MOTORTECH®

MOTORTECH
Ignition Controllers

MIC Series

reliable efficient worldwide

MOTORTECH Ignition Controllers

MIC
MOTORTECH IGNITION CONTROLLER

MOTORTECH has developed into one of the leading manufacturers of ignition controllers in the global market for industrial gas engines. The MOTORTECH ignition controller series now provides solutions for virtually all gas types and engine sizes.

Cooperation with leading engine manufacturers, packagers and operators has resulted in specific designs of equipment. The result is the ability to maintain ideal engine performance across a variety of applications. As the biogas market continues to grow the need to ignite various gases like mine gas and drilling gas effectively grows. MOTORTECH meets these needs by offering products that provide increased ignition energy, long duration spark control while maintaining precise ignition timing.

Efficiency and device availability drive MOTORTECH to devote its efforts to peak technology for the future.

Designed in Germany
since
Certified Quality
made by MOTORTECH®
1988
Manufactured in Europe

Characteristics MIC Series

Characteristics MIC Series

MIC3+
MOTORTECH IGNITION CONTROLLER

MIC4
MOTORTECH IGNITION CONTROLLER

MIC5
MOTORTECH IGNITION CONTROLLER

MIC6
MOTORTECH IGNITION CONTROLLER

General

- For 2- and 4-stroke engines
- Ignition technology pulse width modulated
- Technical restriction to 6000 rpm
- Max. trigger impulses 16+1 or 500 teeth on the flywheel

Technical Data & Features

- Ignition timing to 0.1° crankshaft
- Triggered by magnetic, Hall effect or inductive pickup
- Multiple ignition timing control via
  – Potentiometer (except MIC3+ and MIC6 series)
  – Speed curve
  – 0 to 20 mA analog input
  – 0 to 10 V analog input
- Multiple energy control via MOST (MOTORTECH Output Stage Technology, see Page 6)
- Programmable firing order
- Overspeed shutdown function
- Access controlled
- Programmable spark duration
- Energy output control
- 2 programmable speed curves with max. 8 speed points (speed/ignition timing)
- Diagnostic memory
- System status display
- Error memory

Ignition Diagnostics

- Runtime data
- Alarm and error messages
- Data logging
- Primary and secondary misfire detection
- Cylinder individual high-voltage calculation (kV)

Interfaces

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

Inputs

- Binary ignition release (start/stop)
- Configurable binary input (GPI)
- Binary input for schedule A/B

Outputs

- Max. 2 Auxiliary Synchronization Outputs (ASO) which can support a detonation control system (e.g. DetCon) or fuel injection pump controllers (device dependend)
- Max. 3 multipurpose outputs (GPO) (device dependend)
- Go/NoGo output

Configuration

- Using the graphic user interface MICT (MOTORTECH Integrated Configuration Tool, see page 7)

Certifications

- CSA (Class I, Division 2, Group C, D; T4)
- ATEX – on request
- CE

Scope of Supply

- Configuration software MICT (MOTORTECH Integrated Configuration Tool)
- USB interlink cable
- Vibration dampers
- Ground strap
- Fastening material
- Operating manual

Technical Data




	Feature	MIC3+ Series	MIC4 Series	MIC5 Series	MIC6 Series
General	Max. number of ignition outputs	12	16	20	24
	Max. number of pickups	2	3	3	6 (2 sets with max. 3 pickups)
	Power supply	10 to 32 V DC	10 to 32 V DC	16.8 to 32 V DC	18 to 32 V DC
	Permitted housing surface temperature	-40 °C to +60 °C -40 °F to +140 °F	-40 °C to +60 °C (LD) -40 °F to +140 °F (LD)	-40 °C to +60 °C -40 °F to +140 °F	-40 °C to +60 °C -40 °F to +140 °F
Output	Max. primary voltage	250 V DC	250 V DC	250 V DC	250 V DC
	Max. ignition energy	300 mJ (500 mJ boost for start phase)	300 mJ (500 mJ boost for start phase)	500 mJ (600 mJ boost for start phase)	1000 mJ (1200 mJ boost for start phase)
	Max. programmable spark duration	100 to 800 µsec	100 to 1000 µsec	100 to 1500 µsec	100 to 1500 µsec
Housing	Available housing versions [1]	Light Duty (LD)	Panel Mount (PM), Light Duty (LD), Heavy Duty (HD)	Heavy Duty (HD)	Heavy Duty (HD)
	Dimensions (length x width x height)	250 x 240 x 89.5 mm (LD) 9.84 x 9.45 x 3.52 in (LD)	304 x 240 x 95.5 mm (LD) 11.97 x 9.45 x 3.76 in (LD)	371 x 240 x 114.5 mm (HD) 14.61 x 9.45 x 4.51 in (HD)	385 x 240 x 114.5 mm (HD) 15.16 x 9.45 x 4.51 in (HD)
	Protection class	IP54 (LD)	IP20 (PM), IP54 (LD), IP65 (HD)	IP65 (HD)	IP65 (HD)
	Engine installation	not permitted	not permitted	not permitted	not permitted
	Number of potentio-meters for manual timing adjustment	0	2 (continuous)	2 (continuous)	0
	Input connection	MIL, 35 pole, pin (standard)	terminal strip (standard)	terminal strip (standard)	MIL, 35 pole, pin (standard)
	Output connection	MIL, 17 pole, socket	MIL, 17 pole, socket	MIL, 35 pole, socket	MIL, 35 pole, socket
	Number of status LEDs	5	6	6	11

[1] Consult factory for information on the availability of housing styles.

Housing Versions MIC4 Series [1)]

Optionally as 2-MIL version

Housing version “LD” (Light Duty)

Standard configuration for applications in direct vicinity of gas engines in protected environment. The electronic system is integrated in a solid aluminum housing.

- 17 pole military style connector (socket) for 8 and 16 outputs
- Plug connectors for input wiring
  – Optional 2 MIL connector version for fast installation
- For ambient temperatures from -40 °C to +60 °C (-40 °F to +140 °F)
- Protection rating IP54
- CSA Class I, Division 2, Group C, D; T4
- 304 mm x 240 mm x 95.5 mm (L x W x H)
  (11.97 x 9.45 x 3.76 inch)

Housing version “PM” (Panel Mount – switch cabinet installation)

Device configuration for assembly in control panels. Equipped with plug connectors for simple integration into the wiring system.

