PowerView4 HMI Module

Ignition and Knock Control Visualization

MOTORTECH®

Contents

PowerView4 – HMI Module

The PowerView4 is a compact HMI module (Human-Machine-Interface) for data visualization of MOTORTECH control units. On more than 25 screens the 7” multi-touch display supports the full visualization of the most important operating data of MOTORTECH ignition and knock control as well as the possibility to adjust individual device parameters. Fault diagnoses can be carried out conveniently by the operating personnel in the field, without additional use of a laptop.

The touchscreen enables intuitive navigation through the various menus and display elements. The most important operating data can be easily recorded on the supplied SDHC memory card and transferred to a computer via USB mass storage for evaluation purposes. The visualization functions are factory activated on all devices.

General Features:

- Visualization of ignition (MIC100, MIC3, MIC3+, MIC4, MIC5) and knock control (DetCon2, DetCon16, DetCon20) via CAN bus
- Intended for installation in a control panel door
- Allows the runtime adjustment of individual device parameters
- Various display settings (languages, date, display calibration, etc.)
- Access control
- Day and night mode

Ignition Control (MIC100, MIC3, MIC3+, MIC4, MIC5):

- Overview with status indication for
  - Pickup signals
  - Active schedule
  - Analog display of engine speed
  - Ignition timing
  - Spark plugs (operating hours)
- Display of global ignition timing dependent on
  - Base ignition timing
  - Potentiometer adjustment
  - Analog current and voltage input
  - Speed curve
- Displays the ignition of each cylinder
  - Ignition voltage
  - Misfires
- Display of misfires
  - Primary and secondary sided wiring errors
  - Type of error (no connection/short circuit)
- Display and adjustment of energy
  - Spark duration
  - Spark intensity
- Display and adjustment of firing angles and ignition energy
- Self test activiation
- Warning, alarm and error messages

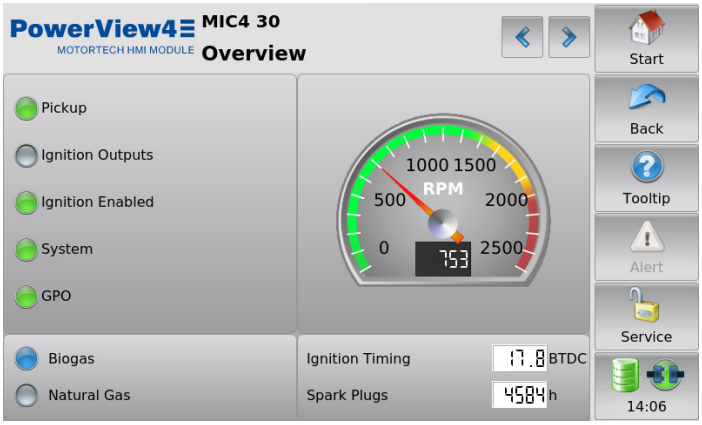
Knock Control (DetCon2, DetCon16, DetCon20):

- Overview with status indication for
  - Analog output signal
  - Knocking intensity
  - State of reduction
- Fault message for
  - Low speed
  - Synchronizing pulse
  - Defective knock sensor
- Display of trend data
  - Knocking intensity
  - Output signal
- Display of knocking intensity

