
User's Manual

PMM OR03

PROGRAMMABLE OPTICAL REPEATER

SERIAL NUMBER OF THE INSTRUMENT

You can find the Serial Number on the rear panel of the instrument.

Serial Number is in the form : 000XY00000.

The first three digits and the two letters are the Serial Number prefix, the last five digits are the Serial Number suffix. The prefix is the same for identical instruments, it changes only when a configuration change is made to the instrument.

The suffix is different for each instrument.

NOTE:

® Names and Logo are registered trademarks of Narda Safety Test Solutions GmbH and L3 Communications Holdings, Inc. – Trade names are trademarks of the owners.

If the instrument is used in any other way than as described in this Users Manual, it may become unsafe

Before using this product, the related documentation must be read with great care and fully understood to familiarize with all the safety prescriptions.



To ensure the correct use and the maximum safety level, the User shall know all the instructions and recommendations contained in this document.

This product is a **Safety Class III** instrument according to IEC classification and has been designed to meet the requirements of EN61010-1 (Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use).



In accordance with the IEC classification, the battery charger of this product meets requirements **Safety Class II** and **Installation Category II** (having double insulation and able to carry out mono-phase power supply operations).

This product has a **Pollution Degree II** normally only non-conductive pollution occurs. Occasionally, however, a temporary conductivity caused by condensation must be expected.

The information contained in this document is subject to change without notice.

KEY TO THE ELECTRIC AND SAFETY SYMBOLS:

You now own a high-quality instrument that will give you many years of reliable service. Nevertheless, even this product will eventually become obsolete. When that time comes, please remember that electronic equipment must be disposed of in accordance with local regulations. This product conforms to the WEEE Directive of the European Union (2002/96/EC) and belongs to Category 9 (Monitoring and Control Instruments). You can return the instrument to us free of charge for proper environment friendly disposal. You can obtain further information from your local NARDA Sales Partner or by visiting our website at www.narda-sts.it.



Warning, danger of electric shock



Earth



Read carefully the Operating Manual and its instructions, pay attention to the safety symbols.



Unit Earth Connection



Earth Protection



Equipotential

KEY TO THE SYMBOLS USED IN THIS DOCUMENT:



DANGER

The DANGER sign draws attention to a potential risk to a person's safety. All the precautions must be fully understood and applied before proceeding.



WARNING

The WARNING sign draws attention to a potential risk of damage to the apparatus or loss of data. All the precautions must be fully understood and applied before proceeding.



CAUTION

The CAUTION sign draws attention against unsafe practices for the apparatus functionality.



NOTE:

The NOTE draw attention to important information.

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SAFETY RECOMMENDATIONS AND INSTRUCTIONS

This product has been designed, produced and tested in Italy, and it left the factory in conditions fully complying with the current safety standards. To maintain it in safe conditions and ensure correct use, these general instructions must be fully understood and applied before the product is used.

- When the device must be connected permanently, first provide effective grounding;
- If the device must be connected to other equipment or accessories, make sure they are all safely grounded;
- In case of devices permanently connected to the power supply, and lacking any fuses or other devices of mains protection, the power line must be equipped with adequate protection commensurate to the consumption of all the devices connected to it;
- In case of connection of the device to the power mains, make sure before connection that the voltage selected on the voltage switch and the fuses are adequate for the voltage of the actual mains;
- Devices in Safety Class I, equipped with connection to the power mains by means of cord and plug, can only be plugged into a socket equipped with a ground wire;
- Any interruption or loosening of the ground wire or of a connecting power cable, inside or outside the device, will cause a potential risk for the safety of the personnel;
- Ground connections must not be interrupted intentionally;
- To prevent the possible danger of electrocution, do not remove any covers, panels or guards installed on the device, and refer only to NARDA Service Centers if maintenance should be necessary;
- To maintain adequate protection from fire hazards, replace fuses only with others of the same type and rating;
- Follow the safety regulations and any additional instructions in this manual to prevent accidents and damages.

EC Conformity Certificate

(in accordance with the directives: EMC 89/336/EEC and low voltage 73/23/EEC)

This is to certify that the product: PMM OR03 Programmable Optical Repeater

Produced by: NARDA S.r.l.
Safety Test Solution
Via Benessea 29/B
17035 Cisano sul Neva (SV) - ITALY

complies with the following European Standards

Safety: CEI EN 61010-1 (2001)

EMC: EN 61326-1 (2007)

This product complies with the requirements of Low Voltage Directive 2006/95/CE and with EMC Directive 2004/108/CE.

Narda Safety Test Solutions

1 – General information

1.1 Documentation

In this Manual you will find the following enclosures:

- A questionnaire to be returned, completed, to NARDA together with the unit, should servicing be required.
- A check-list of all the accessories enclosed with the shipment.

This manual includes the description of the accessories of the electromagnetic fields measuring system.

1.2 PMM OR03 Introduction

The PMM OR03 is a programmable optical repeater that allows the connection of the probes of the PMM 8053 Electric and Magnetic fields measuring system to the user's Personal Computer via the attachment of an optical fibre cable. The PMM OR03 is programmable via a software and has been planned for EMC application together with the PMM SW03 or WIN-OR03 software or with a software developed directly by the user.

1.3 Accessories standard and documents

The accessories and documents enclosed with the instrument PMM OR03 are:

- USB-OC Optical-USB converter + FO-10USB + tripod support;
- Battery charger + international plug adapter;
- Operating Manual + repair request form,
- Calibration Certificate;
- Software diskette.

