

2 Cylinder Uneven fire & 5/7/9 Cylinders Gasoline CDI by Rcexl or CH Ignitions

The CDI units were developed and intended for uneven fire engines and multi cylinders radial engine that runs on gasoline.



- 1 - Black / Red = Power from power source.
- 2 - Brown/Red/Orange = Rcexl Tachometer Output.
- 3 - 4 Pin Molex Connector CDI Sensor Hook Up Black or Gray .



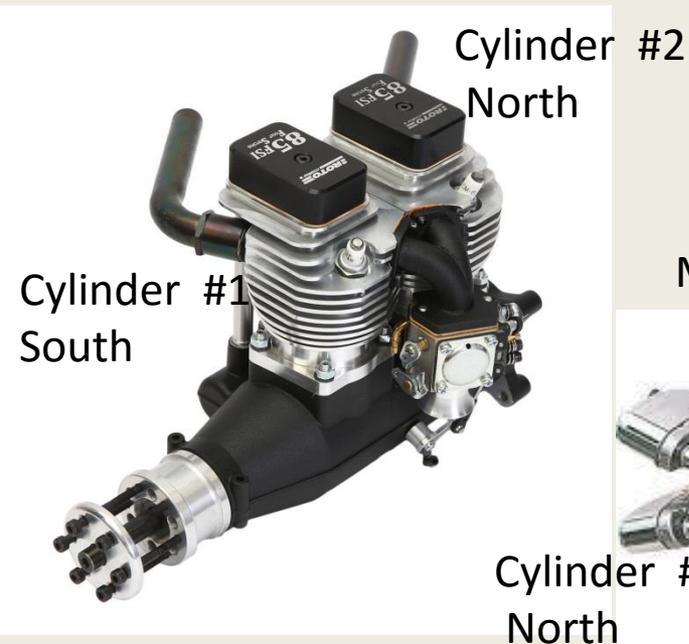
Operating Voltage

- Operating voltage range is from 6v to 9.6v for optimal output power .
- Gasoline operations use: 6v (4cell NIMH), 6.6v LiFe, A123 & 7.4v LiPo
- GLOW fuel no higher than 15% Nitro ; and MUST USE 2CELL LiPo Batteries (7.4v)

Sensor / Magnet Configuration

- The sensor is a dual output sensor and have the ability to read and use both poles of the magnets facing with South and North towards the sensor. (More explanation on the Timing Section)
- For Uneven Fire engines when cylinder #1 is at TDC and cylinder #2 is at BTDC the magnet setup will consist in only 2 magnets.
- Cylinder #1 will have a magnet that must face the sensor with **SOUTH** Pole
- Cylinder #2 will have a magnet that must face the sensor with **NORTH** Pole
(For more details on timing look at Timing Section below)

- The Uneven fire engines can have several configurations: Inline, Boxer(Flat), or “ V ”



Magnets at 180 degree



Magnets at 180 degree

Magnets should be installed South for Cyl. #1 & North for Cyl. #2.

It will be up to you on how to make your project work, How to mount the sensor and magnets.

[CH Ignitions](#) did many of those engines. Hardware may be available for your needs.



Magnets at the angle of the “V” degree

- For Radial Engines with 5,7,& 9 Cylinders the number of magnets equal the number of cylinders of the engine + 1; where number of cylinders will = **SOUTH Pole Orientation** and 1 will be **NORTH Pole Orientation**

EX: 5 cylinder radial engine will have **5 SOUTH** Pole Magnets and **1 North Pole Magnet** .

7 cylinder radial engine will have **7 SOUTH** Pole Magnets and **1 North Pole Magnet** .

9 cylinder radial engine will have **9 SOUTH** Pole Magnets and **1 North Pole Magnet** .

The magnets **MUST** be equally spaced on to the prop drive or magnet ring depending on your application and how you want to mount the magnets.

They can be mounted axial or radial on the prop drive or magnet ring.

