COGNEX®

DataMan™ 100

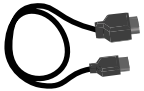
Quick Reference Guide

DataMan 100 Systems

DataMan 100 with IDQuick
(DMR-100Q-00)

DataMan 100 with IDMax
(DMR-100X-00)

Basic Accessory Kit (DM100-BAK-000)



USB adapter cable with power tap (DM100-USB-000)

Mounting bracket
(DM100-UBRK-000)

CD-ROM (Setup Tool and Drivers)
(206-6400-220)

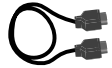
Quick Reference Guide
(590-7013)

DataMan 100 Accessories

DataMan Basic I/O Module
(DM100-IOBOX-000)

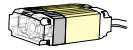
DataMan Expansion I/O Module
(DM100-1400-000)

RS-232/USB adapter for Expansion I/O Module
(DM100-PATCH-000)



RS-232 adapter cable with power tap (DM100-RS232-000)

Power supply
(DM100-PWR-000)

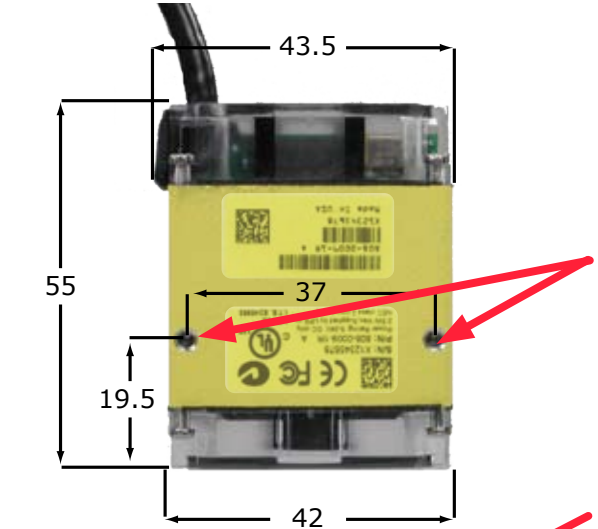


SHD Lens Kit (read high-density symbols)
(DM100-SHD-000)

C-Mount Lens Adapter
(DM100-CMNT-000)

Red lens cover (ESD-safe)
(DM100-RLC-000)

DataMan 100 Product Overview

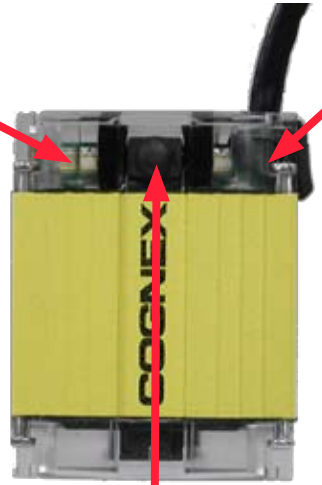


Mounting holes
- (M3 x 3.5)

Illumination LED

Aiming LED

Status LED
- Red: no read
- Green: read



System LED
- Green: Trained
- Yellow: Untrained
- Steady: System OK
- Slow blink: Connected to Setup tool
- Fast blink: Data transfer

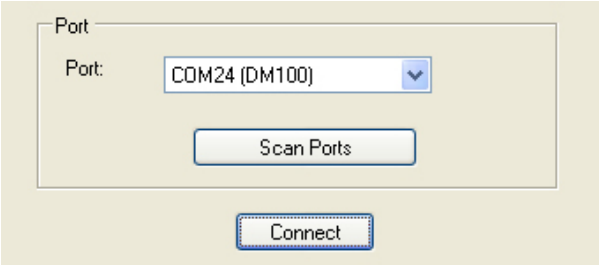
Pushbutton
- Push to read
- Push and hold 3 seconds to train
- Use Setup tool to program additional button functions

Install DataMan 100 Software

1. Make sure your PC meets these system requirements:

   - Microsoft® Windows™ XP or Windows Vista
   - Pentium CPU 500 MHz or faster
   - .NET 1.1 SP1 (installed automatically)

2. Insert CD-ROM and follow the on-screen prompts.
3. Connect the DataMan 100 to your PC using the supplied USB cable.
4. Launch the Setup Tool. Select the **Connect to Reader** step, then click **Scan Ports**. Make sure a port that says **(DM100)** is selected, then click **Connect**.



Reading your First Code

The DataMan 100 is pre-configured for Manual triggering and symbology discrimination. To verify that your reader is operational, click on the **Results Display** step in the Setup Tool, place a code in front of the reader, and press the black trigger button. The Setup Tool should display the image and the decoded string.