1.4 Accessories optional

The following accessories can be ordered separately:

- 8053-SW02 software for data import;(requires SB-04);
- EP-105 E-Field Sensor;
- EP-300 E-Field Sensor;
- EP-330 E-Field Sensor;
- EP-301 E-Field Sensor;
- EP-333 E-Field Sensor;
- EP-183 E-Field Sensor;
- EP-408 E-Field Sensor;
- EP-44M E-Field Sensor;
- EP-33M E-Field Sensor;
- EP-33A E-Field Sensor;
- EP-33B E-Field Sensor;
- EP-33C E-Field Sensor;
- EP-201 E-Field Sensor;
- EP-645 E-Field Sensor;
- EP-745 E-Field Sensor;
- HP-032 H-Field Sensor;
- HP-102 H-Field Sensor;
- HP-050 H-Field Sensor;
- HP-051 H-Field Sensor;
- FO-8053/10 Optical Fibre Cable (10m);
- FO-8053/20 Optical Fibre Cable (20m);
- FO-8053/40 Optical Fibre Cable (40m);
- FO-8053/80 Optical Fibre Cable (80m);
- FO-10USB Optical Fibre Cable (10m);
- FO-20USB Optical Fibre Cable (20m);
- FO-40USB Optical Fibre Cable (40m);
- TR-02A Tripod complete with joint;
- TT-01 Telescopic support;
- SB-04 Switching Control Box
- 8053-CC Rigid carrying case;
- 8053-CA Battery charger Car adapter;
- 8053-BC Additional battery charger,
- 8053-CAL Calibration Probe;
- 8053-OC Optical-RS232 converter;
- 8053-OC-PS Power Supply;
- USB-OC Optical-USB converter

1.5 Main specifications

The following table lists the PMM OR03 specifications.
The following conditions apply to all the specifications:

- The working environment temperature must be between -10° and 40° C.

TABLE 1-1 Technical specifications	
Output	connector for optic fibre Maximum length of optic fibre, 40 meters (USB-OC) Maximum length of optic fibre, 80 meters (8053-OC)
Input	Fischer connector for probe Battery charger connector
Compatibility	with all PMM 8053 probes
Internal battery	rechargeable NiMH batteries (5 x 1.2 V)
Operating time	> 48 - 72 hours (subject to the filter chosen) 10 Hz filter > 72 hours 20 Hz filter > 61 hours 40 Hz filter > 53 hours 80 Hz filter > 48 hours
Recharging time	< 4 hours
External power supply	DC, 10 - 15 V, I = around 300 mA
Self testing	automatic function checks during switch-on, automatic connection check of the instrument; automatic check of each individual sensor diode.
Operating temperature	from -10 to +40°C
Storing temperature	from -20 to +70°C
Dimensions	130 mm x 55 mm diameter
Weight	270 g

1.6 Standard accessories included

The standard accessories included with PMM OR03 are:

- Battery charger 8053-BC
- Plug international adapter
- Optical adapter USB USB-OC
- Optical fibre cable (10 m) FO-10USB
- Conical Tripod support
- Software diskette WIN-OR03

1.7 PMM OR03 panel

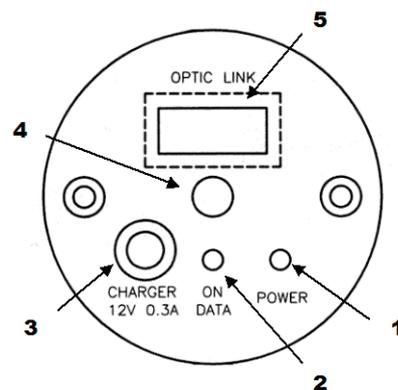


Fig. 1-1 Front panel

Legend:

1. Power on/off button;
2. Led function display;
3. Connector of battery charger (12V 0,3A);
4. Tripod stand fixing screw;
5. Optic fibre connection.

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2 - Installation and use

2.1 Introduction

This section provides all the necessary information to install and use the PMM OR03 Optical Programmable Repeater.

You will find information on the initial inspection, on power supply requirements, interconnection, working environment, assembly, cleaning, storage and shipment details.

2.2 Initial inspection

Inspect the packaging for any damage.



WARNING

If the packaging and its shockproof material are damaged, check that the content is intact and that the instrument has not been mechanically or electrically damaged.

Check the accessories against the check-list supplied with the Manual.

The delivery company and the NARDA office should be notified immediately of any damage.

2.3 Working environment

The working environment in which the instrument is to be placed must meet the following specifications:

- Temperature From -10° to +40° C
- Humidity < 90% relative

The instrument must be stored in a clean and dry place, free of dust, acids and humidity.

The storing area must meet the following parameters.

- Temperature From -20° to + 70° C
- Humidity < 95% relative

2.4 Return for repairs

When the instrument needs to be sent to NARDA for repairs please complete the questionnaire enclosed with this Operating Manual making sure you fill in all the details relative to the service requested.

In order to minimise repair time, please describe the nature of the failure. If the failure occurs only under certain conditions, please provide details on how we may recreate the same condition in order to identify the fault.

If possible, please reuse the original packaging, making sure the instrument is wrapped in heavy paper or plastic.

Alternatively, use a strong box filled with shockproof material, place enough material all around the equipment so that the unit is stable and firmly blocked inside the box.

Whilst packing, pay special care in protecting the unit's front panel.

Seal the box firmly before shipment.

Mark the box **FRAGILE HANDLE WITH CARE**.

2.5 Instrument cleaning

To clean the equipment use only a dust free and dry non abrasive cloth.



WARNING

To avoid damage never use any kind of solvent, acid, or similar to clean the instrument.

2.6 Installation and use of the PMM OR03 Optical Repeater

This section describes the installation and use of the PMM OR03 Optical Repeater.

The PMM OR03 is equipped with internal batteries which can be recharged with the battery charger supplied with the unit.



