

# FlexKraft

## Air-Cooled Rectifiers

/ For electro-chemical processes



Scalable, switch-mode rectifier providing premium DC power supply and exceptional reliability



Modular design for scalability and easy maintenance, also facilitating redundancy when highest reliability is a must



Low ripple as well as current/voltage control for consistent, even and precise plating



Dual mode design for high process flexibility, reducing cost and footprint



Polarity reverse option

### Output ranges

Number of power modules	DC output voltage								Height* (mm)	Weight* (kg)
	0-12 V	0-12 V Dual	0-15 V	0-15 V Dual**	0-24 V	0-30 V	0-48 V	0-60 V		
1	600	2X300	500	2X250	300	250	-	-	450	49
2	1200	2X600	1000	2X500	600	500	300	250	590	76
3	1800	2X900	1500	2X750	900	750	-	-	730	102
4	2400	2X1200	2000	2X1000	1200	1000	600	500	870	133
5	3000	2X1500	2500	2X1250	1500	1250	-	-	1010	160
6	3600	2X1800	3000	2X1500	1800	1500	900	750	1150	188
7	4200	2X2100	3500	2X1750	2100	1750	-	-	1290	220
8	4800	2X2400	4000	2X2000	2400	2000	1200	1000	1570	251
9	5400	2X2700	4500	2X2250	2700	2250	-	-	1710	286
10	6000	2X3000	5000	2X2500	3000	2500	1500	1250	1850	315

\* Footprint of cabinet: 500 x 610 mm, including busbars on the rear side, and excluding options (500 x 860 mm D with polarity reversal).

\*\*For dual output options over 15V, or Voltage over 60, please contact KraftPowercon to get more information.

Specification is subject to change without notice

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The FlexKraft rectifiers are designed to give the best electrical performance in demanding industrial environments. The design is based on primary switching technology. One rectifier stack consists of 1-10 power modules. Several such modules and stacks can be combined to achieve the required power.

### TECHNICAL DATA

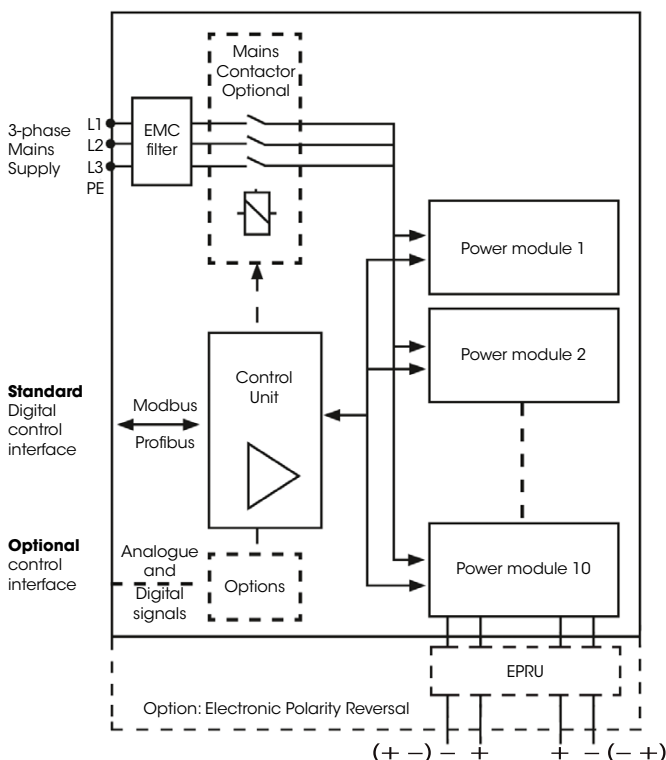
Supply voltage:	380 - 480 VAC $\pm$ 10%, 50 - 60 Hz, 3 Phase 220 VAC $\pm$ 10%,   50 - 60 Hz, 3 Phase for maximum 2x7 VDC / 300A per module
EMC conformity:	According to EN 61000-6-4, Emissions, and EN 61000-6-2, Immunity
LVD conformity:	According to EN-62477-1
Protection class:	IP 32 (except for fan)
Power factor:	$\geq$ 0.93 @ rated load
Efficiency:	Typical 0.9 @ rated output
Ambient temp.:	Max. 40°C, de-rated operation up to 50°C
Cooling:	Forced air cooling
Humidity:	Max. 95% RH, non-condensing
Control precision:	Voltage/current $<$ $\pm$ 1%
DC ripple:	$\approx$ 1% of rated output current at constant current mode in the entire range of regulation
Regulation range:	Stepless at constant voltage or current 0-100%
Duty ratio:	Designed for continuous operation at rated load up to 1000 m altitude
Protection:	Over-current, Over-voltage, Overtemperature, Short circuit, Open circuit, Module failure

### Power supply controls, standard control interfaces

Digital Display and Keypad integrated into unit
Modbus RTU/RS-485 computer interface
Profibus DP/RS-485 computer interface

### Control parameters

Setting	Outputs
Set current	Actual current
Set voltage	Actual voltage
On / Off	On signal
Start / Stop	Run signal
Stand by / Run	Actual Amp hours
Amp hours	Actual run time
Run time	Alarm (general alarm)
Clear counters	Alarm status (cause of alarm) End of process



### Options

- Remote control box 'basic version' with analogue or digital display, potentiometers etc.
- RS 232C interface control of one dual power supply. Control interface Profinet.
- Analogue/Digital interface. Four analogue inputs and four analogue outputs 0-10VDC and 4 digital in and 4 digital out 24VDC.
- Standard configuration: Iset, Uset, Iact and Uact: 0-10 VDC. On/Off, Block/Run, Power On and Alarm as digital signals: 24 VDC.
- Analogue interface with four inputs and four outputs galvanically isolated. Control and status signals either 0-10 VDC or 0/4-20 mA. Standard configuration: Iset, Uset, Iact and Uact: 0-10 VDC
- Digital interface with four inputs and four outputs. Control signals 24 VDC. Status signals via voltage free relay contacts; contact data 24 VDC or 24 VAC. Standard configuration: On/Off, Block/Run, Power On and Alarm.
- Raise / Lower function.
- Electrically controlled AC breaker.
- External reference shunt, 60 mV.
- Polarity Reversal.

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