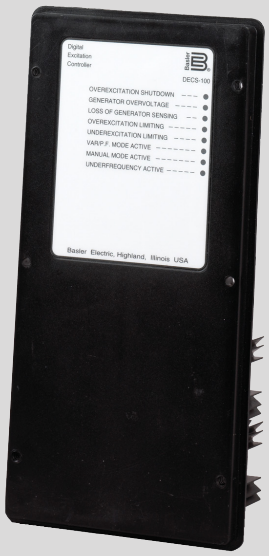
DECS-100 Digital Excitation Control System



Overview

The DECS-100 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-100 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 @ 7 Adc pulse-width-modulated (PWM) output
- 0-3X V/Hz limiting
- Soft Start capability
- Twenty standard stability selections and one customizable selection
- VAR/PF control
- Overexcitation limiting
- Underexcitation 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 400 Hz
- Integrated protection functions including Loss of Sensing transfer to manual
- LED annunciation of operating conditions
- Setup via PC using BESTCOMS™ software (included)
- Models capable of 10 Adc continuous field current output are available upon request. See reverse for details.

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.

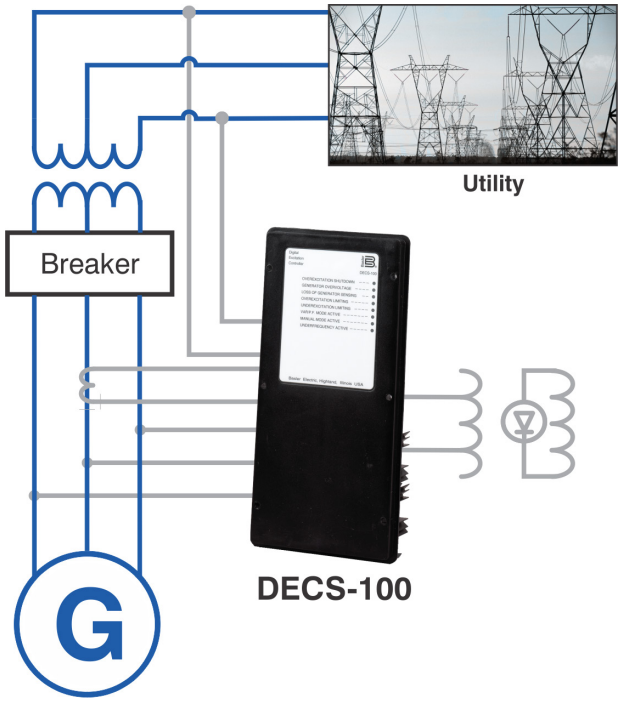


Figure 1 - DECS-100 Connection Diagram for a Typical Application

DECS-100 Digital Excitation Control System

Specifications

Input Power

Voltage:	88 to 250 Vac
Phase:	1-phase or 3-phase
Burden:	650 VA
Frequency:	50 to 400 Hz
Minimum Build-up Voltage:	6.0 Vac

Voltage Sensing

Nominal Voltage Input:	100/120, 200/240, 400/480, 600 Vac, 1-phase or 3-phase
Burden:	<1 VA per phase
Frequency:	50/60 Hz

Current Sensing

Max Continuous:	1 or 5 Amp (two models)
Burden:	<1 VA

Accessory Input

Voltage Range:	–3 Vdc to +3 Vdc
Setpoint Range:	–30% to +30% shift
Burden:	1 k

Field Output

Continuous Rating:	63 Vdc, 7 Adc
10-Second Forcing	
200 Vac Input:	135 Vdc, 15 Adc
110 Vac Input (9 Ω field):	90 Vdc, 10 Adc
110 Vac Input (5 Ω field):	75 Vdc, 15 Adc
Minimum Field Resistance:	9 Ω

Common Alarm Output

Type:	Form A
Rated Load:	7 Aac/Adc continuous
Make:	30 Aac/Adc, carry for 0.2 seconds
Break:	7 Aac/0.1 Adc
Operating Voltage:	240 Vac/250 Vdc max

Regulation Accuracy

Regulation Accuracy:	±0.25% no-load to full-load
Temperature Drift:	±0.5% for a 40°C change
Response Time:	Within 1 cycle
THD:	±0.25% for 20% THD and ±0.5% for 40% THD (distortion as seen with a six-thyristor load)

Agency/Certifications

UL 6200:2019 recognized, CSA certified, CE EMC and LVD compliant, China RoHS compliant, Type approved with Bureau Veritas (BV)*, Det Norske Veritas-Germanischer Lloyd (DNV•GL)*

* Does not apply to models with 10 Adc field current output.

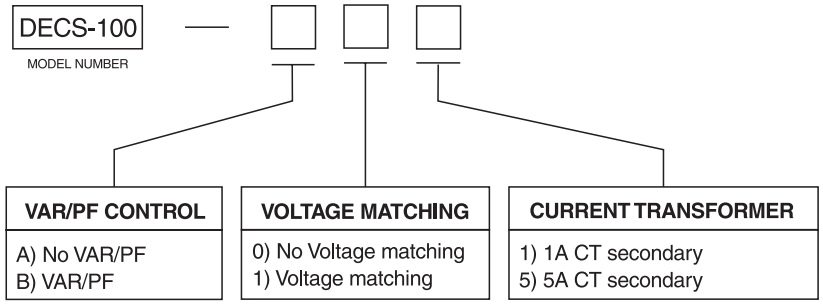
Environmental

Operating Temperature:	–40°C to 70°C (40°F to 158°F)
Storage Temperature:	–40°C to 85°C (40°F to 185°F)
Shock:	20 G in three perpendicular planes
Vibration	
5 to 26 Hz:	1.2 G
27 to 52 Hz:	0.036" double amplitude
53 to 500 Hz:	5.0 G
Salt Fog:	Per MIL-STD-810E

Physical

Weight:	2.42 lb (1.10 kg)
Shipping Weight:	2.88 lb (1.31 kg)
Dimensions (WxHxD):	5.34 x 10.82 x 2.84 inches (135.6 x 274.8 x 72.1 mm)

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



Ordering Information for 10 Adc Field Current Output Models

Part Number	DECS-100 Style	Special Requirements		
		Input Power	Minimum Field Resistance	Maximum Operating and Storage Temperature
9287500147	DECS-100-B11	3-phase only	6.3 Ω	55°C (131°F)
9287500148	DECS-100-B15			

Related Products

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

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.

DECS-250N Digital Excitation Control System with Negative Forcing
A high-powered digital excitation control system featuring negative field forcing that provides exceptional system response, precise voltage regulation, and integrated generator protection.

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

MVC Manual Voltage Controllers
Provides backup manual source for excitation in the event of AVR failure.

Basler Electric®

Highland, Illinois USA
Tel +1 618.654.2341
Fax +1 618.654.2351
email: info@basler.com

Suzhou, P.R.China
Tel +86.512.8227.2888
Fax +86.512.8227.2887
e-mail: chinainfo@basler.com