

Overview

The DECS-250E Digital Excitation Control System provides accurate and reliable regulation, control, and protection for synchronous motors or generators. Three DECS-250E models can supply a maximum of 50 Adc, 100 Adc, or 200 Adc of excitation current in a static or rotary exciter application. All DECS-250E components are housed in a compact enclosure which makes for a simple and cost-effective installation for a wide variety of applications.

Features

- Precise excitation control for synchronous generator or synchronous motor applications.
- True RMS sensing, single-phase or three-phase voltage and current.
- Full generator or motor metering capabilities.
- Automatic Voltage Regulation / Field Current Regulation / Field Voltage Regulation, Power Factor and var modes of operation.
- Integrated generator protection (27/59, 810/U, 32R, 40Q), 59F, 51F, Field Short Circuit, and 25 Sync Check.
- Load sharing over Ethernet.
- Auto tuning feature with two PID stability groups.
- Configurable protection.
- Conformal coating is applied to certain internal circuitry for additional protection and reliability.
- Overexcitation limiting (with temperature compensation).
- Underexcitation limiting.
- Stator current limiting (with temperature compensation).
- Var limiting.
- Underfrequency limiting or V/Hz limiting.
- Trending, oscillography, and sequence of events recording.
- Ten programmable contact inputs.
- Nine programmable contact outputs.
- I/O expansion module compatibility.
 - AEM-2020 Analog Expansion Module.
 - CEM-2020 Contact Expansion Module.
- Single- or three-phase power input.
- Automatic synchronizer option.
- Compact enclosure.

Benefits

- Reduce your setup time with Basler's intuitive BESTCOMSPi^{us}® software that simplifies complex setup with simple drag-and-drop programmable logic, visual real-time strip chart capabilities, and cutting edge auto PID selection capabilities.
- The auto tuning function automatically establishes optimum PID and gain settings, taking the guesswork out of system setup, reducing commissioning time and cost while maximizing overall system performance.
- The Offline Simulator in BESTlogic™ Plus helps test and troubleshoot logic without expensive hardware.
- A 50, 100, 200 ampere positive forcing rectifier bridge can be selected to provide optimum response to the generator main field or exciter field.

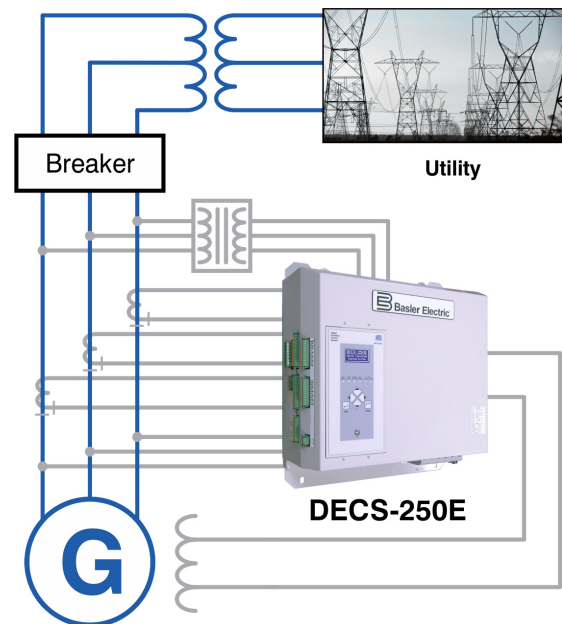


Figure 1 - DECS-250E Connection Diagram for a Typical Application

Specifications

Control Power Supply Input

Style LXXXXXXX

Voltage Range: 18 to 30 Vdc
Burden: 30 W*, 110 W

Style CXXXXXXX

DC Voltage Range: 90 to 150 Vdc
DC Burden: 30 W*, 100 W
AC Voltage Range: 90 to 132 Vac
AC Burden: 40 VA*, 150 VA

* With 50 Adc excitation current (style XXXXXXXXA)

AC Operating Voltage and DC Output Power

120 Vac, 1-phase input: 63 Vdc output
80 Vac, 3-phase input: 63 Vdc output
240 Vac, 1-phase input: 125 Vdc output
160 Vac, 3-phase input: 125 Vdc output
320 Vac, 3-phase input: 250 Vdc output
Full Load Continuous
Current with Positive Forcing: 50, 100, or 200 Adct (style selectable)

† With 1-phase operating power input, 200 Adc styles are de-rated to 133 Adc output.

