



**PWR-240/PWR-480**

# **INSTALLATION MANUAL**





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PWR-240/PWR-480 Installation Manual

Ed.: 04/2008

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# CONTENTS

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	<b>SAFETY REGULATIONS .....</b>	<b>iv</b>
	<b>SERVICES AND SUPPORT .....</b>	<b>iv</b>
	<b>GENERAL VIEW .....</b>	<b>v</b>
	<b>GUIDE TO INSTALLATION .....</b>	<b>vi</b>
<b>1</b>	<b>INSTALLATION .....</b>	<b>1</b>
1.1	PWR-240/PWR-480 Electrical Diagram .....	1
1.2	Electrical Connections .....	2
1.2.1	Input Line Voltage .....	3
1.2.2	Supply Capacity When Wiring Directly to Scanners .....	4
1.2.3	Supply Capacity When Wiring to SC8000 .....	5
<b>2</b>	<b>TECHNICAL FEATURES.....</b>	<b>6</b>

# 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.



**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:

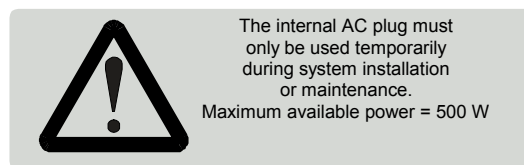


Figure 1 – AC Plug Label

## SERVICES AND SUPPORT

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Datalogic provides several services as well as technical support through its website. Log on to **[www.automation.datalogic.com](http://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

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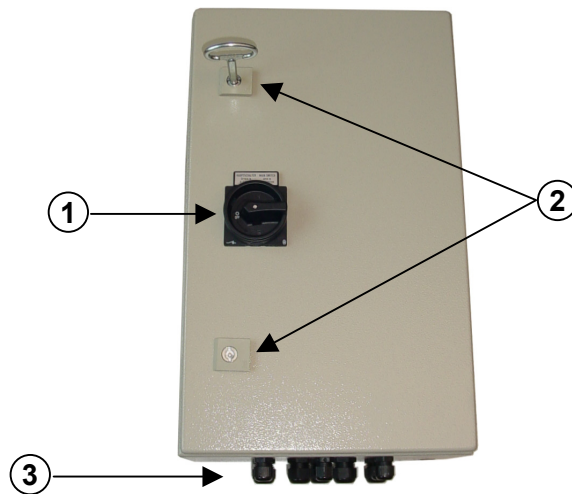


