PWR-480A

INSTALLATION MANUAL

Datalogic Automation S.r.l.
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PWR-480A Installation Manual

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Rev. A

CONTENTS

SAFETY REGULATIONS

ELECTRICAL SAFETY

This product conforms to the applicable requirements contained in the European Standard for electrical safety EN-60950-1 at the date of manufacture.

This symbol refers to operations that must be performed by qualified personnel only. Example: opening the device.

This symbol refers to operations where there is danger of electrical shock. Before opening the device make sure the power cable is disconnected to avoid electrical shock.

The AC Plug Label appears as follows:

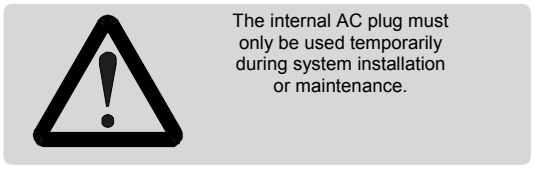


Figure 1 – AC Plug Label

SERVICES AND SUPPORT

Datalogic provides several services as well as technical support through its website. Log on to **www.automation.datalogic.com** and click on the links indicated for further information including:

- **PRODUCTS**
  Search through the links to arrive at your product page where you can download specific **Manuals** and **Software & Utilities** including:
- **SERVICES & SUPPORT**
  - **Datalogic Services** - Warranty Extensions and Maintenance Agreements
  - **Authorised Repair Centres**
- **CONTACT US**
  E-mail form and listing of Datalogic Subsidiaries

