KRAFT POWERCON

S 107.051 US

# FlexKraft Water-Cooled DC Power Supplies

## Single & Dual Outputs with Optional Polarity Reversal

*The sealed cabinet of the water-cooled FlexKraft is designed for industrial applications in harsh and demanding enviroments.*

**SEALED WATER-COOLED POWER SUPPLIES**
All power modules are built-in in a sealed cabinet. The IP43 protection class allows for FlexKraft to be used under very demanding conditions.

**MODULAR DESIGN**
Any combination of power modules up to 60 VDC or 24,000A can be supplied.

**SERVICEABLE**
Easy access for module repair or replacement.

**HIGH POWER FACTOR**
Low reactive power consumption.

**RIPPLE**
Low ripple at ALL output currents.

**FLEXIBLE PLACEMENT**
Completely protected and safe guarded from extreme environments, the FlexKraft system can be placed close to the process, saving both power and energy.

**INDIVIDUALLY CONTROLLED DUAL OUTPUTS**
FlexKraft is also available with dual outputs up to 15 VDC 2 x 3,000A. The two outputs are controlled 0-100% completely individually and independently.

CE ISO 9001

The FlexKraft power supplies are designed to give the best electrical performance in demanding industrial environments. The design is based on switch mode technology.

A complete power supply unit consists of 1-10 power modules and a control module.

## 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

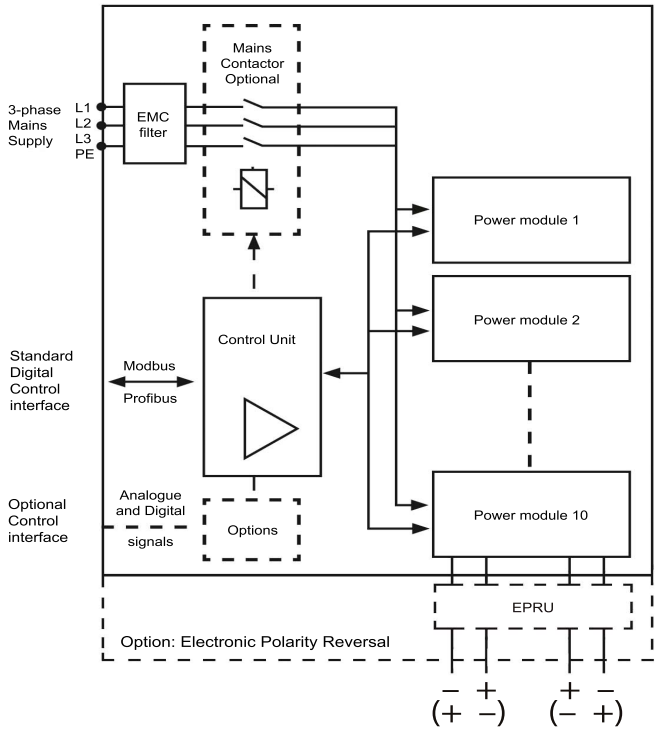
## CONTROL PARAMETERS

| 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 |

## TECHNICAL DATA

| | |
|---|---|
| Supply voltage: | 480 VAC ± 10%, 60 Hz, 3 Phase |
| EMC conformity: | According to IEC 61000-6-4, Emissions, and IEC 61000-6-2, Immunity |
| LVD conformity: | According to IEC 50178 |
| Protection class: | IP 43 |
| Power factor: | ≥ 0.93 @ rated load |
| Efficiency: | Typical 0.88-0.90 @ rated output |
| Ambient temp.: | Max. 122°F |
| Cooling: | Water cooling:<br>Water inlet temperature: not below actual dew point, but max 95°F<br>Temperature rise: 18°F<br>Water pressure: 2–10 lb/ft² |
| Control precision: | Voltage/current < ± 1% |
| DC ripple: | < 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 3300 ft altitude |
| Protection: | Over-current<br>Over-voltage<br>Overtemperature<br>Short circuit<br>Open circuit<br>Module failure |

## BLOCK SCHEMATIC DIAGRAM




## OPTIONS

- Remote control box 'basic version' with analogue or digital display, potentiometers etc.
- RS-232C interface for control of one power supply.
- Analogue/Digital interface. Two control, and two status signals 0–10 VDC and two control and two status signals 24 VDC.
- 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 0/4–20 mA. Standard configuration: Iset, Uset, Iact and Uact: 4–20 mA
- 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.
- Extrernal reference shunt, 60 mV.
- Electrically controlled AC breaker.
- Polarity Reversal.

## STANDARD OUTPUT RANGES

| DC output voltage | Number of power modules | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | Output Current (A) | | | | | | | | | |
| 0–12 V | 600 | 1200 | 1800 | 2400 | 3000 | 3600 | 4200 | 4800 | 5400 | 6000 |
| 0–12 V Dual | 2x300 | 2x600 | 2x900 | 2x1200 | 2x1500 | 2x1800 | 2x2100 | 2x2400 | 2x2700 | 2x3000 |
| 0–15 V | 500 | 1000 | 1500 | 2000 | 2500 | 3000 | 3500 | 4000 | 4500 | 5000 |
| 0–15 V Dual | 2x250 | 2x500 | 2x750 | 2x1000 | 2x1250 | 2x1500 | 2x1750 | 2x2000 | 2x2250 | 2x2500 |
| 0–24 V | 300 | 600 | 900 | 1200 | 1500 | 1800 | 2100 | 2400 | 2700 | 3000 |
| 0–30 V | 250 | 500 | 750 | 1000 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 |
| 0–48 V | – | 300 | – | 600 | – | 900 | – | 1200 | – | 1500 |
| 0–60 V | – | 250 | – | 500 | – | 750 | – | 1000 | – | 1250 |
| Height* (inches) | 18 | 23 | 29 | 34 | 40 | 45 | 51 | 62 | 67 | 73 |
| Weight* (lbs) | 108 | 168 | 224 | 243 | 352 | 414 | 484 | 554 | 630 | 695 |

* Footprint of cabinet: 20" W x 24" D, including busbars on the rear side, and excluding options (20" W x 36" D with polarity reversal)

Volume Flow Rate, gallons per minute >>

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| gallons/min | 0.8 (Δt=9°F) | 0.8 | 1.2 | 1.6 | 2.0 | 2.4 | 2.8 | 3.2 | 3.6 | 4.0 |



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