High Efficiency Industrial Power Solutions

Eltek IBB Industrial power systems offer end users a significant advantage over current technology in both cost and performance. The modular architecture, industry-leading efficiency, compact size, innovative design and comprehensive monitoring and control features provide significant benefits over the current industry standard.

Eltek IBB Power systems and building blocks are built around our Flatpack2 High Efficiency (HE) rectifiers and designed for a number of power-critical Industrial applications, including Power Generation & Distribution, Rail, Marine & Offshore, Oil & Gas and other demanding industries.

Industrial DC Systems IBB

$24V_{DC}$, $30V_{DC}$, $48V_{DC}$, $60V_{DC}$, $110V_{DC}$, $125V_{DC}$ & $220V_{DC}$ systems

DOCUMENT NO: DS-2104924.DS3 v2

INDUSTRY APPLICATIONS

Power Utilities

- Low & High Voltage switchgear
- Transformer & Substations
- Power Generation & Distribution
- Control & protection
- SCADA Communication
- Emergency lighting

Offshore and process industry

- Safety and Automation Systems (SAS)

Marine

- Communication systems onboard ships

Railway & Metro infrastructure

- Control & protection
- Power conversion
- Signaling
- GSM-R
- Safety Systems
- Communication systems

Smartpack2 system controller

Flatpack2 HE rectifier

KEY FEATURES

- ü Compact design and easy installation
- ü Industry-leading efficiency; less power consumption and heat dissipation
- ü Modular Hot Plug-in architecture allows:
  - Redundancy; n+1, n+2 configuration
  - Very low MTTR: <5min
  - MTBF of each module > 350.000h
- ü Extensive control & alarm functions with remote control capabilities
- ü Pre-engineered and tested systems and building blocks
- ü Overall size and footprint; 50% less than thyristor systems
- ü Graphical 3.2" TFT high contrast, high resolution color display for easy navigation in user menu
- ü Optional built in VRLA batteries (up to $125V_{DC}$)

See reverse side for specifications

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Building blocks for IBB Systems

FPC Cabinets

FPC is a family of high-end indoor cabinets, designed for flexibility. With its robust design, removable side panels and variety of options, the FPC cabinet can be used in a wide range of applications.

(For additional information about FPC cabinets, please see separate data sheet)

FPC Cabinets

IBF-SP2 Power Core

A complete 19" & 23" Power core pre-engineered and designed for: 24, 30, 48, 60, 110, 125 and 220 VDC with the following features:

- Power rack housing up to 8 FP2 rectifiers, AC Input fusing and SPD (Surge protection)
- Smartpack2 Controller with 3,2" TFT Color display, including Ethernet and Web interface for remote monitoring
- 300A DC Bus bars
- 6 Digital inputs for external alarm management
- 6 Relay outputs NO, COM, NC for remote alarm indications
- Power Suite Configuration software for easy programming
- Battery shunt

IBF-SP2 with DC bulk feed output

IBF-UPC4 Power Core

A complete 19" & 23" Power core pre-engineered and designed for: 24, 30, 48, 60, 110, 125 and 220 VDC with the following features:

- Power rack housing up to 8 FP2 rectifiers, AC Input fusing and SPD (Surge protection)
- UPC4 DC Controller with multi module (rectifier, DC/DC Converter, Inverter and STS) control functionality and display
- 300A DC Bus bars
- 6 Digital inputs for external alarm management
- 6 Relay outputs NO, COM, NC for remote alarm indications
- MMT Configuration software for easy programming
- Battery shunt

IBF-UPC4 with DC bulk feed output

Distribution Unit

A complete 23" Distribution unit designed for: 24, 30, 48, 60, 110, 125 and 220 VDC with the following features:

- Up to 12 2-Pole MCBs 6-40A with or without fuse trip alarms

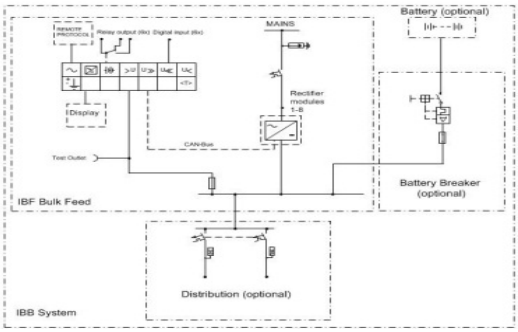
Distribution unit

Battery fuse Unit

A complete battery fuse unit for system mounting designed for: 24, 30, 48, 60, 110, 125 and 220V_{DC} with the following features:

- NH00 and NH1, 63-250A Fuses with fuse trip alarm or
- MCCB, 63-250A Circuit breakers with fuse trip alarm

