

DSEA106 MKII Digital Automatic Voltage Regulator (AVR)

Part Number: A106-02



Overview

The DSEA106 MKII Digital Automatic Voltage Regulator (AVR) is designed to regulate the output voltage of an AC generator. The DSEA106 MKII is supplied by either a stator auxiliary winding or self excited from the generator's main stator windings (shunt).

The DSEA106 MKII eliminates the complexities involved with analogue AVR designs. Analogue AVR designs can be oversensitive to change in temperature which affects the generators output voltage stability, where as the DSEA106 MKII AVR maintains a smooth, stable regulated AC output voltage, regardless of the electrical load connected.

The DSEA106 MKII is simple to install and set up using the DSE Configuration Suite PC Software with the DSE815 configuration interface. On board DIP switches and potentiometers can be used to further adjust the selected configuration and set points within the AVR at a later date by on site maintenance engineers.

The DSEA106 MKII also provides a soft start ramping feature, connection for a droop CT and the ability to perform remote voltage set point adjustment. All of these feature make it perfect for synchronising and loadsharing applications.

The DSEA106 MKII AVR is an ideal option for both OEM and retro-fit solutions and is a suitable aftermarket replacement for multiple OEM AVR products. Speak to DSE's dedicated Technical Support team before placing your order to confirm full compatibility.

Key Features

- LED indication for fault and operating status
- On board DIP switch selection for frequency / voltage configurations and 4 stability ranges
- On board potentiometer adjustment for generator voltage set point, droop percentage, UFRO start frequency, proportional (gain) and integral (stability).
- Remote generator voltage set point adjustment using 5 kΩ potentiometer (with open circuit protection) and/or – 10 V to +10 V DC control signal.
- Compatible with single phase power supply source supplied from a Self Excited (Shunt) or Auxiliary Winding.
- Single generator terminal voltage sensing
- Loss of generator terminal voltage sensing protection
- Under Frequency Roll Off (UFRO) protection with optional instantaneous step.
- Over excitation protection
- Optional idle running detection to prevent over excitation
- Soft ramping of generator terminal voltage to set point on start up.

Product Documentation

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VAT No.316923457

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Specifications	
Power Supply	
Supply Source	Self Excited (Shunt) or Auxiliary Winding
Supply Input	Single Phase
Voltage Range	100 V _{AC} to 300 V _{AC} Phase to Neutral or Phase to Phase
Frequency Range	40 Hz to 180 Hz
Generator Terminal Voltage Measurement	
Measurement Input	Single Phase
Voltage Range	15 V _{AC} to 600 V _{AC} Phase to Neutral or Phase to Phase
Voltage Accuracy	±0.5 %
Frequency Range	40 Hz to 65 Hz
Frequency Accuracy	±0.2 Hz
Droop CT Current Measurement	
Measurement Input	Single Phase
Current Range	0 A to 5 A
VA Rating	0.25 VA
Accuracy	±0.05 A
Droop Adjustment	0 % to 10 %
Remote Bias Inputs	
Number	2
Type	1 Resistive Analogue Input 1 Voltage Analogue Input
Resistive Analogue Input Range	0 Ω to 5 kΩ
Resistive Bias Range	±1 % to ±16 % of Nominal Voltage
Voltage Analogue Input Range	-10 VDC to +10 VDC
Voltage Analogue Input Impedance	Greater than 10 kΩ
Voltage Bias Range	±1 %/V to ±16 %/V of Nominal Voltage
Excitation Output	
Voltage Range	0 V _{DC} to 100 V _{DC} continuous 100 V _{DC} to 150 V _{DC} for 10 seconds
Current Range	0 A _{DC} to 7 A _{DC} continuous 7 A _{DC} to 15 A _{DC} for 10 seconds
Maximum Continuous Output Power	500 W
Exciter Winding Impedance	5 Ω to 50 Ω
Exciter Winding Inductance	0.3 H to 1.2 H

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Specifications	
Communications	
DSE815 Configuration Port	1 Programming Port
Temperature	
Operating Temperature	-40 °C to +70 °C / -40 °F to +158 °F
Storage Temperature	-40 °C to +85 °C / -40 °F to +185 °F
Dimensions	
Overall (W x H x D)	179 mm x 108.3 mm x 61 mm / 7.05 " x 4.26 " x 2.40 "
Mounting	
Type	Chassis Mounting
Mounting Holes	4 M5 mounting holes with 149.2 mm x 85 mm / 5.87 " x 3.35 " centres
Weight	0.39 kg / 0.86 lb

Related Products		
DSEGenset®		
DSEG8900	7" Colour Parallel Genset Controller	G8900-01
DSEG8600	Parallel Genset Controller with Integral Heater	G8600-01
DSE8610 MKII	Synchronising & Load Sharing Auto Start Control Module	8610-02
DSE7420 MKII	Auto Mains (Utility) Failure Control Module	7420-03
DSE7410 MKII	Auto Start Control Module	7410-03
DSE7320 MKII	Auto Mains (Utility) Failure Control Module	7320-03
DSE7310 MKII	Auto Start Control Module	7310-03
Accessories		
DSE815	DSE AVR Communication Interface	0815-01

