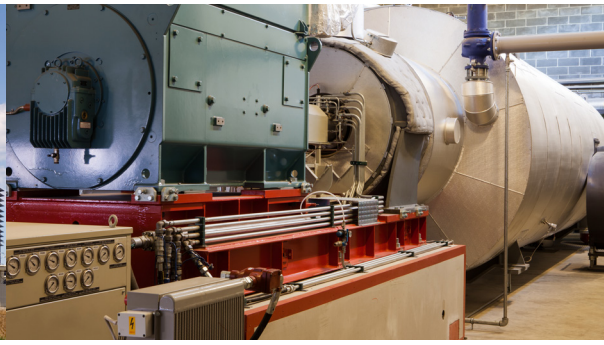
DECS-250 CGCM Digital Excitation Control System



Overview

The DECS-250 CGCM controller is a system ready, total control and protection replacement package for the popular CGCM (Combination Generator Control Module) package provided through Rockwell Automation Allen-Bradley®. This controller combines the latest technology and the proven reliability of the DECS-250 and the CGCM. The DECS-250 CGCM, when used in conjunction with Rockwell Automation's ControlLogix® Automation Control, provides highly robust generator control, protection and system supervision.

Features

- Precise excitation control for synchronous machines
- Automatic Voltage Regulation, Field Current Regulation, Power Factor and var modes of operation
- Full generator metering capabilities
- Integrated Generator Protection (27/59, 81O/U, 32R, 40Q, 47, EDM, 59F, 51F, Loss of PMG, and Field Short Circuit)
- Integrated Automatic Synchronization for 1 or 2 circuit breakers
- Over and Underexcitation limiting
- Autotracking between modes of operation and between redundant units
- Automatic transfer between primary and backup controller in redundant systems
- True RMS sensing, single-phase or three-phase voltage and current
- Conformal coating is applied to certain internal circuitry for additional protection and reliability
- Underfrequency Limiting or V/Hz Limiting

Benefits

- Emulation mode provides plug-and-play capabilities for quick and easy field replacement of existing CGCMs.
- Easy integration with the Allen-Bradley® ControlLogix® family.
- Ability to Autotrack between legacy CGCM's and the DECS-250 CGCM reducing the need to update both control systems.
- Powerful 15 A pulse width modulated power stage provides high initial response for exceptional system response to load transients.
- Flexible PWM power stage makes it easily adaptable to any system - shunt, auxiliary winding, permanent magnet, or dc fed.

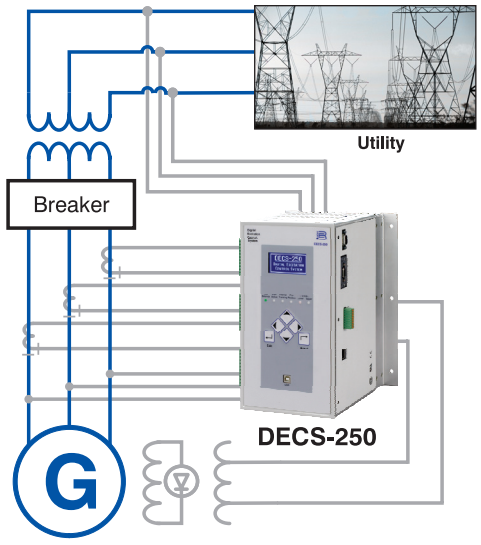


Figure 1 - DECS-250 CGCM Connection Diagram for a Typical Application

DECS-250 CGCM Digital Excitation Control System

Specifications

Power Supply

Nominal: 16 to 60 Vdc
Burden: 50 VA or 30 W

AC Operating Power and DC Output Power

All Styles
- Full Load Continuous Current: 20 Adc up to 55°C (131°F); 15 Adc up to 70°C (158°F)
- 10-Second Forcing: 30 Adc
- Power Input Configuration: 1-phase and 3-phase
- Power Input Frequency: 50 to 500 Hz

32 Vdc
- Nominal Input Voltage: 60 Vac
- Full Load Continuous Voltage: 32 Vdc
- Minimum Field Resistance: 2.13 Ω

63 Vdc
- Nominal Input Voltage: 120 Vac
- Full Load Continuous Voltage: 63 Vdc
- Minimum Field Resistance: 4.2 Ω

125 Vdc
- Nominal Input Voltage: 240 Vac
- Full Load Continuous Voltage: 125 Vdc
- Minimum Field Resistance: 8.33 Ω

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: <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: 16 programmable , dry contact
Auxiliary Inputs: 1
- Current Input: 4 to 20 mAdc
- Voltage Input: –10 to +10 Vdc

Output Contacts: 11 programmable form A; 1 watchdog form C
- Rating: Make, break, and carry 7 A resistive @ 24/48/125 Vdc (120/240 Vac).

Communication

USB: USB type B factory port
RS-232: RS-232, 9 pin, sub D for optional external autotracking
Ethernet: 100baseT

Agency/Certification

CSA certified, UL 6200:2019 recognized, CE UKCA EMC and LVD compliant, Bureau Veritas (BV), Det Norske Veritas (DNV), and American Bureau of Shipping (ABS) recognized, IECEx, UKEx, and ATEX certified

Environmental

Operating Temperature
- 20 Adc Continuous: –40°C to 55°C (–40°F to 131°F)
- 15 Adc Continuous: –40°C to 70°C (–40°F to 158°F)

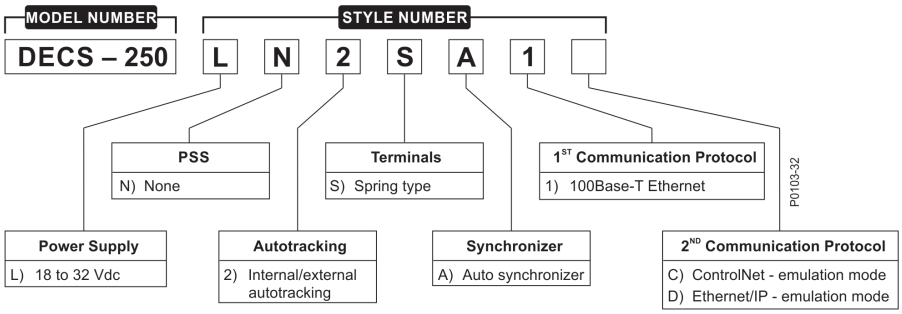
Storage Temperature: –40°C to 85°C (–40°F to 185°F)
Salt Fog: Per MIL-STD 810E method 509.3
Shock: Withstands 15 G in 3 perpendicular planes
Vibration: 5 G from 18 to 2,000 Hz in 3 perpendicular planes

Physical

Weight: 14.6 lb (6.62 kg)
Dimensions (WxHxD): 6.26 x 12.00 x 8.62 inches (159.0 x 304.8 x 219.0 mm)

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

Style Chart



Related Products

BE1-FLEX Protection, Automation and Control System
Designed to be configurable for nearly any Power System Application.

DGC-2020HD Digital Genset Controller
An advanced, but rugged genset control system designed for paralleling and complex load sharing schemes.

DECS-250 Digital Excitation Control System
Provides precise voltage, var and Power Factor regulation, and exceptional system response, plus generator and motor protection.

DECS-250N Digital Excitation Control System with Negative Forcing
Featuring negative field forcing that provides exceptional system response, precise voltage regulation, and integrated generator protection.

Accessories

DECS-250 CGCM Adapter Plate (p/n 9440311112)
For mounting a DECS-250 CGCM in place of a CGCM.

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