The OR03 Optical Repeater is housed within a small cylindrical container. On the flat upper part you will find the Probe connector, on the flat lower part is the panel for the connection of the optic fibre supplied with the unit, the screw attachment for the stand, the connection for the battery charger, the ON/OFF push button and the LED function indicator.

The Optical Repeater can be turned ON or OFF by pressing the red button marked **POWER**.

NOTE

Keeping the POWER button pressed for more than 4 seconds will cause the instrument to switch itself OFF. In this case it is necessary to wait a few seconds before switching it back on again.

The two colours LED marked **ON DATA** will light up and indicate the following operating functions.

When the instrument is turned ON the **red** LED will light up for about ½ second while it is performing a self test; it will then become **green** for 3 seconds confirming that the download of the firmware is taking place. The last operation which takes 13 seconds is the checking of the probe's diodes sensor.

TABLE 2-1 Led colour

LED flashing speed	LED colour	Explanations
Low speed	Green	Transmission with PC is under way and correct (with probe inserted)
Low speed	Red	Transmission with PC is under way and correct (with probe not inserted)
Medium speed	Green	PC disconnected or incorrect transmission (with probe inserted)
Medium speed	Red	PC disconnected or incorrect transmission (with probe not inserted)
Fast speed	Orange	Battery charge under way
Fast speed	Green	Battery charge completed
Light full on	Green	Calibration of repeater is under way and diodes of probe are OK
Light full on	Red	Calibration of repeater is under way and at least one diode of the probe is open or malfunctioning.

NOTE

If transmission failure occurs the PMM OR03 optical repeater will switch itself off automatically after 15 minutes.

NOTE

For further information about the use of OR03 repeater together with the portable field meter PMM 8053 refer to the manual of the 8053 system.

**2.7 Operating instruction
PMM OR03**

The PMM OR03 must be connected to the user's Personal Computer (PC) with an optical fibre. The optical fibre needs a USB-OC (supplied) or PMM 8053-OC optical converter in order to adapt the signals.

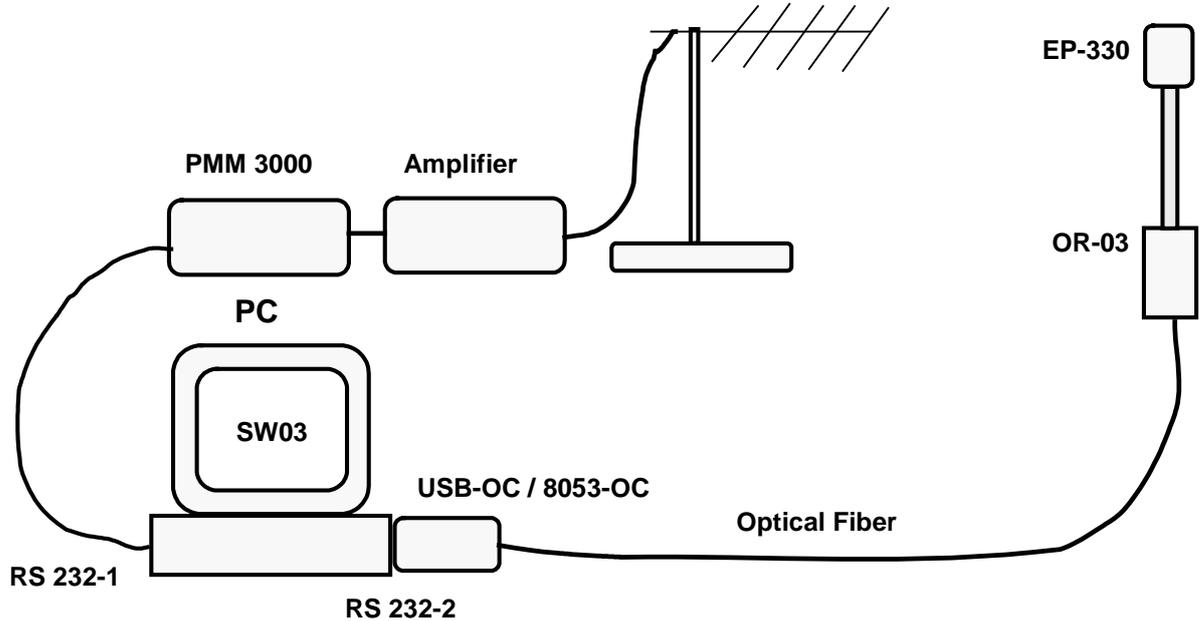


Fig. 2-1 Typical configuration to test irradiation immunity

Typical configuration using PMM OR03 to test irradiation immunity.

To install, insert the probe in the upper connector, insert the optic fibre supplied in the connector marked **OPTIC LINK** making sure that the insertion tab faces outwards, and the other end of the optic fibre in the **OPTIC LINK** connector of the USB-OC or PMM 8053-OC, then connect the converter to a free USB or RS232 serial port of the PC.

Once all the connections have been made, the unit may be turned on by pressing the red button marked **POWER** on the panel.

 **WARNING**

Do not pull the optic fibre by the cable but use the connector to avoid damaging the connection. Pay special attention and care in keeping the transducer of the optic fibre free from dirt and dust.

 **WARNING**

The probe can be connected either with the unit ON or OFF. To avoid damage to the probes connector, ensure that the external tab of the probes connector matches that of the connector on the PMM OR03.

 **WARNING**

Insert or disconnect the probe only by the connector. Inserting or pulling out the probe by holding the support or the head-end may damage the probe.

 **NOTE**

When measuring fields from transmitting aerials, it is important to place the probe with the supporting handle in line with the polarity of the aerial. This is to avoid any interference with the reading, especially when analysing signals of the megahertz range.

2.8 RF signals of dangerous intensity



WARNING

The probes utilised with the PMM OR03 have highly sensitive components.

