

MIC3+CATDI Ignition Controller

Retrofit for CATERPILLAR[®]
G3300 and G3400 Series Gas Engines



Ignition Controller

MIC3+CATDI MOTORTECH IGNITION CONTROLLER

MIC3+CATDI Ignition Controller Retrofit for CATERPILLAR® G3300 and G3400 Series Gas Engines

Based on the MIC3+ series, MOTORTECH produces special controllers as a replacement for the CATERPILLAR® Digital Ignition System used on G3300 and G3400 series gas engines. Designed as an exchange device, the MIC3+CATDI enables a quick conversion without great effort.

With its future oriented electronical concept, the MIC3+CATDI convinces with improved engine starting performance, smooth running and improved combustion. The significantly higher and controllable ignition energy (MOST) compared to the CATERPILLAR® devices, the 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.

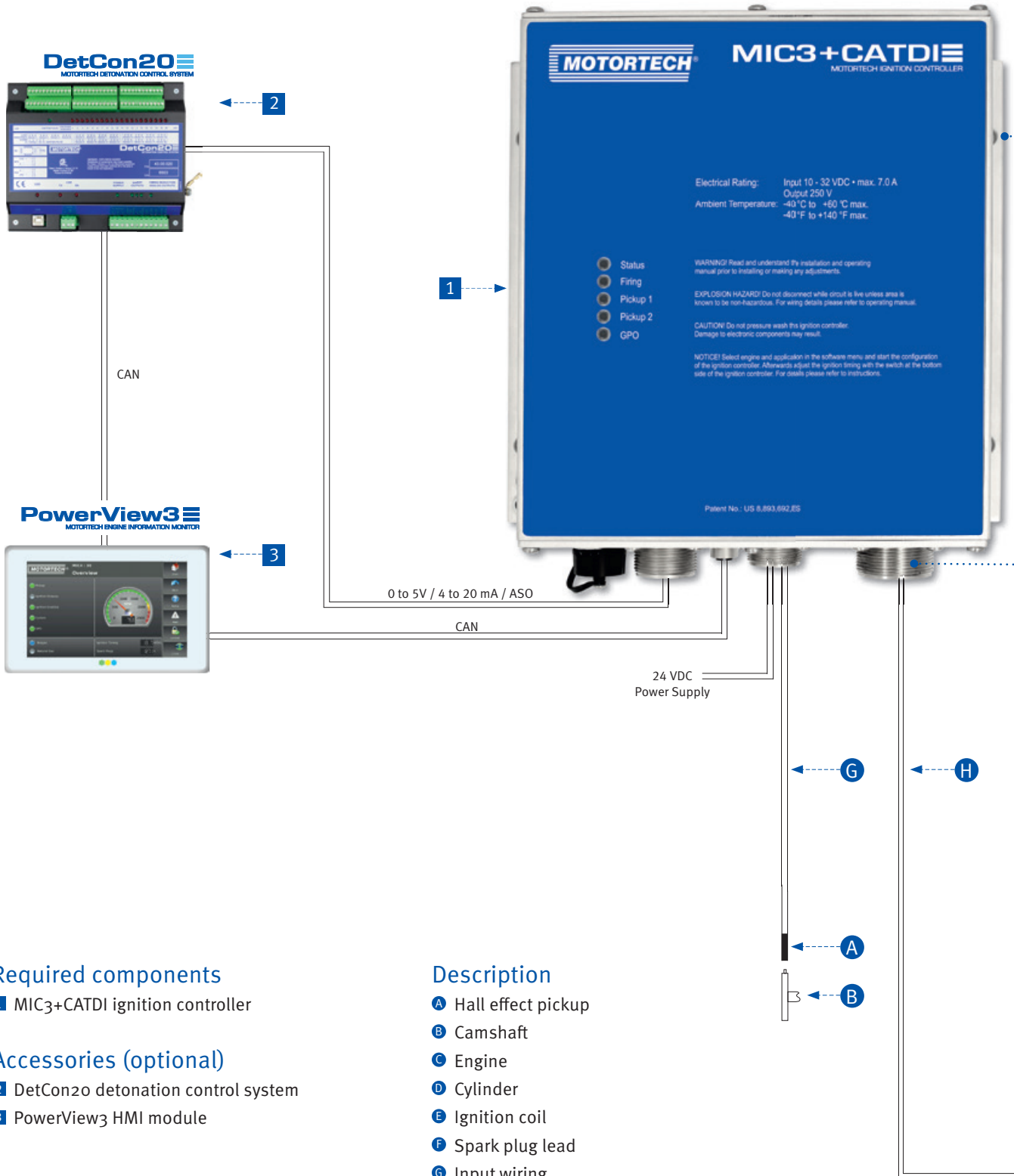
In addition, all MIC3+CATDI ignition controllers include a special bracket kit to mount the ignition controller on the position of the CATERPILLAR® device. Due to the same connector arrangement, existing output and input wiring can be reused. The included configuration menu offers pre-defined configuration files for all engines of CATERPILLAR's G3300 and G3400 series. Only engine type, ignition coil type and timing span need to be selected and the appropriate file gets uploaded to the ignition controller.



