

PowerScan™ PD96XX

QUICK REFERENCE GUIDE



Industrial Corded Handheld
Area Imager Bar Code Reader

 **DATALOGIC**

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The number of arbitrators will be three, with each side to the dispute being entitled to appoint one arbitrator. The two arbitrators appointed by the parties will appoint a third arbitrator who will act as chairman of the proceedings. Vacancies in the post of chairman will be filled by the president of the SIAC. Other vacancies will be filled by the respective nominating party. Proceedings will continue from the stage they were at when the vacancy occurred. If one of the parties refuses or otherwise fails to appoint an arbitrator within 30 days of the date the other party appoints its, the first appointed arbitrator will be the sole arbitrator, provided that the arbitrator was validly and properly appointed. All proceedings will be conducted, including all documents presented in such proceedings, in the English language. The English language version of these terms and conditions prevails over any other language version.

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NOTES

POWERSCAN™ PD96XX

ABOUT THE SCANNER

The PowerScan™ PD96XX is a feature-rich and rugged area imager reader. It is offered in several different models to better fit the different needs of each customer. The table below shows the unique features of each model:

MODEL P/N	OPTICAL FEATURE
PD9630-SR	Standard Range, standard and low density codes
PD9630-HP	High Performance, high standard and low density codes
PD9630-DC	Document Capture, wide angle, standard and low density code, color sensor for image capture

General Features

Omni-directional Operating	To read a symbol or capture an image, you simply aim the reader and pull the trigger. Since the PowerScan™ PD96XX is a powerful omni-directional reader, the orientation of the symbol is not important.
Decoding	Thanks to powerful algorithms, PowerScan™ PD96XX reliably decodes all major 1D (linear) barcodes, 2D stacked codes (such as PDF417), 2D matrix symbols (such as DataMatrix), postal codes (such as POSTNET, PLANET). The data stream — acquired from decoding a symbol — is rapidly sent to the host. The reader is immediately available to read another symbol
Formatting and Concatenating	The string of a decoded code may be processed according to either a simple or advanced data formatting and be concatenated.
Imaging	PowerScan™ PD96XX can also function as a camera by capturing entire images or image portions of labels, signatures, and other items. Color images are possible with -DC model.
Autoscanning	An autoscan command causes the reader to scan continuously and to monitor the central zone of its reading area.
Flash Memory	Flash technology allows you to upgrade the PowerScan™ PD96XX reader as new symbologies are supported or as improved decoding algorithms become available.
USA Driver License Parsing	The reader can be set up to select and output a subset of data elements from USA Driver License PDF417 barcodes. This feature can be enabled using either Datalogic Aladdin™ or the barcodes in the USA Driver License Parsing Quick Reference Guide (QRG), available on the Datalogic website.

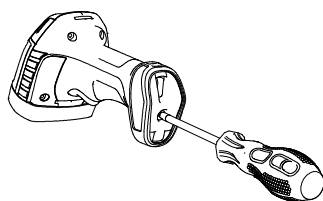
SETTING UP THE READER

Follow the steps below to connect and get your reader up and communicating with its host.

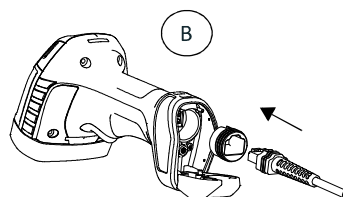
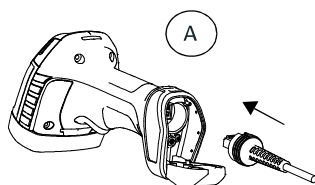
1. Connect the Cable to the reader and the Host as shown below.
2. Configure the Interface ([see page 7](#)).
3. Configure the Reader starting on [page 15](#) (optional, as needed).

Connect the PowerScan™ by plugging directly into the host device as shown. The power can also be supplied through an external power supply via the Interface Cable supplied with a power jack.