Do not insert the probe in electric or magnetic fields which exceed the maximum limit allowed for this particular probe.



WARNING

When strong fields irradiate the probe, the internal diodes may be damaged whether the PMM OR03 is switched ON or OFF or regardless of whether the probe is connected to the instrument.

2.9 Battery charge and PMM OR03 power supply

The PMM OR03 is powered by internal NiMH rechargeable batteries. The battery charger supplied with this instrument can work at 50 Hz and at 60 Hz with a power range from 100 and 240 Volt.

The 8053-BC battery charger is supplied with different adapters for the main power supply in accordance with various national standards. The power plug adapter is attached to the battery charger, to change it simply unplug and replace with a new one.

2.9.1 Replacement of the mains connector

To change the power plug, simply remove the one installed on the battery charger and replace it with one suitable for the application.

2.9.2 Internal batteries check

Before using the instrument and in order to ensure maximum autonomy, the charger needs to complete a full cycle.

Follow this procedure:

- Connect the battery charger to the mains power supply
- Plug in the output connector of the charger to the socket marked **CHARGER** on the bottom panel of the instrument,

 **NOTE**

It is advisable to complete a full rechargeable cycle before using any accessories, this will ensure the maximum autonomy of the internal batteries.

 **NOTE**

Always connect the battery charger to the mains power supply before plugging it in the socket. Charge of the PMM OR03, the unit is provided with an internal safety circuit that will automatically cut off the power supply should there be an overload.

 **NOTE**

Battery charger:
Output: DC, 10 - 15 V, ~ 500 mA



Connector:

 **NOTE**

In order to safeguard the features of the batteries, it is crucial to have a complete recharge before storing them for periods longer than 4 months. Therefore, it is warmly suggested recharging the batteries at least every 4 months even though the device has not been used.

 **NOTE**

The updated PMM OR03 firmware is available for downloading on the internet website www.narda-sts.it or directly from the commercial offices of NARDA.

3 - Programming

3.1 Introduction

This section provides all the information necessary to program the PMM OR03 Programmable Optical Repeater.

3.2 Functionality and PMM OR03 Serial protocol

The serial transmission between the host and the OR03 is in USB (USB-OC) or RS232 (8053-OC) standard. The parameters are :

- Baud 9600 o 38400 (Automatic selection)
- Parity None
- Bit STOP 1
- Length 8 bit

The command sent by the HOST must have the following syntax:

#00command*

The prefix ~#00~ must always be present

"Command" is one of the commands recognised by PMM OR03

The postfix ~*~ tells the PMM OR03 that the input command has terminated and must be interpreted.

The result is enclosed between the ~#~ character, at the beginning, and the ~*~ character at the end.

The Baud Rate is set at 9600 baud as default.

To switch to 38400, simply send a command at 38400 BAUD and the PMM OR03 will automatically switch to the current velocity.

It is possible to return to a 9600 baud by following the same procedure.

Obviously, in such a case, the previous command is lost.

This apparatus is set to start in OR03 master mode to run with PMM 8053B.

To allow it to run in slave mode with SB04 + SW03 (SW02) software it is sufficient any of the dedicated commands. This change is totally transparent from the moment the first dedicated command changes from OR03 from master to slave mode.

When the switch to OR03 slave mode has taken place, the self-timer is set to turn it off after 15 minutes from the last recognised dedicated command.

3.3 Notes on frequency correction

In order to use the apparatus efficiently as a feedback in a system of immunity, the PMM OR03 is able to immediately correct the previously read data.

This means that, once the frequency has been set, it is not necessary to take a new reading in order to have the correct data as this will be automatically available.

The acquisition time is subject to the selected filter, as follows:

Filter	Complete acquisition time (3 axis)
80 Hz	150 ms
40 Hz	250 ms
20 Hz	450 ms
10 Hz	900 ms

The PMM OR03 is set on filter 80Hz by default.

3.4 Commands table The PMM OR03 has been set with the following **dedicated** commands:

TABLE 3-2 Setting commands	
#00k nnn*	Sets the frequency correcting value and makes it active. The <nnnn> item represents the frequency in MHz. When nnnn is out of the probe's frequency range, the correction is disabled. Example #00k 503.8*. Note that you need to leave a blank space between the character k and the frequency. To disable the correction set <nnn> out of the frequency range of the probe. (example 0) #00K 0*
#00K nnn*	Sets the frequency correcting value and makes it active in the same way as the previous command with the difference that it responds by returning the string which corresponds to that of the initial setting.. Example #00K 251.5* returns # FREQ 251.5* Example #00K 0* returns: # FREQ OFF *
#00w8*	Sets the post-filter on 80Hz.
#00w4*	Sets the post-filter on 40Hz.
#00w2*	Sets the post-filter on 20Hz.
#00w1*	Sets the post-filter on 10Hz.
#00W8*	Sets the post-filter on 80Hz and responds with the following string # Bw:80.0 Hz*
#00W4*	Sets the post-filter on 40Hz and responds with the following string # Bw:40.0 Hz*
#00W2*	Sets the post-filter on 20Hz and responds with the following string # Bw:20.0 Hz*
#00W1*	Sets the post-filter on 10Hz and responds the following string # Bw:10.0 Hz*
TABLE 3-3 Query commands	
#00?V*	Requests the firmware version.
#00?v*	An example of answer is the following: #OR03 1.00;09/00*
#00?N*	Inquiry on the probe's name.
#00?n*	Example # EP 330 *
#00?R*	Inquiry on the probe's calibration date.
#00?r*	Example # 19.07.99 *
#00?U*	Inquiry on the probe's unit of measure
#00?u*	Example # V/m *
#00?K*	Inquiry on the Frequency correction setting.
#00?k*	In case it is disabled the answer will be OFF Example # FREQ 50.5 * Example # FREQ OFF *
#00?T*	Inquiry on total field. The answer is as follows: # nnnn* where nn is the field value without unit of measure. nnnn is in scientific expression. The unit of measure is implicit and is always that of the probe. Example # 5.235 *
#00?E*	Inquiry on Batteries status.
#00?e*	Example #BAT=6.48V* Example #BAT=Charging*
#00?X*	Requests the X component of the field with frequency correction if activated. The answer is in the following format: # nnnn * where nnnn is the field value without measuring unit; nnnn is in a scientific annotation. The measuring unit is unexpressed and it is always the one implicit within the probe. Example # 1.25 *
#00?Y*	Requests the Y component of the field with frequency correction if activated. The answer is in the following format: # nnnn * where nnnn is the field value without measuring unit; . nnnn is in a scientific annotation. The measuring unit is unexpressed and it is always the one implicit within the probe. Example # 1.25 e-2 *
#00?Z*	Requests the Y component of the field with frequency correction if activated. The answer is in the following format: # nnnn * where nnnn is the field value without measuring unit; . nnnn is in a scientific annotation. The measuring unit is unexpressed and it is always the one implicit within the probe. Example # 20.023 *

