

# **DATALOGIC**

## **PWR-480B**

### **INSTALLATION MANUAL**





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PWR-480B Installation Manual

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# SAFETY REGULATIONS

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## 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.



**WARNINGS or CAUTIONS:** This symbol identifies a hazard or procedure that, if incorrectly performed, could cause personal injury or result in equipment damage. It is also used to bring the user's attention to details that are considered IMPORTANT. **Operations having this symbol must be performed by qualified personnel only.**



**HIGH VOLTAGE CAUTION:** This symbol alerts the user they are about to perform an action involving, either a dangerous level of voltage, or to warn against an action that could result in damage to devices or electrical shock.

The AC Socket Label appears as follows:

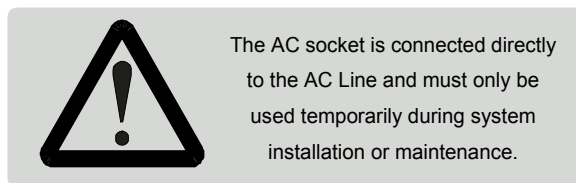


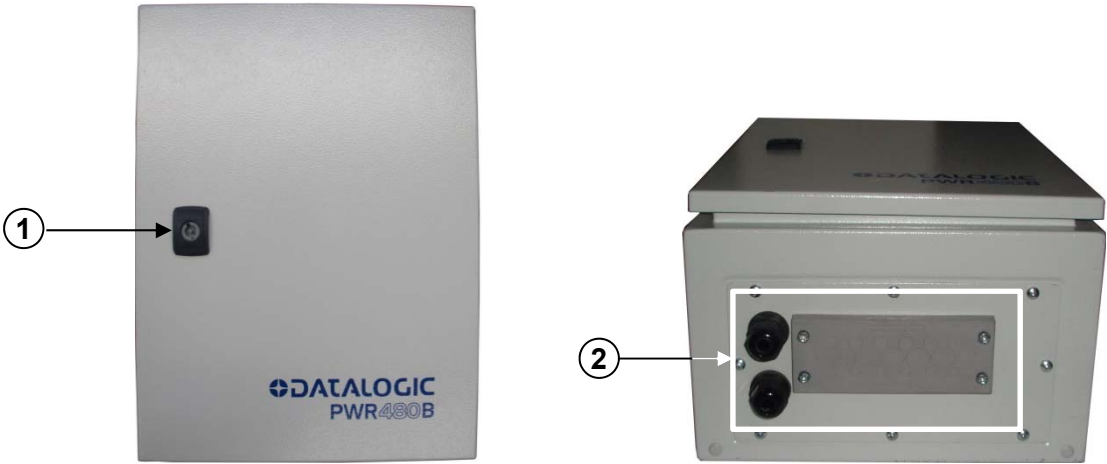
Figure 1 – AC Socket Label

## SUPPORT THROUGH THE WEBSITE

Datalogic provides several services as well as technical support through its website. Log on to [www.datalogic.com](http://www.datalogic.com) and click on the **Industrial Automation links** for further information:

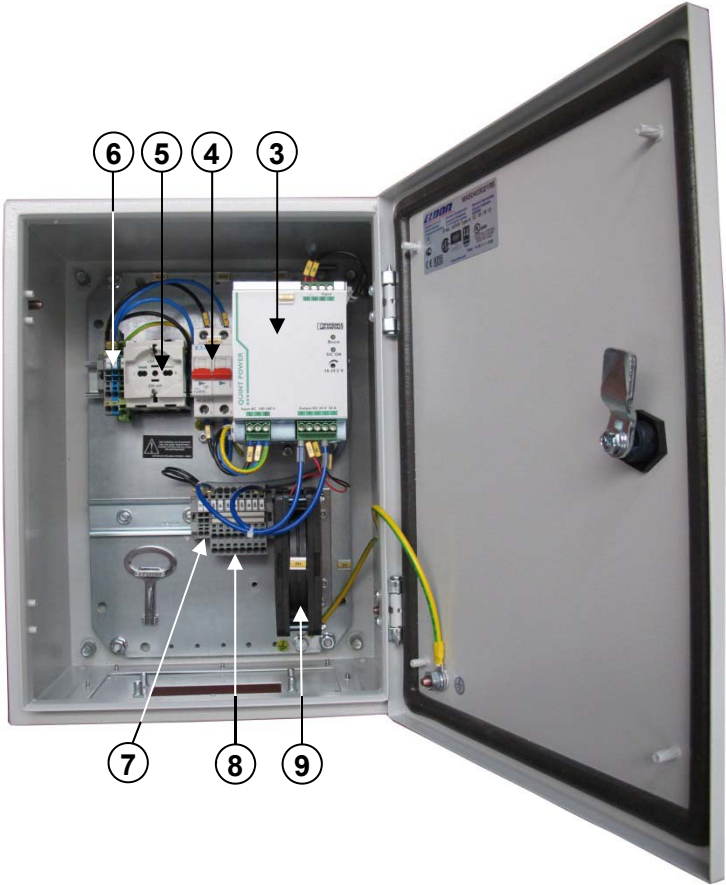
- **PRODUCTS – FIXED INDUSTRIAL BARCODE READERS**  
Select your product from the links on the **Fixed Industrial Barcode Readers** page. The product page describes specific Info, Features, Applications, Models, Accessories, and Downloads including documentation, software drivers, and utility programs.
- **SUPPORT & SERVICES – INDUSTRIAL AUTOMATION**  
Several links from the **Industrial Automation** list take you to additional services such as: Service Program which contains Maintenance Agreements and Warranty Extensions; Repair Centers; On-Line RMA Return Material Authorizations; Technical Support through email or phone; Downloads for additional downloads.

# GENERAL VIEW



① Key Lock                      ② Cable Entry Plate and AS-I Cable Compression Connectors

**Figure 2 - PWR-480B Closed View**



③ Monophase Switching Power Supply                      ⑦ "DC OK" Terminal Block  
 ④ Thermo-magnetic breaker switches                      ⑧ 24 Vdc Terminal Block  
 ⑤ AC Socket (for temporary use only)                      ⑨ Cooling Fan  
 ⑥ AC Line Input Terminal Block

**Figure 3 – PWR-480B Open View**

# GUIDE TO INSTALLATION

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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 cabling to the PWR using the AS-I cable wiring instructions for backbone and branch wiring (see par. 1.3.2 and your scanner manual for details). All cables must pass through the cable entry plate and the AS-I cable compression connectors.

#### Directly to NLS9000

Connect the NLS9000 Illuminator to the PWR by means of the appropriate cables (see par. 1.3.4 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-480B ELECTRICAL DIAGRAM