Data Visualization of Ignition Control

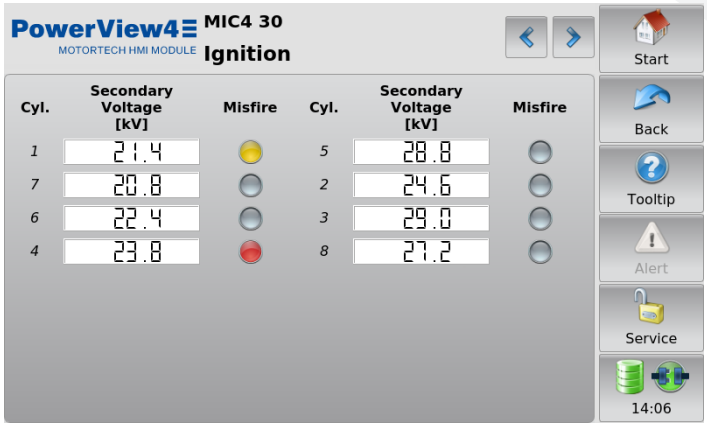
MIC100, MIC3, MIC3+, MIC4, MIC5

MIC Overview



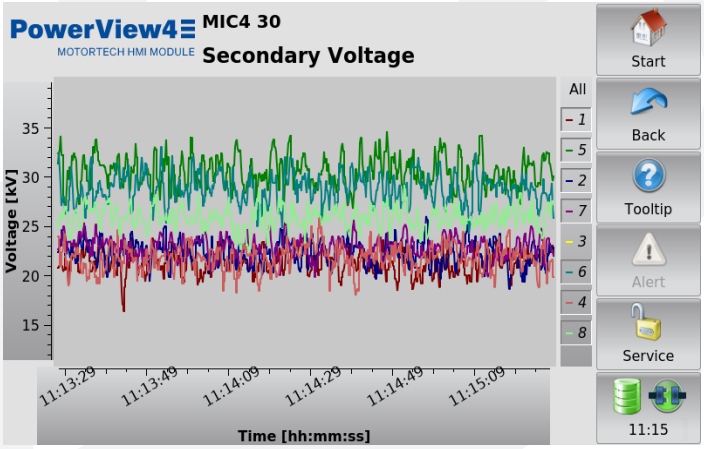
- Status displays (pickup, ignition outputs, ignition enabled, system status, schedule)
- Displays the current engine speed
- Shows the current global ignition timing in °crankshaft
- Display of the operating hours of the spark plugs

Ignition



- Display of the estimated secondary ignition voltage for each individual cylinder
- Display of current and past misfires of each individual cylinder

Secondary Voltage

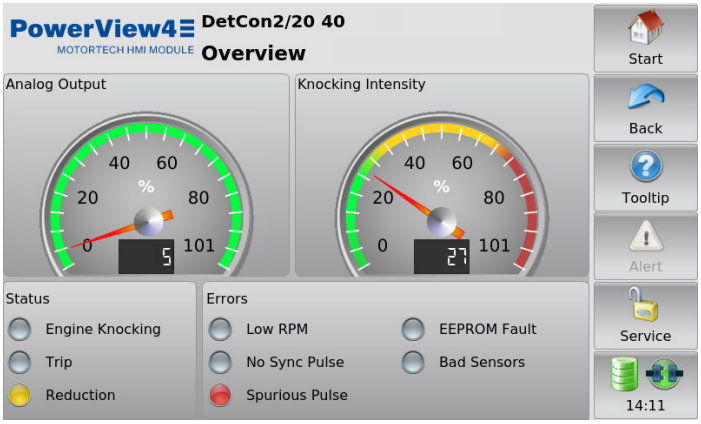


- Shows the estimated secondary voltage of all selected cylinders
- Cylinders can be displayed and hidden individually

Data Visualization of Knock Control

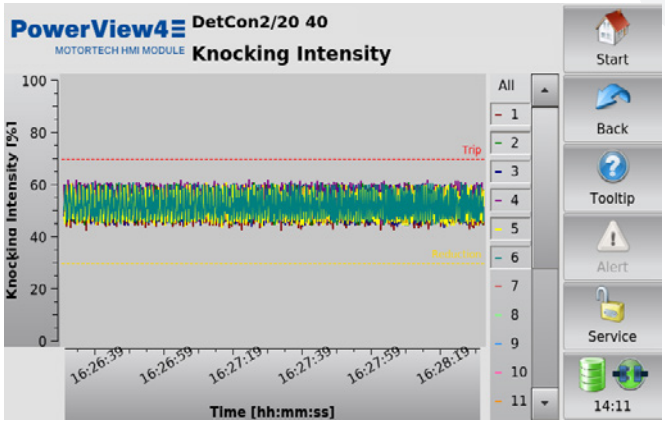
DetCon2, DetCon16, DetCon20

DetCon Overview



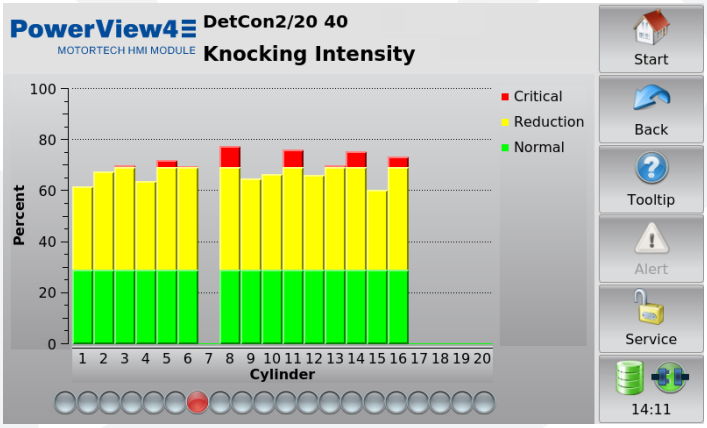
- Status displays (engine knocking, active load reduction, engine shutdown, signal errors)
- Displays the analog output signal strength
- Displays the knocking intensity in percent
- Display of sensor errors