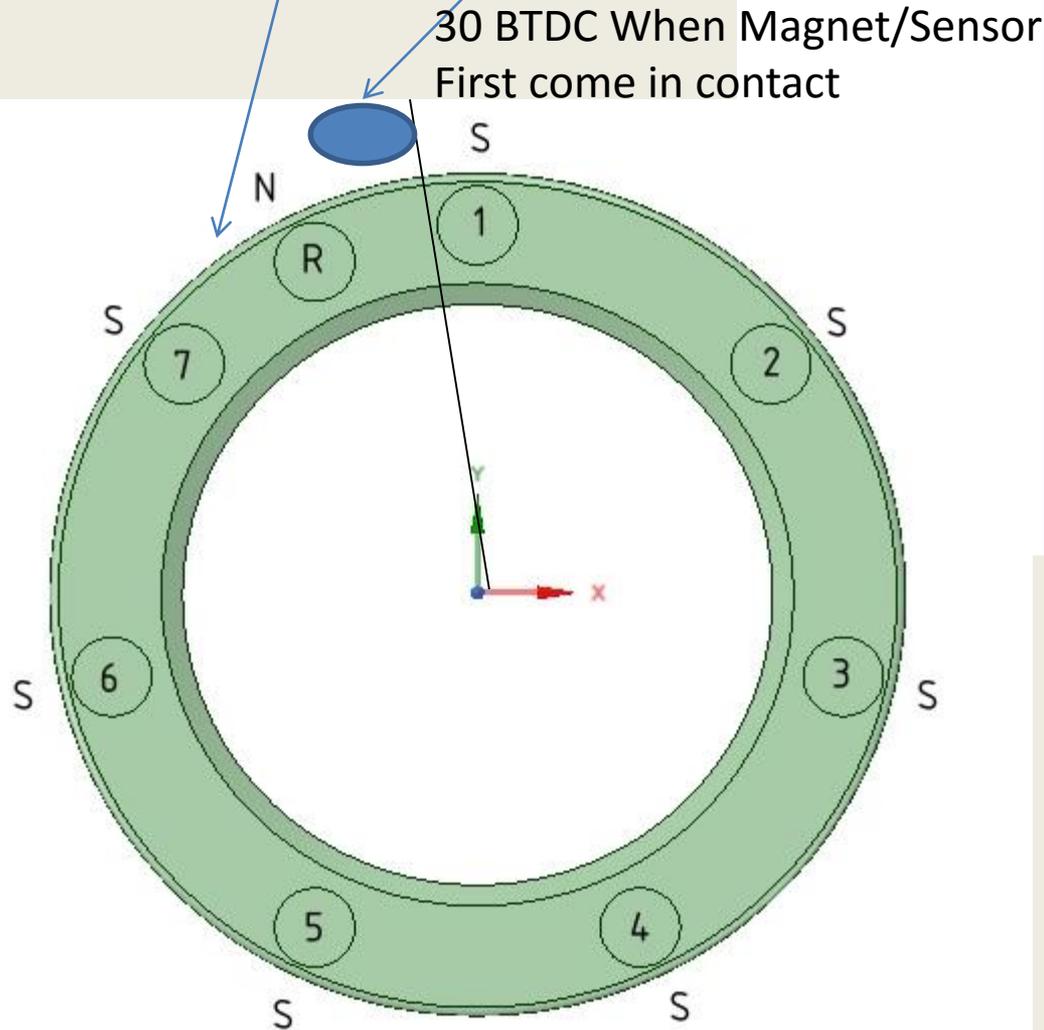
The **GAP** between the magnet active side and sensor holder not more than **1MM**

Connect the High Voltage leads as shown on the Box.

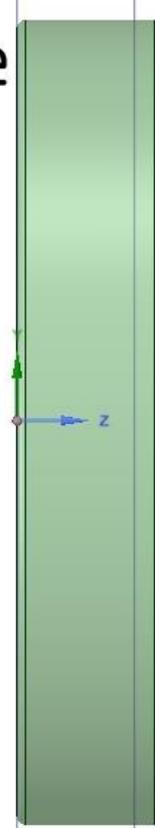
Match the number on the **BOX** with **Cylinder #**. **DO NOT CONNECT BY FIRE ORDER !!!**

Magnets **MUST** be installed on the **Crack Shaft** and **NOT** on a cam gear, it **Must rotate at 1:1 ratio**.

Example of a Radial Magnet Ring / Sensor set-up.



