

# Rectifiers for the Micropack compact DIN-rail system

The Micropack System is convection cooled, designed for less power hungry applications, but still with system functionality options to match any requirements. Use as stand alone or in a flexible off the shelf configurable system.

The Micropack Power System extends your network one step further. With load ranges typically between 120W and 1000W, and in 12, 24 and 48V options, the system is perfect for a great variety of applications.



## Micropack Rectifiers

12/120, 24/240 WOR & 48/250

Doc EDM0000871135v00

### APPLICATIONS

#### TELECOM - WIRELESS

- LTE/femto cells
- Small base stations / repeaters
- Fixed & mobile broadband
- FTTx

#### PRODUCT UTILITIES

- Control & protection
- SCADA
- Communication

#### RARILWAY INFRASTRUCTURE

- Control & protection
- Signaling



Micropack system including distributions



Compact system controller

### KEY FEATURES

- CONVECTION COOLED
- 85-300V AC OR DC INPUT
- 12, 24-30 & 48VDC OUTPUT
- QUICK TRIP CURRENT PULSE
- HOT PLUGGABLE RECTIFIERS
- ACTIVE CURRENT SHARING
- OPERATION W/O CONTROLLER
  - OUTPUT VOLTAGE SET BY POT METER
  - ALARM RELAY FOR BASIC MONITORING
- OPERATION WITH CONTROLLER
  - ADVANCED CONTROL AND MONITORING

