MOTORTECH®

MIC6 Ignition Controller

For Stationary and Marine Applications

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The MOTORTECH MIC6 ignition controller is ideally suited for medium and high speed applications and convinces with a future oriented electronical concept for more power and a significantly higher degree of efficiency.

With 1000 mJ primary energy, the MIC6 series provides a reliable combustion even with weakest or fluctuating caloric values of the gas. Next to high variable ignition energy (MOST*), an accurate spark timing and diversified online diagnostics help to improve engine efficiency, spark plug life and availability of the equipment under the strictest emission regulations.

Extra features like a redundant pickup setup are available for the MIC6 and the specially developed MIC6-Marine version, which meets the strict technical requirements of marine applications and certification societies.

General Features

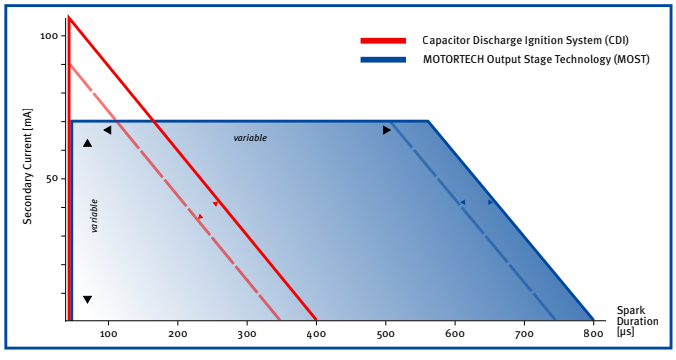
- For medium (900 rpm nominal) and high speed (1500 rpm nominal) applications
- 1000 mJ primary energy max.
- Adjustable spark duration and intensity
- Constant spark intensity via adjusted duration
- 6 pickup inputs for redundant pickup setup
- Ignition diagnostics (primary and secondary)
- More internal memory for faster signal processing and trend data for advanced diagnostics
- Integrated CANopen and Modbus RTU (RS485) interface
- Easy access per USB port

MOST
MOTORTECH OUTPUT STAGE TECHNOLOGY

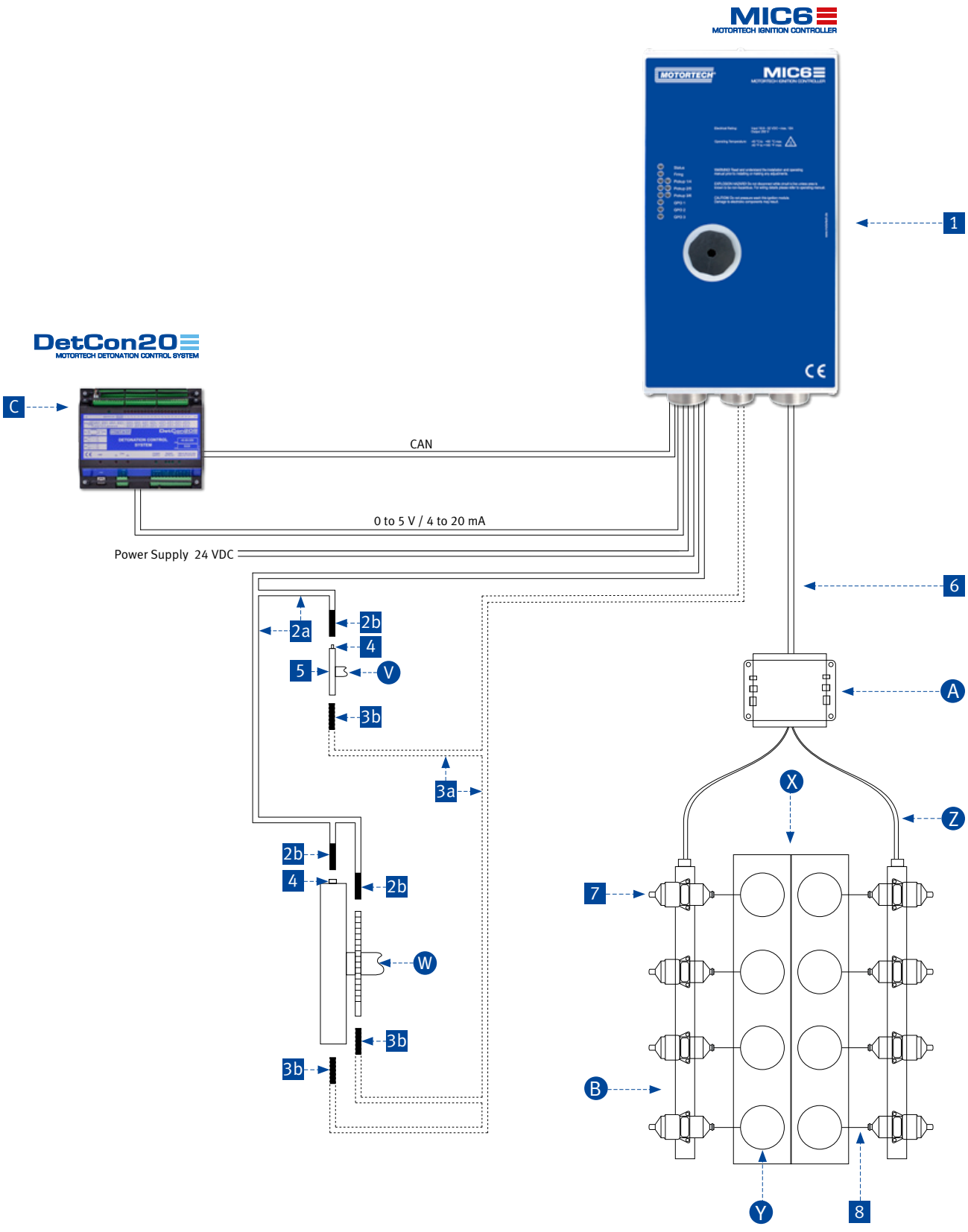
MOST* works with the following principles:

- adjustable ignition spark duration with different available ignition voltages
- constant spark intensity via adjusted ignition spark duration
- 300 to 1000 mJ of primary energy (device dependent) are available

* Patented Technology US 8,893,692 B2



System Overview



Legend

Necessary Components

1 MIC6 ignition controller
2 Pickup – Set 1
  2a Pickup lead*
  2b Pickup*
3 Pickup – Set 2
  (for redundant purposes)
  3a Pickup lead*
  3b Pickup*
4 Trigger pins/magnets

alternative

5 Trigger disc

alternative

Trigger drive
6 Output harness*
7 Ignition coil*
8 1 primary lead/spark plug lead per ignition coil*

** Shielded and unshielded versions available.*

Accessories

A Junction box
B AlphaRail-/ LiteRail – ignition wiring rail

System Enhancement

C DetCon20 – Detonation controller

Description

V Camshaft
W Crankshaft
X Engine
Y Cylinder
Z Harness to connect the ignition wiring rails and the junction box

Established Pickup Arrangements

3-Pickup Arrangement for 4-Stroke Engines

1) Crankshaft (Reset)
Magnetic pickup
(holes, pins, teeth, screws)
2) Crankshaft (Speed)
Magnetic pickup
(holes, pins, teeth, screws)
3) Camshaft (Reset)
Hall effect pickup
(magnets)

alternative

3) Camshaft (Reset)
Inductive pickup
(pins, screws, slots)

1-Pickup Arrangement for 4-Stroke Engines

1) Camshaft (N+1/N-1)
Hall effect pickup
(disc with magnets)

alternative

1) Camshaft (N+1/N-1)
Inductive pickup
(disc with pins, screws, slots)

2-Pickup Arrangement for 2-Stroke Engines

1) Crankshaft (Reset)
Magnetic pickup
(holes, pins, teeth, screws)
2) Crankshaft (Speed)
Magnetic pickup
(holes, pins, teeth, screws)

Ignition Controller

Technical Data & Features

- 18 to 32 VDC supply voltage
- 24 ignition outputs
- 250 VDC primary voltage
- 1000 mJ primary energy (when firing 24 outputs at 900 rpm)
  600 mJ primary energy (when firing 24 outputs at 1500 rpm)
- 0.1° crankshaft accuracy
- 6 pickup inputs for integration
  of 2 redundant pickup sets
- Triggered by 1, 2 or 3 pickups per set
  (magnetic, Hall effect or inductive/configurable)
- Multiple ignition timing control via
  – Speed curve
  – 0 to 20 mA analog input
  – 0 to10 V analog input
- Multiple energy control via MOST*
  (MOTORTECH Output Stage Technology)
- Programmable firing order
- 3 multipurpose outputs (GPO)
- 2 Auxiliary Synchronization Outputs (ASO) which
  can support a detonation control system (e.g. DetCon)
  or fuel injection pump controllers
- Ignition release input
- Go/NoGo output
- Overspeed shutdown function
- Access controlled

Ignition Diagnostics

- Runtime data
- Alarm and error messages
- Data logging
- Primary and secondary misfire detection
- Cylinder individual high voltage calculation (kV)
- 11 LEDs provide a quick system state overview

Interfaces

- CAN Bus 2.0b interface (CANopen/SAE J1939 protocol)
- RS485 interface (Modbus RTU)
- USB 1.1 interface

Configuration

- Using the graphic user interface MICT
  (MOTORTECH Integrated Configuration Tool)

Housing/Connections

- Protection class IP65
- MIL style connectors

Certifications

- CSA (Class I, Division 2, Group C, D; T4) [1)]
- Marine type approval certification in accordance
  with DNV GL, Bureau Veritas, Lloyd's Register [1)]
- ATEX (II 3G EX nA IIB T4 X) – on request
- CE

[1)] Certification for MIC6 series in preparation.

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Distribution partner for DENSO spark plugs

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