

Ellipse™ 1000/2000 Installation Guide

This guide provides detailed instructions for installing the Ellipse Series of Contribution Encoders.

Topics:

- [General Directives](#)
- [Installation Instructions](#)
- [Powering Up and Initialization](#)

General Directives

Safety Precautions

To avoid injury and prevent equipment damage, observe the following safety precautions:

- Do not move or ship equipment unless it is correctly packed in its original wrapping and shipping containers.
- Only Harmonic trained personnel can undertake equipment service and maintenance.
- To prevent damage by lightning, ground the unit according to local regulations.
- Do not permit unqualified personnel to operate the unit.

Power Supply to the Unit

To ensure correctly and safely operation of the unit, the following are required:

- Adding to the system a UPS (Uninterrupted Power Supply) and an AVR (Automated Voltage Regulator) is highly recommended.
- Installing the main power supply by a qualified electrician, according to power authority regulations. Make sure all powering are wired with an earth leakage, according to local regulations.
- It is recommended to install the encoder within 1.5m (approx. 5 feet) from an easily accessible grounded AC outlet.
- When the encoder is rack-mounted, ensure that the rack is correctly grounded.



DANGER: Ensure that the rack is correctly grounded by a qualified electrician. Incorrectly grounded equipment may result in electrical shock.

Inventory Check

Before installation, ensure that all the equipment and the attached parts are available and undamaged, according to the following list:

Item	Quantity
Ellipse Series of Contribution Encoders	1 Unit
Ellipse User Guide	1 CD
RJ-45 to DB9 converter	1 unit



CAUTION: If anything is missing or damaged, do not continue with the installation.

Installation Instructions

This section explains the mechanical installation of an Ellipse unit in a standard equipment rack.

Installing the Unit in a Rack



NOTE: For rack installation, ensure that a designated 19" rack is fully prepared for installation. Ensure sufficient space behind the rack for easy access for installation and maintenance.

The following sections detail the installation of an Ellipse unit in a 19" rack using the dedicated mounting slides.

Installing the Brackets

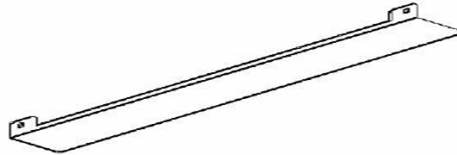
To prepare the Ellipse for rack installation:

1. Fasten a pair of brackets to both side rails of the rack housing by using two flat washer screws for each side.
2. Use the two front holes at the sides of the housing to attach the bracket. (Complementing nuts are already installed on the inner side of the holes, but the four screws required are not included in the supplied kit).
3. Ensure proper grounding of the rack assembly to prevent potential electrical problems (See [Rack Grounding Connection](#) for details on grounding the unit to a rack mount).

Installing the L Shape Slides

The Ellipse uses forced air ventilation, evacuating the air toward the left side panel (left wall) of the 19" rack. To ensure smooth airflow, special L shape slides are provided for rack mounting. To install the L shape slides:

1. Ensure that the brackets are fastened with appropriate screws to each side of the chassis' rails.



2. Attach the L shape slides to the installed brackets.
3. Fasten the L shape slides with four screws (not included in the kit)

Mounting Ellipse units in the 19" Rack



DANGER: To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety.

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- If the rack will hold a number of units, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.



ATTENTION: Pour éviter toute blessure corporelle pendant les opérations de montage ou de réparation de cette unité en casier, il convient de prendre des précautions spéciales afin de maintenir la stabilité du système. Les directives ci-dessous sont destinées à assurer la protection du personnel.

- Si cette unité constitue la seule unité montée en casier, elle doit être placée dans le bas.
- Si cette unité est montée dans un casier partiellement rempli, charger le casier de bas en haut en plaçant l'élément le plus lourd dans le bas.
- Si le casier est équipé de dispositifs stabilisateurs, installer les stabilisateurs avant de monter ou de réparer l'unité en casier.



WARNUNG: Zur Vermeidung von Körperverletzung beim Anbringen oder Warten dieser Einheit in einem Gestell müssen sie besondere Vorkehrungen treffen, um sicherzustellen, daß das System stabil bleibt. Die folgenden Richtlinien sollen zur Gewährleistung Ihrer Sicherheit dienen.

- Wenn diese Einheit die einzige im Gestell ist, sollte sie unten im Gestell angebracht werden.
- Bei Anbringung dieser Einheit in einem zum Teil gefüllten Gestell ist das Gestell von unten nach oben zu laden, wobei das schwerste Bauteil unten im Gestell anzubringen ist.
- Wird das Gestell mit Stabilisierungszubehör geliefert, sind zuerst die Stabilisatoren zu installieren, bevor sie die Einheit im Gestell anbringen oder sie warten.



NOTE: The maximum number of encoders per a 19"/42U rack is 35 (seven groups of five units).