- Plug connectors for input and output wiring (8 and 16 outputs)
- For ambient temperatures from -20° C to +50° C (-4° F to +122° F)
- Protection rating IP20
- CSA Class I, Division 2, Group C, D; T4 (within a control panel)
- 304 mm x 240 mm x 114.5 mm (L x W x H)
  (11.97 x 9.45 x 4.51 inch)

Back

Housing version “HD” (Heavy Duty)

When it‘s time to really get down to business. The Heavy Duty housing is 100 % reliable whether in hot desert sand or perpetual ice!

- 17 pole military style connector (socket) for 8 and 16 outputs
- Plug connectors for input wiring
  – Optional as 2 MIL connector version for fast installation
- For ambient temperatures from -40° C to +70° C (-40° F to +158° F)
- Integrated cooling element for optimal heat dissipation
- Protection rating IP65
- CSA Class I, Division 2, Group C, D; T4
- 304 mm x 240 mm x 114.5 mm (L x W x H)
  (11.97 x 9.45 x 4.51 inch)

[1)] Consult factory for information on the availability of housing versions of other ignition controller series.

MOST – MOTORTECH Output Stage Technology

MOST
MOTORTECH OUTPUT STAGE TECHNOLOGY

Patented Technology for MIC3+/MIC4/MIC5/MIC6*

Efficiency-enhanced engines, highly compressed mixtures, as well as the use of a great variety of gas types are putting greater demands on the entire ignition system, including:

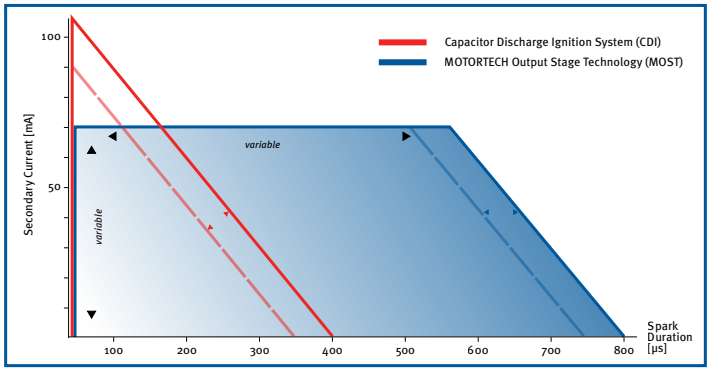
- Reliable ignition even with weak or fluctuating calorific values of the gas
- Compliance with the strictest emission regulations
- Avoidance of knocking and misfiring
- Reduction of maintenance costs through longer spark plug runtimes

These requirements can only be met by precision ignition behavior and efficient control of the ignition spark. MOTORTECH Output Stage Technology (MOST) was developed by MOTORTECH for this.

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

The graphic compares the behavior of a conventional Capacitor Discharge Ignition System (CDI) and Ignition System with MOST

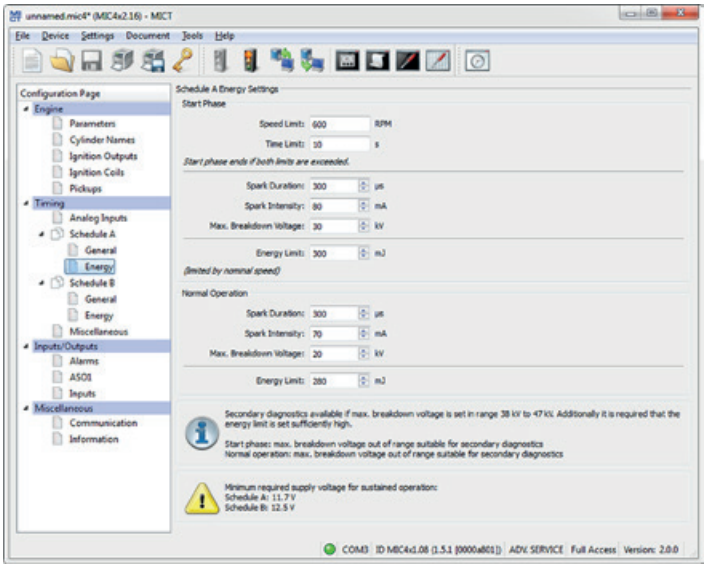


Capacitor Discharge Ignition System (CDI)

The red curve shows that a high peak current is reached during ignition. Afterwards, the current decreases sharply. To achieve longer spark duration, the energy supply must be increased. The result of this is a higher peak current.

Ignition System with MOST

The blue curve shows that a lower peak current is reached during ignition with MOST. The current remains at a constant level until the energy supply ends. Thereafter, the current drops. In this case as well, more energy is supplied for a longer spark duration, however the peak current is not increased in the process.



Settings for MOST in MICT

The settings for MOST are made using the MICT configuration software. On the configuration side *Timing – Schedule A/B – Energy*, you can define different values for the spark duration, spark intensity, breakdown voltage and energy limit for the start phase and normal operation. That way starting difficulties of the engine can be caught. Different energy settings for the two schedules A and B support, for example, optimally matched two gas operation. The settings are dependent on the ignition coils that are used, among other things. They must be suitable for MOST and set correctly on the configuration side *Engine – Ignition Coils*. To optimize the energy settings for an engine, the ignition behavior must be observed and analyzed (misfiring, knock behavior, emission values, etc.). The secondary side diagnostics with MICT, among other things, can help here.

*Patent No.: US 8,893,692 B2

MICT – MOTORTECH Integrated Configuration Tool

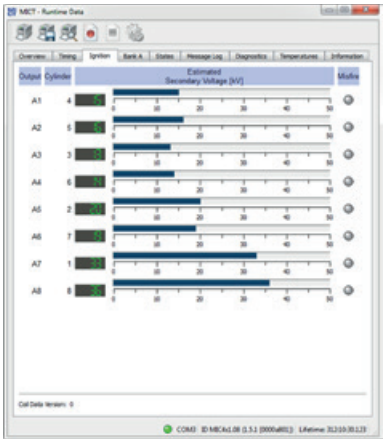
MICT
MOTORTECH INTEGRATED CONFIGURATION TOOL

The MICT is the graphical user interface for all controllers of the MIC3+, MIC4, MIC5 and MIC6 series. With a laptop all configurations can be done and runtime data of the engine can be checked and adjusted.

