



Power Supplies and Controllers for ANODIZING and Aluminium colouring processes

Edition 2017



plating electronic
we care for power

pe ANODIZING COLOUR UNIVERSAL POWER SUPPLY AND CONTROL SYSTEM

The new energy saving technology combined with the easy to operate colouring controller manufactured by plating electronic GmbH ensures uniform colouring results for the following processes:

- Electrolytic colouring of aluminium using the two-steps process: AC or DC/AC method
- Modification of pore structure for interference colouring of aluminium

The universal AC Voltage sinusoidal frequency and amplitude function rounds off the pe8705 Control Unit. Straight forward upgrade in existing plants.

The switch mode Power Supply technology in combination with the digital Control Unit has the following advantages:

Specific colouring time due to amplitude and sinusoidal frequency modification

Reproducibility of the colouring process

Automatic adjustment for batch surface

Integrated colouring and re-colouring function

Ampere-hour and pre-selection counter for the bath dosing

Integration in automated control system via PROFIBUS (others on request)

Mains voltage fluctuations do not affect the colouring result

Three phase mains supply used, so no unbalanced mains load as with normal two phase circuits

Space saving due to compact technology

Electricity Energy cost saving with colouring times shortened by up to 50%

We can blacken faster ...

What defines the colouring process in your works? With our new universal Power Supply and Control Unit pe8705 you define the colouring times. Whether EURAS C-31 or C-35 black, you define the process times and not your process. Thanks to our switch mode Power Supply technology and special, newly developed microprocessor technology, we are able to achieve an improved variable sinusoidal current waveform for the colouring process.



Joachim Knop
ANODIZING Specialist
plating electronic GmbH

As a result we can lengthen the short colouring times for light colours, if desired by operator.

You have the advantage of better reproducibility, in particular for light colours. The part/time diagram in the plant controller can be optimised.

In the case of dark colours, the anodizing capacity can be increased due to the shorter colouring times. For you this means an increase of up to twice the load throughput with lower energy usage. An interesting way of saving energy.



pe8705 Control Unit

The complete solution for anodizing and colour

Product specification: pe8705 ANODIZING-COLOUR Control Unit

Large, clearly laid out LC Display for easy operation with acid resistant membrane keyboard

99 voltage/time colouring programs can be programmed by the user as required

Manual and automatic operation

Process control with indication of the program steps and the time for „end of colouring“

Automatic adjustment for batch surface

Measurement of the bath temperature for temperature monitoring

Bath short circuit monitoring, overload protection, function check and signaling

Integration in automated control system via PROFIBUS (others on request)

Corrosion-resistant polycarbonate (ABS) housing

Mains voltage: 230V AC/1 Ph /50-60 Hz

Max. ambient temperature: 40°C/104°F

Protection rating: IP54

Colouring process AC or DC/AC method



pe87DW COLOUR
22V / 3000A

You define the colour and the process time!

e.g. EURAS black (with normal concentration/metallic salt) in approx. 6 min

Light colours:

Lengthen short colouring times

→ Higher process reliability

Dark colours:

Shorten long colouring times

→ Energy saving, productivity increase



EURAS colours
Standard colours

We have proven AC pulse technology:

pe87DW COLOUR POWER PULSE in the latest switch mode Power Supply technology with water cooling is the ideal compact power supply for the anodizing area, as well as for electrolytically colouring aluminium using the two-steps process: AC or DC/AC method. It is possible to increase the power output by parallel connection such that the POWER PULSE Units can cover a wide range of applications.

The combination pe87DW COLOUR POWER PULSE and our easy to use controller pe8705 offers you ease of operation for your processes. Auto/Manual for instance the individually adjustable setpoint ramps, the universal AC sinusoidal frequency and amplitude function, ensure high plant availability and optimised energy management. With the usage of this combination you can control the processes and therefore define the colouring time and colour shades.



Andreas Reichenbach
PULSE Specialist
plating electronic GmbH

Product specification for pe87DW COLOUR POWER PULSE series:

Effective output voltage 22V, effective output currents from 50...10,000A

DC and AC operation

Microprocessor controlled

Programmable switched outputs (optional)

Regulation error < $\pm 1\%$ in relation to nominal DC value

Efficiency > 87%

Three phase mains supply used, so no unbalanced mains load as with normal two phase circuits

Water cooling and completely enclosed housing with IP54 protection rating

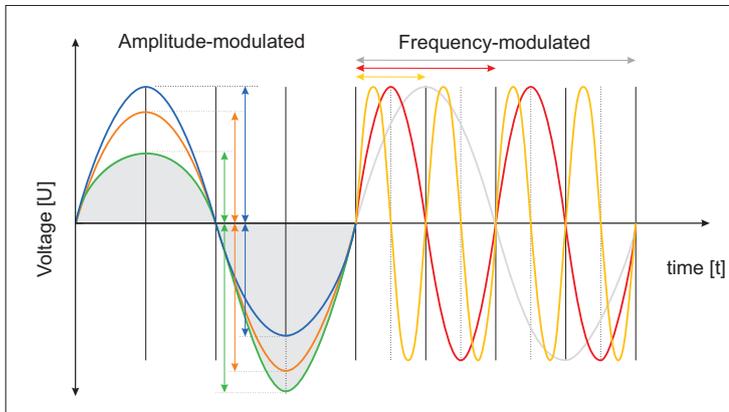
Integration in automated control system via PROFIBUS (others on request)

