

The DECS-150 Digital Excitation Control System is a high powered, low-cost, and environmentally rugged solution for controlling the output of rotary excited synchronous generators. The DECS-150 is perfect for machines that are paralleled to other generators and/or the utility system. It is ideal for distributed generation, cogeneration, and peak shaving applications.

## FEATURES

- Microprocessor based
- 0.25% voltage regulation accuracy
- 0.5% accuracy up to 40% Total Harmonic Distortion (THD) (harmonics associated with six-thyristor load)
- 63 Vdc and 125 Vdc @ 10 Adc pulse-width-modulated (PWM) output
- Capable of 10 Adc continuous field current output when system temperature is 55°C (131°F) or below
- Load Sharing over Ethernet
- Auto tuning feature with two PID stability groups
- Var/PF control
- Exciter Diode Monitor (EDM)
- Overexcitation limiting
- Underexcitation limiting
- Stator current limiting
- Voltage matching
- Manual mode (field current regulation)
- Paralleling input from 1-amp or 5-amp CT secondaries
- Nominal sensing inputs of 120, 240, 480, and 600 Vac
- Power input from 50/60 Hz shunt connection or permanent magnet generator (PMG) operating at 50 to 500 Hz
- Integrated protection functions including Loss of Sensing and Transfer to Manual
- LED annunciation of operating conditions
- Ethernet communications with Modbus® TCP
- Set up via PC using BESTCOMSPUs® software (included)
- Customizable logic in BESTlogic™ Plus
- IP54 rating when rear-mounted USB option is selected

## BENEFITS

- Microprocessor-based design provides high functionality and performance.
- Powerful 7-amp, PWM power stage provides high field forcing for increased system response.
- THD-tolerant design offers reliable operation with nonlinear loads.
- Integrated generator and exciter protection ensure proper system operation.
- Rugged, potted design for exceptional reliability in the harshest environments.
- Auto tuning allows for easier commissioning, saving time and money.
- External Autotracking provides redundancy and more reliable system design.

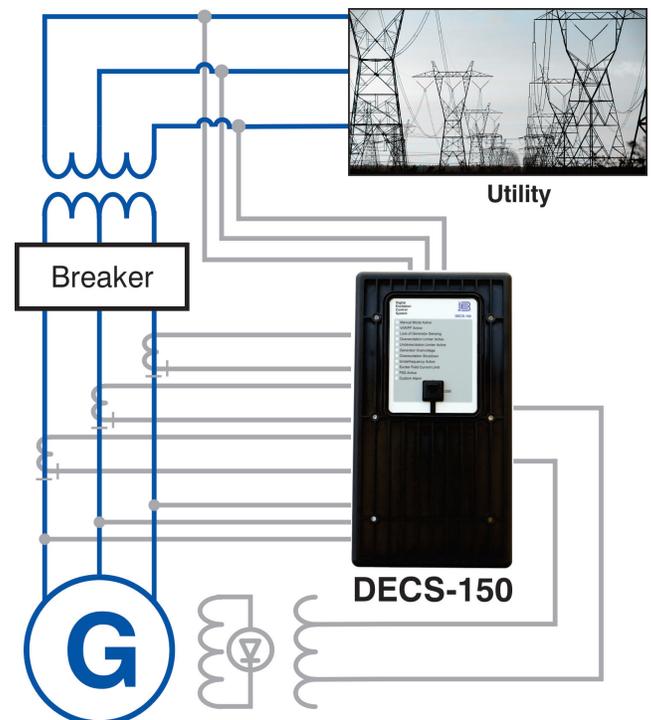


Figure 1 - DECS-150 Connection Diagram for a Typical Application

Visit [WWW.BASLER.COM](http://WWW.BASLER.COM)  
FOR ADDITIONAL INFORMATION.