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

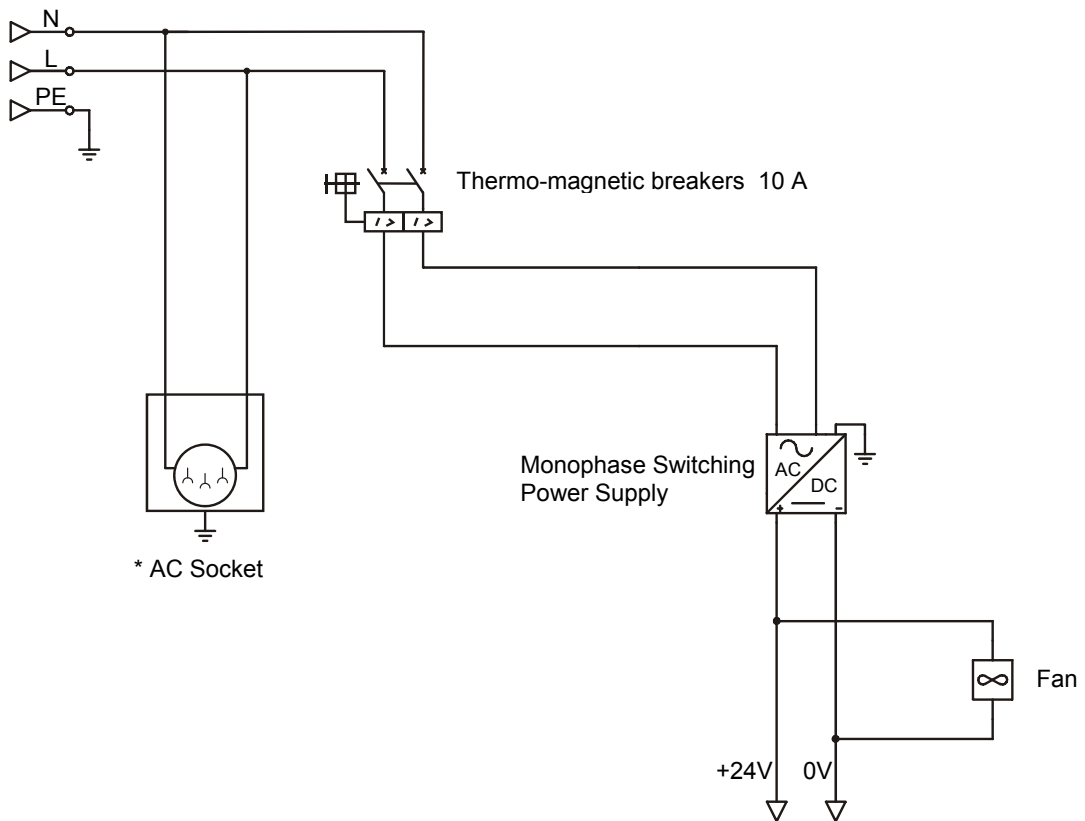


Figure 4 - PWR-480B Electrical Diagram



**CAUTION:** \* The AC socket is directly connected to the AC line and must only be used temporarily during system installation or maintenance.

## 1.2 CABLE INSERTION

The Cable Entry Plate and the AS-I Cable Compression Connectors have protection capability of IP65.

### 1.2.1 Cable Entry Plate

Follow these instructions to correctly insert the cables:

- 1) Determine the number and size of the cables coming into and leaving the PWR-480B.
- 2) Locate the correct entry hole sizes and positions relative to these cables.
- 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

### 1.2.2 AS-I Cable Compression Connectors

Prepare the AS-I cable by stripping the wires and inserting first the compression connector nut, then the AS-I cable sealing grommet.





### 1.3 ELECTRICAL CONNECTIONS

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

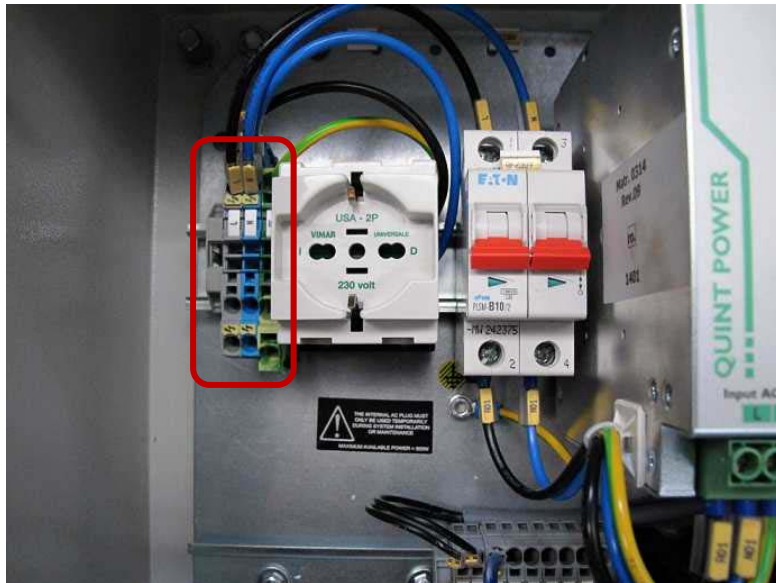


Figure 5 – PWR-480B AC Input Power Connections

The terminal block also provides two wiring terminals (13-14), which monitor the status of the switching power supply (DC OK feature). When the power supply module runs correctly, lines 13 and 14 form a normally closed contact. If the power module experiences problems (i.e. output overload causing output voltage to be reduced by less than 90% of nominal) these lines open. Lines 13 and 14 are decoupled from the power output lines and can be connected to a free digital input to signal this alarm condition.

