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**ACTIVE POWER STATIONS
BUYING GUIDE**

Choose NCore if:

- you have to power more than 8 devices and you don't want to connect more than one device on a single port;
- the total load of all devices to power exceeds 1600W;
- you plan to expand your installation or you prefer a modular system;
- you want to be able to hot-replace all modules, including the Command and the Battery Charger Modules.



NCORE

Choose NCore Lite if:

- you have to power up to 8 devices or you can connect more than one device on a single port;
- the total load of all devices to power does not exceed 1600W;
- you have limited space, NCore Lite is only 1U;
- you prefer an all-in-one system.



NCORE LITE

1

OUTPUT
Modules

2

Battery
Charger

3

INPUT
Modules

4

CMD Module



1

OUTPUT Modules

Determine the number and type of OUTPUT Modules you need. Each module can operate at a different output voltage, all ports of the same module have the same voltage and can be controlled individually for switching on and off.

2

Battery Charger Module

Add the Battery Charger Module if you want to have a backup power source in case of a power outage. You can connect lead and lithium batteries. We suggest using LiFePO4 batteries that guarantee excellent performance and resistance to high temperatures.

3

INPUT Modules

Ensure the right power supply to your Active Power Station. You can choose between Alternating 90 to 264V AC and DC (36-75VDC) sources. You can also opt for a mixed solution, for example by connecting AC sources and DC solar panels at the same time.

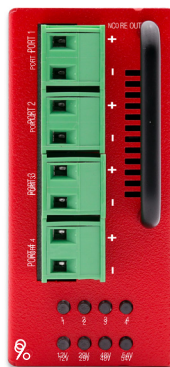
4

CMD Module

Connect the CMD Module and start configuring your NCore. You have a simple and immediate Graphic User Interface, where all the data and commands are exactly where you want them to be. You can also connect to the Ncore via SNMP and SSH.

1

OUTPUT Modules



NCORE-OUT

The OUTPUT Module is 54V during normal operation. During the battery power supply, the output voltage will be equal to the battery voltage.

NCORE-OUT-12V

You need 12V OUTPUT Module if you need to power devices that require 12V.

NCORE-OUT-24V

You need 24V OUTPUT Module if you need to power devices that require no more than 28V (MikroTik CCRs).

NCORE-OUT-ADJ

You need the ADJ Module if you:

- have to power devices that require 29V;
- must power devices that do not support more than 48V;
- want a constant output voltage even during battery power;
- want an isolated output;
- want to be able to decide later on the output voltage for maximum installation flexibility.

2

BATTERY CHARGER Modules



Choose the battery capacity

Calculate the total consumption of your system, multiply it by the desired hours of autonomy. Multiply the result by 2 if the battery is Lead, by 1.2 if the battery is Lithium.

$$Ah = \frac{[\text{Total consumption in Watts}]}{[\text{Battery Voltage}]} * [\text{hours of autonomy}] * [2: \text{Lead}, 1.2: \text{Lithium}]$$

Choose the charging speed

For Lead batteries the maximum charging current is 1/10 of the battery capacity. If the batteries are Lithium this parameter can be higher. The batteries charging time can be calculated with the formula:

$$Ct = \frac{[Ah \text{ battery}] * [1.2: \text{Lead}, 1: \text{Lithium}]}{[\text{charging speed in Amps: 1A, 5A o 10A}]} + [4h: \text{Lead}, 0: \text{Lithium}]$$

Determine the power required to charge the batteries

Charging Speed (Amps)	Power Requirement (Watts)
1	60
5	300
10	600

3

INPUT Modules



Calculate the total power

Sum the power of all devices to be powered. The total power is equal to the devices supply voltage (V) multiplied by the current absorbed (I). Then add the power requirement calculated for the Battery Charger.

total power = $\sum (V \cdot I)$ + battery charger power requirement

Determine how many INPUT Modules you need

Total Power (Watts)	Minimum Configuration	Redundant Configuration
up to 800	1 module	2 modules
from 800 to 1600	2 modules	3 modules
more than 1600	3 modules	-

4

CMD Modules



Add the CMD Module

Ncore could work even without CMD Module, but you wouldn't be able to:

- change the configuration;
- remotely monitor the operating status;
- send on/off commands and schedule charge and discharge cycles;
- read the system logs.



Ordering Guide

Product name	Description
NCORE-BASE	NCore Base Unit
NCORE-OUT	NCore Output Module, 4 Ports
NCORE-OUT-12V	NCore Output Module 12V, 4 Ports
NCORE-OUT-24V	NCore Output Module 24V, 4 Ports
NCORE-OUT-ADJ	NCore Output Module, Adjustable Output Voltage 29V-48V-54V, 4 Ports
NCORE-BATTERY	NCore Battery Charger Module
NCORE-ACDC	NCore ACDC Input Module 800W
NCORE-DCDC	NCore DCDC Input Module 800W
NCORE-CMD	NCore Command Module



NCORE LITE

4

CMD Unit

1

OUTPUT
Ports

2

Battery Charger

3

INPUT Modules



N CORE LITE

1

Integrated OUTPUT Ports

Add Expansion Modules

The 8 ports of Ncore Lite are divided into 3 Groups. During purchasing process you can add Expansion Modules to Groups 1 and 2.

Group 1		Group 2		Group 3			
Port 1	Port 2	Port 3	Port 4	Port 5	Port 6	Port 7	Port 8
Expansion Module		Expansion Module		54V or battery voltage			
not present		not present					
NCL-EM-ADJ 29/48/54V		NCL-EM-ADJ 29/48/54V					
NCL-EM-12V 12V		NCL-EM-12V 12V					
NCL-EM-24V 24V		NCL-EM-24V 24V					

Group 1 and Group 2 ports without Expansion Module and Group 3 ports output voltage is 54V during normal operation. During the battery power supply, the output voltage is equal to the battery voltage.

