

**GE Digital Energy • IMV** 

# **GE Digital Energy**

# LanPro 33

# INSTALLATION AND

### COMMISSIONING GUIDE

Purpose of this document is to be a guide for the person in charge involved in the installation and the startup of the UPS, as a step by step procedure.

#### Preliminary

While every precaution has been taken to ensure the completeness and accuracy of this document, *GE Digital Energy* • *IMV* assumes no responsability nor liability for damages or errors resulting from the the use of the information contained in this document.

After unpacking the UPS(s) check carefully for any visible damages, which could have occurred during transport. Do never try to startup a UPS which shows mechanical or electrical damage. Contact your next service centre for help.

The following material accompanies the UPS:

- The UPS operating manual.
- The PIOR of this UPS. (Putting into operation report)
- 4 Bottom panels which are removed for transport.
- A plastic bag, containing: 3 Battery fuses, 6 cable ties for the fastening of input and output cables and 5 Eyelet terminals for the connection of Neutral and Earth cables to the Input / Output section of the UPS.

The description for the installation and startup of the UPS is based on a STANDARD CONFIGURATION, i.e. single UPS with integrated Battery and single Mains (Utility) input. A description of procedures in case of a parallel system or external Batteries follows seperately this basic instructions. Before paralleling UPS's they must have been running as single units.

Description of the install procedure for optional equipment:

- Separate Mains input: See operating manual, chapter 4.8.2., page 31.
  - External Battery cabinet: See operating manual chapter 7.2, page 65.

For a description of procedure for the paralleling of UPS's, refer to the document: "Installation guide for the RPA kit"

## **Cabinet Lanpro 33**

UPS rating	Dimension W x D x H	Weigh without Battery	Weight with standard Battery
10kVA	500x780x 1280	113kg	247kg
20kVA	500x780x 1280	140kg	372kg
30kVA	660x780x 1280	172kg	520kg



Panel remove		
Frontpanel	Pressed on, remove with screw driver	
Sidepanels	Fixed wit 3 Allen screws on each side	
Bottom	Front and Rear: Pressed on	
Panels	Side:Fixed with 2 Allen screws each side	

#### **Panel and Display**



Кеу	To access	Кеу	Function
metering	Measurements, Statistics and ID-Number	+	Move to next page, or scroll in edit mode
alarms	Messages and Alarms	-	Move to previous page in metering and alarms, or in edit mode, change value
menu	Commands Reset Lamptest Parameters	ok	Press to execute a command or enter in edit mode to change Parameters. Confirm change of Parameter.

Consult the operating manual for a detailed descriptions of the displayed pages and a listing of alarms and messages and descripton of their particular meaning.



### **UPS Input / Output connection**

Cable sections (European standard) Input / Output				
10kVA	20kVA	30kVA		
5 x 4 mm2	5 x 10 mm2	5 x 10 mm2		
Use the eyelet terminals from the plastic bag, for the connection of Neutrals and Earth to Input / Output.				

## **UPS Frontview with Frontdoor open**



#### **UPS commissioning procedures**

(Standard product, single UPS)

Preliminary and mechanical checks

After unpacking and placing of the UPS, verify for any mechanical damage. Do never try to startup a damaged UPS.

Make sure to maintain a minimum clearance of 10cm of the UPS's lateral parts, for adequate ventilation with UPS's on wheels.

Without wheels, in case of maintenance, a minimum clearance of 50cm (20 inches) must be maintained !!)

Remove the Frontpanel and open the Frontdoor. Loosen the 3 screws on each side of the Sidepanes, to take them off. See page UPS cabinet.

Before making any connections we recommand a thorough mechanical check, including verification of loose bolts or components, correct inserted plugs and no loose wires or cables. Make sure fans spin freely.

If any problems with this installation are found that pose a threat to persons or equipment, do not proceed until the problem has been corrected!!!

Installation

Connect Input and Output cables and fix them with the enclosed cable ties.

Insure for adequate size of cables, (see table) and verify for correct phase rotation.

Replace all the previously removed panels. Verify for Q1 and Q2 to be open. Open Mains Rectifier fuses, F1, F2, F3. Open Battery fuses F9, F10, F11 !!

#### System checks

Switch ON the Mains (Utility) voltage from the input distribution.

At this stage the electronic power supply is switched ON and at the end of a selftest on the display should appear "SELF TEST OK" and the buzzer sounds, followed by showing the main page. Press "alarm" for reset. In case of negative self test, the message "Mainboard failure" would appear. Do not proceed with commissioning but call the nearest service centre in this case. Verify in "User Parameters" for correct Date and Time, if necessary adjust.