- Language selectable (German/English/Chinese)
- Microsoft® Windows 7 and Windows 10 compatible
- Included data base offers engine information such as firing order, firing sequence, number of ignition coils per cylinder and typical number of teeth on flywheel for easy engine configuration
- Print function of a given moment in the operation can be used for external problem analysis, etc.
- Context sensitive online help
- Different access levels to avoid accidental misconfigurations

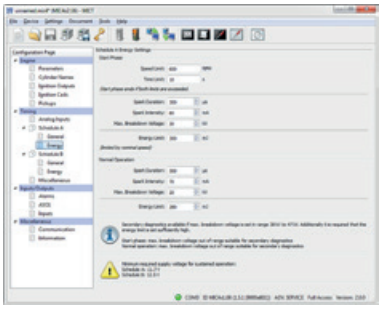
Sample Screens – Runtime Data

Overview
In the overview schedule the most important current runtime data such as speed, ignition timing or system status can be registered at a glance.

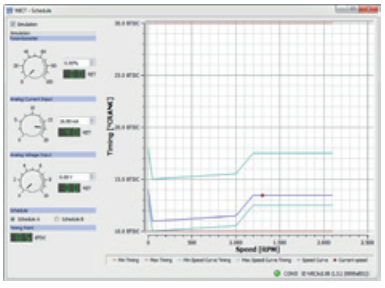


Breakdown Voltage
The MICT offers a lot of real time and detailed information about the status of each individual ignition output. Important data will be visually prepared, so that any irregularities will stand out easily. For example, secondary voltage will be displayed as bar graph, and the type of misfiring carries a warning light as symbol.

Sample Screens – Parameter Set

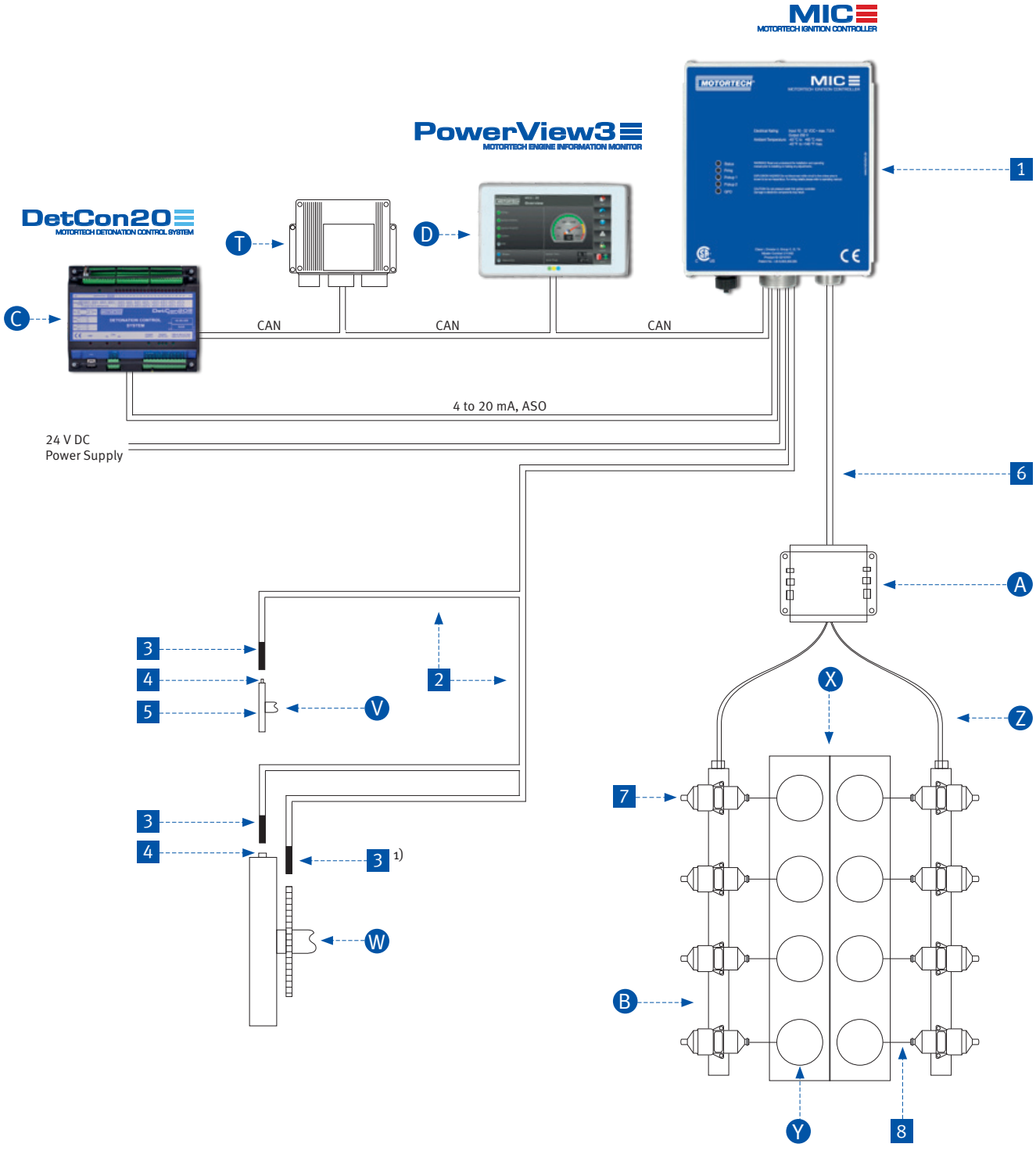


Energy Settings
For start phase and normal operation of the engine, durations at different high voltage levels and ignition spark intensity can be adjusted with the advanced energy settings.



Configuration Visualization
The graphic display of the parameter set A and B offers a fast, visual control of the configured values.

System Overview MIC3+/MIC4/MIC5/MIC6 Series



[1] In combination with the MIC3+ series only one crankshaft pickup possible

Legend

Necessary Components

1 MIC ignition controller
2 Pickup lead *
3 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
D PowerView3 – HMI module

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)

* Shielded and unshielded versions available.

Ignition Controllers for Stationary Applications

MIC3+
MOTORTECH IGNITION CONTROLLER

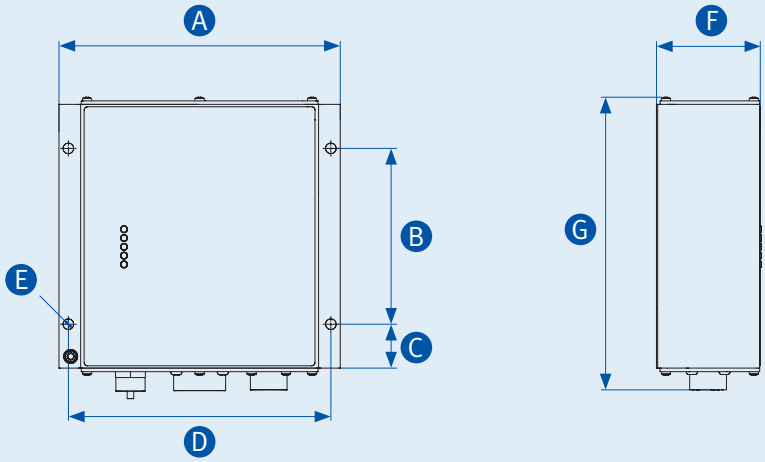
With 300 mJ primary energy, the MIC3+ series provides a reliable combustion on **gas engines with up to 12 cylinders** even with weakest or fluctuating caloric values of the gas. Next to high variable ignition energy an accurate spark timing and diversified online diagnostics help to improve engine efficiency, spark plug life and availability of the equipment under the strictest emission regulations.

