

## Compact, full-featured DIN-rail power 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

12V<sub>DC</sub>/120W, 24-30V<sub>DC</sub>/240W & 48V<sub>DC</sub>/250W

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### INDUSTRY APPLICATIONS

#### Telecom

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

#### Power utilities

- Control & protection
- Scada
- Communication

#### Railway infrastructure

- Control & protection
- Signaling

Various other applications in demanding industries like Marine, Oil & Gas, process etc.



Micropack system



Compack controller

### KEY FEATURES

Convection cooled – inaudible

Accepts 85 – 300 V<sub>AC/DC</sub> input

12, 24-30, 48 V<sub>DC</sub> output versions

NiCad support for 12 and 24V<sub>DC</sub>

Quick-trip pulse to help open load MCB

Pot-meter voltage adjustment for standalone

Module alarm relay contact for basic monitoring without controller

Active current sharing

Comprehensive monitoring and control when used with controller:

- Remote/local connection through Ethernet
- Webpages and SNMP support
- Monitoring of rectifier temperature, input voltage and output current

Modular approach in DIN-rail mountable back planes

Off-the-shelf delivery

See reverse side for specifications

# Micropack Rectifiers

12V<sub>DC</sub>/120W, 24-30V<sub>DC</sub>/240W & 48V<sub>DC</sub>/250W



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> <sup>1)</sup>		
Voltage range (nominal)	130 - 275 V <sub>AC/DC</sub>	185 - 275 V <sub>AC/DC</sub> <sup>1)</sup>	
Frequency	0 - 66 Hz <sup>1)</sup>		
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>2)</sup>	20 - 22 <sup>2)</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 @ nominal input/output, peak/range	89.5% / >88%, 50-100% load	93.0% / >92%, 50-100% load	93.6% / >93%, 50-100% load
Isolation	3.0 kV <sub>AC</sub> – input and output, 1.5 kV <sub>AC</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	UL 60950-1, EN 60950-1, CSA 22.2		
EMC	ETSI EN 300 386 V.1.3.2 EN 61000-6-1 / -2 / -3 / -4 / -5 <sup>4)</sup>		
Mains Harmonics	EN 61000-3-2		
Environment	ETSI EN 300 019: 2-1 (Class 1.2), 2-2 (Class 2.3) & 2-3 (Class 3.2) ETSI EN 300 132-2 2002/95/EC (RoHS) & 2002/96/EC (WEEE)		
Marine compliance (EMC class B with AC filter)	DnV Rules for Classification of Ships, High Speed & Light Craft and DnV Offshore Standards		
<sup>1)</sup> DC support for 241120.200 with primary FW 404088.009 (from HW revision 1.2) and 241120.100 from HW revision 2 <sup>2)</sup> 11/22 cells with max boost voltage 1.636 V <sub>DC</sub> /cell <sup>3)</sup> 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 <sup>4)</sup> Only 12V and 24V			