

THYROBOX^{DC} 3

Industrial High-Power
DC Power Supply



Thyrobox^{DC} 3 from AEG Power Solutions fulfills the high requirements of power supply for demanding industrial processes: a perfect stability of output voltage for the best current quality and high efficiency performance.

In line with the specificities of those processes, power consumption is as close as possible to sine wave form and the system has a high power factor. Thyrobox^{DC} 3 is based on proven B12 Thyristor Rectifier and IGBT chopper technology. Due to the wide output voltage range, load voltages from 50 V up to 700 V can be realized with Thyrobox^{DC} 3. The smallest Thyrobox^{DC} 3 has an output current of 1,800 A, which can be modularly expanded to 7,200 A.

The robust and compact design of the Thyrobox^{DC} 3 enables utilization even in harsh environments.

Typical applications

Where high quality output voltage and electric current and greater efficiency are needed:

- Coating
- Electrolysis
- Electroplating
- Any continuous industrial process requiring reliable high-level power supply

FEATURES

- Output current ripple <1%
- High efficiency (over 97%)*
- High power factor
- Low THDi
- Project specific parameter optimization possible
- Modular Design for MW installations
- Graphical display

Options include:

- Various communication interfaces
- Special instrumentation and software
- Different configurations for water inlet and DC connection possible

Water or air cooled version available:

- Modular water cooled version and external transformer for high power demand
- Compact air cooled version dc3C, single cabinet approach, transformer included in the rectifier cabinet, for medium power demand

BENEFITS

- **Highly reliable process power supply** combined with high efficiency
- **High dynamics to supply different types of applications**
- **High quality DC power supply** to increase the life span of DC components
- **Wide range of output voltage** can be supplied by using proven B12 Thyristor Rectifier and IGBT chopper technology
- **Small footprint**, especially low cabinet depth for simple container integration to increase the cost efficiency of system solutions
- **DC current or voltage source**, depending on the project requirements
- **Low distortion, low THDi and high-level power factor** without cost intensive filter elements reduces CAPEX and optimizes OPEX costs
- **Stainless Steel cooling system**, allowing use of tap water as cooling liquid

Specifications

THYROBOX	DC 3	DC 3C
INPUT		
Input voltage	0.4 – 35 kV	380/400 V
Transformer	External Customized	Integrated
Auxiliary input	230 VAC, 50/60 Hz	230 VAC, 50/60 Hz
OUTPUT		
Min. load voltage	50 V	
Max. load	700 V I 1800 A I ~450 kW	700 V I 1000 A I 200 kW
Power factor	0.95 for P > 20 % P _N	0.94 for P > 20 % P _N
THDi	<7 % @ rated point of operation	
Current ripple	<1%	
Efficiency @ rated point of operation	>97 % @ nominal operation	>97 % excl. transformer >95 % incl. transformer
CONFIGURATION		
AC power cable	From bottom	
DC output	Bottom, top optional	Bottom
Water inlet	Top, bottom optional	-
Dimensions without connectors W x D x H (mm)	1200 x 600 x 2200	1200 x 800 x 2200
Weight	950 kg	1400 kg
ENVIRONMENT AND PROTECTION DEGREE		
Cooling	Water cooling 30 l/min	Forced air 330 Nm³/h
Inlet temperature of cooling fluid/air	<35 °C without derating	<40 °C
Ambient temperature	>5 °C to <40 °C	>0 °C to <40 °C
IP protection degree	Standard: IP40; customizable: up to IP43	IP20
CONTROLS		
Digital voltage control	Yes	
Digital current control	Yes	
Digital power control	Yes	
COMMUNICATIONS		
According to customer requirements	Profibus, Profinet, Modbus	
Optional analogue I/O	0 – 10 V / 4...20 mA	
STANDARDS AND CERTIFICATIONS		
Conformity	IEC 62103 (EN 50178), EN 60146	
EMV	EN 61000	

AEG Power Solutions

Approach your local AEG Power Solutions representative for further support. Contact details can be found on: www.aegps.com

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