

# Diagnostix™

## Desk Charging Base

**5500N**

Instructions for Use



Made in Germany  
Inspected and Packaged in the U.S.A.



Consult instructions  
for use



Diagnostix™ Desk Instrument  
Table of Contents

<b>1. A Special Thank You</b>	<b>3</b>
<b>2. Introduction and Intended Use</b>	<b>3</b>
<b>3. Contraindications</b>	<b>3</b>
<b>4. Symbols</b>	<b>4</b>
<b>5. Warnings and Precautions</b>	<b>4-5</b>
<b>6. Start-Up and Operation</b>	<b>5-7</b>
<b>7. Specula Compartment</b>	<b>8</b>
<b>8. Wall Mounting</b>	<b>8</b>
<b>9. LED Indicators</b>	<b>9</b>
<b>10. Cleaning and Disinfection</b>	<b>9</b>
<b>11. Technical Specifications</b>	<b>10</b>
<b>12. Maintenance</b>	<b>10</b>
<b>13. Electromagnetic Compatibility</b>	<b>10-14</b>
<b>14. Warranty</b>	<b>15</b>
<b>15. Quality Standards</b>	<b>15</b>
<b>16. How to Contact Us</b>	<b>15</b>

**14. WARRANTY**

---

This ADC Diagnostix Desk Charging Base is warranted for 2 years from date of purchase. This warranty includes the instrument. The warranty does not apply to damage caused by improper handling, accidents, improper use, or alterations made to the instrument by third parties. The warranty is only valid after the product is registered online.

**15. QUALITY STANDARDS**

---

Device fulfills the stipulations of the International standard IEC60601-1-2

Recommended distances between portable and mobile RF communications equipment and the charging stations.			
The charging station is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or user of the charging station can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communication equipment (transmitters) and the charging station as recommended below, according to the maximum output power of the communications equipment.			
Rated output power of the transmitter (w)	Separation distance according to the frequency of the transmitter (m)		
	150 kHz to 80 MHz $d = 12\sqrt{P}$	80 MHz to 800 MHz $d = 1, 2\sqrt{P}$	800 MHz to 2,7 GHz $d = 2, 3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.273
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1: At 80 MHz and 800 MHz, the distance for the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. The electromagnetic propagation is affected by absorption and reflection by structures, objects and people.

## 1. A SPECIAL THANK YOU

Congratulations on your purchase of an ADC® Diagnostix™ Desk Charging Base.

ADC professional diagnostic products are the instruments of choice where accuracy and dependability are critical.

This feature-rich instrument was designed to simplify physical exams and non-invasive diagnostics. With proper use and care it will provide many years of dependable service.

Read this booklet thoroughly before attempting to use your new ADC Diagnostix Desk Charging Base.

## 2. INTRODUCTION AND INTENDED USE

This manual is for the ADC Diagnostix Desk Charging Base. The charger base is manufactured for use with ADC or compatible 2.5V or 3.5V power handles and instrument heads. The base is designed to recharge compatible power handles.

If you have any questions, call our toll-free number or visit our website. For contact information, see the last page of this instruction booklet.











Please note that the ADC Diagnostix Desk Charging Base is only suitable for charging ADC instruments operated with ADC rechargeable batteries.













Do not use with any other equipment.

## 3. CONTRAINDICTIONS

There are no known contraindications. The device is only intended for the use specified in the instructions for use.

## 4. SYMBOLS

Symbol	Definition
	Read operating instructions
	Medical device
	Type BF Equipment
	Protection Class II Unit
	<b>Warning!</b> The general warning sign indicates a possibly dangerous situation that can lead to serious injuries.
	<b>Caution!</b> Important note in these instructions. The caution symbol indicates a potentially dangerous situation that can lead to minor or moderate injuries. It can also be used to warn of unsafe practices
	Direct current
	Alternating current
	Date of Manufacture YYYY-MM-DD / (year-month-day)
	Manufacturer


Symbol	Definition
	Manufacturer serial number
	Lot number
	Reference number
	Temperature for transport and storage conditions
	Relative humidity for transport and storage conditions
	Air pressure for transport and storage Air pressure for ambient operation
	CE marking
	Discard according to national regulations or EU directives
	Non-ionizing radiation
	<b>Caution:</b> Federal law restricts this device to sale by or on the order of a physician (licensed physician).
	Not made with natural rubber latex
	Phthalate free

## 5. WARNINGS AND PRECAUTIONS

This ADC Diagnostix Desk Charging Base has been manufactured to the highest quality standards and is subject to rigorous quality control. Read these instructions for use carefully before putting the unit into operation and keep them in a safe place.