Technical benefits

- More than double the ignition energy (300 mJ)
- Boost feature with 500 mJ ignition energy for improved starting performance
- Smoother running of the engine
- Improved combustion
- Less wear to engine components
- Manual switch for ignition timing adjustment
- Solution for easy conversion
- No rewiring or mechanical adaptations necessary
- Predefined configuration data can be easily uploaded to the ignition controller
- The available devices include all components for a successful upgrade
- CAN Bus interface for connection of PowerView3 HMI Module for full ignition data visualization

System Overview



Required components

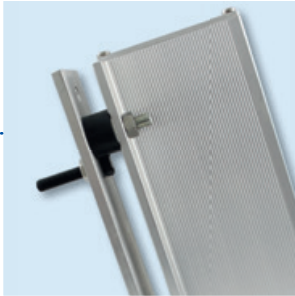
- 1 MIC3+CATDI ignition controller

Accessories (optional)

- 2 DetCon20 detonation control system
- 3 PowerView3 HMI module

Description

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



Special bracket kit to mount the ignition controller on the position of the CATERPILLAR® device.

2 The DetCon20 control unit offers full protection for gas engines from 2 to 20 cylinders. Microprocessor controlled, it will detect any detonation 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 in a linear function. If detonation cannot be cured a signal will be send for load reduction and finally an engine STOP signal. CAN Bus interface included.

3 Complete visualization of MIC3+, MIC4 and MIC5 operating data, inclusive error diagnostic via optionally available PowerView3 HMI module (Human-Machine-Interface). The touchscreen guarantees an intuitive navigation through different display pages and menus. The PowerView3 is also available for data visualization of detonation control (DetCon) and temperature monitoring (TempScan).



Due to the same connector configuration, the existing input and output wiring can be re-used. Additional connectors for CAN Bus (PowerView3) and analog input (DetCon20) connection.



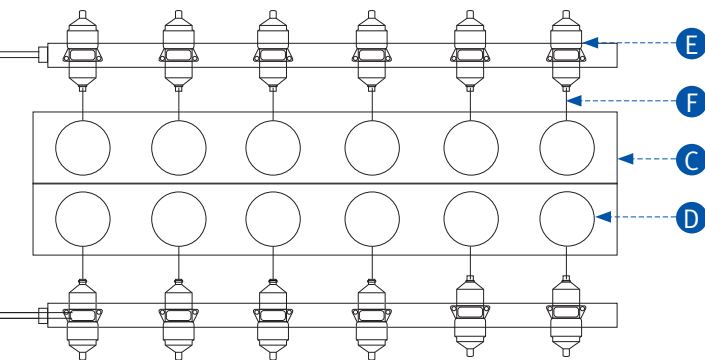
Standard unshielded epoxy ignition coils for non-shielded applications. Available in different variations to replace any existing ignition coil on CATERPILLAR® gas engines.