Features

- Max. 12 ignition outputs
  (controller versions available with 6 or 12 outputs)
- Triggered by max. 2 pickups
- 250 V DC max. primary voltage
- 300 mJ max. primary energy
  (500 mJ boost for start phase)
- 100 to 800 µsec max. programmable spark duration
- MOST – MOTORTECH Output Stage Technology
- Available as Light Duty (LD) housing version
- Protection class IP54

Dimensions

- A 240 mm (9.45 in)
- B 150 mm (5.91 in)
- C 37,5 mm (1.48 in)
- D 224 mm (8.82 in)
- E Ø 9 mm (0.35 in)
- F 89,5 mm (3.52 in)
- G 250 mm (9.84 in)



Ignition Controllers for Stationary Applications

MIC4
MOTORTECH IGNITION CONTROLLER

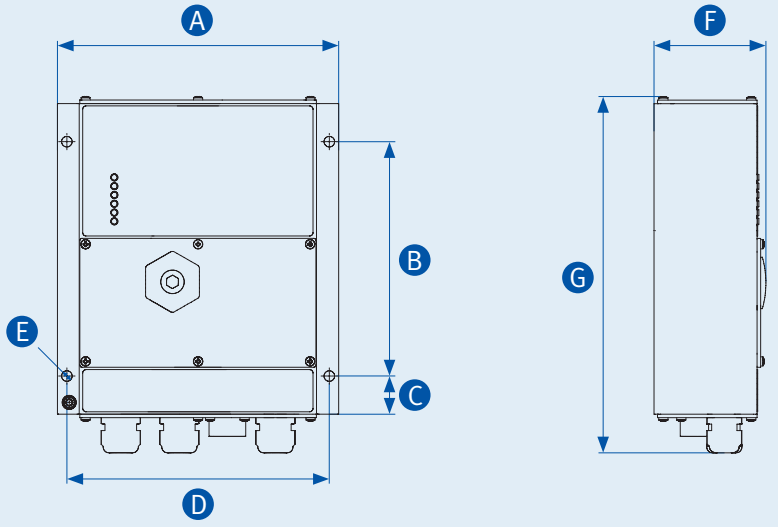
The MIC4 offers 300 mJ primary energy and thus enables reliable combustion on **gas engines with up to 16 cylinders** even with weakest or fluctuating caloric values of the gas. Next to high variable ignition energy an accurate spark timing and diversified online diagnostics help to improve engine efficiency, spark plug life and availability of the equipment under the strictest emission regulations.

Features

- Max. 16 ignition outputs
  (controller versions available with 8 or 16 outputs)
- Triggered by max. 3 pickups
- 250 V DC max. primary voltage
- 300 mJ max. primary energy
  (500 mJ boost for start phase)
- 100 to 1000 µsec max. programmable spark duration
- MOST – MOTORTECH Output Stage Technology
- Available as Panel Mount (PM), Light Duty (LD) and Heavy Duty (HD) housing version
- Protection class IP20 (PM), IP54 (LD), IP65 (HD)

Dimensions

- A 240 mm (9.45 in)
- B 200 mm (7.87 in)
- C 32,5 mm (1.28 in)
- D 224 mm (8.82 in)
- E Ø 9 mm (0.35 in)
- F 95,5 mm (3.76 in)
- G 304 mm (11.97 in)



Ignition Controllers for Stationary Applications

MIC5
MOTORTECH IGNITION CONTROLLER

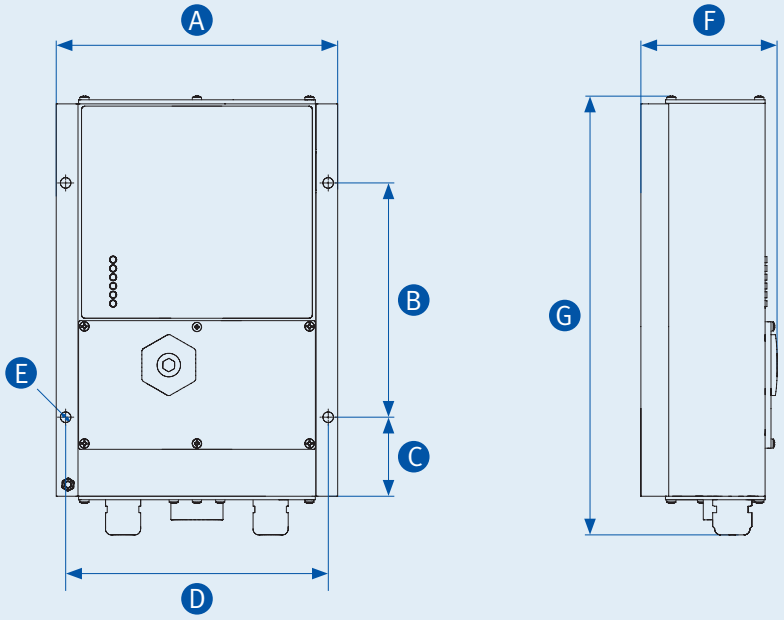
Based on MOTORTECH's ignition controller platform the MIC5 with 500 mJ primary energy is designed for **gas engines with up to 20 cylinders**. High ignition energy, accurate spark timing and diversified online diagnostics help to improve engine efficiency, spark plug life and availability of the equipment under the strictest emission regulations.

