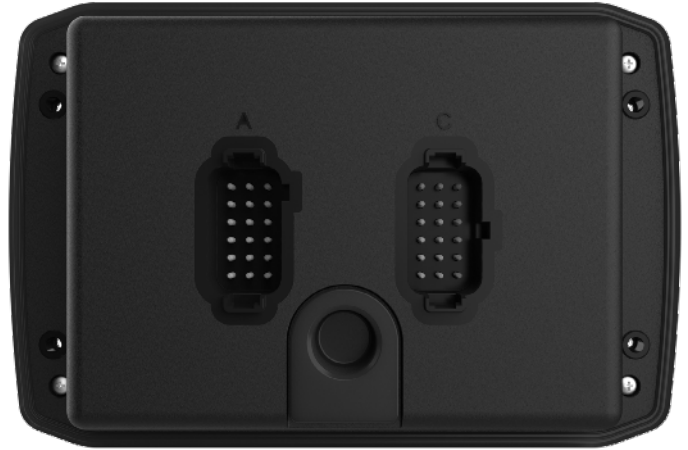




DSEE400 – Engine Only Control Module

Part Numbers: E400-01



Overview

The DSEE400 is an easy to use engine controller designed to provide flexible control with built in monitoring and protection. The DSEE400 is compatible with both electronic and mechanical diesel engines. It is fully configurable for a wide range of applications such as engine driven pumps and compressors.

All of the engine control functions, including the engine start, speed and clutch control can be achieved both automatically & manually. The monitoring and configuration of the system variables allows the DSEE400 to start and stop the engine and increase and decrease engine speed as the output demand requires.

On board event logging makes it possible to determine preventative maintenance and improved performance criteria for the machine. The DSE Configuration Suite PC Software is used to easily make adjustments to the operating parameters, sequences, timers and alarms. Reducing valuable development and commissioning time.

Key Features

- Advanced PLC functionality including multi-purpose PIDs
- Flexible inputs and outputs
- Built-in governor speed control
- PC configuration using DSE Configuration Suite
- Multiple language support
- Customisable status and multi-instrumentation display screens
- Enhanced 4-line text display
- Integrated RS485 ports providing Modbus RTU support
- Multi-level PIN protected front panel editor
- Manual front panel and automatic control modes for such applications as filling, emptying and maintaining levels.
- Latest ECU / ECM support for a wide range of engine manufacturers
- IP67 rating with integrated gasket offers increase resistance to water ingress
- Supports connection to DSE battery chargers by RS485 for display of status and instrumentation

Product Documentation

057-252 – DSEE400 Operator Manual
057-251 – DSEE400 PC Configuration Suite Manual
053-180 - DSEE400 Installation Instructions



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DSEE400 – Engine Only Control Module

Part Numbers: E400-01

Specifications	
DC Supply	
Continuous Voltage Rating	5 V to 35 V DC continuous
Cranking Dropouts	Able to survive 0 V for 100 ms, providing supply was at least 10 V before dropout and supply recovers to 5 V. This is achieved without the need for internal batteries. Backlight will not be maintained during cranking.
Maximum Operating Current	326 mA at 12 V, 164 mA at 24 V
Maximum Standby Current	119 mA at 12 V, 38 mA at 24 V
Charge Alternator Excitation / Fail Range	0 V to 35 V
Analogue Inputs	
Number	7
Type	Positive Switching Digital Input, Resistive Analogue Input, Current Analogue Input or Voltage Analogue Input
Positive Digital Input Closed Voltage Threshold	Greater than 8.1 V
Positive Digital Input Open Voltage Threshold	Less than 3.2 V
Resistive Analogue Measurement Range	Input A: 0 Ω to 240 Ω Input B to G: 0 Ω to 480 Ω
Current Analogue Measurement Range	Input A to G: 0 mA to 20 mA
Voltage Analogue Measurement Range	Input A to G: 0 V to 10 V
Analogue Resolution	1 %
Analogue Accuracy	±2 %
Digital Inputs	
Number	4
Type	Negative Switching Digital Input or Positive Switching Digital Input
Negative Digital Input Closed Voltage Threshold	Less than 3.2 V
Negative Digital Input Open Voltage Threshold	Greater than 8.1 V
Positive Digital Input Closed Voltage Threshold	Greater than 8.1 V
Positive Digital Input Open Voltage Threshold	Less than 3.2 V

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DSEE400 – Engine Only Control Module

