



Utility Systems Technologies, Inc.
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Mini-EVR™

Overview

The Mini-EVR™ is an industrial-grade microprocessor featuring a non-full-power semiconductor design. The unit continuously monitors output voltage and quickly switches transformer taps when voltage falls outside regulation range. The Mini-EVR automatically regulates voltage and conditions power with no operator or programming required. In the event of a malfunction, the automatic bypass actuates to isolate power electronics and controls while maintaining power to the load and all functionality (except voltage regulation).

Industrial-grade means our Mini-EVR is compatible with all load types and load-power factors and provides a minimum 1,000% fault-clearing capability. Unlike computer-grade products, the Mini-EVR is designed for frequent high-inrush current and low-power factor loads without the need to over-size the product or sacrifice reliability.

Mini-EVR features:

- Highest overload capacity available for compatibility with all load types
- Highest fault-clearing capacity available for reliable operation of protective devices
- 99% efficiency for all but the lowest end of the load range
- Continuous load current – no load current interruption on tap switching
- Quickly corrects under/over voltage, sags, and swells
- Automatic failsafe electronic bypass to eliminate load current interruption in the event of a malfunction



- Zero moving parts and fan-free design for increased reliability and no scheduled maintenance
- Surge suppression and input circuit breaker are standard
- Natural convection cooling

Mini-EVR installation is simple. The unit arrives completely assembled and requires no programming, testing, measuring, setting of switches, or internal wiring. It installs much like a dry-type transformer: simply place the unit and make the input and output wiring connections.

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Specifications

Application			
Power Rating/Size (kVA) [1Ø only)	5, 7.5, 10 (for larger single-phase units, see UST SureVolt™ power conditioner)		
Voltages	60Hz: 120, 208, 240, 480	50Hz: 110, 120, 220, 380, 400	Non-standard voltages available
Regulation/Operating Characteristics			
Regulation	Nominal input voltage +10%/-22%; Nominal output voltage ±3 (other options available)		
Regulation Variation	None – regulation constant for 0 to 100% load and any load power factor		
Overload/Inrush Capability	6000% -1 cycle, 1000% - 1 second, 500% - 5 seconds, 200% - 1 min.; 1000% fault clearing		
Load Power Factor	No limitations, compatible with all load types		
Tap Switching	No load current interruption or waveform distortion on switching at any load or power factor		
Zero Crossing Sensitivity	None: tap switching not dependent upon determining load current zero crossing		
Harmonic Distortion	No distortion added at any load or power factor		
Response Time	1 cycle typical regardless of load or load power factor		
Efficiency	99% typical		
Operating Frequency	±3% of nominal frequency		
Protection / Bypass			
Surge Suppression	Included, complies with ANSI/IEEE C62.41, UL 1449		
Failsafe Electronic Bypass	Auto-actuation on high temperature, over-current, component failure with no loss of load		
Construction			
Technology	Microprocessor-controlled tap switching auto-transformer design		
Switching Semiconductors	Non-full power semiconductors – individual SCRs are not required to carry full unit current		
Controls	No controls or programming required; no user-adjustable controls		
Cooling	Natural convection; no cooling fans used		
Transformer	Dry-type auto-transformer, copper wound		
Enclosure	Wall-mounted NEMA-1, ANSI 61 grey, other enclosure types and colors available		
Monitoring	Contacts for remote indication of unit and surge suppression status are included		
Audible sound level	Less than 65 dB @ 1 meter		
Environmental Requirements			
Temperature - Humidity	Ambient 32° to 104°F (0 to 40°C) – Relative humidity 0-95% non-condensing		
Operating Altitude	0 to 3,300 ft (1000m)		

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Weights and Dimensions•

kVA	Height	Width	Depth	Weight – 60Hz	Weight-50Hz	Enclosure
	Inches (cm)	Inches (cm)	Inches (cm)	Lbs. (kg)	Lbs. (kg)	
5	20 (51)	20 (51)	10 (26)	85 (39)	94 (43)	M16
7.5	30 (76)	20 (51)	11 (28)	120 (55)	132 (60)	M20
10	30 (76)	20 (51)	11 (28)	150 (68)	165 (75)	M20

* Weights and dimensions for standard units. Certain options may require larger enclosures or more weight. Contact factory for details.

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Model Numbers, Documentation, Common Options & Lug Sizes

Model Number Construction		
ZZZ:	KVA: 050 (5 kVA), 075 (7.5kVA), 100 (10kVA)	Example: 5kVA, 50Hz, 220v MEVR -050-220-5
AAA:	Input Voltage (L-N) e.g. 120v = 120	
OOOO	Options – Refer to common options list for option code	