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4 – PMM WIN-OR03 Instructions for use

4.1 Introduction

This Chapter is a guide to install and use the PMM WIN-OR03 Field Level Measurement Software.

Available functions and setting details are also included.

The PMM WIN-OR03 is a software instrument that integrates the PMM OR03 Programmable Optical Repeater.

The PMM WIN-OR03 allows displaying the measured field level directly on a Personal Computer screen.

This software works with the Windows™ operating system.

4.2 Hardware requirements

Suggested user PC hardware requirements for a complete software compatibility:

- Pentium processor;
- At least 16 Mb of RAM;
- At least 10 Mb of free hard disk space;
- Windows™ 95/98/XP Operating System.



The updates for PMM OR03 software and firmware are available for download from the internet web site www.narda-sts.it or directly from the commercial offices of NARDA.

4.3 Software installation

The software must be installed, on the PC, from the diskette provided, with the following procedure:

- Power on the PC with Windows™ operating system;
- Insert the PMM WIN-OR03 diskette into the diskette driver;
- call "Run" from main Menu ("Start");
- key in the command "A:SETUP" ("A" identifies your diskette driver, change it accordingly to your PC configuration) and push "Enter".

The program asks to confirm the installation directory.

Answer **OK** to accept the default **C:\WINOR03**, or key in a new name.

A window similar to the following will be displayed:



Select **Continue** to go on with the installation or press **Exit Set-up** to abort it.

At the end of the installation process the software will inform the user for completion with the following window:



Select **OK** to end installation.

The **PMM OR03** icon will be created.



4.4 Hardware installation

Insert the probe on the OR03; connect the USB-OC supplied with OR03 to a USB port of the PC, and the optic fiber cable to the OR03. Instead if you connect the repeater to the RS232 port, you must use the optional accessories 8053-OC.



WARNING

Do not pull the optic fiber by holding onto the cable but use the connector so that the head does not get damaged. Avoid dirt and other particles getting into the transducers of the optic fiber.



Fig. 4-1 OR03 link with USB-OC

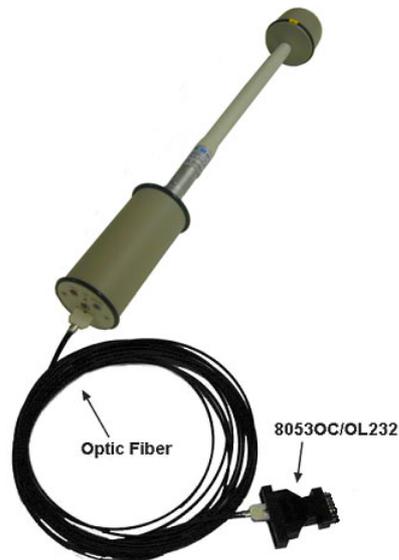


Fig. 4-2 OR03 link with 8053-OC

NOTE

OR03 should be OFF.

Connecting the USB-OC the first time, Windows opens the “**Found New Hardware Wizard**”. If it asks to connect to Windows Update, select “**No, not this time**”, then click “**Next**”.



You may select “**Install from a list or specific location (Advanced)**”.



In the search dialog, specify the FT232R USB UART driver located in the diskette folder and click Next.



Please wait while the wizard install the software.



When the "Completing the Found New Hardware" message appears, click on "Finish". The converter is ready to run.



 **NOTE**

With **USB-OC** the program doesn't establish automatically the connection on the first COM port that is not in use.

In this case, it is necessary to "force" the serial port by the following procedure:

 **NOTE**

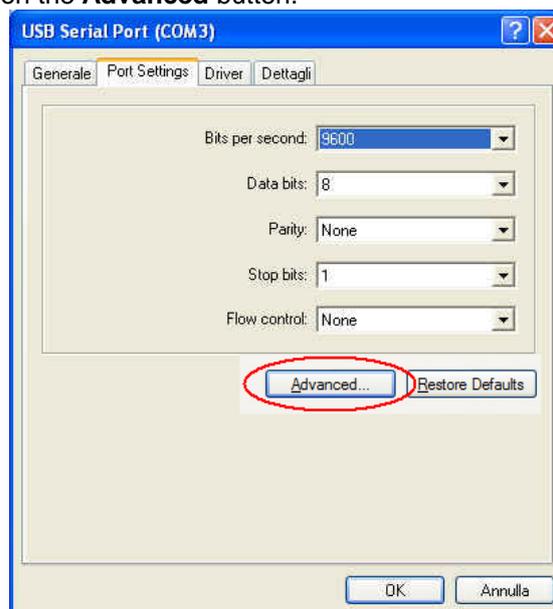
The assigned COM port nr. must be between 1 and 9.

