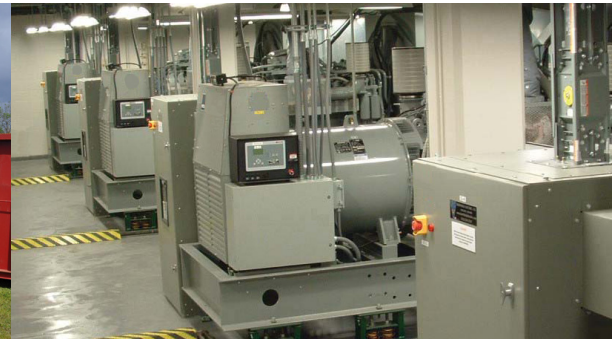


BE2000E Digital Voltage Regulator



Overview

The BE2000E is an environmentally rugged product designed to control the output of brushless excited synchronous generators equipped with single-phase PMGs (permanent magnet generators). Enjoy the benefit of Basler Electric's years of experience and support of excitation control systems when choosing the BE2000E as an ideal DVR® replacement voltage regulator.

Features

- Four control modes: Automatic Voltage Regulation (AVR), Manual or Field Current Regulation (FCR), Power Factor (PF) Regulation, and Reactive Power (Var) Regulation
- Programmable stability settings
- Soft start control with an adjustable time setting in AVR Control Mode
- Overexcitation limiting (OEL) in AVR, Var, and PF Control Modes
- Underfrequency (Volts/Hertz) compensation or engine unloading feature
- Crowbar circuitry provides field protection
- Overtemperature protection
- Three-phase or single-phase generator voltage (RMS) sensing in AVR Mode
- Field current and field voltage sensing
- Four contact sensing inputs for system interface
- One common output relay for alarm indication and trip functions
- Six protection functions: overexcitation shutdown, generator overvoltage shutdown, BE2000E overtemperature shutdown, loss of generator sensing shutdown, overexcitation limiting, and crowbar shutdown
- Generator paralleling with reactive droop compensation and reactive differential compensation
- Front-panel human-machine interface (HMI) indicates system and BE2000E status and offers the ability to adjust settings at the front panel.
- Rear RS-232 communication port for personal computer communication using BESTCOMS™. BE2000E Windows® based software for fast, user-friendly, setup and control

Benefits

- Microprocessor-based design, high functionality, and performance for precise control over the generator excitation and output.
- THD (Total Harmonic Distortion)-tolerant design provides reliable operation in the presence of high harmonic distortion caused by nonlinear loads.
- Rugged 3-amp pulse-width-modulated (PWM) power stage for reliable regulation, which can help reduce expensive service calls and down time.
- Plug-and-play replacement for Marathon® Electric generators equipped with DVR®2000E or DVR®2000EC voltage regulators allows for quick and easy retrofitting.

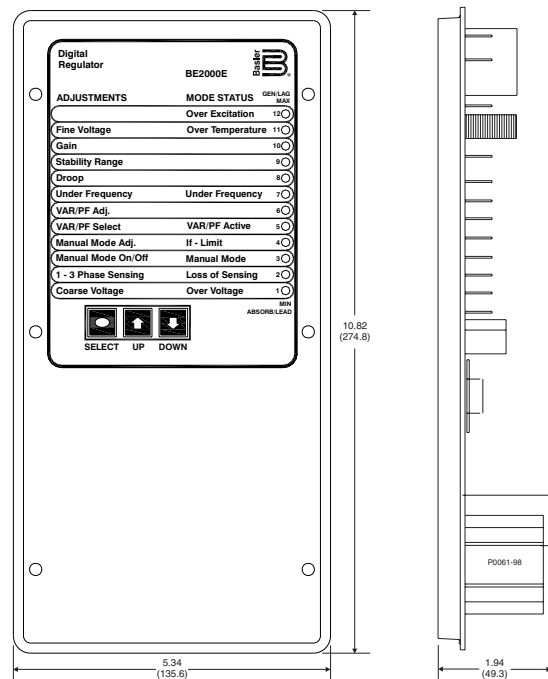


Figure 1 - BE2000E Dimensions in Inches (Millimeters)

Specifications

Field Output

Continuous: 75 Vdc at 3.0 Adc
 10-second Forcing: 150 Vdc at 7.5 Adc
 (with 200 Vdc input)
 Field Resistance: 18 Ω minimum

Input Power*

1-Phase: 180 to 240 Vac
 Frequency Range: 120 to 300 Hz
 Burden: 330 VA

Voltage Sensing

Configuration: 1-phase or 3-phase, 50/60 Hz
 Voltage Ranges:
 120 Vac (100 to 140 Vac)
 240 Vac (200 to 280 Vac)
 480 Vac (400 to 560 Vac)
 600 Vac

Burden: < 1 VA per phase

* The operating power input is designed to work with a Marathon Electric PMG with a 7.5 μF, 370 Vac rated capacitor installed across the terminals.

