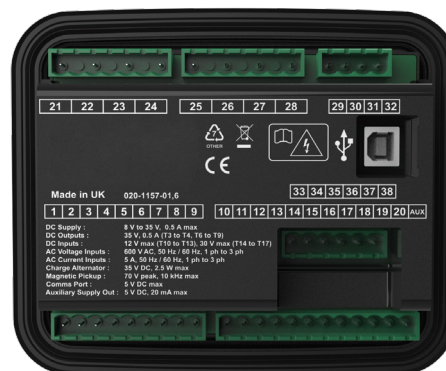


DSEG4500 Compact Single Genset Controller

DSEG4501 Compact Single Genset Controller with RS485

Part Number: G4500-01, G4501-01



Overview

The DSEG4500 Compact Single Genset Controller and DSEG4501 Compact Single Genset Controller with RS485 are part of the next-generation DSEG-Series platform, designed for versatility and performance. User-configurable for Remote Start (RS) or Automatic Mains (Utility) Failure (AMF) applications, they offer a robust feature set tailored to single genset operations.

Selected features include real-time monitoring of generator and load power, engine speed, oil pressure, coolant temperature, frequency, voltage, current, power, and fuel level. All critical data is displayed on a dedicated multi-line, text and icon high-resolution screen.

The DSEG4500 and DSEG4501 support both electronic J1939 (CAN) and non-electronic (alternator frequency sensing) engines. This makes them compatible with a wide range of fuel types including diesel, gas, and petrol. A generous number of flexible inputs, outputs, and protection features ensures adaptability for diverse applications. Electric engines allow for an enhanced monitoring of the DEF tank and configurable alarms determined by the SCR Inducement Severity level. Non-electric engines allow for input recognition of EGR fault inducement severities.

Fully programmable via the DSE Configuration Suite software, the DSEG4500 and DSEG4501 deliver the renowned DSE easy setup experience, providing seamless integration and control.

Key Features

- Designed to protect and control a genset, genset breakers and mains (utility) breaker.
- Remote Start / AMF functionality in one controller.
- Wide range of control and protection features.
- Flexible connection and communication options.
- Multiple configuration possibilities.
- Simple user interface control.
- Integrated gasket (IP65 protection)
- Separate FPE PIN and maintenance reset PIN
- Manual front panel and automatic control modes
- RS485 communications (G4501-01 only)
- Module status pages for both current (DM1) and previous (DM2) Diagnostic Trouble Codes
- Event logging for current (DM1) Diagnostic Trouble Codes

Product Variants

- G4500-01 - Compact Single Genset Controller
- G4501-01 - Compact Single Genset Controller with RS485

Product Documentation

- 053-280 – DSEG4500 & DSEG4501 Installation Instructions
- 057-379 – DSEG4500 & DSEG4501 Operator Manual
- 057-378 – DSEG4500 & DSEG4501 Configuration Suite PC Manual



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DSEG4500 Compact Single Genset Controller

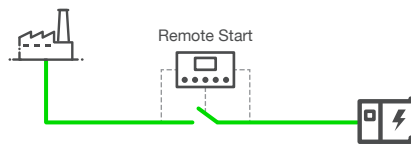
DSEG4501 Compact Single Genset Controller with RS485

Part Number: G4500-01, G4501-01

Remote Start Controller Key Features

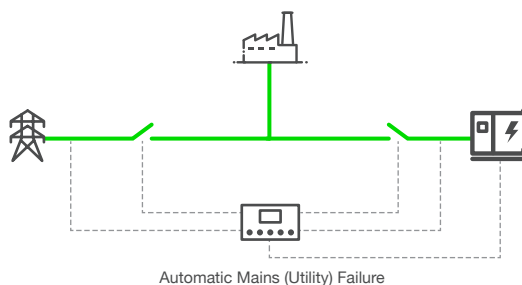
- 3 phase generator sensing
- Digital input, Modbus control key, inbuilt scheduler or manual generator start up

Typical Applications



Automatic Mains (Utility) Failure Controller Key Features

- 3 phase generator sensing
- 3 phase mains (utility) sensing
- Mains (utility) failure detection
- Digital input, Modbus control key, inbuilt scheduler or manual generator start up



Product Documentation

053-280 – DSEG4500 & DSEG4501 Installation Instructions

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**DSEG4500** Compact Single Genset Controller**DSEG4501** Compact Single Genset Controller with RS485

