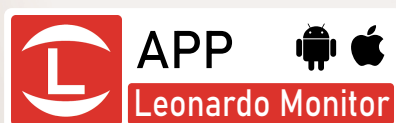











## AC STORAGE SYSTEM

## DATASHEET



**For ON-GRID PV plants**

-  AC storage converter
-  3000 VA 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
-  Compliant with CEI 0-21: 2019-04 + V1-2017

 **Li-ION batteries**  
**RESU LG CHEM compatible**

Il **Leonardo PRO X** è la soluzione ideale 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.

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 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

## DATASHEET

### Features:

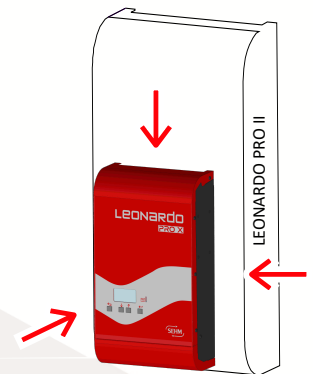


#### **Nuovo hardware:**

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.*

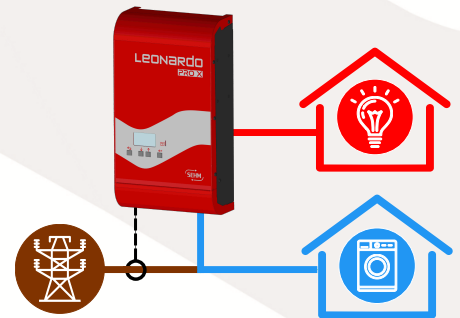


#### **Molteplici configurazioni:**

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 tutti i modelli di batterie 48V Li-ION RESU LG CHEM.

**Compatible** with all the RESU LG CHEM Li-ION 48VDC battery versions.



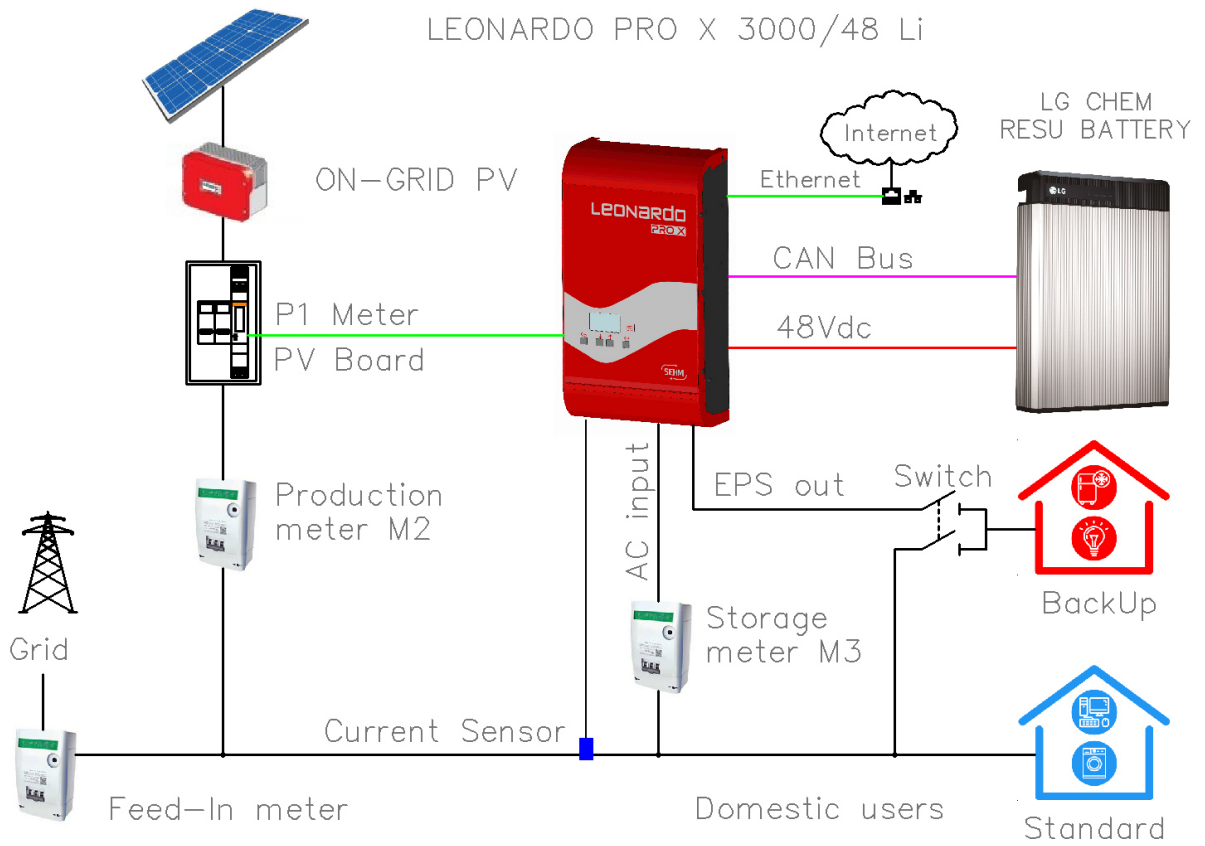
**Monitoraggio e controllo** con APP, portale WEB e display remoto, per aggiornamento e modifica parametri di sistema.