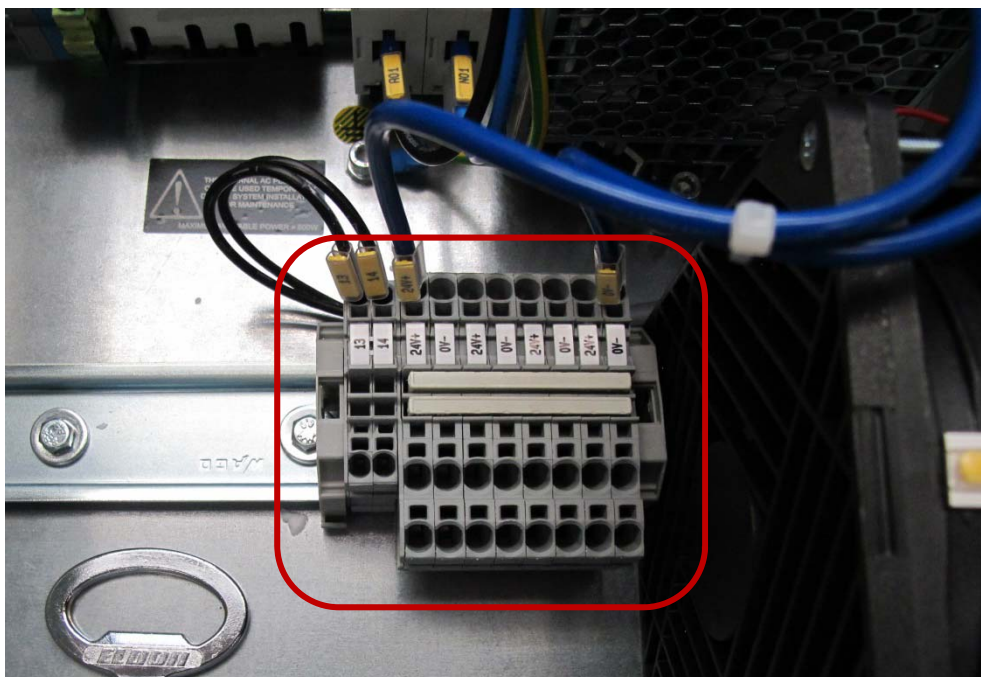


Figure 6 – PWR-480B DC Output Power Connections

### 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-480B power supply shall comply with the National Electric Code ANSINFPFA.

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-480B.

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 socket can only be used temporarily during installation or maintenance procedures.



Figure 7 – PWR-480B AC Line Terminal Block with Protection Covers



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

### 1.3.2 Supply Capacity When Wiring Directly to AS-I Compatible Scanners

For direct wiring, power distribution is performed simultaneously for all the scanners. However all the scanner motors start up slowly so that there is no significant peak current draw. See the specific scanner manual for consumption data.

The maximum number of scanners to be supplied for direct wiring is shown in the table below and also depends on the wiring topology:

PWR-480B Power Supply	Maximum Number of Scanners by Topology		
	Triple Branch	Ring	Single Branch
DS8110	24	19	9

The power supply unit is connected directly to the scanners via AS-I cabling.

