

COGNEX

DataMan[®] 8700 Quick Reference Guide

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Precautions

To reduce the risk of injury or equipment damage, observe the following precautions when you install the Cognex product:

- This product is intended for industrial use in automated manufacturing or similar applications.
- The safety of any system incorporating this product is the responsibility of the assembler of the system.
- This product does not contain user-serviceable parts. Do not make electrical or mechanical modifications to product components. Unauthorized modifications can void your warranty.
- Route cables and wires away from high-current wiring or high-voltage power sources to reduce the risk of damage or malfunction from the following causes: over-voltage, line noise, electrostatic discharge (ESD), power surges, or other irregularities in the power supply.
- Changes or modifications not expressly approved by the party responsible for regulatory compliance could void the user's authority to operate the equipment.
- Ensure that the cable bend radius begins at least six inches from the connector. Cable shielding can be degraded or cables can be damaged or wear out faster if a service loop or bend radius is tighter than 10X the cable diameter.
- This device should be used in accordance with the instructions in this manual.
- All specifications are for reference purposes only and can change without notice.

Symbols

The following symbols indicate safety precautions and supplemental information:



WARNING: This symbol indicates a hazard that could cause death, serious personal injury or electrical shock.



CAUTION: This symbol indicates a hazard that could result in property damage.



Note: This symbol indicates additional information about a subject.



Tip: This symbol indicates suggestions and shortcuts that might not otherwise be apparent.

Product Overview



Number	DataMan 8700 DX Reader
1	LED aimer
2	Trigger (press and hold to read)
3	Cable insertion point (in case of corded readers)
4	360° ring light indicator
5	Lanyard hook
6	OLED display



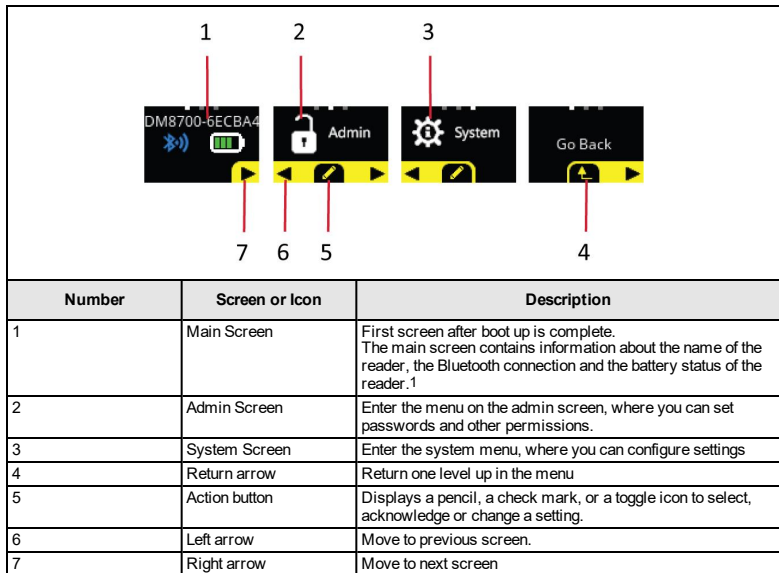
Number	DataMan 8700 DX Reader
7	OLED input and configuration buttons
8	Diffused light
9	Polarized light
10	Direct light
11	Charging pins (in case of wireless readers)
12	Battery insertion (in case of wireless readers)



Number	DataMan 8700 DQ Reader
1	LED aimer
2	Trigger (press and hold to read)
3	Cable insertion point
4	360° ring light indicator
5	Lanyard hook
6	OLED display
7	OLED input and configuration buttons
8	Diffused light

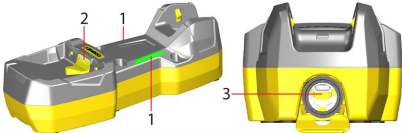
OLED Display Layout

The OLED display is user interface where you can communicate with the DataMan 8700.













¹ The Bluetooth connection and the battery status of the reader is only displayed on wireless readers.

