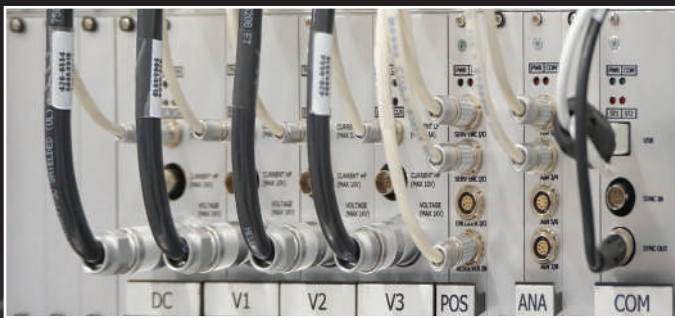


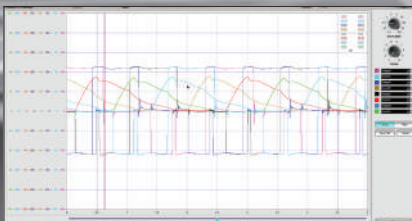
PMM-10

POWER MEASURING MODULE

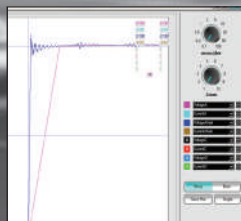
- Fast data - 10 Mhz Burst data, 200 kHz Streaming data
- Numerous power and efficiency calculations
- Synchronized calculation of Power and Efficiency values



- Fast Data for Improved Resolution and Anomaly Detection



4-Phase Voltage & Current



10 Mhz (blue) & 200 kHz (pink) signals



D&V's PMM-10 Power Measuring Module is a precision measuring system that is suitable for use when testing hybrid electric motors, motor controllers/drives, BSG/ISG's and other rotating electrical devices.

The modular PMM-10 can be assembled with a maximum of 10 modules per rack, and a second rack can be added, to tailor it for the specific measurement requirements of the application.

Available modules:

- Voltage / Current Input Module
- Analog Input Module
- Position Sensing Module
- USB Interface Module

Features

- Standard 19" rack mount format; 13U including patch panel
- Displays RMS and MRV values of Voltage and Current signals
- Selectable buffer periods: 1T, 10T or 100T
- Burst data at 10 MHz for 50 ms with configurable trigger and pre-trigger buffer size
- All data measurement channels are synchronized to within 100 nanoseconds.
- Calculated values (Power, Efficiency, etc) are also synchronized to within 100 nanoseconds of measured data
- Various formulas for calculated values can be implemented on raw or sinusoidally filtered data:
 - Active Power
 - DC Power
 - Mechanical Power
 - Apparent Power
 - Power Factor
 - Efficiency
- Diagnostic Patch Panel included
- High speed USB interface

Module specifications:

A) Voltage / Current Input Module

Voltage channel:

- Burst data rate: 10 mega-samples per second
- Measuring range: 0-1000V peak (700V RMS on sinusoidal signal)
- 4 measurement range choices: 1000V, 500V, 250V, 125V

- Accuracy +/- 0.1% of range +/-0.1% of measurement
 - 1000V range +/- 1V +/- 0.1% of measurement
 - 500V range +/- 0.5V +/- 0.1% of measurement
 - 250V range +/- 0.25V +/- 0.1% of measurement
 - 125V range +/- 0.125V +/- 0.1% of measurement

Current channels:

- Burst data rate of 10 mega-samples per second
- Time mismatch between current and voltage channels less than 20 nanoseconds
- Channel range of 0-500 mA
- Dual inputs
 - Standard LEM current sensors (for low speed applications up to 100 kHz)
 - Rogowski coil sensors (for high speed applications of 1 - 5 MHz)
- Measurement range of 0-600 A
- Accuracy: limited by LEM or Rogowski coil specifications

B) Analog Input Module

Analog input channels:

- 8 input channels per card
- +/- 10 V signal input range
- Sampling frequency: 20 kHz

C) Position Sensing Module

Resolver input channel:

- Inputs for SIN, COS and Excitation signals
- Frequency range: 1-25 kHz
- Sampling frequency: 200 kHz
- Range: 0.05V – 10V RMS
- Max common mode offset: 10Vdc
- Accuracy: 0.3% full scale
- Input resistance: > 20 kOhm
- Excitation frequency accuracy: 0.01%

Encoder input channels:

- 3 universal U, V, W inputs
- Inputs for A,B, Z pulse
- Max input frequency: 1MHz
- +/-5V symmetrical input range