Part Numbers: E400-01

Specifications	
Emergency Stop Input	
Number	1
Type	Positive Switching Digital Input
Closed Voltage Threshold	Greater than 5.0 V
Open Voltage Threshold	Less than 3.0 V
Magnetic Pick-up Input	
Voltage Input Range	0.5 V _{Peak} to 70 V _{Peak}
Frequency Input Range	5 Hz to 10 kHz
Resolution	1 Hz
Accuracy	±1 %
Flywheel Teeth	10 to 500
Digital Output	
Number	4
Type	Positive Switching DC Output
DC Output Rating	Output A to B (Fuel and Start): 10 A _{DC} for 10 s, 5 A continuous at Emergency Stop input supply voltage Output C to D: 2 A _{DC} at module supply voltage
PWM Outputs	
Number	2
Type	Positive Switching DC Output, PWM Output or PWMi Output
Positive Switching DC Output Rating	2 ADC at PWMi supply voltage.
PWM & PWMi Frequency Range	20 Hz to 500 Hz
PWM & PWMi Rating	4 A resistive at PWMi supply at 0 Hz to 250 Hz 2 A resistive at PWMi supply at 250 Hz to 500 Hz
Minimum Load Impedance	3 Ω at 12 V, 6 Ω at 24 V
PWMi Resolution	1 mA for 0 A to 2 A range 2 mA for 0 A to 4 A range
Accuracy	±1 %

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DSEE400 – Engine Only Control Module

Part Numbers: E400-01

Specifications	
Analogue Outputs	
Number	1
Type	Current Analogue Output or Voltage Analogue Output
Function	Configurable or Governor Control
Voltage Analogue Range	0 V to 10 V
Load Impedance	Current Analogue Output: Maximum 500 Ω Voltage Analogue Output: Minimum 1 kΩ
Resolution	Current Analogue Output: 5 µA Voltage Analogue Output: 5 mV
Accuracy	±1 %
Communications	
USB B	1 Programming Port
RS485	1 Modbus RTU Port
CAN	1 Fully Isolated Port
Temperature	
Operating Temperature	-30 °C to +80 °C / -22 °F to +176 °F
Storage Temperature	-40 °C to +85 °C / -40 °F to +185 °F
Dimensions	
Overall (W x H x D)	189 mm x 125 mm x 54 mm / 7.46 " x 4.94 " x 2.14 "
Mounting	
Type	Panel Fascia Mounting
Panel Cut-Out (W x H)	148 mm x 112 mm / 5.83 " x 4.41 "
Mounting Holes	4 x M4 mounting holes with 165 mm x 68 mm / 6.50 " x 2.68 " centres

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DSEE400 – Engine Only Control Module

Part Numbers: E400-01

Related Products		
DSEWebNet®		
DSE890 MKII	DSEWebNet® Gateway	0890-04
Accessories		
DSEE400 Connector Harness Set		007-852
DSEE400 DT16 Deutsch Connector A		007-850
DSEE400 DT16 Deutsch Connector C		007-851
DSEE400 DT16 Connector IP Plug		020-1042

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DSEE400 – Engine Only Control Module

Part Numbers: E400-01

Environmental Testing Standards	
Electro-Magnetic Compatibility	
BS EN 61000-6-2	EMC Generic Immunity Standard for the Industrial Environment
BS EN 61000-6-4	EMC Generic Emission Standard for the Industrial Environment
Electrical Safety	
BS EN 60950	Safety of Information Technology Equipment, including Electrical Business Equipment
Electrical Tests	
ISO 7637-2	Transient Immunity of Supply Lines
ISO 7637-3	Transient Immunity of I/O or Sensor Lines
Temperature	
BS EN 60068-2-1	Ab/Ae Cold Test -30 °C
BS EN 60068-2-2	Bb/Be Dry Heat +70 °C
Vibration	
BS EN 60068-2-6	Ten sweeps in each of three major axes 5 Hz to 8 Hz at ±7.5 mm, 8 Hz to 500 Hz at 2 Gn
Humidity	
BS EN 60068-2-30	Db Damp Heat Cyclic 20/55 °C at 95% Relative Humidity 48 Hours
BS EN 60068-2-78	Cab Damp Heat Static 40 °C at 93% Relative Humidity 48 Hours
Shock	
BS EN 60068-2-27	Three shocks in each of three major axes 15 Gn in 11 ms
Degrees of Protection Provided by Enclosures	
BS EN 60529	IP67

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DSEE400 – Engine Only Control Module