Permanently short-circuit and open-circuit proof

Max. ambient temperature: 40°C/104°F



Universal AC sinusoidal frequency and amplitude modification



You can define the colouring times with the aid of amplitude and frequency modification

Amplitude modification:

Positive and negative sinusoidal AC voltage can be adjusted as required.

Frequency modification:

Individual adjustment of the frequency within the range of 5 up to 100 Hz.

Selection of the amplitude and the frequency as necessary can be used to influence the colouring time

Extension of the colouring times for light colours and shortening of the colouring times for dark colours



„Top quality Deep Black in less than 7 minutes!“

„During the construction of our Anodizing Plant we decided to use four Anodizing Power Supplies and a Colour Unit from plating electronic GmbH.

I have never regretted the decision in the slightest. The dependable and competent on-site service, from installation to the start of series production, as well as the compact and reliable technology in this plant have totally impressed me and my staff.

- Significantly increase colouring times for light colours
- Significantly shorten colouring times for dark colours

In my many years of practical experience I have never obtained such good colouring results! Deep Black in less than 7 minutes, that is great! Due to the reduction in the colouring time by 30% - 40% for C-35 we save on our electricity energy costs, increase the Load throughput and therefore significantly reduce our process costs.“

Customer reference Germany



pe Colour Power Supply 2x22V / 3400A

PROGRAMMABLE CONTROLLERS FOR ANODIZING, HARD ANODIZING AND TITANIUM ANODIZING

Product specification: pe280 Control Unit

Large, clearly laid out LC Display for easy operation with acid resistant membrane keyboard

Compact construction designed for use in an anodizing environment

Integration in automated control system via either Profibus, RS485, TCP/IP, etc.

Manual and automatic operation

Software update using PC via RS232 flash system

Mains voltage: 230V AC / 1 Ph / 50-60Hz or 24V DC

Max. ambient temperature: 40°C/104°F

Protection rating: IP54

Weight approx. 2kg / 4lbs

Additional product specification: pe280 ANODIZING Control Unit

Starting edge

Indication of the process time and the remaining anodizing time

Pro automatic comparison of batch surface

Ampere-hours counter for automatic dosing

Current and voltage pre-selection can be continuously adjusted

3 separate automatic current density programs

Temperature monitoring and automatic conductance correction in case of temperature fluctuations



pe280 ANODIZING Control Unit

Your advantages

Compact, robust construction
Acid-resistant membrane keyboard
Easy operation

pe280 HARD ANODIZING Control Unit

Starting edge

Indication of the process time and the remaining anodizing time

Pro automatic comparison of batch surface

Ampere-hours counter for automatic dosing

Current and voltage pre-selection can be continuously adjusted

Setpoint curves / timer function up to 14 DC steps

4 memories for individual programs

Temperature monitoring

DC POWER SUPPLIES FOR ANODIZING APPLICATIONS

Latest switch mode technology

Due to the use of high-frequency technology, switch power supply technology offers many advantages over conventional rectifiers based on motorised adjustment or thyristor technology. As a consequence of the proven, reliable, compact technology, switch mode systems are excellently suited to the demanding anodizing area.



pe5x10

e.g. 22V / 9000A*

*picture shows POWER STATION pe5410-W

Your advantages

Water cooling, IP54,
compact size, i.e.
reduced power losses,
higher efficiency



pe4203-W

e.g. 22V / 500A



pe4206-W

e.g. 22V / 1000A

Product specification, water-cooled DC Power Supplies

Higher power by connecting several units in parallel

pe5910-W max. 200 kW, max. 10000A, max. 1000V
Dimensions: 800 x 2200 x 600 (W x H x D in mm)

pe5710-W max. 132 kW, max. 7200A, max. 1000V
Dimensions: 800 x 2200 x 600 (W x H x D in mm)

pe5410-W max. 100 kW, max. 5000A, max. 1000V
Dimensions: 400 x 2200 x 600 (W x H x D mm)

pe4206-W, max. 40 kW, max. 2000A, max. 1000V
Dimensions: 483 x 260 x 520 (W x H x D mm)

pe4203-W, max. 20 kW, max. 1000A, max. 1000V
Dimensions: 483 x 130 x 520 (W x H x D mm)

Regulation error < 1%

Ripple < 1% (related to rated DC value)