Troubleshooting

If you are unable to read a code, verify that

- You have scanned the correct connection code on page 15 or 16.
- If you are using your PC's USB to power the DataMan 100, make sure that your PC's USB port can supply enough power (2.5W peak). Connect the DataMan 100 power supply (DM100-PWR-000) to the USB adapter cable if needed.
- If you are using a direct USB connection, make sure that the USB adapter cable is connected to the DataMan 100 before you connect the USB cable to your PC. Connecting or disconnecting the 15-pin plug from the USB cable while the PC is connected may cause a USB driver crash on the PC.
- If you are using a USB connection with the Basic I/O module, make sure that the DataMan 100 is connected to the I/O module before you connect the I/O module to your PC. Connecting or disconnecting the 15-pin plug from the I/O module while the PC is connected may cause a USB driver crash on the PC.

Setting DataMan 100 Focus Position

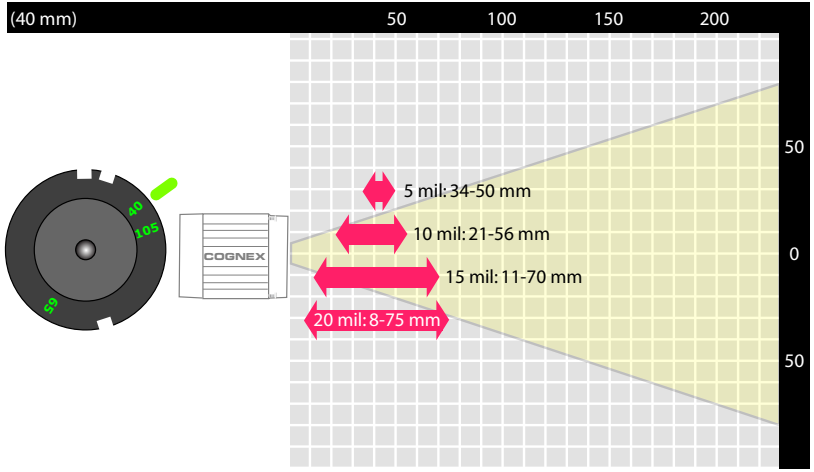
DataMan can operate in one of three distance ranges. To set the focus position:

1 Remove screws and lens cover.

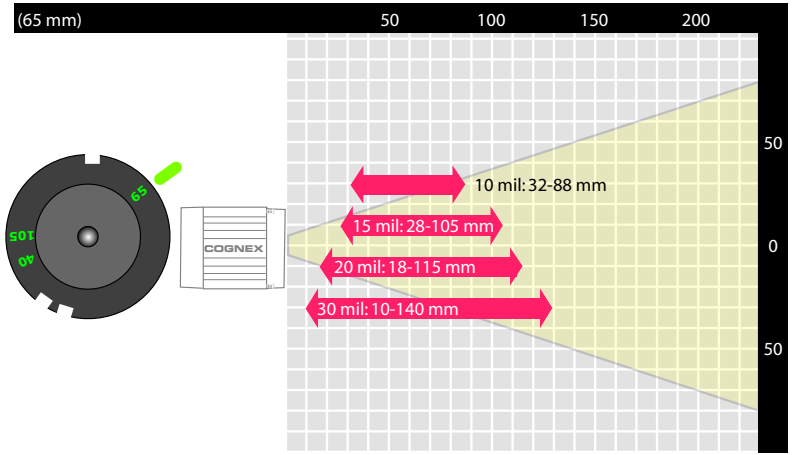
2 Set focus position.

3 Replace lens cover and screws.

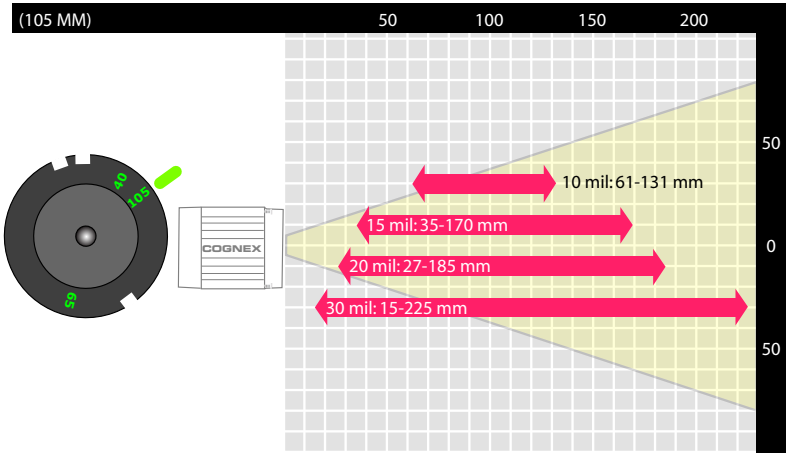
Reading Distances (40 mm)