Prop Drive



Sensor

Gap Max 1mm

Place the North magnet at the middle Distance between Cyl #1 and Cyl.# "X" Where "X" is the last cylinder number of your engine. Example shows a 7 cylinder magnet configuration

Universal Sensor Timing Device

Device Overview,

The universal Sensor Timing Device is a necessity , a must have “Toy” for correct setting the timing on your engine according to your OEM specification .

It can be used with any CDI ignitions that has the Rcexl and/or made by Rcexl or CH Ignitions.

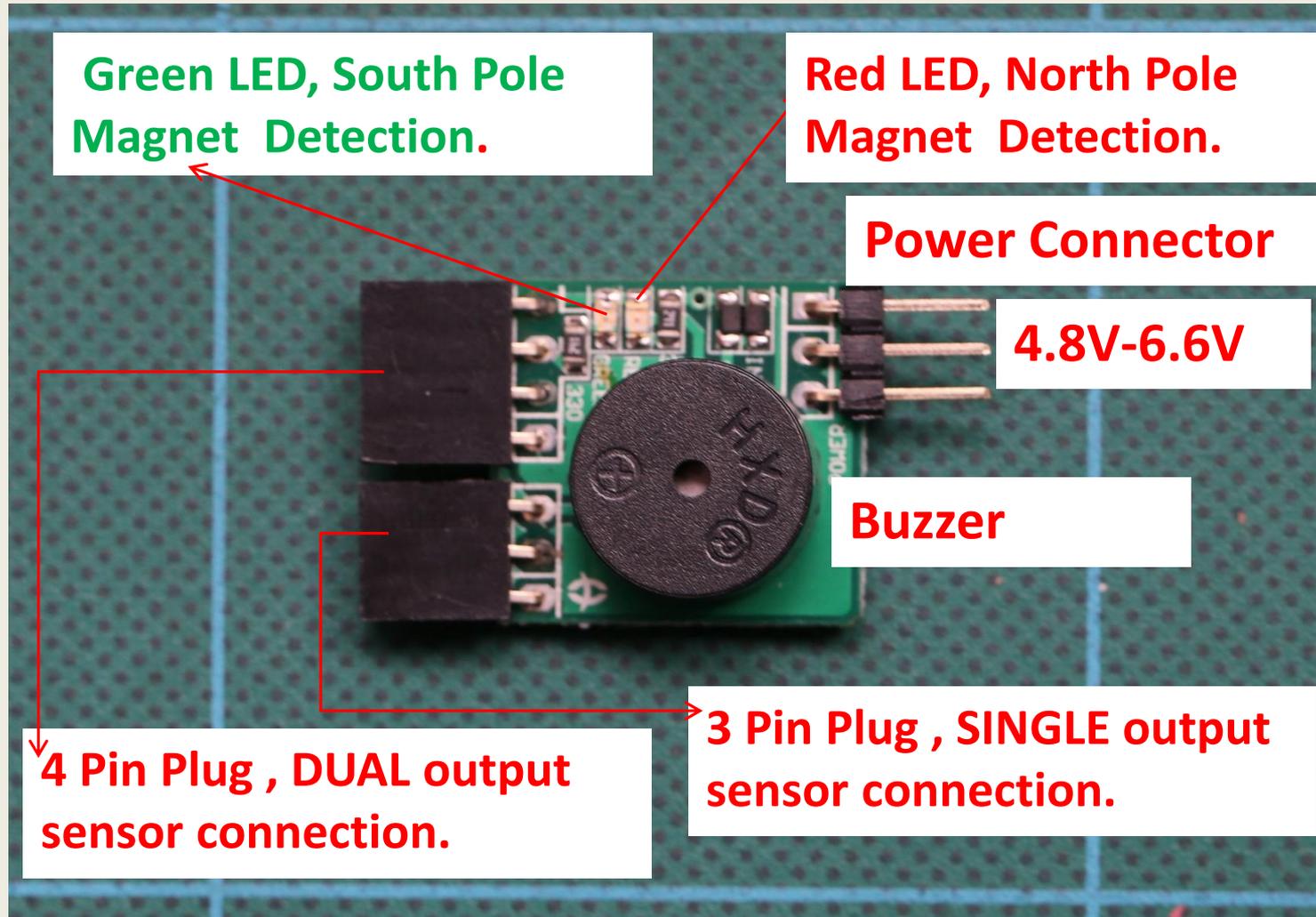
This device has the ability to work with Single or Dual output sensors.

