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PRISMIC® A3100 Excitation Controller

The A3100 includes two fully featured independent controllers and two independent power circuits within a single 6U 19 inch enclosure, all available as removable cards (single channel option available).



Introduction

The BRUSH PRISMIC® A3100 excitation controller or automatic voltage regulator (AVR) incorporates all the features required for control of a brushless generator.

Each controller channel acts as a hot standby for the other and each channel is independently controlled with automatic tracking included to enable smooth transfer from one controller to the other.

The non-operating channel control and power cards can be extracted without powering down the AVR or excitation so maintaining power generation whilst exchanging the cards.

With most connectors completely compatible with earlier BRUSH controllers the A3100 is an easy replacement of previous BRUSH AVRs such as the MAVR, A30 and A30-M.

Generators equipped with previous generation analogue MAVR units may be easily upgraded to use the A3100 with the addition of a simple upgrade loom kit.

Key Features

- High integrity dual redundant excitation system in a single 19 inch enclosure
- Hot swappable control and power channel
- Built in power system stabiliser (optional feature)
- Automatic synchroniser (optional)
- SCADA/DCS communications using Ethernet Modbus TCP/IP or Ethernet Global Data (EGD) or RS232/RS485 Modbus RTU protocol
- Conforms to CE directives
- cCSAus approved
- Compatible connections with earlier BRUSH products for easy upgrades – an ideal upgrade for the MAVR, MicroAVR or A30
- Automatic tracking between channels in all modes
- Negative forcing of exciter field voltage
- Including PC Human Machine Interface (HMI) software for advanced maintenance diagnostics and downloading of data
- Digital (discrete) outputs for remote status indication
- Analog input signal for special applications
- Modes of operation include generator terminal voltage control, power factor control, var control and offload vars
- Monitoring of rotating rectifier health and diode failure indication
- The following limiters are included:
 - Over excitation limiter
 - Under excitation limiter
 - Over flux limiter
 - Fast acting field current limiter
 - Stator current limiter
- Automatic switching to standby initiated by the following conditions:
 - Over voltage monitor triggered
 - Under voltage monitor triggered
 - Over excitation monitor triggered
 - Under excitation monitor triggered
 - Over flux monitor triggered
 - Voltage sensing error
- Speed detector included eliminating the need for separate speed switch unit
- Rotor ground (earth) fault detector input included eliminating the need for separate unit (R10 receiver)
- Auxiliary power supply input allows easy setting of unit without PMG supply present
- Soft start for controlled application of excitation

Specification

Max continuous output current

20A

Max 10 second output current

30A

Excitation supply voltage

single phase 110V to 330V

Supply frequency

50Hz to 480Hz

Nominal sensing voltage

100V to 120V selectable in 0.1V steps

Voltage sensing phases

3 phase or single phase

Nominal generator frequency

50Hz or 60Hz

Current transformer input nominal

5A or 1A

Current transformer input burden

0.3VA

Load taken by sensing inputs

0.3VA

Maximum field voltage for forcing

75% of available excitation supply voltage

Minimum field voltage

-60% of available excitation supply voltage

Voltage adjustment range

selectable from +/-10% to +/-25%

Accuracy of control

+/-0.2%

Auxiliary power supply

24V d.c.

Operating temperature range

0C to +55C

Storage temperature range

-20C to +80C

Dimensions

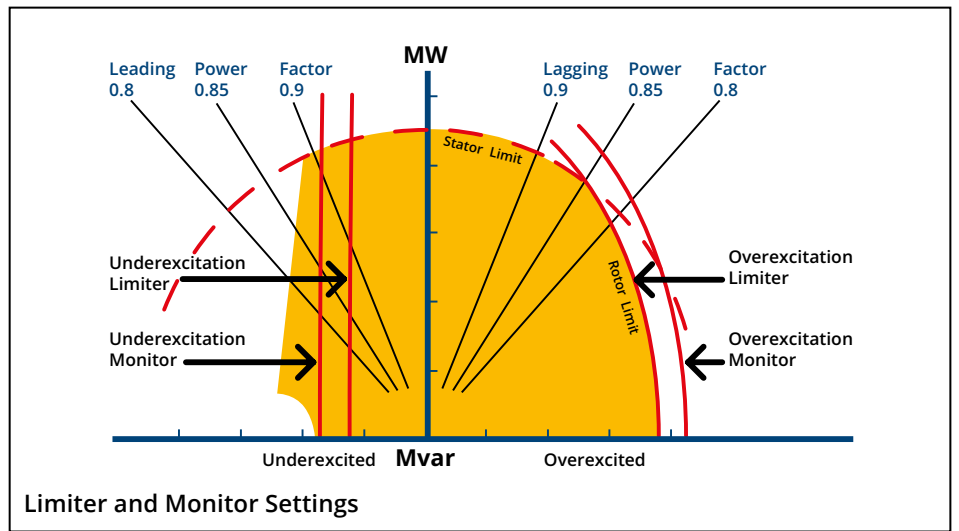
width 483mm

height 266mm

depth 301mm

Weight

14kg



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