PowerScan™ PM/PBT9600

QUICK REFERENCE GUIDE

Industrial Cordless Handheld
Area Imager Bar Code Reader™

DATALOGIC

Datalogic S.r.l.
Via S. Vitalino, 13
40012 Calderara di Reno (BO)
Italy
Tel. +39 051 3147011
Fax +39 051 3147205

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Patents

See www.patents.datalogic.com for patent list.

See the Regulatory Addendum included with your product for additional regulatory, safety and legal information.

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POWERSCAN™ PM/PBT9600

ABOUT THE SCANNER

The PowerScan™ PM/PBT9600 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	TYPE	CONNECTIVITY	FEATURE
PM9600	SR433RB or SR910RB	Star® 433 MHz or 910 MHz	Standard Range, standard and low density codes, no display
PM9600	HP433RB or HP910RB	Star® 433 MHz or 910 MHz	High Performance, high, standard and low density codes, no display
PM9600	DHP433RB or DHP910RB DKHP433RB or DKHP910RB	Star® 433 MHz or 910 MHz	High Performance, high, standard and low density codes, display and 4k or 16k keyboards
PM9600	AR433RB DKAR433RB	Star® 433 MHz	Auto Range Area Imager, Auto Range Optics - No display - With display and 16k keyboard
PM9600	DPXRB	Star® 433 MHz or 910 MHz	Direct Part Marking (DPM) reader with auto range optics and multi-color illumination system
PBT9600	SRRB	Bluetooth ®	Standard Range, standard and low density codes, no display
PBT9600	HPRB	Bluetooth ®	High Performance, high, standard and low density codes, no display
PBT9600	DCRB	Bluetooth ®	Document Capture, standard and low density codes, no display
PBT9600	ARRB	Bluetooth ®	Auto Range Area Imager, auto range optics, no display
PBT9600	DPXRB	Bluetooth ®	Direct Part Marking (DPM) reader with auto range optics and multi-color illumination system

General Features

FEATURE	DESCRIPTION
Omni-directional Operating	To read a symbol or capture an image, you simply aim the reader and pull the trigger. Since the PowerScan™ PM/PBT9600 is a powerful omni-directional reader, the orientation of the symbol is not important.
Decoding	Thanks to powerful algorithms, PowerScan™ PM/PBT9600 reliably decodes all major 1D (linear) bar codes, 2D stacked codes (such as PDF417), 2D matrix symbols (such as DataMatrix), postal codes (such as POSTNET, PLANET) and DPM barcodes on different material supports (e.g. metal, plastic, glass, printed circuits, components case, etc.). 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™ PM/PBT9600 can also function as a camera by capturing images (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 (not available in PM/PBT9600-AR model).
Flash Memory	Flash technology allows you to upgrade the PowerScan™ PM/PBT9600 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 bar codes. This feature can be enabled using either Datalogic Aladdin™ or the bar codes in the USA Driver License Parsing Quick Reference Guide (QRG), available on the Datalogic website.

PM9600 4-key and 16-key Models

The PM9600 series offers two display options: 4 configurable keys and a full 16-key keyboard. This increases interaction between the host and the user allowing a two-way exchange of information for more reliable and effective communications.

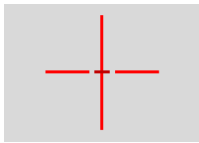
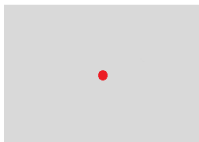
The table below illustrates the key functions of the two models.

	The 4-key keyboard has two fully configurable generic Function keys (F1 and F2) and two arrow keys. These keys are fully customizable to perform specific tasks (e.g. scrolling the list of items, navigating menus, etc.). Not available for AR models. For all related features and how to configure them, refer to the Product Reference Guide.
	The 16-key keyboard is active in numeric data-entry mode by default. It means you can enter any numeric combination including '.' (F2 key). By pressing the yellow arrow key (bottom left corner) you switch to the alphanumeric keyboard which enables the T9-type data entry mode (i.e. consecutive and rapid pressing of the same key makes different characters appear on the display). Additional function keys are available: • F1 key turns ON/OFF the backlight of the keyboard • F3 key deletes the last character entered • F4 key clears the entire screen To send the numeric / alphanumeric string to the host, press the green Enter key in the lower right corner.

