

# MIO F01 - Frequency Module

## » FREQUENCY MODULE



The MIO F01 module is a standalone device providing four frequency inputs for conditioning of torque, speed, position, and frequency measurements. It provides advanced conditioning functions of target signals, such as torsion measurements and crank angle signals management.

The result of the calculations can be distributed via EtherCATnetwork. Integrated safety functions switch up to 8 digital outputs or redirect the results to one of 4 available analog outputs.

The system impresses with its variability. Signals with up to four singularities are safely processed in the entire frequency range to a resolution of up to 0.1 °.

For comfortable, front, cabling of the outputs, this module can be combined with a MIO E01 to a 19" x 1HE module.

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### Benefits

- > Modular, compact and mobile: Size (W x H x D) 222 x 43 x 148.5 mm (1/2-19" x 1U x 148.5 mm), Weight: 1 kg
- > Polyvalent: suitable to condition all frequency measurements needed at test cell in one device:
  - Speed measurement
  - Torque measurement
- > Easy integration: standalone (analog and digital outputs) or integrated into an EtherCAT network
- > Advanced: integrate calculation possibilities on measured signals:
  - Comparison
  - Filtering
  - Monitoring
  - ...

### Application

- > Condition torque and speed measurements for control loop at test cell
- > Manage safeties upon thresholds overshoots (over-speed, torque, etc...)
- > Allows a torsion analysis of the whole shaft line at test cell (from dynamometer to engine), gear boxes analysis, clutch analysis, acyclism measurement
- > Provides engine synchronization signals like CDM and TRIG to combustion analysis systems (e.g.: FEVIS)

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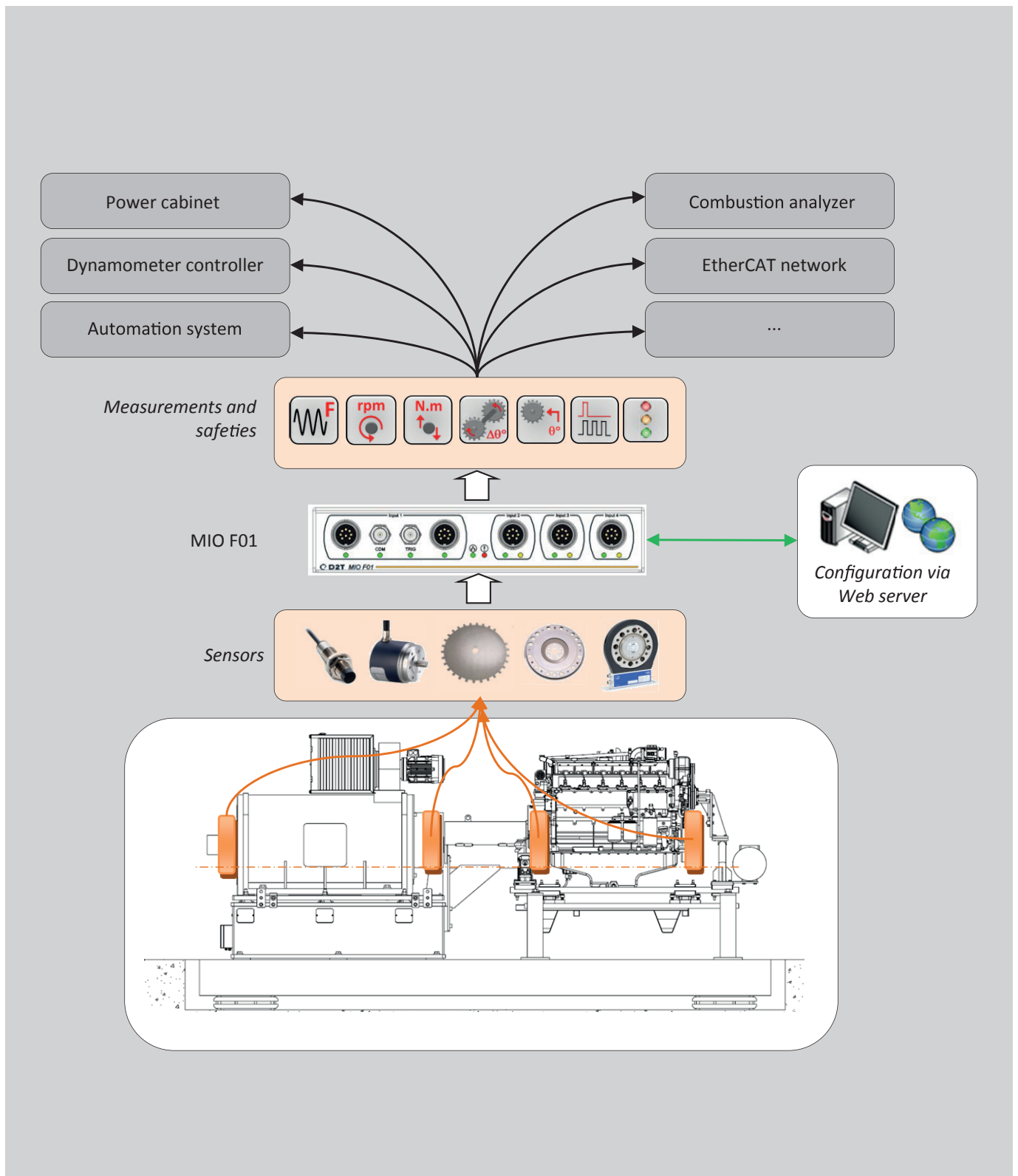
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## Technical Data

Frequency inputs	Number: 4 Level: 0.4Vp to 60Vp Frequency: 0.1 Hz to 240kHz Sensors: Magneto resistive, Hall effect, variable reluctance Encoders (TTL, RS422, LVDS) Torquemeters with frequency output Sensor supply: - DIN8: + 5VDC / 100mA and 24VDC / 100mA - DIN12: + 5VDC / 500mA and $\pm$ 15VDC / 100mA
Analog outputs	Number: 4 Type: configurable, isolated $\pm$ 10V (16 bits 10kHz)
Digital outputs	4 x Digital output configurable, TTL 0...5V 4 x Digital output configurable, dry contact 500mA / 50V
Target management	Number of pulses: 1...3,600 Type of singularities: none, 1 additional mark, 1 different, 1...4 missing marks Singularities: 0...4
Scope of supply	Description
Connexions	Inputs: Binder 8, DIN 12 and BNC (front face) Outputs: Sub-D 15 pins (Rear face)
PC Interface	EtherCAT or Ethernet 100 Mbits/s (RJ45 connectors)
Configuration	MIO Editor or WebServer
Size (W x H x D)	222 x 43 x 148.5 mm (1/2-19" x 1U x 148.5 mm)
Weight	1 kg
Operating temperature	- 20...+ 60 °C
Storage temperature	- 40...+ 85 °C
Relative humidity	5...95% at 50 °C (non condensing)
Supply voltage range	+ 9...+ 30VDC
Standards	EMC 2004/108/CE, IEC61326-1