Battery fuse unit



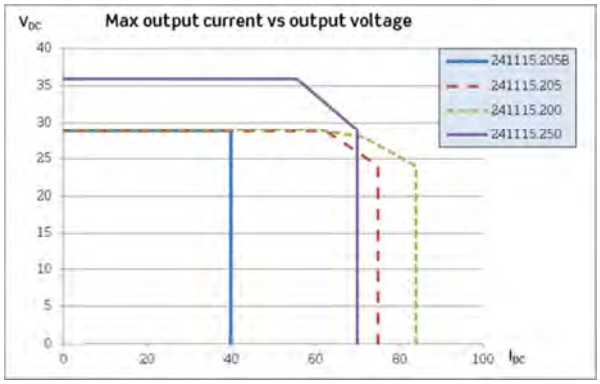
General single line diagram

24V/30V Systems

Applications

The 24V/30V rectifiers are suitable for parallel operation with all types of stationary batteries, including lead acid or nickel cadmium types, and can also operate without batteries.
Typical applications:

- Alarm systems
- Diesel start float application
- PABX systems
- Emergency lightning
- Industrial control systems



AVAILABLE 24V/30V RECTIFIERS

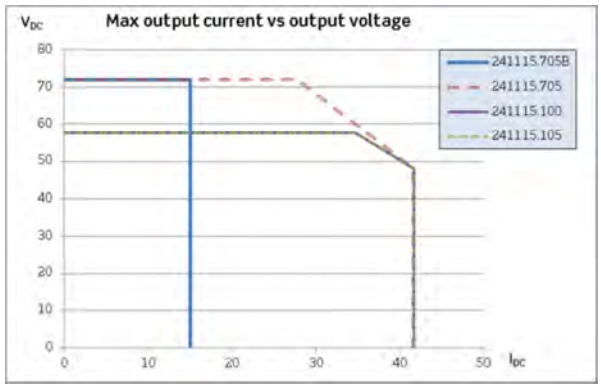
Part Number	Description	Voltage Range	Efficiency	Maximum Current		Output protection
				1 Module	Max/Syst.	
241115.205B	Flatpack2 24V/40A HE	21.7 – 28.8 V	> 95% (30-65% load)	40 A	4/160A	Fuse
241115.205	Flatpack2 24V/1800W HE	21.7 – 28.8 V	> 95% (30-65% load)	75 A	4/300A	Fuse
241115.200	Flatpack2 24V/2000W	21 – 29 V	> 89% (25-100% load)	84 A	4/300A	Blocking diode
241115.250	Flatpack2 24V/2000W WOR	21.5 – 36 V	> 91% (25-85% load)	70 A	4/280A	Fuse

48V/60V Systems

Applications

The 48V rectifiers are deigned to meet international telecom standards for safe and reliable operation in telecom environments or any industrial communication system.
Typical applications:

- Telecommunication systems; SCADA, GSM-R
- PABX systems
- Emergency lightning
- Industrial control systems



AVAILABLE 48V/60V RECTIFIERS

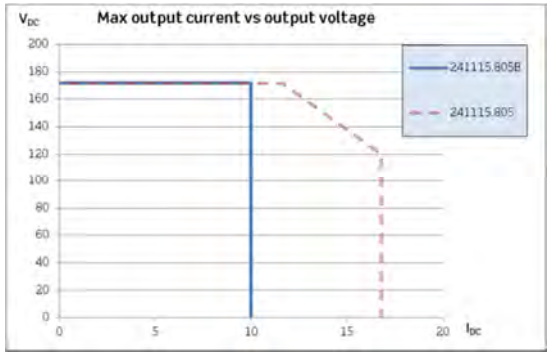
Part Number	Description	Voltage Range	Efficiency	Maximum Current		Output protection
				1 Module	Max/Syst.	
241115.705B	Flatpack2 48-60V/15A HE	39.9 – 72 V	> 95.5% (50-100% load)	15 A	8/120A	Fuse
241115.705	Flatpack2 48-60V/2000W HE	39.9 – 72 V	> 95.5% (25-75% load)	41.6 A	8/166,4A	Fuse
241115.100	Flatpack2 48V/2000W	43.2 – 57.6 V	> 91.5% (45-95% load)	41.6 A	8/166,4A	Blocking diode
241115.105	Flatpack2 48V/2000W HE	43.5 – 57.6 V	> 96% (30-70% load)	41.6 A	8/166,4A	Fuse

110V/125V Systems

Applications

The 110V rectifiers are designed for demanding environments and comply with IEC61000-6.5 (Immunity Power Stations and Substations) for reliable operation in critical applications.
Typical applications:

- Low & High Voltage switchgear
- Transformer & SUB Stations
- Power Generation & Distribution



