

## Bank Controller Module for Diesel Engines

### Application:

The Bank Controller Module, BCM, is used for controlling fuel injection solenoids on up to ten cylinders for stationary and marine diesel engines.

### Operation:

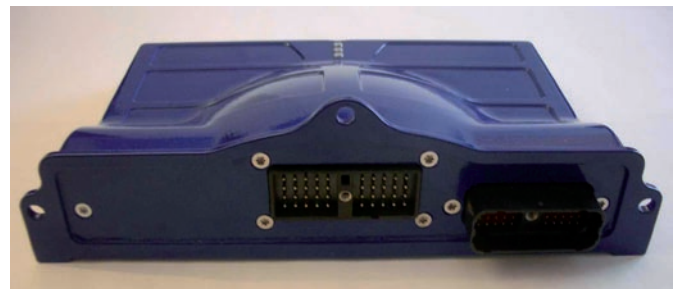
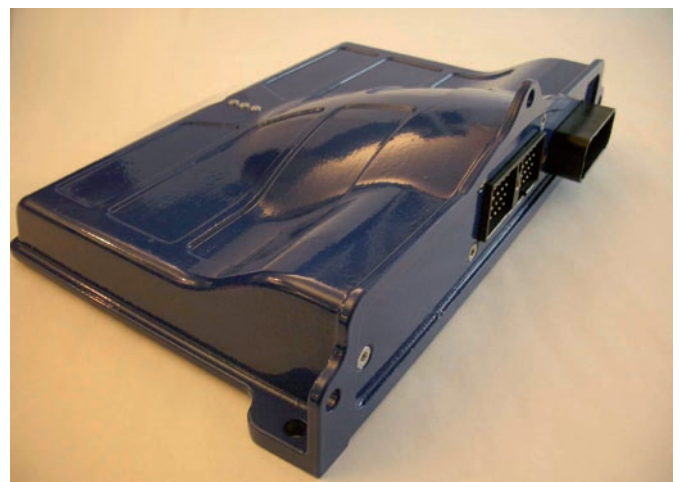
The BCM controls and monitors fuel injection solenoids for up to ten cylinders on a cylinder bank for a diesel engine. The fuel injection system can be equipped with one solenoid, UPS-system, or two solenoids, AUPS-system, per cylinder. The AUPS-system provides extra flexibility in terms of fuel pressure and injection rate control.

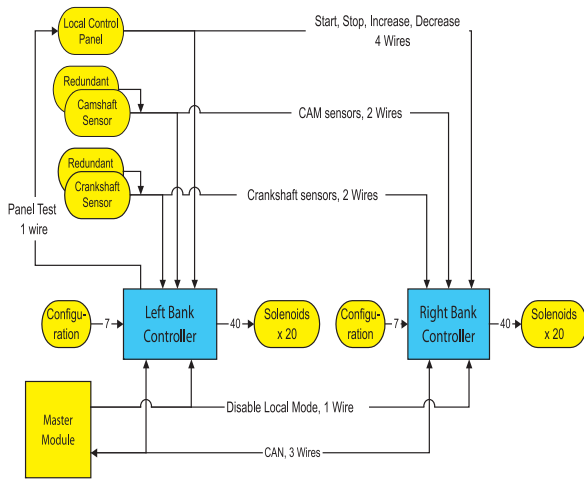
The BCM is designed and manufactured for on engine mount and is intended to work in conjunction with an external Master system that supplies start, stop, fuel quantity and advance angle commands to the BCM. All cylinders can be individually controlled with regard to both fuel quantity and injection timing thereby providing cylinder balancing control.