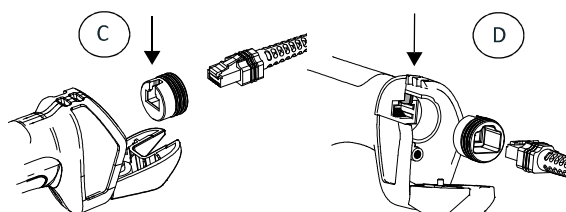
Connecting the Cable



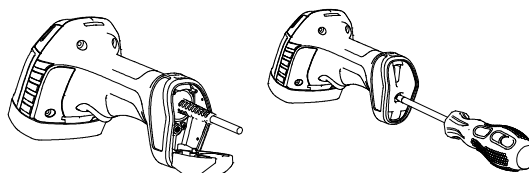
1. Use a screwdriver to open the handle.



2. Insert the circular RJ45 cable (figure A) or use the adapter with non-circular RJ45 cables (figure B).



3. In this case, make sure to insert the adapter with the slot facing up (C). The rib (D) inside the adapter seat must fit into this slot.



4. Once the cable is properly inserted, close the handle and screw it back into the body.

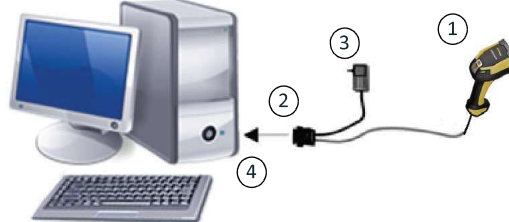
Connecting to the Host Interface

Follow the steps indicated by the pictures below to connect the gun to the Host, according to the communication cable available.

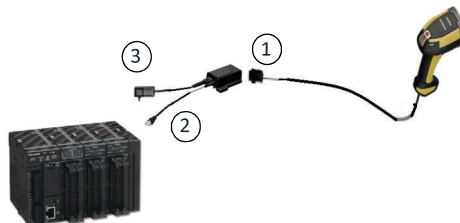
USB



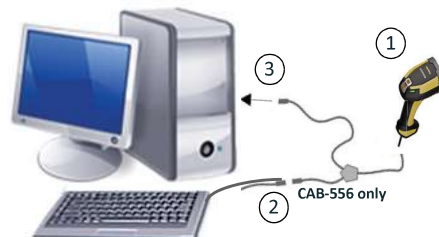
RS-232



ETHERNET



WEDGE



NOTE: Use only CAB-556. Other Wedge cables are not compatible with PD96xx readers.

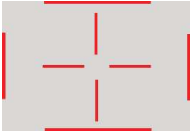


CAUTION: To avoid damage to the scanner and/or to the host, first install correctly the cable into the scanner and then connect the other end of the cable into the host port of the PC.

USING THE POWERSCAN™ PD96XX

The PowerScan™ PD96XX normally functions by capturing and decoding codes. The reader is equipped with an internal Motionix™ motion-sensing function which activates the aiming system on device motion. The intelligent aiming system indicates the field of view which should be positioned over the bar code:

Table 1 – Aiming System

MODEL P/N	AIMER PATTERN
PD9630-SR PD9630-HP	
PD9630-DC	

Symbologies with smaller bars or elements (mil size) should be read closer to the unit. Symbologies with larger bars or elements (mil size) should be read farther from the unit.

Successful reading is signaled by an audible tone plus a good-read green spot LED indicator and vibration. Reference the PowerScan™ 9600 Family Product Reference Guide (PRG) for more information about this feature and other programmable settings.

SELECTING THE INTERFACE TYPE

Upon completing the physical connection between the reader and its host, proceed directly to the Interface Selection paragraph below, to program the reader for the interface type it is connected to (for example: RS-232, Keyboard Wedge, USB, etc.). Scan the appropriate bar code to select your system's correct interface type.