Figure 2 - PWR-240/PWR-480 closed view

- ① Main Switch                      ③ Glands
- ② Key Locks

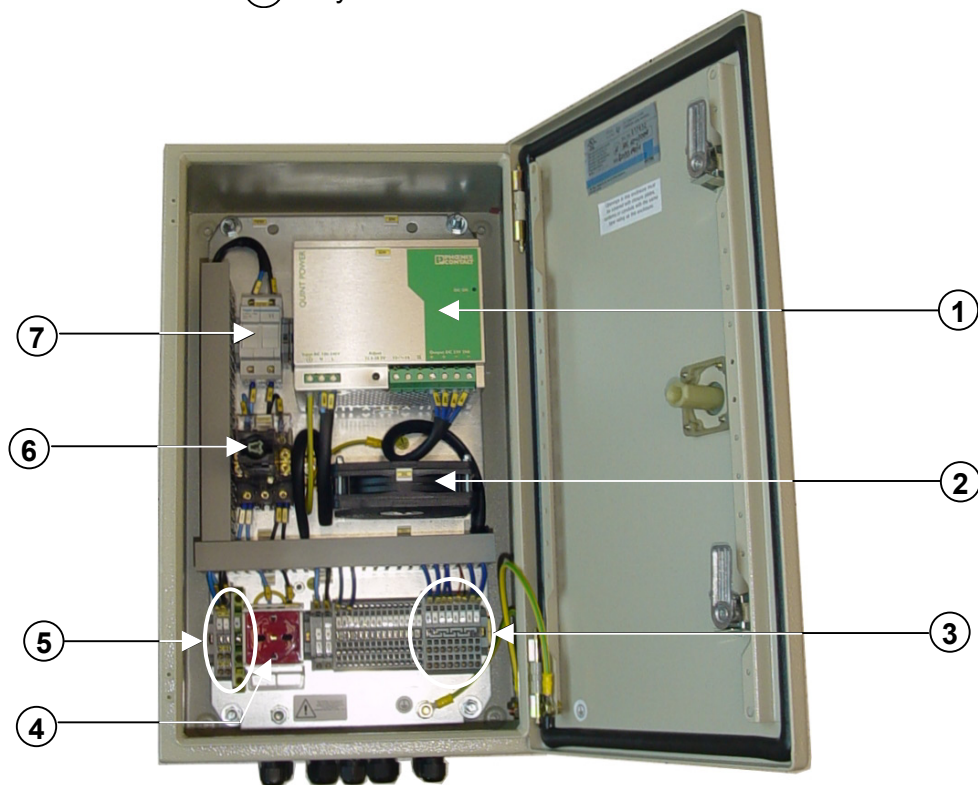


Figure 3 – PWR-240/PWR-480 open view

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

## 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) With AC line voltage OFF, wire the AC Line input to the PWR AC Terminal Block see par. 1.2.1.
- 4) 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. 1.2.2 and your scanner manual for details. All system cables must pass through the glands.  
  
    With SC8000  
    Connect the SC8000 Controller to the PWR by means of the appropriate cables (see par. 1.2.3 and the SC8000 manual for details). All cables must pass through the glands.
- 5) Close and lock the PWR enclosure.
- 6) 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-240/PWR-480 ELECTRICAL DIAGRAM

The PWR-240/PWR-480 components are electrically connected as displayed in the following diagram:

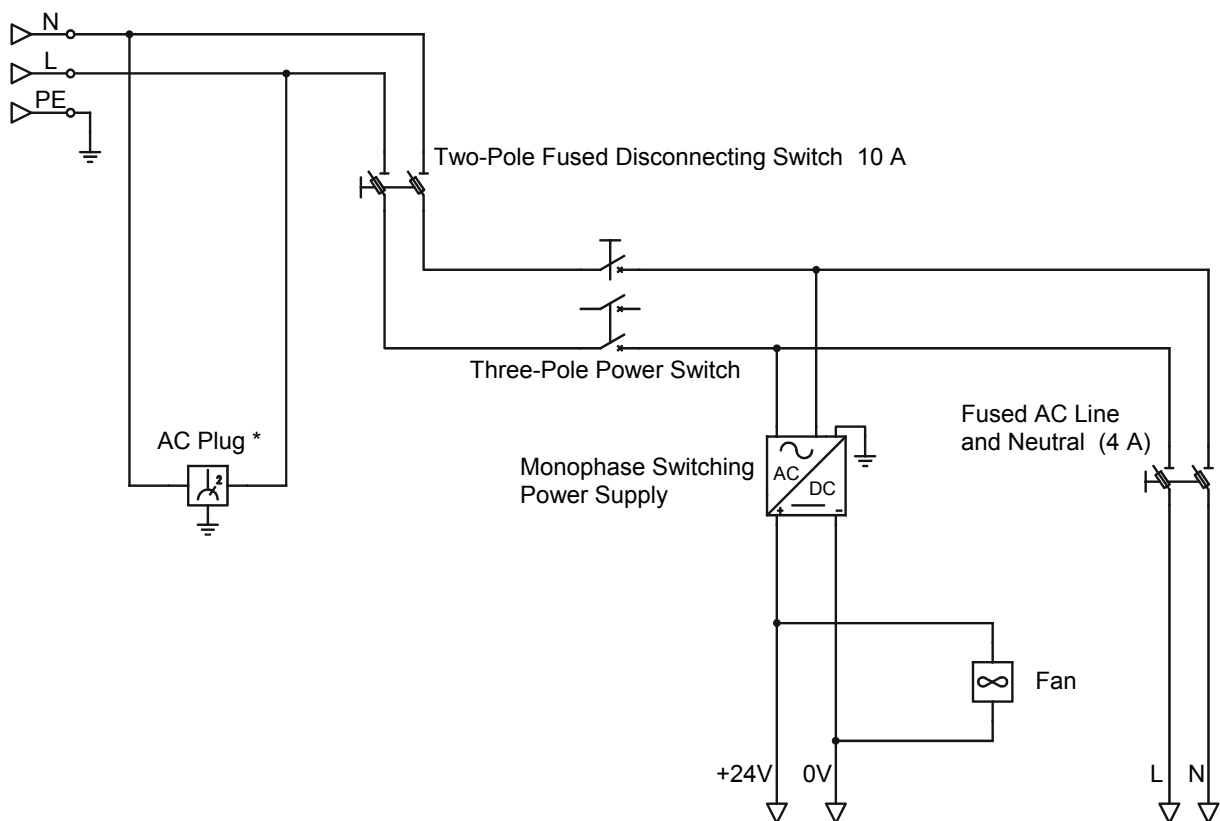


Figure 4 - PWR-240/PWR-480 Electrical Diagram



CAUTION

\* *The AC plug must only be used temporarily during system installation or maintenance. The maximum power is 500 W.*

## 1.2 ELECTRICAL CONNECTIONS

The PWR-240/PWR-480 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.

For connection to the SC8000 Controller, only the 24 V DC low voltage output is necessary.

