

Power Supply System, Battery Charger or DC/DC Converter

The Integrated 19" 2U power supply is built around the Flatpack2 rectifier and designed for applications such as switchgear, telecom, emergency lighting and alarm systems.

The rectifier's wide DC output range makes it suitable for parallel operation with all types of stationary batteries, including lead acid, lithium, or nickel cadmium types.

As additional options the measuring and signaling can be widely extended by incorporating the Eltek Fleximonitor and Relay Board.



Flatpack2 Integrated 19" 2U

24V, 48V, 60V, 110V, 125V & 220V

Doc CTO30402.400.DS3 - rev4

MODULAR ARCHITECTURE

RECTIFIER MODULE

The most efficient power conversion module in the industry!

Since the launch the Flatpack 2 family has expanded into a wide selection of power ratings and voltages.

The modular architecture, industry-leading efficiency, compact size, innovative design and comprehensive monitoring and control features provide significant benefits over industry standards.



FP2 Rectifier Module

APPLICATIONS

Power Utilities

- Low & High voltage switchgear
- Transformer & substations
- Power generation & distribution
- Control & protection
- Scada system
- Communication equipment

Railway & Metro infrastructure

- Control & protection
- Signaling
- Safety Systems

Telecom-mobile

- LTE/4G/WiMAX
- Distributed antenna system
- Broadband
- Radio base stations/cell sites

KEY FEATURES

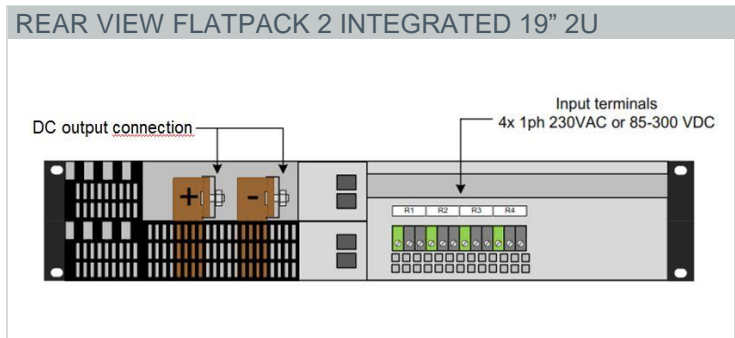
- COMPACT DESIGN AND SIMPLE INSTALLATION
- VAC OR DC INPUT
- HOUSE UP TO 4 RECTIFIER MODULES
- 24-220 VDC SYSTEMS
- BULK FEED OUTPUT
- GRAPHICAL 3.2" TFT HIGH CONTRAST, HIGH RESOLUTION COLOR DISPLAY FOR EASY NAVIGATION IN USER MENU
- ETHERNET FOR REMOTE OR LOCAL MONITORING AND CONTROL VIA WEB BROWSER
- SNMP PROTOCOL WITH TRAP, SET AND GET ON ETHERNET. EMAIL OF TRAP ALARMS
- DIGITAL PROGRAMMABLE RELAY OUTPUTS
- PROGRAMMABLE MULTIPURPOSE INPUTS ("DIGITAL INPUTS" OR ANALOG SIGNALS).

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MODEL	24-125V
Part number	CIO30402.4nnn
INPUT DATA	
Voltage (nominal)	185-275 V _{AC/DC}
Voltage (operating range)	85-305 V _{AC/DC}
Maximum current AC (per input)	11.6-19.2 A
Frequency	0-66 Hz
Power factor	> 0.99
OUTPUT DATA	
Voltage (nominal) DC	24, 48, 60, 110, 125 V
Adjustable range DC	See module info below
Max output power DC	12 kW
Static Voltage regulation	+/- 0.5%
CONTROLLER TYPE	
Smartpack 2	Touch
Basic unit	Standard basic
I/O unit	Type 2