The Single Sensors Output (3 Pin Connector) are used mostly on single and twin 2 or 4 stroke engines where is a even fire .

The Dual Sensor Output (4 Pin Connector) are used on multi cylinder 2 or 4 stroke engines; uneven twins, inline ,”V” and radial engines .

Universal Sensor Timing Device

Device Over View



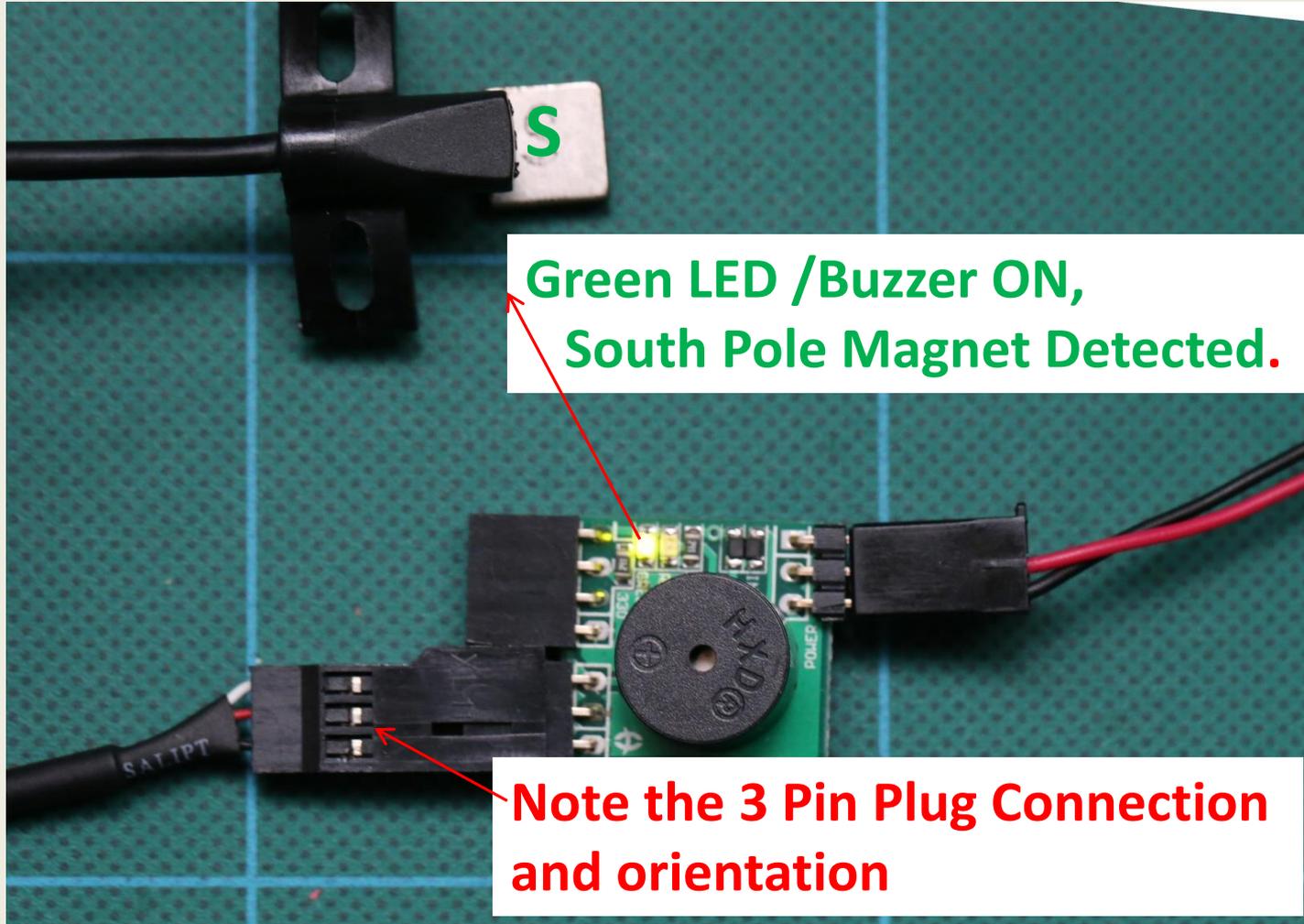
Universal Sensor Timing Device

Device Operation,

1. Connect the power, 4.8v-6.6v battery pack is need it. Do not worry about plug polarity , device is design to take care of that. The “+“ (Positive) is placed in to the middle of the connector and the “- “ (Negative) is placed on the outsides ...this way will be easy and one thing less for you to worry about.
2. For 3 Pin Plug Connector , connect the plug to the 3 pin socket connector. The **Green** LED and Buzzer will turn **ON** giving you a audible and