USING THE POWERSCAN™ PM/PBT9600

The PowerScan™ PM/PBT9600 normally functions by capturing and decoding codes. Turn on the scanner by pressing the trigger for 2 seconds. When the scanner starts up, it vibrates. After the vibration, the trigger can be released and the startup phase ends. 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

OPTICS TYPE	AIMER PATTERN
SR/HP optics	
DC optics	
AR/DPX optics	

The field of view indicated by the aiming system will be smaller when the reader is closer to the bar code and larger when it is farther from the code. Symbologies with smaller elements (mil size) should be read closer to the unit. Symbologies with larger elements (mil size) should be read farther from the unit.

NOTE: Placing the aiming pointer over the barcode is strongly recommended to maximize the reading capability of DPM barcodes.

Successful reading is signaled by an audible tone plus a good-read green spot LED indicator (not present in AR models) and vibration.

With the AR-model, if enabled, a partial trigger press produces a red spot, which should be aimed over the code center to get the best reading performance. By completely pressing the trigger the illumination area appears and the code scanning starts.

Refer to the PowerScan™ 9600 Family Product Reference Guide (PRG) for more information about this feature and other programmable settings.

Aiming Pointer

Scan the following symbols to enable or disable the aiming pointer.

Aiming Pointer = Disable

★ Aiming Pointer = Enable

NOTE: Disabling the aiming pointer in PM/PBT9600-AR and PM/PBT9600-DPX models is strongly discouraged as it ensures best decoding performance.

SETTING UP THE READER

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

1. Physically mount the Base station and connect it to the Host as described in the BC9600 Quick Reference Guide.
2. Charge the Batteries (see page 6).
3. Link to the Base Station (see page 7).
4. Select the Interface Type (see page 10).
5. Configure the Reader starting on page 18 (optional, depends on settings needed).

NOTE: According to recent modification of Regulation for shipping Li-Ion based battery packs, the products and their spare battery packs parts are shipped with a very low residual charge (low state of charge).
Hence the needs:
• that a new product must be fully recharged before starting to use it.
and
• that battery packs of the stocked products PM/PBT9600 and spare battery pack parts must be periodically recharged. For instance, by using a BC9600 base station powered up with a 12V Datalogic AC/DC adapter (cod.8-0935) for at least 30 minutes each 3 months.

CHARGING THE BATTERIES

Once the BC9600 is powered, you can charge the reader's batteries. Place the PowerScan™ PM/PBT9600 into the BC9600 base station. The LEDs on the base station / battery charger turn green and flash orange (battery state of charge <50%) / green (battery state of charge >50%) during charge.

The battery is completely charged when the LED on the base station / battery charger turns fixed green.

The battery can also be charged using the Multi Battery Charger accessory.

The Battery Status information can be easily retrieved by double-tapping with your fingers on top of the head of the scanner

NOTE: The PowerScan PM/PBT9600 may get warm during charging: this is normal and does not mean a malfunction.

NOTE: Before using the battery, read "Battery Safety" on page 37. Datalogic recommends annual replacement of rechargeable battery packs to ensure maximum performance.

LINKING THE READER

Link Datalogic Devices to Base

Before configuring the interface, it is necessary to link the handheld with the base.

To link the handheld and the base, simply put the handeld into the base. If the reader was previously linked to another base, you must first scan the **Unlink** bar code before re-linking it to the new base.

Unlink

See the Radio Characteristics table on page 27 for the maximum number of handhelds that can be simultaneously linked to a single base station.

Link Scanner as Serial Device to a Bluetooth Host

Use this procedure to let the PowerScan PBT9600 communicate with a Bluetooth host using the Bluetooth Serial Port Profile (SPP).

1. If using a Bluetooth adapter on the host device, install any driver provided with the adapter.

2. Scan the **Link to Host in SPP mode** label below to make the scanner visible to the host device.

3. Use the Bluetooth manager of the host device to “Discover new devices” and select "PBT9600...". If you receive an error message, it may be necessary to change the security settings on either the host device or the scanner.

4. Use an RS-232 terminal program to see incoming data on the port designated by the Bluetooth manager of the host device

Link to Host in SPP Mode

Link Scanner as HID device to a Bluetooth host

Use this procedure to let the PowerScan PBT9600 send data to a Bluetooth host using the Bluetooth HID profile.

