



# User Manual

## Medical Network Isolation

Type Nwl V1.2

Galvanic isolation for  
medical electrical devices and systems  
according to DIN EN 60601-1



## 1 Common Safety Instructions

- 1) Please read the following instructions carefully before using the Nwl!
- 2) This device may only be installed and put into operation by qualified personnel.
- 3) The enclosure of the Nwl must not be opened! There are no parts inside, which have to be maintained by the user.
- 4) Before using the Nwl, contact the manufacturer of your medical device / system, and make sure that it is allowed – while sufficient galvanic isolation is given – to link your medical device / system with local area networks (LAN) or other PCs!

### 1.1 Positioning the Nwl

The Nwl is not protected against penetration of liquids. It is not intended to be used in presence of explosive gases or aerosols.

### 1.2 Connecting the Nwl

When the Nwl is connected, make sure that:

- only network components according to IEEE 803.2 (10/100-BaseT, Twisted-Pair) are connected to the Nwl. Do not connect any telecommunication-devices, power supplies or similar things! The Nwl could be damaged, or even persons could be harmed!
- only tested CAT 5 network cables with according marks of conformity are used.
- the maximum length of network cables is reduced to 80m when using 100MBit network (100BaseT).

### 1.3 Maintenance / Safety Check

In order to ensure safe operation, it is advised to perform a safety check once in a year. This safety check may only be performed by qualified personnel. For more information, see chapter 4 Maintenance.

If in doubt, contact your local dealer or the manufacturer.

### 1.4 Environmental Protection

There may be some regulations under public law concerning the disposal of this device. Please contact your local dealer or the manufacturer before taking the Nwl out of operation.

## 1.5 Symbols



Refer to documentation



PC

Network connection PC over patch-cable or crosslink-cable when linking PC to PC



LAN

Network connection LAN (Hub, Switch) or LAN-cable when linking PC to PC

## 2 Normal Use

The device „Medical Network Isolation“ (Nwl) is especially designed for usage in the medical technology.

Its purpose is to connect a medical device or system, which is equipped with a standard-network-interface, to a local area network, while relevant standards for electrical safety (DIN EN 60601-1 und DIN EN 60601-1-1) are met. Linking two PCs with a crosslink-network-cable is possible, too. Other examples are:

- Linking the PC of a long-term-EEG system to the practice- or clinical network.
- Linking a EMG measuring system to a PC for analysis in the doctor's or consulting room

Please refer to the fourth point of chapter 1 Common Safety Instructions!

### 3 Installation

The NwI may only be installed and put into operation by qualified personnel. Please contact your medical-technical section or a system / network administrator.

For the installation of the NwI, two pluggable connectors (RJ45) are used. Put the network-cables into the sockets of the NwI until you hear the locks making a clicking sound.

The NwI should be installed near to the medical device / system (PC).

Take account of the safety instructions of chapter 1.2 Connecting the NwI!

### 5 Declaration of Conformity

### 6 Contact, Manufacturer

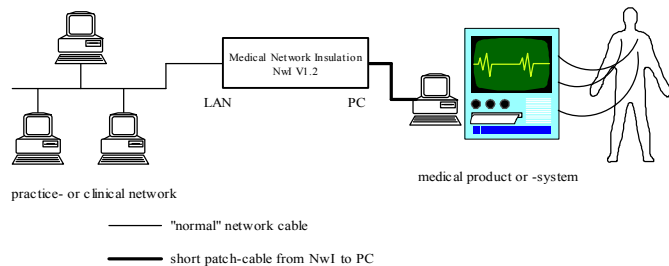
If you have any questions or problems, please contact your local dealer or the manufacturer:

DeMeTec GmbH  
Lützelwiesen 5  
35428 Langgöns (Germany)  
Tel: +49-6403-7874-0  
Fax: +49-6403-7874-30

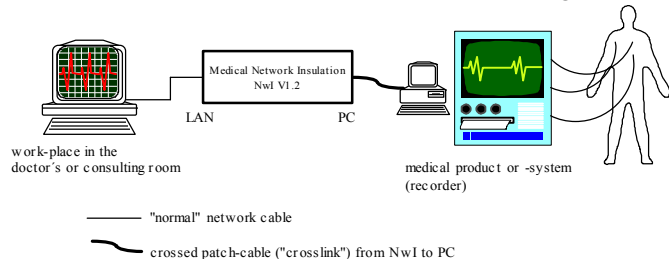
Email: [email@DeMeTec.de](mailto:email@DeMeTec.de)  
Internet: <http://www.DeMeTec.de>

According to the operation purpose, one of the following installations is advised:

1. Linking a medical device or system (PC) to a local practice or clinical network:



2. Direct link of a medical device or system (PC) to a work-place in the doctor's or consulting room:



### 4 Maintenance

A safety check according to DIN VDE 0751-1 has to be performed once in a year, including the following points:

- Visual check of housing, network connectors, labels (damaging)
- Measurement of isolation resistance. All pins of one RJ45 have to be connected together and with the shield of the cable. The isolation resistance between signal input- and signal output part has to be higher than 50M Ohm.

## 7 Technical Description

### 7.1 Classification

manufacturer		DeMeTec GmbH, Lützelwiesen 5 35428 Langgöns (Germany)
product designation		Medical Network Isolation – Nwl V1.2
mains voltage		not applicable
mains frequency		not applicable
power consumption		not applicable
classification	protection class	not applicable
	protection against penetration of liquids	no protection
	protection class of the applied part against electric shock	not applicable
	protection class against discharge of defibrillators	not applicable
	protection in presence of explosive gases or aerosols, e.g. nitrous oxide or anaesthetics (according to EN 60601-1:2006 annex G Clause G2)	no protection
operation mode		continuous operation
operating conditions	temperature	+32°F to +160°F / 0°C to +70°C
	relative humidity	10% to 90% (non-condensing)
	air pressure	860hPa to 1060hPa
storage conditions	temperature	-15°F to +185°F / -25°C to +85°C
	relative humidity	10% to 95% (non-condensing)
	air pressure	500hPa to 1060hPa
dimensions (L×W×H)		(90×50×25)mm <sup>3</sup>
weight		64g
classification as defined by Annex IX, MDD		class I

### 7.2 Technical Data

network-specification		IEEE 803.2 10/100-BaseT, Twisted-Pair, auto-conf (completely transparent in the network)
voltage endurance between the network connectors		4kV
connectors		2 × RJ45
attenuation	10MBit (10-BaseT)	< 0,4dB (network cable maximum length 100m)
	100MBit (100-BaseT)	4,3dB (network cable maximum length 80m)

### 7.3 Accessory

The following accessory can be obtained for the Nwl:

- patchcable 0,5m, grey, CAT5 (item no. WR-083)
- patchcable 3m, grey, CAT5 (item no. WR-084)