










# LEONARDO PRO X

## STORAGE SYSTEM: AC-DC Configurations

## DATASHEET



-  Available for AC ON-GRID PV plants or for DC PV Plants configuration
-  3000VA / 5000VA continuous power
-  95% Inverter efficiency
-  48 Vdc Lithium battery voltage
-  Integrated LCD display
-  Network ethernet connection
-  Cloud IOT monitoring & control
-  Output Voltage 230 V, 50 Hz  
Three-phase configuration available
-  Leonardo PRO X 3000/48 Li  
Compliant with CEI 0-21: 2019-04 + V1-2017



Il **Leonardo PRO X** è la soluzione ideale per nuovi impianti fotovoltaici utilizzando i regolatori di carica WRM, Western CO. o per aggiungere un sistema di accumulo su impianti fotovoltaici già dotati di inverter di stringa AC On-Grid.

Grazie al nuovo hardware di conversione, permette l'utilizzo di batterie agli ioni di litio a 48V, sicure ed affidabili, pur mantenendo elevata efficienza di conversione elettrica.

Il **Leonardo PRO X** è dotato di display integrato e comunicazione ethernet di serie, la connessione ad internet permette il monitoraggio RealTime ed assistenza tecnica da remoto.

In caso di impianti PV ON-GRID, grazie alla connessione AC, il Leonardo PRO X è compatibile con gli schemi di installazione previsti dalla CEI 0-21 senza alterare la quantità di energia prodotta ed incentivata dall'impianto esistente.

In caso di black-out della rete elettrica, il Leonardo PRO X alimenta le utenze collegate all'uscita EPS, con un tempo di ripristino inferiore ai 10ms.

*Leonardo PRO X is the perfect solution for new PV plants in DC configuration using Western CO. MPPT WRM charge controllers, or to add a storage system to existent solar grid tie inverter plants.*

*Thanks to the new power conversion hardware, it can be used with the safe and reliable 48 VDC Li-ion batteries, meanwhile keeping high power conversion efficiency.*

*Leonardo PRO X has an integrated display and ethernet connection which comes standard. The internet connection is used for monitoring the system, and remote technical assistance.*

*Thanks to the AC Grid connection, Leonardo PRO X is suitable with the installation schemes provided by the CEI 0-21, without changing the energy produced and incentivized by the existent PV plant.*

*In case of grid blackout, Leonardo PRO X supplies the loads connected at the EPS output, with a reactivation time of 10ms.*

# LEONARDO PRO X

## Features:

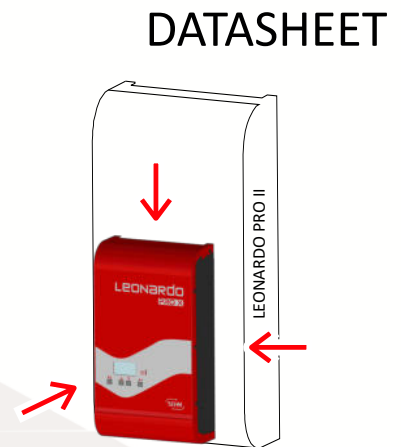


### **Nuovo hardware:**

Efficienza massima del 95% e dimensioni ridotte ad un quarto del modello precedente.

### **New hardware:**

*95% maximum efficiency and reduced size to a fourth of the old version.*

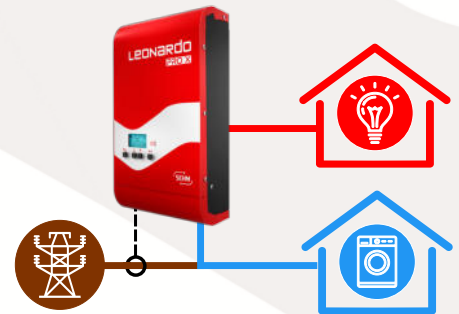


### **Molteplici configurazioni:**

Gestione carichi con sensore di corrente ed uscita EPS per carichi privilegiati in caso di blackout.