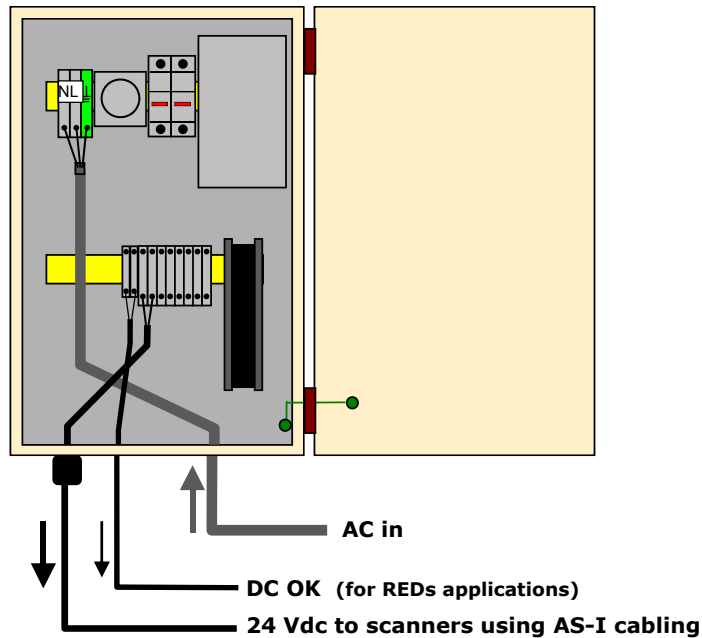


Figure 8 - Connecting PWR-480B Directly to Scanners

Refer to the specific scanner manual for I/O interface wiring connections.