Features

- Max. 20 ignition outputs
- Triggered by max. 3 pickups
- 250 V DC max. primary voltage
- 500 mJ max. primary energy
  (600 mJ boost for start phase)
- 100 to 1500 µsec max. programmable spark duration
- MOST – MOTORTECH Output Stage Technology
- Available as Heavy Duty (HD) housing version
- Protection class IP65 (HD)

Dimensions

- A 240 mm (9.45 in)
- B 200 mm (7.87 in)
- C 67,5 mm (2.66 in)
- D 224 mm (8.82 in)
- E Ø 9 mm (0.35 in)
- F 114,5 mm (4.50 in)
- G 371 mm (14.73 in)



MIC6
MOTORTECH IGNITION CONTROLLER

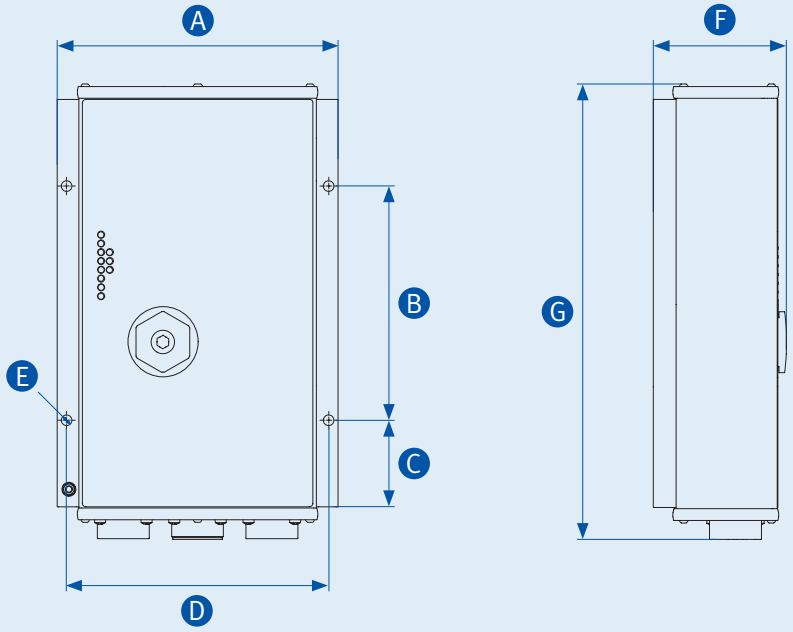
The MIC6 is ideally suited for **medium and high speed applications with up to 24 cylinders** and convinces with a future oriented electronical concept for more power and a significantly higher degree of efficiency. With a maximum of 1000 mJ primary energy, the MIC6 provides a reliable combustion even with weakest or fluctuating caloric values of the gas and offers extra features like a redundant pickup setup.

Features

- Max. 24 ignition outputs
- Triggered by max. 6 pickups (optional – for integration of 2 redundant pickup sets)
- 250 V DC max. primary voltage
- 1000 mJ max. primary energy when firing 24 outputs at 900 rpm [1] (1200 mJ boost for start phase)
- 100 to 1500 µsec max. programmable spark duration
- MOST – MOTORTECH Output Stage Technology
- Available as Heavy Duty (HD) housing version
- Protection class IP65 (HD)

Dimensions

- A 240 mm (9.45 in)
- B 200 mm (7.87 in)
- C 85 mm (3.35 in)
- D 224 mm (8.82 in)
- E Ø 9 mm (0.35 in)
- F 114.5 mm (4.51 in)
- G 385 mm (15.16 in)



[1] 600 mJ primary energy when firing 24 outputs at 1800 rpm

Ignition Controllers for Marine Applications

MIC6-Marine
MOTORTECH IGNITION CONTROLLER

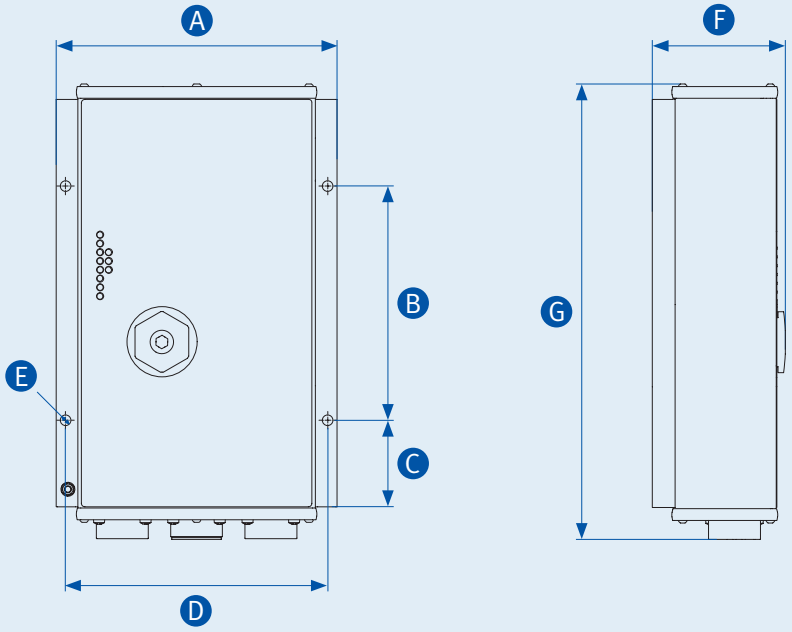
The specially developed MIC6-Marine meets the strict technical requirements of marine applications and certification societies and offers extra features like a redundant pickup setup. The MIC6-Marine is ideally suited for **medium and high speed applications with up to 24 cylinders** and convinces with a future oriented electronical concept for more power and a significantly higher degree of efficiency. With a maximum of 1000 mJ primary energy, the MIC6-Marine provides a reliable combustion. 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.

Features

- Max. 24 ignition outputs
- Triggered by max. 6 pickups (for integration of 2 redundant pickup sets)
- 250 V DC max. primary voltage
- 1000 mJ max. primary energy when firing 24 outputs at 900 rpm [1] (1200 mJ boost for start phase)
- 100 to 1500 µsec max. programmable spark duration
- MOST – MOTORTECH Output Stage Technology
- Available as Heavy Duty (HD) housing version
- Protection class IP65 (HD)

Dimensions

- A 240 mm (9.45 in)
- B 200 mm (7.87 in)
- C 85 mm (3.35 in)
- D 224 mm (8.82 in)
- E Ø 9 mm (0.35 in)
- F 114.5 mm (4.51 in)
- G 385 mm (15.16 in)



[1] 600 mJ primary energy when firing 24 outputs at 1800 rpm

Ignition Controllers for Marine Applications

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 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)