Interface Selection

All models are multi-interface and support RS-232, USB, Ethernet and Keyboard Wedge. Information and programming options for each interface type are provided in this section. For defaults and additional information associated with each interface, proceed to the corresponding chapter in the PowerScan™ 9600 Family PRG.

CONFIGURING THE INTERFACE

Scan the appropriate programming bar code to select the interface type for your system.



NOTE: Unlike some other programming features and options, interface selections require that you scan only one programming label. DO NOT scan an ENTER/EXIT label prior to scanning an interface selection label.

Some interfaces require the scanner to start in the disabled state when powered up. If you read one of these interface selections by mistake, or if additional scanner configuration is desired while in this state, pull the trigger and hold for 5 seconds. The scanner will change to a state that allows reading programming labels.

This procedure is allowed only once after the reader is powered up. If it is necessary to repeat the procedure, you must cycle power to the reader before repeating.

SERIAL INTERFACE
RS-232 standard interface  ★ Select RS232-STD
RS-232 Wincor-Nixdorf  Select RS232-WN
RS-232 for use with OP0S/UP0S/JavaPOS  Select RS-232 OP0S
USB Com to simulate RS-232 standard interface  Select USB-COM-STD^a
USB-OEM
USB -OEM (can be used for OP0S/UP0S/JavaPOS)  Select USB-OEM

a. Download the correct USB Com driver from www.datalogic.com
★ Factory setting

USB FOR TERMINALS
USB HID POS  Select USB HID POS
USB Toshiba TEC  Select USB Toshiba TEC
USB FOR MAGELLAN SCANNERS
USB for Magellans  Select USB Magellan Scanners
ETHERNET
 Select Ethernet Interface

Keyboard Interface

Use the programming labels to select options for USB Keyboard and Wedge Interfaces.

KEYBOARD
USB Keyboard with standard key encoding  Select USB Keyboard
USB Keyboard with alternate key encoding  Select USB Alternate Keyboard
USB -Composite  ★ Select USB-Composite
AT, PS/2 w/Standard Key Encoding  Select KBD-AT
AT, PS/2 w/Alternate Key  Select KBD-AT-ALT

★ Factory setting

COUNTRY MODE
 ENTER/EXIT PROGRAMMING MODE
 ★ Country Mode = US
 Country Mode = Belgium
 Country Mode = Croatia
 Country Mode = Czech Republic
 Country Mode = Denmark

★ Default Value

COUNTRY MODE (CONTINUED)
 Country Mode = France
 Country Mode = French Canadian
 Country Mode = Germany
 Country Mode = Hungary
 Country Mode = Italy
 Country Mode = Japanese 106-Key

COUNTRY MODE (CONTINUED)
 Country Mode = Lithuanian
 Country Mode = Norway
 Country Mode = Poland
 Country Mode = Portugal
 Country Mode = Romania
 Country Mode = Spain

COUNTRY MODE (CONTINUED)
 Country Mode = Sweden
 Country Mode = Slovakia
 Country Mode = Switzerland
 Country Mode = United Kingdom



BSR idware GmbH
Jakob-Haringer-Str.3
A-5020 Salzburg
<https://www.bsr.at>
sales@bsr.at

PROGRAMMING

The reader is factory-configured with a set of standard default features. After scanning the interface bar code from the Interfaces section, select other options and customize your reader through use of the programming bar codes available in the PowerScan™ PD96XX PRG. Check the corresponding features section for your interface, and also the Data Editing and Symbolologies chapters of the PRG.

Using Programming Bar Codes

This manual contains bar codes which allow you to reconfigure your reader. Some programming bar code labels, like the bar code "Reset Default Settings" below, require only the scan of that single label to enact the change.

Other bar codes require the reader to be placed in Programming Mode prior to scanning them. Scan an ENTER/EXIT bar code once to enter Programming Mode; scan the desired parameter settings; scan the ENTER/EXIT bar code again to accept your changes, which exits Programming Mode and returns the reader to normal operation.