Specifications are subject to change without notice

AVAILABLE RECTIFIERS & DC/DC CONVERTERS FLATPACK2 HE & SHE, 24-125V

MODELS	24/1800 HE	48/2000 SHE	48/3000 SHE	48/2000 HE	48/3000 HE	48-60/2000 HE	110/2000 HE
Part number	241115.205	241115.106	241119.106	241115.105	241119.105	241115.705	241115.805
INPUT DATA							
Voltage AC (nominal)	185-275 V _{AC}	185-264 V _{AC}	206-264 V _{AC}	185-275 V _{AC}	176-277 V _{AC}	185-275 V _{AC}	185-275 V _{AC}
Voltage DC (nominal)	185-300 V _{DC}	-	-	185-275 V _{DC}	-	185-275 V _{DC}	185-275 V _{DC}
Voltage AC (range)	85-300 V _{AC}	85-264 V _{AC}	85-264 V _{AC}	85-300 V _{AC}	85-305 V _{AC}	85-305 V _{AC}	85-300 V _{AC}
Voltage DC (range)	85-300 V _{DC}	-	-	85-275 V _{DC}	-	80-300 V _{DC}	85-300 V _{DC}
Frequency	0-66 Hz	45-66 Hz	45-66 Hz	0-66 Hz	45-66 Hz	0-66 Hz	0-66 Hz
Current (maximum) @ nominal input, full load	11.25 A _{RMS}	11.6 A _{RMS}	16 A _{RMS}	11.6 A _{RMS}	19.2 A _{RMS}	11.6 A _{RMS}	11.9 A _{RMS}
Protection	Fuse	Fuse	Fuse	Fuse	Fuse	Fuse	Fuse
OUTPUT DATA							
Nominal output voltage	24 V _{DC}	48 V _{DC}	48 V _{DC}	48 V _{DC}	48 V _{DC}	48-60 V _{DC}	110-125 V _{DC}
Voltage (default)	26.7 V _{DC}	53.5 V _{DC}	53.5 V _{DC}	53.5 V _{DC}	53.5 V _{DC}	53.5 V _{DC}	122.5 V _{DC}
Voltage (adjustable range)	21.7-28.8 V _{DC}	43.2-57.6 V _{DC}	43.2-57.6 V _{DC}	43.5-57.6 V _{DC}	43.5-58 V _{DC}	39.9-72 V _{DC}	89.2-171.6 V _{DC}
Power (maximum) @ nominal input	1800 W	2000 W	3000 W	2000 W	3000 W	2000 W	2000 W
Power @ 85 V _{AC}	750 W	850 W	1000 W	850 W	1380 W	750 W	850 W
Current (maximum) @ nominal input, full load	75 A	41.7 A	62.5 A	41.7 A	62.5 A	41.6 A	16.7 A
Protection	Fuse	Fuse	Fuse	Fuse	Fuse	Fuse	Diode
OTHER SPECIFICATIONS							
Efficiency @ nominal input	95.4 %	97.8%	97.8 %	96.5 %	96.2 %	96.1 %	94.4 %

Note: See respective Flatpack2 datasheet for more information

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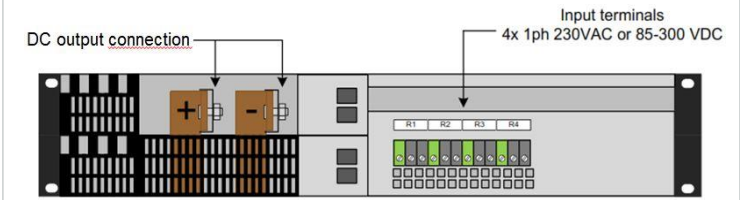
MODEL	110-220V
Part number	CIO20402.4nnn
INPUT DATA	
Voltage (nominal)	185-275 V _{AC/DC}
Voltage (operating range)	85-300 V _{AC/DC}
Maximum current AC (per input)	11.9 A
Frequency	0-66 Hz
Power factor	> 0.99
OUTPUT DATA	
Voltage (nominal) DC	110, 125, 220 V
Adjustable range DC	See module info below
Max output power DC	8 kW
Static Voltage regulation	+/- 0.5%
CONTROLLER TYPE	
Smartpack 2	Touch
Basic unit	Industrial basic
I/O unit (option)	Fleximonitor / Relay box

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FRONT VIEW FLATPACK 2 INTEGRATED 19" 2U



