BENNING

World Class Power Solutions

DC Power-Systems

Telecom BLT 1600

DC Power-Systems BLT 1600
Rectifier TEBECHOP

TEBECHOP 1300
48 V - 25 A

DC Power-Systems BLT 1600

The BLT 1600 DC Power-System offers extremely reliable, redundant system performance.

The BLT 1600 DC Power-System consists of the following system components: TEBECHOP rectifiers modules, MCU monitoring system, DC distribution, and sub-racks, installed in a fully enclosed cabinet.

The TEBECHOP rectifiers feature advanced high frequency power design incorporating surface mount and innovative technologies for extremely high output power density.

The new generation TEBECHOP rectifiers features high efficiency operation across all load levels for superior performance and lower operating costs.

Key Features

- **TEBECHOP rectifiers carry global safety recognitions (UL and CE marks)**
- **High efficiency (typical 93 %) performance over the entire range of operation**
- **Plug and Play – add hot-plug modules without user adjustment or settings; no system shutdown required**
- **User configurable digital monitor and control panel extensively displays system operating conditions and parameters including individual rectifiers status.**
- **Embedded intelligent digital interface in each TEBECHOP hot-plug rectifier module provides extensive control and monitoring of all rectifier operating functions, including remote management of the overall power system.**

TEBECHOP 1800
48 V - 33 A

TEBECHOP 12000
48 V - 200 A

TEBECHOP 2700
48 V - 50 A

IPU Characteristic

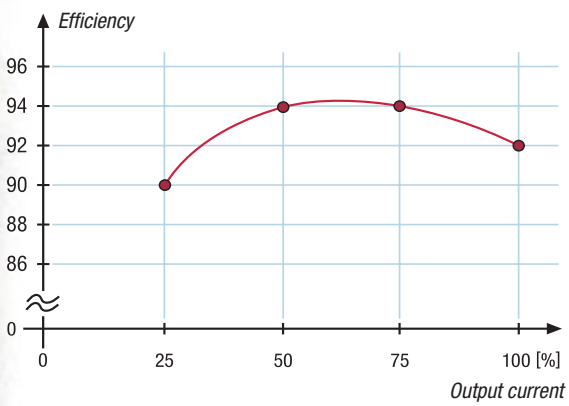
The TEBECHOP rectifiers support the constant-power characteristics typical of today's telecom loads resulting in a reduced number of rectifier modules and higher output current during the battery recharge cycle (see diagram).

Sub-Rack

The sub-rack is an integral part of the BLT 1600 DC Power-System. Each 6U high sub-rack provides back-plane control and power connections while supporting TEBECHOP hot-plug rectifier modules.

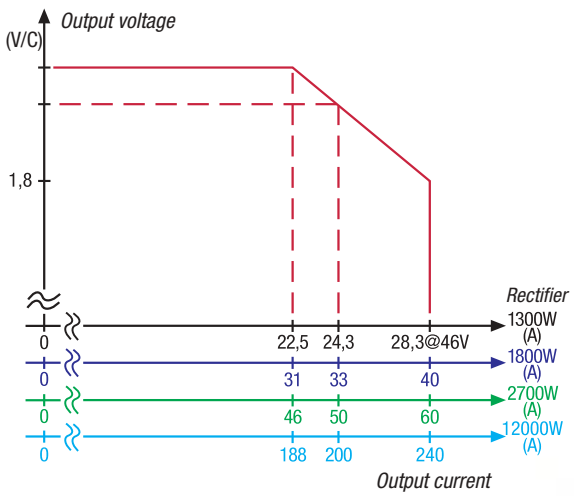
TEBECHOP 12000 (48 V - 200 A)

Efficiency as function of output current



IPU-Characteristic (48 V)

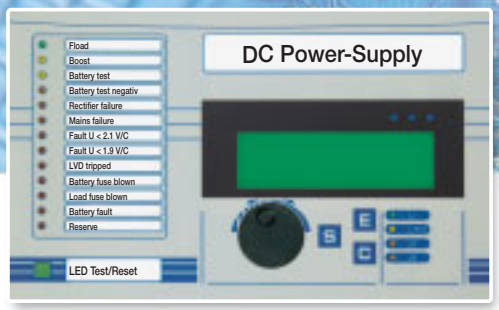
Rectifier TEBECHOP 1300 / 1800 / 2700 / 12000 W