The BCM can also operate in local mode as backup if the communication with the Master system is disturbed. In local mode operation a separate, manually operated control panel with pushbuttons for start, stop, raise and lower commands is used. For a V-engine, both BCM-units will automatically synchronise to the engine speed selected by the operator. In local mode the engine can be de-rated as required by the user

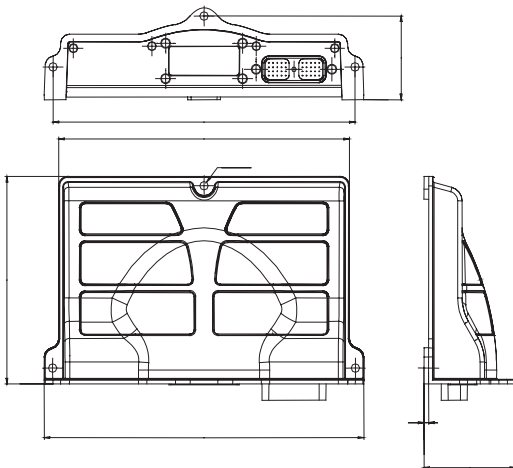
### BCM Features:

- Direct Injection fuel control
- User programmable pull-in and hold current
- Closing point detection for all solenoids
- Short circuit protection and detection of all outputs
- Diagnostics on all inputs
- Visible traffic light LED display for indication of system status
- Redundant engine position sensors
- CAN-link for communication with Master
- Operates in both remote and local mode
- Customer calibration data stored in E2Prom
- On engine mount
- Marine approval from DNV, Lloyds and Germanische Lloyds
- Configuration provided by engine harness
- Also available in an SDM-version for up to 20-cylinder Common Rail fuel injection engines





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### About us:

HOERBIGER Control Systems (HCO) is a research and development company with focus on advanced electronics that provides better balance between vehicles, combustion engines and the environment. We provide superior customer values by providing comprehensive and integrated technical solutions for vehicles and combustion engines.

We believe that combustion engines will continue to be an important mean for power generation and a requisite for a lifestyle that is increasingly dependent on transportation. Since our start in 1982 we have been active in advanced engineering for the combustion engine industry. We will continue to specialise in the development and supply of advanced electronic solutions for vehicles and other engine applications. With our patented innovations we can support our customers with to leading position in niche areas like in-cylinder combustion monitoring and control.

### Technical details

<b>Housing:</b>	Aluminium
<b>Protection:</b>	IP66
<b>Connectors:</b>	1 x 40 pin Deutsch DRC26-40A
Unit pump	1 x 40 pin Deutsch DRC16-40S
<b>Connectors:</b>	1 x 40 pin Deutsch DRC26-40A
Common Rail	1 x 40 pin Deutsch DRC26-40B
	1 x 40 pin Deutsch DRC26-40C
<b>Power Supply:</b>	16 to 32 Volts
<b>Temp range:</b>	-30 to +90 degrees Celsius
	-22 to +194 degrees Fahrenheit
<b>Vibration:</b>	1.6 mm @ 2 to 20 Hz
	4 G @ 20 to 1000 Hz
<b>Digital core:</b>	32 bit 68376 @ 20 MHz
Unit pump	256 kB Flash
	8 kB E2Prom
	32 kB RAM
	FPGA 100k gates for solenoid control
<b>Digital core:</b>	32 bit PowerPC @ 40 MHz
Common Rail	1024 kB Flash
	512 kB E2Prom
	64 kB RAM
	FPGA 300k gates for solenoid control
<b>Pull-in current:</b>	2 to 25A programmable
<b>Hold current:</b>	2 to 15A programmable
<b>Pull-in voltage:</b>	Supply voltage with closing point detection
Unit pump	
<b>Pull-in voltage:</b>	48 to 90V pull-in (boost) voltage, software programmable
Common Rail	
<b>Crank sensor:</b>	Active sensor with tooth or holes
Unit pump	with 1 missing tooth or hole for position synchronisation.
	CAM sensor required for 4-stroke
<b>Crank sensor:</b>	Active or passive (VR) sensor
Common Rail	CAM sensor required for 4-stroke
<b>Weight:</b>	2.4 kilo

*Complete system manual with installation and operational instructions available from HCO on request.*

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