If you should have any questions, call our toll-free number or visit our website. Our address can be found on the last page of this booklet.

Please note that instruments described in these instructions for use are to be used by suitably trained personnel only. The safe functioning of this instrument is guaranteed only when original parts and accessories from ADC are used.

Guidance and manufacturer's declaration - electromagnetic immunity			
The charging station is intended for use in the electromagnetic environment specified below. The customer or user of the charging station should ensure that it is used in such an environment.			
Immunity testing	IEC 60601 test level	Compliance level	Electromagnetic environment guidance
Conducted RF IEC 61000-4-6	Pass	Pass	Portable and mobile RF communications equipment should be used no closer to any part of the charging station, including the cables, than the recommended distance calculated using the equation applicable to the frequency of the transmitter.  <b>Recommended separation distance</b> d = 1.2 · P <sup>0.5</sup> 150 kHz to 80 MHz d = 1.2 · P <sup>0.5</sup> 80 MHz to 800 MHz d = 2.3 · P <sup>0.5</sup> 800 MHz to 2.7 GHz
Fast transient electrical disturbances / bursts IEC 61000-4-4	3 V/m 80 MHz to 2.7 GHz	3 V/m	Where P is the maximum output power of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be below the compliance level in each frequency range. In the vicinity of devices marked with the following symbol, interference may occur:  Where P is the maximum output power of the transmitter in watts (W) according to the transmitter manufacturer and the recommended distance is indicated in meters (m).  Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be below the compliance level in each frequency range.
Proximity fields from RF wireless communications equipment	Pass	Pass	
<p><b>NOTE 1:</b> At 80 MHz and 800 MHz, the higher frequency range applies.</p> <p><b>NOTE 2:</b> These guidelines may not apply in all situations. The electromagnetic propagation is affected by absorption and reflection by structures, objects and people.</p>			
<p>a.) Field strengths from fixed transmitters, such as base stations for radio (mobile/cordless phones) and land mobile radios, amateur radio, AM and FM radio broadcasts and television broadcasts, cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location where the charging station is used exceeds the RF compliance level specified above, the charging station should be monitored to verify normal operation. If abnormal performance is observed, additional measures may be required, such as re-orienting or relocating the charging station.</p> <p>b.) With a frequency range over 150 kHz to 80 MHz, the field strengths should be less than 3 V/m.</p>			

Guidance and manufacturer's declaration - electromagnetic immunity			
The charging station is intended for use in the electromagnetic environment specified below. The customer or user of the charging station should ensure that it is used in such an environment.			
Immunity testing	IEC 60601 test level	Compliance level	Electromagnetic environment guidance
Electrostatic discharge (ESD) IEC 61000-4-2	Con: $\pm 8$ kV Air: $\pm 15$ kV	Con: $\pm 8$ kV Air: $\pm 15$ kV	Floors should be made of wood, concrete or ceramic tiles. If the floor is covered with synthetic material, the relative humidity must be at least 30%.
Fast transient electrical disturbances / bursts IEC 61000-4-4	5/50 ns, 100 kHz; $\pm 2$ kV	5/50 ns, 100 kHz; $\pm 2$ kV	The quality of the supply voltage should be that of a typical business or hospital environment
Surge IEC 61000-4-5	1,2/50 (8/20) $\mu$ s LIL: $\pm 1,0$ kV LIG: $\pm 2,0$ kV	1,2/50 (8/20) $\mu$ s LIL: $\pm 1,0$ kV LIG: $\pm 2,0$ kV	The quality of the supply voltage should be that of a typical business or hospital environment.
Voltage dips, short interruptions and voltage fluctuations on power supply input lines IEC 61000-4-11	0% UT for 0.5 cycle (1 phase) 0% UT for 1 cycle 70% UT for 25/30 cycles (50/60 Hz)	0% UT for 0.5 cycle (1 phase) 0% UT for 1 cycle 70% UT for 25/30 cycles (50/60 Hz)	The quality of the supply voltage should be that of a typical business or hospital environment.
	0% UT for 250/300 cycles (50/60 Hz)	0% UT for 250/300 cycles (50/60 Hz)	
Power frequency (50Hz/60Hz) magnetic field IEC 61000-4-8	30 A/m 50 Hz	30 A/m 50 Hz	Mains frequency magnetic fields should be at a level characteristic of a typical location in a typical commercial hospital environment.
Hinweis: $U_T$ is the AC mains voltage prior to application of the test level.			

