



# ModuPulse

The KraftPowercon NEW Modular PPR!

## **ModuPulse™**

The Problem-Solver for advanced plating processes, e.g. PCB and semiconductor, requiring Periodic Pulse Reverse is here!

## **Modular Design**

Its unique and modular design offers you monumental benefits, e.g. an output range between 4x150A to 2400A, small footprint, ease of service and highest possible up-time.

**Try it! It won't let you down!**

**TECHNICAL DATA**

Dimensions	Width x Depth 750 x 690 mm Height see in table below
Protection class	IP43
EMC conformity	Emission EN 61000-6-2, Immunity EN 61000-6-4
LVD conformity	EN 50178

**INPUT**

Mains supply	3x 380-400VAC $\pm$ 10%, 50-60Hz
Efficiency	Typ. 0.7
Power factor	Typ. 0.8
Mains supply disconnection	Yes, possible during maintenance by circuit breaker

**OPTIONS**

Digital I/O	4ch Dig input + 4ch Dig output. Programmable functions
Pulse time range	0.5 - 10.0 ms
Pulse amplitude range	-1000.0 - 1000.0%
Number of current steps	1-16
Accuracy, Continuous	0,5% of actual current + 0,7% of rated current
Accuracy, Pulse	2,5% of actual current + 0,7% of rated current
Ripple, Current	Max 2% (RMS)
Cabling	Each 150A/450A of Pulse Power Modules output is to be individually cabled to the load, preferably with 95 mm <sup>2</sup> cables.

**OUTPUT**

Config	Ifwd	Irev	Ufwd	No of modules	Cabinet size	Weight [kg]	Height [mm]	Min cooling water flow [l/min]	Phase shift possible
S600	1x600A	1x1800	5V	1	1	145	1190	4	-
D300	2x300A	2x900A	5V	1	1	145	1190	4	No
Q150	4x150A	4x450A	5V	1	1	145	1190	4	No
S1200	1x1200A	1x3600A	5V	2	1	185	1190	6	-
D600	2x600A	2x1800A	5V	2	1	185	1190	6	Yes
Q300	4x300A	4x900A	5V	2	1	185	1190	6	Yes
O150	8x150A	8x450A	5V	2	1	185	1190	6	Yes
S1800	1x1800	1x5400A	5V	3	2	246	1690	8	-
D900	2x900A	2x2700A	5V	3	2	246	1690	8	No
S2400	1x2400	1x7200A	5V	4	2	286	1690	10	-
D1200	2x1200A	2x3600A	5V	4	2	286	1690	10	Yes
Q600	4x600A	4x1800A	5V	4	2	286	1690	10	Yes
O300	8x300A	8x900	5V	4	2	286	1690	10	Yes
TwinS1800	2x1x1800A	2x1x5400A	5V	2x3	3	<400	2210	14	Yes
TwinD900	2x2x900A	2x2x2700A	5V	2x3	3	<400	2210	14	Yes

**CONTROL**

Fieldbus Protocols	Profibus DP or Modbus RTU
Interface	RS-485
Baudrate Profibus DP	187 kbit/s – 1.5 Mbit/s
Baudrate Modbus RTU	9600 bit/s - 38400 bit/s
Indicators on rectifier	LED Supply power available, Alarm
Actuals	Average current, Average voltage, Status, Alarms, Warnings
Settings	Base Current, Pulse levels, Pulse times, Voltage limit, Phase shift, Start
Functions	Process timer, Ah Counter, Ah Indicator
Soft start ramp	Yes
Protections	Short circuit, Open circuit, Over temp, Over current, Phase loss

**COOLING**

Cooling method	Water cooling
Water quality	De-ionized water, tap water, cooling water for cooling of plating bath or rinse water
Water temperature	Inlet/Outlet 20-35 degC / 20-45 degC
Ambient temperature min/max	+5 - +50 degC
Relative humidity	$\leq$ 95%, non-condensing