



IGNITION SYSTEM 3W / M1 **with microprozessor controlled auto timing**

General

For optimum operation of combustion engines an ignition system with auto timing is necessary. For easy starting a spark is ideal in the top dead center (TDC) of the engine. With increasing RPM a pre-ignition timing up to 30 degree is needed. This is achieved with our system using a high precision RPM-check by two magnets built-in the hub of the engine. The hall sensor transmits the signal to the microprocessor programmed with our engine characteristic.

Technical specifications

Temperature range: - 40°C / +65°C, ambient temperature
 Voltage range: 6V - 8,4V, nominal voltage

| | Single | Twin |
|-------------------------------|-----------------------|-----------------------|
| Operating voltage | 6 - 8,4V | 6 - 8,4V |
| Current consumption (Standby) | 10mA | 10mA |
| | ca. 100mA* / 1000 RPM | ca. 110mA* / 1000 RPM |
| | ca. 900mA* / 6000 RPM | ca. 950mA* / 6000 RPM |
| Ignition voltage | >20 KV | > 20 KV |
| RPM max | 10000 RPM | 10000 RPM |
| Magnet (red); Northpole | TDC | TDC |
| Magnet (green); Southpole | 47°**(55°) before TDC | 47°**(55°) before TDC |

* current consumption depends on the voltage of battery used with increasing voltage, current consumption goes down.

** The new grey Sensor requires a smaller angle between the magnets (Since 2008 in deliveries)

Like all other electronic devices the ignition box gets warm under operation conditions. For that reason a simple air flow has to be guaranteed. Therefore the 4 delivered rubber mounts or 2 stripes hook and look tape have to be used for installation, insuring a gap underneath the box.

Cable information

Sensor cable / multi coloured
 Red / Black long with socket
 Red / back short with plug
 Yellow / white with plug

to pick up sensor
 to battery
 connection for LED, long contact negative (black wire)
 connection for 3W tachometer
 (Output signal: positive pulse, Ground – 4V)

Info about LED

| | | |
|--|--|--|
| Ignition battery switched on | LED flashes 1 times and stays than off | Ignition in stand-by. 1 st . Rotation of engine / propeller , no spark is generated. |
| 1 st . Rotation of engine / propeller | LED stays off | Ignition activate with the next rotation of engine / propeller, a spark will be generated. |
| 2 nd . Rotation of engine / propeller | LED stays off | Ignition activated, spark activated, engine starts |
| Engine stops , ignition on | After approx. 3 mins LED flashes short 2 times. | Ignition stand-by. With the 1 st . rotation of the engine / propeller, no spark will be generated |
| Engine stops, ignition still on longer than 3min | Led flashes every 45 sec, reminding that the ignition is still on. | Ignition in stand-by. with the 1 st . rotation of the engine / propeller , no spark will be generated |

Since June 2003 the operating voltage is 6V / 5 Cells NiCd /NimH or 8,4V / 2 Cells LiPo (2S). It can be used without voltage regulators. A voltage regulator is integrated and regulate the voltage to 5V.

The ignition which were built before 2003 need 4,8V (4 Cells NiCd /NimH).

The ignition is set by factory. No adjustment is required

Important Note from praxis

Because an Ignitionsystem consists of several components like Battery, Ignitionbox, Sensor and Spark plug, a correct function of all components is vital for a safe Ignition spark. In case of service it is important to send all components to 3W. A description of the misfunction helps to save time and costs.

Trouble shooting

1. Engine starts and run in idle speed, but in higher RPM the engine dies – Battery empty or defective.
2. Ignition stops during flight but runs correctly after restart – mass problem at spark plug connector
3. Engine runs irregular at high RPM or unsteady – defective spark plug connector or defective Ignitionbox also damaged Ignition cable.
4. Engine dies in low RPM – defective Ignition coil (in Ignitionbox)?

All symptoms implies a correct Carburetor setting. Special attention has to be given for a correctly balanced Propeller because due to incorrectly balanced Propellers the mass connection on the spark plug connector could be damaged by vibrations. The spark plug connector needs a firm seat. An Additional remedial action would be to use a small hose clamp if the hexagon of the spark plug is worn out.