### KEY BENEFITS

- NO AUDIOBLE NOISE
- OFF THE SHELF DELIVERY
- SYSTEMS CAN BE ASSEMBLED AND CONFIGURED ON SITE

# Micropack Rectifiers

Doc PEDM0000871135v00



Model	12V / 120W	24V / 240W	48V / 250W
Part number	241120.300	241120.200	241120.100
<b>INPUT DATA</b>			
Voltage range		85 - 300 V <sub>AC/DC</sub>	
Voltage range (nominal)	130 - 275 V <sub>AC/DC</sub>		185 - 275 V <sub>AC/DC</sub>
Frequency		0 - 66 Hz	
Maximum current, 230V input / overall (boost)	0.6 A / 2.0 A	1.2 A / 2.0 A	1.2 A / 1.9 A
Maximum earth leakage current		2.0 mA (@ 250V <sub>AC</sub> /50Hz)	
Power Factor	0.97 (@ 70 - 100 % load)	0.98 (@ 55 - 100 % load)	0.98 (@ 50 - 100 % load)
THD (@ 230 V <sub>AC</sub> )	< 5 % (@ 80 - 100 % load)	< 5 % (@ 50 - 100 % load)	< 5 % (@ 50 - 100 % load)
Protection	Varistor for transient protection, fuse in both lines (2x 2.0 A), shutdown above 300 V <sub>AC/DC</sub>		
<b>OUTPUT DATA</b>			
Default voltage	13.6 V <sub>DC</sub>	27.2 V <sub>DC</sub>	53.5 V <sub>DC</sub>
Voltage range	10.7 - 18.0 V <sub>DC</sub>	21.5 - 36 V <sub>DC</sub>	43.5 - 57.6 V <sub>DC</sub>
Voltage range without controller	10.7 - 15.0 V <sub>DC</sub>	21.5 - 30 V <sub>DC</sub>	43.5 - 57.6 V <sub>DC</sub>
# Pb cell supported (1.8 - 2.4 V <sub>DC</sub> /cell)	6 - 7	12 - 15	24
# NiCad cell supported (1.05 - 1.65 V <sub>DC</sub> /cell)	10 - 11 <sup>1)</sup>	20 - 22 <sup>1)</sup>	-
Max power, nominal / 60s boost	120 W / 160 W	240 W / 315 W	250 W / -
Max current, @12/24/48V <sub>DC</sub> / boost / QT <sup>3)</sup>	10 A / 15 A / 55 A	10 A / 15 A / 55 A	5 A / - / -
Current sharing	±5% of maximum current from 10 to 100% load		
Static voltage regulation	±0.5% from 10% to 100% load and nominal input		
Dynamic voltage regulation	± 5 % < 10ms, load step 10% to 90% or opposite at nominal output voltage		
Hold-up time, default voltage and full power	20 ms, V <sub>OUT</sub> > 10.7 V <sub>DC</sub>	20 ms, V <sub>OUT</sub> > 21.5 V <sub>DC</sub>	20 ms, V <sub>OUT</sub> > 43 V <sub>DC</sub>
Rippel and noise, 30 MHz b.w. / psophometric	< 200 mV <sub>PP</sub> / 5 mV <sub>RMS</sub>	< 200 mV <sub>PP</sub> / 5 mV <sub>RMS</sub>	< 150 mV <sub>PP</sub> / 2 mV <sub>RMS</sub>
Protection	Overvoltage shutdown, short circuit proof, high temperature, hot plug-in inrush current limiting, fuse		
<b>OTHER SPECIFICATIONS</b>			
Efficiency	89.5 %	93.0 %	93.6 %
Isolation test voltage	4.2 kV <sub>DC</sub> – input and output, 2.5 kV <sub>DC</sub> – input earth, 0.5 kV <sub>DC</sub> – output earth		
Alarms: Red LED 'on'	Low mains shutdown, High and low temperature shutdown, Rectifier Failure, Overvoltage shutdown on output, Fan failure, Low voltage alarm, CAN bus failure		
Warnings: Yellow LED 'on'	Rectifier in power derate mode, Remote battery current limit activated, Input voltage out of range, flashing at overvoltage		
Normal (module running): Green LED 'on'			
Alarm output (isolated)	NO (+positive terminal), COM (-negative terminal). 60 V / 100 mA max		
MTBF (Telcordia SR-332 Issue I method III (a))	>480 000h (@T <sub>AMBIENT</sub> = 25°C)	>480 000h (@T <sub>AMBIENT</sub> = 25°C)	>500 000h (@T <sub>AMBIENT</sub> = 25°C)
Operating temperature (5 - 95% RH non-cond.)	-40 to +70°C [-40 — +158°F]	-40 to +60°C [-40 to +142°F]	-40 to +75°C [-40 to +167°F]
Output power de-rates above temp / to	+55°C / 50W @ +70°C	+45°C / 80W @ +60°C	+55°C / 140W @ +75°C
Storage temperature	-40 to +85°C (-40 to +185°F), humidity 0 - 99% RH non-condensing		
Dimensions[WxHxD] / Weight	39.0 x 88.5 x 149mm [1.54 x 3.48 x 5.87"] / 0.5 kg [1.1 lbs]		
<b>DESIGN STANDARDS</b>			
Electrical safety	EN IEC 62368-1:2020/A11:2020, IEC 62368-1:2018, UL 62368-1:2021 C22.2 No. 62368-1:2021, IEC 60950-1:2013		
EMC	ETSI EN 300 386 V.2.2.1:2022, EN IEC 61000-6-1:2019 / -2:2019 / -3:2022 / -4:2019 / IEC 61000-6-5:2015 <sup>3</sup>		
Mains Harmonics	EN 61000-3-2		
Environment	ETSI EN 300 019: 2-1 (Class 1.2) & 2-2 (Class 2.3), EN IEC 62474:2019 2011/65/EU incl. 2015/863/EU (RoHS), 2012/19/EU (WEEE), IEC 63000:2018 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		
Marine	DnV Rules for Classification of Ships, High Speed & Light Craft and DnV Offshore Standards		

1) 11/22 cells with max boost voltage 1.636 V<sub>DC</sub>/cell

2) Quick-Trip function, if V<sub>OUT</sub> = 5 V<sub>DC</sub> a 35 ms current pulse is generated to help trip fuse/MCB on short circuited branch

3) Only 12V and 24V