

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, or nickel cadmium types.

As additional options the measuring and signaling can be widely extended by incorporating the Eltek Flexi-Monitor and Relay Board see details in specific Data sheet.



Flatpack2 Integrated 19" 2U 24VDC, 48 VDC, 60 VDC, 110 VDC, 125 VDC & 220 VDC Systems

DOC. NO: CTO30402.400.DS3, rev3

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 the current industry standard.



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
- 85-300 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).

Flatpack2 Integrated 19" 2U

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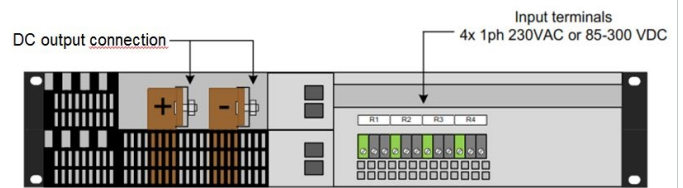
MODEL	24-125 VDC-12 KW
Part number	CIO30402.4xxx
INPUT DATA	
Voltage (nominal)	185-275 VAC or VDC
Voltage (operating range)	85-305 VAC or VDC
Maximum current AC (per input)	11,6-19,2 A
Frequency	45-66 Hz / 0 Hz
Power factor	> 0.99
OUTPUT DATA	
Voltage (nominal) DC	24, 48, 60, 110, 125 V
Adjustable range DC	See module type
Max output power DC	12 kW
Static Voltage regulation	+/- 0,5%
CONTROLLER TYPE	
Smartpack 2	Master
Basic unit	Standard basic
I/O unit	Type 2

Specifications are subject to change without notice

FRONT VIEW FLATPACK 2 INTEGRATED 19" 2U



REAR VIEW FLATPACK 2 INTEGRATED 19" 2U



AVAILABLE RECTIFIERS & DC/DC CONVERTERS FP2 HE

Models	24/1800 HE	48/3000 SHE	48/2000 HE	48/3000 HE	48-60/2000 HE	110/2000 HE
Part number	241115.205	241119.106	241115.105	241119.105	241115.705	241115.805
INPUT DATA						
Voltage AC (nominal)	185-275 VAC	206-264 VAC	185-275 VAC	176-277 VAC	185-275 VAC	185-275 VAC
Voltage DC (nominal)	185-275 VDC	-	185-275 VDC	-	185-275 VDC	185-275 VDC
Voltage AC (range)	85-300 VAC	85-264 VAC	85-300 VAC	85-305 VAC	85-305 VAC	85-305 VAC
Voltage DC (range)	85-300 VDC	-	140-275 VDC	-	80-300 VDC	85-300 VDC
Frequency	0-66 Hz	45-66 Hz	45-66 Hz / 0 Hz	45-66 Hz	45-66 Hz / 0 Hz	0-66 Hz
Current (maximum)	11,25 ARMS	16 ARMS	11,6 ARMS	19,2 ARMS	11,6 ARMS	11,9 ARMS
Protection	Fuse	Fuse	Fuse	Fuse	Fuse	Fuse
OUTPUT DATA						
Nominal output voltage	24 VDC	48 VDC	48 VDC	48 VDC	48-60 VDC	110-125 VDC
Voltage (default)	26,7 VDC	53,5 VDC	53,5 VDC	53,5 VDC	53,5 VDC	122,5 VDC
Voltage (adjustable range)	21,7-28,8 VDC	43,2-57,6 VDC	43,5-57,6 VDC	43,5-57,6 VDC	39,9-72 VDC	89,2-171,6 VDC
Power (maximum)	1800 W	3000 W	2000 W	3000 W	2000 W	2000 W
Power @ 85 VAC	750 W	1000 W	850 W	1380 W	750 W	850 W
Current (maximum)	75 A	62,5 A	41,7 A	62,5 A	41,6 A	16,7 A
Protection	Fuse	Fuse	Fuse	Fuse	Fuse	Diode
OTHER SPECIFICATIONS						
Efficiency @ nominal input	95,4 %	97,8 %	96,5 %	96,2 %	96,1 %	94,4 %