Base Station Overview





DMB8700-BT Base Station	
	
1	Base station status indicators
2	Connection point with the reader: <ul style="list-style-type: none">• pairing reader and base station• non-wireless communication• charging
3	Cable plug

DataMan 8700 Accessories





Accessory Name	Product ID	Illustration
DM8700 slide-in communication conversion kits	DM8700-USB-KIT DM8700-RS-KIT DM8700-ENET-KIT	
Intelligent Bluetooth	DMB8700-BT	
Power Supply for USB and RS-232 communication on the corded reader or wireless base station reader and base station	DM8700-PWR-00	
4500 mAh Battery for the wireless reader	DMA-BATTERY-5000	
Hip holster	DMA-HOLSTER-8700	
24V DC Industrial PoE Supply for one device	CPS-24V-POE1	
4 Port 24V DC Industrial PoE Supply	CPS-24V-POE4	

Accessory Name	Product ID	Illustration
PoE injector for one device	CPS-AC- POE1A-xx ¹	
Wall Mount Bracket	DMA-WALL- 8700	
Presentation Stand, can be used with wall mount bracket (DMA-WALL-8700)	DM-STAND- 00	

Cables

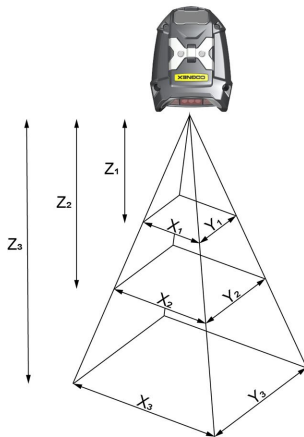
Accessory Name	Product ID	Illustration
RS-232 coiled cable, 2.5 m with Dsub-9 connector, power over pin 9	DMC-HH-RS232P- 02C	
RS-232 coiled cable, 2.5 m with Dsub-9 connector	DMC-HH-RS232-02C	
RS-232 coiled cable, 4 m with Dsub-9 connector	DMC-HH-RS232-05C	
RS-232 Firmware update cable, RS-232 to USB converter included with RS-232 kits	DMC-HH-RS232-USB	
USB straight cable, 2.5 m with USB type-A connector	DMC-HH-USBA-02	
USB coiled cable, 2.5 m with USB type-A connector	DMC-HH-USBA-02C	
USB straight cable, 2.5m with USB type-C connector	DMC-HH-USBC-02	

¹ xx can be US, EN, UK, or JP.

USB coiled cable, 2.5m with USB type-C connector	DMC-HH-USBC-02C	
Ethernet coiled cable, 5m with RJ45 connector	DMC-HH-ENET-05C	
Ethernet straight cable, 2.5m with RJ45 connector	DMC-HH-ENET-02	
Ethernet straight cable, 5m with RJ45 connector	DMC-HH-ENET-05	
Ethernet straight cable, 30m with RJ45 connector	DMC-HH-ENET-30	
Ethernet coiled cable, 5 m with M12 X-coded connector	DMC-HH-ENETM12-05C	

i Note: Collimated cable length for Ethernet does not have to exceed 50m.

Field of View and Reading Distances for 8700DX

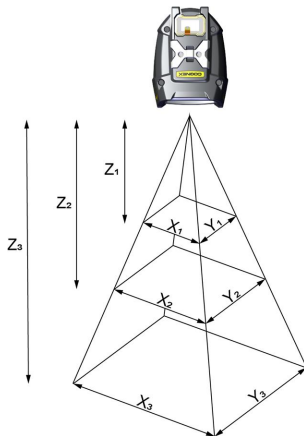


DM8700 DX Field of View Values		
Working Distance	Horizontal Values	Vertical Values
$Z_1 = 40 \text{ mm (1.5 in)}$	$X_1 = 63 \text{ mm (2.5 in)}$	$Y_1 = 47 \text{ mm (1.8 in)}$
$Z_2 = 140 \text{ mm (5.5 in)}$	$X_2 = 126 \text{ mm (5 in)}$	$Y_2 = 95 \text{ mm (3.7 in)}$
$Z_3 = 300 \text{ mm (11.8 in)}$	$X_3 = 228 \text{ mm (11.3 in)}$	$Y_3 = 171 \text{ mm (6.7 in)}$

i Note: All values beginning with 0 denote the minimum distance where the Field of View is able to see the entire code.