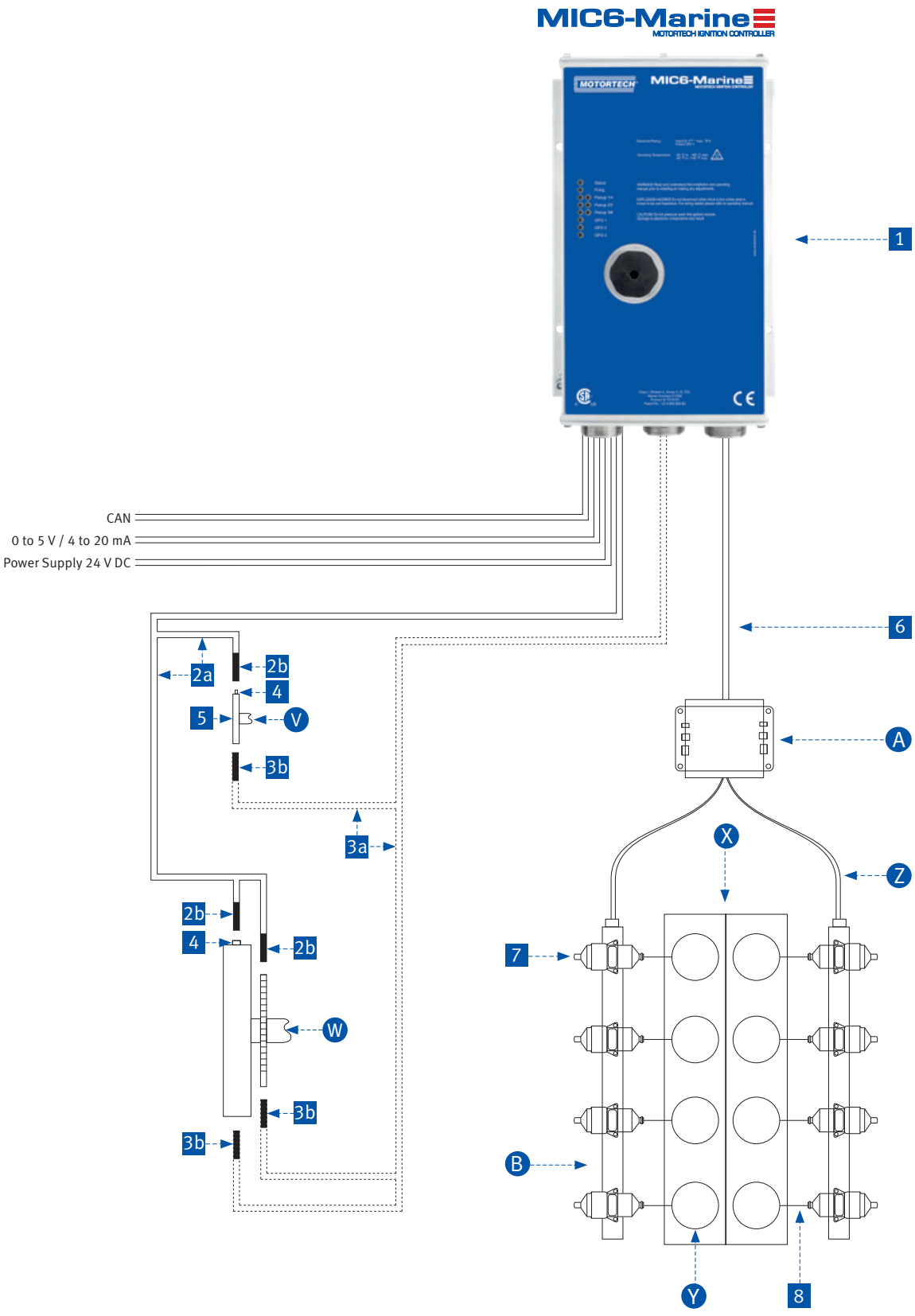
Housing/Connections

- Protection class IP65
- MIL style connectors

Certifications

- Marine type approval certification in accordance with
  – DNV GL
  – Bureau Veritas
  – Lloyd's Register
  – ABS
- ATEX – on request
- CE
- CSA

System Overview MIC6-Marine



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 reluctor 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*

Accessories

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

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)

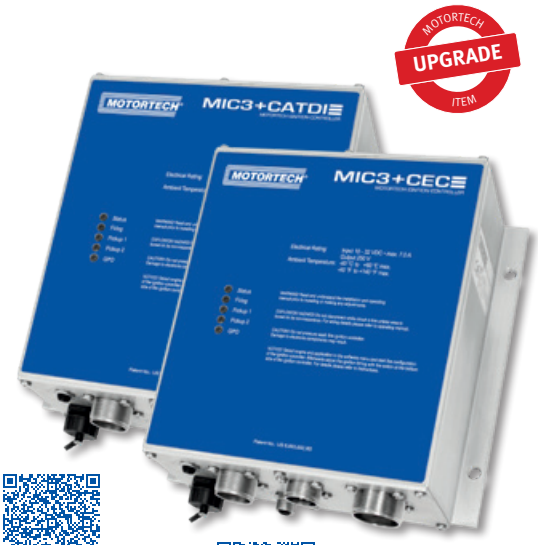
* Shielded and unshielded versions available.

MIC3+CEC & MIC3+CATDI Ignition Controller

MIC3+CATDI
MOTORTECH IGNITION CONTROLLER

MIC3+CEC
MOTORTECH IGNITION CONTROLLER

Based on the MIC3+ series, MOTORTECH produces special controllers as replacements for the OEM ignition systems used on **CATERPILLAR®** G3300 and G3400 and **WAUKESHA®** ATGL, VGF and VHP series gas engines. Designed as an exchange device, the MIC3+CATDI and MIC3+CEC enable a quick conversion without great effort.