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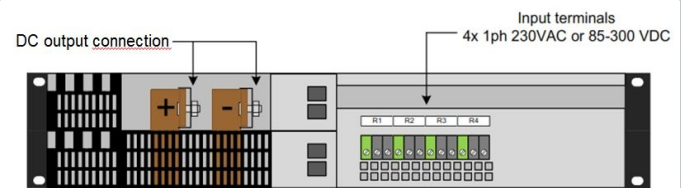
MODEL	110-220 VDC-8 KW
Part number	CIO20402.4xxx
INPUT DATA	
Voltage (nominal)	185-275 VAC or VDC
Voltage (operating range)	85-305 VAC or VDC
Maximum current AC (per input)	11,9 A
Frequency	0-66 Hz
Power factor	> 0.99
OUTPUT DATA	
Voltage (nominal) DC	110, 125, 220 V
Adjustable range DC	See module type
Max output power DC	8 kW
Static Voltage regulation	+/- 0,5%
CONTROLLER TYPE	
Smartpack 2	Master
Basic unit	Industrial basic
I/O unit (option)	Fleximonitor/relay box

Specifications are subject to change without notice

FRONT VIEW FLATPACK 2 INTEGRATED 19" 2U



REAR VIEW FLATPACK 2 INTEGRATED 19" 2U



AVAILABLE RECTIFIERS & DC/DC CONVERTERS FP2 HE

Models	110/2000 HE	220/2000 HE
Part number	241115.805	241115.815
INPUT DATA		
Voltage AC (nominal)	185-275 VAC	185-275 VAC
Voltage DC (nominal)	185-275 VDC	185-275 VDC
Voltage AC (range)	85-300 VAC	85-300 VAC
Voltage DC (range)	85-300 VDC	85-300 VDC
Frequency	0-66 Hz	0-66 Hz
Current (maximum) @ nominal input, full load	11,9 ARMS	11,9 ARMS
Protection	Fuse	Fuse
OUTPUT DATA		
Nominal output voltage	110-125 VDC	220 VDC
Voltage (default)	122,5 VDC	245,3 VDC
Voltage (adjustable range)	89,2-171,6 VDC	178,5-297 VDC
Power (maximum)	2000 W	2000 W
Power @ 85 VAC	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 %

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Flatpack2 Integrated 19" 2U

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Models / ordering information	24-125 VDC-12 kW	110-220 VDC-8 kW
Product family	CIO30402.4xxx	CIO20402.4 xxx
INPUT DATA		
Voltage (range), see respective module	85-300 V _{AC/DC}	
Individual AC input	4* (L,N,PE)	
Current (maximum) @ nominal input, full load	19,2 A (3 kW module)	11,9 A
Recommended input breaker (2 kW module)	16 A for each individual input, 25 A connected as TN net 400V _{AC} + N, 3phase	
Protection	Individual fuse in rectifiers modules	
Connection	Individual screw terminal 6 mm ² for L, N, PE	
OUTPUT DATA		
Nominal output voltage	24-125 V _{DC}	110-220 V _{DC}
Power (maximum @ nominal input)	12kW	8 kW
Current (maximum)	See previous page or applicable Flatpack2 HE rectifier datasheet	
Pb, number of cells supported	12-60	50-120
NiCd, number of cells supported	18-104	82-180
Unprotected bulk output connection	M5 bolt	
Output protection in rectifiers	Fuse	Blocking OR-ring diode
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	6*potential free NO-C-NO	3*potential free NO-C-NO
Inputs	6*NO/NC	See option 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 kVAC - input to output 1.5 kVAC - input to earth 0.5 kVDC - 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[WxDxH]	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 module)	
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	

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