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Power Products

DECS-150 DIGITAL EXCITATION CONTROL SYSTEM

DECS-150 Digital Excitation Control Systems offer precise excitation control and machine protection in a compact package. DECS-150 adaptability to many applications is assured through configurable contact inputs and outputs, flexible communication capabilities, and programmable logic implemented with the provided software.

The high flexibility and powerful functionalities make this device particularly useful in those projects where machines are paralleled to other generators and/or the utility system, since the requirements from the grid codes are very demanding.

The DECS-150 is suitable for all Mecc Alte brushless alternators, including the medium and high voltage series ECO46 and ECO49. In fact, the DECS-150 can be fed indifferently by the PMG3, MAUX or even shunt-excited.

Excitation power is supplied from the DECS-150 by means of a filtered, switching power module that uses pulse-width modulation. It is capable of supplying 7 Amps at 70°C ambient temperature and has a forcing capability of 11 Amps for 10 seconds.

MAIN FEATURES

- Voltage regulation accuracy ±0.25%
- THD-tolerant design offers reliable operation with non-linear loads
- True RMS three-phase generator voltage sensing/regulation
- Four excitation control modes:
  - Automatic Voltage Regulation (AVR)
  - Field Current Regulation (FCR)
  - Power Factor Regulation (PF)
  - Var Regulation (var)
- Auto tuning feature
- Soft start and voltage build-up control
- Integrated droop and cross current compensation
- Diodes failure detection
- Remote setpoint control input accepts analog voltage or current control signal
- Real-time metering
- Wide range of limiting and protection functions:
  - Overexcitation
  - Underexcitation
  - Stator current limiting
  - Up to eight programmable functions
- Eight programmable contact-sensing inputs
- Three contact outputs
- Flexible communication: serial communication through USB port and Ethernet communication
- Data logging and sequence of events
- USB-powered for programming via BESTCOMS*Plus*® software

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SPECIFICATIONS

DC Operating Power

Full Load Continuous Current:	10 A at 55°C 7 A at 70°C

AC Operating Power

Power Input Configuration:	1-phase 3-phase
Power Input Frequency:	dc, 50 to 500 Hz
Nominal Input Voltage:	120 ÷ 240 Vac 250 Vdc

Generator and Bus Voltage Sensing

Configuration:	1-phase 3-phase–3-wire
50 Hz Voltage Ranges:	100 Vac ±10% 200 Vac ±10% 400 Vac ±10%
60 Hz Voltage Ranges	120 Vac ±10% 240 Vac ±10% 480 Vac ±10% 600 Vac ±10%
Frequency:	50/60 Hz nominal
Burden:	<1 VA per phase

Generator Current Sensing

Configuration:	1-phase or 3-phase with separate input for cross-current compensation
Nominal Current:	1 Aac
Frequency:	50/60 Hz
Burden:	<0,1 VA

Inputs and Outputs

Contact Inputs:	8 programmable
Type:	Dry contact
Interrogation Voltage	12 Vdc
Auxiliary Inputs:	1
Current Input:	4 to 20 mAdc
Voltage Input:	–10 to +10 Vdc
Output Contacts:	2 programmable 1 watchdog 1 breaker shunt trip
Rating:	7 A 24 Vdc/240 Vac

Communication

USB:	USB type B port
Ethernet:	RJ45 jack 10BASE-T 100BASE-TX

Environmental

Operating Temperature	
10 A Continuous:	–40°C to 55°C
7 A Continuous:	–40°C to 70°C
Storage Temperature:	–40°C to 85°C
Humidity:	MIL-STD-705B, Method 711-1C
Salt Fog:	IEC 60068-2-11
Shock:	Withstands 30g in 3 perpendicular planes
Vibration:	5 G for 3 hours from 18 to 2,000 Hz
Transients:	EN61000-4-4
Static Discharge:	EN61000-4-2

Physical

Weight:	1.79 kg
Dimensions (WxHxD):	163 x 302 x 82 mm

Agency/Certification

UL recognised (evaluated to UL 6200), CSA certified, EAC certified, CE EMC and LVD compliant, maritime recognitions by BV, DNV•GL, and ABS.

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