DX8200A

General View:

Figure A

1 Laser Beam Output Windows
2 Mounting Slots
3 Laser Safety Label

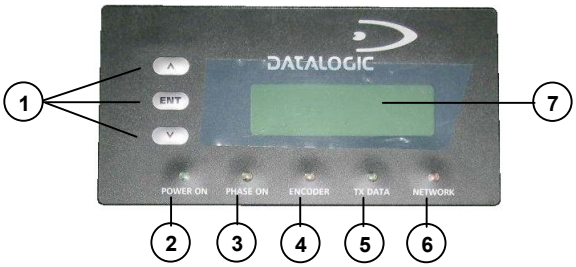


Figure B

1 Programming Keypad
2 Power On LED (Green)
3 Phase On LED (Yellow)
4 Encoder LED (Yellow)
5 TX Data LED (Green)
6 Network LED (Red)
7 LCD Display

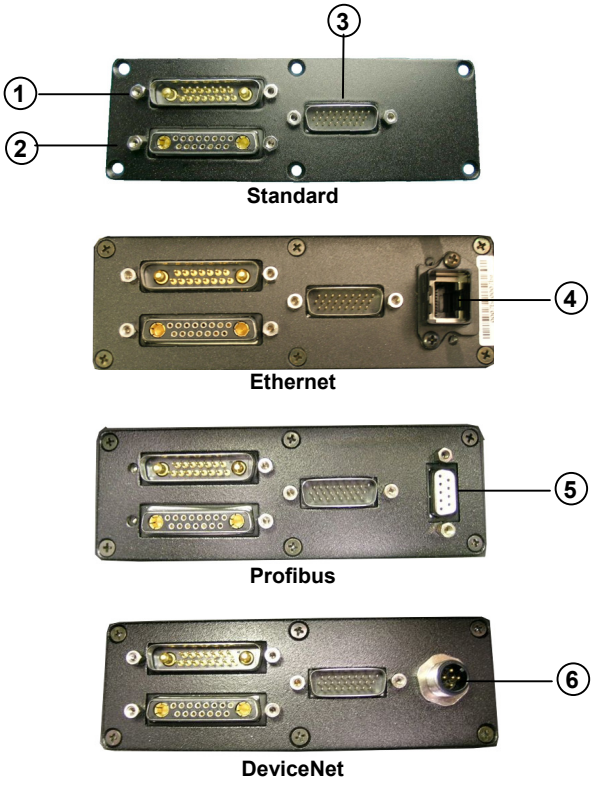


Figure C

1 Lonworks 17-pin Male Connector
2 Lonworks 17-pin Female Connector
3 Serial Interface and I/O 26-pin male Connector
4 Harting RJ Industrial® Modular female Connector
5 Profibus 9-pin female Connector
6 DeviceNet 5-pin male Connector

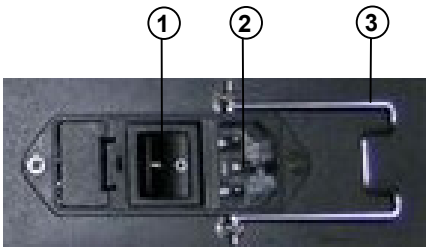


Figure D

(VAC Models Only)

1 Line Switch
2 Power Inlet
3 Cord Retaining Clamp

Technical Features:

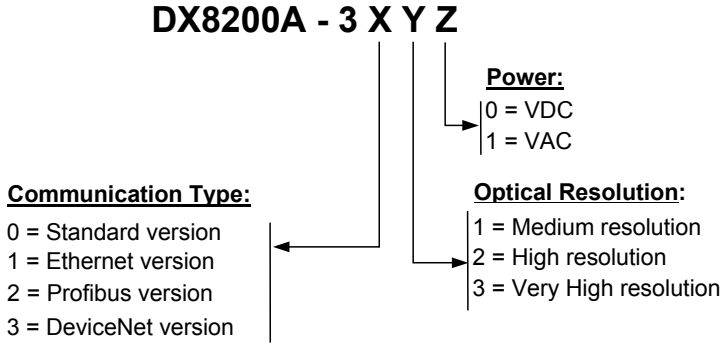
ELECTRICAL FEATURES (see note 1)		
	VAC models	**VDC models**
Supply voltage	110 to 230 Vac	20 to 30 Vdc
Power consumption	30 VA typical 35 W Max. (including startup current)	30 W typical
Common Communication Interfaces	**Main**	**Baud Rate**
	RS232	1200 to 115200
	RS485 full-duplex	
	RS485 half-duplex	
	20 mA C.L. (INT-30 with C-BOX 100 only)	19200
	Auxiliary	
	RS232	1200 to 115200
	Other	
	Lonworks	1,25 Mb/s
Model-Dependent Communication Interfaces	Ethernet Profibus DeviceNet	100Mb/s up to 12 M/bs up to 500 K/bs
Inputs Ext. Trigger 1, 3 aux. digital inputs	(optocoupled NPN or PNP)	
Outputs 3 software programmable digital outputs	(optocoupled)	
OPTICAL FEATURES (see note 1)		
Light receiver	Avalanche photodiode	
Wavelength	630 to 680 nm	
Safety class	Class 2 - EN60825-1; Class II - CDRH	
Light source	Up to 4 semiconductor laser diodes	
Laser control	Security system to turn laser off in case of motor slow down	
READING FEATURES		
Scan rate	≤ 1000 scans/s	
Maximum resolution Max. reading distance Max. reading width Max. depth of field	(see reading diagrams on page 14)	
USER INTERFACE		
LCD Display	2 lines by 20 characters LCD	
Keypad	3 keys	
LED indicators	Power On (green color) Phase On (yellow color) Encoder (yellow color) TX Data (green color) Network (red color)	

