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PICO TECHNOLOGIES

Secondary ignition pickup (capacitive with BNC)

MI074 - PP178

Due to the high voltages involved in secondary ignition systems, it is not possible to make measurements by direct connection. Attempting to make a direct connection will almost certainly damage the measuring instrument.

The MI074 is a capacitive pickup that simply connects around the insulation of an ignition circuit component such as a plug wire. This avoids the need for direct connection.

The MI074 comes with a shielded 1.8 m (6 foot) lead. It is suitable for use with conventional ignition systems and most HEI and DIS systems. Our library of Automotive Waveforms contains example waveforms captured using a PicoScope automotive oscilloscope and the MI074.

Although ideal for use with a PicoScope automotive oscilloscope, the MI074 pickup can also be used with most other makes of oscilloscope provided they have an waveform invert option.

How to use the MI074 Secondary Ignition Pickup
Safety precautions before use:

- Keep the lead away from pulleys and other moving parts
- Keep the lead away from heat
- Never let the pickup come in direct connection with primary or secondary voltage (otherwise the PicoScope may be damaged)
- Always use the ground clip
- Do not let the metal portion of the pickup contact a ground

Connecting the MI074:

- Connect the MI074 to the automotive oscilloscope before connecting to the vehicle
- Connect the ground clip to a good ground on the vehicle
- Connect to vehicle

For...

- **Standard Ignition**: clip the pickup around the coil wire (or one plug wire at a time)
- **Integrated coil**: clip the pickup around the central location on the distributor cap
- **DIS**: clip the pickup around one plug wire at a time

Typical Uses
Whilst HT leads would appear to be components from the past, the secondary ignition pick up lead is far from redundant. We have relied on these devices to obtain critical secondary ignition information for years, assisting with diagnosis surrounding misfires and emission failures. With the relentless introduction of COP devices there remains the need to connect between a COP unit and spark plug using the MI074 in conjunction with the TA037 for “hands free” intermittent misfire detection under road-test conditions. Here we can monitor secondary ignition events long after the coil has been switched off, so revealing the activity in each cylinder under true operating conditions.

Typical examples of use:

- Confirmation of Secondary ignition events
- Can be applied to a variety of HT ignition systems, Conventional, Wasted Spark, COP and Cartridge style ignition.
- “Hands free” Misfire detection. (Unlike the COP/Signal probe)
- HT integrity tests
- Confirmation of Coil on Plug serviceability under load