GENERAL VIEW

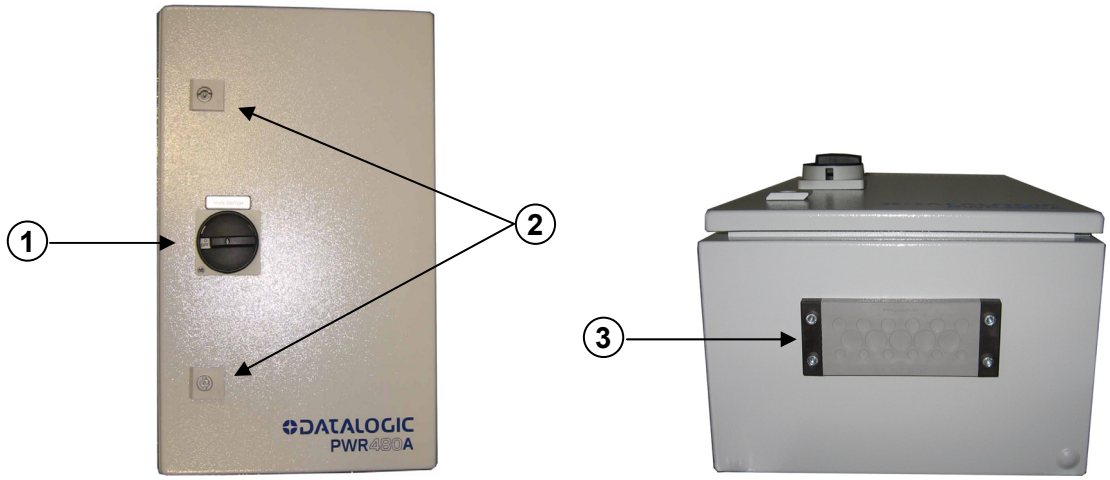


Figure 2 - PWR-480A closed view

1 Main Switch
2 Key Locks
3 Cable Entry Plate

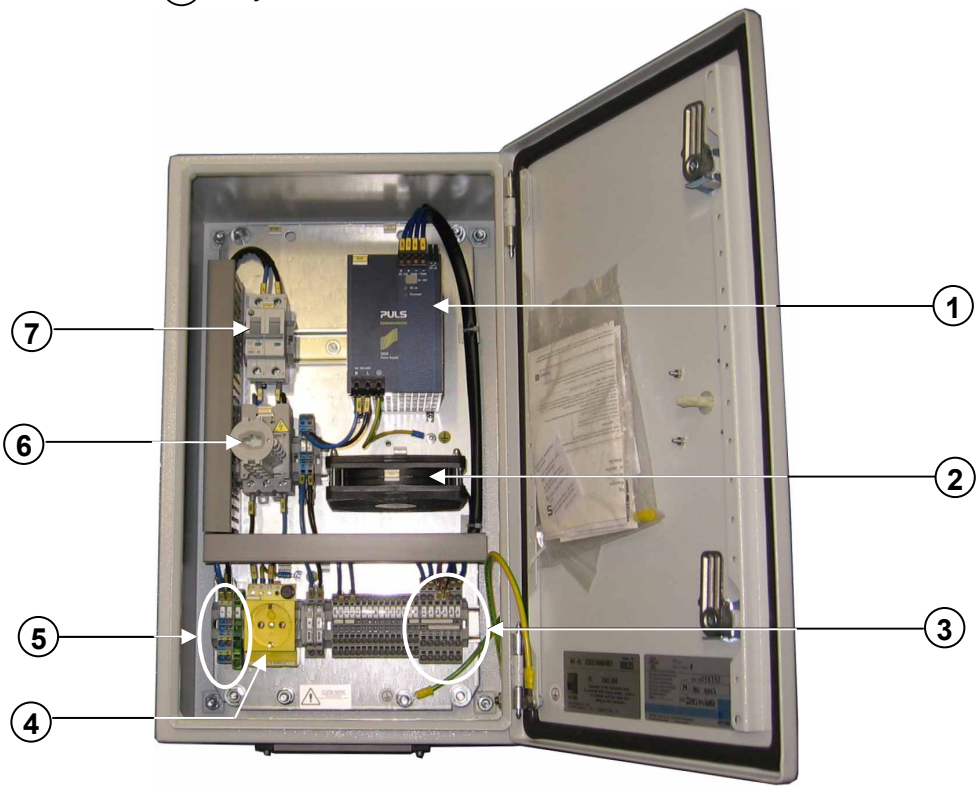


Figure 3 – PWR-480A open view

1 Monophase Switching Power Supply
2 Cooling Fan
3 24 Vdc Terminal Block
4 AC Plug (for temporary use only)
5 AC Line Input Terminal Block
6 Main Switch
7 Thermo-magnetic breaker switches

GUIDE TO INSTALLATION

The following can be used as a checklist to verify all the steps necessary to complete installation of the PWR power Supply.

CAUTION

Before wiring the device make sure the power is disconnected to avoid electrical shock.

1) Read all information in the section “Safety Precautions” at the beginning of this manual.

2) Mount the PWR near the Reading Station.

3) Plan all the cable entry points to avoid unnecessary holes and pass the cables through the Cable Entry Plate as described in par. 1.2.

4) With AC line voltage OFF, wire the AC Line input to the PWR AC Terminal Block see par. 1.3.1.

5) System Wiring:

   Directly to Scanners
   Provide correct and complete system cabling to the PWR according to the signals necessary for the layout of your application. (See par. 1.3.2 and your scanner manual for details). All system cables must pass through the cable entry plate.

   Directly to NLS9000
   Connect the NLS9000 Illuminator to the PWR by means of the appropriate cables (see par. 1.3.3 and the NVS9000 manual for details). All cables must pass through the cable entry plate.

6) Close and lock the PWR enclosure.

7) Apply the AC line voltage from the building installation and check that the PWR powers up correctly.

The installation is now complete.

1 INSTALLATION

CAUTION

Before opening the device make sure the power cable is disconnected to avoid electrical shock.

1.1 PWR-480A ELECTRICAL DIAGRAM

The PWR-480A components are electrically connected as displayed in the following diagram:

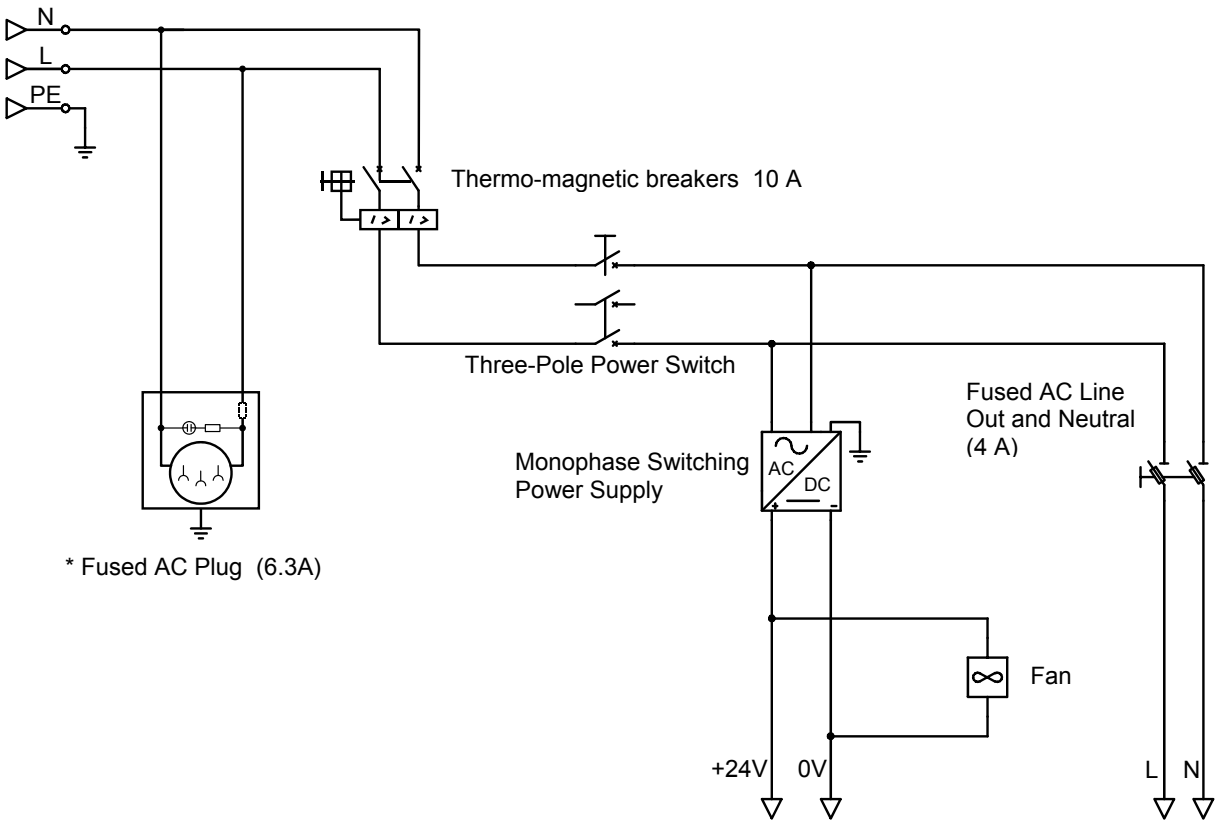


Figure 4 - PWR-480A Electrical Diagram

CAUTION

* *The AC plug must only be used temporarily during system installation or maintenance.*

1.2 CABLE ENTRY PLATE

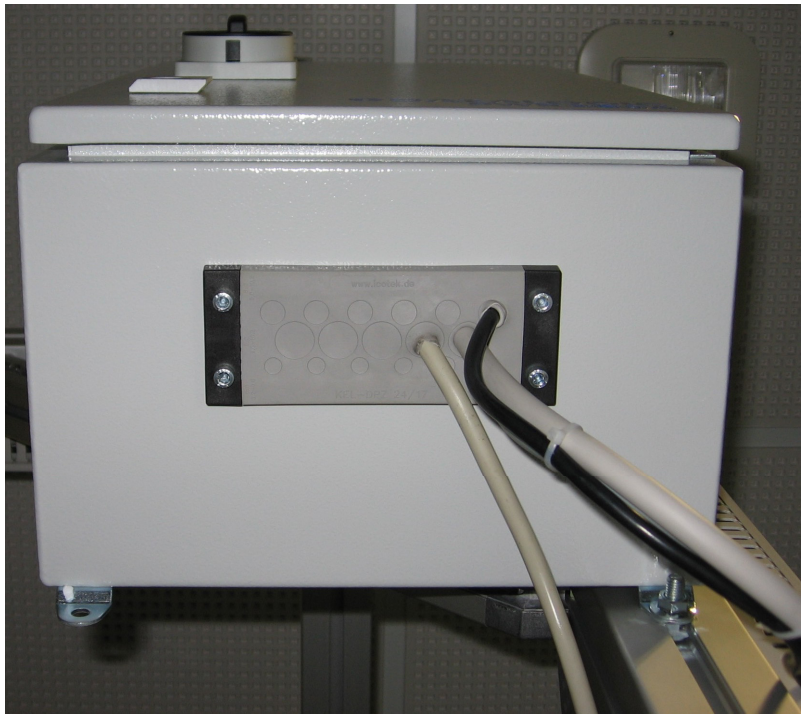
The Cable Entry Plate has protection capability of IP65.

Follow these instructions to correctly insert the cables:

1) Determine the number and size of the cables coming into and leaving the PWR-480A.
2) Locate the correct entry hole sizes and positions relative to these cable.
3) Press the cable end through the proper hole so that the gland material seals around it.

The Cable Entry Plate has 17 cable entry points with the following specifications:

Number of Entry Points	Cable Diameter	
	Millimeters	**Inches**
6	3.2 – 6.5	0.126 – 0.256
6	5.0 – 10.2	0.197 – 0.402
5	9.0 – 16.2	0.354 – 0.638



1.3 ELECTRICAL CONNECTIONS

The PWR-480A power unit provides a terminal block through which AC Line voltage enters and 24 Vdc Low Voltage output is provided.