Configure Other Settings

Additional programming bar codes are available in the PRG to allow for customizing programming features. If your installation requires different programming than the standard factory default settings, refer to the PRG.

Resetting Product Defaults

If you aren't sure what programming options are in your reader, or you've changed some options and want your custom factory settings restored, scan the bar code below to reset the reader to its initial configuration. Reference the PRG for other options, and a listing of standard factory settings.



NOTE: Factory defaults are based on the interface type. Be sure your reader is configured for the correct interface before scanning this label. See "Selecting the Interface Type" on page 7 for more information.



Reset Default Settings

READING PARAMETERS

Move the reader toward the target and center the aiming pattern and illumination system to capture and decode the image. See ["Using the PowerScan™ PD96XX" on page 6](#) for more information.

The aiming system will briefly switch off after the acquisition time, and if no code is decoded will switch on again before the next acquisition. The illuminator will remain on until the symbol is decoded.

As you read code symbols, adjust the distance at which you are holding the reader.

OPERATING MODES

Scan Mode

The reader can be set to operate in one of several scanning modes. See the PRG for more information and settings for any of the options:

Trigger Single (Default) — This mode is associated with typical handheld reader operation. Motion Sense is active and if the scanner detects motion the aiming pattern is turned on. When the trigger is pulled, illumination is turned on and the scanner attempts to read a label. Scanning is activated until one of the following occurs:

- the programmable "Scanning Active Time"¹ has elapsed
- a label has been read
- the trigger is released

Trigger Pulse Multiple — Scanning begins when the trigger is pulled and continues after the trigger is released, until the trigger is pulled again or until the programmable "Scanning Active Time"¹ has elapsed. Reading a label does not disable scanning. Double Read Timeout¹ prevents undesired multiple reads while in this mode.

Trigger Hold Multiple — When the trigger is pulled, scanning starts and the product scans until the trigger is released or "Scanning Active Time"¹ has elapsed. Reading a label does not disable scanning. Double Read Timeout¹ prevents undesired multiple reads while in this mode.

Always On — The illuminator is always ON and the reader is always ready for code reading. Double Read Timeout¹ prevents undesired multiple reads.

Flashing — The reader illuminator flashes on and off regardless of the trigger status. Code reading takes place only during the Flash On² time. Double Read Timeout¹ prevents undesired multiple reads.

1. See the Product Reference Guide (PRG) for these and other programmable features

Stand Mode — The scanner looks for changes within its field-of-view. The Aiming Pattern is always on to show the optimum reading area. If a predefined amount of movement is detected, the white illumination switches on. Scanning continues until a label is read or “Scanning Active Time” is reached.

Retained Trigger Hold Multiple — Same as Trigger Hold Multiple but all decoded labels are transmitted when the trigger is released. The labels can be sorted before transmission.

SCAN MODE	
 ENTER/EXIT PROGRAMMING MODE	
 ♦ Scan Mode = Trigger Single	 Scan Mode = Trigger Pulse Multiple
 Scan Mode = Trigger Hold Multiple	 Scan Mode = Flashing
 Scan Mode = Always On	 Scan Mode = Stand Mode
 Scan Mode= Retained Trigger Hold Multiple	
♦ = Default value	