1. If using a Bluetooth adapter on the host device, install any driver provided with the adapter.

2. Scan the **Link to Host in HID mode** label below to make the scanner visible to the host device.

3. Use the Bluetooth manager of the host device to "Discover new devices" and select "PBT9600...". If you receive an error message, it may be necessary to change the security settings on either the host device or the scanner.

4. On the host device, open the program that is meant to receive the incoming data.

.

Link to Host in HID mode

NOTE: The PowerScan PBT9600 can be set up to authenticate the remote system when connecting, by entering a Bluetooth passkey or a PIN code. If you want to set the security level and authentication options suitable for your application, or when adding new equipment to a system that requires authentication or uses a custom security PIN, please see the PRG for information.

POWER OFF

Scan the bar code below to shut off power to the hand-held until the next trigger pull.

Power Off

SELECTING THE INTERFACE TYPE

Upon completing the physical connection between the reader base station 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, USB, etc.). Scan the appropriate bar code to select your system's correct interface type.

Interface Selection

You can select a multi-interface (supporting RS-232 and USB) or an Ethernet interface according to the base model used. 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 base charger before repeating.

SERIAL INTERFACE

RS-232 standard interface

Select RS232-STD

RS-232 Wincor-Nixdorf

Select RS232-WN

RS-232 for use with OPOS/UPOS/JavaPOS

Select RS-232 OPOS

USB Com to simulate RS-232 standard interface

Select USB-COM-STD[a]

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

USB-OEM

USB -OEM (can be used for OPOS/UPOS/JavaPOS)

Select USB-OEM

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

USB Keyboard with standard key encoding

Select USB Keyboard

USB Keyboard with alternate key encoding

Select USB Alternate Keyboard

USB Composite

★ Select USB-Composite

★ Factory setting

COUNTRY MODE

If using one of the Keyboard Interfaces, select the specific country / language supported by the keyboard. Read the ENTER / EXIT code before and after the Country Mode selection. For a complete list of the available country modes, refer to the Product Reference Guide.

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

★ = Default Value

COUNTRY MODE (CONTINUED)

Country Mode = Denmark

Country Mode = France

Country Mode = French Canadian

Country Mode = Germany

Country Mode = Hungary

Country Mode = Italy

COUNTRY MODE (CONTINUED)
 Country Mode = Japanese 106-Key
 Country Mode = Lithuanian
 Country Mode = Norway
 Country Mode = Poland
 Country Mode = Portugal
 Country Mode = Romania

COUNTRY MODE (CONTINUED)

Country Mode = Spain

Country Mode = Sweden

Country Mode = Slovakia

Country Mode = Switzerland

Country Mode = United Kingdom

PROGRAMMING

The reader is factory-configured with a set of standard default features. Customize your reader using the programming bar codes available in the PowerScan™ PM/PBT9600 Product Reference Guide or using Datalogic Aladdin software configurator. Check the corresponding features section for your interface, and also the Data Editing and Symbologies 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 "Reset Default Settings" label 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 customization of the programming functions. 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 initial configuration. See 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.

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™ PM/PBT9600" on page 4 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. In AR models, the aiming system remains on until the trigger is released.

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[1] is active. 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”[2] 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”[2] has elapsed. Motion sense[1] is active. Reading a label does not disable scanning. Double Read Timeout[2] prevents undesired multiple reads while in this mode.

1. If the scanner detects motion the aiming pattern is turned on. In AR models, the aiming system turns on with a partial pull of the trigger.
2. See the Product Reference Guide (PRG) for these and other programmable features.

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. Motion sense[2] is active. Reading a label does not disable scanning. Double Read Timeout[1] 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 Timeout[1] prevents undesired multiple reads. Not available for AR model.

Flashing — The reader illuminator flashes on and off regardless of the trigger status. Code reading takes place only during the Flash On[3] time. Double Read Timeout[1] prevents undesired multiple reads.

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. Not available for AR model.

Retained Trigger Hold Multiple — Same as Trigger Hold Multiple but all decoded labels are transmitted when the trigger is released. Motion sense[2] is active. The labels can be sorted before transmission.

1. See the Product Reference Guide (PRG) for these and other programmable features.
2. If the scanner detects motion the aiming pattern is turned on. In AR models, the aiming system turns on with a partial pull of the trigger.
3. Controlled by Flash On Time and Flash Off Time. Use the PRG to program these options.