DM8700 DX Depth of Field Values			
Distances in mm / 1D min code		Distances in mm / 2D min code	
18-58	3 MIL	10-71	5 MIL
10-175	10 MIL	10-155	10 MIL
0-650	50 MIL	0-650	50 MIL
0-1000	100 MIL	0-1000	100 MIL

Field of View and Reading Distance for 8700DQ



DM8700 DQ Field of View Values

Working Distance	Horizontal Values	Vertical Values
$Z_1 = 48 \text{ mm (1.9 in)}$	$X_1 = 79 \text{ mm (3.1 in)}$	$Y_1 = 60 \text{ mm (2.4 in)}$
$Z_2 = 140 \text{ mm (5.5 in)}$	$X_2 = 148 \text{ mm (5.8 in)}$	$Y_2 = 111 \text{ mm (4.4 in)}$
$Z_3 = 300 \text{ mm (11.8 in)}$	$X_3 = 275 \text{ mm (10.8 in)}$	$Y_3 = 206 \text{ mm (8.1 in)}$

DM8700 DQ Depth of Field Values

Distances in mm / 1D min code		Distances in mm / 2D min code	
25-70	3 MIL	10-60	5 MIL
55-300	30 MIL		

Connecting the Reader

Wireless reader Battery Insertion:

1. Pull out metal tab to open the end cap.
2. Insert the battery.
3. Close the end cap by pressing the metal tab.



Corded reader Cable insertion:

1. Use a small screwdriver or a pencil to press in the gray tab by the cable insertion.



2. Turn the cable insertion mechanism to the open position.



3. Insert the cable.
4. Lock the cable by turning the cable insertion mechanism to the opposite direction.



Note: Disconnect the DataMan 8700 from power before inserting the communication modules.

Installation

Installation procedures are detailed in the *DataMan DM8700 Reference Manual*, which is installed with the DataMan Setup Tool. The DataMan Setup Tool is available from the DataMan support site: <http://www.cognex.com/support/dataman>.

To access documentation, open the Windows Start menu, select *All Programs > Cognex > DataMan Software vx.x.x > Documentation*.

Note:

- Cables are sold separately.
- If a standard component is missing or damaged, immediately contact your Cognex Authorized Service Provider (ASP) or Cognex Technical Support.



CAUTION: All cable connectors are "keyed" to fit the connectors on the DataMan system; do not force the connectors or damage may occur.

1. After installing the software, connect the DataMan 8700 to your PC.
2. Launch the DataMan Setup Tool and click **Refresh**.
3. Select your DataMan 8700 Series reader from the list and click **Connect**.

DataMan 8700 Specifications

Specification	DataMan 8700 Reader
Weight	DX Coded: 463g (15.90 oz) + ~132 g (4.60 oz) cables DX Wireless: 548 g (18.70 oz) (battery included) DQ Coded: 395 g (13.90 oz) + ~132 g (4.60 oz) cables
Operating Temperature	0 °C — 40 °C (32 °F — 104 °F) **
Storage Temperature	-40 °C — 60 °C (-40 °F — 140 °F)
Maximum Humidity	< 95% (non-condensing)
Environmental	Compliant with latest EU RoHS and China RoHS For indoor use only
Symbologies	1-D barcodes: Codabar, Code 39, Code 128, and Code 93, Interleaved 2 of 5, Postal, UPC/JAN, POSTNET, PLANET Code, GS1 IMB 2-D barcodes: MaxiCode, Aztec Code, Data Matrix™, QR Code and microQR Code, PDF 417
Power Supply Requirements	Serial/USB: 5.5 V DC, 6.0 W maximum LPS or NEC Class 2 power supply Ethernet: PoE Class 2 power supply Wireless: 3.6 V, 4500 mAh Li-ion battery
Battery life for wireless reader (typical use case)	The expected life time of the battery is 5 years. Charging time through PoE: 10-11 hours Charging time through USB with external power: 6.2 hours
Ethernet	10/100 Base-T FULL/HALF DUPLEX, IEEE 802.3
Bluetooth	Bluetooth 4.2, Classic, 2.4~2.4835 GHz
Protection	ISO 16750-5 IP67 Endures multiple drops from 2.5 m height on concrete

**In presentation mode, use the Motion Detection feature to prevent overheating as the reader generates significant heat when triggering constantly.



Note: A reader triggering at consistently high frequencies may overheat even when below the max operating temperature in some applications or environmental circumstances.