The terminal block also allows various system wiring terminals so that all system wiring (i.e. host communication, P.S., Encoder, etc.) can be provided through a single cable when connecting directly to the scanners.

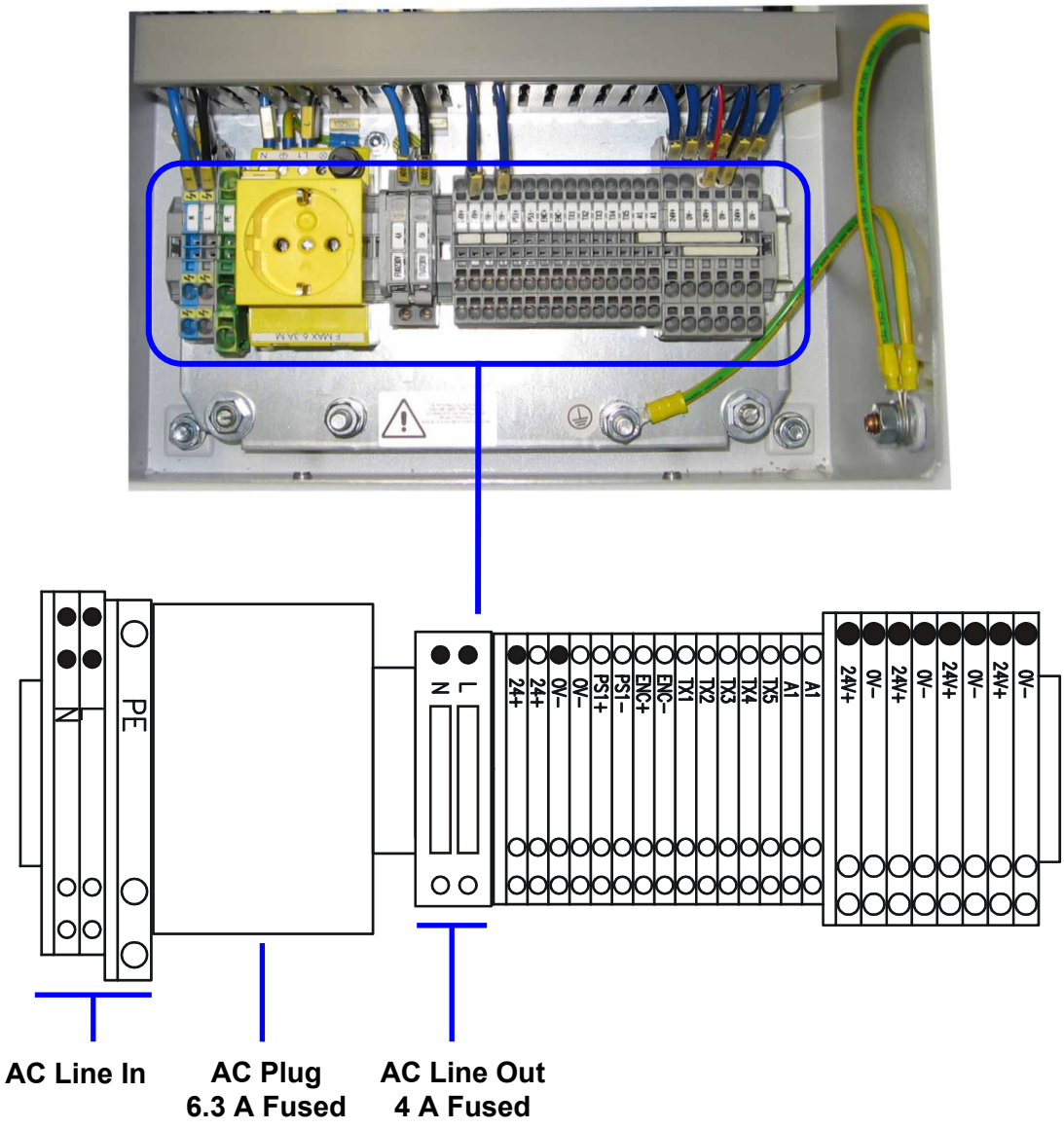


Figure 5 – PWR-480A Terminal Block

1.3.1 Input Line Voltage

Wire according to the following points:

Primary wiring: Overcurrent protection should be provided by a 12 to 15 A building installation circuit breaker. Wiring methods from the branch circuit breaker to the PWR-480A power supply shall comply with the National Electric Code ANSI\NFPA.

For primary wiring use a 3-conductor cable with minimum size 13 AWG for every conductor. Choose the overall cable diameter and UL Listed conduits accordingly. These conductors have to be inserted into the dedicated terminal blocks on the DIN rail (see diagram) which are marked Line (L) neutral (N) and Protection Earth (PE).