SCAN MODE

ENTER/EXIT PROGRAMMING MODE

★ Scan Mode = Trigger Single

Scan Mode = Trigger Pulse Multiple

Scan Mode = Trigger Hold Multiple

Scan Mode = Flashing

★ = default value

SCAN MODE (CONTINUED)
 Scan Mode = Always On[a]
 Scan Mode = Stand Mode[a]
 Scan Mode= Retained Trigger Hold Multiple

a. Not available for AR model

Set Date and Time (optional)

1. Scan the Enter / Exit Programming bar code below to set date and time.

ENTER / EXIT PROGRAMMING MODE

2. Scan the Set Date bar code + six digits for Year, Month and Day (YYYYMMDD) from the "Hex-Numeric Key-pad" on page 39.

Set Date

3. Scan Set Time + six digits for Hours, Minutes and Seconds (HHMMSS) from the "Hex-Numeric Keypad" on page 39.

Set Time

4. Scan the Enter/Exit Programming bar code to complete the procedure.

TECHNICAL SPECIFICATIONS

The following table contains Physical and Performance Characteristics, User Environment and Regulatory information.

PHYSICAL CHARACTERISTICS	
Color	Yellow/Black
Dimensions	Height 19.8 cm (7.8'') Length 15 cm (5.9") Width 7.9 cm (3.1")
Weight	PM9600 w/o display: 425 g (14.9 oz.) PM9600 w/display: max 455 g (16 oz.) PM9600AR w/o display: 450 g (15.9 oz.) PM9600AR w/ display: 480 g (16.9 oz.) PM9600DPX: 463 g (16.3 oz.) PBT9600: 415 g (14.6 oz.) PBT9600AR: 450 g (15.9 oz.) PBT9600DPX: 435 g (15.3 oz.)
ELECTRICAL CHARACTERISTICS	
Battery Type	Li-ion battery pack
Time of Recharge typical @ 25°C ambient temperature	
External Power	typ. 3h 15' fast charge @ 12V typ. 2h 50' fast charge @ 24V
Host Power USB	typ. 15h 15'
Host Power USB type C	typ. 6h
Interfaces Supported	USB, RS-232, Ethernet
Max. Scan Rate	50 frames/sec
Reading Indicators	Top and rear illumination, Good Read Spot[a], Beep, Vibrator

a. Not available for AR model.

ENVIRONMENTAL CHARACTERISTICS	
Operating Temperature	-20° to 50° C (-4° to 122° F)
Recharging Temperature[a]	Recommended 0° to 35° C (32° to 95° F) Max allowed 0° to 40° C (32° to 104° F)
Storage Temperature	-40° to 70° C (-40° to 158° F)
Humidity	0 to 95% non-condensing
Drop Resistance	Withstands 50 drops from 2.4 m / 8 ft @20° C; Withstands 50 drops from 2.0 m / 6.6 ft @-20° C
Ambient Light Immunity	100,000 Lux
Water/Dust Protection Degree	IP67 and IP65
ESD Protection	20 KV

a. **NOTE**: The higher the ambient temperature, the longer the charging time.

OPTICAL CHARACTERISTICS	
Optical Format	1/4"
Imager Sensor	1280 H x 800 V
Illumination System	SR, HP and DC: White LED AR: 1 red LED (near field) + 1 red LED (far field) DPX: White, Red and Blue LED
Aiming System	SR, HP and DC: 660 nm VLD AR, DPX: 650nm VLD
Reading Angle	SR, HP, DC: Pitch: +/- 52°; Skew: +/- 52° AR: Pitch: +/- 60°; Skew: +/- 60° DPX: Pitch: +/- 52°; Skew: +/- 52°
Field of View	HP: 38° x 24° SR: 38° x 24° DC: 51° x 33.5° AR: 34°H x 22°V (Near field) 12°H x 7.5°V (Far field) DPX: 38° x 29°

Print Contrast Ratio	SR, HP, DC: minimum 15% AR: minimum 20% DPX: 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, datalogic 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, MacroPDF, Micro PDF417, China sensible, DotCode
Other: OCR, Digimarc[a]

a. Not available for AR and DPX models.

REGULATORY
See Regulatory Addendum

RADIO CHARACTERISTICS			
	Star 433 models	Star 910 models	BT models
Frequency working center	433MHZ	910MHZ	2400 to 2483.5 MHz
Programmable Speed	19.2 kb/s 500 kb/s (default)	36.8 kb/s 500 kb/s (default)	
Typical Range (in open air)	100 m (at 500 kb/s) 150 m (at 19.2 kb/s)	180 m (at 500 kb/s) 230 m (at 36.8 kb/s, frequency hopping) 80 m (at 36.8 kb/s, fixed channel)	100m
Max number of devices per base station	16		7

NOTE: A radio coverage reduction is expected when the base station is charging a gun.

DOF - DEPTH OF FIELD[A] (TYPICAL)	
Symbology	**DOF range**
Code 39	**AR optics:** 3 mils: 13-95 cm (5.1- 37.4in) 20 mils: up to 600 cm (up to 236.2in)
Code 128	**SR optics:** 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) **HP optics:** 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) **AR optics:** 40 mils: up to 1000 cm (up to 393.7 in) 100 mils:up to 2000 cm (up to 787.4 in) **DPX optics:** 2.5 mils: 2.5-9.8 cm (1.0-3.9 in) 5 mils: 2.5-16.9 cm (1.0-6.7 in)
EAN13	**SR optics:** 13 mils: 4-67.5 cm (1.5-26.5 in) **HP optics:** 13 mil: 4-120.2 cm (1.5-40.2 in) **AR optics:** 13 mils: up to 320 cm (up to 126 in) **DPX optics:** 13 mils: 2.5-22.5 cm (1.0-8.9 in)
PDF417	**HP optics:** 10 mils: 0.5-46.1 cm (0.2-18.1 in) **DPX optics:** 5 mils: 2.0-14.7 cm (0.8-5.8 in) 10 mils: 1.0-21.5 cm (0.4-8.5 in)

Data Matrix	**SR optics:** 10 mils: 6.4-30 cm (2.5-11.8 in) **HP optics:** 4 mils: 6.5-9.3 cm (2.5-3.6 in) 10 mils: 4.2-32.1 cm (1.6-12.6 in) **AR optics:** 10 mils: up to 110 cm (up to 43.3 in) 55 mils: up to 650 cm (up to 255.9 in) 100 mils:up to 1000 cm (up to 393.7 in) **DPX optics:** 5 mils: 2.0-10.0 cm (0.8-3.9 in) 10 mils: 2.0-16.2 cm (0.8-6.4 in)
Max Resolution[b]	**SR optics:** 1D = 3 mils, 2D = 6 mils **HP optics:** 1D = 2.5 mils, 2D = 4 mils **AR optics:** 1D = 2.5 mils, PDF= 3mils, Datamatrix = 5 mils **DPX optics:** 1D = 2 mils, 2D = 4 mils

a. All labels grade A, typical environmental light, 20°C, label inclination 10°. For AR model only: All labels grade A, ambient light level 200-300lux, pitch angle 10°, tilt angle 10° skew angle 0°, room temperature 20°C.
b. 1D codes are Code 39 and 2D codes are Data Matrix

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 (not available in AR model). 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 Beep	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.

INDICATION	LED	BEEPER
Good Read Beep	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 (not available for AR model).	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
Double TAP	The scanner turns on the LED for a few seconds indicating the state of the battery. Green: completely charged. Orange: half charge. Red: low battery.	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 is not decoded.	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 to scan another bar code type.
	Distance between reader and bar code is incorrect.	Move imager 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).

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.

THE DATALOGIC WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, EXPRESS, IMPLIED, STATUTORY OR OTHERWISE, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE. DATALOGIC SHALL NOT BE LIABLE FOR ANY DAMAGES SUSTAINED BY BUYER ARISING FROM DELAYS IN THE REPLACEMENT OR REPAIR OF PRODUCTS UNDER THE ABOVE. THE REMEDY SET FORTH IN THE WARRANTY STATEMENT IS THE BUYER'S SOLE AND EXCLUSIVE REMEDY FOR WARRANTY CLAIMS. NO EXTENSION OF THIS WARRANTY WILL BE BINDING UPON DATALOGIC UNLESS SET FORTH IN WRITING AND SIGNED BY DATALOGIC'S AUTHORIZED REPRESENTATIVE. DATALOGIC'S LIABILITY FOR DAMAGES ON ACCOUNT OF A CLAIMED DEFECT IN ANY PRODUCT DELIVERED BY DATALOGIC SHALL IN NO EVENT EXCEED THE PURCHASE PRICE OF THE PRODUCT ON WHICH THE CLAIM IS BASED. DATALOGIC SHALL NOT BE LIABLE FOR DAMAGES RELATING TO ANY INSTRUMENT, EQUIPMENT, OR APPARATUS WITH WHICH THE PRODUCT SOLD UNDER THIS AGREEMENT IS USED. Further details on warranty coverage, rights and conditions are addressed under and regulated by the Terms and Conditions of Sales of Datalogic available at https://www.datalogic.com/terms_conditions_sales.

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.

CLEANING PROCEDURE

Proper cleaning is needed on the external plastic surfaces and output window to guarantee reliable scanning and charging of the battery.

A regular cleaning routine will remove the dust and dirt that may accumulate on the product over time. The maintenance activity may be repeated more frequently depending on the severity of the environment in which the scanner is used.

A periodic deeper cleaning is suggested once per month.

Cleaning plastic surfaces

Exterior surfaces and scan windows exposed to spills, smudges or debris accumulation require periodic cleaning to ensure best performance during scanning operations. Follow the procedures described in this instruction sheet to keep your PowerScan™ device in good operating condition.

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

CAUTION: DO NOT use abrasive pads or cleaning agents.

Common Cleaning Solutions

The cleaners and disinfectants (or their equivalent) listed below have been tested for use on the PowerScan™ 9600:

PRODUCT	CHEMICAL CONTENT
Alcohol Wipes	70% Isopropyl Alcohol
Formula 409® Glass and Surface Cleaner	n-Alkyl Dimethyl Benzyl Ammonium Chloride; n-Propoxypropanol
Windex® Multisurface	2-Hexoxyethanol, Butoxypropanol
Clorox® Bleach; Clorox Healthcare Bleach Germicidal Cleaner	Diluted to reach max 0.8% of concentration Sodium Hypochlorite; Sodium Hydroxide
Hydrogen Peroxide	3%
100% Gentle dish soap and water	

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

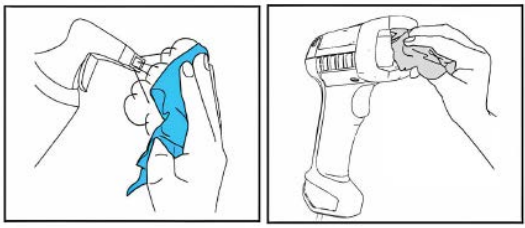
CAUTION: DO NOT spray or pour cleaner directly onto the unit.
DO NOT use solutions in their concentrated form.
DO NOT use aerosols, solvents or abrasives.
DO NOT use paper towels or rough cloths to clean windows.

NOTE: The PowerScan™ 9600 is tolerant to occasional contact to the following industrial fluids:

- **Brake fluid (DOT3)**
- **Carburetor Cleaner (STP)**
- **Gasoline**
- **Motor oil (SAE30)**
- **Automatic Transmission Fluid (ATF)**

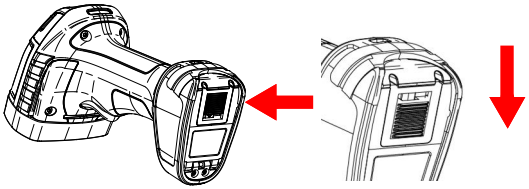
Cleaning enclosure and window surfaces

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.

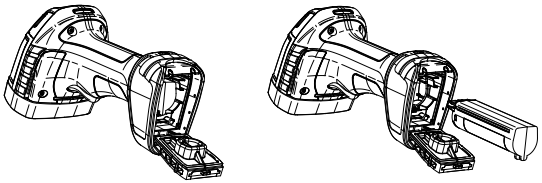


CHANGING THE BATTERIES

1. Push in and slide the battery lock down to open the battery door, as shown below.



2. Open the battery door and extract the battery.



3. Invert the sequence to insert the battery and lock the battery door.

WARNING: Do not incinerate, disassemble, short terminals or expose to high temperature. Risk of fire, explosion. Use specified charger only. Risk of explosion if the battery is replaced by an incorrect type. Dispose of the batteries as required by the relevant laws in force.

BATTERY SAFETY

To install, charge and/or do any other action on the battery, follow the instructions in this manual.

NOTE: To charge the Battery Pack, See "Changing the Batteries" on page 36. Datalogic recommends annual replacement of rechargeable battery packs to ensure maximum performance.

WARNING: Do not discharge the battery using any device except for the scanner. When the battery is used in devices other than the designated product, it may damage the battery or reduce its life expectancy. If the device causes an abnormal current to flow, it may cause the battery to become hot, explode or ignite and cause serious injury.
Lithium-ion battery packs may get hot, explode or ignite and cause serious injury if exposed to abusive conditions. Be sure to follow the safety warnings that follow:

- **Do not place the battery pack in fire or heat.**
- **Do not connect the positive terminal and negative terminal of the battery pack to each other with any metal object (such as wire).**
- **Do not carry or store the battery pack together with metal objects.**
- **Do not pierce the battery pack with nails, strike it with a hammer, step on it or otherwise subject it to strong impacts or shocks.**
- **Do not solder directly onto the battery pack.**
- **Do not expose the battery pack to liquids, or allow the battery to get wet.**
- **Do not apply voltages to the battery pack contacts.**

In the event the battery pack leaks and the fluid gets into your eye, do not rub the eye. Rinse well with water and immediately seek medical care. If left untreated, the battery fluid could cause damage to the eye.

CAUTION: Always charge the battery at 32° – 104°F (0° - 40°C) temperature range.
Use only the authorized power supplies, battery pack, chargers, and docks supplied by your Datalogic reseller. The use of any other power supplies can damage the device and void your warranty.
Do not disassemble or modify the battery. The battery contains safety and protection devices, which, if damaged, may cause the battery to generate heat, explode or ignite.
Do not place the battery in or near fire, on stoves or other high temperature locations.
Do not place the battery in direct sunlight, or use or store the battery inside cars in hotweather. Doing so may cause the battery to generate heat, explode or ignite. Using the battery in this manner may also result in a loss of performance and a shortened life expectancy.
Do not place the battery in microwave ovens, high-pressure containers or on induction cookware.
Immediately discontinue use of the battery if, while using, charging or storing the battery, the battery emits an unusual smell, feels hot, changes color or shape, or appears abnormal in any other way.
Do not replace the battery pack when the device is turned on.
Do not remove or damage the battery pack's label.
Do not use the battery pack if it is damaged in any part. Battery pack usage by children should be supervised.

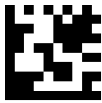
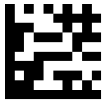
As with other types of batteries, Lithium-Ion (LI) batteries will lose capacity over time. Capacity deterioration is noticeable after one year of service whether the battery is in use or not. It is difficult to precisely predict the finite life of a LI battery, but cell manufacturers rate them at 500 charge cycles. In other words, the batteries should be expected to take 500 full discharge / charge cycles before needing replacement. This number is higher if partial discharging / recharging is adhered to rather than full / deep discharging.

The typical manufacturer advertised useful life of LI batteries is one to three years, depending on usage and number of charges, etc., after which they should be removed from service, especially in mission critical applications. Do not continue to use a battery that is showing excessive loss of capacity, it should be properly recycled / disposed of and replaced. For most applications, batteries should be replaced after one year of service to maintain customer satisfaction and minimize safety concerns.

Collect and recycle waste batteries separately from the device in comply with European Directive 2006/66/EC, 2011/65/EU, 2002/96/EC and 2012/19/EU and subsequent modifications, US and China regulatory and others laws and regulations about the environment.

HEX-NUMERIC KEYPAD

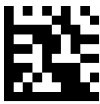
Use the bar codes that follow to enter numbers as you would select digits / characters from a keypad.

HEX-NUMERIC KEYPAD
 0
 1
 2
 3
 4
 5

HEX-NUMERIC KEYPAD (CONTINUED)

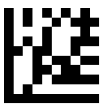
6

7

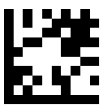


8

9



A



B

HEX-NUMERIC KEYPAD (CONTINUED)

C

D

E

F

DATALOGIC

www.datalogic.com

Datalogic S.r.l.
Via S. Vitalino, 13 | 40012 Calderara di Reno | Bologna - Italy
Tel. +39 051 3147011 | Fax +39 051 3147205

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