

- ▶ SAE J1939 Connectivity
- ▶ Sealed from Environment
- ▶ RoHS Compliant
- ▶ No Secondary Enclosure Required
- ▶ Quick Disconnect Field Connections
- ▶ Programs using EZ LADDER Toolkit Software
- ▶ High Current Outputs with PWM
- ▶ Analog Inputs
- ▶ High Speed Counting
- ▶ Visual Status Indicator (Watchdog LED)
- ▶ Output Monitoring for Overloaded / Open Circuit



HEC-1500-E-R Programmable Logic Controller

HEC-1500-E-R Series Harsh Environment Controllers allows for programmable intelligence under less than ideal conditions. Features include a sealed, water-tight enclosure, analog and digital I/O, real-time clock, high speed counting, CAN network communication with SAEJ1939 and OptiCAN and serial ports for printing or Modbus Slave. Based on patented PLC on a Chip® technology, the controller is easy to apply and program using the EZ LADDER® Toolkit PC based software. The HEC-1500-E-R Series is suitable for direct mounting on machines and is an ideal choice for mobile applications.

Typical Applications Include:

- ▶ Mobile Equipment
- ▶ Material Handling
- ▶ Off Highway Equipment
- ▶ Spreader Controls
- ▶ Remote Locations Monitoring & Control
- ▶ Engine Driven Pumps, Compressors and Generators

HEC-1500 Series Controller Specifications		
Processor / Memory / Programming	HEC-1500-E-R	HEC-1504-E-R
Processor / Memory / EEPROM	M-Series PLC on a Chip, 12K RAM, 256K Flash, 2792 Bytes EEPROM	M-Series PLC on a Chip, 12K RAM, 256K Flash, 2792 Bytes EEPROM
Programming	Ladder Diagram / Function Block	Ladder Diagram / Function Block
Digital & Analog I/O		
Digital Inputs, 8-32VDC	6 Total, Qty 4, Sinking Qty 2 Selectable Sink or Source	6 Total, Qty 4, Sinking Qty 2 Selectable Sink or Source
High Speed Counters ¹	Qty 2, 40KHz Max., Count Up, Sinking or Sourcing Selectable	Qty 2, 40KHz Max., Count Up, Sinking or Sourcing Selectable
Digital Outputs, 8-32VDC, PWM or On/Off	Qty 6, Sourcing, 4 Amp Maximum (per output pair), PWM Frequency 1.436Hz to 1KHz, PWM Range 5-95%, Over-current protected. Output Voltage = Input Voltage.	Qty 6, Sourcing, 4 Amp Maximum (per output pair), PWM Frequency 1.436Hz to 1KHz, PWM Range 5-95%, Over-current protected. Output Voltage = Input Voltage.
Indicator LEDs	1 Programmable, 1 Watchdog	1 Programmable, 1 Watchdog
Analog Inputs	2 Channels, 10-bit Resolution, Field Selectable 0-5VDC, 0-10VDC or 0-20mADC	2 Channels, 10-bit Resolution, Field Selectable 0-5VDC, 0-10VDC or 0-20mADC
Communications		
Serial Ports	Programming via Deutsch 'A' Connector	Programming via Deutsch 'A' Connector 1 RS232 / RS485 / RS422 Configurable Serial Port via M8 4 Pin
Networking	1 CAN Port, SAE J1939 (Read Only), OptiCAN	1 CAN Port, SAE J1939 (Read Only), OptiCAN, Modbus Slave
Other		
Input Power	8-32VDC	8-32VDC
Real Time Clock	Time of Day, Day, Month, Year and Day of Week	Time of Day, Day, Month, Year and Day of Week
Style / Mounting	Sealed Enclosure / Panel Mount	Sealed Enclosure / Panel Mount
Connections	2 Deutsch DTM Series (coded A,B)	2 Deutsch DTM Series (coded A,B) M8 Cable (4 pin)
Dimensions	4.63" x 5.24" x 1.44"	4.63" x 5.24" x 1.44"

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Operating Temperature	-40°C to +80°C with Output Derating based on Temperature	-25°C to +80°C with Output Derating based on Temperature
RoHS	RoHS Compliant	RoHS Compliant

1. Counter Inputs are included in the quantity of digital inputs. Counter inputs may be used as counter or standard digital input.

The HEC-1500-E-R User Manual and EZ LADDER Toolkit can be downloaded from <http://www.divelbiss.com>.

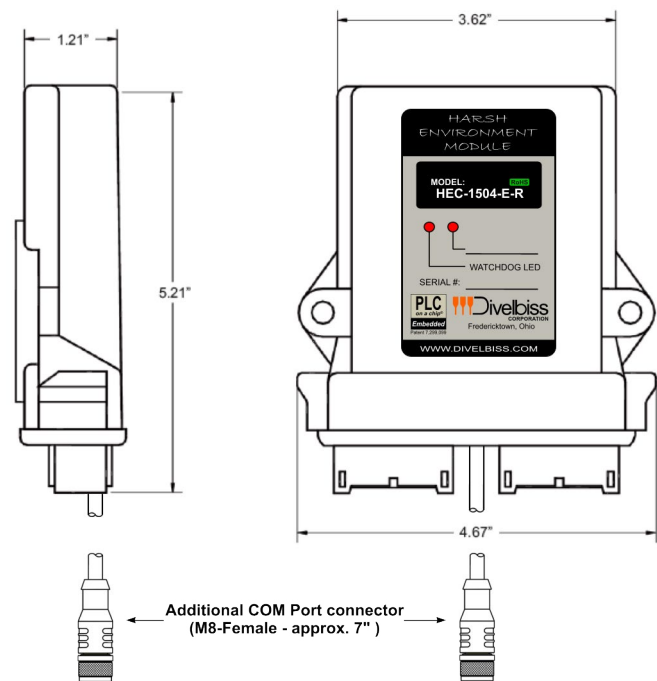
Ordering Information: (see Specifications for complete list of features per model)

Model #	Description
HEC-1500-E-R	Harsh Environment Controller with 6 DC inputs (2 configurable for High Speed Counter), 6 DC/PWM outputs, 2 configurable Analog Inputs, 1 CAN Network port for Optican or SAE J1939 connectivity.
HEC-1504-E-R	All HEC-1500 options plus additional configurable RS232/RS422/RS485 COM Port via M8 cable.

Optional Hardware Add-ons/Accessories:

Model #	Description
HEC-10 (Includes:)	"A" Keyed Connector Kit 1 DTM06-12SA 12 1062-20-0122 (16-20 AWG crimp sockets) 1 Wedge Lock
HEC-20 (Includes:)	"B" Keyed Connector Kit 1 DTM06-12SB 12 1062-20-0122 (16-20 AWG crimp sockets) 1 Wedge Lock
HEC-CRMPTL	Crimp Tool for HEC-10/20 Pins (DTT-20-0)
HEC-100	"A" Keyed (Gray) Cable assembly with 6ft. flying leads
HEC-110	"B" Keyed (Black) Cable assembly with 6ft. flying leads
HEC-910	Programming Breakout Cable, 9 pin D-sub connector for RS232/Null Modem Connection
126-102860	RS232 Null Modem Programming Cable
EZLDCD-01	EZ LADDER Toolkit Development Software on USB Flash Drive (Free with Controller Purchase)

Dimensions



Programming the Controller

The Harsh Environment Controller PLCs program in Ladder Diagram using the Divelbiss EZ LADDER® Toolkit, 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 programming port (on the "A" connector). 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 Toolkit's User 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.divelbiss.com>.

Specifications are subject to change without notice.