#### Verification of Parameter settings

The setting of Parameters allows the programming and setting of certain functions and values of the UPS. If not otherwise specified, the UPS will leave the factory in a standard configuration, which corresponds to the values in the attached PIOR. Verify if this values conform to the actual situation on site and if necessary adapt.

Important: Keep the PIOR updated whenever Parameter(s) are changed !!!!

To access Parameters:

Go in the "menu" to the page PARAMETER MENU. User Parameters can be accessed without Password, since these have no influence on the function of the UPS, while Service Parameters can be accessed only via Password. Password: Change the string XXXXXXXX into YYYYYYY.

To change Parameters:

- Move the cursor with "-" to the Parameter to change.
- Press "ok" to enter edit mode.
- Scroll with "+" and change values with "-".
- Press "ok" to confirm and install new Parameter and to exit edit mode.

Listing of second level Parameters	
Below a listing of the Parameters:	
Battery type	
Floating voltage adjust	
Battery capacity	
Battery charge current limitation	
Number of Battery cells	
Autonomy (Backup) time in Minutes	
Stop operation time in Battery discharge	
Bypass locked (enable / disable Bypass)	
Tolerance of Mains Bypass voltage	
Programming of Automatic Battery test	
Manual Battery test	
Commands (Inverter ON) Local, Remote, Both	
Input filter (Rectifier input voltage)	
Mains filter (Bypass voltage)	
Sync filter (Alarm not synchronizerd)	
The delay time , in seconds, installed in one of the	
above Parameters has effect on the signals from the	
Panel, the events memory and the Customer Interface	
Programming of the 6 output relays on the Customer	
Interface.	
Programming of the 2 input relays on the Customer	
Interface.	
See the operating manual for possible programming	
signals, or scroll simply through them.	
Inverter output voltage (220, 230, 240 Volt)	



<ul> <li>Insert Battery fuses and verify that after a few seconds in the first measurement screen for Ubp / Ubn, if the floating voltage with charged battery has reached it's nominal value of +/- 270 V, +/- 3V. In case of discharged Battery this value can be lower, the Battery charger would run then in current limitation.</li> </ul>	
<ul> <li>The UPS is now running normally, but with Q1 open, still disconnected from the Load. Should during any of the above steps result a malfunction, alarms or non corresponding measurements, interrupt startup and contact the next Service center for support.</li> <li>During the whole procedure no Alarm condition should occur. which Alarms are indicated by the sounding of the Buzzer and the blinking yellow LED.</li> </ul>	
End of startup in Service mode	
<ul> <li>Shutdown of UPS in Service Mode</li> <li>If everything ok, press the button "Total OFF", to shutdown Booster, Inverter and SSM and open the contactors K4, K6 and K7.</li> <li>Before proceeding to normal startup with Q1 closed, discharge the Capacitors of the DC-Link, either by starting the Inverter ( switch off, after discharge !!) or wait until the reading of the voltages UDCP / UDCN displays a value below 5 Volt.</li> </ul>	
Control	
<ul> <li>Activate in "menu" the Lamptest and verify for sounding Buzzer and blinking LED's.</li> <li>Verify the correct settings of Parameters according to PIOR or changes due to customer request. Important: Always update PIOR in case of changes !!</li> <li>Verify the programming of Output and Input channels on the Customer Interface.</li> <li>Open Battery fuses and disconnect Mains voltage from the UPS. (Complete shutdown)</li> </ul>	

#### Startup in normal mode (Q1 closed) Connect Mains voltage (Utility) to the UPS. The Electronics are now powered. Control selftest on the display. At the end of selftest, the first page is displayed. The yellow LED on the Frontpanel should now be constantly ON, indicating that Q1 open, thus the UPS in service mode. Startup in Normal Mode With Rectifier input fuses closed, close Q1. This will cause automatically the precharge of the DC-Capacitors, followed by the start of the Booster and Bypass activation. Thus UDCP and UDCN voltage must be +/- 400V (+/- 3V) and Load is supplied from Mains. Verify for corresponding values of Mains voltage and • Load voltage. Close Battery fuses and verify Battery voltage and **Battery charging current.** If possible connect some Load and take note of the amount of Load for each phase. (Load distribution) Yellow LED on frontpanel is lit.. ٠ Choose in "menu" page Inverter ON / OFF and start the Inverter. After transfer of the output to Inverter, the green LED is lit, indicating Load supply from Inverter i.e. from the save source. End of Startup in Normal Mode Control Verify correctness of measured values and take note. Verify for adequate ventilation and room temperature. Load description. Be as specific as possible. For regular shutdown, with Load either supplied through maintenance Bypass Q2 or disconnected completely, refer

to chapter 5.4 of the operating manual.