

MIC6 Ignition Controller

For Stationary and Marine Applications



Ignition Controller

MIC6 MOTORTECH IGNITION CONTROLLER

MIC6 Ignition Controller For Stationary and Marine Applications

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.



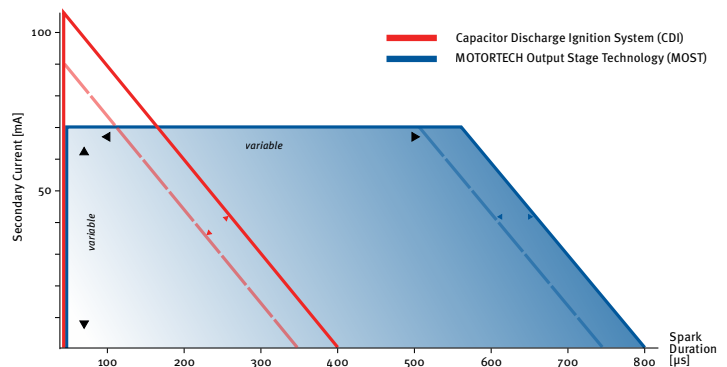
General Features

- For medium (up to 900 rpm nominal) and high speed (up to 1800 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 RS485 (Modbus RTU) 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

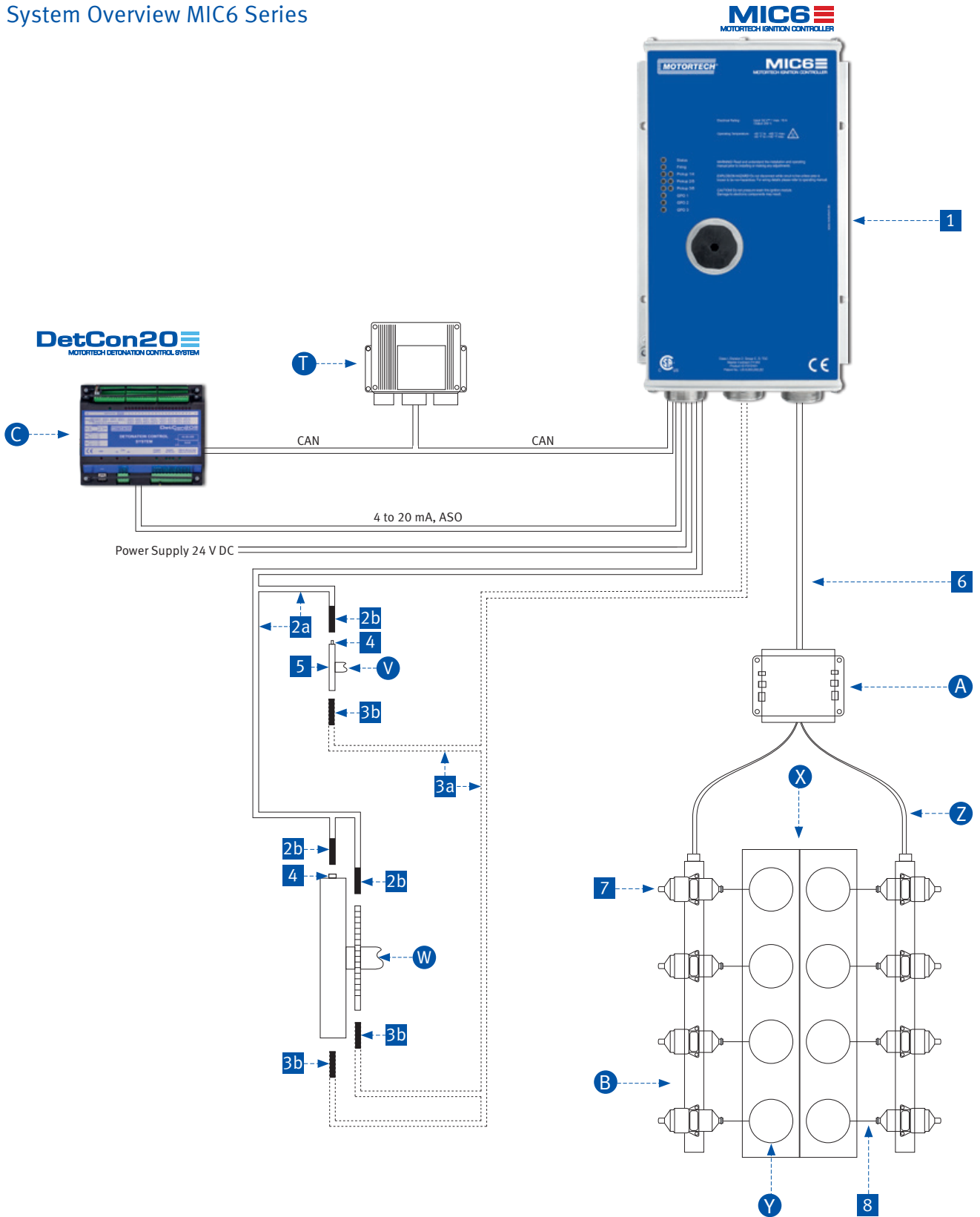


* Patented Technology US 8,893,692 B2

System Overview



System Overview MIC6 Series



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 Reluctor pins/trigger magnets
alternative
- 5 Trigger disc
alternative
Trigger drive
- 6 Output harness*
- 7 Ignition coil*
- 8 1 primary lead/spark plug lead per ignition coil*

Accessories

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

System Enhancement

- C DetCon20 – Detonation controller

Description

- T Electronic Control Unit (ECU)
- 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)

Technical Data & Features

- 18 to 32 V DC supply voltage
- 24 ignition outputs
- 250 V DC primary voltage
- 1000 mJ primary energy (when firing 24 outputs at 900 rpm)
600 mJ primary energy (when firing 24 outputs at 1800 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 to 10 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

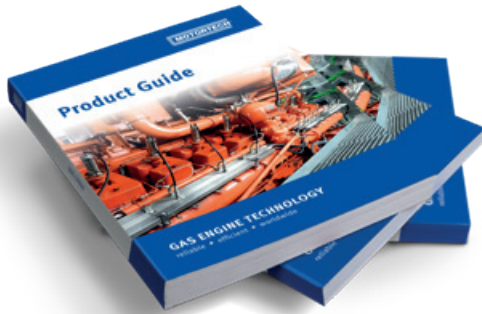
Certifications

- CSA (Class I, Division 2, Group C, D; T4)
- Marine type approval certification in accordance with
 - DNV GL
 - Bureau Veritas
 - Lloyd's Register
 - ABS
- ATEX – on request
- CE



* See page 2 for more information.

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MOTORTECH GmbH

Hogrevestr. 21-23
29223 Celle
Germany
Phone: +49 (5141) 93 99 0
Fax: +49 (5141) 93 99 99
www.motortech.de
sales@motortech.de

MOTORTECH Americas, LLC

1400 Dealers Avenue, Suite A
New Orleans, LA 70123
USA
Phone: +1 (504) 355 4212
Fax: +1 (504) 355 4217
www.motortechamericas.com
info@motortechamericas.com

MOTORTECH Shanghai Co. Ltd.

Room 1018 Enterprise Square,
No. 228 Meiyuan Road,
Zhabei District, 200070 Shanghai
China
Phone: +86 (21) 6380 7338
www.motortechshanghai.com
info@motortechshanghai.com

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