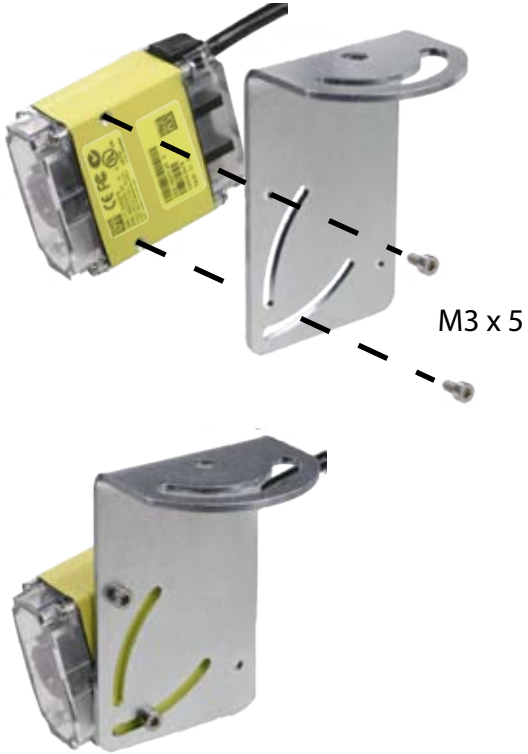
Reading Distances (65 mm)



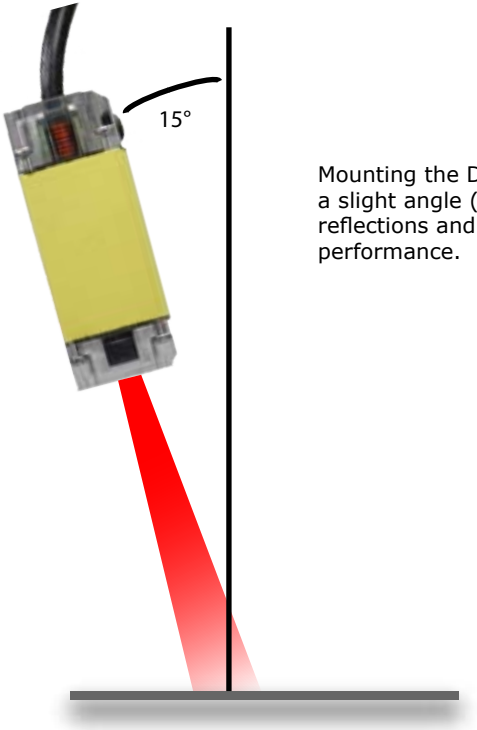
Reading Distances (105 mm)



Universal Mounting Bracket



Optimizing Lighting



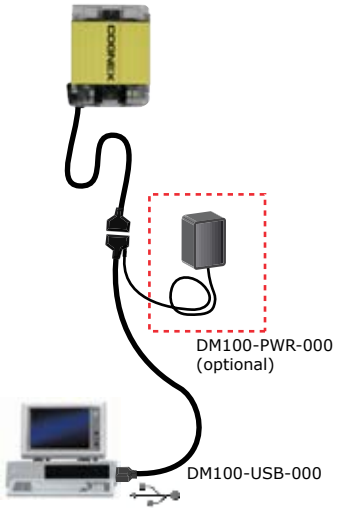
Mounting the DataMan 100 at a slight angle (15°) can reduce reflections and improve reader performance.

USB Connections

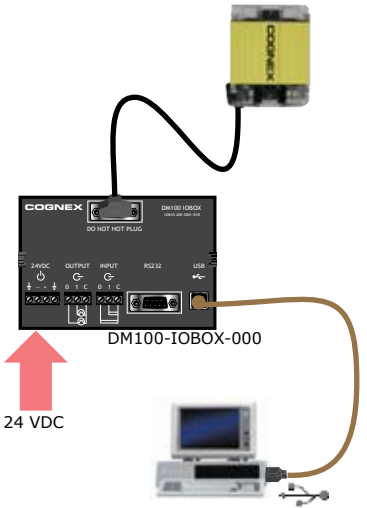
When connected to a PC over USB, the DataMan 100 appears as either a COM port or as a standard USB keyboard. You control the connection type by scanning the appropriate connection code.