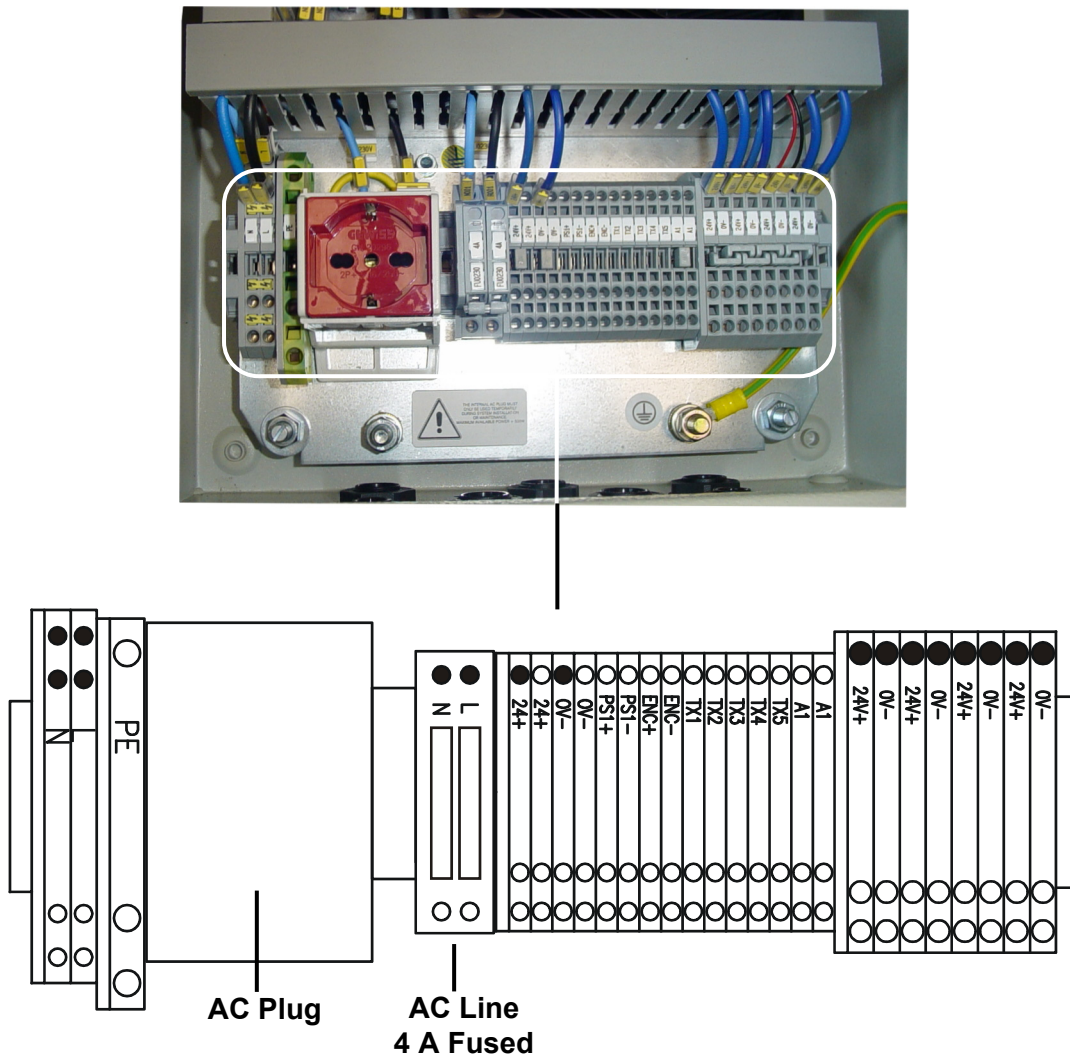


Figure 5 – PWR-240/PWR-480 Terminal Block



### 1.2.1 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-240/PWR-480 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-240/PWR-480.

The AC input cable must be inserted through one of the Glands 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.

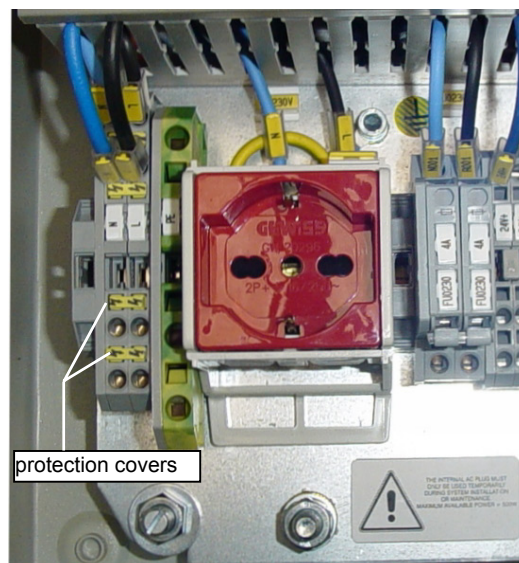


Figure 6 – PWR-240/PWR-480 AC Line Terminal Block with Protection Covers

### 1.2.2 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.

#### PWR-240:

The maximum peak power propagated is  $24\text{ V} \times 15\text{ A} = 360\text{ W}$ , while the steady state (normal) power is  $24\text{ V} \times 10\text{ A} = 240\text{ W}$ .

#### PWR-480:

The maximum peak power propagated is  $24\text{ V} \times 26\text{ A} = 624\text{ W}$ , while the steady state (normal) power is  $24\text{ V} \times 20\text{ A} = 480\text{ W}$ .

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

Power Supply Unit	Maximum Number of Scanners					
	DS6000	DX6000	DS8100A	DX8200A	DS8100*	DX8200*
PWR-240	12	10	8	6	4	3
PWR-480	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.

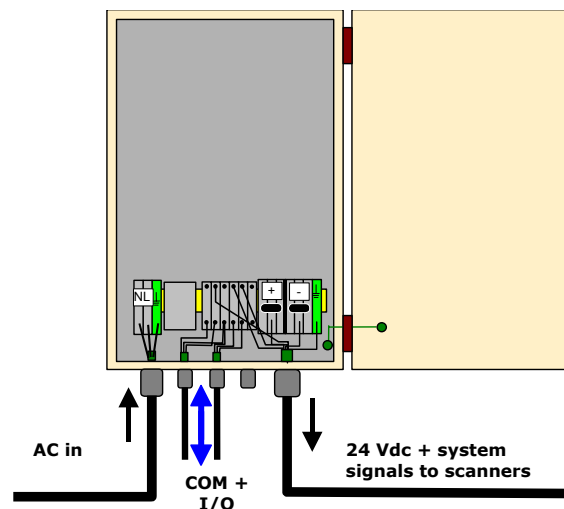


Figure 7 - Connecting PWR-240/PWR-480 Directly to Scanners

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.

### 1.2.3 Supply Capacity When Wiring to SC8000

For the SC8000 Industrial Controller the power consumption is 36 W (+ an additional 68 W only if the temperature drops below 4 °C).

Power distribution to the scanners is performed by the SC8000 junction box. The SC8000 turns on the scanners one by one in a definite sequence so that simultaneous motor start-up is avoided. In this way the PWR unit can supply power to a greater number of scanners. See the specific scanner manual for consumption data.