2. Controlled by Flash On Time and Flash Off Time. Use the PRG to program these options.

TECHNICAL SPECIFICATIONS

PowerScan™ PD96XX

PHYSICAL CHARACTERISTICS	
Color	Yellow/Black
Dimensions	Height 19.0 cm (7.5") Length 14.0 cm (5.5") Width 7.9 cm (3.1")
Weight (without cable)	Approx. 318 gr. (11.2 oz.)
ELECTRICAL CHARACTERISTICS	
Input Voltage	5 - 30 VDC $\pm$ 5%
Current Consumption	Operating (Typical): PD9630-SR: 200mA @ 5V; 120mA @ 12V PD9630-HP/ PD9630-DC: 280mA @ 5V / 140mA @ 12V Standby/Idle (Typical): 187mA @ 5V / 92mA @ 12V
Reading Indicators	Top illumination, Good Read Spot, Beep, Vibration
Interfaces Supported	USB, RS-232, Ethernet and Keyboard Wedge see page 7 for a listing of available interface options
ENVIRONMENTAL CHARACTERISTICS	
Operating Temperature	-20° to 50° C (-4° to 122° F)
Storage Temperature	-40° to 70° C (-40° to 158° F)
Humidity	0 to 95% non-condensing
Drop Resistance	Withstands 50 drops from 2.5 m/8.2 ft @20° C; Withstands 50 drops from 2.0 m/6.6 ft @-20° C
Ambient Light Immunity	100,000 Lux
Contaminants: Spray/rain, Dust/particulates	IP67 and IP65
ESD Protection	20 KV
Regulatory	See Regulatory Addendum

OPTICAL CHARACTERISTICS	
Optical Format	1/4"
Imager Sensor	1280 H x 800 V
Illumination System	White LED
Aiming System	630 – 680 nm VLD
Reading Angle	All models: Pitch: +/- 52°; Skew: +/- 52°
Field of View	HP: 38° x 24° STD: 38° x 24° DC: 51° x 33,5
Print Contrast Ratio	minimum 15%
DECODE CAPABILITY	
1D Bar Codes GS1 Databar linear codes, UPC/EAN (A,E,13,8), including P2/P5 Addons, ISBN, ISSN, Code128, EAN128, ISBT128, Code39, Code39 Full ASCII, Code39 CIP, Code 32, Trioptic, Interleaved 2 of 5, IATA, Industrial 2 of 5, Standard 2 of 5, matrix2 of 5, data-logic 2 of 5, follet 2 of 5, Codabar, Code11, MSI, Plessey, Code 93, Pharmacode, BC412	
2D / Stacked Codes DataMatrix (square, rettangular), MaxiCode, QR Codes, (QR, Micro QR and Multiple QR codes), Aztec Postal codes including: Australian Post, China Post, Japanese Post, KIX Post, Planet Code, Postnet, Royal Mail Code(RM45CC), IMB, Sweden Post, Portugal Post, LaPoste A/R 39 Stacked codes including EAN/JAN Composites, GS1 Databar Composites, GS1 Databar Expanded Stacked; GS1 DataBar Stacked; GS1 DataBar Stacked Omnidirectional, PDF417, Macro PDF, Micro PDF417, China sensible, DotCode	
Other OCR, Digimarc	

DOF - DEPTH OF FIELD (TYPICAL) ^A	
Symbology	DOF range
Code 128	PD96XX-SR: 5 mils: 6.4-30.9 cm (2.5-12.2 in) 20 mils: 4-103.7 cm (1.6-40.8 in) 40 mils: 5.5-175 cm (2.2-68.9 in)
	PD96XX-DC: 5 mils: 3.1-39.7 cm (1.2-15.6 in) 20 mils: 3.5-119.1 cm (1.3-46.9 in) 40 mils: 4.5-186.6 cm (1.7-73.4 in)
	PD96XX-HP: 2.5 mils: 6.3-11.5 cm (2.5-4.5 in) 5 mils: 3.8-41 cm (1.5-16.1 in) 20 mils: 4-157 cm (1.6-61.8 in) 40 mils: 5.5-242.9 cm (2.1-95.6 in)
EAN13	PD96XX-SR: 13 mils: 4-67.5 cm (1.5-26.5 in)
	PD96XX-DC: 13 mils: 3.5-102 cm (1.3-40.1 in)
	PD96XX-HP: 13 mil: 4-120.2 cm (1.5-40.2 in)
PDF417	PD96XX-HP: 10 mils: 0.5-46.1 cm (0.2-18.1 in)
Datamatrix	PD96XX-SR: 10 mils: 6.4-30 cm (2.5-11.8 in)
	PD96XX-DC: 10 mils: 4.2-30.2 cm (1.6-11.8 in)
	PD96XX-HP: 4 mils: 6.5-9.3 cm (2.5-3.6 in) 10 mils: 4.2-32.1 cm (1.6-12.6 in)
Max Resolution	PD96XX-SR: 1D = 3 mils, 2D = 6 mils
	PD96XX-DC: 1D = 3 mils, 2D = 5 mils
	PD96XX-HP: 1D = 2.5 mils, 2D = 4 mils