1 Make the connection by...

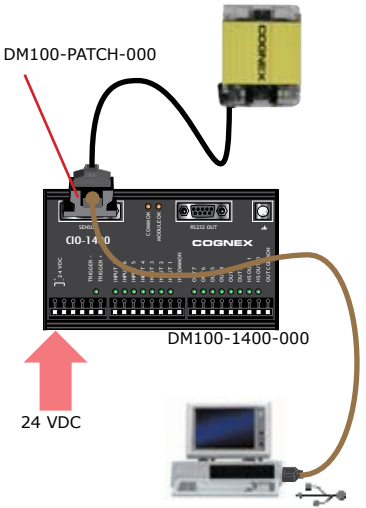
...connecting directly to the PC:



...connecting to the PC through basic I/O module:



...connecting to the PC through expanded I/O module:



2 Scan the connection code:

USB Serial

NOTE: DataMan PC software must be installed for this connection type!

USB Keyboard

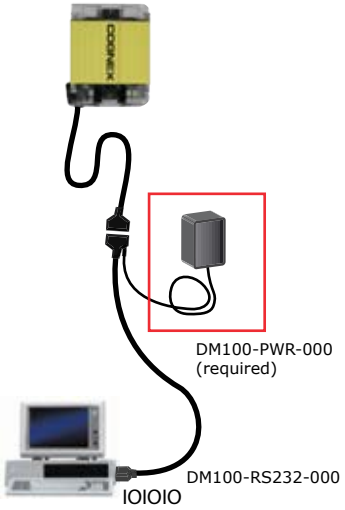
NOTE: You cannot use the Setup tool with this connection type.

RS-232 Connections

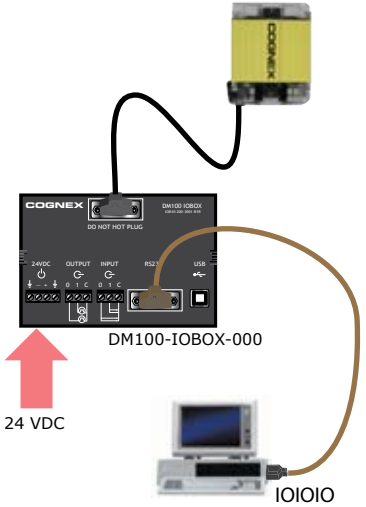
You can connect the DataMan 100 to a PC or other device over a standard RS-232 serial connection. **NOTE:** You must supply external power to use this connection type.

1 Make the connection by...

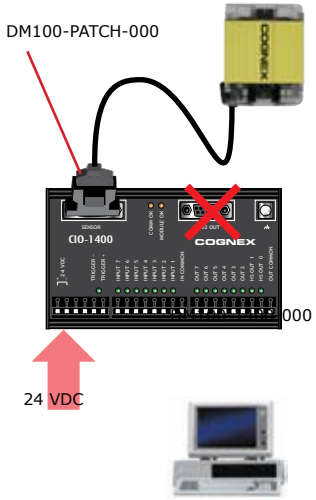
...connecting directly to the PC:



...connecting to the PC through basic I/O module:



NOTE: Serial connections from the extended I/O module to the PC are only supported for short (<60 bytes) data transmissions.

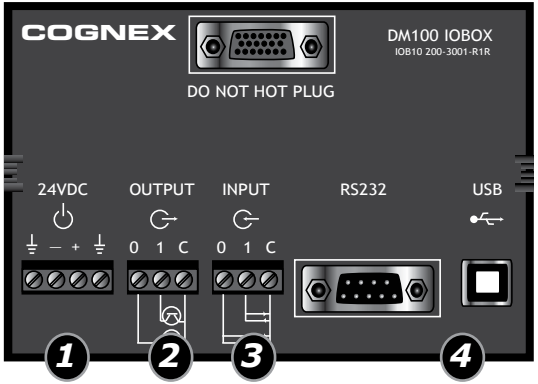


2 Scan the connection code:

RS-232 Serial

See page 27 for codes to set baud rate and other RS-232 parameters.

Wiring DataMan 100 - Basic I/O Module



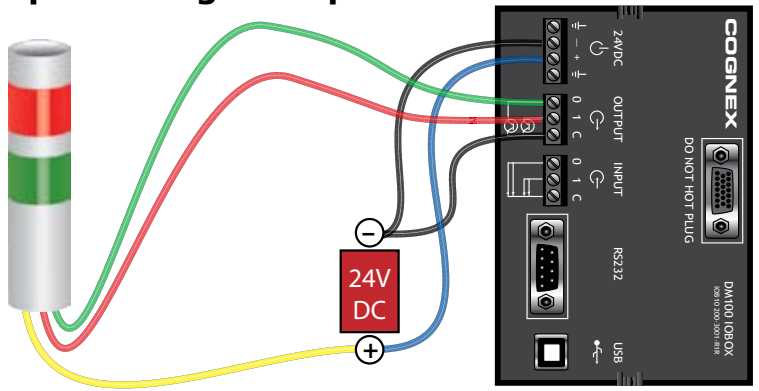
1 ***Power:*** 5–24 VDC, 2.5W peak. Connect either ground pin to chassis ground.

