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- * 7" Touch Screen Color Panel Control
- * Precision Digital Control
- * Molded Fiberglass Enclosure
- * High Efficiency
- * Dual Pulse

IP21P SWITCH MODE PULSE RECTIFIER

- High efficiency
- Better current distribution
- Reduced metals and additive consumption
- Finer grain structure, lower stress and greater ductility
- Enhanced brightness
- Improved corrosion resistance
- Faster plating speeds
- Output current available from 10 to 100,000 Amps



Control Modes:

- Constant current or
- Constant voltage with bus bars cables drop compensation
- Wireless remote color Touch Screen control panel (optional)

Operation Modes:

- On/Off manual operation
- 10 independent programmable timers
- 10 independent Amp X min or Amp X hour counters + 1 total
- 10 independent recipes (for decorative chromium applications)
- Thickness operation (10 independent programs)

Automation:

- Process control (5 Amp X min or Amp X hour independent programs)
- 3 independent dosing pumps control (optional)
- 4 input x 4 output integrated PLC (optional)

Pulse Adjustment:

- T On = from 5uS to 654,800uS (1uS resolution).
- T Off = from 5uS to 654,800uS (1uS resolution).
- Train Pulse adjusts from 0.1 to 6,000 Sec.
- Direct Current capability
- Automatic pulse adjust (single pulse only)

Dual Pulse:

- Dual Pulse capability + Pulse Train

Pulse Reverse:

- Reverse Pulse capability connecting 2 pulse rectifiers (sync mode)

Protection:

- Line fault and output overload electronic protection
- over temperature alarm
- Thermal magnetic trip circuit breaker
- Isolation fault

Construction:

- 0.95 power factor (low energy consumption)
- Low noise high-frequency switch mode converter
- Corrosion proof molded fiberglass enclosure
- 7" Color Touch Screen control panels
- Easy replace power modules
- Water cooled (can use rinse water before use)
- Remote Control Panel available
- Reliable low maintenance rugged construction
- Hundreds of units operating for more than 10 years without any maintenance

Standard Switch Mode Pulse Rectifiers - 12V output

MODEL	Average Current (A)	Peak Current (A)	Water Cooling	Dimensions H x W x D (in)	Weight (Lb)
IP21P-010/12	10	20	Air – Conv.	14 x 12 x 6	50
IP21P-050/12	50	100	Air – Conv.	18 x 16 x 10	60
IP21P-100/12	100	200	Forced Air	18 x 16 x 10	60
IP21P-200/12	200	400	Forced Air.	18 x 16 x 10	70
IP21P-300/12	300	600	1 liter/min	18 x 16 x 10	90
IP21P-500/12	500	1000	1.5 liter/min	18 x 16 x 10	100
IP21P-1000/12	1000	2000	3 liters/min	24 x 20 x 12	150
IP21P-2000/12	2000	4000	6 liters/min	30 x 24 x 10	180
IP21P-3000/12	3000	6000	9 liters/min	30 x 24 x 10	190
IP21P-4000/12	4000	8000	12 liters/min	40 x 32 x 12	200
IP21P-5000/12	5000	10000	15 liters/min	48 x 36 x 16	360

3 phase 240V or 380/440V/480V, 50/60Hz AC line. Models from 10 to 200 Amps 110V or 240V-60Hz single phase

Standard Switch Mode Pulse Rectifiers - 24V output

MODEL	Average Current (A)	Peak Current (A)	Water Cooling	Dimensions H x W x D (in)	Weight (Lb)
IP21P-020/24	20	40	Air – Conv.	18 x 16 x 10	60
IP21P-050/24	50	100	Forced Air	18 x 16 x 10	60
IP21P-100/24	100	200	Forced Air	18 x 16 x 10	70
IP21P-300/24	300	600	1 liter/min	18 x 16 x 10	100
IP21P-500/24	500	1000	1.5 liter/min	18 x 16 x 10	150
IP21P-1000/24	1000	2000	3 liters/min	24 x 20 x 12	160
IP21P-2000/24	2000	4000	6 liters/min	30 x 24 x 10	190
IP21P-3000/24	3000	6000	8 liters/min	40 x 32 x 12	200
IP21P-4000/24	4000	8000	12 liters/min	40 x 32 x 12	220
IP21P-5000/24	5000	10000	15 liters/min	48 x 36 x 16	400

3 phase 240V or 380/440V/480V, 50/60Hz AC line. Models from 20 to 100 Amps 110 or 220V-60Hz single phase Anodizing applications

Standard Switch Mode DC Rectifiers - 12V or 24V output

MODEL	Current (A)	Water Cooling	Dimensions H x W x D (in)	Weight (Lb)
IP21C-300/12	300	1 liter/min	18 x 16 x 10	110
IP21C-500/12	500	1.5 liter/min	18 x 16 x 10	110
IP21C-1000/12	1000	3 liters/min	18 x 16 x 10	140
IP21C-2000/12	2000	6 liters/min	30 x 24 x 10	160
IP21C-3000/12	3000	9 liters/min	30 x 24 x 10	180
IP21C-4000/12	4000	12 liters/min	40 x 32 x 12	200
IP21C-5000/12	5000	15 liters/min	40 x 32 x 12	320