

**ANGULAR PULSES GENERATOR
AND MULTIPLIER**

Thermal engine analysis

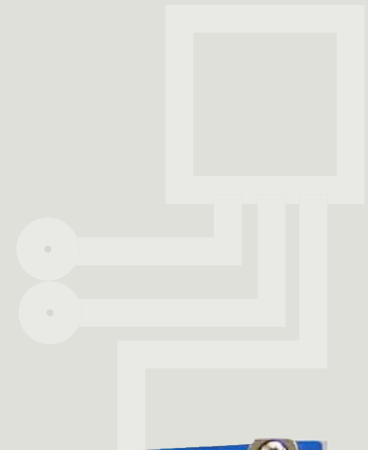
Pulse multiplier

**Increase angular resolution
up to 60 times**

Torsional vibration measurement

The FFR-M module generates an accurate high resolution angular pulses from the existing data of the engine

- ✓ *Reproduce the missing pulses from a 60-2 cogwheel*
- ✓ *Replace an angular encoder*
- ✓ *Interface with sensors used in automotive field*
- ✓ *Setting by mini-keyboard and serial link*
- ✓ *Output resolution up to 0.1°*



FFR-M B2
PULSE MULTIPLIER

OVERVIEW

The FFR-M module delivers the angular pulses by multiplying the original number of pulses as well as by adding pulses where there are missing teeth.

It delivers the angular and synchronization signals, which can be used by a combustion analysis system, like OSIRIS.

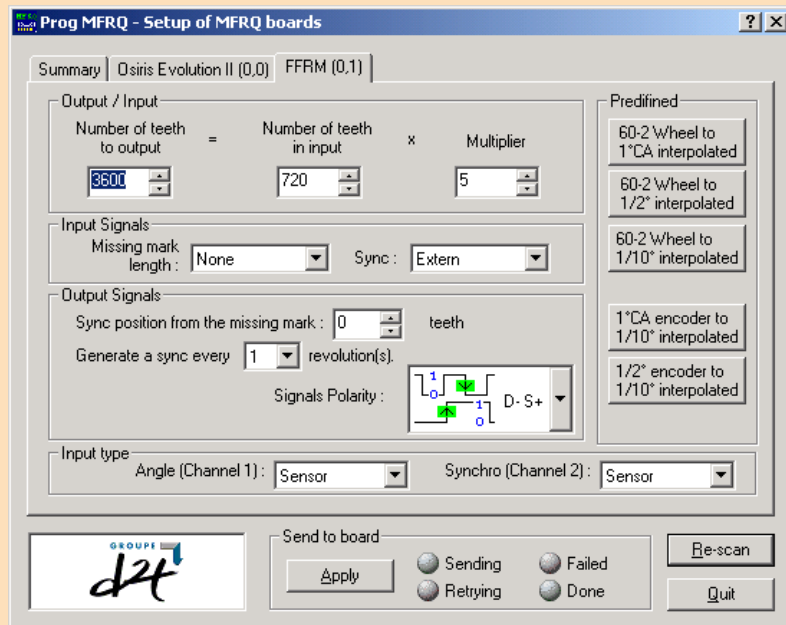
It is an alternative solution to angular encodes for fast acquisition made in crank angle, and the engine cycles analysis made from a toothed wheel.

When the FFR-M module is used with OSIRIS, the single board can be integrated in the rack of the combustion analysis system.

CONFIGURATION SOFTWARE

The FFR-M parameters are put either by the means of the mini-keyboard located on the front face, or by the means of a configuration software as shown opposite.

Only one windows is required to set all the parameters.



SOFTWARE INTERFACE

TECHNICAL SPECIFICATIONS

Mechanical and electrical features

according to harmonized standards
 CE compliance EN 50081-2 (Emissions),
 EN 50082-2 (Immunity),
 EN 61010-1 (Safety requirements for electrical equipment).

Operating temperature from 0 to 50 °C

Inputs angle and synchro

Type differential voltage
 Impedance 800 kΩ (differential)
 400 kΩ (common)
 Resolution > 100 mVp (sensor)
 Sensor power supply 12 V d.c., 50 mA protected
 Max. frequency 150 kHz

Output angle and synchro

Level 0-5 V or 0-15 V
 Switching time ≤ 20 ns
 Max resolution 0.1 CA

Communication

Serial link RS232, chained modules
 Format 19,200 bits/s, 8 data bits, parity even, 1 stop bit

Dimensions and weight

MODULE 10T
 Dimensions 3U, 10TE, 160 mm
 Weight 0.6 kg
 MODULES B2 and S2
 Dimensions 3U, 14TE, 220 mm
 Weight 1.1 kg

Power supply

MODULE 10T and Single board for OSIRIS rack 5 V (200 mA), ± 15 V (130 mA)
 MODULE B2 from 10 to 18 V d.c., (<0.6 A unloaded).
 MODULE S2 from 115 to 230 V a.c., (<0.05 A unloaded)

All D2T products benefit from a one-year back-to-factory parts and workmanship warranty. Technical specifications may be modified without prior notice.