Part Number: G4500-01, G4501-01

Specifications	
DC Supply	
Continuous Voltage Rating	8 V to 35 V DC continuous
Cranking Dropouts	Able to survive 0 V for 50 ms, providing supply was at least 10 V before dropout and supply recovers to 10 V. This is achieved without the need for internal batteries. Backlight will not be maintained during cranking.
Maximum Operating Current	200 mA at 12 V, 120 mA at 24 V
Maximum Standby Current	65 mA at 12 V, 35 mA at 24 V
Charge Alternator Excitation / Fail Range	0 V to 35 V
Voltage Measurement	
Number	2
Measurement Inputs	3 Phase + Neutral Remote Start Controller: Generator Only Automatic Mains (Utility) Failure Controller: Generator and Mains (Utility)
Voltage Range	15 V to 415 V Phase to Neutral 25 V to 720 V Phase to Phase
Frequency Range	3.5 Hz to 75 Hz
Resolution	1 V Phase to Neutral 2 V Phase to Phase 0.1 Hz
Accuracy	±1 % Phase to Neutral ±2 % Phase to Phase ±0.05 Hz
Current Transformer Measurement	
Number	3
Measurement Inputs	Remote Start Controller: Generator Only Automatic Mains (Utility) Failure Controller: Generator or Load
Current Range	0 A to 5 A
Resolution	0.5 %
Accuracy	±1 %

Product Documentation

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**DSEG4500** Compact Single Genset Controller**DSEG4501** Compact Single Genset Controller with RS485

Part Number: G4500-01, G4501-01

Specifications	
Analogue Inputs	
Number	3
Type	Negative Switching Digital Input, Resistive Analogue Input, Current Analogue Input or Voltage Analogue Input
Digital Input Closed Voltage Threshold	Less than 3 V
Digital Input Open Voltage Threshold	Greater than 8 V
Resistive Analogue Measurement Range	Input A, B & C: 0 Ω to 3 k Ω
Current Analogue Measurement Range	Input A: 0 mA to 20 mA
Voltage Analogue Measurement Range	Input A: 0 V to 10 V
Analogue Resolution	1 %
Analogue Accuracy	± 1 %
Digital Inputs	
Number	4
Type	Negative Switching Digital Input
Closed Voltage Threshold	Less than 3 V
Open Voltage Threshold	Greater than 8 V
Magnetic Pick-up Input	
Voltage Input Range	0.5 V _{Peak} to 70 V _{Peak}
Frequency Input Range	1 Hz to 10 kHz
Resolution	1 Hz
Accuracy	± 1 %
Flywheel Teeth	10 to 500

Product Documentation

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**DSEG4500** Compact Single Genset Controller**DSEG4501** Compact Single Genset Controller with RS485

Part Number: G4500-01, G4501-01

Specifications	
Digital Outputs	
Number	6
Type	Positive Switching DC Outputs
Positive DC Output Rating	Output A to F: 0.5 A at supply voltage
Auxiliary Supply Output	
Number	1
Rating	20 mA at 5 V
Communications	
USB B	1 Programming Port
CAN	1 CAN Port
RS485	1 Fully Isolated RS485 Port (G4501-01 Only)
Temperature	
Operating Temperature	-30 °C to +70 °C / -22 °F to +158 °F
Storage Temperature	-40 °C to +80 °C / -40 °F to +176 °F
Dimensions	
Overall (W x H x D)	142.6 mm x 118.6 mm x 48.5 mm / 5.61 " x 4.66 " x 1.91 "
Mounting	
Type	Panel Fascia Mounting
Panel Cut-Out (W x H)	118 mm x 92.0 mm / 4.65 " x 3.62 "
Maximum Panel Thickness	5 mm / 0.19"

Product Documentation

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DSEG4500 Compact Single Genset Controller

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Part Number: G4500-01, G4501-01

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 61010	Safety of Information Technology Equipment, including Electrical Business Equipment
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	IP65 - From the front of the module when installed into a control panel (Integrated Gasket)

Product Documentation

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**DSEG4500** Compact Single Genset Controller**DSEG4501** Compact Single Genset Controller with RS485

Part Number: G4500-01, G4501-01

Remote Start Controller	
Pin	Description
1 to 2	DC Supply
3	Fuel
4	Start
5	Charge Alternator
6 to 9	Digital Outputs
10 to 13	Analogue Inputs
14 to 17	Digital Inputs
18 to 20	Engine ECU/ECM
21 to 24	Generator Voltage Sensing
25 to 28	Not Applicable
29 to 32	Generator Current Sensing
33 to 35	Magnetic Pickup
36 to 38	RS485 (G4501-01 Only)
Aux	Auxiliary Supply Output