visual indication when the SOUTH pole of the magnet triggers the sensor. The LED and Buzzer will turn **ON** when the trailing edge of the magnet and sensor first come together and will stay **ON** for the entire duration that magnet passes the sensor . The LED and Buzzer will turn OFF when trailing edge of the magnet and sensor are no longer in range. This is the time when you will know that timing need to be set . Usual 30 degrees BTDC. Some engines may very ,use manufacture manual for details on timing.

Universal Sensor Timing Device

Single Sensor Output Operation



Universal Sensor Timing Device

Dual Sensor Output, **South** Pole Operation Used on Inline, Boxer, V & Radial Engines

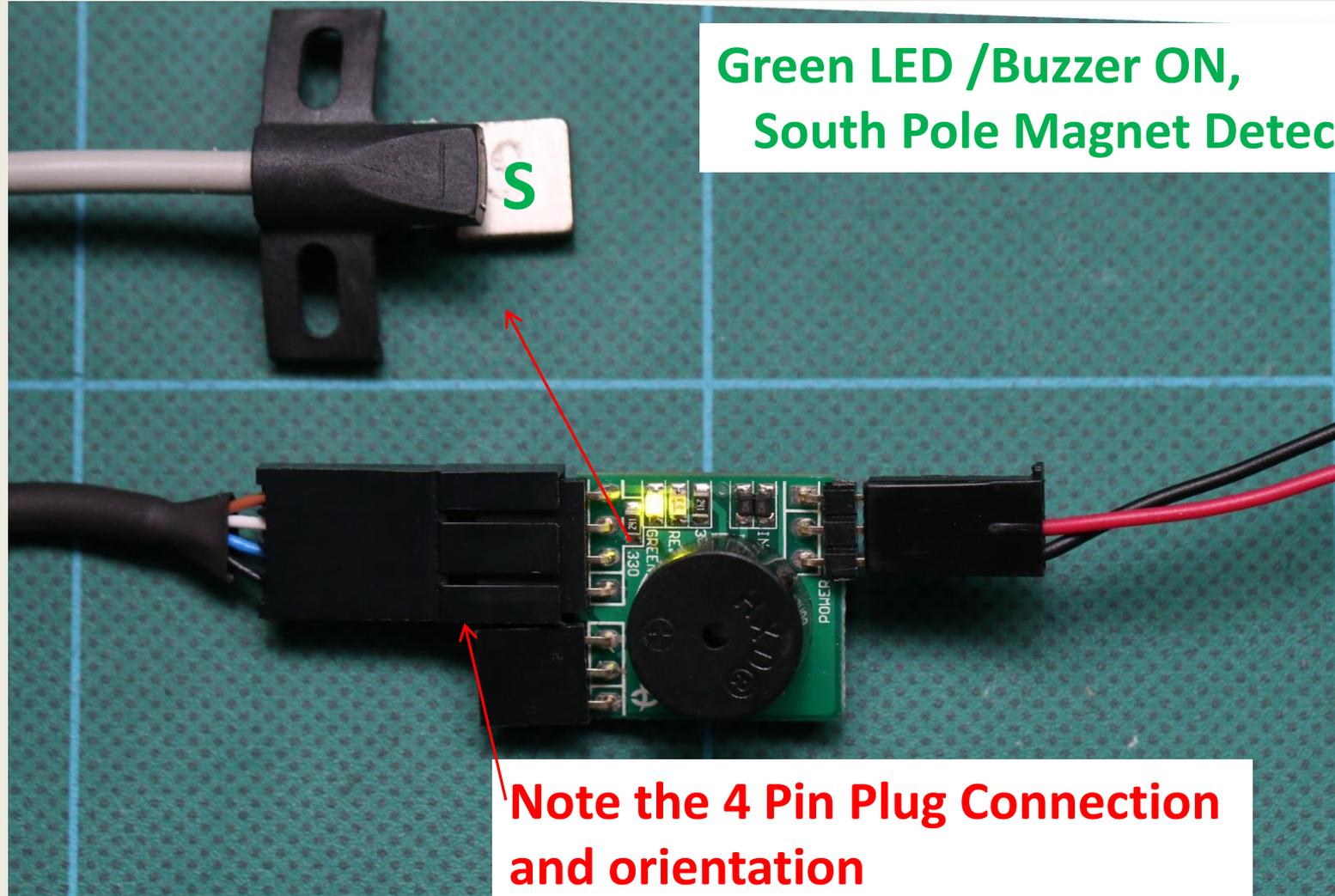
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Note: Dual Sensor Output timing is set different than Single Output Sensor. !!!