**SPECIFICATIONS**

**AC Operating Power and DC Operating Power**

All Styles

Full Load Continuous Current: 10 A at 55°C (131°F)  
7 A at 70°C (158°F)

Power Input Configuration: 1-phase and 3-phase

Power Input Frequency: dc, 50 to 500 Hz

63 Vdc

Nominal Input Voltage: 120 Vac, 125 Vdc

Full Load Continuous Voltage: 63 Vdc

Minimum Field Resistance: 9 Ω

10-Second Forcing: 100 Vdc, 11 Adc

125 Vdc

Nominal Input Voltage: 240 Vac, 250 Vdc

Full Load Continuous Voltage: 125 Vdc

Minimum Field Resistance: 18 Ω

10-Second Forcing: 200 Vdc, 11 Adc

**Generator and Bus Voltage Sensing**

Configuration: 1-phase or 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 or 5 Aac

Frequency: 50/60 Hz

Burden with 1 Aac Sensing: <0.1 VA

Burden with 5 Aac Sensing: <0.3 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 at 24 Vdc/240 Vac

**Communication**

USB: USB type B port (front or rear panel optional)

Ethernet: RJ45 jack (rear panel)  
10BASE-T/100BASE-TX (copper), Modbus® TCP

CAN Bus: External Autotracking

**Agency/Certification**

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

**Environmental**

Operating Temperature

10 A Continuous: -40°C to 55°C (-40°F to 131°F)

7 A Continuous: -40°C to 70°C (-40°F to 158°F)

Storage Temperature: -40°C to 85°C (-40°F to 185°F)

Humidity: MIL-STD-705B, Method 711-1C

Salt Fog: IEC 60068-2-11

Shock: Withstands 30 G 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

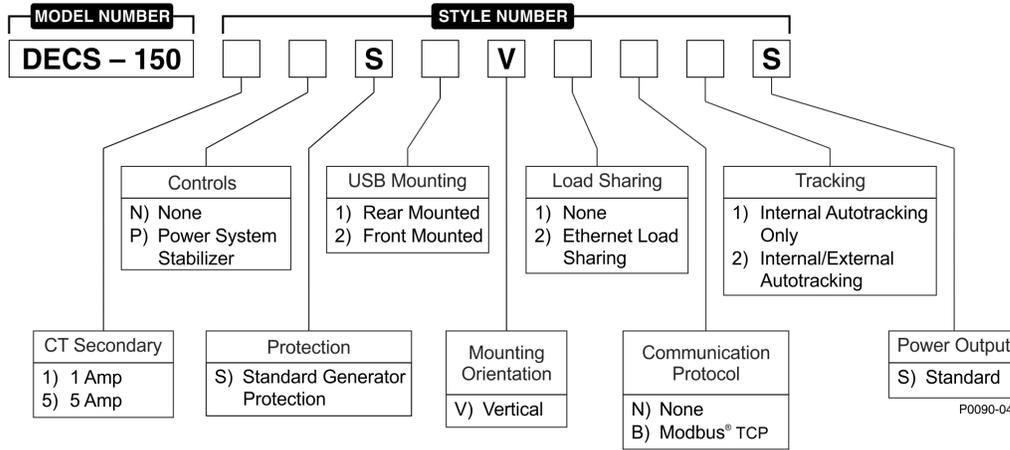
**Physical**

Weight: 3.95 lb (1.79 kg)

Dimensions (WxHxD): 6.41 x 11.88 x 3.23 inches (163 x 302 x 82 mm)

For complete specifications, download the instruction manual at [www.basler.com](http://www.basler.com).

**STYLE CHART**



**RELATED PRODUCTS**

- [BE1-11g Generator Protection System](#)
  - Combines with the DECS-150 to offer a complete generator control and protection system.
- [ES Series Protection Relays](#)
  - A wide range of cost-saving options to simplify industrial application protection.
- [DECS-250 Digital Excitation Control System](#)
  - Provides precise voltage, var and Power Factor regulation, and exceptional system response, plus generator and motor protection.
- [DGC-2020 Digital Genset Controller](#)
  - An advanced genset control system with extensive functionality and flexibility.
- [DGC-2020ES Digital Genset Controller](#)
  - The total system solution for emergency and stand alone generator set applications.
- [DGC-2020HD Digital Genset Controller](#)
  - An advanced, but rugged genset control system designed for paralleling and complex load sharing schemes.

**ACCESSORIES**

- [ICRM-7, ICRM-15](#)
  - Protects PWM-type voltage regulators from high inrush currents when powered by an independent source.
- [MVC Manual Voltage Controllers](#)
  - Provides backup manual source for excitation in the event of AVR failure.



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