#### **PWR-240:**

The maximum peak power propagated is  $24\text{ V} \times 15\text{ A} = 360\text{ W}$ , while the steady state (normal) power is  $24\text{ V} \times 10\text{ A} = 240\text{ W}$ .

#### **PWR-480:**

The maximum peak power propagated is  $24\text{ V} \times 26\text{ A} = 624\text{ W}$ , while the steady state (normal) power is  $24\text{ V} \times 20\text{ A} = 480\text{ W}$ .

Due to these limits, the maximum number of scanners to be supplied when using the SC8000 Controller is:

Power Supply Unit	Maximum Number of Scanners + SC8000	
	DS8100*	DX8200*
PWR-240	6	5
PWR-480	14	12

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

The power supply unit is connected to the SC8000 external junction box according to the following diagram (power supply side):

Only two glands on the power supply unit are utilized, AC Line Input and 24 V DC Output.

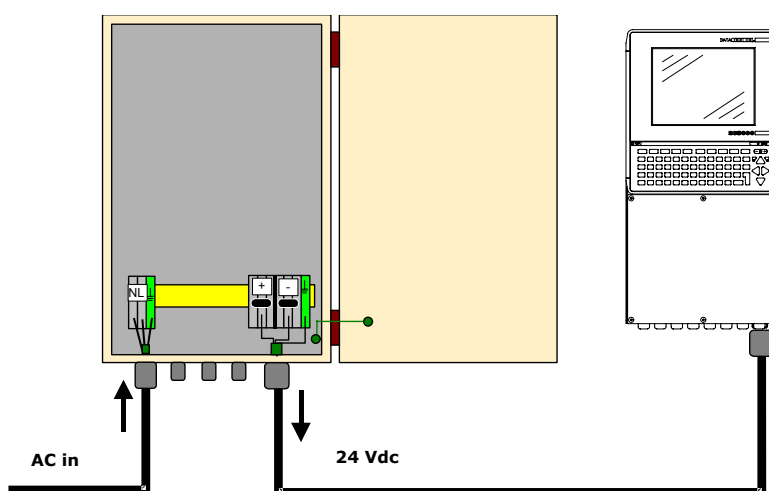


Figure 8 - Connecting PWR-240/PWR-480 to SC8000

On the SC8000 Junction Box side, the Low Voltage Output cable must be terminated with the special connector supplied together with the SC8000 (see the SC8000 Installation Manual, paragraph 2.3.1).

## 2 TECHNICAL FEATURES

ELECTRICAL FEATURES	PWR-240	PWR-480
Input Voltage	AC from 85 to 264 V from 45-65 Hz	
Input Current	3.27 A @ 85 V 1.02 A @ 264 V	6.73 A @ 85 V 2.12 A @ 264 V
Nominal Output Current	10 A	20 A
Maximum Output Current	15 A (up to +40 °C)	26 A (up to +40 °C)
Output Voltage	24 VDC ± 1%	
Output Noise Suppression	Radiated EMI values below EN50081-1, even when using long, unscreened output cables	
ENVIRONMENTAL FEATURES		
Operating temperature	-25° to +50 °C (-13° to +122°F)	
Storage temperature	-40° to +85 °C (-40° to 185 °F)	
Humidity	90% non condensing	
Protection Class	IP65*	
PHYSICAL FEATURES		
Mechanical Dimensions	500 x 300 x 210 mm (19.7 x 11.8 x 8.3 in)	
Weight	about 14.6 kg (32 lbs)	about 15.9 kg (35 lbs)

\* when all unused glands are plugged with the appropriate gland plugs.

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**PWR-XXX Power Supply Unit**

e tutti i suoi modelli  
 and all its models  
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 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:

<b>89/336/EEC EMC Directive</b>	e	<b>92/31/EEC, 93/68/EEC</b>	emendamenti successivi
	and		further amendments
	et		ses successifs amendements
	und		späteren Abänderungen
	y		sucesivas 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:**

INFORMATION TECHNOLOGY EQUIPMENT - SAFETY -

**EN 60950-1/A11, April 2004:**

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

Lippo di Calderara, January 29th, 2008

Lorenzo Girotti  
 Product & Process Quality Manager