3. For 4 Pin Plug Connector , connect the plug to the 4 pin socket connector. The **Green** LED and Buzzer will turn **ON** giving you a audible and visual indication when the SOUTH pole magnet triggers the sensor. The LED and Buzzer will turn **ON** when the trailing edge of the magnet and sensor first come together and will stay **ON** for the entire duration that magnet passes under the sensor . When the LED and Buzzer will turn **ON** , this will be the time when you will know that timing need to be set . Usual 30 degrees BTDC. Some engines may vary ,use manufacture manual for details on timing. The LED and Buzzer will turn OFF when trailing edge of the magnet and sensor are no longer in range.

Universal Sensor Timing Device

Dual Sensor Output, **South** Pole Operation
Used on Inline, Boxer, V & Radial Engines



Green LED /Buzzer ON,
South Pole Magnet Detected.

Note the 4 Pin Plug Connection
and orientation

Universal Sensor Timing Device

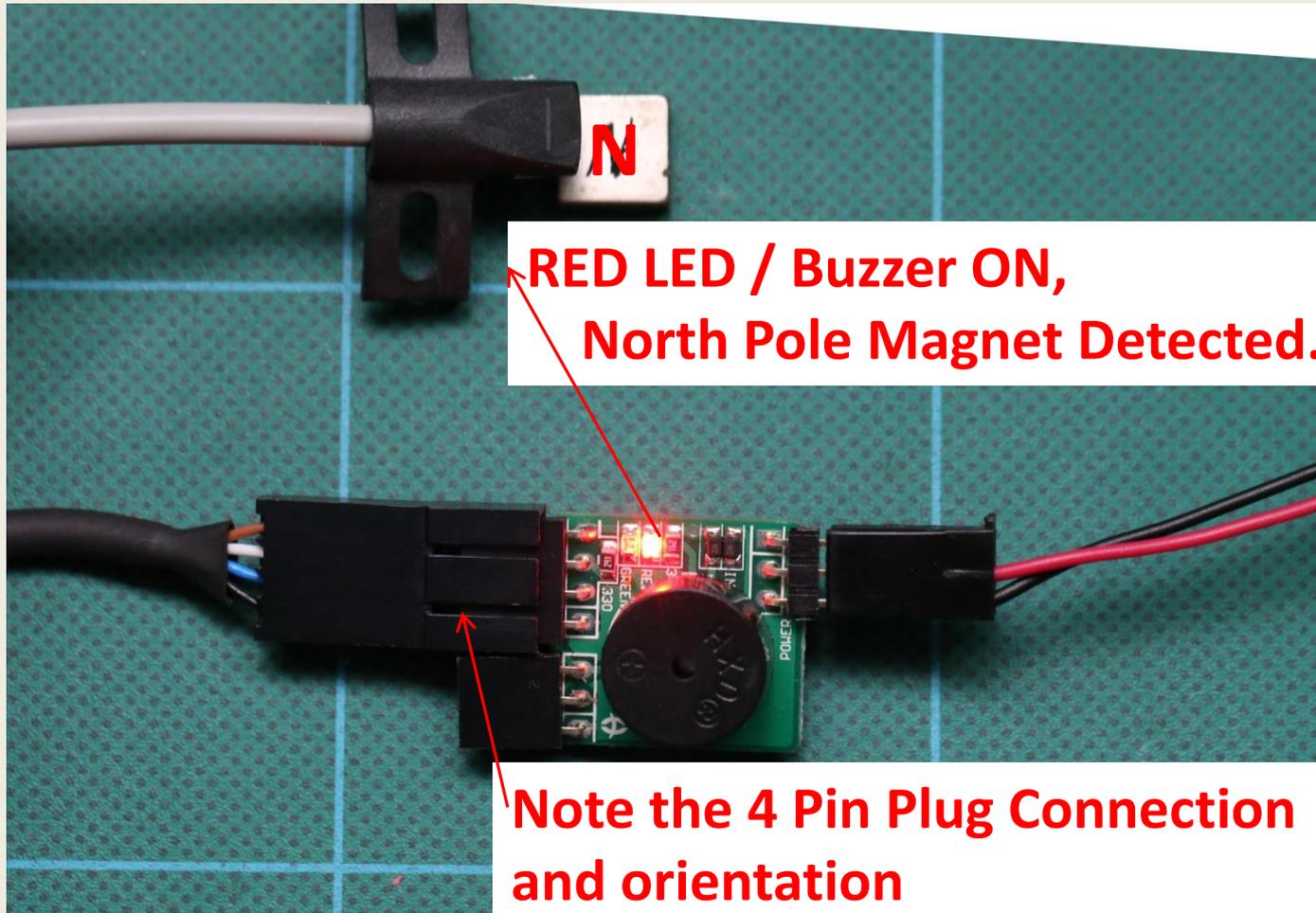
Dual Sensor Output, **North** Pole Operation Used on Inline, Boxer, V & Radial Engines.

