

# Rectifiers Flex Kraft, Dual Output, 2 x 250 – 3 000A



*Flex Kraft rectifiers with dual output offer extremely compact and cost effective solutions.*

### Individually controlled dual output

The two outputs are controlled 0-100 % totally individually and independently.

### Flexibility

Power control allows the use of a wide range of voltages and currents.

### Upgradeable

Modular design allows upgrading of power output.

### Serviceable

Easy access for module repair or replacement.

### Space-saving

With two "rectifiers" assembled into one stack, the

space requirement is low. The small foot-print results in easy installations. Modular design allows flexibility in the layout.

### High Power Factor

Low reactive power consumption compared to thyristor rectifiers.

### Ripple

Low ripple at ALL output currents.

### Extended scope

Flex Kraft is also available in one stack for single output up to 6 000A (See S 107.034). By combination of modules and stacks, rectifiers for up to 60 V DC or 24 000A can be delivered.



ISO 9001



The **FlexKraft** rectifier is designed to give the best electrical performance as well as withstanding harsh industrial environments. The design is based on primary switching technology.

The rectifiers consist of 1–10 power modules, which together with a control module form a complete unit.

## PLANT CONTROL SYSTEM

### Standard control interface:

Digital Display and Keypad integrated into unit

Modbus RTU/RS-485

Profibus DP/RS-485

### Process control parameters:

#### Input to unit:

Set current  
Set voltage  
On / Off  
Start / Stop  
Stand by / Run  
Amp hours  
Run time  
Clear counters

#### Output from unit:

Actual current  
Actual voltage  
On signal  
Run signal  
Actual Amp hours  
Actual run time  
Alarm (general alarm)  
Alarm status (cause of alarm)  
End of process

## TECHNICAL DATA

**Supply voltage:** 3 x 380–480 V ± 10%, 50–60 Hz  
3 x 200–240 V ± 10%, 50–60 Hz  
for a maximum output of 7 VDC

**EMC conformity:** According to EN 61000-6-4, Emissions, and EN 61000-6-2, Immunity

**LVD conformity:** According to EN 50178

**Protection class:** IP 32 (except for fan)

**Power factor:** ≥ 0.93 @ rated load

**Efficiency:** Typical 0.9 @ rated output

**Ambient temp.:** Max. 40°C, derated operation up to 50°C

**Cooling:** Forced air cooling

**Humidity:** Max. 85% relative, non-condensing

**Weight:** Approx. 25 kg per module

**Control precision:** Voltage/current < ± 1%

**DC ripple:** < 1% of rated output current at constant current mode in the entire range of regulation

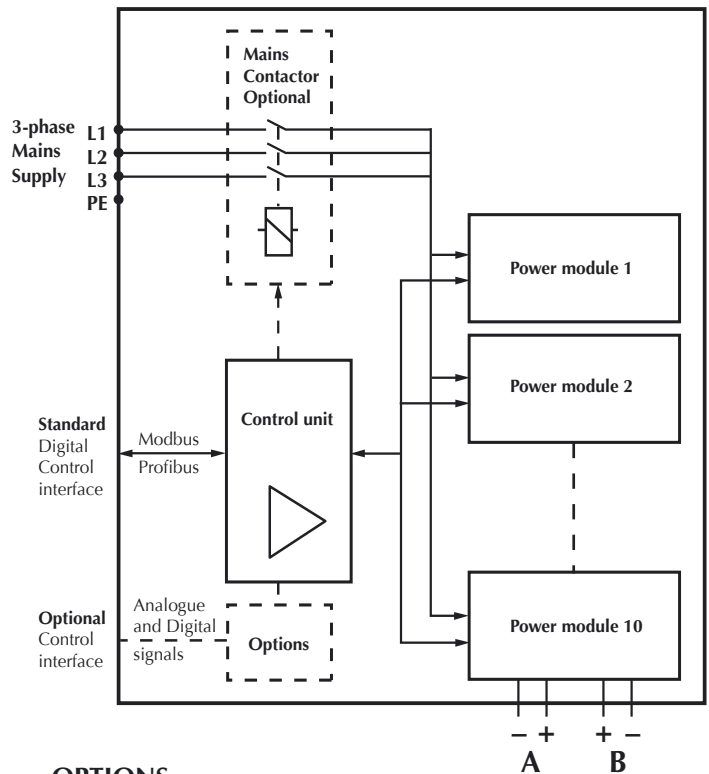
**Regulation range:** Stepless at constant voltage or current 0–100%

**Duty ratio:** Designed for continuous operation at rated load up to 1000 m altitude

**Protection:**  
Over-current  
Over-voltage  
Overtemperature  
Short circuit  
Open circuit  
Module failure

## BLOCK SCHEMATIC DIAGRAM

S 107.035 GB



## OPTIONS

- Remote control box with digital Display and Keypad.
- Remote control box "basic version" with analogue or digital instruments, potentiometers etc.
- RS 232C interface control of one dual rectifier.
- Analogue/Digital I/O 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 I/O 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 I/O 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.
- Software for pulse plating and process sequence control.
- Mains Contactor
- External reference shunt, 60 mV.
- Pole reversing units.
- Custom-designed rectifiers.

## OUTPUT SPECIFICATION/STANDARD RANGE (other data upon request)

Number of power modules →

V/A	1	2	3	4	5	6	7	8	9	10
0–12 V	2x 300	2x 600	2x 900	2x 1200	2x 1500	2x 1800	2x 2100	2x 2400	2x 2700	2x 3000
0–15 V	2x 250	2x 500	2x 750	2x 1000	2x 1250	2x 1500	2x 1750	2x 2000	2x 2250	2x 2500

<b>Height (mm)</b>	450	590	730	870	1010	1290	1430	1570	1710	1850
<b>Footprint of cabinet:</b> Width= 500 mm, depth 610 mm inclusive busbars on the rear side.										