

OVERVIEW

Enclosed one-phase and three-phase Power Factor correction units intended for installation on the load side of a main-disconnect or sub-panel:

- Up to 125 kVAR capacity
- 120 / 480 / 600 volt configurations
- Demonstrated ability to reduce Real and Reactive Power consumption
- Demonstrated ability to provide 50,000 volt surge protection
- All components cUL certified
- NEMA rated enclosures
- Projected 15 - 20 year lifespan
- Five (5) year parts and service warranty

SPECIFICATIONS

1.0 Certifications: cUL, CSA and / or QPS certified in full system configuration.

2.0 Warranty: Minimum five (5) year comprehensive manufacturer's warranty including system component replacement, labour and installation.

3.0 Manuals: Operational and Maintenance Manuals including wiring diagrams, installation and removal instructions.

4.0 Power Factor Correction: Installed device operates with the intention of increasing Power Factor ratings within the facility rather than at the service connection.

Device capable of increasing Power Factor (PF) to the following minimums:

4.1 Initial PF < 0.50: Increase existing PF by 200% - or to a minimum of 0.90.

4.2 Initial PF > 0.50: Increase existing PF by 175% - or to a minimum of 0.90.

5.0 Surge Protection: Device capable of providing surge protection up to 50,000 volts.

6.0 Enclosure and Dimensions:

6.1 Size – Device is sufficiently compact to take advantage of most existing panels. All components are included in the primary device enclosure.

6.2 Installation and Removal – Device may be installed and / or removed by any qualified and licensed electrician.

6.3 NEMA Rating – Device cabinets conform to NEMA 3 designs for outdoor use and NEMA 4 designs for explosion proof applications.

7.0 Installation:

7.1 Single Point Installation – Device accommodates a single point installation in either the Main Distribution Panel (MDP) or suitable Secondary Distribution Panel (SDP) and is connected with an individual breaker.

7.2 Service Interruption – Installation accomplished with minimal utility service interruption.

7.3 Location – Device is suitable for exterior installations if required. Unit pricing reflects both indoor and outdoor installation potentials.

7.4 Multiphase Capability – Foundational device architecture and operation accommodates both single and three phase service.

7.5 Ventilation – Installed device does not require additional ventilation or space conditioning hardware or applications.

8.0 Performance:

8.1 Energy Consumption Reduction – Device demonstrates a beneficial reduction in power consumption and related costs. Performance documentation available.

8.2 Building Automation and Control Network Compatibility – Device accepts BACnet modbus monitoring.

9.0 Custom Construction:

9.1 Corrosion Protection – All parts are constructed of corrosion resistant materials or painted or plated as corrosion protection.

9.2 Internal Wiring – R/C Appliance Wiring Material, minimum 8 AWG:

9.2.1 Wires to ground are green, or green with yellow stripe, or marked similar. All internal wiring mechanically secured before soldering or terminate in pressure terminal connectors, or are male/female disconnect type.

9.2.2 Wiring terminates in quick connect terminals or male/female disconnect with positive detent or wire wrap connections, taper pins and tabs, or in solder connections made mechanically secure before soldering.

9.3 Wiring and Switch Sizings – See 12.0 (Table 1)

9.4 Conductors – All conductors clamped within a terminal block, mechanically secured before soldering, or provided with an insulated quick connect terminal.

9.5 Grounding – All exposed dead-metal parts that may become energized and all dead-metal parts inside the enclosure that are exposed to contact during operation, including maintenance and repair, and that may become energized, are in electrical continuity with the ground screw.

9.6 Spacings – Spaces between any non-insulated live parts and a non-insulated live part of opposite polarity, and non-insulated grounded metal part other than the enclosure or an exposed dead metal part that is isolated (insulated) conform as follows:

BLACKHAWK POWERHOUSE
Device Specifications

Potential Involved in volts	Through Air or Oil in inches (mm)	Over Surface in inches (mm)	Shortest Distance in inches (mm)
0 - 150	1/8 (3.2)	1/4 (6.4)	1/2 (12.7)
151 - 300	1/4 (6.4)	3/8 (9.5)	1/2 (12.7)
301 - 600	3/8 (9.5)	1/2 (12.7)	1/2 (12.7)

9.7 In addition, the following distances are maintained between UL CYWT2 terminal capacitors and various locations:

9.7.1 A minimum through air distance of 3/4 inch (19.2mm) between opposite polarity for units rated 151–300V.

9.7.2 A minimum through air distance of 7/8 inch (22.2mm) between opposite polarity for units rated greater than 300V.

9.7.3 A minimum through air distance to enclosure of 1.0 inch (25.4mm).

10.0 Marking & Labels:

9.1 All required markings are:

- permanently molded, die-stamped, or paint-stenciled
- or stamped or etched metal plates permanently secured
- or indelibly stamped on adhesive backed pressure sensitive labels.

10.2 Markings contain:

9.2.1 The manufacturer's name, trademark, or other descriptive marking

9.2.2 The electrical / enclosure ratings: volts / amps / hz / number of phases

9.2.3 The catalog number or equivalent.

9.2.4 The date or dating period of manufacture.

11.0 Electrical Rating:

Rated Voltage	Current (A)	Frequency (Hz)	Phase
120 / 240 Vac	13 - 100 A	50-60	1
208 / 240 Vac	13 - 100 A	50-60	3
277 / 480 Vac	13 - 100 A	50-60	3
347 / 600 Vac	13 - 100 A	50-60	3

BLACKHAWK POWERHOUSE
Device Specifications

12.0 Table 1

Wire & Switch Sizing									
240 V (3 Phase) Unit					480 & 600 V (3 Phase) Units				
KVAR	75°C Min Cable Sizes	90°C Min Cable Sizes	Safety Switch		KVAR	75°C Min Cable Sizes	90°C Min Cable Sizes	Safety Switch	
			Rating AMPS	Fuse AMPS				Rating AMPS	Fuse AMPS
2	6	6	30	10	2	6	6	30	6
3	6	6	30	15	3	6	6	30	6
5	6	6	40	20	5	6	6	30	10
7.5	6	6	40	30	7.5	6	6	30	15
10	6	6	60	40	10	6	6	30	20
12.5	6	6	60	50	12.5	6	6	30	25
15	6	6	60	60	15	6	6	30	30
17.5	4	6	100	75	17.5	6	6	60	35
20	4	4	100	80	20	6	6	60	40
22.5	3	4	100	90	22.5	6	6	60	50
25	3	3	100	100	25	6	6	60	50
27.5	1	2	200	125	27.5	6	6	60	60
30	1	2	200	125	30	6	6	60	60
35	1/0	1	200	150	35	4	6	100	70
40	2/0	2/0	200	175	40	4	4	100	80
45	3/0	3/0	200	200	45	3	4	100	90
50	3/0	3/0	200	200	50	3	3	100	100
60	250	4/0	400	250	60	3	3	200	110
75	350	300	400	300	75	1/0	1	200	150
100	2 x 3/0	3 x 3/0	400	400	100	3/0	2/0	200	200