- Open the **Device Manager** (using **Start > Control Panel > System > Hardware > Device Manager**). The COM driver for the USB-OC is located under **Ports (COM & LPT) – USB Serial Port (COMx)**.

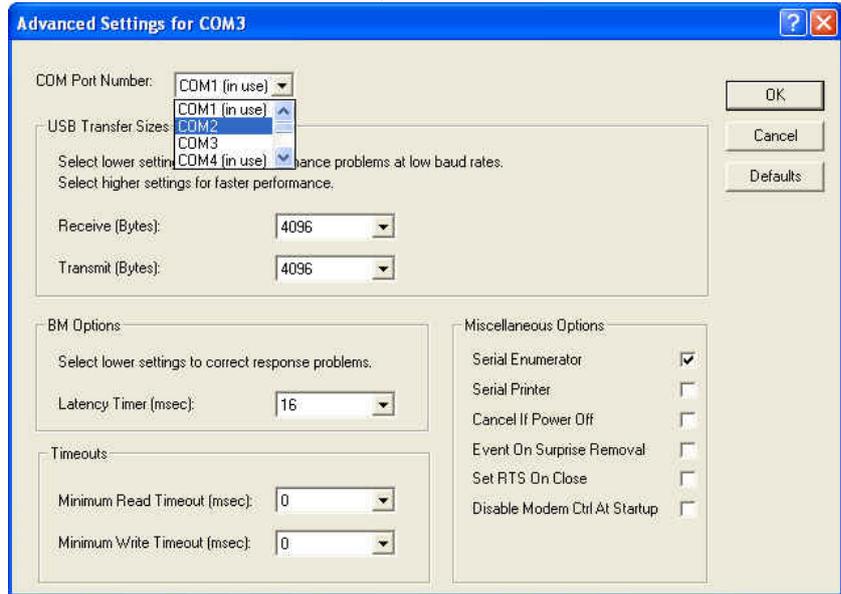
COMx stands for the COM port selected by the driver. If the driver is listed as a different COMx port, you must change the port settings as described below.



- To change the **COMx** port, double click on **Ports (COM & LPT) > USB Serial Port** to open the Properties dialog. Select the **Port Settings** tab and click on the **Advanced** button.



- On the Advanced Settings dialog, select the first COM port that is not in use as the COM Port Number, then click **OK**.



- Select the icon **WIN-OR03** with the right mouse button;
- Select **Properties**;
- Add the command **COMM=N** preceded by a space (in capital letters) at the end of the Destination field where N indicates the serial port to be used; for example, if the OR03 is connected to port 2, add the command **COMM=2**.

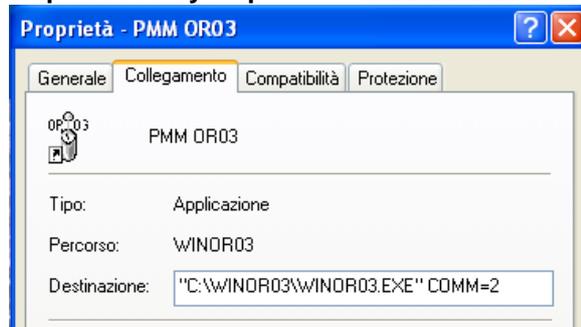
 **NOTE**

The assigned COM port nr. must be between 1 and 9.



 **NOTE**

- In some operating system the Destination field is enclosed in double quotation marks (""); in this case, the command **COMM=N**, preceded by a space must be outside as in the example below;



- Then confirm by selecting **Apply**

 NOTE

With 8053-OC the program automatically establishes the connection on the first RS232 port that is not in use at that time, in the following order: COM1, COM2, COM3, etc.

 NOTE

The energy available on the DB9 connector of some PC model could be not sufficient to guarantee a good link with 80 meter fibre.

 NOTE

The energy available on the DB9 connector of some PC model could be not sufficient to guarantee a link with 8053-OC. In this case, it is necessary to connect 8053-OC-PS between the converter and PC.

Whenever a port is tied up by a device (e.g. modem) which is not active or turned off at that time, the program recognises it as free and will therefore attempt to connect OR-03 to that port. In this case, it is necessary to “force” the next serial port by the following procedure:

- Select the icon **WIN-OR03** with the right mouse button;
- Select **Properties**;
- Add the command **COMM=N** preceded by a space (in capital letters) at the end of the Destination field where N indicates the serial port to be used; for example, if the OR03 is connected to port 2, add the command **COMM=2**.

 NOTE

The assigned COM port nr. must be between 1 and 9.



 NOTE

- In some operating system the Destination field is enclosed in double quotation marks (“”); in this case, the command **COMM=N**, preceded by a space must be outside as in the example below;