Remote Monitoring via the MCU

MCU Remote Monitoring System

The MCU remote monitoring system collects and monitors critical system information providing operational controls and local/remote reporting functions of the Mini Power Rack.
For example, the MCU can perform a fail-safe battery capacity test. The battery availability test can be initiated automatically, remotely or locally via the MCU. The test is accomplished by reducing the output voltage of the rectifiers to 1.80 volts per cell. The battery is then discharged via the connected load. This partial discharge is terminated after a pre-programmed period of time. If the monitored battery voltage falls below the preset test value, an alarm is activated and the results are stored within the MCU.
A negative result from battery availability test can be used to alert the field support staff to travel to the site and perform an on-site battery capacity test. This feature reduces unnecessary site visits.
All important system information from the MCU can be transmitted remotely via an optional telephone modem or through communication via Internet/intranet to a central control station.



Output current: 150 A
Output voltage: 48 V
Output power: 7.8 kW

Output current: 300 A
Output voltage: 48 V
Output power: 15.6 kW

DC Power-Systems BLT 1600 Systems

Hot-plug

TEBECHOP hot-plug rectifiers can be easily user installed and removed without effecting system operation.

Output current: 400 A
Output voltage: 48 V
Output power: 21.6 kW

Output current: 1600 A
Output voltage: 48 V
Output power: 96 kW

DC Power-Systems BLT 1600
Technical data, Plug-in rectifiers

TEBECHOP hot-plug Front Panel

The LCD display and control buttons on the front panel of the TEBECHOP hot-plug rectifiers offer extensive information and operating options. The 5-segment LCD displays output voltage, output current, temperature as well as other operation conditions of the module.

Interface (SV-Sig)

Each TEBECHOP hot-plug rectifier has an intelligent digital interface (Micro controller) for communicating with other parallel operating rectifiers and the MCU monitoring system.

Output power	**[W]**	**1300***	**1800**	**2700***	**12000**
max. quantity per 19" carrier		**6**	**6**	**8**	**1**
Input voltage	[V]	85 - 264	176 - 264	85 - 264	360 - 460
Input current	[A]	6.3	8.5	13	17
Frequency	[Hz]	47 - 63			
Power factor		0.99	0.99	0.99	0.94
Output current					
48 V	[A]	25	33	50	200
60 V	[A]	-	27	50	160
Output voltage		programmable			
Boost	[V/C]	2.4			
Float	[V/C]	2.23			
Direct	[V/C]	2.05			
Battery availability test	[V/C]	1.8			
Stability of output voltage					
Static	[%]	+/- 1			
Dynamic load step (10/100/10) (di/dt>200µs)	[%]	+/- 5			+/- 4
Response time	[ms]	< 5			< 1
Efficiency		90	91	92	94
Characteristic		IPU Power constant			
Noise voltage	[mV]	2			
Radio interference		EN 55022 class B			
Protection class		1-EN 60950			
Safety		EN 60950			
Protection		IP 20			
Ventilation method		forced-ventilaton			
Ambient temperature	[C°]	0 - 40			
Operating altitude	[m]	up to 2000 m above see level			
Moisture class		F DIN 40040			
Current measurement		-	measuring socket		-
Voltage measurement		-	measuring socket		-
Frontpanel indications					
Mains	yellow		•	•	•
DC overvoltage	red		•	•	•
Normal operation	green	•	•	•	•
Fault	red	•	•	•	•
Blower (fan) failure	red		•	•	•
Fuse alarm	red		•	•	•
LCD - Display					•
Dimensions					
Height (front panel)	[mm]	267	267	267	133
Width	[mm]	67	74	67	485
Depth	[mm]	221	315	315	430
Weight	[kg]	2.7	5.8	4.8	22.0

** Power Derating from 205 V input voltage*

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