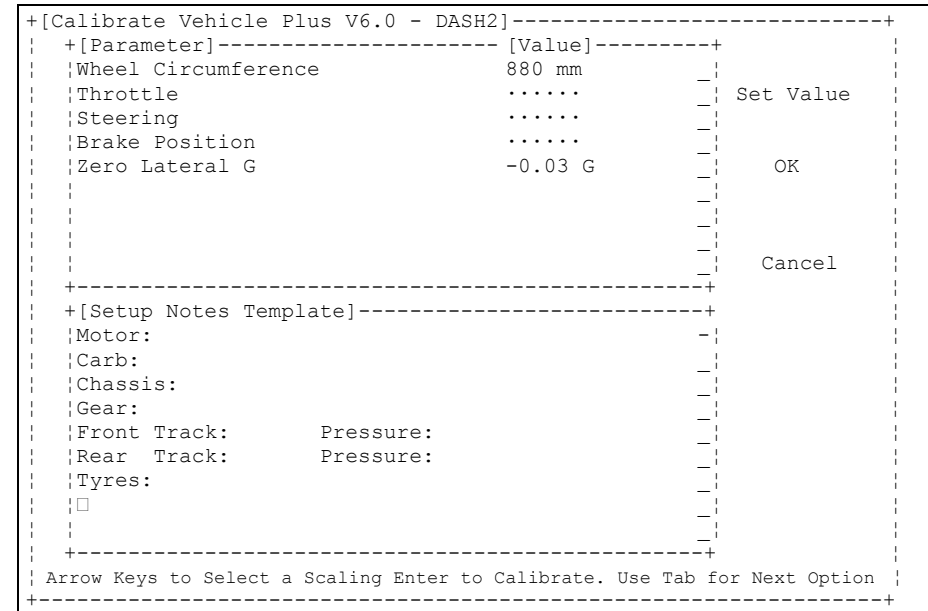
These terminals must be connected to the corresponding terminals of the selected input channel.

Pin Number	Signal Description
1	Signal from sensor
2	+5V Supply
3	No connection
4	0v

These sensors are a lever arm operated sensor with 110 degrees of movement, the arm operates in a counter-clockwise direction in normal operation. Once the intended location for fixing is determined drill 4.5mm holes and fix in position with the supplied bolts and locknuts. Using the length of cable supplied, pass the end of the cable through the hole in lever arm and attach to the throttle control. Adjust the cable tension until the lever arm is just pulled away from its rest position. This adjustment needs to be checked regularly to remove any slack in the cable, which may give rise to errors in throttle position.

### **Data Pro Menu EDIT⇒Setup Calibration**

Use this choice to calibrate the software to match the values used by the system installed on your vehicle. The following panel is displayed:



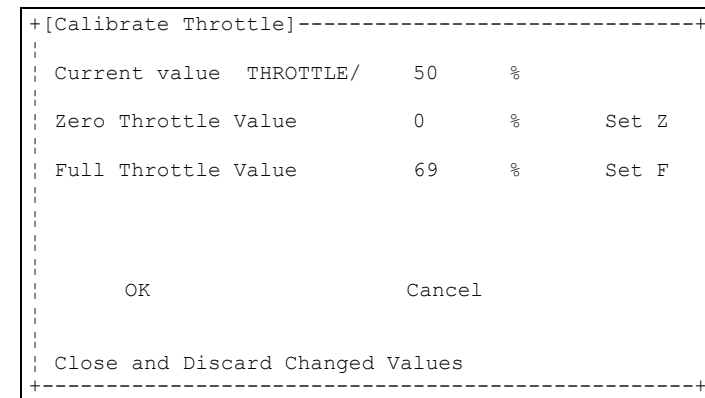
The list may include items not available with the version of the STACK Data Analysis Software installed on your PC. To enter a new calibration value or change an existing one, select the parameter and either press <Enter> or click on the Set Value field. This displays a dialog box containing a field in which you enter the value (see Sensor Calibration section).

Press OK to confirm the new value or Cancel to revert to the original value.

The lower window region is used to store your own information about the current setup. For example you could use it to store engine number, chassis settings, tyre pressures, gear ratios. This information is copied into the run details when you download the data for the run. The Edit->Run Details menu gives you access to that information at any time.

### **Sensor Calibration**

Normally the sensors will only need re-calibrating if the Throttle linkage has physically been altered or disassembled since the last time the vehicle was run.



If in doubt, select the correct setup file and re-calibrate the sensors as described below.

The need to re-calibrate sensors may arise after overhaul or service work on the vehicle.

You can calibrate the sensors either in real-time or manually (if the PC is not connected to the system on the vehicle). A dialog box is displayed, select the sensor to calibrate and press <Enter>.

### **Throttle and Brake Pedal Calibration**

The current value is the value being transmitted from the sensor. With the pedal released, select the Set Z field and press <Enter> or click on it. Now fully depress the pedal, select the Set F field and press <Enter> or click on it. When finished, return to the Calibrate screen by selecting OK and pressing <Enter> or clicking on it. Selecting Cancel aborts without saving the new calibration.