Guarantee:

The equipment is covered by a 12 months guarantee from the date of shipment. Any faults arising due to faulty materials or workmanship, within the guarantee period, will be corrected free of charge providing the equipment is returned to us carriage paid.

Certificate of Conformity:

The equipment covered by these instructions has been manufactured and tested in accordance with our quality assurance procedures and conforms fully with our published specification.

Health and Safety:

Provided that the equipment covered by these instructions is installed and operated as directed, it presents no hazard and conforms fully to health and safety regulations.

another great product

from a great british Company

SYNATEL INSTRUMENTATION LTD

Synatel Instrumentation Ltd., Walsall Road, Norton Canes, Cannock, Staffs. UK. WS11 9TB.
Tel: (01543) 277003 * Fax: (01543) 271217
*web:www.synatel.co.uk * e-mail: sales@synatel.co.uk*

M2539(A) >: SM1MAN-Syn

SYNATEL INSTRUMENTATION LTD

SpeedMaster SSM1

(inc. PulsePilot PP1)

Function Check & Calibration Instrument

Manual No: M2539

OPERATING INSTRUCTIONS

SpeedMaster Check Results

Company Name:

Date:	Product Ref. ID or Location Ref.	Normal Setting	Trip Setting 10% (if Applicable)	Trip Setting 20%	Sig./Initials

Calibration of Sensors to a Specified Speed:

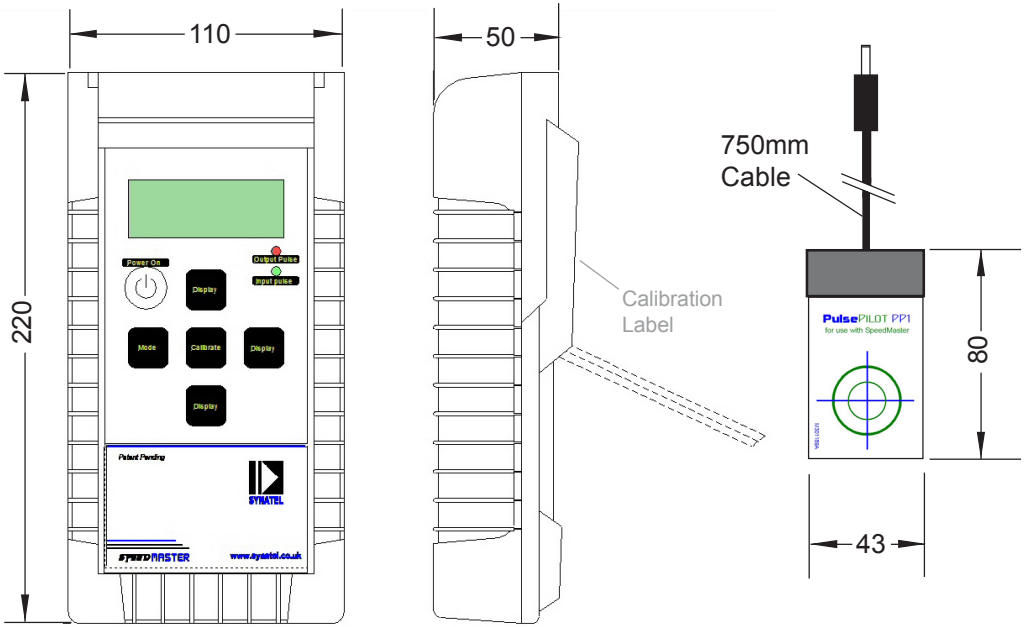
NOTE - This procedure can be carried out in the Workshop or on the machine. Most Synatel speed sensors include automatic calibration at 20% under speed. The **SpeedMaster** can be used to calibrate to any other figure if needed.
For example: A shaft is running at 100 PPM and a shutdown is wanted at 90 PPM (10% underspeed). Firstly, calculate the running speed which would shut down at 90 PPM at a 20% setting = 90/0.8 = 112.5 PPM ≈ 113 PPM
Next, follow “Method of Use” steps 1-4, then use upper and lower “display” buttons to give 113 on the display.
Ensure that pulses are being received by the sensor by looking at the input LED of the sensor and then calibrate as per the sensor instructions. Calibration is now set at 90 PPM which can be checked by using the **SpeedMaster**.