Trend Knocking Intensity



- Shows the knocking intensity progress of all selected cylinders
- Cylinders can be displayed and hidden individually

Knocking Intensity



- Display of knocking intensity for each cylinder
  - Green: The knocking intensity is within the normal range
  - Yellow: The knock control reduces knocking
  - Red: Critical engine state
- Additional status display for sensor errors at the cylinder

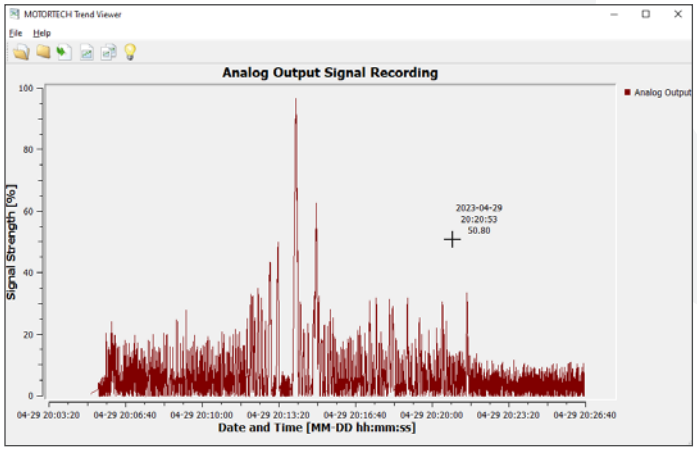
TECHNICAL DATA:		
Display	Screen diagonal	178 mm (7“)
	Touch technology	Projected capacitive multi touch
	Colour depth	18 bit (262.144 colors)
	Resolution	800 x 480 pixels
	Brightness	400 cd/m² typical
Communication	CAN-Bus	2x CAN (ISO/DIS 11898)
Memory	SD card slot	4 bit MMC/SDIO/SD/SDHC
	RAM standard	512 MB 32 bit DDR3L
	eMMC flash	4 GB MLC eMMC
Power Supply	Supply voltage	Nominal voltage: 24 V DC
	Power consumption	5.3 W typical
Housing	Front	3.0 mm toughened glass
	Frame	Fine zinc alloy, matt chrome
	Rear	1.4016 stainless steel
	Protection class	IP66 (front), IP20 (rear)
Device Dimensions	Width	206.9 mm (8.15 inch)
	Height	126.2 mm (4.97 inch)
	Depth	35.6 mm (1.40 inch)
	Weight	861 g (1.90 lbs)
Climatic Environmental Conditions	Operation	0 °C to +60 °C (+32 °F to +140 °F)
	Storage	–20 °C to +70 °C (–4 °F to +158 °F)
	Humidity	5% to 90% without condensation

ORDERING INFORMATION:		
P/N	Description	Supersedes
06.05.150	PowerView4 HMI module incl. - Factory activation of ignition and knock control visualization - Harnesses for power supply and CAN connection (15 m / 50 ft each) - SDHC memory card, 16 GB, pre-installed - USB stick with MOTORTECH Trend Viewer visualization software and operating manuals	06.05.085

Visualization Software

MOTORTECH Trend Viewer

The MOTORTECH Trend Viewer visualizes engine operating data recorded with the PowerView4 HMI module. The data can be exported as a CSV file and as a graphic, enabling detailed analysis and further processing on a computer. The Trend Viewer visualization software is included with the PowerView4 HMI module.



Product Overview

Ignition Controllers
MIC100, MIC3+, MIC4, MIC5

MOTORTECH's ignition controller platform is designed to meet the special needs of cutting edge industrial gas engines. Gas engines with up to 20 cylinders can be controlled efficiently and reliably. High adjustable ignition energies (MOST*), accurate spark timing and diversified online diagnostics help to improve engine efficiency, spark plug lifetime and availability of the equipment under the strictest emission regulations.

*Patented Technology (except MIC100 series)

MIC3+
MOTORTECH IGNITION CONTROLLER

MIC4
MOTORTECH IGNITION CONTROLLER

MIC5
MOTORTECH IGNITION CONTROLLER

Knock Control DetCon20

The DetCon20 control unit offers full protection for gas, diesel and dual fuel engines from 2 to 20 cylinders. Microprocessor controlled, it will detect any knocking in the early stage and will send an analog signal (4 to 20 mA/0 to 5 V) out to the ignition system to retard the ignition timing in linear function. A load reduction signal or, ultimately, a STOP signal is sent to the engine controller if the knocking cannot be eliminated.

DetCon20
MOTORTECH DETONATION CONTGROL SYSTEM

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