Westhaus
GROUP

RECTIFIER THYRISTOR

Voltage input	**3 x 400/230 VAC**
Voltage out	**24/108/216 VDC**
Power out	**6 to 150 kVA**

This system is designed to combine high power output and robust applications. For these requirements the thyristor rectifiers are the commonly used systems to provide safe DC distribution.

This system can be used for:

- Safe DC distribution in standby parallel mode of rectifiers and battery
- Direct source for DC load
- Telecommunication
- Railway systems
- Petrochemical industry
- AC/DC auxiliary supply for transformer stations
- Railed vehicles and ships
- Industry

- Approved technology
- High reliability
- Designed for robust applications
- High power output

The „state-of-the-art“ thyristor rectifiers are working in a controlled IU mode according to DIN 41772. The voltage output is controlled and has a maximum deviation of 1% in the range of 0 to 100% of the output power.
In combination with a battery system and connected electrical equipment the rectifier is working in a standby parallel mode. This system can be used for lead acid batteries as well as for NiCd cells and can provide the following operation modes:

- Conservation charging
- Fast charging
- Manual charging
- Diode testing
- Grid compensation mode

Different options available according to customer requirements.

Type list

Voltage out (VDC)	Device type	No. of cells lead acid battery	No. of cells NiCd-battery	Current out (ADC)	Power out (kVA)
24	D400 G24/ … Bwrug-Vx	12	18 .. 20	up to 1000	up to 30
48	D400 G48/ … Bwrug-Vx	24	37 .. 40	up to 800	up to 45
60	D400 G60/ … Bwrug-Vx	29 .. 30	47 .. 50	up to 630	up to 45
110	D400 G110/ … Bwrug-Vx	53 .. 56	87 .. 90	up to 630	up to 58
220	D400 G220/ … Bwrug-Vx	105 .. 108	175 .. 180	up to 630	up to 150

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Technical Data

AC input	
Voltage input	400 V AC +10/-10%
Frequency	47-63 Hz
Current input	according to type
Starting current	≤ current input
Power factor	>0,72 (24V-system), >0,78 (108V– und 216V-system)
Efficiency	≥ 85...93 %
DC output	
Voltage out	according to system type
Charging characteristic	IU characteristic mode according to DIN 41772/ DIN 41773 possible other characteristics: Conservation charging/Fast charging/Manual charging/ Diode testing/Grid compensation mode
Current out deviation	+/- 1% static
Current out	according to system type
Short circuit withstand	constantly short-circuit proof, 1 x I_{max}
Parallel mode	possible, power deviation approx 10 %
Voltage ripple	5% PP without battery
Environmental conditions	
Temperature range	0°C to 40°C
Humidity	F
Altitude	≤ 1000m above sea level, extended range possible
Noise	< 65 dB(A) at 1m distance
Construction details	
body	steel cabinet with front door
Size, weight	according to type
Cooling	convection or temperature controlled venting system
Connection	ground (standard)
Type of protection	IP20
Size of single cabinets	height 2200mm, depth 600mm width AC input 800mm DC-cabinet 800mm Battery cabinet 2x600mm
Colour/surface	powder coating RAL 7035;
Standards	
Certificate	CE
Safety	EN 60950, VDE 0100 part 410, VDE 0106 part 100, EN 60146
EMC	EN 55011 class A, EN 61000
Monitoring	
Controlling	- grid control - voltage output (U<, U>) - voltmeter - ammeter
Connection	- fuse circuit breaker DC out
Indication	- general fault with potential free contact
Options	- battery charging monitoring unit - earth leakage monitoring - deep discharge protection - microcontroller monitoring unit with serial/USB connection

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