10-Second Forcing: 1.44 x rated Adc
Power Input Frequency: 50/60 Hz

Generator Current Sensing

Configuration: 1-phase or 3-phase with separate input for cross current compensation
Current Ranges: 1 Aac or 5 Aac nominal

Frequency: 50/60 Hz Nominal
Burden: < 1 VA

Generator and Bus Voltage Sensing

Configuration: 1-phase or 3-phase
Voltage Ranges: 100/120 Vac ±10%
200/240 Vac ±10%
400/480 Vac ±10%
600 Vac ±10%

Frequency: 50/60 Hz Nominal
Burden: < 1 VA per phase

Inputs and Outputs

Contact Inputs: 10 programmable inputs (dry contacts)
Auxiliary Input: Connection available in 4 to 20 mA or ±10 Vdc input
Output Contacts: 9 programmable form A contacts and one form C for watchdog function
Rating: Make, break, and carry 7 A resistive @ 24/48/125 Vdc (120/240 Vac).

Communication

USB: USB type B
RS-232: RS-232, 9 pin, sub D for optional external autotracking
RS-485: Modbus® RTU protocol
CAN bus: One port for ECU communications
One port for expansion modules

Ethernet: 100base-T Modbus TCP protocol for unit-to-unit communication
Expansion Port: Optional PROFIBUS protocol

Agency/Certifications

UL 6200:2019 recognized, UKCA, CE EMC, LVD, and RoHS II compliant, China RoHS Compliant

Environmental

Operating Temp: -20°C to 60°C (-4°F to 140°F)
Storage Temp: -20°C to 75°C (-4°F to 167°F)
Humidity: IEC 60068-2-38
Ingress Protection: IP20 (NEMA1 cabinets available)
Shock: 15 G in three perpendicular planes
Vibration: IEC 60255-21-1, 3 hours per plane, 3-25 Hz, 1.5 mm displacement, 25-2,000 Hz, 5 G acceleration, sweep rate 0.45 octaves per min.

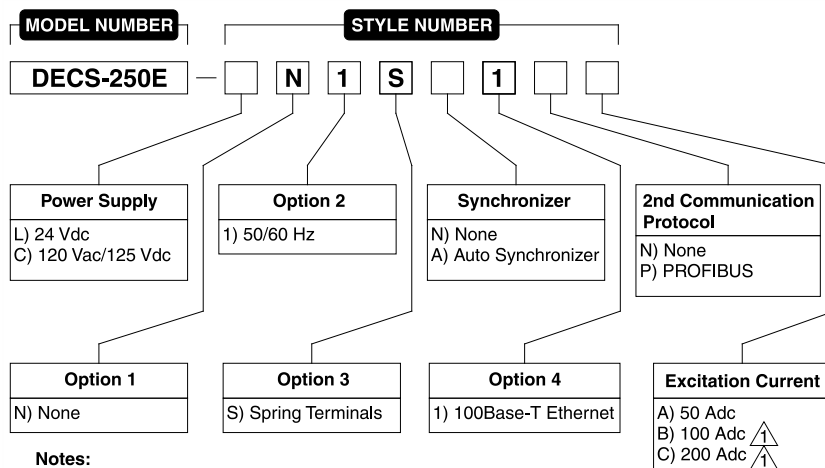
Physical

Weight: 55.5 lb (25.2 kg)
Dimensions (WxHxD): 22.2 x 24.8 x 9.0 inches (565 x 629 x 228 mm)

For complete specifications, download the instruction manual at www.basler.com.



Style Chart



Notes:

⚠ Excitation Current options B and C are forced air cooled with redundant fans.

Related Products

BE1-FLEX Protection, Automation and Control System

Designed to be configurable for nearly any Power System Application.

DGC-2020 Digital Genset Controller

Provides genset and transfer switch control, metering, protection, and programmable logic in a simple, easy to use, reliable, rugged, and cost-effective package.

Accessories

IDP-801 Interactive Display Panel

A 7.5" (190.5 mm) Human Machine Interface to view generator system parameters locally or remotely.

CEM-2020 Contact Expansion Module

Provides additional contact I/O for large or complex logic schemes.

AEM-2020 Analog Expansion Module

Provides additional metering and control with external peripherals through analog I/O.

Field Flashing Module

Provides flashing power to the field for voltage buildup.
p/n 9504018100 - 125 Vdc field flashing voltage
p/n 9504018101 - 24 Vdc field flashing voltage

Shaft Suppression Module

Reduces risk of damage to generator bearings.
p/n 9199800100 - up to 250 Vdc field voltage
p/n 9199800101 - up to 375 Vdc field voltage

AC Line Filter

Reduces amount of EMI (electromagnetic interference) on the system.
p/n 9504012100 - 50/100 Adc excitation current
p/n 9504012101 - 200 Adc excitation current