

- ▶ Four Digital Inputs / Two for High Speed Counting
- ▶ Six Digital Outputs / Four Configurable as PWM
- ▶ PWM Resolution Selectable 8-bit or 16-bit
- ▶ Output Current Sensing/Feedback
- ▶ Four Analog Inputs / 0-20mA or 0-5V
- ▶ Quick Disconnect Field Connections
- ▶ J1939 and OptiCAN Connectivity
- ▶ RoHS Compliant
- ▶ Sealed from Environment
- ▶ Programs with EZ Ladder® Software
- ▶ Visual Status Indicator (Watchdog LED)
- ▶ Output Monitoring for Overloaded/Open Circuit



HEC-4000 Series Controllers allow for programmable intelligence under less than ideal conditions. Features include a sealed, water-tight enclosure, high speed counting, and CAN network communication with J1939. Based on patented\* PLC on a Chip® technology, the controllers are easy to apply and program using the EZ Ladder® PC based software. These Harsh Environment Controllers are suitable for direct mounting on machines and are an ideal choice for mobile applications.

### Typical applications include:

- ▶ Mobile Equipment
- ▶ Agricultural Equipment
- ▶ Off Road Equipment
- ▶ Remote Locations Monitoring & Control
- ▶ Engine Driven Pumps, Compressors and Generators
- ▶ Proportional Valves

### Specifications:

**Memory:** 256K Flash, 12K RAM, 4K EEPROM  
**Serial Ports:** 1 Programming Port (Max baud 57.6K), 1 Optional (Factory configured for RS232, RS422, or RS485)  
**Networking:** 2 CAN Ports, J1939 Read Only support / OptiCAN  
**Digital I/O:** 4 Inputs (2 High Speed for Counters) and 6 Outputs (4 are selectable for PWM)  
**Inputs:** rated 8 to 32VDC  
**Outputs:** Sourcing, rated to 4A Maximum (See User's Manual for derating), PWM frequency programmable 1.5 Hz to 1KHz, PWM, Over-current protected, Output Voltage equal to Input Voltage  
**Output Current Sensing:** PWM channels provide internal analog current sensing variables for closed loop control  
**Counters:** 2 Channels, Count Up, 40KHz Max.  
**Input Voltage:** 8 to 32VDC  
**Operating Temp:** -40 to 80° C for Models without optional serial port. (With optional serial port: -25 to 80°C)  
**Program Language:** Ladder Logic with Function Block using Divelbiss EZ Ladder PC based software  
**Mounting:** Panel Mount using screws  
**Type:** NEMA 4X, Sealed Plastic Housing

# HEC-4000-E-R

## Harsh Environment Controller



Proudly Made in the **USA**

### Hardware Selection Guide

Model #	Rating	Analog	Min - Max Integer Values
HEC-400x-E-R	0-20mADC	10 bit	0 - 1023
HEC-401x-E-R	0-5VDC	10 bit	0 - 1023
HEC-410x-E-R	0-20mADC	12 bit	0 - 4095
HEC-411x-E-R	0-5VDC	12 bit	0 - 4095
HEC-420x-E-R	0-20mADC	15 bit	0 - 32767
HEC-421x-E-R	0-5VDC	15 bit	0 - 32767
HEC-xxx0-E-R	No optional COM port installed		
HEC-xxx1-E-R	RS-232 optional COM port factory installed		
HEC-xxx2-E-R	RS-422 optional COM port factory installed		
HEC-xxx3-E-R	RS-485 optional COM port factory installed		

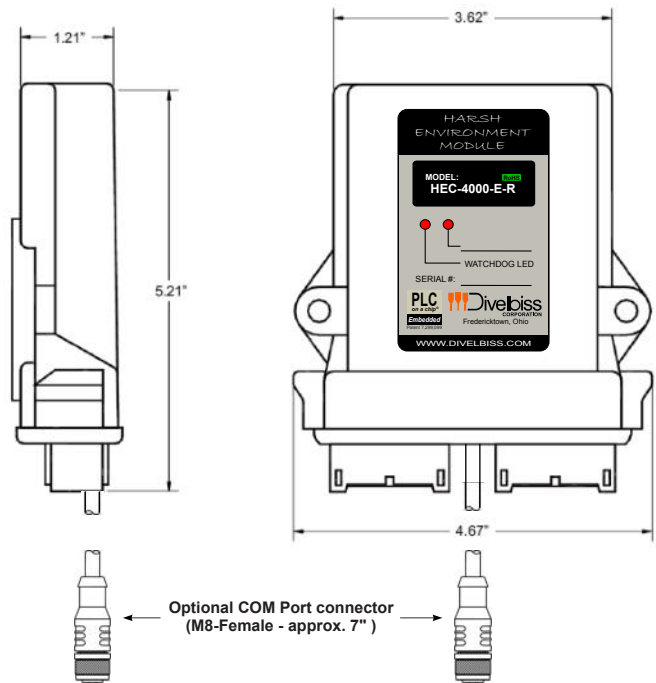
### Optional Hardware Add-ons

Model #	Description
HEC-10	"A" Key Connector Kit
Includes:	1 DTM06-12SA 12 1062-20-0122 (16-20AWG socket pins) 1 Wedge Lock
HEC-20	"B" Key Connector Kit
Includes:	1 DTM06-12SB 12 1062-20-0122 (16-20AWG socket pins) 1 Wedge Lock
HEC-CRMPTL	Crimp Tool (DTT-20-0)
HEC-100	"A" Key Cable Assembly with 6 ft flying leads
HEC-110	"B" Key Cable Assembly with 6 ft flying leads
HEC-140	Shielded "A" Key Cable Assembly with 6 ft flying leads
HEC-150	Shielded "B" Key Cable Assembly with 6 ft flying leads
HEC-900	Programming Breakout Cable in-line Deutsch connector for serial connection
HEC-910	Programming Breakout Cable 9-pin D-sub connector for serial connection
HEC-920	Programming Cable (mates with HEC-900) 9-pin D-sub connector to Deutsch
ICM-CA-34	RS232 Null Modem Programming Cable

### Programming Software

Description	Divebiss Part #
EZ Ladder® Development Platform	ICM-EZLDCD-01
<i>Includes:</i> EZ Ladder Development Platform CD	

### Dimensions



### Programming the Controller

The Harsh Environment Controller PLCs program in Ladder Diagram using the Divebiss EZ Ladder®, a Ladder Diagram Development Platform. EZ Ladder software parallels the IEC-61131 standard and provides an easy to use interface.

After a ladder diagram program is developed, it can be downloaded to the HEC controller via the serial port. The program is stored on non-volatile FLASH memory and is automatically executed on power up. Once the download is complete, the HEC is successfully programmed and begins executing the program.

Refer to the EZ Ladder User's Manual for more detail on creating ladder diagram programs, connecting to targets and downloading the program to targets. The manual can be downloaded from our website: <http://www.divebiss.com>

**NOTE:** Specifications are subject to change without notice.

2010002.0