AVAILABLE 110V/125V RECTIFIERS

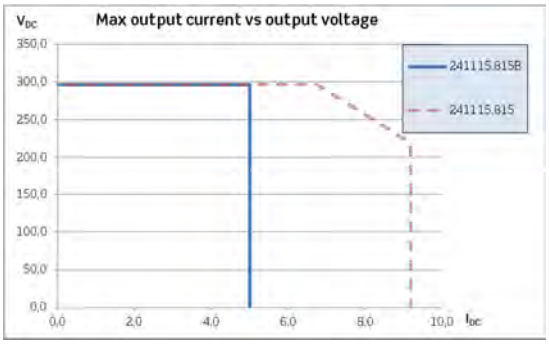
Part Number	Description	Voltage Range	Efficiency	Maximum Current		Output protection
				1 Module	Max/Syst.	
241115.805B	Flatpack2 110-125V/10A HE	89.2-171.6 V	> 94% (45-100% load)	10 A	8/80 A	Oring diode
241115.805	Flatpack2 110-125V/2000W HE	89.2-171.6 V	> 94% (30-70% load)	16.8 A	8/134,4A	Oring diode

220V Systems

Applications

The 220V rectifiers are designed for demanding environments and also comply with IEC61000-6.5 (Immunity Power Stations and Substations) for reliable operation in critical applications. Typical applications:

- Low & High Voltage switchgear
- Transformer & SUB Stations
- Power Generation & Distribution



AVAILABLE 220V RECTIFIERS

Part Number	Description	Voltage Range	Efficiency	Maximum Current		Output protection
				1 Module	Max/Syst.	
241115.815B	Flatpack2 220V/5A HE	178,5-297 V	> 95% (45-95% load)	5 A	8/40A	Oring diode
241115.815	Flatpack2 220V/2000W HE	178,5-297 V	> 95% (35-65% load)	9.16 A	8/73.3A	Oring diode

GENERAL TECHNICAL SPECIFICATIONS

Model	Industrial DC Systems IBB 24-220V_{DC}
Part number	Depending on configuration
INPUT DATA	
Voltage (range)	115 - 400 V_{AC} (Δ) or (Y), Derating <185V_{AC}, 45-66Hz
Input protection	MCBs and SPD (OVP Class 2)
Rectifier protection	Individual fuse in rectifier modules
Connection	Terminals 10mm^2
OUTPUT DATA	
Voltage (nominal)	24V_{DC}, 30V_{DC}, 48V_{DC}, 60VD_C, 110V_{DC}, 125V_{DC} &220V_{DC}
Power (maximum) @ nominal input	16kW
Current (maximum) @ nominal input	See previous page or applicable Flatpack2 rectifier datasheet
Protected battery output	1 x 2 pole NH00/NH1 Fuses (63 - 250A) or MCCB Circuit Breaker(63 - 250A) with or without fuse trip alarm
Protected load outputs	1-24 x 2 pole (6 - 40A) MCB:s with or without fuse trip alarm
Integrated battery shunt	100/300A
Load connection	Terminal, max 16mm^2
Output Protection in rectifiers	Blocking OR-ing FET or fuse, Short circuit proof & High temperature protection
CONTROL AND MONITORING	
Monitoring Unit	Smartpack2 or UPC4
Local Operation	Display and keys, WEB interface via standard browser using WebPower
Remote Operation	WebPower (WEB Interface, SNMP protocol and email)
Alarm Relays (Connection: clamp ≤ 1.5 mm^2)	6 x Potential free change over contacts (NO, NC, C) [Max 75V/2A/60W] Optional; 3 x Potential free change over contacts (NO, NC, C) [Max 430V_{DC}/0,1A]
Inputs	6 x Configurable (digital, analog max 75V) and 3 temperature
Current measurements	Rectifier current and, if battery shunt is used, battery current and load current
Alarms	Low & high output voltage alarms (Minor and major levels), Earth fault alarm, Temperature alarm, Mains outage alarm, Battery remaining capacity/low quality alarms, Battery/load breaker tripped alarm and much more
OTHER SPECIFICATIONS	
Isolation	3.0 kV_{AC} - input to output 1.5 kV_{AC} - input to earth 0.5 kV_{DC} - output to earth[1)]
Operating temperature	-40 to +45°C (-40 to +113°F), humidity 5 - 95% RH non-condensing Output power de-rates at high temperature, see datasheet for applicable rectifier
Storage temperature	-40 to +85°C (-40 to +185°F), humidity 0 - 99% RH non-condensing
Dimensions[WxHxD]	600 x 1800/2000 x 600mm
DESIGN STANDARDS	
Electrical safety	UL 60950-1-3rd edition, EN 60950-1-3rd edition
EMC	ETSI EN 300 386 V.1.4.1 EN 61000-6-1 / -2 / -3 / -4 / -5
Environment	ETSI EN 300 019, ETSI EN 300 132 - 2

1) 1.5kV_{AC} for IBB with 110V & 220V Flatpack2 rectifiers

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