DataMan 8700 Base Station Specifications

Specification	DMB8700-BT
Weight	500 g (17.63 oz)
Operating Temperature	0 °C — 40 °C (32 °F — 113 °F)
Storage Temperature	-40 °C — 60 °C (-40 °F — 140 °F)
Maximum Humidity	95% (non-condensing)
Power Supply Requirements	5.5 V DC, 6 W maximum LPS or NEC Class 2 power supply or PoE Class 2 power supply
Protection	IP65
Ethernet	10/100 Base-T FULL/HALF DUPLEX, IEEE 802.3
Bluetooth	Bluetooth 4.2, Classic, 2.4–2.4835 GHz

LED Wavelengths for DataMan 8700 Readers



Note: The data below refer to the LED Illumination accessory of the reader, not to the LED indicators.

The following table shows LED types and the related wavelengths:

Reader Model	LED	λ [nm]
DM8700 DX	RED	660
DM8700 DQ	WHITE	N/A

Regulations and Conformity

The corded DataMan 8700 DX and DQ have Regulatory Models R00083 and R00084, respectively. The wireless DataMan 8700 DX have Regulatory Model R00085, and meets or exceeds the requirements of all applicable standards organizations for safe operation. However, as with any electrical equipment, the best way to ensure safe operation is to operate them according to the agency guidelines that follow. Please read these guidelines carefully before using your device.



i Note: For the most current CE declaration and regulatory conformity information, see the Cognex support site: cognex.com/support.

The following specifications apply to the corded DataMan 8700 DX and DQ readers:

Regulator	Specification
USA	FCC Part 15B, Class A
Canada	ICES-003
European Community	EN 61010-1 EN 61326-1

The following table shows Safety and Regulatory Information for corded readers:


Safety and Regulatory	
Manufacturer	Cognex Corporation One Vision Drive Natick, MA 01760 USA

Safety and Regulatory	
	Corded DataMan 8700 DX: Regulatory Model R00083 Corded DataMan 8700 DQ: Regulatory Model R00084 This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take immediate measures. This equipment complies with the essential requirements of the EU Directive 2014/30/EU. Declarations are available from your local representative.
EU RoHS	Compliant to the most recent applicable directive.
FCC	FCC Part 15, Class A This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
Canadian Compliance	This Class A digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.
TÜV	Corded DataMan 8700 DX: Regulatory Model R00083 Corded DataMan 8700 DQ: Regulatory Model R00084 NRTL: TÜV SÜD SCC/NRTL ÖSHA Scheme for UL/CAN 61010-1. CB report available upon request. TÜV SÜD, IEC/EN 61010-1.
Korea 	Corded DataMan 8700 DX: Regulatory Model R00083 Corded DataMan 8700 DQ: Regulatory Model R00084 This device is certified for office use only and if used at home, there can be frequency interference problems. 이 장치는 사무실 전용으로 인증받았으며, 가정에서 사용할 경우 주파수 간섭 문제가 발생할 수 있습니다.

The following specifications apply to the DataMan 8700 DX wireless reader:

Regulator	Specification
USA	FCC Part 15B, Class A FCC Part 15C contains FCC ID: TXH-50164
Canada	ICES-003 RSS 247 contains IC: 6315A-50164
European Community	For Bluetooth EN61010-1 EN ETSI 301 489-1/-17 EN ETSI 300 328

The following table shows Safety and Regulatory Information for wireless readers:

Safety and Regulatory	
Manufacturer	Cognex Corporation One Vision Drive Natick, MA 01760 USA
	Wireless DataMan 8700 DX: Regulatory Model R00085 This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take immediate measures. This equipment complies with the essential requirements of the EU Directive 2014/53/EU. Declarations are available from your local representative.
EU RoHS	Compliant to the most recent applicable directive.
FCC	FCC Part 15 This device complies with part 15 of the FCC Rules and Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Safety and Regulatory