a. 13 mils DOF based on EAN. All other 1D codes are Code 39. All labels grade A, typical environmental light, 20°C, label inclination 10°

LED AND BEEPER INDICATIONS

The reader's beeper sounds and its LED illuminates to indicate various functions or errors on the reader. An optional "Green Spot" also performs useful functions. The following tables list these indications. One exception to the behaviors listed in the tables is that the reader's functions are programmable, and so may or may not be turned on. For example, certain indications such as the power-up beep can be disabled using programming bar code labels.

INDICATION	LED	BEEPER
Power-up	Upper LED flashes/blinks on power-up, however, this may be too rapid to view. With a USB interface, the LED blinks until enumeration with the host is completed.	Reader beeps four times at highest frequency and volume upon power-up.
Good Read	LED behavior for this indication is configurable via the feature "Good Read: When to Indicate" (see the PRG for information). The Green spot turns on for a configurable time.	The reader will beep once at current frequency, volume, mono/bi-tonal setting and duration upon a successful label scan.
ROM Failure	Flashes	Reader sounds 4 long beeps.
Limited Scanning Label Read	N/A	Reader 'chirps' six times at the highest frequency and current volume.
Reader Disabled	The LED blinks continuously 100mS on / 900mS off	N/A
Image Capture	Blue light	N/A

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
Nothing happens when the scan button is pulled.	No power to the reader.	Check system power. Ensure power supply is connected.
	Interface or power cables are loose.	Ensure all cable connections are secure.
LED comes on, but bar code does not decode.	Reader not programmed for correct bar code type.	Ensure reader is programmed to read the type of bar code scanned. Refer to the PRG for more information.
	Bar code label is unreadable.	Check the label to ensure it is not defaced. Try scanning another bar code type.
	Distance between reader and bar code is incorrect.	Move the reader closer to or further from the bar code.
Bar code is decoded but not transmitted to the host.	Reader not programmed for the correct host type.	Scan the appropriate host type bar code. Refer to the PRG for more information.



NOTE: For detailed troubleshooting, refer to the PRG (Product Reference Guide)

CLEANING PROCEDURE

Exterior surfaces and scan windows exposed to spills, smudges or debris require periodic cleaning to ensure best performance during scanning.



CAUTION: Do not use abrasive pads or cleaning agents.



CAUTION: Be sure to turn off power and unplug the device from electrical outlet before cleaning.

Common Cleaning Solutions

The cleaners and disinfectants listed below are recommended for use on Datalogic Disinfectant-Ready Enclosures.

PRODUCT	CHEMICAL CONTENT
Sani-Cloth® HB, Sani-Cloth® Plus, Super Sani-Cloth®	Quaternary Ammonium Chloride solution
Hepacide Quat II	Virucidal disinfectant cleaner
Alcohol Wipes	70% Isopropyl Alcohol
CaviWipes™	Isopropanol 10-20%; Ethylene Glycol Monobutyl Ether 1-5%
Virex® 256	n-Alkyl Dimethyl Benzyl Ammonium Chloride; Didecyl Dimethyl Ammonium Chloride
Formula 409® Glass and Surface Cleaner	n-Alkyl Dimethyl Benzyl Ammonium Chloride; n-Propoxypropanol
Windex® Blue	Isopropyl Alcohol
Clorox® Bleach; Clorox Healthcare Bleach Germicidal Cleaner	Sodium Hypochlorite; Sodium Hydroxide
Hydrogen Peroxide	3%
ProSpray™ Wipes (Disinfectant towelettes)	0.647% o-phenylphenol; 0.070% o-benzyl-p-chlorophenol
100% Gentle dish soap and water	



NOTE: Disinfectants may be harsh on metal. They are recommended for use only on enclosures.