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



# Connection Diagram

# LEONARDO PRO X



## 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>



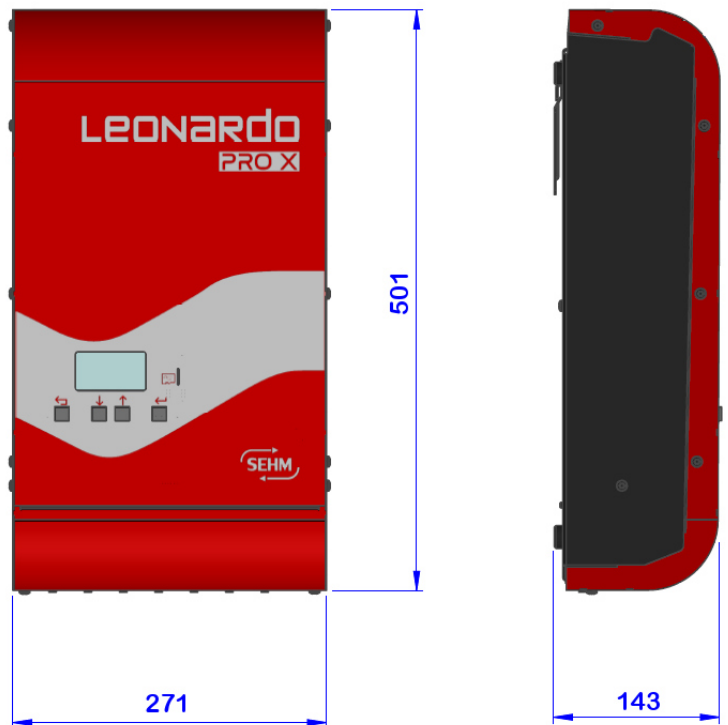
**Current sensor:**  
 Measurements: AC 100A  
 Connection cable: 1m, 3.5mm jack  
 Opening size: 13mm x 13mm



**CAN Bus Cable**  
 Battery plug: RJ45 right angle  
 Inverter plug: RJ10  
 Length: 2.5 m



## Dimensions



TECHNICAL SPECIFICATIONS



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**MADE  
and  
USED**

			<i>Leonardo PRO X 3000/48 Li</i>
<b>INVERTER</b>	Nominal power	<b>Pnom</b>	3kVA
	Continuous power at 25 ° C	<b>Pcon1</b>	2.4kW
	Continuous power at 40 ° C	<b>Pcon2</b>	2.2kW
	Battery voltage	<b>Vbat</b>	48V
	Battery voltage range	<b>Vdc</b>	40 - 66V
	AC voltage and frequency	<b>Vnom</b>	230Vac - 50Hz
	AC voltage range	<b>Vac</b>	187 - 265Vac
	AC input current	<b>Iac</b>	32A
	Harmonic distortion	<b>Thd</b>	< 3%
	Nominal power factor	<b>Pi</b>	1
	Maximum efficiency DC-> AC	<b>Eds</b>	95%
	Connectable load power on EPS out	<b>Eps</b>	2.4kW
	EPS transfer time on grid blackout	<b>Tsw</b>	10ms
	Power consumption in by-pass mode	<b>Pbp</b>	< 2W
	Topology	<b>Top</b>	Toroidal isolation transformer
	Cooling	<b>Ven</b>	Forced ventilation
	PV production meter	<b>Mis</b>	40A with direct connection
Consumption current sensor	<b>Ta</b>	100A split core current transformer	
<b>AC CHARGER</b>	Maximum charge power	<b>Pch</b>	2.1kW
	Maximum charge current	<b>Ich</b>	35A
	Maximum efficiency AC-> DC	<b>Ech</b>	95%
	Charging curve	<b>Alg</b>	BMS self-adaptive
	Battery communication	<b>Com</b>	CAN BUS
<b>INTERFACES</b>	PV production meter connection	<b>Meter</b>	2 x 2.5mm <sup>2</sup> screw terminals
	VE-Bus Master/Slave port	<b>VE-Bus</b>	RJ45
	WBUS service port	<b>WBUS</b>	RJ11
	Battery communication port	<b>CAN</b>	RJ10 with 1.5m supplied cable
	Internet communication port	<b>Ethernet</b>	RJ45
	Current sensor port	<b>Current Sense</b>	3.5mm jack with 1m cable
<b>ENCLOSURE</b>	Battery connection	<b>BAT</b>	M8 bolts
	AC connections	<b>AC</b>	13mm <sup>2</sup> screw terminals
	Local user interface		128x64 LCD Display
	Protection degree		IP21
	Weight		18kg
	Dimensions		271x501x143mm
	Operating temperature range		-40 to +65°C
	Humidity		Max 95%



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**MADE  
PURE  
USED**