2 ***Discrete Output:*** Current sink only; must connect logical ground to common. Outputs are opto-isolated and protected against reverse polarity. Max current 50 mA @ 24 VDC. Output 1 used for external illumination control by default.

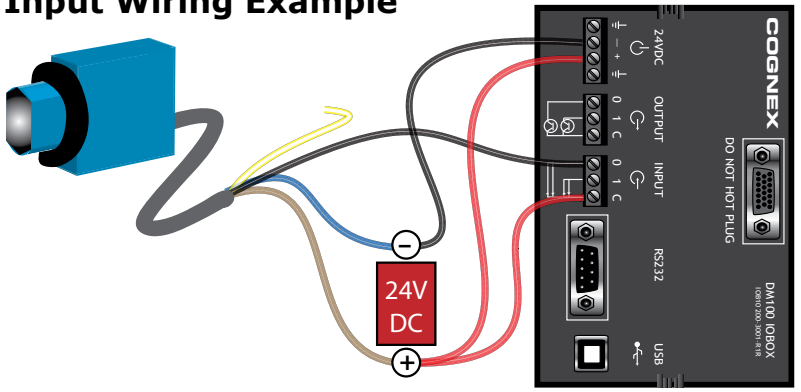
3 ***Trigger Input:*** Opto-isolated, polarity-independent, current source or sink. Input 0 is dedicated trigger line; Input 1 is not used.

4 ***RS-232 and USB:*** If USB connection is detected, USB communications is automatically selected; otherwise RS-232 connection is used.

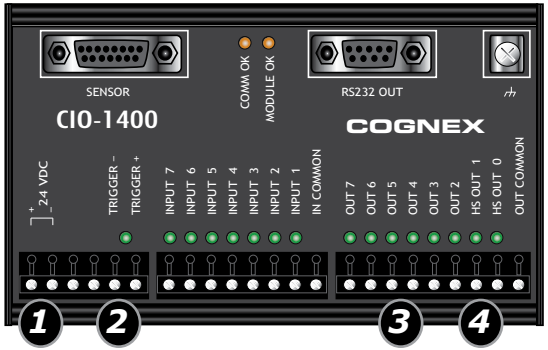
Output Wiring Example



Input Wiring Example



Wiring DataMan 100 - Expansion I/O Module



NOTE: The Trigger+ connector is wired to Input 0 on the DataMan 100. The Trigger- connector is wired to Input Common while the unlabeled connector next to Trigger- is wired to Input 1 on the DataMan 100.

The Input 1 through Input 7 connectors are not used.

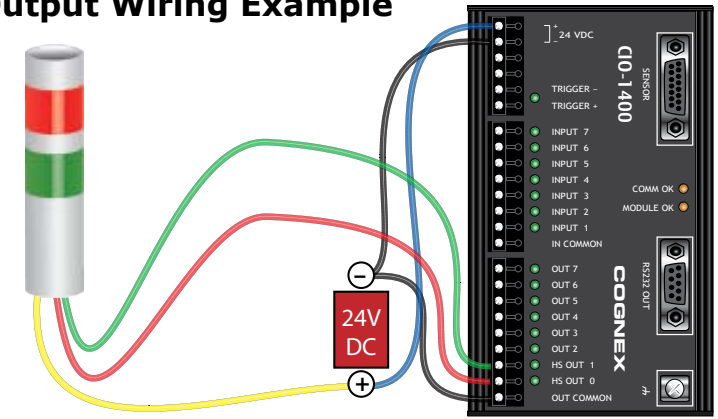
1 ***Power:*** 24 VDC ± 10%, 4.2W peak.

2 ***Trigger Input:*** Opto-isolated, polarity-independent, current source or sink. Directly wired to DataMan 100 input line 0.