Specification:

Speed Range	10 to 3,600 P.P.M (accuracy ±<0.5%).
Supply	4 x AA batteries.
Input	**PulsePilot** transducer only.
Display	5 digit, 7 segment, green LED Display.
Power On	Plug in **PulsePilot** connector and press “On” button.
Power Off	Unit powers off automatically if no buttons are pressed for 5 minutes. It can be turned off immediately by unplugging the **PulsePilot**.

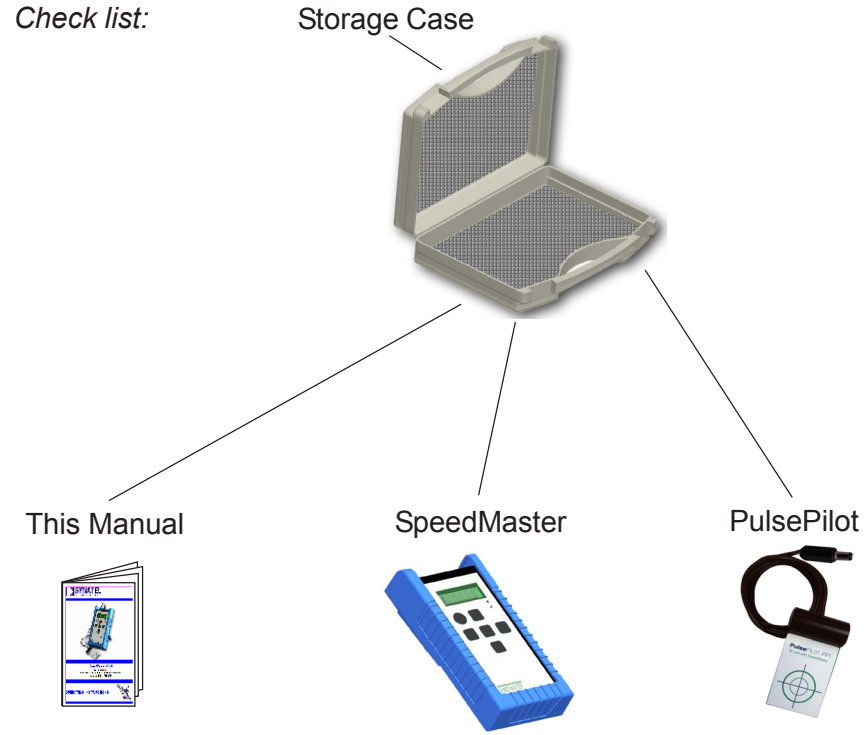
Dimensions: mm

SpeedMaster **PulsePilot**



Product Contents:

Check list:



Note: When using this unit for the first time & before attempting to switch on, remove the **SpeedMaster** unit from the rubber surround, remove battery cover (*2 screws*) and pull out battery protector tab.

IMPORTANT: The **SpeedMaster** system requires annual checking/re-calibration. Please return the unit to your supplier for correct checking & re-calibration.
There are no user parts inside the **SpeedMaster** unit, and removal/tampering of the serial number label voids warranty.
The first check/re-calibration should be 12 months from the supply date, as shown on the Calibration label on the underside of the **SpeedMaster**.

Introduction:

The **SpeedMaster** is a test instrument designed to check the function and calibration of all types of Synatel speed monitors. The system consists of the **SpeedMaster** hand held instrument and **PulsePilot** transducer.

By inserting the **PulsePilot** between the target and speed monitor, the actual shaft speed can be displayed. The unit can then override the signal from the target injecting a speed which can be reduced (or increased) in 1% steps to allow the actual trip speed of the sensor to be determined.

The **SpeedMaster** can also be used to calibrate Synatel sensors to any desired speed if the automatically calibrated speed is not suitable.