**Warning:** The device must not be operated in rooms in which flammable mixtures or mixtures of pharmaceuticals and air or oxygen or nitrous oxide are present, e.g. operating theatres.

**Warning:** Do not use in a magnetic resonance environment.

**Warning:** There is a danger of life-threatening electrical shock. Unplug the instrument before cleaning or when disinfecting.

**Warning:** The device contains sensitive electronic components. Avoid strong electrical or electromagnetic fields in the direct vicinity of the device (e.g., mobile telephones, microwave ovens). These can lead to temporary impairment of the ADC Diagnostix Desk Charging Base.

**Warning:** This device must be used in a controlled environment. The device must not be exposed to harsh environmental conditions.

**Warning:** Do not use batteries or electrical cords other than those included with this product or replacement parts supplied by the manufacturer.

**Caution:** Old electronic devices must be disposed of in accordance with the institutional guidelines for the disposal of expired devices.

## 6. START-UP AND OPERATION:

The ADC Diagnostix Desk Charging Base is suitable for charging of 2.5V or 3.5V handles.

### a) Preparation prior to charging

- Ensure that the charging base is positioned on a level surface. Do not position unit in the direct vicinity of a radiator. Protect against direct sunlight.
- Fluids must not penetrate into the interior of the enclosure. Do not use fluids in close proximity of the charging base.



- Connect unit to an electrical outlet. Ensure that the voltage stated on the rating plate on the bottom of the unit agrees with the mains voltage.

After connection of the charging base, a self-test is performed. During the test, the LEDs on the front of the unit will be repeatedly switched on.

- When charging 19mm handles (AA size), insert plastic reducers in handle recesses. When charging 28mm handles (C size), remove reducers from handle recesses by lifting in an upward direction before inserting handle.



- The ADC Diagnostix Desk Charging Base may be used for charging 2.5V and 3.5V rechargeable batteries. The charging chambers are interchangeable and may be used with 2.5V or 3.5V battery handles. A 2.5V and 3.5V unit may be charged simultaneously.

## b) Charging

- The rechargeable battery is tested when inserted into the charging chamber. At voltages of less than 1.5V, the rechargeable battery is either fully discharged or faulty. The charging base will try to recharge the battery by applying a pulsating charging current. The yellow charging LED will flash.
- For rechargeable battery voltages of more than 1.5V, charging will commence. The yellow charging LED will turn on.

## c) Charging Time

- The end of the charging time is detected by evaluation of the negative voltage differential caused by heating of the rechargeable battery cells when fully charged. The yellow charging LED will switch off and the green "rechargeable battery full" LED will switch on.



Guidance and manufacturer's declaration - electromagnetic emissions		
The charging station is intended for use in the electromagnetic environment specified below. The customer or the user of the charging station should ensure that it is used in such an environment.		
Emissions testing	Compliance	Electromagnetic environment guidance
RF emissions CISPR 11	Group 1	The charging station uses RF energy for its internal function only. Therefore, the RF emissions are very low and are unlikely to cause interference in nearby electronic devices.
RF emissions CISPR 11	Class B	
Harmonic emissions IEC 61000-3-2	Pass	
Voltage fluctuations/flicker emissions IEC 61000-3-3	Pass	The charging station is intended for use in all facilities, including residential areas and those directly connected to a public supply network that also supplies buildings used for residential purposes.

## 11. TECHNICAL SPECIFICATIONS

---

<b>Model:</b>	ADC Rechargeable Battery Charger Base
<b>Display System:</b>	LEDs Connection
<b>Main Connection</b>	(See Note on Bottom Label)
<b>Power Adapter Input:</b>	100 V-240 V AC / 50-60 Hz/0.6 A
<b>Power Adapter Output:</b>	9 V DC/2 A/18 W
<b>Classification:</b>	Applied part type B
<b>Operating Conditions:</b>	32°F to 104°F (0°C to 40°C) 10% to 85% relative humidity
<b>Storage Temperature:</b>	23°F to 122°F (-5°C to 50°C) 10% to 85% relative humidity
<b>Air Pressure:</b>	700 to 1050 hPa
<b>Dimensions:</b>	7.3" x 3.4" x 2.9" (186 mm x 87 mm x 74 mm)
<b>Weight:</b>	Approx. 1.1 lbs (500 g) without packing

## 12. MAINTENANCE

---

These instruments and their accessories do not require any specific maintenance. Should an instrument have to be examined for any specific reason whatsoever, please return it to ADC.