You need the Expansion Module ADJ if you:

- have to power devices that require 29V;
- must power devices that do not support more than 48V;
- want a constant output voltage even during battery power;
- want an isolated output;
- want to be able to decide later on the output voltage for maximum installation flexibility.

You need 12V OUTPUT Module if you need to power devices that require 12V.

You need 24V OUTPUT Module if you need to power devices that require no more than 28V (MikroTik CCRs).

2

Integrated Battery Charger

Choose the battery capacity

Calculate the total consumption of your system, multiply it by the desired hours of autonomy. Multiply the result by 2 if the battery is Lead, by 1.2 if the battery is Lithium.

$$Ah = \frac{[\text{Total consumption in Watts}]}{[\text{Battery Voltage in Volt}]} * [\text{hours of autonomy}] * [2: \text{Lead}, 1.2: \text{Lithium}]$$

Choose the charging speed

For Lead batteries the maximum charging current is 1/10 of the battery capacity. If the batteries are Lithium this parameter can be higher.

The batteries charging time can be calculated with the formula:

$$Ct = \frac{[Ah \text{ battery}] * [1.2: \text{Lead}, 1: \text{Lithium}]}{[\text{charging speed in Amps: } 1A, 5A \text{ o } 10A]} + [4h: \text{Lead}, 0: \text{Lithium}]$$

Determine the power required to charge the batteries

Charging Speed (Amps)	Power Requirement (Watts)
1	60
5	300
10	600

3

INPUT modules



Calculate the total power

Sum the power of all devices to be powered. The total power is equal to the devices supply voltage (V) multiplied by the current absorbed (I). Then add the power requirement calculated for the Battery Charger.

total power = $\sum (V \cdot I)$ + battery charger power requirement

Determine how many INPUT Modules you need

Total Power (Watts)	Minimum Configuration	Redundant Configuration
up to 800	1 module	2 modules
more than 1600	2 modules	-

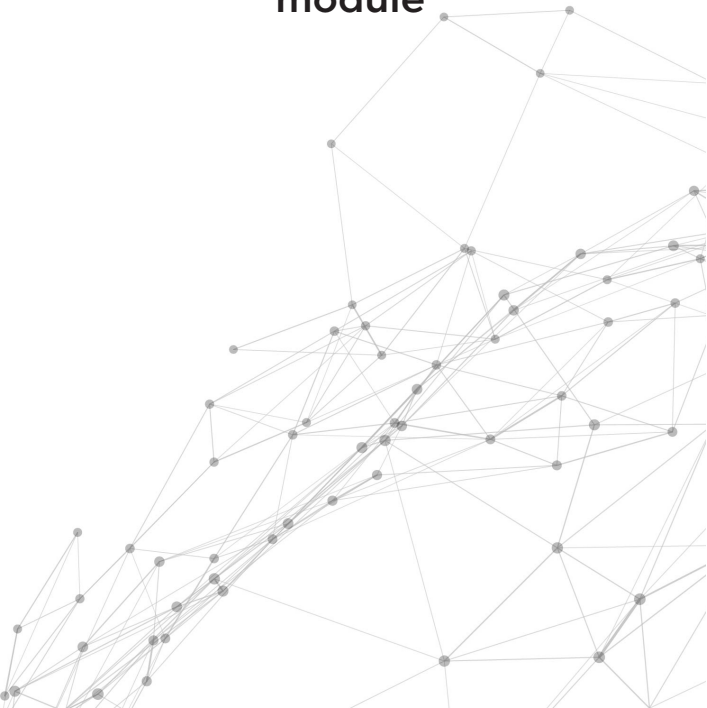
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Integrated CMD module

CMD unit is integrated

Connect the ethernet connector on the rear to:

- change the configuration;
- remotely monitor the operating status;
- send on/off commands and schedule charge and discharge cycles;
- read the system logs.



NCORE LITE

Ordering Guide

Product name	Description
NCORE-LITE	Ncore-Lite, 8 Ports
NCORE-LITE-ADJ	NCore-Lite, 8 Ports, OUT Group 1 NCL-EM-ADJ
NCORE-LITE-12V	NCore-Lite, 8 Ports, OUT Group 1 NCL-EM-12V
NCORE-LITE-24V	NCore-Lite, 8 Ports, OUT Group 1 NCL-EM-24V
NCORE-LITE-ADJ-ADJ	NCore-Lite, 8 Ports, OUT Group 1 NCL-EM-ADJ, OUT Group 2 NCL-EM-ADJ
NCORE-LITE-ADJ-12V	NCore-Lite, 8 Ports, OUT Group 1 NCL-EM-ADJ, OUT Group 2 NCL-EM-12V
NCORE-LITE-ADJ-24V	NCore-Lite, 8 Ports, OUT Group 1 NCL-EM-ADJ, OUT Group 2 NCL-EM-24V
NCORE-LITE-12V-12V	NCore-Lite, 8 Ports, OUT Group 1 NCL-EM-12V, OUT Group 2 NCL-EM-12V
NCORE-LITE-24V-24V	NCore-Lite, 8 Ports, OUT Group 1 NCL-EM-24V, OUT Group 2 NCL-EM-24V
NCORE-LITE-24V-12V	NCore-Lite, 8 Ports, OUT Group 1 NCL-EM-24V, OUT Group 2 NCL-EM-12V
NCORE-ACDC	NCore ACDC Input Module 800W
NCORE-DCDC	NCore DCDC Input Module 800W



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