

ACTIVE VOLTAGE CONDITIONER (AVC)

175kVA to 6MVA, High Power, High Performance
Digital Voltage Conditioning Solution



Description

The Active Voltage Conditioner (AVC) from Vectek Electronics is an inverter based system that protects sensitive industrial and commercial loads from voltage disturbances. It provides fast, accurate voltage sag correction plus continuous voltage regulation and load voltage compensation.

The AVC provides the required equipment immunity from the level of voltage sags expected on the AC supply network.

This model of AVC is available in load capacities of 175kVA – 6MVA and has an operating efficiency exceeding 98%. It offers extremely fast response to three-phase sags down to 50%, and single-phase sags down to 25% on the ac supply network.

All AVC models provide continuous regulation within -10% of the nominal mains voltage and remove voltage unbalance from the supply. Optionally models can be configured to remove flicker and harmonic voltages from the supply.

Options

- Sag and Surge protection
- AVC-R enhanced regulation
- PQ metering c/w waveform capture
- Flicker correction
- Harmonic Voltage Correction
- Medium Voltage Connections
- RS232/RS485 serial communications
- Custom cabinet design
- Transformer mounted externally

Key Features

- Three-phase sag correction down to 50%
- Single-phase sag correction down to 25%
- Continuous voltage regulation
- Unbalanced voltage correction
- Line impedance compensation for voltage drop elimination
- User adjustable set point
- Fast (sub-cyclic) response
- Compact Footprint
- Load dedicated solution
- Simple user controls
- Plain English 4x20 character LCD display
- Rugged overload capability
- Fuse clearing ability
- Short circuit protected
- Extensive diagnostics
- Fault log
- Voltage event log
- Separate injection transformer

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Technical Specifications

Load Capacity

- 175 kVA – 6,000kVA

Rated Voltage

Nominal Supply Voltage

- 208/460/480/600V, 60Hz
- 380/400/415/440V/690V, 50Hz
- 3 phase, 3 or 4 wire plus ground
- Other voltage options

Maximum Supply Voltage

- 110% of nominal supply voltage

Minimum Supply Voltage

- 50% of nominal (running)
- 75% of nominal (starting)

Correction

AVC-S (Standard)

- 30% 3-phase, 50% 1-phase-to-ground (boost) for at least 30 sec.
- Continuous 10% 3-phase correction

AVC-R

- +20/-10% 3-phase, +30/-15% single-phase-to-ground for at least 30 sec.
- +/-10% three-phase continuous

Voltage Regulation

- Output voltage set point adjustable
- +/- 1%, up to 10% correction continuously
- +/- 2.5% at 30% correction

Response (to sag event)

- Initial correction provided within 1ms, completed within 8 msec

Efficiency

- 98 - 99%

Environment

- Operating temperature: 0 – 40°C (50°C maximum with 20% derating)
- Cooling: Forced ventilation
- Relative humidity 0 – 90% (non condensing)
- Noise radiation <65dBa (1m head position)

Bypass

- AVC Load rating (kVA) ^{*1}
- 125% for 10 minutes
- 150% for 1 minute
- inverter to bypass <0.5ms

^{*1} The AVC provides continuous correction and only transitions to and from bypass under fault or overload conditions, or when manually starting and stopping.

Protection

- Inverter input semiconductor fuses
- Inverter and transformer thermal protection
- Input voltage out of tolerance protection
- Output overload protection
- Output short circuit protection

Controls (inputs and outputs)

- 4 line LCD with input and output voltage and current displayed
- Full parameter control from keypad
- Voltage set point adjustable in 0.1% steps
- RUN control to start and stop converter
- Dry contacts indicating fault, run and overload status
- External customer enable



Interior View 1.6MVA Unit @ 480V



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