CAUTION: Ensure that a sufficient amount of airflow enters the Ellipse from the left end (from the front panel point of view).



NOTE: Consider if other devices in the rack use airflow in the opposite direction.



To mount the 19"/42U rack with the Ellipse units:

1. Verify using of appropriate brackets and L shape slides according to [Installing the Brackets](#) and [Installing the L Shape Slides](#).
2. Mount the Ellipse in groups of five units (maximum) upon each pair of brackets.
3. Leave one-unit-space between each group of five units.

Electrical Power Installation



DANGER: The unit should be installed by a qualified electrician to a grounded socket outlet. If the unit is rack mounted, ensure that the unit is grounded to the rack and the rack is correctly grounded. Do not connect power to the unit until you have verified that the line voltage is correct. Failure to do so may result in electrical shock.



CAUTION: This product relies on the building's electrical installation for short-circuit (overcurrent) protection. Ensure that a fuse or circuit breaker no larger than 120 VAC, 20 A U.S. (240 VAC, 20 A international) is used on the phase conductors (all current-carrying conductors).



ATTENTION: Pour ce qui est de la protection contre les courts-circuits (surtension), ce produit dépend de l'installation électrique du local. Vérifier qu'un fusible ou qu'un disjoncteur de 120 V alt., 20 A U.S. maximum (240 V alt., 20 A international) est utilisé sur les conducteurs de phase (conducteurs de charge).



WARNUNG: Dieses Produkt ist darauf angewiesen, daß im Gebäude ein Kurzschluß- bzw. Überstromschutz installiert ist. Stellen sie sicher, daß eine Sicherung oder ein Unterbrecher von nicht mehr als 240 V Wechselstrom, 20 A (bzw. in den USA 120 V Wechselstrom, 20 A) an den Phasenleitern (allen stromführenden Leitern) verwendet wird.

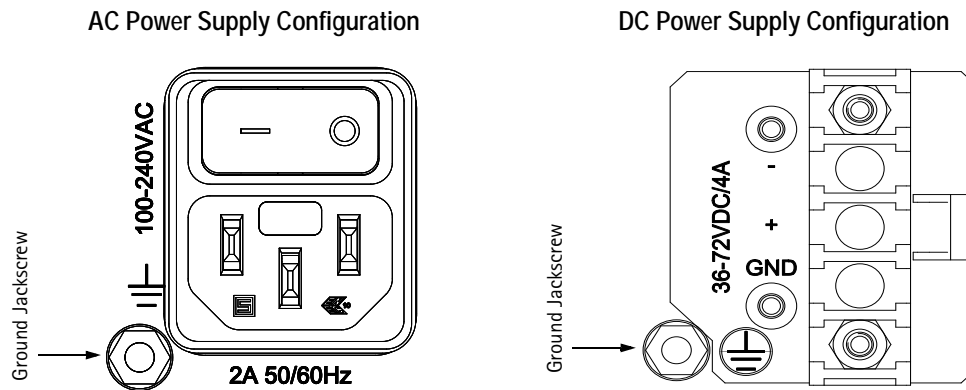
The Ellipse Encoders support either AC or DC power compatibility. Power and ground connections for each option are detailed in the following sections.

Rack Grounding Connection

When the Ellipse is rack mounted, the unit grounding jackscrew must be connected to the rack housing, which in turn must be correctly grounded.



DANGER: The GROUND STUD connection to the stud on the unit rear is the first to connect and the last to disconnect.



AC Power and Ground Connections

Connecting an AC power cable to the Ellipse AC connector to ground the encoder.



NOTE: The AC powered unit should be powered by a power supply cord, approved by related country's national electric safety codes for 18AWG three wire cords. The unit should be installed by a qualified electrician to a grounded socket outlet.

DC Power and Ground Connections

The -48 DC power and ground connections to the encoder must be supplied by an external 48V DC power supply.

The external power-source connects to the contacts on the power terminal board:

- (+) 48V DC to the (+) contact.
- (-) 48V DC to the (-) contact.
- Grounding wire to the (GND) contact.



CAUTION: The DC powered unit should be protected with a dual poles branch circuit over-current protection rated max. 20Amp, located in a easy access place. The unit is intended for RESTRICTED ACCESS LOCATION (otherwise, DC terminals should be guarded to make them not accessible to operator). The DC power conductors including protective grounding conductor shall be rated min. 18AWG (0.8mm²)

Cable Connections

All Ellipse connectors are located on the rear panel. Connect the data, control and power cables as required for the specific installation.

Powering Up and Initialization

Prior to powering up the Ellipse, ensure that all cabling is correctly connected (see [Electrical Power Installation](#) on page 4). Verify that the unit is connected to the main power supply and grounded according to the instructions.

Upon power-up, the user will hear the internal fan begin operation and see the front panel LCD display activated.

Once the Ellipse is powered up, the unit begins an automatic initialization procedure, which includes loading of the embedded system parameters. This process takes approximately 30 seconds.