Current Sensing

Configuration: 1-phase (BØ), 50/60 Hz
 Rating: 5 Aac maximum continuous
 Burden: < 0.1 VA

Inputs and Outputs

Type: Dry Contact
 Interrogation Voltage: 13 Vdc
 Terminals:
 Unit/Parallel Control: 52L, 52M
 Raise: 6U, 7
 Lower: 6D, 7
 Var/PF Enable: 52J, 52K

Communication

Interface: Full Duplex RS-232
 Connection: DB-9 connector on rear panel
 Baud: 4800
 Data Bits: 8
 Parity: None
 Stop Bit: 1

Agency/Certification

UL 6200:2019 recognized, CSA certified, CE, UKCA, LVD, EMC, RoHS, and China RoHS compliant, maritime recognitions by BV, DNV, and ABS

Environmental

Operating Temp: -40°C to 70°C (-40°F to 158°F)
 Storage Temp: -40°C to 85°C (-40°F to 185°F)
 Shock: 20 G in three perpendicular planes
 Salt Fog: Tested per MIL-STD 810E
 Vibration:
 5 to 26 Hz: 1 G
 27 to 52 Hz: 0.036" double amplitude
 53 to 500 Hz: 5 G

Physical

Weight: 1.52 lb (0.69 kg)
 Dimensions (W x H x D):
 5.34" x 10.82" x 1.94"
 (135.6 mm x 274.8 mm x 49.3 mm)

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

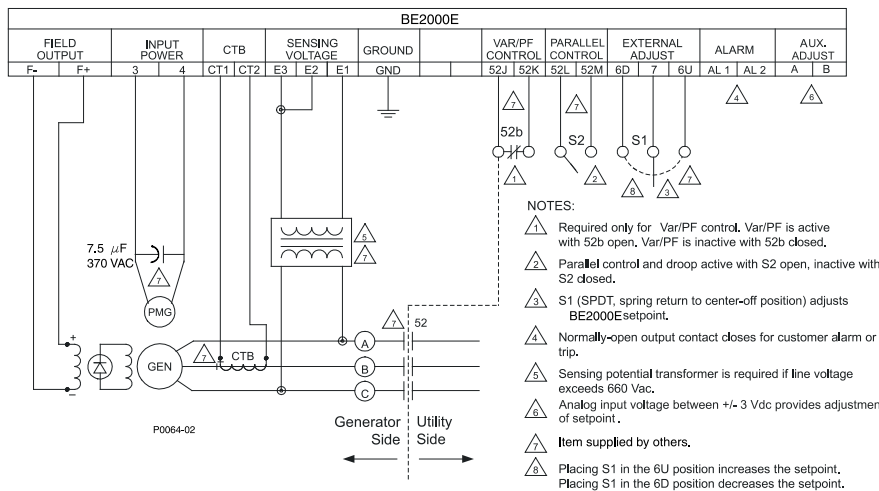


Figure 2 - BE2000E Typical Connections with 3-Phase Sensing

Related Products

BE1-FLEX Protection, Automation and Control System

Designed to be configurable for nearly any Power System Application.

ES Series Protection Relays

Provide a wide variety of cost-saving options to simplify industrial application protection.

DECS-150 Digital Excitation Control System

Provides precise voltage regulation, exceptional system response, and valuable protection of the generator and excitation system.

DECS-250 Digital Excitation Control System

Provides precise voltage, var and Power Factor regulation, and exceptional system response, plus generator protection.

DGC-2020 Digital Genset Controller

An advanced genset control system with extensive functionality and flexibility for your emergency, standalone, and paralleled generator set applications.

DGC-2020ES Digital Genset Controller

The total system solution for emergency and standalone generator set applications.

DGC-2020HD Digital Genset Controller

A highly advanced integrated genset control system for your emergency, stand-alone, and paralleled generator set applications.

Accessories

MVC Manual Voltage Controllers

Provides backup manual source for excitation in the event of AVR failure.