Note 1: The values given are typical at 25 °C ambient temperature (if not otherwise indicated).

SOFTWARE FEATURES	
Readable Codes	Interleaved 2/5 Code 39 Standard Codabar Code 128 EAN 128 Code 93 (standard and full ASCII) EAN/UPC (including Add-on 2 and Add-on 5)
Code selection	Up to 10 codes during one reading phase
Headers and Terminators	Up to 128-bytes headers and 128-bytes terminators
Operating modes	On Line, Serial On Line, Automatic, Test, PackTrack™, Continuous
Configuration modes	Genius™ utility program
Parameter storage	Non-volatile internal FLASH
ENVIRONMENTAL FEATURES	
Operating temperature Storage temperature Humidity	0° to +50 °C (+32° to +122 °F) -20° to +70 °C (-4° to +158 °F) 90% non condensing
Ambient light immunity	20000 lux
Vibration resistance : IEC 68-2-6 test FC 2 hours on each axis	14 mm @ 2 to 10 Hz 1.5 mm @ 13 to 55 Hz 2 G @ 70 to 200 Hz
Shock resistance: IEC 68-2-27 test EA 3 shocks on each axis	30 G; 11 ms
Protection class	IP64* (sealed connectors required)
PHYSICAL FEATURES	
Mechanical dimensions	470 x 300 x 141 mm (18.50 x 11.81 x 5.55 in)
Weight	about 11 kg (388 oz)

* with Harting RJ Industrial® Push Pull Ethernet connector.

Model Description:



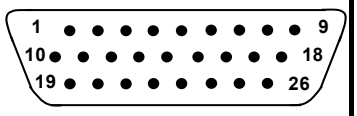
Accessories:

NAME	Description	Part Number
PWR-120	J-box power unit 110/230 VAC 24 V 120 W	93ACC1530
PWR-240	J-box power unit 110/230 VAC 24 V 240 W	93ACC1070
PWR-480	J-box power unit 110/230 VAC 24 V 480 W	93ACC1080
BTK-8100	Bus terminator kit (5 pcs)	93ACC1090
BTK-8102	Double terminator kit (2 pcs)	93A051287
PLL-8000	Optocoupled PLL device	93ACC1280
FS-1	Frame shaper (8 pcs)	93ACC1750
CAB-8100	10 wire shielded cable D 9.5 mm – 50 m	93ACC1120
CAB-8101	17-pin scanner/scanner connection cable 1.2 m	93A051020
CAB-8102	17-pin scanner/scanner connection cable 2.5 m	93A051030
CAB-8105	17-pin scanner/scanner connection cable 5 m	93A051040
CAB-8305	Power and bus return cable (last Slave) 5 m	93A051268
CAB-8402	No power cable 2.5 m	93ACC1758
CAB-8405	No power cable 5 m	93ACC1759
CAB-6011	26-pin scanner to C-BOX 100 1 m	93A051221
CAB-6012	26-pin scanner to C-BOX 100 2 m	93A051222
CAB-6015	26-pin scanner to C-BOX 100 5 m	93A051223
CAB-6502	Fam 6K-8K cross cable 2.5 m	93A051288
CAB-6505	Fam 6K-8K cross cable 5 m	93A051289
CAB-8605	Power and Lonworks termination cable (Master) 5 m	93A051290
Sentinel-5	Supervisor (up to 5 arrays)	93A101004
Sentinel-10	Supervisor (up to 10 arrays)	93A101005
Sentinel-32	Supervisor (up to 32 arrays)	93A101007
C-BOX 100	Passive Connection Box	93ACC1510
MEP-542	Photocell kit - PNP	93ACC1727
MEP-543	Photocell kit - NPN	93ACC1728
OEK-1	Optical encoder kit + 10 m cable	93ACC1600
UPT-80	DX8200A – DX8200 Adapter	93ACC1757

Electrical Connections:

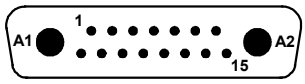
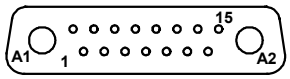
The details of the connector pins are indicated in the following tables:

The DX8200A scanner provides a 26-pin male D-sub connector for connection to power supply, Host interface (Main and Aux), and input/output signals.