Efficiency up to 92%

Digital regulation

Constant current and voltage regulation

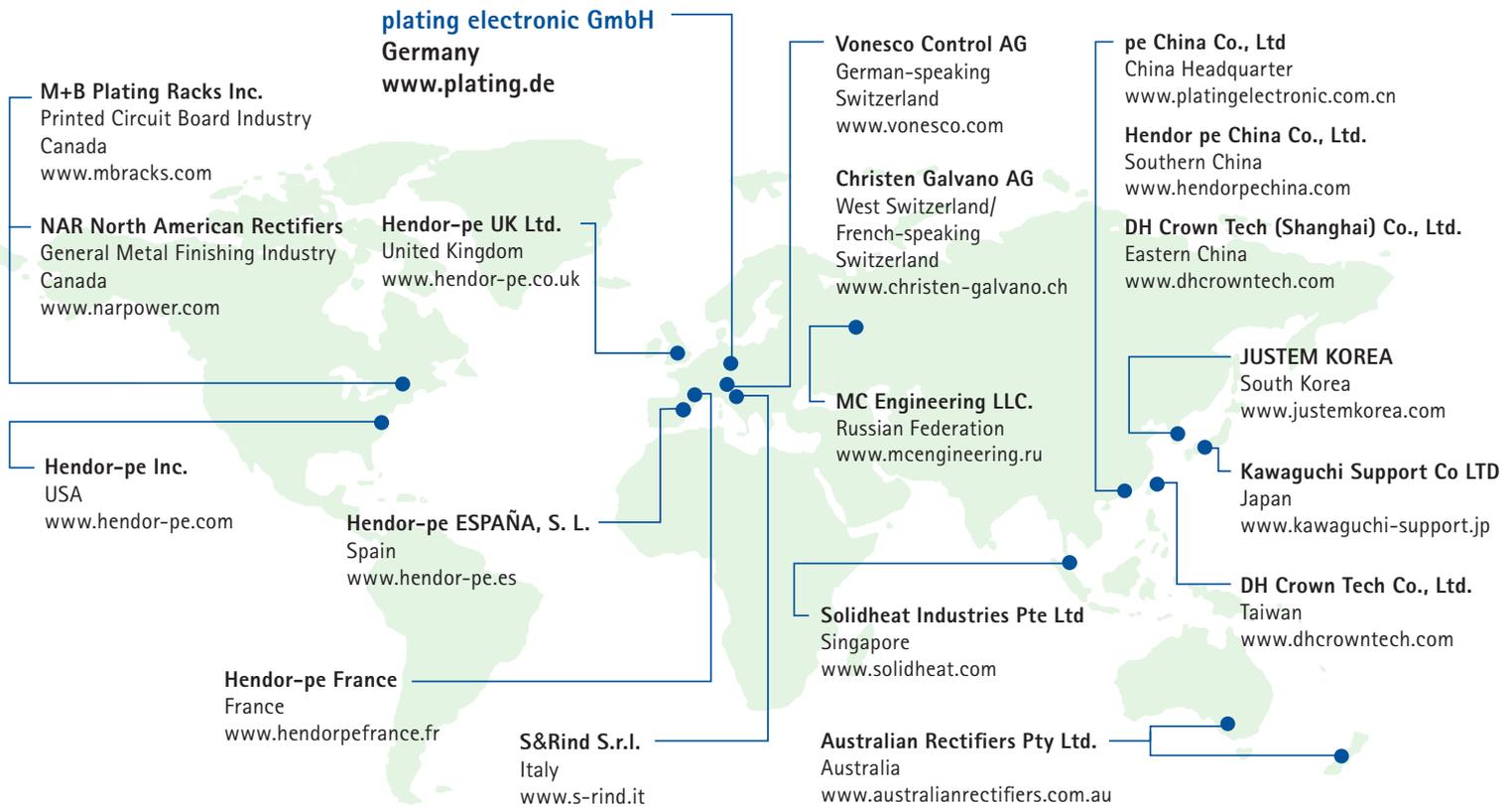
Permanently short-circuit and open-circuit proof

Electroplating and PULSE-REVERSE Power Supplies

plating electronic – Your specialist for DC and Pulse power supplies

Since 1986 plating electronic has been one of the leading developers and manufacturers of compact and highly specialised DC and Pulse power supplies. Our power supplies and control systems, which are exactly tailored to the specific application profiles, are in use worldwide. Global service and on-site customer support are provided by our international subsidiaries and partners.

As a medium-sized enterprise, our focus is on the fast realisation of projects and maximum customer satisfaction. Whether compact standard unit in bench-top design, plug-in, as cabinet units or specially planned solutions for a specific customer need – every power supply is suitable for the highest day-to-day requirements and continues, of course, to be **MADE IN GERMANY**.



For detailed information about our partners please visit: www.plating.de

*You are interested in our range of Plating Rectifiers/DC Power Supplies, Pulse-Reverse Power Supplies or High-Current Power Supplies?
Please contact us for detailed brochures about our manufacturing programme or visit: www.plating.de.*