Method Of Use:

1) Plug the **PulsePilot** transducer into the **SpeedMaster** instrument and press the "Power On" button, the display will illuminate.
2) Place the **PulsePilot** transducer between the speed sensor and target.

> ⚠ **IMPORTANT SAFETY NOTICE –** When using the Synatel Whirligig speed monitoring accessory the **PulsePilot** can generally be hand held even when the monitored shaft is rotating. However all applications are different and great care should be taken with regard to personal safety.
>
> If a target system supplied by third parties is being used, the **PulsePilot** must **not** be hand held. The shaft should be stopped and locked out. The **PulsePilot** should then be attached firmly but temporarily eg with non metallic industrial adhesive tape, guards refixed if appropriate and the system restarted.

Upon switch-on the **SpeedMaster** is in input mode and the input light will flash each time a target is seen. The display will show measured speed in pulses per minute (the Whirligig can have 1, 2, 4 or 8 pulses per revolution).

[*Note: Pressing upper display button "-10%", displays 90% of measured speed. and Pressing lower display button "-20%", displays 80% of measured speed*].

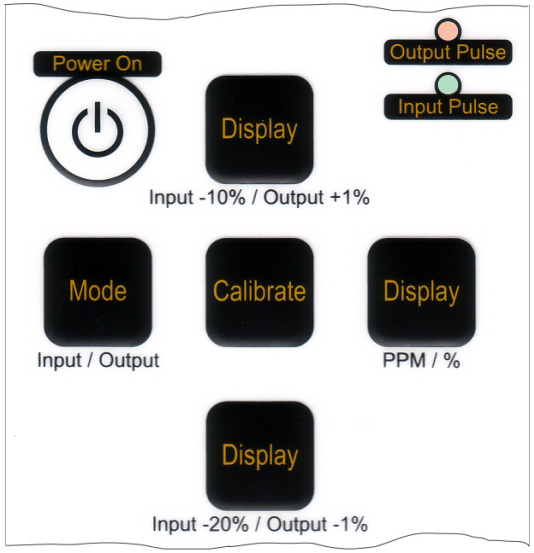
3) Press the calibrate button, this will set the **SpeedMaster** internal oscillator to the measured shaft speed, (or to 1000 P.P.M if the shaft is stationary).
4) Press the "Mode" button, the output light will flash and the calibrated pulse rate will be fed to the sensor.

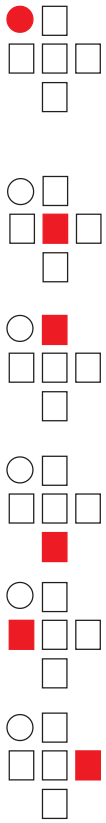
> ⚠ **IMPORTANT SAFETY NOTICE –** In this condition, the sensor is receiving pulses only from the **SpeedMaster**, shaft pulses are not monitored and the system should be observed for faults and shut down manually in event of a fault occurring.

At this point, the speed can be artificially raised or lowered in 1% steps. Pressing the "PPM/%" display button will toggle between actual speed or percentage reduction from calibrated speed. Each press of the upper display button will increase simulated speed by 1% and on the lower display button will decrease simulated speed by 1%. Holding down either button will cause the simulated speed to increment/decrement simulated speed in 1% steps.

The system should shut down when the calibrated 'trip' setting is reached, normally 20% under running speed.

Button Functions:





MODE	
Power On, press once when **PulsePilot** is connected. Unit powers off automatically if no buttons are pressed for 5 minutes. It can be turned off immediately by unplugging the **Pulse Pilot**.	
INPUT	**OUTPUT**
Sets simulated speed generated by **SpeedMaster** to be equal to measured speed.	No Function.
When pressed, displays 90% of measured speed.	Each press increases simulated speed by 1% of starting value. Holding down increments speed in 1% steps.
When pressed, displays 80% of measured speed.	Each press reduces simulated speed by 1%. Holding down decrements in 1% steps.
Press to change to 'Output' mode.	Press to change to 'Input' mode.
No Function.	Toggles between simulated speed in PPM and % of calibrated speed.