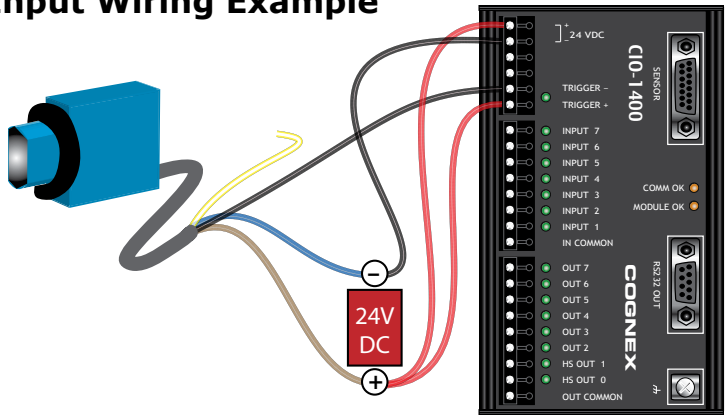
3 ***Outputs:*** Six extended output lines configurable using the DataMan Setup Tool. Current sink only; must connect logical ground to common. Outputs are opto-isolated and protected against reverse polarity. Max current 100 mA @ 24 VDC.

4 ***High-Speed Outputs:*** Two outputs directly wired to DataMan 100 output lines. Current sink only; must connect logical ground to common. Outputs are opto-isolated and protected against reverse polarity. Max current 50 mA @ 24 VDC.

Output Wiring Example



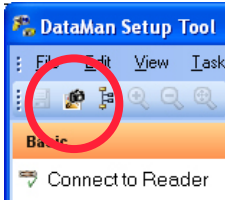
Input Wiring Example



DataMan 100 Trigger Types

DataMan decodes when you tell it to. You can trigger a read by

1. Pressing and holding the trigger button.
2. Sending a pulse on Input-0 line.
3. Sending a command on the RS-232 serial line. (You must be using the RS-232 communications type.
4. Clicking the Trigger button or pressing **<Ctrl>-T** in the Setup tool.



DataMan 100 Trigger Modes

DataMan supports five trigger modes. The trigger mode determines what happens when a trigger signal is received.

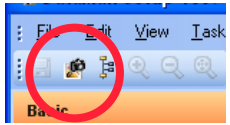
1. In **Single** mode, DataMan 100 acquires and attempts to decode an image as soon as the trigger is received. You can use the Setup tool to define a trigger delay.
2. In **Presentation** mode, continuously scans for and attempts to decode symbols. Whenever a symbol is present in the field of view, DataMan 100 decodes it. You can specify a latency period between read attempts, and you can configure the DataMan 100 to not decode the same code multiple times using the Setup tool.
3. In **Manual** mode, DataMan continuously acquires and attempts to decode images as long as the trigger button is held down.
4. In **Burst** mode, an external trigger causes the DataMan 100 to acquire a pre-determined number of images at a specified interval, then attempt to decode each image in sequence. The operation is terminated as soon an image is decoded.
5. In **Self** mode, DataMan acquires images continuously, with a specified delay between images, and attempts to decode each acquired image. You can specify a latency period between read attempts, and you can configure the DataMan 100 to not decode the same code multiple times using the Setup tool.

DataMan 100 Training

For best performance, you can train DataMan. Train DataMan by placing a code in front of the reader and doing one of the following:

1 Press and hold the trigger button for at least 3 seconds. This trains the code and optimizes lighting.

2 Click and hold the trigger button in the Setup for at least 3 seconds. This trains the code and optimizes lighting.



3 In the **Display** pane of the Setup Tool you can click the **Train Code** button to train the code, and you can click the **Optimize Lighting** button to optimize lighting.

Training and Trigger Modes

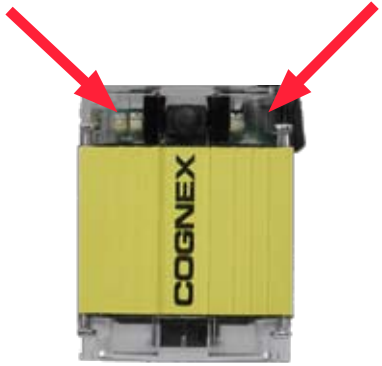
Training is supported for the trigger modes shown below:

Trigger Mode	Training Supported?
Single	Yes
Presentation	No
Manual	No
Burst	Yes
Self	Yes

DataMan 100 Training Feedback

DataMan reports the status of the training operation using its signalling LEDs:

Flashes red between 1 and 3 times when training attempt is complete. Greater numbers of flashes indicate better training results.



Displays steady green if trained, steady yellow if untrained.