MOTORTECH's patented PolyMot™ spark plug leads are the most reliable leads in the industry. Made from a combination of ceramic, Teflon® and silicone, they transfer nearly any rate of high energy spark from the ignition coil to the spark plug.

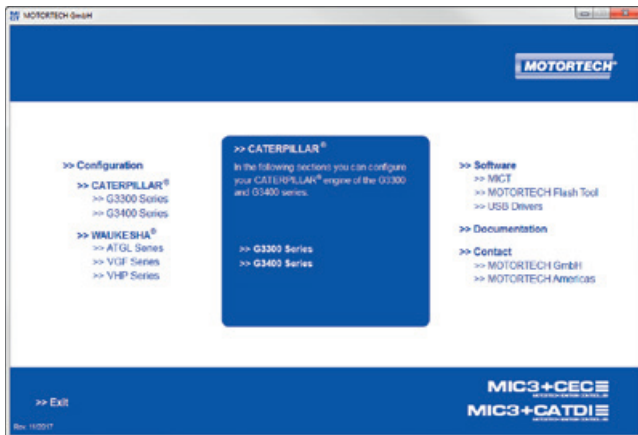


Today the industrial gas engine market requests iridium and platinum tip electrodes for long spark plug life. MOTORTECH recommends DENSO® spark plugs with iridium/platinum or double-iridium alloy.



Ordering Information

MIC3 MOTORTECH Integrated Configuration Tool – Configuration Menu



The configuration menu is specially made for MIC3+ retrofit ignition controllers and offers pre-defined configuration files for all engines of CATERPILLAR®'s G3300 and G3400 series and spares the individual programming of the unit. The clear structure of the menu makes it easy to find the correct file for your application.

Ordering Information – MIC3+CATDI Ignition Controllers

P/N	Description	For Use with Engine Types	Equivalent to
66.00.356-8	MIC3+CATDI ignition controller 8 outputs, 3 MIL connectors, Input 6 pole pin, output 10 pole pin, analog input 10 pole socket, to replace CATDI ignition controllers on G3300 and G3400 series gas engines	G3304, G3306, G3406, G3408	CAT DI Model – P/N 163-6164 MOTORTECH MIC500 – P/N 06.00.513
66.00.357-12	MIC3+CATDI ignition controller 12 outputs, 3 MIL connectors, Input 6 pole pin, output 19 pole pin, analog input 10 pole socket, to replace CATDI ignition controllers on G3412 series gas engines	G3412	CAT DI Model – P/N 163-6108 MOTORTECH MIC500 – P/N 06.00.514

Ordering Information – Accessories (optional)

P/N	Description	Equivalent to
06.05.085	PowerView3 HMI module	
Alternative 06.05.185	PowerView3 HMI module, built into stainless steel enclosure	
Alternative 06.05.187	PowerView3 HMI module, built into steel enclosure with sight window	
06.05.086-F	PowerView3 activation code for visualization of MIC3+ data ¹⁾	
06.05.087-F	PowerView3 activation code for visualization of DetCon20 data ¹⁾	
43.00.020-04	DetCon20 detonation control kit, incl. DetCon20 control unit, detonation sensor leads (4 pcs.), detonation sensors (4 pcs.)	
43.00.020-06	DetCon20 detonation control kit, incl. DetCon20 control unit, detonation sensor leads (6 pcs.), detonation sensors (6 pcs.)	
43.00.020-08	DetCon20 detonation control kit, incl. DetCon20 control unit, detonation sensor leads (8 pcs.), detonation sensors (8 pcs.)	
43.00.020-12	DetCon20 detonation control kit, incl. DetCon20 control unit, detonation sensor leads (12 pcs.), detonation sensors (12 pcs.)	
06.02.046-160	Analog input harness, 10 pole pin, 180°, 160 in., for P/N 66.00.356-8, 66.00.357-12	

¹⁾ Activation code has to be ordered separately with each PowerView3 HMI module.

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