

## DC power system R-FORCE

All in one - switched-mode rectifiers, PDU, MCU.



*DC power system R-Force ML4000*

### Highlights

- | Hot swap technology
- | High efficiency
- | High power density coefficient
- | 100% front installation and usage
- | Wide temperature range of operation
- | Fail-safe modular structure combined with fault tolerant solutions

# INDEPENDENT. INNOVATIVE. NICE.

R-Force – versatile and powerful solution for the telecommunications industry.

#### Performance

R-Force series presents a high-tech modular DC power supply solution for any telecommunications application. Ultra high reliability for wireless, fiber and fixed line networks.

#### Scalability

R-Force contains of a 1U distribution unit and 1U to 4U of power subrack, which can house up to 2 ML rectifiers each. Total capacity of 5U system can reach up to 320 Amps @ 48 VDC.

#### Reliability

The R-Force DC power system is suitable for both indoor and outdoor application. Tested functionality under harshest conditions. Operating temperature range: -30°C ... +80°C.

#### Simplicity

Easily done. Setting up and controlling through 3 buttons beside the LCD display.

#### Innovation


We developed ERS – Electronic Rectifier Switch for fast and safe rectifier module exchange, without any screw-drivers. The real time-saving and cost-reducing plug & play connection system.

#### Monitoring and control

Communication via RS232, SNMP, Ethernet or GSM.

# Technical data

## DC power system R-FORCE

Input (AC)	
Voltage, nominal	230 V (3 x 400 V)
Voltage, operating range	140 V ... 276 V
Frequency	45 Hz ... 66 Hz
Current, maximum, @ full load	See Rectifiers ML series datasheet
Output (DC)	
Voltage	53.5 V (adj. range 43 V ... 58 V)
Power, nominal	Up to 16000 W
Current, maximum, @ 53.5 V	Up to 320 A
Current sharing between modules	± 5% from max. current
System response time	< 2 ms
Other specifications	
Main functions and features	Recharge and maintain of all types of batteries Battery test and asymmetry control Voltage temperature compensation Fan speed regulation (current and temperature) Digital, light and sound signalling (LCD display, LED's)
Protections	Protection against over-voltage and disturbances at the input Protection against overload and short circuit at the output Protection against deep battery discharge Protection against high temperature
Operating conditions	
Ambient temperature	-30°C ... +80°C (power de-rating at 60°C)
Humidity	Operating: 0% to 95% RH non-condensing Storage: 0% to 99% RH non-condensing
Operating altitude	≤ 3000 m a.s.l.
<p><b>System example: R-Force ML16000</b>                      Total power: 16 kW, 320 Amps @ 48 VDC                      Total height: 5U</p> <ul style="list-style-type: none"> <li> <b>PDU – Power Distribution Unit: 1U</b> <ul style="list-style-type: none"> <li>- MCU – Monitoring and Control Unit</li> <li>- Battery and load MCB's</li> <li>- LVD: LVBD / LVLD</li> </ul> </li> <li> <b>Power rack: 4U</b> <ul style="list-style-type: none"> <li>- 8 x rectifiers ML2000, 2000 W each</li> </ul> </li> </ul>	
 <p><i>DC power system R-Force ML16000</i></p>	