The terminal block marked with the ground symbol is a special block which allows direct connection of the Protection Earth with the enclosure of the PWR-480A.

The AC input cable must be inserted through one of the holes in the cable entry plate and the individual wires installed into the AC terminal block.

Replace the protection cover over the spring clamp connector after correctly installing the wires.

The AC plug can only be used temporarily during installation or maintenance procedures.

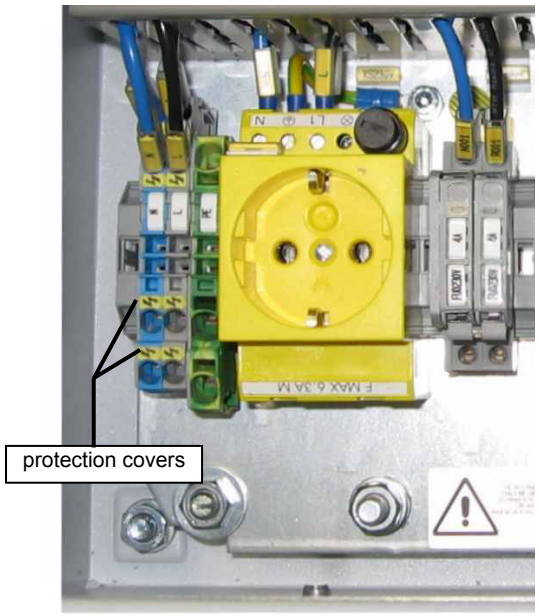


Figure 6 – PWR-480A AC Line Terminal Block with Protection Covers

CAUTION

The Reading Station Frame to which PWR-480A is mounted must also be connected to the plant ground (Protection Earth).

1.3.2 Supply Capacity When Wiring Directly to Scanners

A general rule to consider is that each scanner requires both peak power and steady state power.

For direct wiring, power distribution is performed simultaneously for all the scanners. This means that the PWR must bear the peak power draw of all the scanner motors starting up together. See the specific scanner manual for consumption data.

The maximum peak power propagated is 24 V x 30 A = 720 W, while the steady state (normal) power is 24 V x 20 A = 480 W.

Due to these limits, the maximum number of scanners to be supplied for direct wiring is:

	Maximum Number of Scanners					
Power Supply Unit	**DS6000**	**DX6000**	**DS8100A**	**DX8200A**	**DS8100***	**DX8200***
PWR-480A	24	20	16	12	8	6

* DS8100 and DX8200 scanners have peak power (startup) consumption of 60W.

The power supply unit is connected directly to the scanners.

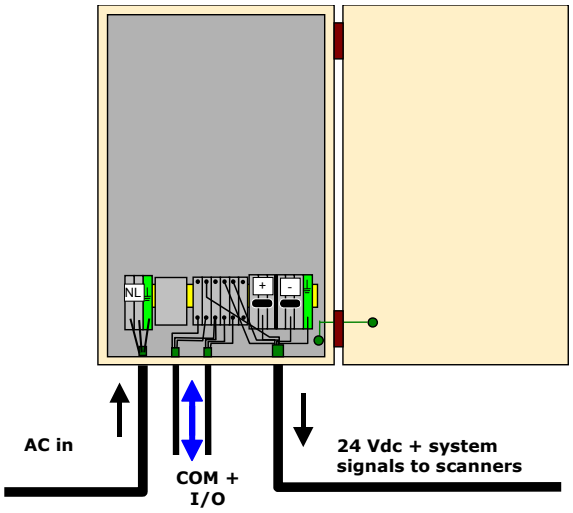


Figure 7 - Connecting PWR-480A Directly to Scanners

Refer to the specific scanner manual to make the connections of the low voltage output and other I/O interface wires to the internal terminal block.

1.3.3 Supply Capacity When Wiring to NLS9000s

For the NVS9000 cameras the power consumption depends from the model of the NLS9000 illuminator used.