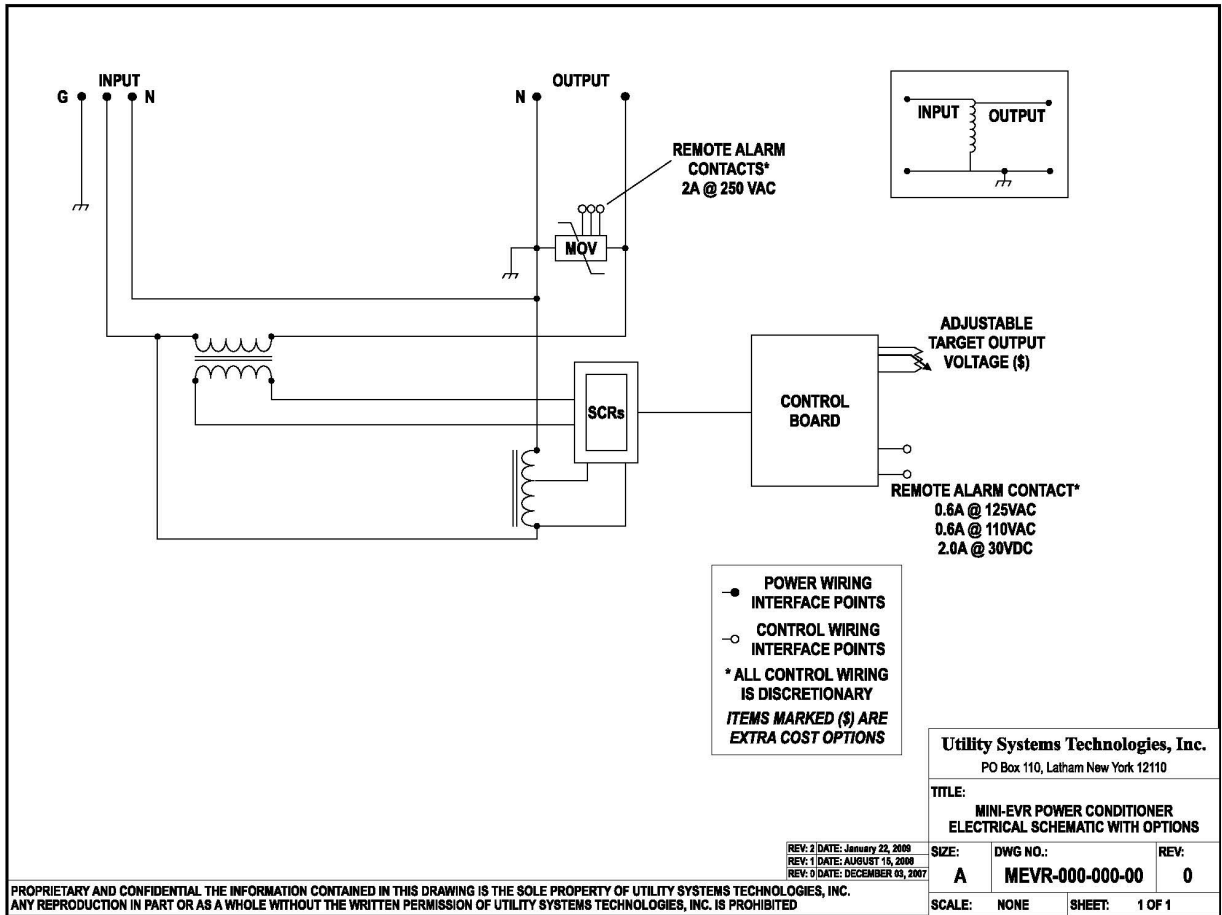
Standard Documentation & Factory Testing
Installation details (weights, enclosure dimensions, cable entry/exit, conductor connections, wiring connections) are typically issued within 10 working days in PDF format. Two (2) copies of the Owners Manual with unit information, electrical diagram(s) and factory test data are shipped with each unit. Every unit is factory tested to manufacturer's standards to confirm proper operation of the unit and any options. Contact factory for other requirements.

Common Options		
Option	Code	Description
50 HZ	5	For 50 Hz units
Non-standard Enclosure	E	A variety of enclosures and enclosure cooling options are available, including NEMA-3R, 12, and 4X. Contact factory for further details.
Non-standard Voltage (s)	N	For any non-standard input or output voltage
Adjustable Target Output Voltage	O	Permits adjustment of the target output voltage by approximately +/-10% to increase or decrease output voltage or limit normal output to a minimum or maximum value. Contact factory for further details.
Undefined Option(s)	Q	Used for any option not already defined
Non-standard Regulation Range	R	For any regulation ranges other than the nominal input voltage +10%/-22% and nominal output voltage +/-3%. Contact factory for further details.

Unit Input & Output Lug Sizes												
Voltage	2kVA		3kVA		5kVA		7.5kVA		10kVA		15kVA	
	#	Size	#	Size	#	Size	#	Size	#	Size	#	Size
120	1	14AWG-1/0	1	14AWG-1/0	1	14AWG-1/0	1	14AWG-1/0	1	14AWG-1/0	1	4AWG-300kcmil
208	1	14AWG-1/0	1	14AWG-1/0	1	14AWG-1/0	1	14AWG-1/0	1	14AWG-1/0	1	14AWG-1/0
240	1	14AWG-1/0	1	14AWG-1/0	1	14AWG-1/0	1	14AWG-1/0	1	14AWG-1/0	1	14AWG-1/0
380	1	14AWG-1/0	1	14AWG-1/0	1	14AWG-1/0	1	14AWG-1/0	1	14AWG-1/0	1	14AWG-1/0
400	1	14AWG-1/0	1	14AWG-1/0	1	14AWG-1/0	1	14AWG-1/0	1	14AWG-1/0	1	14AWG-1/0
480	1	14AWG-1/0	1	14AWG-1/0	1	14AWG-1/0	1	14AWG-1/0	1	14AWG-1/0	1	14AWG-1/0

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Schematic



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