Using the DataMan Setup Tool Software

Setup Tool Tasks:

Connect to DataMan

Establish a connection over a USB or RS-232 serial port

Results Display

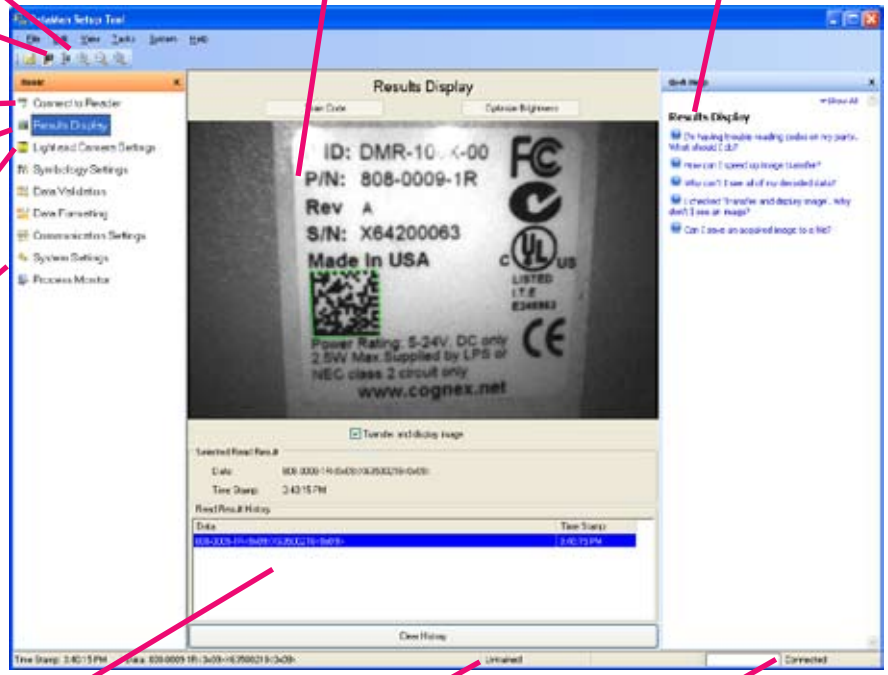
View decoded images and data

Light and Camera Settings

Configure illumination and exposure settings

System Settings

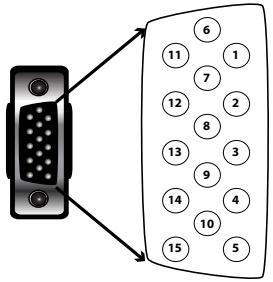
Configure input and output lines



DataMan 100 Specifications

Weight	125 g	
Operating Temperature	0ºC — 40ºC (32ºF — 104ºF)	
Storage Temperature	-10ºC — 60ºC (-14ºF — 140ºF)	
Maximum Humidity	95% (non-condensing)	
Environmental	IP65	
Vibration	EN61373 including IEC 60068-2-6,60068-2-64 6.4, and 60068-2-27	
Codes	Data Matrix™ (IDMax: ECC 0, 50, 80, 100, 140, and 200; IDQuick: ECC200) QR Code and microQR Code UPC/EAN/JAN Codabar, Interleaved 2 of 5, Code 39, Code 128, and Code 93, Pharma, Postal, RSS/CS, PDF 417, MicroPDF 417	
Discrete I/O operating limits	• **DataMan 100** • **Basic I/O Module** • **Trigger, HS Output 0, and HS Output 1 on Extended I/O module**	Max output current: 50 mA @ 24 VDC Output load: 500 Ω @ 24 VDC Input voltage limits: - 25 VDC — +25 VDC
	• **Outputs 2-7 on Extended I/O Module**	Max output current: 100 mA @ 24 VDC Output load: 240 Ω @ 24 VDC Input voltage limits: - 24 VDC — +24 VDC (logic 0: 0 – ±8V, logic 1: ±10V – ±24V)
Power Supply Requirements	• **DataMan 100 and Basic I/O Module)**	5 — 24 VDC 2.5 W maximum LPS or NEC class 2 power supply
	• **DataMan 100 and Extended I/O Module**	24 VDC ± 10% 4.2 W maximum LPS or NEC class 2 power supply

DataMan 100 Cable Pinout

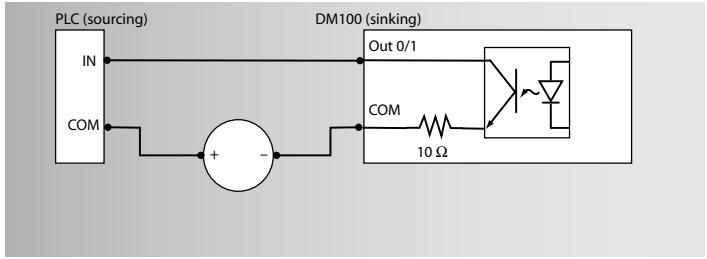


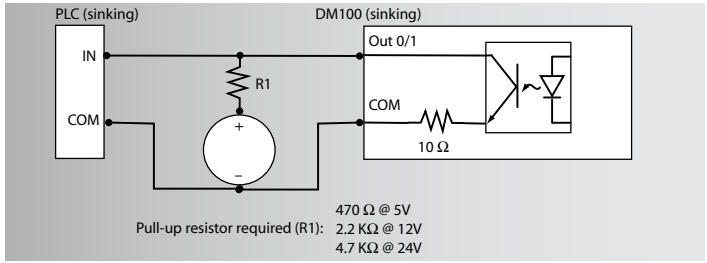
Note: Pin numbers are shown for cable connector, not I/O module.