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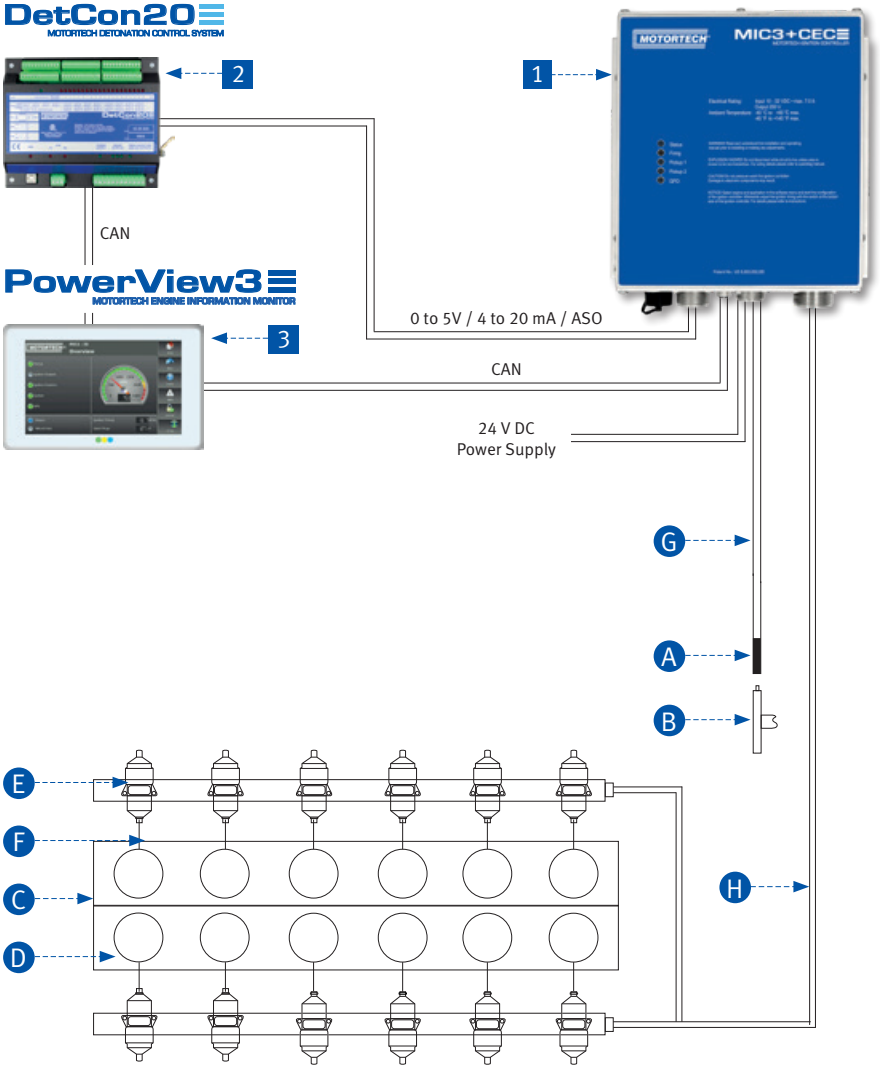

Required components

1 MIC3+CEC/CATDI ignition controller

Accessories (optional)

2 DetCon2o detonation control system
3 PowerView3 HMI module

Description

Ⓐ Hall effect pickup
Ⓑ Camshaft
Ⓒ Engine
Ⓓ Cylinder
Ⓔ Ignition coil
Ⓕ Spark plug lead
Ⓖ Input wiring
Ⓗ Output wiring

MIC4-ZS Ignition Controller

MOTORTECH

MIC4-ZS
MOTORTECH IGNITION CONTROLLER

Based on the MIC4 series, MOTORTECH produces a special controller version as a replacement for the TEM-ZS1 and TEM-ZS3 ignition system used on **MWM®/DEUTZ®** gas engines. Designed as an exchange device, the MIC4-ZS enables a quick conversion without great effort.

In addition to the MIC4-ZS ignition controller, the prepared conversion kits include the required high-performance ignition coils. Pre-chamber spark plugs or spark plug leads can be re-used, as these ignition coils have the same secondary connections as the original ones. The ignition coils – designed for MOTORTECH ignition controllers with MOST technology – guarantee the ideal performance support, especially when it comes to alternative combustibles with alternating or relatively low fuel value, e.g. biogas, mine gas, woodgas, sewage gas, landfill gas etc.

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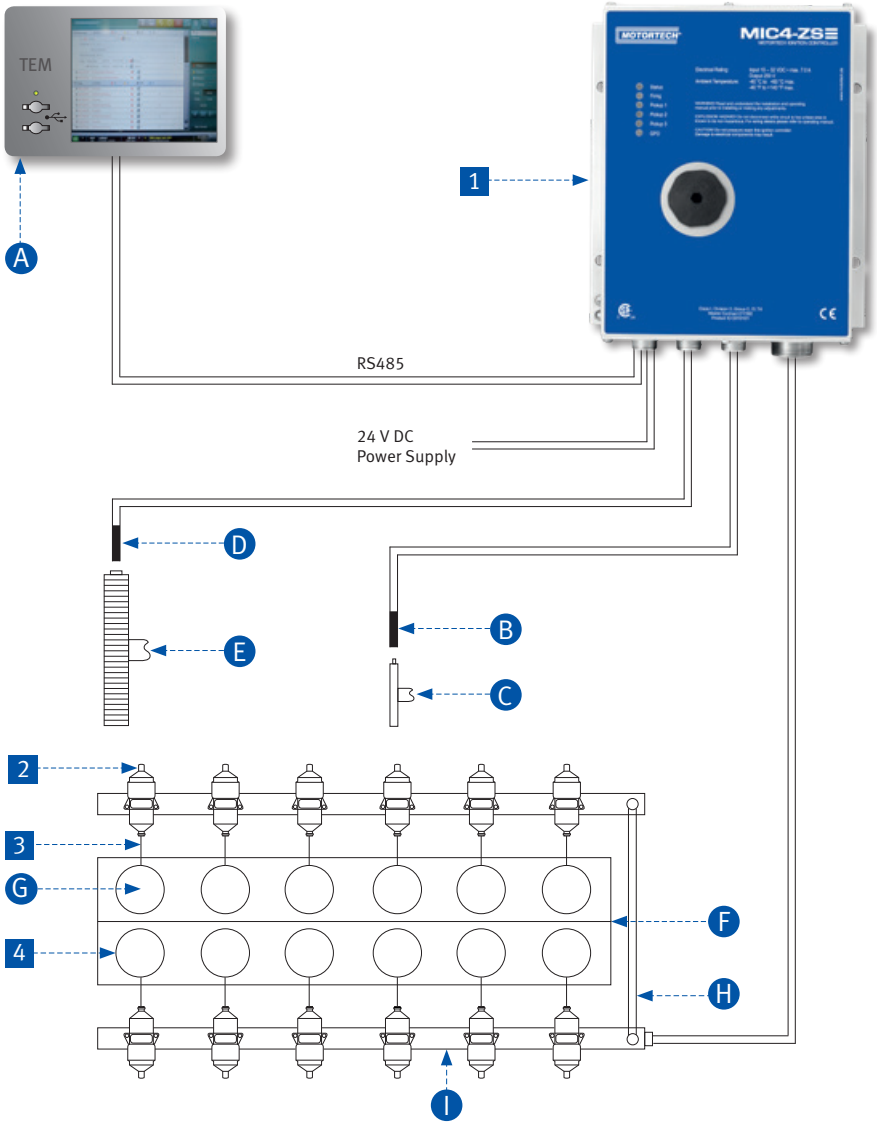


Required components

1 MIC4-ZS ignition controller
2 High-performance ignition coil

Accessories (optional)

3 PolyMot™ spark plug lead
4 DENSO® spark plugs

Description

A TEM management system
B Hall effect pickup
C Camshaft
D Magnetic pickup
E Crankshaft
F Engine
G Cylinder
H Connecting harness for the multifunction rails of A- and B-Bank
I Multifunction rail

PowerView3 – Ignition Control Visualization

PowerView3
MOTORTECH ENGINE INFORMATION MONITOR

The operating data of MIC3/3+, MIC4 and MIC5 series ignition controllers will be completely visualized via HMI module (Human Machine Interface). The overview screen shows the relevant information as engine speed, ignition timing and status of pickups, ignition outputs or active parameter set.