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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
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	IP20

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Pin Out Description	
Pin	Description
Aux +	Self Excited (Shunt) or Auxiliary Winding L1
Aux -	Self Excited (Shunt) or Auxiliary Winding L2/N
F+	Exciter Output Positive
F-	Exciter Output Negative
S1	Droop CT S1
S2	Droop CT S2
L1	Generator Terminal L1 Voltage
N (L2)	Generator Terminal L2/N Voltage
P1	0 Ω to 5 k Ω Remote Bias Input
P2	0 Ω to 5 k Ω Remote Bias Input
A+	-10 V to +10 V Remote Bias Input Positive
A-	-10 V to +10 V Remote Bias Input Negative

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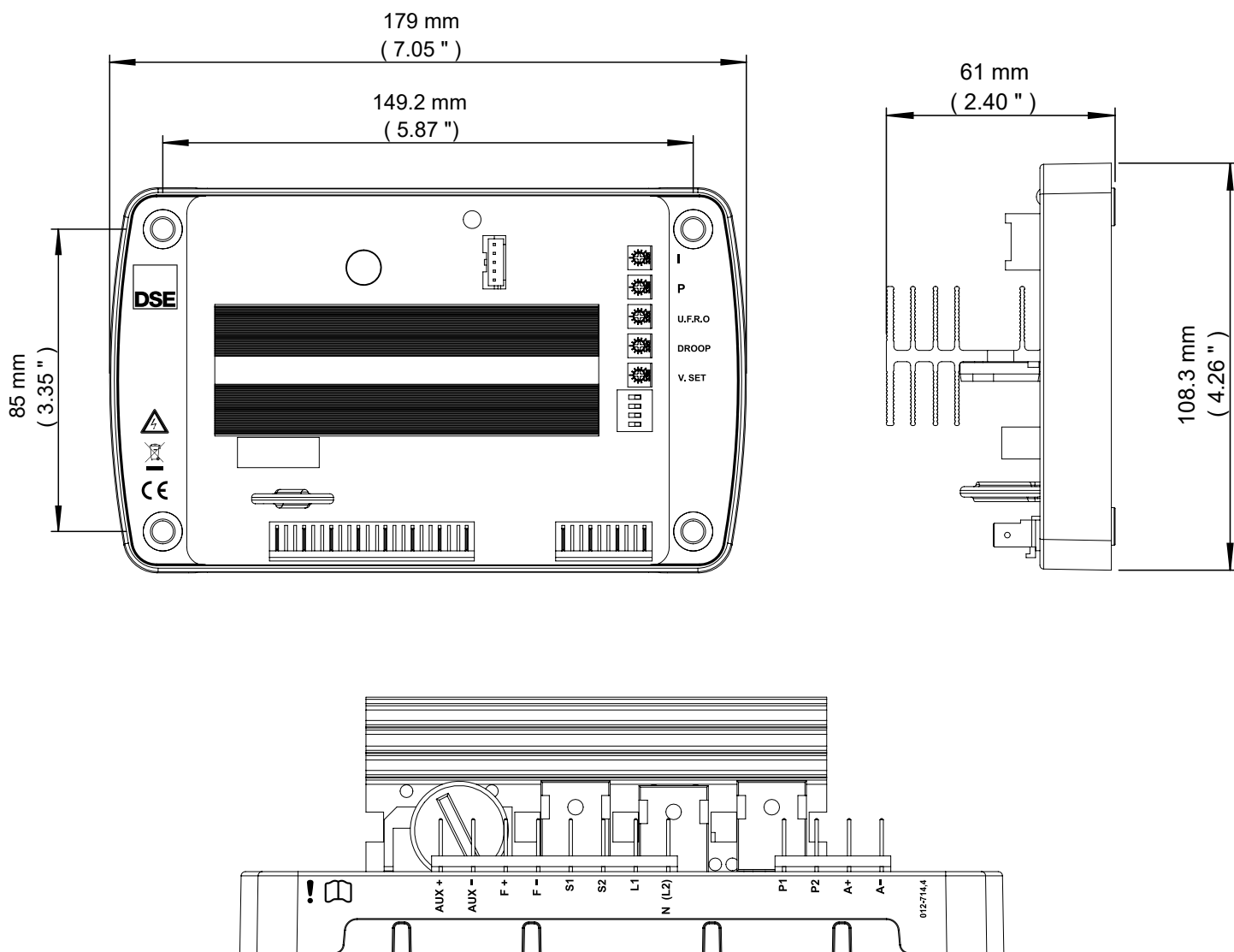
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DSEA106 MKII Digital Automatic Voltage Regulator (AVR)

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Technical Drawing & Connection label



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