Illuminator Model	Maximum Power Consumption (NVS9000 camera included)
NLS9000-800 Short Lighting System	12.5A
NLS9000-1100 Medium Lighting System	15.5A
NLS9000-1500 Long Lighting System	18.5A

One PWR-480A is able to power in parallel:
- one NLS9000 illuminator (including the NVS9000 camera which is powered via this unit)
- one CBX500-NVS or CBX9000 with all the standard sensors

The power supply unit is connected to the camera illuminator according to the following diagram (power supply side):

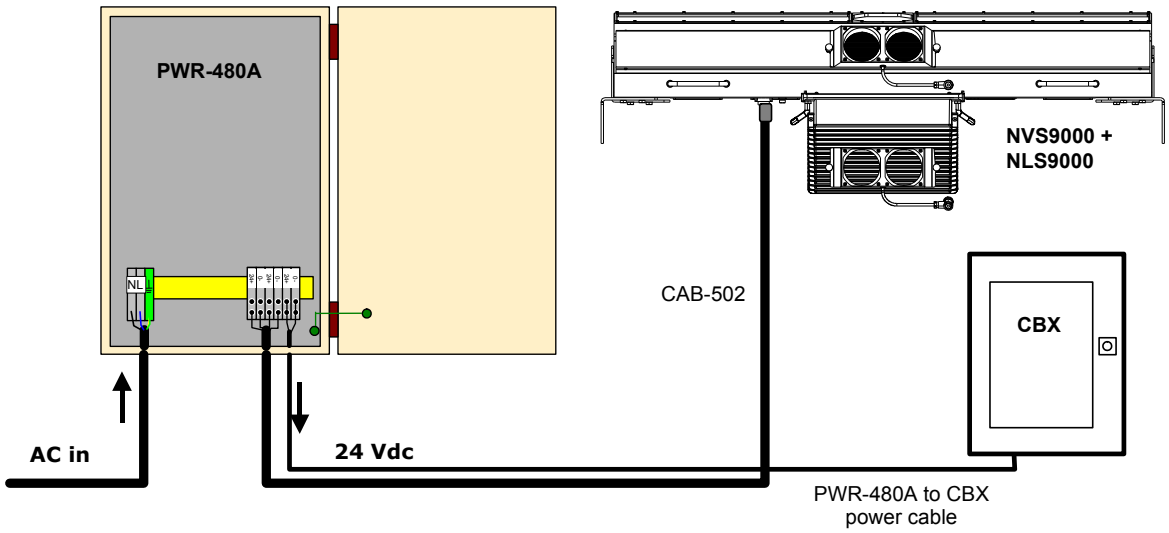


Figure 8 - Connecting PWR-480A to NLS9000 Illuminator

The NLS9000 series illuminators and CBX9000 connection boxes are supplied with a proper power cord:

NLS9000: use CAB-502

CBX9000 or CBX500-NVS: use PWR-480A to CBX power cable

For further details see the NVS9000 Installation Manual.

2 MAINTENANCE

2.1 AC LINE OUT FUSE REPLACEMENT

CAUTION	*Before opening the device make sure the power cable is disconnected to avoid electrical shock.*

To replace the AC Line Out fuses follow the procedure below:

1. With the AC Line input power **disconnected**, remove the two 4A AC Line Out fuse blocks from the PWR-480A using a screwdriver to unlatch them from the DIN Rail. See the figure below.

