



PowerKraft™ Rectifier

For Electrolytic processes

Provides optimized power supply for your
Electrolysis Application and operating conditions



Competitive technology in Eco-design, high efficiency and Redundancy feature.



Standardized and customized solutions for different Electrolysis applications.



Global customer service and application support.



Reliability in extreme operating conditions.

The PowerKraft design ensures best performance in demanding electrolytic processes. The design is based on time proven thyristor technology. The equipment consist of Transformer, Rectifier and Control panel.

POWER SUPPLY CONTROLS

Standard control interfaces:
Local : DC Meters and Control Potentiometer integrated into a unit
Remote : PLC interface via. 4 - 20mA signals / Potential free contacts.

CONTROL INTERFACE

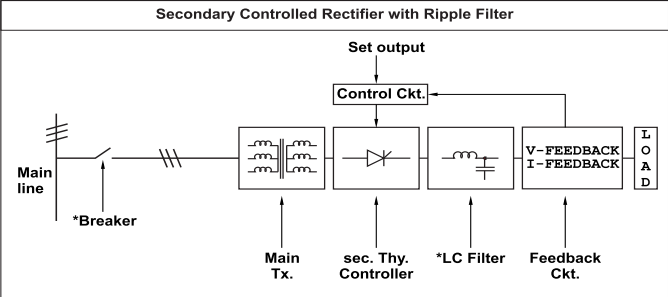
Set Output - (V/I): Multi turn potentiometer - 1no. (Lockable)
Rectifier On: Illuminated Push Button
Rectifier Stop / EM Stop: Mushroom head Push Button
Fault / Fault reset: Illuminated Push Button
Auto/Manual: Illuminated Selector Switch

TECHNICAL DATA

Output Direct Voltage range: 150 V - 1000 V*
Output Direct Current range: 1500 A - 10 kA**
Input 3-phase AC Voltages: 380, 415, 440, 480 V,
6.6 kV - 33 kV (Higher voltages on request)
Frequency: 50/60 Hz
Auxiliary supply: ≤ 480 VAC ±10%, 3-phase
Certificate: CE marking
EMC conformity: IEC 61000-6-4 (Emissions) and IEC 61000-6-2 (Immunity)
Design Standards: *** IEC 60076, IEC 61378, IEC 60146
Protection class: IP 20 (Air cooled), IP 44 (Water cooled)
Topology: 6 Pulse, 12 Pulse
Power factor: > 0.9 lagging at rated output and nominal input voltage
Efficiency: > 0.9 at rated nominal current
Ambient temperature: +5/+40°C (Up to 50°C on request)
Cooling: Rectifier — Forced air (AF) / Water Cooled
Transformer - Dry Type (AF), Oil Immersed (ONAN / ONAF)
Humidity: 10-90% RH, non-condensing
Control precision: ±1%
Regulation range: Stepless at constant voltage or current 10—100%
Ripple filter: < 5% at rated output (Available on request)
Duty ratio: Continuous operation at rated load
Protection: Overcurrent, Overvoltage, Thyristor Overtemperature,
Thyristor fuse failure, Transformer Overtemperature,
Emergency Stop
Communication interface: PROFINET, Hardwired - Classic Solution

* Other voltages on request
** Other currents on request
*** Other Standards on request

BLOCK SCHEMATIC DIAGRAM



* - Breaker and LC Filter are optional

PowerKraft OPTIONS

- Additions**
- Remote control box 'basic version' with DC meter, potentiometers, fault reset etc.
 - Harmonic filter panel + PF correction bank.
 - AC/ DC busduct.
 - Water cooling system for rectifier.
 - HT isolator panel, Feeder panel, Polarity Reversal.

- Harmonics**
- Active Harmonic Filter (AHF)
Total current harmonic distortion: < 7 % of rated nominal current
< 5% of rated nominal current
Harmonic mitigation performance: Up to the 50th harmonic
Protection: Overheat, overvoltage and undervoltage, summary fault indication
Communication interface: PROFINET
Protection: IP20/IP21 (Option)
Certification: CE, UL, ROHS

- Power Factor**
- General: > 0.9 Lagging. Up to 15-100% of nominal output*
PFC bank: Modular System
* Depending on customer requirement

- Container Solution**
- It contains electrical equipment e.g. rectifier, AHF, PFC, AC distribution panel.
40 feet ISO container, transformer along with enclosure and Busduct.
It is equipped with lighting, smoke detection, fire extinguisher, HVAC unit, main and panic doors, etc.

EXTERNAL DIMENSIONS

Voltage Range 100 — 700 V	Rectifier dimensions (mm)			Transformer dimensions
Current Range (Amps)	A	B	C	
Up to 1000	1000	600	2235	Sizes vary based on current and voltage; cooling type and pulse. Shall be informed at GA drawing approval stage.
2500	1000	600	2235	
5000	2000	600	2235	
8000	4000	600	2235	
10000	4000	600	2235	

* Dimensions above are indicative. GA drawing approval shall be final
* Dimension details for rectifier above 10000A shall be informed during offer/GA drawing approval stage.

EXTERNAL DIMENSION DIAGRAM

