

# Owner's Manual

## Medical-Grade (IEC 60601-1) Cat6 Isolator

Model: N234-MI-1005

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## **Package Contents**

- N234-MI-1005
- Quick Start Guide

## **Optional Accessories**

- N201-Series Cat6 Gigabit Snagless Patch Cable
- N202-Series Cat6 24 AWG Solid Wire Patch Cable
- N125-Series Gigabit Molded Shielded Patch Cable

## **General Safety Instructions**

- Before use, the following section should be read carefully and in its entirety.
- The N234-MI-1005 should only be installed and put into operation by qualified and trained personnel.
- Do not open the housing. There are no serviceable parts inside. Faulty or defective devices must be exchanged and returned to the manufacturer.

## General Safety Instructions

- Before starting the N234-MI-1005, make sure your medical appliance/systems permit coupling with sufficient galvanic isolation to the local network (LAN) or to another computer.

### Location

- During installation, ensure the N234-MI-1005 is protected from moisture, high humidity and mechanical damage. The unit should not be operated in close proximity to atmospheres with combustible composites.
- The N234-MI-1005 should also not be operated in close proximity to devices that emit electromagnetic radiation so as to avoid electromagnetic interference (e.g. mobile phones). Avoid potential interference by operating the N234-MI-1005 outside of environments with electromagnetism.
- Do not use this equipment within oxygen-enriched atmospheres, or within 0.3 m (1 ft.) of a point at which an oxygen-enriched atmosphere is intentionally vented.

## **General Safety Instructions**

### **Connection**

When connecting the N234-MI-1005 Medical Isolator, note that:

- You cannot connect any telecommunication appliances, voltage supplies or similar to the N234-MI-1005. By doing so, both the N234-MI-1005 and personnel could be harmed.
- You can only connect network components complying with IEEE 802.3 or IEEE 802.3ab (10/100/1000BASE-T, Twisted-Pair) to the N234-MI-1005.
- You use, without exception, tested and approved Cat6 network cable with appropriate test mark.

### **Environmental Protection**

For disposal of the N234-MI-1005, stipulations subject to public law may involve special instructions. Before final decommissioning of the appliance, contact the manufacturer.

## Intended Use

The N234-MI-1005 is an appliance specially developed for use in medical technology. The purpose of the N234-MI-1005 is to connect in compliance with electrical safety standards IEC 60601-1 and EMC/IEC 60601-1-2 a medical appliance or system equipped with a network interface to a non-medical appliance or system (single PC or local network).

Examples for using the N234-MI-1005 include:

- Connection to the practice or clinic networks with the PC of a prolonged EEG system.
- Connection to an analysis computer in the doctor's or consulting room with an EMG measuring station.

The last bullet point in the **General Safety Instructions** section is to be observed for this.

## Installation

Only qualified and trained personnel should connect the N234-MI-1005. Please instruct your network systems administrator or medicine technology department for this purpose. The installation of the N234-MI-1005 is performed by way of the two pluggable connections (RJ45 jacks). Plug the network connection cable into the socket of the N234-MI-1005 until the lock engages with an audible click sound. Installation of the N234-MI-1005 should be performed near the medical appliance/system. Make sure the safety information in the **Connection** section of General Safety Instructions is followed.

## Maintenance

To maintain a safe technical condition, an annual inspection is recommended. Review and perform the following checks:

1. Examine unit for external damage (housing, network connections, legibility of labeling, dirt, etc.).
2. Examine unit for any substance penetration inside of the unit (in particular, moisture).
3. Perform a function test.
4. Perform an isolation test. The isolation resistance of the N234-MI-1005 should not exceed 20 MOhms. During testing, all data cables at both connections should be shut down. The screen also should be shut down. The isolation resistance should be measured between signal entry and signal exit.
5. Review the availability and sufficiency of the documents.

**Should any deficiency be found during a test, the N234-MI-1005 should not be used any longer, as the safety of the patients and the operator cannot be guaranteed.**

If in doubt, please contact your supplier or the manufacturer.

## **Cleaning**

Use a dry or a moderately damp cloth to clean the N234-MI-1005. Make sure no fluids or moisture penetrates the device.



## Specifications

|   |   |
|---|---|
| Type Designation                                  | MI 1005   |
| Operating Mode                                    | Continuous Operation  |
| Operating Temperature                             | 14 to 185°F / -10 to 85°C   |
| Operating Humidity                                | 10% to 90% RH, Non-Condensing   |
| Operating Air Pressure                            | 700 hPA to 1060 hPA   |
| Storage Temperature                               | -13 to 185°F / -25 to 85°C  |
| Storage Humidity                                  | 10% to 95% RH, Non-Condensing   |
| Storage Air Pressure                              | 500 hPA to 1060 hPA   |
| Rated for Altitude                                | Up to 9,800 ft. / 3000 m  |
| Dimensions (H x W x D)                            | 0.9 x 2.5 x 1.1 in. / 23 x 65 x 29 mm   |
| Weight  | 0.1 lb. / 50 g  |
| Pollution Degree                                  | 2   |
| Max Isolation Voltage between Ethernet Connectors | 5kV AC (50/60 Hz, 1 Minute)   |
| Connection Sockets                                | 2x RJ45 Female  |
| Network Specifications                            | IEEE 803.2ab 10/100/1000BASE-T, Twisted-Pair, auto-conf (completely transparent in Ethernet network, no drivers required) |
| Material  | UL94V-0 Complying Materials/RoHS Compliant  |
| MTBF  | 0,21 X 10 <sup>8</sup><br>(1 Fault in 21,000,000 hrs.)  |
| Product Rating                                    | Passive Ethernet Isolating Device, Insulation Rating DI (250 V AC / 300V DC) tested at 5kV AC                             |

## **Warranty and Product Registration**

### **1-Year Limited Warranty**

Tripp Lite warrants its products to be free from defects in materials and workmanship for a period of one (1) year from the date of initial purchase. Tripp Lite's obligation under this warranty is limited to repairing or replacing (at its sole option) any such defective products. To obtain service under this warranty, you must obtain a Returned Material Authorization (RMA) number from Tripp Lite or an authorized Tripp Lite service center. Products must be returned to Tripp Lite or an authorized Tripp Lite service center with transportation charges prepaid and must be accompanied by a brief description of the problem encountered and proof of date and place of purchase. This warranty does not apply to equipment, which has been damaged by accident, negligence or misapplication or has been altered or modified in any way.

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## Warranty and Product Registration

### PRODUCT REGISTRATION

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Under the Waste Electrical and Electronic Equipment (WEEE) Directive and implementing regulations, when customers buy new electrical and electronic equipment from Tripp Lite they are entitled to:

- Send old equipment for recycling on a one-for-one, like-for-like basis (this varies depending on the country)
- Send the new equipment back for recycling when this ultimately becomes waste

Tripp Lite has a policy of continuous improvement. Specifications are subject to change without notice.



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**12**

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