Canadian Compliance	<p>This device complies with part 15 of the FCC Rules and Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:</p> <p>(1) This device may not cause harmful interference, and</p> <p>(2) this device must accept any interference received, including interference that may cause undesired operation.</p> <p>Le présent appareil est conforme aux Innovation, Science and Economic Development Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:</p> <p>(1) l'appareil ne doit pas produire de brouillage, et</p> <p>(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.</p>
Brazilian Compliance	<p>Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados.</p> <p>Para maiores informações, consulte o site da ANATEL www.anatel.gov.br.</p>
TÜV	<p>Wireless DataMan 8700 DX: Regulatory Model R00085 NRTL: TÜV SÜD SCC/NRTL OSHA Scheme for UL/CAN 61010-1. CB report available upon request. TÜV SÜD, IEC/EN 61010-1.</p>
<p>Korea</p> 	<p>Wireless DataMan 8700 DX: Regulatory Model R00085</p> <p>This device is certified for office use only and if used at home, there can be frequency interference problems.</p> <p>이 장치는 사무실 전용으로 인증받았으며, 가정에서 사용할 경우 주파수 간섭 문제가 발생할 수 있습니다.</p>

For European Community Users

Cognex complies with Directive 2012/19/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 on waste electrical and electronic equipment (WEEE).

This product has required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment, if not properly disposed.

In order to avoid the dissemination of those substances in our environment and to diminish the pressure on the natural resources, we encourage you to use the appropriate take-back systems for product disposal. Those systems will reuse or recycle most of the materials of the product you are disposing in a sound way.



The crossed out wheeled bin symbol informs you that the product should not be disposed of along with municipal waste and invites you to use the appropriate separate take-back systems for product disposal.

If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration.

You may also contact your supplier for more information on the environmental performance of this product.


Compliance Statements: DataMan Base Station

The DMB8700-BT DataMan Base Stations have the Regulatory model R00087 and meet or exceed the requirements of all applicable standards organizations for safe operation. However, as with any electrical equipment, the best way to ensure safe operation is to operate them according to the agency guidelines that follow.

i Note: For the most current CE declaration and regulatory conformity information, see the Cognex support site: cognex.com/support.

Please read these guidelines carefully before using your device.

Regulator	Specification
USA	FCC Part 15B, Class A FCC Part 15C contains FCC ID: TXH-50164
Canada	ICES-003 RSS 247 contains IC: 6315A-50164
European Community	For Bluetooth EN61010-1 EN ETSI 301 489-1/-17 EN ETSI 300 328

Safety and Regulatory	
Manufacturer	Cognex Corporation One Vision Drive Natick, MA 01760 USA
	DMB8700-BT DataMan Base Station: Regulatory Model R00087 This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take immediate measures. This equipment complies with the essential requirements of EU Directive 2014/53/EU. Declarations are available from your local representative.
EU RoHS	Compliant to the most recent applicable directive.

Safety and Regulatory

FCC	<p>FCC Part 15 This device complies with part 15 of the FCC Rules and Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.</p>
Canadian Compliance	<p>This device complies with part 15 of the FCC Rules and Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Le présent appareil est conforme aux Innovation, Science and Economic Development Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.</p>
Brazilian Compliance	<p>Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados. Para maiores informações, consulte o site da ANATEL www.anatel.gov.br.</p>
TÜV	<p>DataMan 8700 Base Station Regulatory Model R00087 NRTL: TÜV SÜD SCC/NRTL OSHA Scheme for UL/CAN 61010-1. CB report available upon request.TÜV SÜD, IEC/EN 61010-1.</p>

中国大陆RoHS (Information for China RoHS Compliance)

根据中国大陆《电子信息产品污染控制管理办法》(也称为中国大陆RoHS), 以下部份列出了本产品中可能包含的有毒有害物质或元素的名称和含量。



Table of toxic and hazardous substances/elements and their content, as required by China's management methods for controlling pollution by electronic information products.

Part Name 部件名称	Hazardous Substances 有害物质					
	Lead (Pb) 铅	Mercury (Hg) 汞	Cadmium (Cd) 镉	Hexavalent Chromium (Cr (VI)) 六价铬	Polybrominated biphenyls (PBB) 多溴联苯	Polybrominated diphenyl ethers (PBDE) 多溴二苯醚
Regulatory Model R00083 Regulatory Model R00084 Regulatory Model R00085 Regulatory Model R00087	X	O	O	O	O	O

This table is prepared in accordance with the provisions of SJ/T 11364.

这个标签是根据SJ/T 11364的规定准备的。

O: Indicates that said hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement of GB/T26572 - 2011.

表示本部件所有均质材料中含有的有害物质低于GB/T26572 - 2011的限量要求。

X: Indicates that said hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T26572 - 2011.

表示用于本部件的至少一种均质材料中所含的有害物质超过GB/T26572 - 2011的限制要求。

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