4. For 4 Pin Plug Connector , connect the plug to the 4 pin socket connector. The **RED** LED and Buzzer will turn **ON** giving you a audible and visual indication when the NORTH pole magnet triggers the sensor. The LED and Buzzer will turn **ON** when the trailing edge of the magnet and sensor first come together and will stay **ON** for the entire duration that magnet passes under the sensor . The LED and Buzzer will turn OFF when trailing edge of the magnet and sensor are no longer in range.

The North Pole operation is not used for timing unless specified, but it must to be checked to ensure proper sensor operation , The CDI unit must see this in order to function properly.

Universal Sensor Timing Device

Dual Sensor Output, **North** Pole Operation
Used on Inline, Boxer, V & Radial Engines



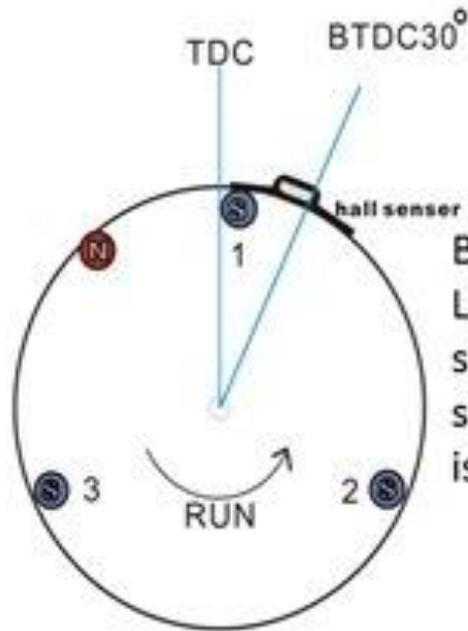
Universal Sensor Timing Device

Single & Multi Cylinder Timing Diagram

Multi Cylinder Timing Set-up

2 cyl "V", Boxer, Inline'

3,5,7,9 Radial Engines



Bring engine to 30 Degree BTDC, Spark or buzzer /Green LED should be coming ON when trailing edge of the sensor and magnet comes together. The ignition module should spark or if you use a timing device then correct set is when buzzer and/or Green LED comes ON first time !.