## 13. ELECTROMAGNETIC COMPATIBILITY (EMC)

---

Follow the instructions during the installation and operation of the device.

To avoid electromagnetic interference with the operation of the device, do not use the device at the same time as other electronic devices.

To avoid electromagnetic interference with the operation of the device, do not use or stack the device near, on or under other electronic devices.

Do not use the device in the same room as other electronic devices, (e.g. life-supporting devices that have a significant impact on the life of the patient and treatment outcomes) or other measuring instruments or treatment devices that use little electrical power.

Do not use cables or accessories that are not specified for this device, as this can increase the emission of electromagnetic waves from the device and reduce the device's electromagnetic immunity.

- The maximum charging time for NiMH rechargeable batteries is limited to <650 minutes (10.8 hours). The maximum charging time for Li-ion rechargeable batteries is limited to <480 minutes (8 hours).
- When the rechargeable battery is fully charged (green LED on), the unit will switch to maintenance charge.
- The temperature inside the charger base is monitored. Do not keep in sunlight, or close proximity of a radiator, as over heating may cause premature actuation of the automatic switch-off mechanism shutting the charger off before completing a full charge.

### Caution:

- When the handle is removed from the charging chamber for a few seconds while the rechargeable battery is fully charged (green LED on) without switching on, initially the yellow charging LED will be switched on when reinserting the unused rechargeable battery. However, this is not due to malfunction of the charging base but the described "rechargeable battery full" sensor.
- When the rechargeable battery is full, no negative voltage differential can be recorded. The rechargeable battery must first heat up in order to signal "rechargeable battery fully charged."
- The time prior to the green "rechargeable battery fully charged" LED switching on again may vary considerably (15 minutes or longer). Additional temperature sensing and a timer, however, ensure that the charging process is carefully monitored at any time.



***We recommend keeping the instrument in the charging chambers after use to ensure that instruments are always ready.***

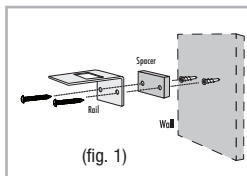
## 7. SPECULA COMPARTMENT

The specula compartment may be used for spare specula and lamps.

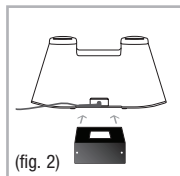
## 8. WALL MOUNTING

The ADC Diagnostix Desk Charging Base may be mounted on the wall.

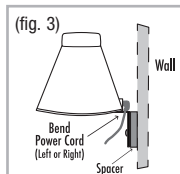
**To Mount:** Hold wall rail in place on the wall where intended for mounting. Level and mark hole positions with a pen. Drill 5 mm (3/16") wide holes. Insert the supplied mollys in the holes. Position spacer holes over the mollys and affix rail over the spacer and secure to the wall with the screws supplied (fig. 1).



Slide unit bracket guide slots of the ADC<sup>®</sup> Diagnostix<sup>™</sup> Desk Charging Base plate onto the wall rail. When fully inserted, the bottom cover tab will engage and lock in the recess of the wall rail (fig. 2). Position the power cord either to the right or left behind the base to accommodate electrical outlet (fig. 3).



**To remove:** Press the bottom tab lock, which allows the unit to slide from the rail (fig. 4).



## 9. LED INDICATORS

LEDs switching on repeatedly, brief permanent switch-on, followed by off	Mains connection, self-test
Yellow LED on	Charging in progress
Green LED on	Rechargeable battery fully charged, unit changing to maintenance charge
Yellow LED flashing	Rechargeable battery fully discharged or faulty. Unit trying to regenerate rechargeable battery by a pulsating charging current. Should no charging cycle be indicated after approx. 16 h, the rechargeable battery is faulty or must be replaced

## 10. CLEANING AND DISINFECTION

Prior to cleaning or disinfection of the unit disconnect mains cable from socket.

### Cleaning and/or Disinfection

The ADC Diagnostix Desk Charging Base may be cleaned externally with a damp cloth.

In addition, the following disinfectants may be used for external disinfection: Aldehyde (formaldehyde, glutaraldehyde, aldehyde derivatives), surfactants or alcohols. After disinfection, wipe the instruments with a damp cloth to remove any remaining disinfectant.

Never place the charging station in liquids. Use a soft lint free cloth or cotton swabs to prevent damage to charging base.

### Sterilization

According to the Test Centre for Medical Devices in Tübingen, Germany, sterilization is only prescribed in the case of operative procedures. There is no necessity for sterilization of this charging base.