Part Numbers: E400-01

Connector A	
Pin	Description
A1	Digital Output C
A2	Digital Output D
A3	Emergency Stop Input
A4	Digital Output A (Fuel)
A5	Digital Output B (Start)
A6	Digital Input A
A7	DC Battery Positive
A8	CAN Screen
A9	CAN Low
A10	CAN High
A11	Analogue Input A, B, C and D Common
A12	Digital Input B
A13	DC Battery Negative
A14	Charge Alternator
A15	Analogue Input D
A16	Analogue Input C (Fuel Level)
A17	Analogue Input B (Engine Temperature)
A18	Analogue Input A (Oil Pressure)

Connector C	
Pin	Description
C1	Governor Output B (Output)
C2	RS485 A
C3	RS485 Screen
C4	Analogue Input E, F and G Common
C5	Analogue Input E
C6	Analogue Input F
C7	Governor Output A (Reference)
C8	RS485 B
C9	MPU Positive
C10	MPU Negative
C11	MPU Screen
C12	Analogue Input G
C13	PWM DC Supply Positive
C14	PWM DC Supply Negative
C15	PWM Output F
C16	PWM Output E
C17	Digital Input D
C18	Digital Input C

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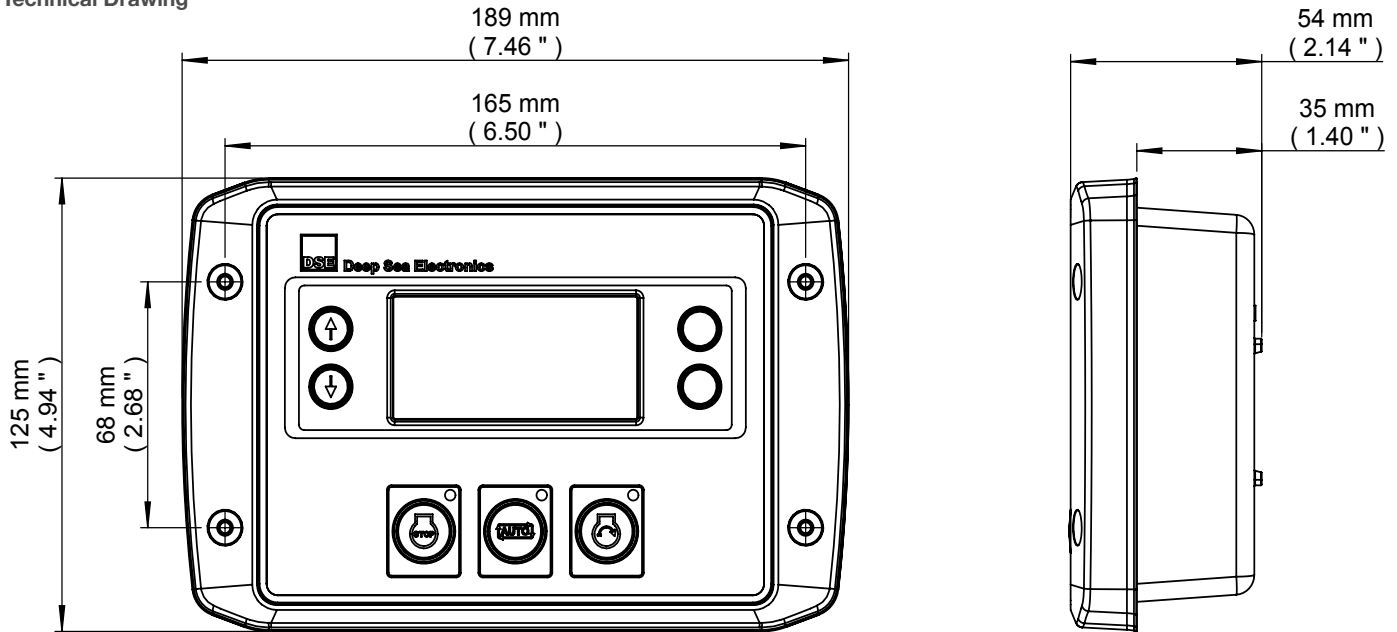
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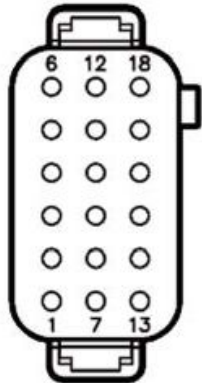
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Technical Drawing

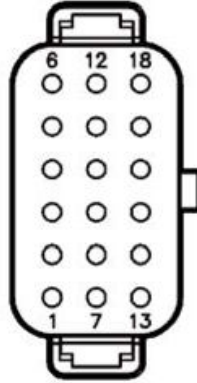


Connector Diagrams

Connector A



Connector C



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