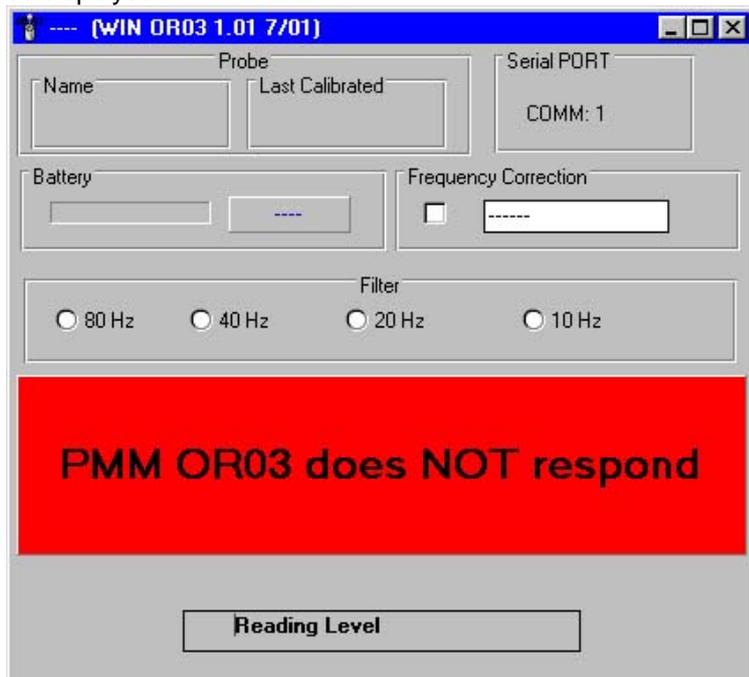
- Then confirm by selecting **Apply**

4.5 Main Window

After the program has started it is shown the main window of the software:



If PMM OR03 is not connected or the serial port is wrong or the communication with the OR03 is not correct an error message window will be displayed:



The main windows is divided into the following sectors:

- **Probe;**
- **Serial PORT;**
- **Battery;**
- **Frequency Correction;**
- **Filter;**
- **Field Level;**
- **Status Bar.**

- 4.5.1 Probe** It shows some information about the probe connected to the OR03: probe model, Calibration date stored into the E2prom inside the probe itself.
- 4.5.2 Serial PORT** It shows the serial port that is in use to connect the PMM OR03.
- 4.5.3 Battery** The battery voltage and in case of being under charge the state of charging, are displayed.
- 4.5.4 Frequency Correction** By entering the known frequency value, the software will correct the measurement taken by using a correction factor included in an internal table of the probe. This enables an extremely precise measurement of the field level at the selected frequency to be given.
- The frequency will always be entered in MHz except for HP-050 probe which is in Hz.
- This function can be activated or not by a click on the corresponding box.
- 4.5.5 Filter** PMM WIN-OR03 controls a low pass filter built in the meter. The purpose of this filter is to reduce noise during measuring. One of the following can be chosen:
- **10 Hz**
 - **20 Hz**
 - **40 Hz** → is the default filter
 - **80 Hz**
- Acquisition time will vary depending on the selected filter:
- 900 ms with 10 Hz filter
 - 450 ms with 20 Hz filter
 - 250 ms with 40 Hz filter
 - 150 ms with 80 Hz filter
- 4.5.6 Field Level** It is shown the measured level of the field together with its right unit, selected according to the connected probe.
- 4.5.7 Status Bar** Here is indicated the status of the program itself.

5 - Accessories

5.1 Introduction

This section provides information required for installing and using accessories for PMM OR03 Optical Programmable Repeater. Information is included regarding initial inspection, power requirements, interconnections, work environment, assembly, cleaning, storage and shipment.

The following general information is applicable to all accessories.

5.2 Preliminary inspection



WARNING

Inspect the packaging for any damage.

If the packaging or anti-shock material have been damaged, check that the contents are complete and that the product has not suffered electric or mechanical damage.

Check that all the Accessories are there against the checklist found with the apparatus.

Inform the carrier and NARDA of any damage that has occurred.

5.3 Work environment

Unless otherwise specified, the work environment of the Accessories, must come within the following conditions:

- Temperature From -10°C to +50° C (0°C to 40°C for Battery Charger)
- Humidity < 90% relative

The Accessories must be stored in a clean and dry environment, free from dust, acids and humidity.

The storage environment must come within the range of the following conditions:

- Temperature From -30°C to + 70°C (-20°C to 60°C for Battery Charger)
- Humidity < 95% relative

5.4 Return for repair

When the Accessories need to be returned to NARDA for repair, please complete the questionnaire appended to this User's Manual, filling in all the data that will be useful for the service you have requested.

For reducing the period of time required for the repairs, it is necessary to be as specific as possible in describing the problem. If the problem only occurs in certain circumstances, please describe in detail how it happens.

If possible it is better to reuse the original packaging; making sure that the apparatus is wrapped in thick paper or plastic.

Otherwise, use strong packaging by using a sufficient quantity of shock absorbent material around all sides of the product to ensure that it is compact and does not move around inside the package.

In particular, take every precaution to protect the front panels.

Finish the package by sealing it up tightly.

Apply a FRAGILE label to the package to encourage greater care in its handling.

5.5 Cleaning



WARNING

Use a dry, clean and non-abrasive cloth for cleaning the instruments.

Do not use solvents, acids, turpentine, acetone or other similar products for cleaning the devices in order to avoid damaging them.

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8053-OC Optical RS232 Converter

Introduction



8053-OC is an optional accessory of the PMM OR03 Optical Programmable Repeater.

It converts the signals of some of the system's accessories, which are only connected via fiber optic, into RS-232-compatible signals. It, therefore, makes it possible to link the following items up to the serial port of any Personal Computer to operate them in conjunction with specific application software and for firmware updating:

- EHP-50E Electric and Magnetic Field Analyzers, 5Hz-100kHz
- EHP-200A Electric and Magnetic Field Analyzers, 9kHz-30MHz

Either 8053-OC or USB-OC is indispensable for updating the internal firmware of the above-mentioned items via a Personal Computer and the relative update software is available free-of-charge on NARDA's Web site at: <http://narda-sts.it>

Installation

Insert 8053-OC in the connector of a free serial port of the PC, connect the fiber optic coming from the probe or other Accessories treating the locating key with care.

Considering the very low consumption of the device, the power required by 8053-OC is taken directly from the serial port of the PC. This means no maintenance is needed.