Automatic Mains (Utility) Failure Controller	
Pin	Description
1 to 2	DC Supply
3	Fuel
4	Start
5	Charge Alternator
6 to 9	Digital Outputs
10 to 13	Analogue Inputs
14 to 17	Digital Inputs
18 to 20	Engine ECU/ECM
21 to 24	Generator Voltage Sensing
25 to 28	Mains (Utility) Voltage Sensing
29 to 32	Generator / Load Current Sensing
33 to 35	Magnetic Pickup
36 to 38	RS485 (G4501-01 Only)
Aux	Auxiliary Supply Output

Product Documentation

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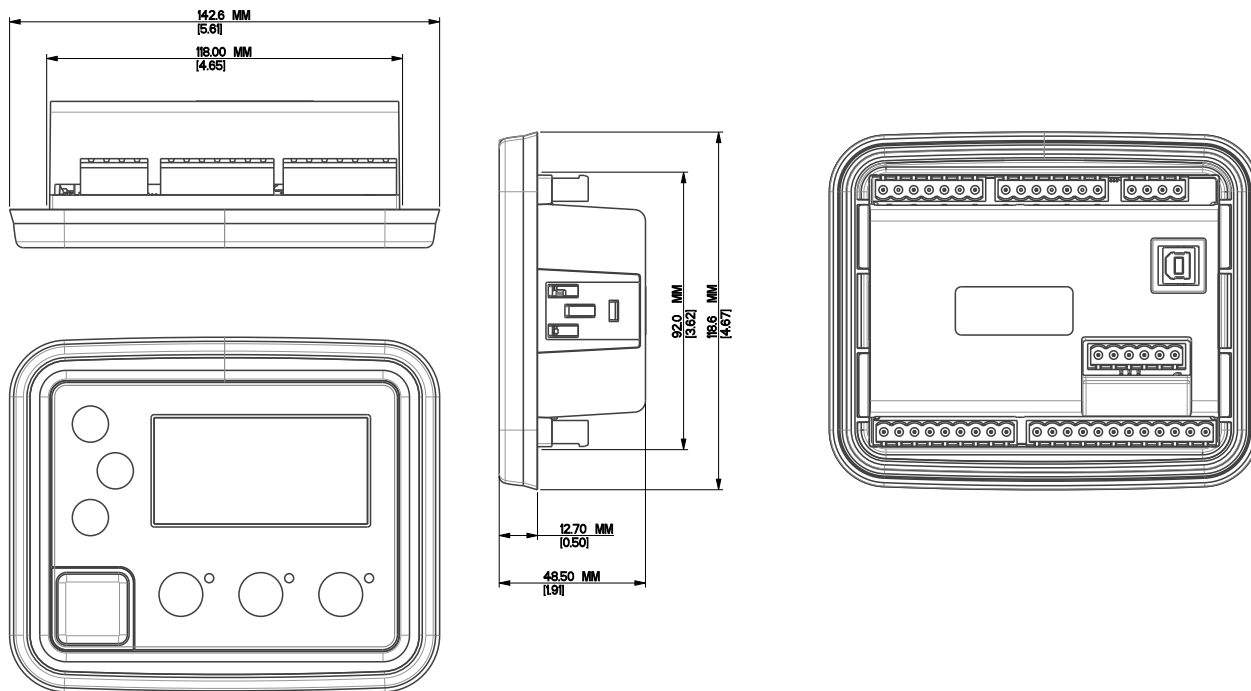


DSEG4500 Compact Single Genset Controller

DSEG4501 Compact Single Genset Controller with RS485

Part Number: G4500-01, G4501-01

Technical Drawing



Connection Label

21	22	23	24	25	26	27	28	29	30	31	32
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Made in UK 020-1157-01,6

33	34	35	36	37	38
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	AUX
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	-----

DC Supply : 8 V to 35 V, 0.5 A max
 DC Outputs : 35 V, 0.5 A (T3 to T4, T6 to T9)
 DC Inputs : 12 V max (T10 to T13), 30 V max (T14 to T17)
 AC Voltage Inputs : 600 V AC, 50 Hz / 60 Hz, 1 ph to 3 ph
 AC Current Inputs : 5 A, 50 Hz / 60 Hz, 1 ph to 3 ph
 Charge Alternator : 35 V DC, 2.5 W max
 Magnetic Pickup : 70 V peak, 10 kHz max
 Comms Port : 5 V DC max
 Auxiliary Supply Out : 5 V DC, 20 mA max

Refer to PIN out description charts for connection information on the operating mode controller is configured for.

Product Documentation

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