

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

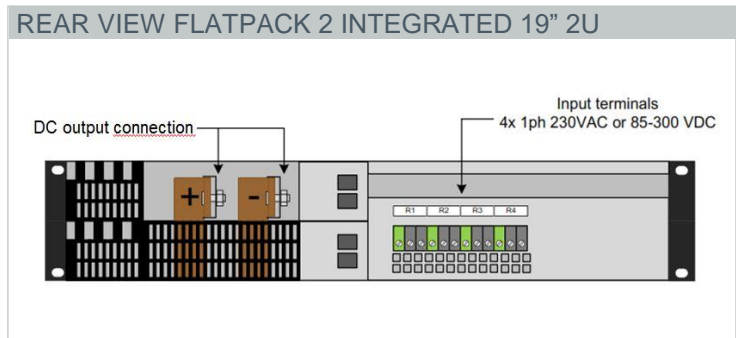
- COMPACT DESIGN AND SIMPLE INSTALLATION
- VAC OR DC INPUT
- HOUSE UP TO 4 RECTIFIER MODULES
- 24-220 VDC SYSTEMS
- BULK FEED OUTPUT
- GRAPHICAL 3.2" TFT HIGH CONTRAST, HIGH RESOLUTION COLOR DISPLAY FOR EASY NAVIGATION IN USER MENU
- ETHERNET FOR REMOTE OR LOCAL MONITORING AND CONTROL VIA WEB BROWSER
- 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).

Flatpack2 Integrated 19" 2U

Doc CTO30402.400.DS3 – rev4



| | |
|--------------------------------|----------------------------|
| 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

Specifications are subject to change without notice

Flatpack2 Integrated 19" 2U

Doc CTO30402.400.DS3 – rev4



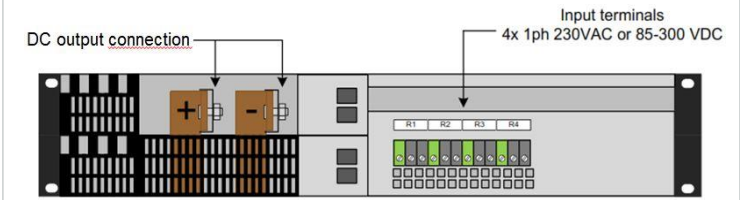
| | |
|--------------------------------|----------------------------|
| MODEL | 110-220V |
| Part number | CIO20402.4nnn |
| INPUT DATA | |
| Voltage (nominal) | 185-275 V _{AC/DC} |
| Voltage (operating range) | 85-300 V _{AC/DC} |
| Maximum current AC (per input) | 11.9 A |
| Frequency | 0-66 Hz |
| 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 |

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 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

Specifications are subject to change without notice

Flatpack2 Integrated 19" 2U

Doc CTO30402.400.DS3 – rev4



| 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

Specifications are subject to change without notice