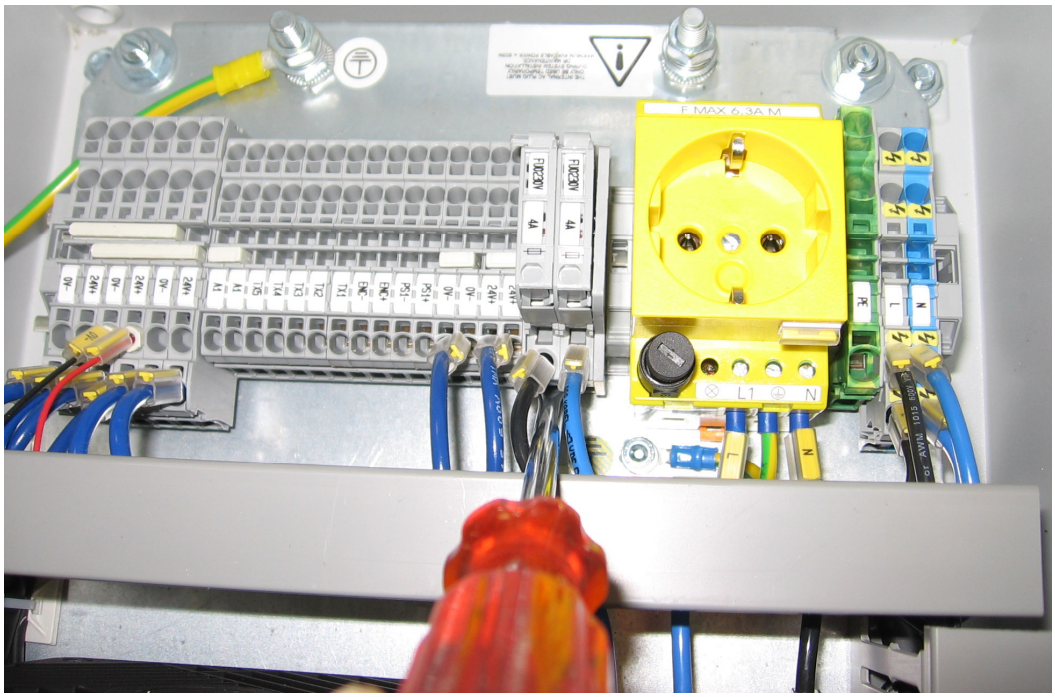


Figure 9 – Removing the AC Line Out Fuse Blocks from the PWR-480A DIN Rail

2. Remove the plastic guard on the Neutral fuse block.

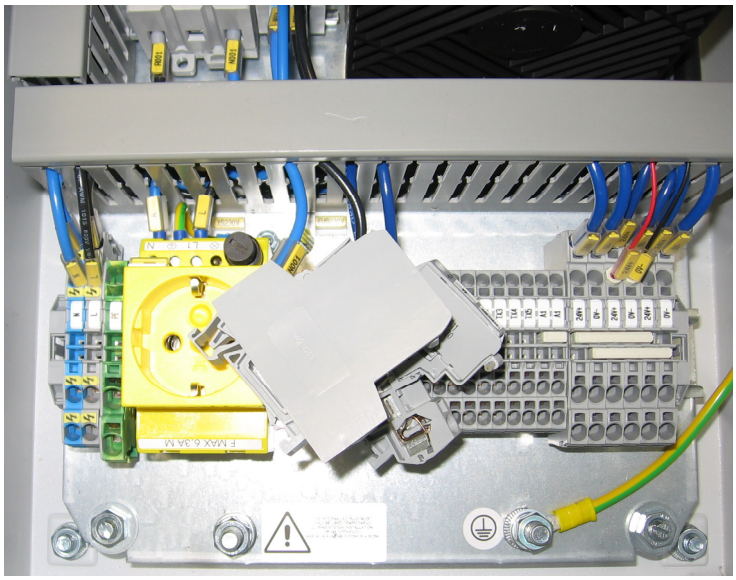


Figure 10 – Plastic Guard on Neutral Fuse Block

3. Open the plastic cover. The fuse is automatically lifted out of the block.
4. Replace the fuse with the spare fuse provided.
5. Close the plastic cover so that the new fuse reseats into the block.
6. Repeat for the other fuse block.

