01 / Product and system overview

ABB

3BHE014557R0003 UN1000B-Z,V3

Voltage Regulator

Product role

ABB 3BHE014557R0003 UN1000B-Z,V3 is a UNITROL voltage regulator for synchronous-machine excitation control. Match the complete unit marking and installed control configuration.

Machine measurements
Voltage and current

>

UNITROL base control
Configured excitation

>

Exciter
Machine field

Applicability

UNITROL 1000-15 base-design functions are described separately from the supplied V3 marking. Match hardware, control software and enabled options to the installed machine.

02 / Technical specification dashboard

Item	Design fact	Item	Design fact
Manufacturer	ABB	Supply architecture, base design	Separate auxiliary and excitation-power circuits
Product type	Voltage Regulator	Measurement functions, base design	Machine voltage and machine current
Complete product identity	3BHE014557R0003 UN1000B-Z,V3	Commissioning interface, base design	RS-232 connection for CMT 1000
Reference platform	UNITROL 1000-15	Load-sharing interface, base design	RS-485
Machine application, base design	Synchronous generators and synchronous motors	Expansion interface, base design	CAN bus
Power-stage principle, base design	Microprocessor-controlled IGBT excitation stage		

03 / Operating context and integration

Functional role

The UNITROL 1000-15 base design combines microprocessor control with an IGBT power stage to regulate excitation in synchronous generators and synchronous motors. Auxiliary power for the control electronics and power for the excitation stage are separate circuit functions. Machine-voltage and machine-current measurements supply the control system, while the regulated field output acts on the exciter. The supplied 3BHE014557R0003 UN1000B-Z,V3 identity must remain tied to its actual hardware and control-software configuration.

Configuration

At platform level, automatic voltage, power-factor and reactive-power regulation use PID control, while manual excitation-current regulation uses PI control. Reactive-current droop supports operation in parallel with a network; voltage droop compensation uses communication between regulators for reactive-load sharing in island operation. Soft start and bumpless transfers form part of the base control concept. Enabled modes, machine settings and limiter behavior must match the installed software and excitation design.

Interfaces and integration

The base architecture provides RS-232 communication for the CMT 1000 commissioning tool, RS-485 for reactive-load sharing and CAN communication for local expansion. Digital and analogue interfaces connect external commands, measurements and status signals. Automatic synchronizing and rotating-diode monitoring are separately configured functions; they must not be inferred from the voltage-regulator role or treated as included accessories. Preserve the installed parameter set and confirm the actual V3 interfaces before replacement.

04 / Application and compatibility review

Generator excitation control

The UNITROL 1000-15 platform adjusts excitation for synchronous-generator voltage control. Match the machine measurements, exciter and active parameter set to the installed unit.

Synchronous-motor excitation

Excitation control also applies to synchronous motors. Select the required operating mode and machine settings within the approved motor and excitation-system design.

Parallel-machine operation

Reactive-current droop and platform load-sharing functions support coordinated operation. Apply the installed communication arrangement and control-software configuration.

Commissioning and maintenance

CMT 1000 provides the platform commissioning interface. Preserve the existing parameter set and match the installed software before replacing or adjusting a regulator.

Lifecycle and supply

A current manufacturer lifecycle phase for this complete identity has not been confirmed. Request current ABB guidance using the installed configuration. Supply scope and dispatch are confirmed in quotation.

05 / Purchase review and reference basis

Match the complete marking

Include 3BHE014557R0003 UN1000B-Z,V3 and any revision or assembly number visible on the item. Keep the exact reference on your enquiry and quotation.

Check the offered item before ordering

Request available label and connector photos. Have your maintenance team compare the offered 3BHE014557R0003 UN1000B-Z,V3 with the installed equipment and applicable ABB documentation.

Reference basis

ABB UNITROL 1000-15 / UNITROL 1000-40 technical presentation, 11 December 2008.

Apter Power technical summary, not an ABB-issued manual. UNITROL 1000-15 base-design functions are described separately from the supplied V3 marking. Match hardware, control software and enabled options to the installed machine.

Related ABB products

Navigation only; no substitution or compatibility claim.

ABB HIEE205010R0003 UNS3020A-Z V3

ABB HIEE305114R0001 UNS4684A-P

Discuss your installed configuration

Send the full unit marking and connection details.

sales13@apterpower.com | +86 18030235313