### 1.3.3 DS8110 AS-I Wiring Topology

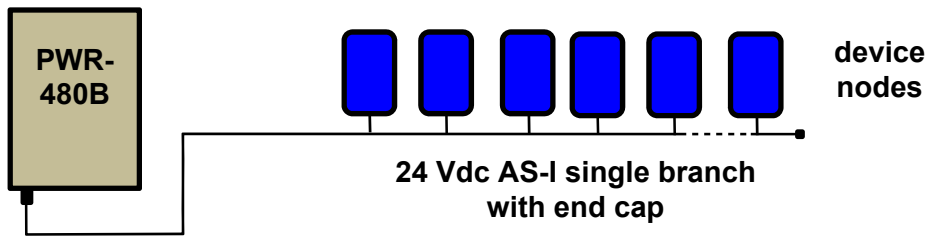


Figure 9 – Single Branch Topology

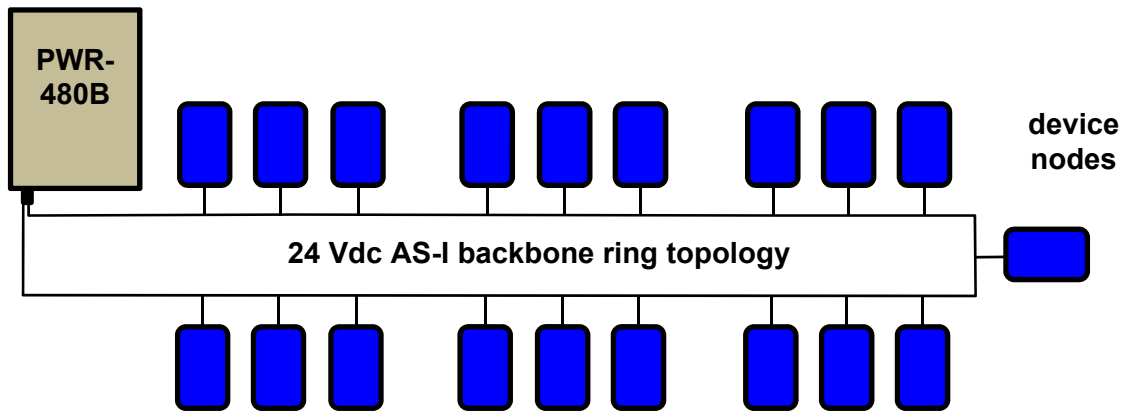


Figure 10 - Ring Topology

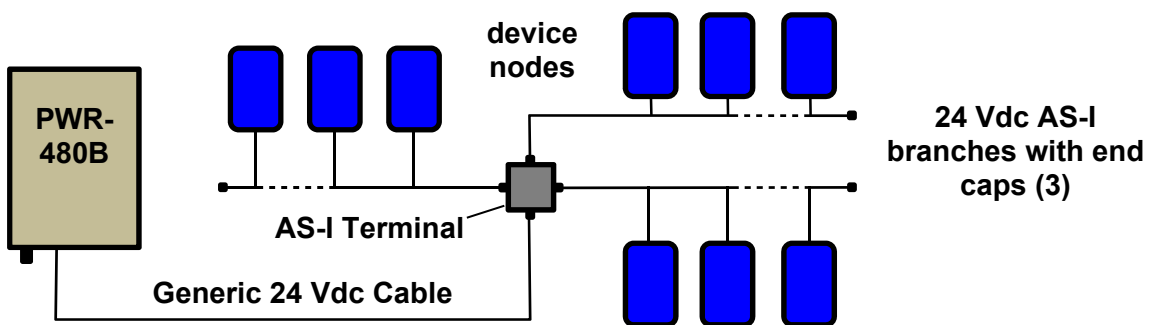


Figure 11 – Triple Branch Topology

### 1.3.4 Supply Capacity When Wiring Directly to Lonworks Scanners

For direct wiring, power distribution is performed simultaneously for all the scanners. However all the scanner motors start up slowly so that there is no significant peak current draw. See the specific scanner manual for consumption data.

The maximum number of scanners to be supplied for direct wiring is shown in the table below and also depends on the wiring topology:

PWR-480B Power Supply	Maximum Number of Scanners by Topology <sup>1</sup>	
	Ring	Single Branch
DX8200A	6	3
DS8100A	8	4
DX6400	10	5
DS6400 / DS6300	12	6

The power supply unit is connected directly to the scanners through Lonworks cables.

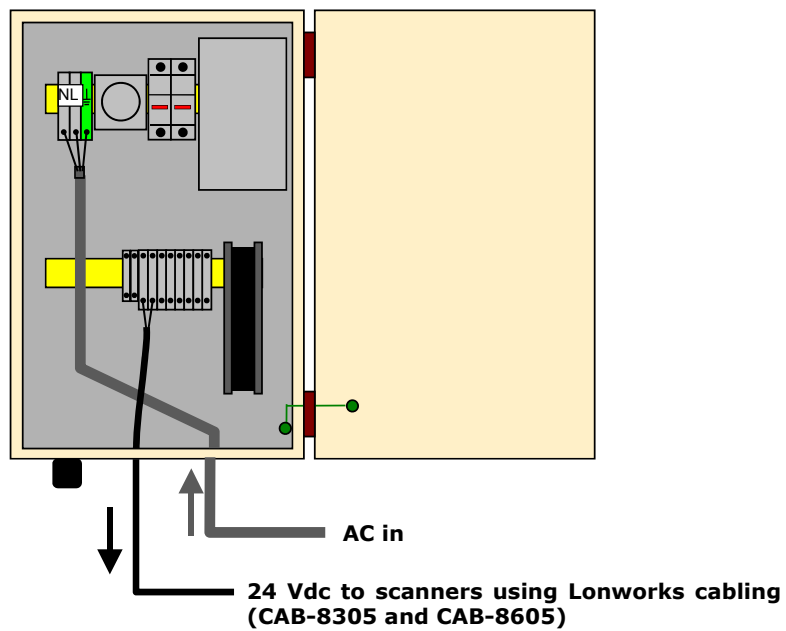


Figure 12 - Connecting PWR-480B Directly to Lonworks Scanners

Refer to the specific scanner manual for I/O interface wiring connections.

<sup>1</sup> Alternative or custom wiring solutions can be provided by Technical Service if it is necessary to increase the maximum number of scanners.

### 1.3.5 Supply Capacity When Wiring to NLS9000s

For the NVS9000 cameras the power consumption depends on 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-480B 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):