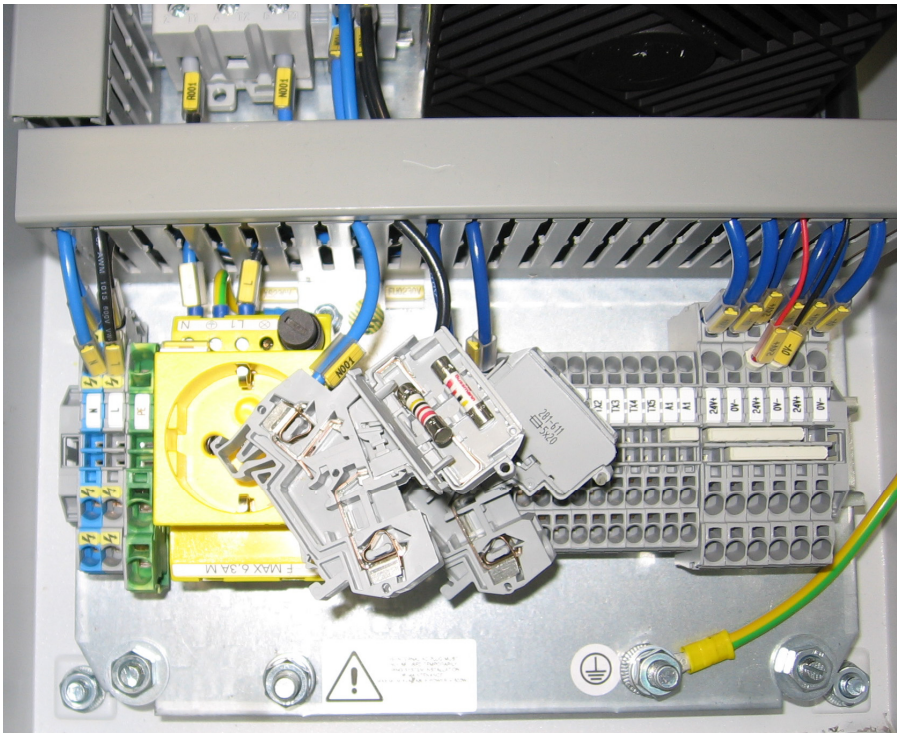


Figure 11 – Replace the fuses

7. Replace the plastic guard on the Neutral fuse block and snap the fuse blocks back onto the DIN Rail.

3 TECHNICAL FEATURES

ELECTRICAL FEATURES	PWR-480A
Input Voltage	AC from 100 to 240 V ±15% from 50-60 Hz ±6%
Input Current	4.56 A @ 120 V 2.48 A @ 230 V
AC Line Fuses: AC Plug AC Line Out	 6.3 A, 250V; 5x20 mm 4 A, 250V; 5x20 mm
Nominal Output Current	20 A
Maximum Output Current	30 A (up to +4s)
Output Voltage	24 Vdc (adjustable 24-28 Vdc)
ENVIRONMENTAL FEATURES	
Operating Temperature	-25° to +50 °C (-13° to +122°F)
Storage Temperature	-40° to +85 °C (-40° to 185 °F)
Humidity	5-95% non condensing
Protection Class EN 60529	IP65*
PHYSICAL FEATURES	
Mechanical Dimensions	500 x 300 x 210 mm (19.7 x 11.8 x 8.3 in)
Weight	about 15.9 kg (35 lbs)

* when cables are inserted into the proper holes of the cable entry plate and all unused holes are sealed.

DECLARATION OF CONFORMITY

CE 08

Datalogic Automation S.r.l.
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dichiara che
declares that the
déclare que le
bescheinigt, daß das Gerät
declare que el

PWR-480A Power Supply Unit e tutti i suoi modelli
and all its models
et tous ses modèles
und seine Modelle
y todos sus modelos

sono conformi alle Direttive del Consiglio Europeo sottoelencate:
are in conformity with the requirements of the European Council Directives listed below:
sont conformes aux spécifications des Directives de l'Union Européenne ci-dessous:
der nachstehend angeführten Direktiven des Europäischen Rats:
cumple con los requisitos de las Directivas del Consejo Europeo, según la lista siguiente:

89/336/EEC EMC Directive e and et und y **92/31/EEC, 93/68/EEC** emendamenti successivi / further amendments / ses successifs amendements / späteren Abänderungen / succesivas enmiendas

2006/95/EC Low Voltage Directive

Basate sulle legislazioni degli Stati membri in relazione alla compatibilità elettromagnetica ed alla sicurezza dei prodotti.
On the approximation of the laws of Member States relating to electromagnetic compatibility and product safety.
Basée sur la législation des Etats membres relative à la compatibilité électromagnétique et à la sécurité des produits.
Über die Annäherung der Gesetze der Mitgliedsstaaten in bezug auf elektromagnetische Verträglichkeit und Produktsicherheit entsprechen.
Basado en la aproximación de las leyes de los Países Miembros respecto a la compatibilidad electromagnética y las Medidas de seguridad relativas al producto.

Questa dichiarazione è basata sulla conformità dei prodotti alle norme seguenti:
This declaration is based upon compliance of the products to the following standards:
Cette déclaration repose sur la conformité des produits aux normes suivantes:
Diese Erklärung basiert darauf, daß das Produkt den folgenden Normen entspricht:
Esta declaración se basa en el cumplimiento de los productos con las siguientes normas:

EN 55022 (Class A ITE), September 1998:	INFORMATION TECHNOLOGY EQUIPMENT RADIO DISTURBANCE CHARACTERISTICS LIMITS AND METHODS OF MEASUREMENTS
EN 61000-6-2, September 2005:	ELECTROMAGNETIC COMPATIBILITY (EMC) PART 6-2: GENERIC STANDARDS - IMMUNITY FOR INDUSTRIAL ENVIRONMENTS
EN 60950-1, December 2001: **EN 60950-1/A11, April 2004**:	INFORMATION TECHNOLOGY EQUIPMENT - SAFETY - PART 1 : GENERAL REQUIREMENTS
EN 61000-3-2, APRIL 2006:	ELECTROMAGNETIC COMPATIBILITY (EMC) PART 3-2 : LIMITS - LIMITS FOR HARMONIC CURRENT EMISSIONS (EQUIPMENT INPUT CURRENT UP TO AND INCLUDING 16A PER PHASE)
EN 61000-3-3, JULY 1995: **EN 61000-3-3/A1, JUNE 2001**:	ELECTROMAGNETIC COMPATIBILITY (EMC) PART 3 : LIMITS SECTION 3: LIMITATION OF VOLTAGE FLUCTUATIONS AND FLICKER IN LOW-VOLTAGE SUPPLY SYSTEMS FOR EQUIPMENT WITH RATED CURRENT <= 16A

Lippo di Calderara, October 29th, 2008

Lorenzo Girotti
Product & Process Quality Manager