### **Multiple configurations:**

*Loads management with current sensor and EPS output to supply protected loads in case of grid outage.*



### **Modularità:**

Aumento della potenza di conversione con modulo slave in configurazione parallela.

### **Modularity:**

*Increase the conversion power with a slave module in parallel configuration.*



### **Compatibilità con:**

### **Compatible with:**

- LG CHEM RESU 48V
- PYLONTECH US2000C, US3000C, FORCE L2
- MIDAC RES 5.1



**Monitoraggio e controllo** con APP, nuovo portale WEB e display remoto, per aggiornamento e modifica parametri di sistema.

*Monitoring and control available using the mobile APP, the new WEB platform and the remote console that allows firmware update and customization of the system settings.*



## Dimensions

### 3000/48 Li



### 5000/48 Li



## Accessories

### P1 Production meter:

Dimensions: 1 DIN Module

Measurements: 32 A, 230 VAC

AC cables section: 2.5-6 mm<sup>2</sup>

Pulse output cables section: 1.5 mm<sup>2</sup>



### Current sensor:

Measurements: AC 100A

Connection cable: 1m, 3.5mm jack

Opening size: 13mm x 13mm



### CAN Bus Cable

Battery plug: RJ45 right angle

Inverter plug: RJ10

Length: 2.5 m



			Leonardo PRO X 3000/48 Li	Leonardo PRO X 5000/48 Li
<b>INVERTER</b>	<b>Nominal power</b>	Phom	3kVA	5kVA
	<b>Continuous power at 25 ° C</b>	Pcon1	2.4kW	4.0kW
	<b>Continuous power at 40 ° C</b>	Pcon2	2.2kW	3.7kW
	<b>Battery voltage</b>	Vbat	48V	48V
	<b>Battery voltage range</b>	Vdc	40 – 66V	40 – 66V
	<b>AC voltage and frequency</b>	Vnom	230Vac – 50Hz	230Vac – 50Hz
	<b>AC voltage range</b>	Vac	187 – 265Vac	187 – 265Vac
	<b>AC input current</b>	Iac	32A	50A
	<b>Harmonic distortion</b>	Thd	< 3%	< 3%
	<b>Nominal power factor</b>	Pi	1	1
	<b>Min. load Maximum efficiency DC-&gt; AC</b>	Eds	95%	96%
	<b>Max. load Maximum efficiency DC-&gt; AC</b>		80%	80%
	<b>Connectable load power on EPS out</b>	Eps	2.4kW	4.0kW
	<b>EPS transfer time on grid blackout</b>	Tsw	10ms	10ms
	<b>Power consumption in by-pass mode</b>	Pbp	< 2W	< 2W
	<b>Topology</b>	Top	Toroidal isolation transformer	Toroidal isolation transformer
	<b>Cooling</b>	Ven	Forced ventilation	Forced ventilation
	<b>PV production meter</b>	Mis	40A with direct connection	40A with direct connection
<b>Consumption current sensor</b>	Ta	100A split core current transformer	100A split core current transformer	
<b>AC CHARGER</b>	<b>Maximum charge power</b>	Pch	2.1kW	3.5kW
	<b>Maximum charge current</b>	Ich	35A	70A
	<b>Maximum efficiency AC-&gt; DC</b>	Ech	95%	95%
	<b>Charging curve</b>	Alg	BMS self-adaptive	BMS self-adaptive
	<b>Battery communication</b>	Com	CAN BUS	CAN BUS
<b>INTERFACES</b>	<b>PV production meter connection</b>	Meter	2 x 2.5mm2 screw terminals	2 x 2.5mm2 screw terminals
	<b>VE-Bus Master / Slave port</b>	VE-Bus	RJ45	RJ45
	<b>WBUS service port</b>	WBUS	RJ11	RJ11
	<b>Battery communication port</b>	CAN	RJ10 with 1.5m supplied cable	RJ10 with 1.5m supplied cable
	<b>Internet communication port</b>	Ethernet	RJ45	RJ45
	<b>Current sensor port</b>	Current Sense	3.5mm jack with 1m cable	3.5mm jack with 1m cable