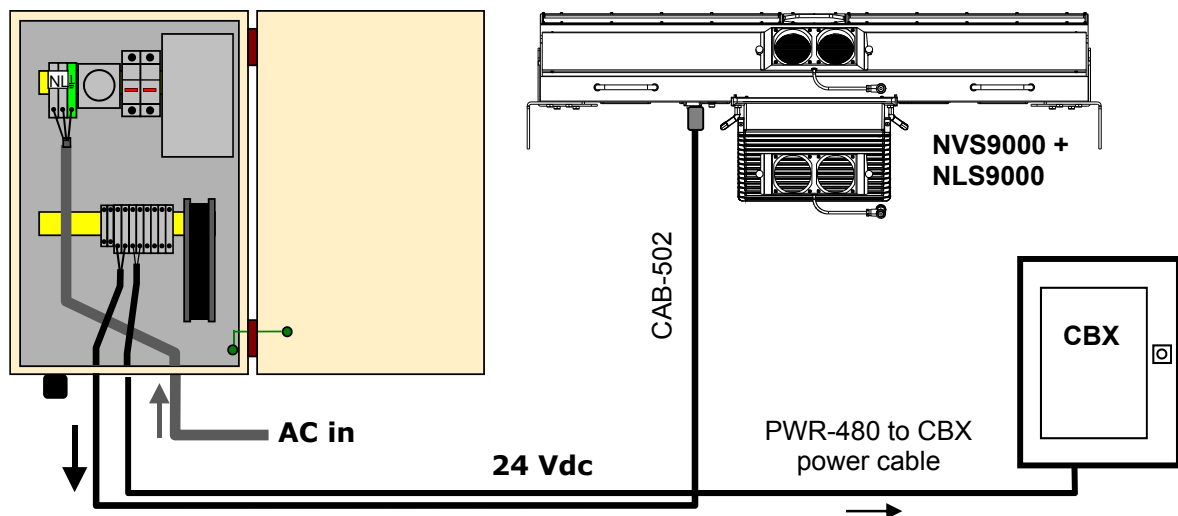


Figure 13 - Connecting PWR-480B to NLS9000 Illuminator

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-480 to CBX power cable

For further details see the NVS9000 Installation Manual.

## 2 TECHNICAL FEATURES

<b>ELECTRICAL FEATURES</b>	<b>PWR-480B</b>
Input Voltage	AC from 100 to 240 V $\pm$ 15% from 45 to 65 Hz
Current Consumption	5.1 A @ 120 Vac 2.3 A @ 230 Vac
Output Voltage	24 Vdc (adjustable 18-29.5 Vdc)
Nominal Output Current	20 A
Maximum Output Current	26 A (up to 40 °C)
<b>ENVIRONMENTAL FEATURES</b>	
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*
<b>PHYSICAL FEATURES</b>	
Mechanical Dimensions	400 x 300 x 210 mm (15.8 x 11.8 x 8.3 in)
Weight	about 12 kg (26.5 lbs)

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

**Datalogic Automation S.r.l.**

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[www.automation.datalogic.com](http://www.automation.datalogic.com)

*declares that the*

**PWR-480B; Power Supply**

*and all its models*

*are in conformity with the requirements of the European Council Directives listed below:*

**2004 / 108 / EC EMC Directive  
2006/95/EC Low Voltage Directive**

---

*This Declaration is based upon compliance of the products to the following standards:*

**EN 61000-6-3, SEPTEMBER 2007:**

*ELECTROMAGNETIC COMPATIBILITY (EMC) - PART 6-3: GENERIC STANDARDS - EMISSION STANDARD FOR RESIDENTIAL, COMMERCIAL AND LIGHT-INDUSTRIAL ENVIRONMENTS*

**EN 61000-6-2, SEPTEMBER 2005:**

*ELECTROMAGNETIC COMPATIBILITY (EMC)  
PART 6-2: GENERIC STANDARDS - IMMUNITY FOR INDUSTRIAL ENVIRONMENTS*

**EN 60950-1, APRIL 2006 :**

*INFORMATION TECHNOLOGY EQUIPMENT - SAFETY -*

**EN 60950-1/A11, MARCH 2009 :**

*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 :**

*ELECTROMAGNETIC COMPATIBILITY (EMC)*

**EN 61000-3-3/A1, JUNE 2001 :**

*PART 3 : LIMITS SECTION 3: LIMITATION OF VOLTAGE FLUCTUATIONS AND FLICKER IN LOW-VOLTAGE SUPPLY SYSTEMS FOR EQUIPMENT WITH RATED CURRENT <= 16A*

Monte San Pietro, October 10th, 2014

Paolo Morselli  
Quality Manager