REAR VIEW FLATPACK 2 INTEGRATED 19" 2U



AVAILABLE RECTIFIERS & DC/DC CONVERTERS FLATPACK2 HE, 110-220V

MODELS	110/2000 HE	220/2000 HE
Part number	241115.805	241115.815
INPUT DATA		
Voltage AC (nominal)	185-275 V _{AC}	185-275 V _{AC}
Voltage DC (nominal)	185-275 V _{DC}	185-275 V _{DC}
Voltage AC (range)	85-300 V _{AC}	85-300 V _{AC}
Voltage DC (range)	85-300 V _{DC}	85-300 V _{DC}
Frequency	0-66 Hz	0-66 Hz
Current (maximum) @ nominal input, full load	11.9 A _{RMS}	11.9 A _{RMS}
Protection	Fuse	Fuse
OUTPUT DATA		
Nominal output voltage	110-125 V _{DC}	220 V _{DC}
Voltage (default)	122.5 V _{DC}	245.3 V _{DC}
Voltage (adjustable range)	89.2-171.6 V _{DC}	178.5-297 V _{DC}
Power (maximum) @ nominal input	2000 W	2000 W
Power @ 85 V _{AC}	850 W	850 W
Current (maximum) @ nominal input, full load	16.7 A	9.16 A
Protection	Diode	Diode
OTHER SPECIFICATIONS		
Efficiency @ nominal input	94.4 %	95 %

Note: See respective Flatpack2 datasheet for more information

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MODEL	24-125V	110-220V
Product number (Configured Industrial Power system)	CIO30402.4nnn	CIO20402.4nnn
INPUT DATA		
Voltage (range), see respective module	85-300 V _{AC/DC}	
Individual AC input	4x (L, N, PE)	
Current (maximum) @ nominal input, full load	See rectifier details	11.9 A
Protection	Individual fuse in rectifier modules	
Connection	Individual screw terminal 6 mm ² , rear connection	
OUTPUT DATA		
Nominal output voltage	24-125 V _{DC}	110-220 V _{DC}
Power (maximum @ nominal input)	12 kW	8 kW
Current (maximum)	See previous pages or applicable Flatpack2 rectifier datasheet	
Pb, number of cells supported	12-60	50-120
NiCd, number of cells supported	18-104	82-180
Output protection in rectifiers	Fuse	Blocking OR-ring diode
Connection	Unprotected bulk output on M6 bolt, rear connection	
CONTROL AND MONITORING		
Monitoring master unit	Smartpack2	
Monitoring basic unit	Standard basic	Industrial basic
Local operations	Display and keys, WEB interface via standard browser	
Remote operations	Web interface, SNMP protocol, Modbus	
Alarm relays	6x potential free NO-C-NO	3x potential free NO-C-NO
Inputs	6x NO/NC	Optional Fleximonitor
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	
OPTIONS (see Fleximonitor datasheet)		
Fleximonitor	-	option
Relay extension board 4 outputs	-	option
Relay extension board 8 outputs	-	option
OTHER SPECIFICATION		
Isolation	3.0 kV _{AC} - input to output 1.5 kV _{AC} - input to earth 0.5 kV _{DC} - output to earth	
Protection Class	IP 20	
Operating temperature	-40 to +55°C (-40 to +131°F), humidity 5 - 95% RH non-condensing	
Storage temperature	-40 to +85°C (-40 to +185°F), humidity 0 - 99% RH non-condensing	
Dimensions [W x D x H]	482 x 432 x 89mm (2U) (19" x 17" x 3.5")	482 x 470 x 89mm (2U) (19" x 18.5" x 3.5")
Weight	10 kg (1 module), 16 kg (4 modules)	
DESIGN STANDARDS		
Electrical safety	UL 60950-1, EN 60950-1	EN 60950-1
EMC	ETSI EN 300 386 V.1.6.1, FCC CFR 47 Part 15 EN 61000-6-1 /-2 /-3 /-4 /-5 (depending on module)	
Environment	ETSI EN 300 019-2-1 (Class 1.2) /-2-2 (Class 2.3) /-2-3 (Class 3.2) RoHS (2011/65/EU) and WEEE (2002/96/EC) compliant Normal operating conditions as per IEC 62040-5-3:2016 clause 4.2. Other operating conditions as per IEC 62040-5-3:2016 clause 4.3, must be advised.	

Note: See respective Flatpack2 rectifier datasheet for more information

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