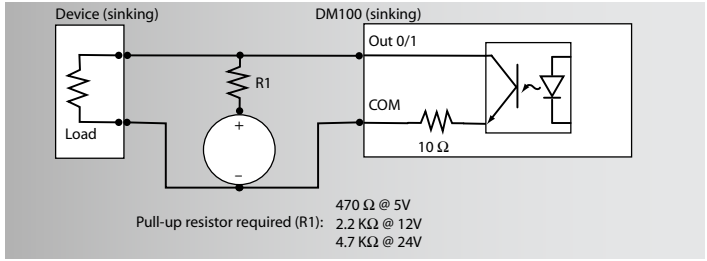
PIN	Color	Signal
1	Brown	Reserved
2	Green	TxD (RS-232)
3	Green/Black	RxD (RS-232)
4	Red & Red/Black	GND
5	Brown/White	DC+ (system power, 5-24 VDC)
6	Blue	Reserved
7	Blue/White	Output-0
8	White	Input-0
9	White/Black	Input-1
10	Light Blue	Reserved
11	Light Blue/Black	Output-1
12	Light Blue/Yellow	Output-Common
13	Light Blue/Green	Input-Common
14	Yellow	Reserved
15	Yellow/Black	Reserved

Note: Colors are of individual wires within I/O cable.

Digital Output Wiring

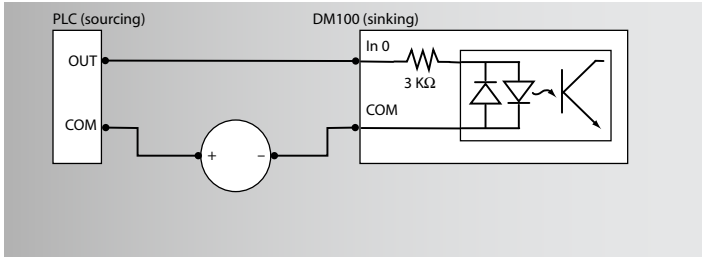


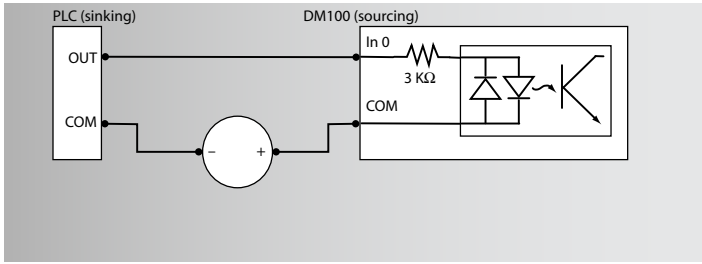


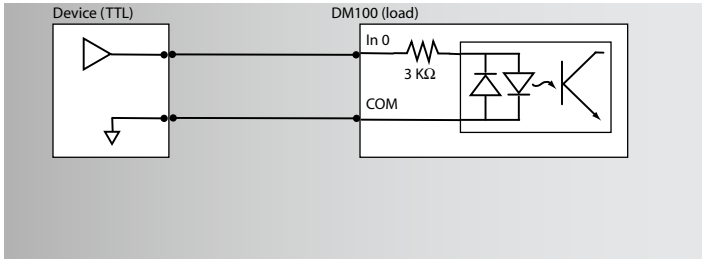


Note: These diagrams only apply to the Basic I/O module and to direct connections to the DataMan 100 input/output lines.

Digital Input Wiring







Note: These diagrams only apply to the Basic I/O module and to direct connections to the DataMan 100 input/output lines.

RS-232 Parameter Codes

9600 Baud

115,200 Baud

19,200 Baud

8-1-none

38,400 Baud

8-1-even

57,600 Baud

8-1-odd

Warnings and Notices

CAUTION: This device requires the use of an LPS or NEC class 2 power supply.

CAUTION: Do not connect or disconnect this device from the I/O module or 15-pin USB adapter cable while the I/O module or adapter cable is connected to a PC .

NOTE: For product support, contact http://support.cognex.com

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