Gryphon™ I GFS4500

QUICK REFERENCE GUIDE

Fixed Mount Area Imager
Bar Code Reader

DATALOGIC

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

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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.

12.4 Attorneys' Fees. In the event an action is brought to enforce the terms and conditions of this Agreement, the prevailing party shall be entitled to reasonable attorneys' fees, both at trial and on appeal.

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The only exception to this policy is when the buyer has a signed contract with Datalogic that clearly defines the terms and conditions for making software/firmware changes in products shipped to the buyer.

To arrange for a Software Maintenance and Support Agreement please contact your Datalogic sales person.

GRYPHON™ I GFS4500

DESCRIPTION

Designed for easy integration and simple installation, the GFS4500 scan modules provide ready-to-use versatile solutions for kiosks and machine manufacturers. The GFS4500 module can be easily integrated with little effort in different enclosures from multiple sides with its small regular size and various fixing points. The "naked" version GFE4500 is ideal for tailor-made fully integrated solution.

The Gryphon GFS4500 2D scan modules are made to last with a durable design for maximum uptime. You can rely on them for both indoor and outdoor applications with the IP54 sealing, the UV protected scratch resistant output window, the wide range operating temperature and the great resistance to accidental drops, shock, and vibrations. RS-232 and USB/RS-232 models have an integrated cable while the USB models are equipped with a locking clip to prevent the USB cable from coming loose or disconnecting. The 5-year factory warranty proves the GFS4500 series has been designed to last.

The GFS4500 2D scan modules features the most advanced Megapixel sensor technology with distinctive red or white illumination technology with adjustable brightness for outstanding reading performance. The wide angle optics allows snappy scanning of any 1D and 2D barcodes and it starts reading at almost contact while offering improved motion tolerance and first pass decoding of fast-moving codes. The speedy reading of tickets, boarding passes, loyalty cards, and coupons from mobile phone displays is granted by the ultimate decoding algorithms you can count on.

Datalogic's 'Green Spot' technology coupled with a high visibility topfront LED and integrated loud beeper with adjustable intensity provide superior good-read feedback.

The GFS4500 is available in the following data interface versions:

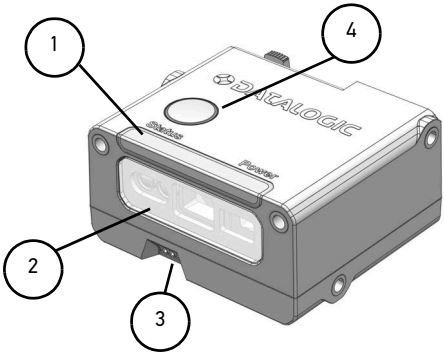
1. GFS4520: USB (micro-USB connector)
2. GFS4550: RS232 (2m straight cable DB9 connector)
3. GFS4590: USB / RS232 (10cm multi-interface connector)

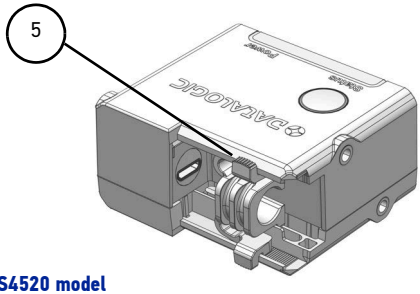
SETTING UP THE READER

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

1. Connect the reader to the Host as shown on page 6.
2. Select the Interface. (See page 9).
3. Configure the Reader, see page (optional, as needed).

Parts of the Reader





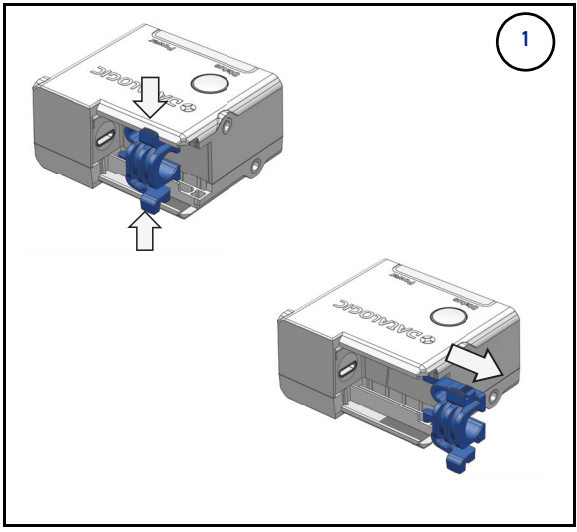
GFS4520 model

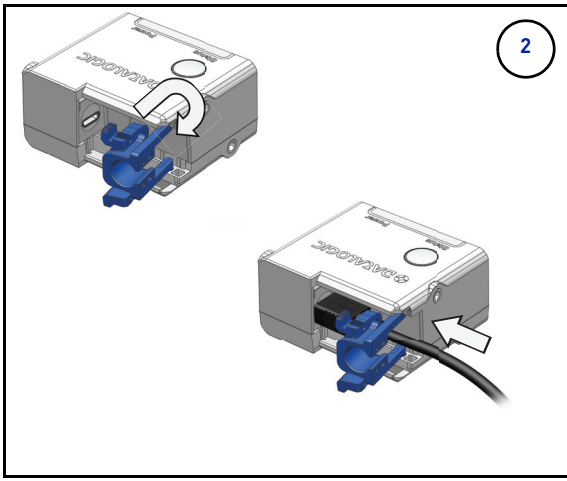
1. Power/Status LEDs	2. Scan window
3. Beeper output	4. Trigger
5. USB cable retainer (only for GFS4520)	

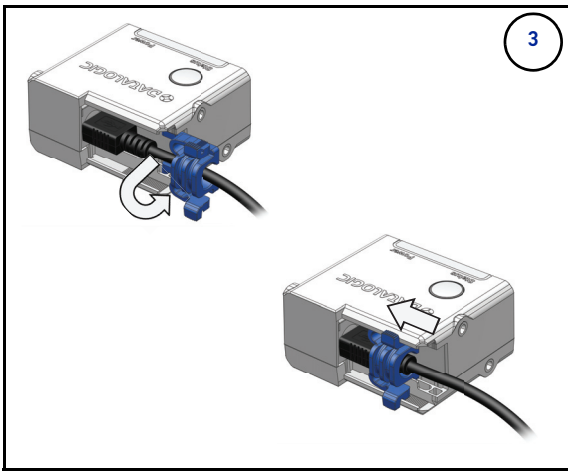
Attaching and Retaining the USB Cable (GFS4520 Model Only)

1. While pressing the retainer's locking wings, slide to pull it out of its housing.
2. Rotate the retainer clockwise and insert the USB cable.
3. Set back the retainer by rotating it counterclockwise and push until the cable is firmly locked.

NOTE: Different microUSB cable sizes can be used. Ensure the connector shell size does not exceed 18.0 mm (w), 7.0 mm (h), 10.8 mm (d). Use only straight USB connectors, do not use right-angled connectors.





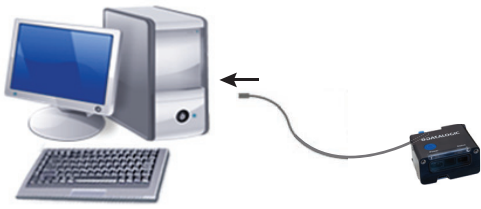


Video Tutorial

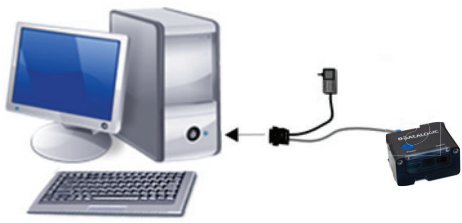
Connecting to the Host Interface

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

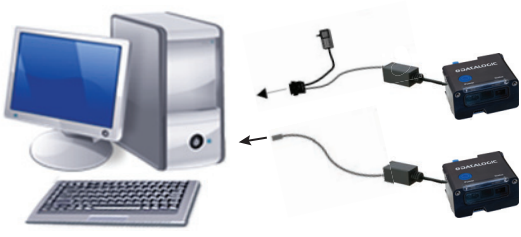
USB



RS-232



USB/RS-232
(with multi-interface connector)



NOTE: Refer to the Product Reference Guide for the list of compatible Datalogic cables.

USING THE GRYPHON™ I GFS4500

The Gryphon™ GFS4500 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.

Figure 1. Gryphon™ GFS4500's Aiming System

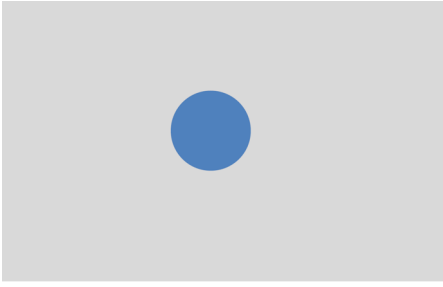


Figure 2. Relative Size and Location of Gryphon™ GFS4500's Aiming System Pattern on 2D Matrix Symbol

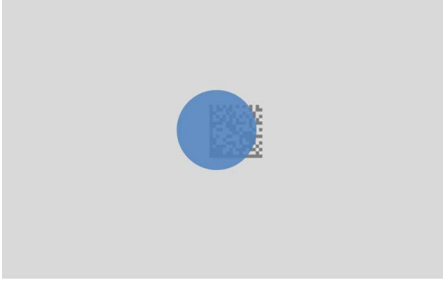
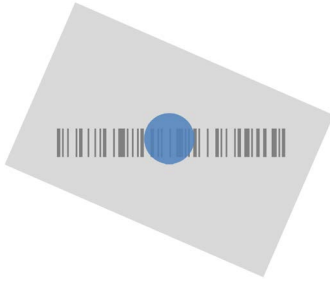
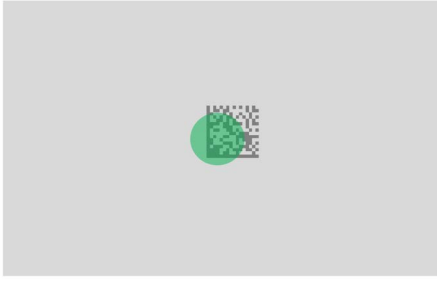


Figure 3. Relative Size and Location of Gryphon™ GFS4500's Aiming System Pattern on Linear bar code



A beam illuminates the label. The projected pattern of 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 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. If the aiming system is centered you will get a good read. Successful reading is signaled by an audible tone plus a goodread green spot LED indicator. Reference the Gryphon™ GFS4500 Product Reference Guide (PRG) on the Datalogic website for more information about this feature and other programmable settings.

Figure 4. Relative Size and Location of Gryphon™ GFS4500's Green Spot



SELECTING THE INTERFACE TYPE

Upon completing the physical connection between the reader and its host, proceed directly to Interface Selection below for information and programming for the interface type supported by the reader and scan the appropriate bar code to select your system's correct interface type, according to your application.

For interfaces other than those listed in this manual, see the Gryphon™ I GFS4500 Product Reference Guide (PRG), available online at www.datalogic.com.

RS-232 (GFS4550 ONLY)
 Select RS232-STD **RS-232 standard interface**
 Select RS232-WN **RS-232 Wincor-Nixdorf**
 Select RS-232 OPOS **RS-232 for use with OPOS/UPOS/JavaPOS**
 Select USB-COM-STD[a] **USB Com to simulate RS-232 standard interface**

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

USB Interface (GFS4520 & GFS4590 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.

USB-KBD
 Select USB-KBD **To simulate a Keyboard**
USB ALTERNATE KEYBOARD
 Select USB Alternate Keyboard **USB Keyboard with alternate key encoding**

USB-COM

Select USB-COM[a]
Simulate a serial interface

USB COMPOSITE

Select USB-Composite
Combines USB-KBD emulation and USB-COM

USB-OEM

Refer to the PRG or Aladdin for USB-OEM
(for use with OPOS/UPOS/JavaPOS)

a. Download the correct USB-COM driver from: https://www.datalogic.com

Country Mode

This feature specifies the country/language supported by the keyboard. Several languages are supported:

COUNTRY MODE
 ENTER/EXIT PROGRAMMING MODE
 ★ Country Mode = U.S.
 Country Mode = Belgium
 Country Mode = Croatia*
 Country Mode = Czech Republic*
 Country Mode = Denmark*

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 = Lithuanian*

COUNTRY MODE (CONTINUED)
Country Mode = Norway*
Country Mode = Poland*
Country Mode = Portugal*
Country Mode = Romania*
Country Mode = Slovakia*
Country Mode = Spain
Country Mode = Sweden

COUNTRY MODE (CONTINUED)
 Country Mode = Switzerland*
 Country Mode = United Kingdom

* Supports only the interfaces listed in the Country Mode feature description.

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 GFS4500 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 "Resetting Product Defaults" on page 16, 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 programming features. If your installation requires different programming than the standard factory default settings, refer to the PRG.

Resetting Product Defaults

If you are not sure what programming options have been set in your reader, or you have changed some options and want your custom factory settings restored, scan the bar code below to reset the reader to its initial configuration. Refer to 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 9 for more information.

Reset Default Settings

NUMLOCK

This option specifies the setting of the Numbers Lock (Numlock) key while in keyboard wedge interface. This only applies to alternate key encoding interfaces. It does not apply to USB keyboard.

NUMLOCK
 ENTER/EXIT PROGRAMMING MODE
 ★ 3 Numlock = Numlock key unchanged
 Numlock = Numlock key toggled

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 GFS4500 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.

GOOD READ GREEN SPOT DURATION
 ENTER/EXIT PROGRAMMING MODE
 Disable
 ★ Short (300 ms)

GREEN SPOT DURATION (CONTINUED)
 Medium (500 ms)
 Long (800 ms)

★ = default value

OPERATING MODES

The reader can operate in one of several scanning modes.

NOTE: 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 (GFS4550 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).

Always on[1] — Scanning is continually on.

Object Sense[2] — Scanning is turned on automatically when an item is placed in reader's field of view.

Test mode — Once entered, the Status LED is activated in different colors depending on the Good Read rate of the current barcode.

1. "Always On" corresponds to "Automatic" operating mode in previous Gryphon GFS4400 series.
2. "Object Sense" corresponds to "Automatic (Object Sense)" operating mode in previous Gryphon GFS4400 series.

OPERATING MODE
 ENTER/EXIT PROGRAMMING MODE
 Operating Mode = On Line
 Operating Mode = Serial On Line
 Operating Mode = Alway On
 Operating Mode = Object Sense
 Operating Mode = Test Mode

PICK MODE

This option specifies the ability of the reader to decode labels only when they are close to the center of the aiming pattern, which is the area indicated by the red cross. Pick Mode is a Decoding and Transmission process where bar codes that are not within the configurable distance from the center of the aiming pattern are not acknowledged or transmitted to the host. If the scanner switches to a different Read Mode, Pick Mode is automatically disabled.

NOTE: This feature is not compatible with Multiple Labels Reading in a Volume. See the PRG for more information.

PICK MODE
 ENTER/EXIT PROGRAMMING MODE
 ★ Pick Mode = Disabled
 Pick Mode = Enabled

★ = default value

MULTIPLE LABEL READING

The reader offers a number of options for multiple label reading. See the PRG or software configuration tool for descriptions of these features and programming labels.

ENERGY SAVING

The following barcodes contain predefined configurations to reduce the power consumption of the scanner.

ENERGY SAVING
 ★ Energy Saving = Off
 Energy Saving = Medium
 Energy Saving = Max

Energy Saving = Medium

- Volume of Good Read Beep is reduced to Medium Level
- Intensity of Green Spot and Aimer LEDs is reduced to Mid level

Energy Saving = Max

- Volume of Good Read Beep is reduced to Low Level
- Intensity of Green Spot and Aimer LEDs is reduced to Low level
- Intensity of Status and Power LEDs is reduced to Low Level
- Intensity of Illuminator is reduced to Mid level.

NOTE: Please note, decreasing the Illuminator intensity may reduce the overall reading performances.

Refer to the following table for an estimation of power saving in the different presents:

ENERGY SAVING	TYPICAL POWER SAVING
Off (Default)	0%
Medium	10-15%
Max	20-25%

PERFORMANCE PRESET

The scanner can be configured to match different performance needs, depending on the application.The following barcodes contain predefined configurations to be applied.

PERFORMANCE PRESET
 Fast moving barcodes at close distance
 Medium moving barcodes and smartphones reading at close distance
 ★ Smartphone reading at close distance
 Barcode labels at long distance

TECHNICAL SPECIFICATIONS

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

PHYSICAL CHARACTERISTICS	
Colors	Black. Other colors and custom logo options are available for minimum quantity purchase.
Dimensions	GFS4500: 2.8 x 4.8 x 5.5 cm / 1.1 x 1.9 x 2.2 in. GFE4500: 2.0 x 2.7 x 4.8 cm / 0.8 x 1.1 x 1.9 in.
Weight	GFS4520: 52 g / 1.8 oz (micro-USB connector) GFS4550: 152 g / 5.4 oz (2m straight cable DB9 connector included) GFS4590: 95 g / 3.4 oz (10cm multi-interface connector included) GFE4590: 17 g / 0.6 oz (12 pin connector)
ELECTRICAL CHARACTERISTICS	
Current	Operating (Typical): < 225 mA Standby/Idle (Typical): - Automatic Object Sense Mode: 115 mA - Online & Serial Online Modes: 55 mA
Input Voltage	GFS4520: 5 VDC +/- 5%; GFS4550/GFS4590/GFE4590: 5 - 14 VDC
ENVIRONMENTAL CHARACTERISTICS	
Operating Temperature	GFS4500: -20 to 50 °C / -4 to 122 °F (suitable up to 55°C / 131 °F) GFE4500: -20 to 60 °C / -4 to 140 °F
Storage/Transport Temperature	-40 to 70 °C / -40 to 158 °F
Humidity	5-95% (non condensing)
Ambient Light immunity	0-120,000 Lux
Drop Resistance	Withstands repeated drops from 1.5 m / 5 ft onto a concrete surface
Vibration Resistance	Tolerates random vibration, 5 G, from 22 Hz to 300 Hz, 2 hrs / 3 axes
Particulate & Water Sealing	GFS4500: IP54
READING PERFORMANCE	
Image capture	Graphic Formats: BMP, JPEG, TIFF; Greyscale: 256, 16, 2
Image Sensor	1 Megapixel: 1280 x 800 pixels
Field of View	51°H, 32°V
Print Contrast Ratio (Min.)	15%

Motion Tolerance	70 IPS (EAN/UPC)
Frame Rate	60 full-frame/s
Reading Angles	Pitch: +/- 60°; Roll (Tilt): +/- 180°; Skew (Yaw): +/- 60°
Reading Indicators	Beeper (Adjustable Tone and volume); Datalogic 'Green Spot' Good Read Feedback; Top-Front Good Read LED with Adjustable brightness
Resolution (Maximum)	1D Linear: 0.076 mm / 3 mils Data Matrix: 0.13 mm / 5 mils PDF417: 0.13 mm / 5 mils
INTERFACES	
INTERFACES	GFS4520: USB (micro-USB connector) GFS4550: RS232 (2m straight cable DB9 connector) GFS4590: USB / RS232 (10cm multi-interface connector) GFE4590: USB / RS232 (12 pin connector)
Digital I/O	GFS4550 / GFE4590: One SW Programmable digital input + one SW programmable digital output

DOF - DEPTH OF FIELD [A]	
	Resolution [mils]
Code 39	5 mil: 4 to 30.0 cm / 0.16 to 11.8 in 10 mil: 1.7 to 53.5 cm / 0.6 to 21.0 in
Data Matrix	10 mil: 3.5 to 23.5 cm / 1.3 to 9.6 in 15 mil: 3.0 to 35.0 cm / 1.2 to 13.7 in
EAN/UPC	13 mil: 4.0 to 82.0 cm / 1.6 to 32.3 in
PDF417	10 mil: 1.5 to 35.0 cm / 5.9 to 13.7 in
QR Code	10 mil: 3.5 to 22.0 cm / 1.4 to 8.7 in

a. Minimum distance determined by symbol length and scan angle. Printing resolution, contrast, and ambient light dependent.

DECODE CAPABILITY	
1D / Linear Codes	Auto discriminates all standard 1D codes including GS1 DataBar™ linear codes.
2D Codes	Aztec Code; China Han Xin Code; Data Matrix; MaxiCode; Micro QR Code; QR Code; Dot Code; Dot Matrix
Postal Codes	Australian Post; British Post; China Post; IMB; Japanese Post; KIX Post; Planet Code; Postnet; Royal Mail Code (RM4SCC)
Stacked Codes	EAN/JAN Composites; GS1 DataBar Composites; GS1 DataBar Expanded Stacked; GS1 DataBar Stacked; GS1 DataBar Stacked Omnidirectional; MacroPDF; MicroPDF417; PDF417; UPC A/E Composites
Digital Watermarking	Digimarc Barcodes
REGULATORY	

See Regulatory Addendum included with your product.

RS-232 Electrical Connections (GFS4550 only)

9-PIN CONNECTOR		
1	Trigger	Trigger signal input (see Figure 5 and Figure 6 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	5 - 14Vdc
7	CTS	Clear To Send (input to scanner)
8	RTS	Request To Send (output from scanner)
9	DIGITAL OUTPUT	Output signal (see Figure 8 and Figure 9)

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

Input connection - Typical layout

ENTER/EXIT PROGRAMMING MODE

Figure 5. NPN configuration

NPN configuration = Set Input Configuration to NPN

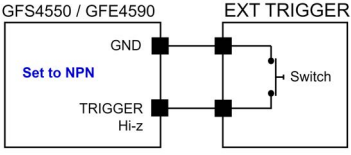
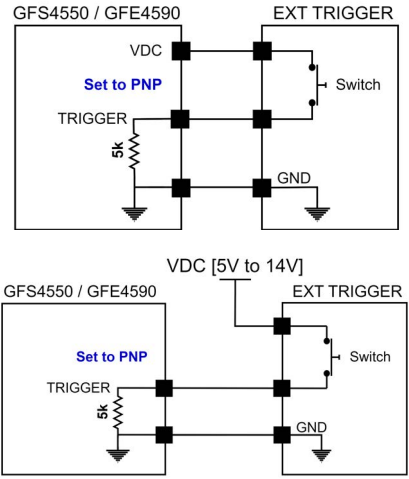


Figure 6. PNP configuration

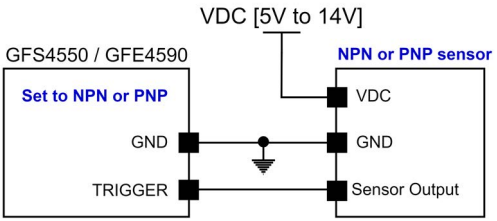
★ PNP configuration = Set Input Configuration to PNP



Vext: 5.0 Vdc to 14.0 Vdc, I_IN: 4.0 mA max

Figure 7. NPN or PNP configuration

Ensure both sides are configured the same way.



Vext: 5.0 Vdc to 14.0 Vdc, I_IN: 4.0 mA max

Output connection - Typical layout

ENTER/EXIT PROGRAMMING MODE

Figure 8. NPN output configuration

★ NPN configuration = Set Output Configuration to NPN

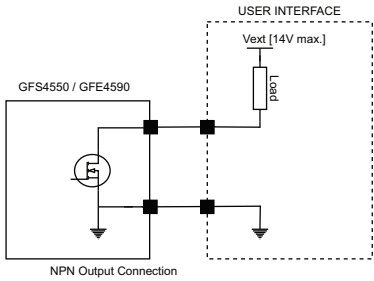
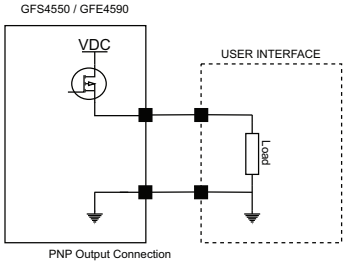
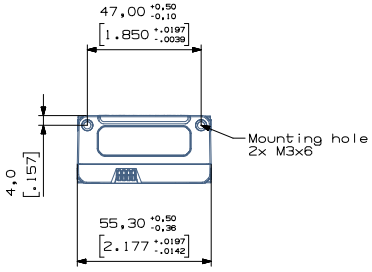


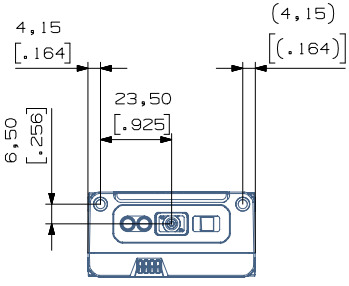
Figure 9. PNP output configuration

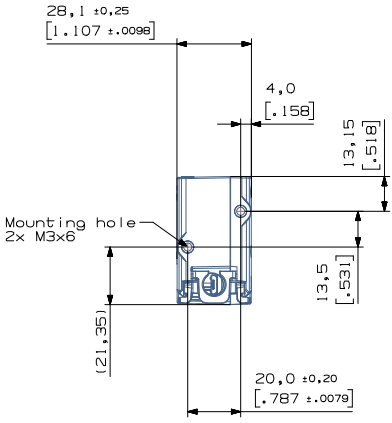
PNP configuration = Set Output Configuration to PNP

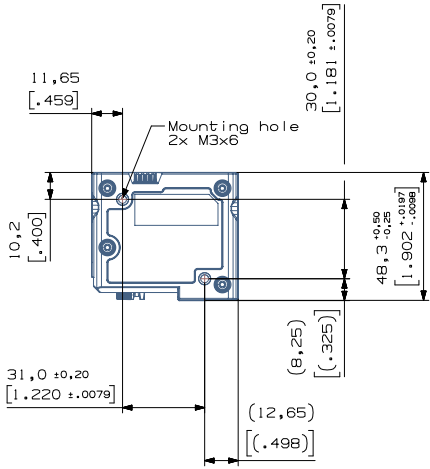


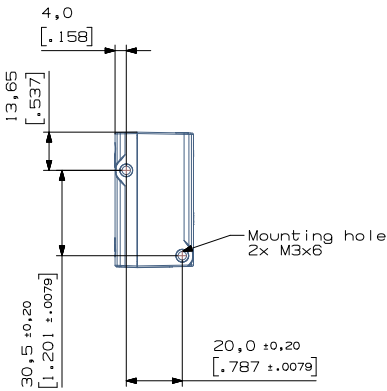
GFS4500 Dimensions







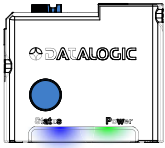

11,65
[.459]
Mounting hole
2x M3x6
30,0 ±0,20
[1.181 ±.0079]
10,2
[.400]
48,3 +0,50 -0,25
[1.902 +.0197 -.0098]
(8,25)
[(.325)]
31,0 ±0,20
[1.220 ±.0079]
(12,65)
[(.498)]


4,0
[.158]
13,65
[.537]
Mounting hole
2x M3x6
30,5 ±0,20
[1.201 ±.0079]
20,0 ±0,20
[.787 ±.0079]

LED AND BEEPER INDICATIONS

Button and LED Status

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

<table>
<tr><td rowspan="4">  </td><td rowspan="3">POWER LED (green)</td><td>ON = Power ON</td></tr>
<tr><td>Blinking = USB enumeration (USB version only) or FW Upgrade</td></tr>
<tr><td>OFF = Power OFF or Limited Scanning Mode or Standby (USB version only)</td></tr>
<tr><td rowspan="3">STATUS LED (multicolor)</td><td>Green = Good Read, USB enumeration (USB version only) or FW Upgrade</td></tr>
<tr><td>Blue = Image Capture mode.</td></tr>
<tr><td>RED = Used to indicate Wrong Code or No Read, depending on the configuration (see Product Reference Guide).</td></tr>
</table>

NOTE: It is possible to increase or decrease the intensity of Status and Power LED. For more information, refer to the Product Reference Guide.

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.

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.	Imager beeps four times at highest frequency and volume upon power-up.
Good Read	Upper green LED comes on for programmed time (default). LED behavior for this indication is configurable using Aladdin utility.	One beep at current frequency, volume, mono/bi-tonal setting upon a successful label scan. It is also possible to upload custom jingles with Aladdin.
ROM Failure	200ms on / 200ms off	Imager sounds one error beep at highest volume for 200 mS.
Limited Scanning Label Read	N/A	Imager 'chirps' six times at the highest frequency and current volume.
Imager Disabled	The LED blinks continuously 100ms on / 900 ms off	N/A

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
Nothing happens when the scan button is pushed	No power to the imager.	Check system power. Ensure power supply is connected.
	Interface or power cables are loose.	Ensure all cable connections are secure.
Status LED comes on, but bar code is not decoded	Imager 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.	Imager 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).

USING THE GFS4400 ADAPTER

Customers can take advantage of the accessory “Mounting Adapter to replicate the GFS4400 fixing holes” (Part Number: MA-4500-BK) to replace their setups based on previous Gryphon™ I GFS4400 family, with the new Gryphon™ I GFS4500. Since the two products have different mounting holes, the Adapter Plate can be attached to the GFS4500 to replicate the same mounting holes of the previous GFS4400.

Two M3x10 screws are required to attach the Mounting Adapter to the GFS4500 (already included in MA-4500-BK package).

M3 screws are then required to attach the adapter to the surface, maximum length is 6mm (not included in MA-4500-BK package).

Figure 10. Comparison of front views of Gryphon GFS4400 (left) and Gryphon GFS4500 with Mounting Adapter (right)

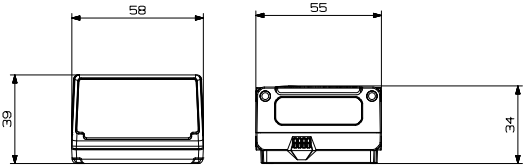
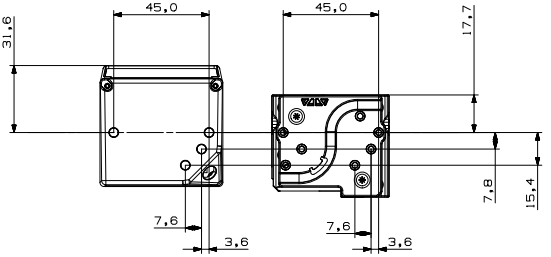


Figure 11. Comparison of bottom views of Gryphon GFS4400 (left) and Gryphon GFS4500 with Mounting Adapter (right)



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 **five 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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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.

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