The PowerView3 also allows adjustments of various ignition parameters such as ignition timing and energy. Functions as the self-test for error diagnostics can also be executed via HMI module. The control keys guarantee simple navigation through different display pages and menus. All in all the PowerView3 HMI module is also able to provide error diagnostics on-site without requiring a laptop!

Scan QR Code®

The PowerView3 is also available for data visualization of:

- DetCon Detonation Control
- TempScan20 Temperature Module

General Features

- Visualization of ignition, detonation and temperature control via CAN bus
- Access control
- Display of CAN connection status
- Several display configurations (languages, date, display calibration, etc.)
- For assembly in control panels
- Day and night mode
- CSA® certified (Class I, Division 2, Group C, D; T4)

Ignition Control (MIC3/3+/MIC4/MIC5 series)

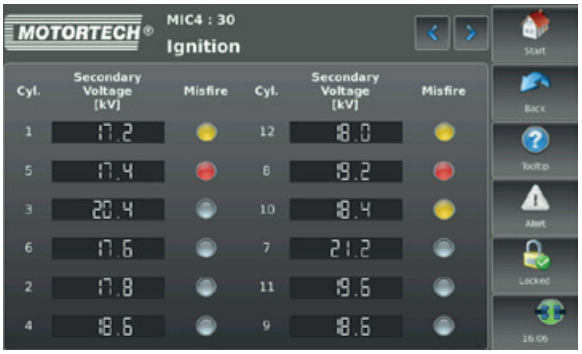
- Overview with status indication for
  - Pickup signals
  - Active schedule
  - Analog display of engine speed
  - Ignition timing
  - Spark plugs (operating hours)
- Display of global ignition timing dependent on
  - Base ignition timing
  - Potentiometer adjustment
  - Analog current and voltage input
  - 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 activation
- Warning, alarm and error messages

Sample Screens – MIC3/3+/MIC4/MIC5

MIC Overview

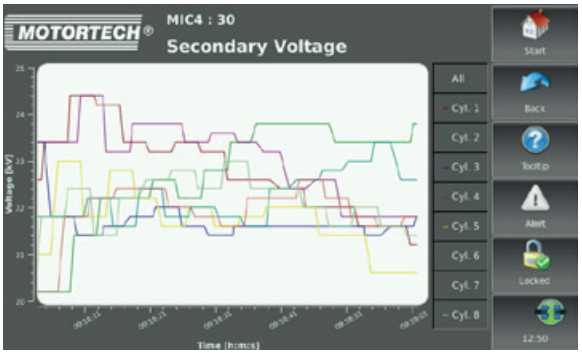
- Status displays (pickup, ignition outputs, ignition enabled, system status, schedule)
- Displays the current engine speed
- Shows the current global ignition timing in ° crankshaft
- Displays the previous operating hours of the spark plugs

Ignition



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

Secondary Voltage



- Display of estimated secondary voltage of all selected cylinders
- Cylinders can be displayed and hidden individually
- Zoom function for detailed view of secondary voltage
- Navigation within the timeline

Components for MIC Ignition Systems

MOTORTECH LiteRail Wiring Systems

The MOTORTECH LiteRail system aluminium profile is delivered pre-assembled for your engine design. Appropriate and pre-fitted ignition coils and the cabling needed via an exchangeable cable distributor simplify the assembly and exchangeability in the event of service. The MOTORTECH Lite Rail is available as a compound system with the MIC3+, MIC4, MIC5 and MIC6.

Lite Rail cabling tracks are only available for use in rooms not at risk of explosion (non CSA).

High Energy Coils

Ignition coils are becoming steadily more important in modern ignition systems. MOTORTECH provides high energy coils adjusted to controllers.

- New modern design
- Use of high quality materials
- Ideal for the ignition of alternative fuels like biogas
- Compatible with MOST

PolyMot™
MOTORTECH SPARK PLUG LEADS & EXTENSIONS

Spark Plug Leads for Non Shielded Applications

PolyMot™ patented spark plug leads are the most reliable high tension leads in the industry. Made from a combination of Ceramic, Teflon® and Silicone they transfer nearly any rate of high energy spark from the coil to the spark plug. Variations for nearly all engine models in combination to spark plugs are available.

Magnetic Pickup (MPU)

Reliable design in a variety of different lengths. Available in standard or CSA certified versions.

Hall-Effect Pickup

High temperature resistant pickup. Triggers off any magnet. Available in standard or CSA certified versions and both possible polarities.

Inductive Pickup

Small sensor (M12 thread) for use in applications where there is not much available installation space. It can operate in oil. High temperature resistance. Available in standard or CSA certified versions.

MHP-Plugs

MOTORTECH HIGH PERFORMANCE SPARK PLUGS

MHP spark plugs are designed to meet the requirements, both of modern and common engine developments and reliably deliver highest voltages and thus a strong spark down into the combustion chamber. The J-type electrode design with IRIDIUM alloy discs on center and ground electrode provides reliable combustion and increased spark plug life and helps to reduce service costs due less spark plug changes.

XTL-Plugs

MOTORTECH EXTENDED BARREL SPARK PLUGS

For engine applications equipped with extreme tight spark plug well, conventional ignition leads show its limits. The solution is specially designed spark plugs with extended metal housing. XTLPlugs are manufactured with an integrated 7 mm spark plug lead, which allows a direct connection to an externally mounted ignition coil. It can be ordered with different barrel and lead lengths, different lead outputs from the barrel and a wide range of ignition coil connectors. XTL-Plugs are designed for unshielded applications and offer long runtimes.

DetCon20

MOTORTECH DETONATION CONTROL SYSTEM

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 detonation in the early stage and will send an analog signal (4-20mA/0-5V) out to the ignition system to retard in a linear function. If detonation cannot be cured a signal will be sent for load reduction and finally an engine STOP signal. CAN Bus interface included.

Download now!

Distribution partner for DENSO spark plugs

DENSO

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