Table 5-1 Technical specifications of the 8053-OC Serial Optical Converter

Max. length of the fiber optic	80 m
RS 232 Connector	9 pin DB9

Front panel

Key:

- 1 – Fiber optic connector



Rear panel

Key:

- 1 - RS232 female DB9 connector

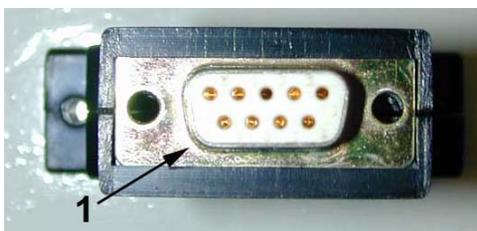


Fig. 5-1 8053-OC Panels

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5.7

8053-OC-PS Power Supply

Introduction

8053-OC-PS is an optional accessory of the PMM OR03 Optical Programmable Repeater.



8053-OC-PS is indispensable for some PC model don't have sufficient energy on the Serial Port to guarantee a link with 8053-OC.

Installation

Insert 8053-OC-PS in the connector of a free serial port of the PC or serial cable and connect the 8053-OC to 8053-OC-PS. To supply the 8053-OC-PS with 230Vac - 9Vdc Wall Adapter. Connect the fiber optic coming from the probe or other Accessories to 8053-OC.

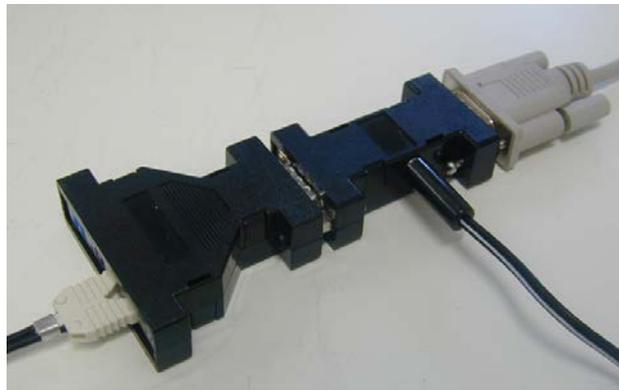


Table 5-2 Technical specifications of the 8053-OC-PS Power Supply

RS 232 Connectors

9 pin DB9



Front panel

RS232 male DB9 connector



Rear panel

RS232 female DB9 connector



Side panel

Supply male connector

Fig. 5-2 8053-OC-PS Connectors

Power supply

8053-OC-PS is powered through 230Vac - 9Vdc Wall Adapter.

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Caro cliente

grazie per aver acquistato un prodotto NARDA! Sei in possesso di uno strumento che per molti anni ti garantirà un'alta qualità di servizio. NARDA riconosce l'importanza del Cliente come ragione di esistenza; ciascun commento e suggerimento, sottoposto all'attenzione della nostra organizzazione, è tenuto in grande considerazione. La nostra qualità è alla ricerca del miglioramento continuo. Se uno dei Suoi strumenti NARDA necessita di riparazione o calibrazione, può aiutarci a servirla più efficacemente compilando questa scheda e accludendola all'apparecchio.

Tuttavia, anche questo prodotto diventerà obsoleto. In questo caso, ti ricordiamo che lo smaltimento dell'apparecchiatura deve essere fatto in conformità con i regolamenti locali. Questo prodotto è conforme alle direttive WEEE dell'Unione Europea (2002/96/EC) ed appartiene alla categoria 9 (strumenti di controllo). Lo smaltimento, in un ambiente adeguato, può avvenire anche attraverso la restituzione del prodotto alla NARDA senza sostenere alcuna spesa. Può ottenere ulteriori informazioni contattando i venditori NARDA o visitando il nostro sito Web www.narda-sts.it.

Dear Customer

thank you for purchasing a NARDA product! You now own a high-quality instrument that will give you many years of reliable service. NARDA recognizes the importance of the Customer as reason of existence; in this view, any comment and suggestion you would like to submit to the attention of our service organization is kept in great consideration. Moreover, we are continuously improving our quality, but we know this is a never ending process. We would be glad if our present efforts are pleasing you. Should one of your pieces of NARDA equipment need servicing you can help us serve you more effectively filling out this card and enclosing it with the product.

Nevertheless, even this product will eventually become obsolete. When that time comes, please remember that electronic equipment must be disposed of in accordance with local regulations. This product conforms to the WEEE Directive of the European Union (2002/96/EC) and belongs to Category 9 (Monitoring and Control Instruments). You can return the instrument to us free of charge for proper environment friendly disposal. You can obtain further information from your local NARDA Sales Partner or by visiting our website at www.narda-sts.it.

Servizio richiesto: *Service needed:*

Solo taratura Riparazione Riparazione & Taratura Taratura SIT Altro:
 Calibration only Repair Repair & Calibration Certified Calibration Other:

Ditta:

Company:

Indirizzo:

Address:

Persona da contattare:

Technical contact person:

Telefono:

Phone n.

Modello:

Equipment model:

Numero di serie:

Serial n.

Accessori ritornati con l'apparecchiatura: **Nessuno** **Cavo(i)** **Cavo di alimentazione** **Altro:**
 Accessories returned with unit: None Cable(s) Power cable Other:

Sintomi o problemi osservati: *Observed symptoms / problems:*

Guasto: **Fisso** **Intermittente** **Sensibile a:** **Freddo** **Caldo** **Vibrazioni** **Altro**
 Failure: Continuous Intermittent *Sensitive to:* Cold Heat Vibration Other

Descrizione del guasto/condizioni di funzionamento:

Failure symptoms/special control settings description:

Se l'unità è parte di un sistema descriverne la configurazione:

If unit is part of system please list other interconnected equipment and system set up:

