

 **DATALOGIC**

Gryphon™ | GFS4400

Fixed Mount Area Imager
Bar Code Reader



Quick Reference Guide

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



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NOTES

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- END -

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NOTES



Gryphon GFS4400

Fixed Mount Area Imager Bar Code Reader

The Gryphon GFS4400 is a fully self-contained standard range 2D bar code scanning module for use in self service kiosks or other semi automated equipment requiring the ability to read a bar code. It is intended to be an easy integration by system designers with little expertise in scanning technology. Unlike currently available products, the GFS4400 uses the latest and fastest imaging technology and offers Datalogic's Green Spot for good read feedback.

The scanning technology is essentially the same as the Gryphon I 4400 family of area imagers, with some enhancements for presentation reading and improved motion tolerance. The enclosure is designed for ease of integration, is sealed to IP54 for cleaning, and is constructed of a solvent- and disinfectant-tolerant resin for health care applications.

The GFS4400 is an area imaging scanner for OEM applications. It is available in two different data interface versions:

- GFS4470 Gryphon Fixed Scanner 2D Imager USB
- GFS4450-9 Gryphon Fixed Scanner 2D Imager RS-232 9-pin connector

Setting Up the Reader

Scan the appropriate barcode for your reader's interface type from the following section.

RS-232 Interface (GFS4450-9 only)

RS-232 standard interface



Select RS-232 STD

RS-232 Wincor-Nixdorf



Select RS-232 W-N

RS-232 for use with OPOS/UPOS/JavaPOS



Select RS-232 OPOS

USB Interface (GFS4470 only)

The reader attaches directly to a USB host or a powered USB hub, and is powered by it. No additional power supply is required. The reader auto-detects the USB and defaults to the USB-COM interface.

To simulate a Keyboard, scan the bar code below:



Interface Selection: USB-KBD

Select USB Keyboard with alternate key encoding:



USB Alternate Keyboard

Select USB Keyboard for Apple computers:



USB-KBD-APPLE

To simulate a serial interface, scan the bar code below:



Interface Selection: USB-COM



IMPORTANT

**Download the correct USB COM driver from:
<http://www.datalogic.com>.**

USB-OEM (for use with OPOS/UPOS/JavaPOS)

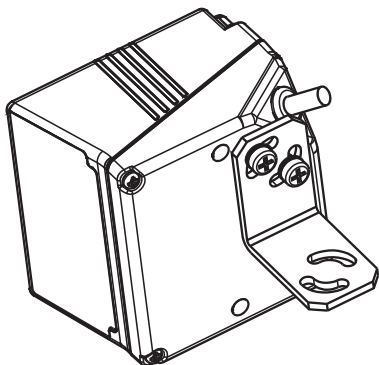
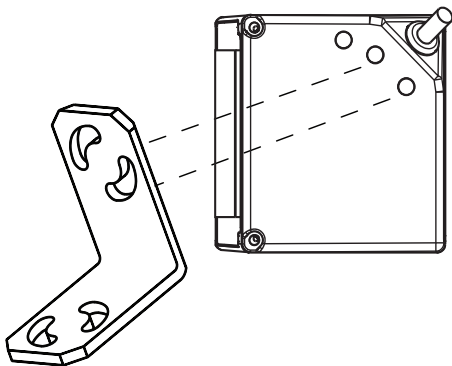


Select USB-OEM

Mounting Bracket

The GFS4400 can be mounted onto a stationary surface using a bracket as shown below. Just attach to the bottom of the reader using the provided screws, as shown in the two figures below. For specific size information, see "GFS4400 Dimensions" on page 25.

**Mounting the
Bracket**



Bracket Attached

Programming

The reader is factory-configured with a set of standard default features. After scanning the interface bar code from the Interfaces section, you can select other options and customize your reader through use of the programming bar codes available in the Gryphon I GFS4400 Product Reference Guide (PRG).

Programming can also be performed using the Datalogic Aladdin™ Configuration application, which is downloadable from the Datalogic website listed on the back cover of this manual. This multi-platform utility program allows device configuration using a PC. It communicates with the device using a serial or USB cable and can also create configuration barcodes to print.

Using Programming Bar Codes

This manual contains bar codes which allow you to reconfigure your reader. Some programming bar code labels, like ["Reset Default Settings" on page 7](#), 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 default settings restored, scan the bar code below to reset the reader to its initial configuration.



Defaults are based on the interface type. Be sure your reader is configured for the correct interface before scanning this label.



Reset Default Settings

The product can also be restored to its original factory default settings. Reference the PRG for this option, and for a list of standard factory settings.

Reading Parameters

Move the reader toward the target and center the aiming pattern and illumination system to capture and decode the image. 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.

Aiming System

A number of options for customizing control of the Aiming System are available. See the Gryphon I GFS4400 PRG for more information and programming bar codes.

Good Read Green Spot Duration

Successful reading can be signaled by a good read green spot. Use the bar codes that follow to specify the duration of the good read pointer beam after a good read.



ENTER/EXIT PROGRAMMING MODE



Disabled



◆ Short (300 ms)



Medium (500 ms)



Long (800 ms)

Operating Modes

The reader can operate in one of several scanning modes.



See the PRG for further information on the operation of reading modes, and additional programmable features.

On Line — Scanning is activated when the button is pushed or through an external trigger (GFS4450-9 only).

Serial On Line — Scanning is initiated by command sent through the host interface (manual and external triggering can be enabled in this read mode through option setting).

Automatic — Scanning is continually on.

Automatic (Object Sense) — Scanning is turned on automatically when an item is placed in reader's field of view.



ENTER/EXIT PROGRAMMING MODE



Operating Mode = On Line

Operating Modes (continued)



Serial On Line



Operating Mode = Automatic



Operating Mode = Automatic (Object Sense)

Technical Features

Item	Description
Physical Characteristics	
Color	Grey
Dimensions	Height 1.54" / 39mm Length 2.24" / 57mm Width 2.28" / 58 mm
Weight (with cable, without bracket)	USB version - Approximately 6.3 ounces/170 g RS-232 version - Approximately 7.2 ounces/204 g
Electrical Characteristics	
Input Voltage	5 VDC \pm 5% Overvoltage tolerant to 14VDC
External Trigger Input (Only GFS4450-9): 1V - 5V Current Consumption for 1V = 2mA max 5V = 10mA max Min Pulse Duration = 25ms *	

* Although the scan engine can respond to this minimum pulse width for triggering, bar code decoding time is dependent on several factors. External Trigger should be held active until there is a good read decode or a determined timeout period.

Item	Description
Output (Only GFS4450-9): 14VDC	
Vout	14VDC
Vce	20 VDC max
Collector Current	40 mA continuous max
Vce Saturation	0.3 V max at 15 mA
Power Dissipation	80 mW max at 50 °C (ambient temperature)
Current & Power Consumption	
Input current at 5V in Automatic (Object Sense) Reading Mode	
Operating (typical)	180 mA
Operating (max)	250 mA
Idle/standby (typical)	65 mA (OnLine & Serial OnLine Modes) 115 mA (Automatic Object Sense Mode) No idle in Automatic Mode
Performance Characteristics	
Nominal Frame Rate	53 frames/second
Light Source	Dual Red LEDs
Roll (Tilt) Tolerance	Up to $\pm 180^\circ$

Pitch Tolerance	$\pm 40^\circ$	
Skew (Yaw) Tolerance	$\pm 40^\circ$	
Print Contrast Minimum	25% minimum reflectance	
Field of View	40° H x 26° V	

Depth of Field (Typical)	cm		inches	
	NF	FF	NF	FF
Code 39 5mil	4.7	17.0	1.8	6.7
Code 39 10mil	1.7	30.0	0.7	11.8
Code 39 20mil	1.1	42.0	0.4	16.5
EAN 7.5mil	2.8	22.0	1.1	8.7
EAN 13mil	2.5	34.0	1.0	13.4
PDF-417 6.6mil	3.3	15.0	1.3	5.9
PDF-417 10mil	2.2	22.0	0.9	8.7
PDF-417 15mil	2.5	30.0	1.0	11.8
DataMatrix 10mil	2.7	17.0	1.1	6.7
DataMatrix 15mil	1.2	21.0	0.5	8.3
QR Code 10mil	3.5	12.0	1.4	4.7
QR Code 15mil	0.5	20.0	0.2	7.9
Minimum Element Width	1D Min Resolution = 4 mil PDF-417 Min Resolution = 5 mil Datamatrix Min Resolution = 7 mil			

Note: the reading performances may change with different symbologies.

Decode Capability

1D Bar Codes

UPC/EAN/JAN (A, E, 13, 8); UPC/EAN/JAN (including P2 /P5); UPC/EAN/JAN (including; ISBN / Bookland & ISSN); UPC/EAN Coupons; Code 39 (including full ASCII); Code 39 Trioptic; Code39 CIP (French Pharmaceutical); LOGMARS (Code 39 w/ standard check digit enabled); Danish PPT; Code 32 (Italian Pharmacode 39); Code 128; Code 128 ISBT; Interleaved 2 of 5 ; Standard 2 of 5; Interleaved 2 of 5 CIP (HR); Industrial 2 of 5; Discrete 2 of 5; Datalogic 2 of 5 (China Post Code/Chinese 2 of 5); IATA 2of5 Air cargo code; Code 11; Codabar; Codabar (NW7); ABC Codabar; EAN 128; Code 93 ; MSI; PZN; Plessey; Anker Plessey; GS1 DataBar Omnidirectional; GS1 DataBar Limited; GS1 DataBar Expanded; GS1 DataBar Truncated; DATABAR Expanded Coupon.

2D / Stacked Codes

The Gryphon I GFS4400 scanner is capable of decoding the following symbologies using multiple frames (i.e. Multi-Frame Decoding): Datamatrix; Inverse Datamatrix; Datamatrix is configurable for the following parameters; Normal or Inverted; Square or Rectangular Style; Data length (1 - 3600 characters); Maxicode; QR Codes (QR, Micro QR and Multiple QR Codes); Aztec; Postal Codes - (Australian Post; Japanese Post; KIX Post; Planet Code; Postnet; Royal Mail Code (RM45CC); Intelligent Mail Barcode (IMB); Sweden Post; Portugal Post); LaPoste A/R 39; 4-State Canada; PDF-417; MacroPDF; Micro PDF417; GS1 Composites (1 - 12); Codablock F; French CIP13^a; GS1 DataBar Stacked; GS1 DataBar Stacked Omnidirectional; GS1 DataBar Expanded Stacked; GS1 Databar Composites; Chinese Sensible Code; Inverted 2D codes^b.

^aIt is acceptable to handle this with ULE

^bThe SW can apply the Normal/Reverse Decoding Control to the following symbologies: Datamatrix, QR, Micro QR, Aztec and Chinese Sensible Code.

NOTE: The Scanner can also decode mirrored images of 2D matrix codes Data-matrix, QR Code and Maxicode.

Interfaces Supported	GFS4450-9 version: RS-232 Standard GFS4470 version:USB-COM, USB-Keyboard, USB-OEM
User Environment	
Operating Temperature	-4° to 122° F (-20° to 50° C)
Storage Temperature	-4° to 158° F (-20° to 70° C)
Humidity	Operating: 5% to 90% relative humidity, non condensing
Drop specifications	5 drops from 30 inches (0.76 mt.) to concrete
Ambient Light immunity	Up to 100,000 Lux
Contaminants	IEC529-IP54
ESD Level	12 KV
Regulatory	
LED Emission Class	(IEC-62471:2006-07) Exempt (No Risk) IEC60825-1: 2007
Electrical Safety	IEC 60950-1 , CAN/CSA C22.2 No. 60950-1-07; UL 60950-1
EMI/RFI	North America (FCC) : Part 15 Class B, Canada (IC) : ICES-003 Class B, European Union EMC Directive, Australian (C-tick), Russia (Gost)

RS-232 Electrical Connections

9-pin connector

1	Trigger	Trigger signal input (see Figure 2 and Figure 3 on next page)
2	TX	Transmit Data (output from scanner)
3	RX	Receive Data (input to scanner)
4	NC	Not connected
5	GND	Ground
6	VCC	+5Vdc
7	CTS	Clear To Send (input to scanner)
8	RTS	Request To Send (output from scanner)
9	DIGITAL OUTPUT	Output signal (see Figure 1)

Default configuration is RS-232: 9600, 8, N, 1, no handshaking, ACK/NAK disabled.

Figure 1. Output Connection

Output Connection

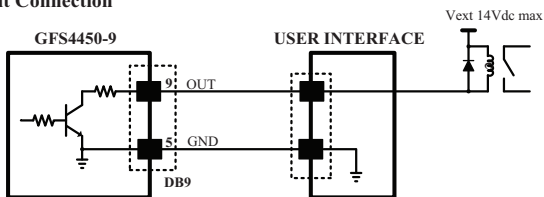


Figure 2. Using GFS4450-9 Power

Input Trigger Using
GFS4450-9 Power

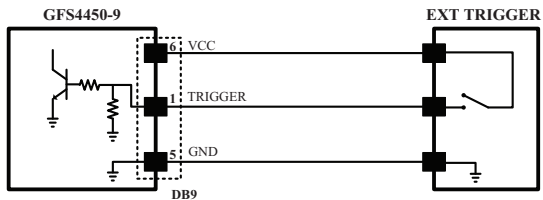
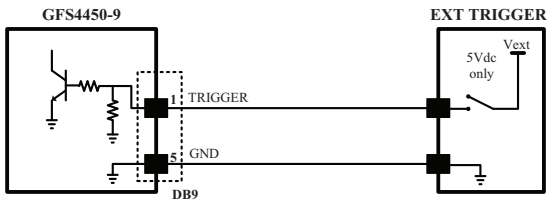


Figure 3. Using External Power Supply


Input Trigger Using
External Power



LED and Beeper Indications

Button and LED Status

The top of the product has a button and three indicator LEDs:

	POWER (yellow LED)	ON = Power ON
		OFF = Power OFF or standby (only USB version)
	GOOD (green LED)	ON = Good Read
		Blinks = USB enumeration or interface inactive or waiting for change of con- figuration
	TRIGGER (blue LED)	ON = External trigger or button pressed or phase active
		Blinks = During transfer of captured image, or during Flash memory updates
Button	Press for manual trigger	

Indicators

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.

Indicator	Description	LED	Beeper
Power-up Beep	The reader is in the process of powering-up.		Reader beeps four times at highest frequency and volume upon power-up.
Good Read Beep	A label has been successfully scanned by the reader.	LED behavior for this indication is configurable via the feature 'Good Read: When to Indicate' (see the PRG for information.)	The reader will beep once at current frequency, volume, mono/bi-tonal setting and duration upon a successful label scan.

Indicator	Description	LED	Beeper
ROM Failure	There is an error in the reader's software/programming	Flashes	Reader sounds one error beep at highest volume.
Limited Scanning Label Read	Indicates that a host connection is not established.	N/A	Reader 'chirps' six times at the highest frequency and current volume.
Reader Active Mode	The reader is active and ready to scan.	The LED is lit steadily ^a	N/A
Reader Disabled	The reader has been disabled by the host.	The LED blinks continuously	N/A

Indicator	Description	LED	Beeper
Green Spot ^a flashes momentarily	Upon successful read of a label, the software shall turn the green spot on for the time specified by the configured value.	N/A	N/A
Image Capture	On when ready to capture image	Blue LED on	N/A
Flash Memory Update	Occurs while update is in progress	Blue LED blinks	

^aExcept when in sleep mode or when a Good Read LED Duration other than 00 is selected

Programming Mode - The following indications ONLY occur when the reader is in Programming Mode.

Indicator	Description	LED	Beeper
Label Programming Mode Entry	A valid programming label has been scanned.	LED blinks continuously	Reader sounds four low frequency beeps.
Label Programming Mode Rejection of Label	A label has been rejected.	N/A	Reader sounds three times at lowest frequency and current volume.
Label Programming Mode Acceptance of Partial Label	In cases where multiple labels must be scanned to program one feature, this indication acknowledges each portion as it is successfully scanned.	N/A	Reader sounds one short beep at highest frequency and current volume.
Label Programming Mode Acceptance of Programming	Configuration option(s) have been successfully programmed via labels and the reader has exited Programming Mode.	N/A	Reader sounds one high frequency beep and 4 low frequency beeps followed by reset beeps.

Label Program- ming Mode Cancel Item Entry	Cancel label has been scanned.	N/A	Reader sounds two times at low frequency and current volume.
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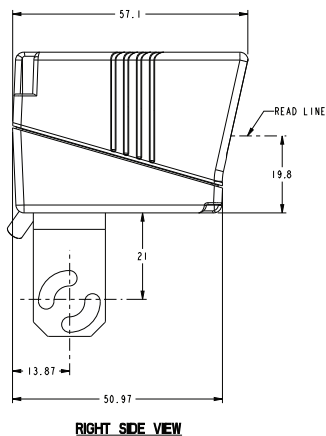
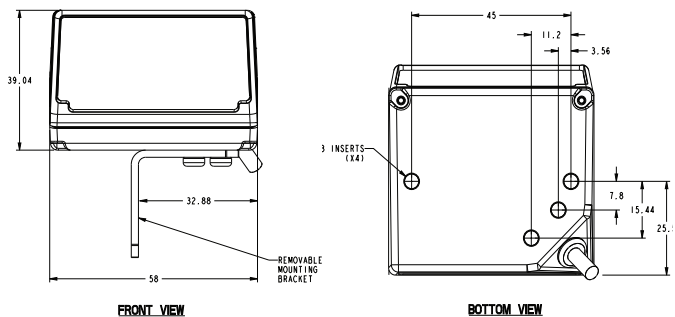
Error Codes

Upon startup, if the reader sounds a long tone, this means the reader has not passed its automatic Selftest and has entered FRU (Field Replaceable Unit) isolation mode. If the reader is reset, the sequence will be repeated. Press and release the trigger to hear the FRU indication code.

The following table describes the LED flashes/beep codes associated with an error found.

Number of LED Flashes/Beeps	Error	Corrective Action
1	Configuration	Contact Helpdesk for assistance
2	Interface PCB	
6	Digital PCB	
11	Imager	

GFS4400 Dimensions



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.

Datalogic Limited Factory Warranty

Warranty Coverage

Datalogic warrants to Customer that Datalogic's products will be free from defects in materials and workmanship for a period of 1.5 years from product shipment. This warranty does not extend to batteries and cables. As consumable items batteries and cables carry a 90 day warranty from time of purchase for DOA (dead on arrival) defects. In order to obtain service under this Warranty, Customer must notify Datalogic of the claimed defect before the expiration of the Warranty period and obtain from Datalogic a return authorization number for return of the product to designated Datalogic service center. If Datalogic determines Customer's claim is valid, Datalogic will repair or replace product without additional charge for parts and labor. Customer shall be responsible for packaging and shipping the product to the designated Datalogic service center, with shipping charges prepaid. Datalogic shall pay for the return of the product to Customer if the shipment is to a location within the country in which the Datalogic service center is located. Customer shall be responsible for paying all shipping charges, duties,taxes, and any other charges for products returned to any other locations.

Datalogic hardware products are warranted against defects in material and workmanship under normal and proper use. The liability of Datalogic under this warranty is limited to furnishing the labor and parts necessary to remedy any defect covered by this warranty and restore the product to its normal operating condition. Repair or replacement of product during the warranty does not extend the original warranty term. 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.

If Datalogic determines that a product has defects in material or workmanship, Datalogic shall, at its sole option repair or replace the

product without additional charge for parts and labor, or credit or refund the defective products duly returned to Datalogic. To perform repairs, Datalogic may use new or reconditioned parts, components, subassemblies or products that have been tested as meeting applicable specifications for equivalent new material and products. Customer will allow Datalogic to scrap all parts removed from the repaired product. The warranty period shall extend from the date of shipment from Datalogic for the duration published by Datalogic for the product at the time of purchase (Warranty period). Datalogic warrants repaired hardware devices against defects in workmanship and materials on the repaired assembly for a 90 day period starting from the date of shipment of the repaired product from Datalogic or until the expiration of the original warranty period, whichever is longer. Datalogic does not guarantee, and it is not responsible for, the maintenance of, damage to, or loss of configurations, data, and applications on the repaired units and at its sole discretion can return the units in the "factory default" configuration or with any software or firmware update available at the time of the repair (other than the firmware or software installed during the manufacture of the product). Customer accepts responsibility to maintain a back up copy of its software and data.

Warranty Claims Process

In order to obtain service under the Factory Warranty, Customer must notify Datalogic of the claimed defect before the expiration of the applicable Warranty period and obtain from Datalogic a return authorization number (RMA) for return of the product to a designated Datalogic service center. If Datalogic determines Customer's claim is valid, Datalogic will repair or replace product without additional charge for parts and labor. Customer shall be responsible for packaging and shipping the product to the designated Datalogic service center, with shipping charges prepaid. Datalogic shall pay for the return of the product to Customer if the shipment is to a location within the

country in which the Datalogic service center is located. Customer shall be responsible for paying all shipping charges, duties, taxes, and any other charges for products returned to any other locations. Failure to follow the applicable RMA policy, may result in a processing fee. Customer shall be responsible for return shipment expenses for products which Datalogic, at its sole discretion, determines are not defective or eligible for warranty repair.

Warranty Exclusions

The Datalogic Factory Warranty shall not apply to:

- (i) any product which has been damaged, modified, altered, repaired or upgraded by other than Datalogic service personnel or its authorized representatives;
- (ii) any claimed defect, failure or damage which Datalogic determines was caused by faulty operations, improper use, abuse, misuse, wear and tear, negligence, improper storage or use of parts or accessories not approved or supplied by Datalogic;
- (iii) any claimed defect or damage caused by the use of product with any other instrument, equipment or apparatus;
- (iv) any claimed defect or damage caused by the failure to provide proper maintenance, including but not limited to cleaning the upper window in accordance with product manual;
- (v) 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;

- (vi) any damage or malfunctioning caused by non-restoring action as for example firmware or software upgrades, software or hardware reconfigurations etc.;
- (vii) the replacement of upper window/cartridge due to scratching, stains or other degradation and/or
- (viii) any consumable or equivalent (e.g., cables, power supply, batteries, keypads, touch screen, triggers etc.).

No Assignment

Customer may not assign or otherwise transfer its rights or obligations under this warranty except to a purchaser or transferee of product. No attempted assignment or transfer in violation of this provision shall be valid or binding upon Datalogic.

DATALOGIC'S LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ORAL OR WRITTEN, STATUTORY OR OTHERWISE, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NONINFRINGEMENT. DATALOGIC SHALL NOT BE LIABLE FOR ANY DAMAGES SUSTAINED BY CUSTOMER ARISING FROM DELAYS IN THE REPLACEMENT OR REPAIR OF PRODUCTS UNDER THE ABOVE. THE REMEDY SET FORTH IN THIS WARRANTY STATEMENT IS THE CUSTOMER'S SOLE AND EXCLUSIVE REMEDY FOR WARRANTY CLAIMS. UNDER NO CIRCUMSTANCES WILL DATALOGIC BE LIABLE TO CUSTOMER OR ANY THIRD PARTY FOR ANY LOST PROFITS, OR ANY INCIDENTAL, CONSEQUENTIAL IN-DIRECT, SPECIAL OR CONTINGENT DAMAGES REGARDLESS OF WHETHER DATALOGIC HAD ADVANCE NOTICE OF THE POSSIBILITY OF SUCH DAMAGES.

Risk of Loss

Customer shall bear risk of loss or damage for product in transit to Datalogic. Datalogic shall assume risk of loss or damage for product in Datalogic's possession. In the absence of specific written instructions for the return of product to Customer, Datalogic will select the carrier, but Datalogic shall not thereby assume any liability in connection with the return shipment.

Services and Support

Datalogic provides several services as well as technical support through its website. Log on to www.datalogic.com and click on the links indicated for further information.

Products

Search through the links to arrive at your product page where you can download specific **Manuals** and **Software & Utilities**, including:

- **Datalogic Aladdin™**, a multi-platform utility program that allows for both RS-232 and USBCOM communications interfacing. The GUI-based application provides an easy mechanism for setting scanner configuration, as well as configuration bar code printing.

Service & Support

- **Technical Support** - Product documentation and programming guides and Technical Support Department in the world
- **Service Programs** - Warranty Extensions and Maintenance Agreements
- **Repair Services** - Flat Rate Repairs and Return Material Authorization (RMA) Repairs
- **Downloads** – Manuals & Documentation, Data Sheets, Product Catalogues, etc.

Contact Us

- Information Request Form and Sales & Service Network

NOTES



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