CAUTION: DO NOT spray or pour cleaner directly onto the unit.
DO NOT use solutions in their concentrated form.
DO NOT use aerosols, solvents or abrasives.
DO NOT use paper towels or rough cloths to clean windows.

Cleaning enclosure and window surfaces

1. Moisten a soft cloth with a recommended cleaning solution. Be sure to apply the solution to your cloth first. Wring excessive liquid from the cloth.
2. Use the cloth to wipe down the surface of the unit. Use cotton swabs, lightly moistened, to reach in corners and crevices.
3. Use another clean dry cloth to remove any residue of the cleaning agent and ensure the unit is dry.



ERGONOMIC RECOMMENDATIONS



CAUTION: In order to avoid or minimize the potential risk of ergonomic injury follow the recommendations below. Consult with your local Health & Safety Manager to ensure that you are adhering to your company's safety programs to prevent employee injury.

- Reduce or eliminate repetitive motion
- Maintain a natural position
- Reduce or eliminate excessive force
- Keep objects that are used frequently within easy reach
- Perform tasks at correct heights
- Reduce or eliminate vibration
- Reduce or eliminate direct pressure
- Provide adjustable workstations
- Provide adequate clearance
- Provide a suitable working environment
- Improve work procedures.

Technical Support

Support Through the Website

Datalogic provides several services as well as technical support through its website. Log on to (www.datalogic.com). For quick access, from the home page click on the search icon , and type in the name of the product you're looking for. This allows you access to download Data Sheets, Manuals, Software & Utilities, and Drawings.

Hover over the Support & Service menu for access to Services and Technical Support.

Reseller Technical Support

An excellent source for technical assistance and information is an authorized Datalogic reseller. A reseller is acquainted with specific types of businesses, application software, and computer systems and can provide individualized assistance.

WARRANTY

Datalogic warrants that the Products shall be free from defects in materials and workmanship under normal and proper use during the Warranty Period. Products are sold on the basis of specifications applicable at the time of manufacture and Datalogic has no obligation to modify or update Products once sold. The Warranty Period shall be **three years** from the date of shipment by Datalogic, unless otherwise agreed in an applicable writing by Datalogic.

Datalogic will not be liable under the warranty if the Product has been exposed or subjected to any: (1) maintenance, repair, installation, handling, packaging, transportation, storage, operation or use that is improper or otherwise not in compliance with Datalogic's instruction; (2) Product alteration, modification or repair by anyone other than Datalogic or those specifically authorized by Datalogic; (3) accident, contamination, foreign object damage, abuse, neglect or negligence after shipment to Buyer; (4) damage caused by failure of a Datalogic-supplied product not under warranty or by any hardware or software not supplied by Datalogic; (5) any device on which the warranty void seal has been altered, tampered with, or is missing; (6) any defect or damage caused by natural or man-made disaster such as but not limited to fire, water damage, floods, other natural disasters, vandalism or abusive events that would cause internal and external component damage or destruction of the whole unit, consumable items; (7) use of counterfeit or replacement parts that are neither manufactured nor approved by Datalogic for use in Datalogic-manufactured Products; (8) any damage or malfunctioning caused by non-restoring action as for example firmware or software upgrades, software or hardware reconfigurations etc.; (9) loss of data; (10) any consumable or equivalent (e.g. cables, power supply, batteries, etc.); or (11) any device on which the serial number is missing or not recognizable.

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