26-pin D-Sub Connector Pinout			
Pin	**Name**	**Function**	
1	Shield	Internally connected by capacitor to chassis	 **26-pin male D-sub Connector**
20	RXAUX	Receive data of auxiliary RS232 (referred to GND)	
21	TXAUX	Transmit data of auxiliary RS232 (referred to GND)	
8	OUT 1+	Configurable digital output 1 – positive pin	
22	OUT 1-	Configurable digital output 1 – negative pin	
11	OUT 2+	Configurable digital output 2 – positive pin	
12	OUT 2-	Configurable digital output 2 – negative pin	
16	OUT 3A	Configurable digital output 3 – polarity insensitive	
17	OUT 3B	Configurable digital output 3 – polarity insensitive	
18	EXT_TRIG A	External trigger (polarity insensitive)	
19	EXT_TRIG B	External trigger (polarity insensitive)	
6	IN2A	Input signal 2 (polarity insensitive)	
10	IN2B	Input signal 2 (polarity insensitive)	
14	IN3A	Input signal 3 (polarity insensitive)	
15	IN4A	Input signal 4 (polarity insensitive)	
24	IN_REF	Common reference of IN3 and IN4 (polarity insensitive)	
9, 13	VS	Supply voltage – positive pin	
23, 25, 26	GND	Supply voltage – negative pin	

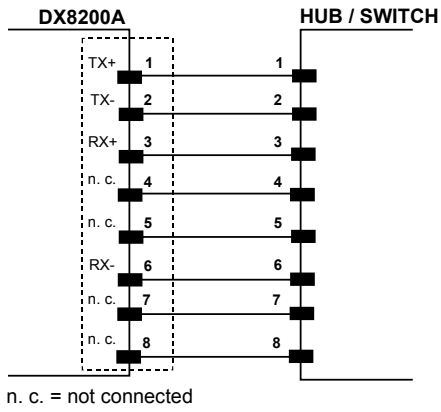
Main Interface Connector Pinout				
Pin	**RS232**	**RS485 Full-Duplex**	**RS485 Half-Duplex**	**20 mA C.L.** (INT-30 with C-BOX 100 only)
2	TX	TX485+	RTX485+	
3	RX	RX485+		
4	RTS	TX485-	RTX485-	see INT-30 instructions
5	CTS	RX485-		
7	GND_ISO	GND_ISO	GND_ISO	

Two 17-pin connectors provide access to the scanner's local Lonworks network used for both input and output connections to build a multi-sided or omni-station system.

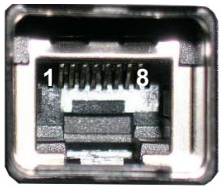
17-pin Lonworks Connector Pinout			
Pin	**Name**	**Function**	
A1	GND	Supply voltage (negative pin)	 **Male - Input**  **Female - Output** **17-pin Local Lonworks Connectors**
A2	VS	Supply voltage 20 to 30 Vdc (positive pin)	
1	Shield A	Cable shield A	
2	n.c.	Not connected	
3	Shield B	Cable shield B	
4	n.c.	Not connected	
5	n.c.	Not connected	
6	n.c.	Not connected	
7	VS_I/O	Supply voltage of I/O circuit	
8	Lon A+	Lonworks a line (positive pin)	
9	Lon A-	Lonworks a line (negative pin)	
10	Lon B+	Lonworks b line (positive pin)	
11	Lon B-	Lonworks b line (negative pin)	
12	SYS_I/O	System signal	
13	SYS_ENC_I/O	System signal	
14	n.c.	Not connected	
15	Ref_I/O	Reference voltage of I/O circuit	

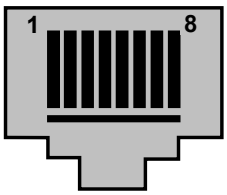
Ethernet Version

Harting RJ Industrial® Modular Connector



n. c. = not connected



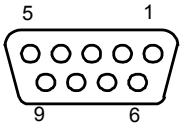


Harting RJ Industrial Female Connector

Profibus Version

Profibus Connector

Pin	Name	Function
1	Shield*	Shield, protective ground resp.
2	Free	
3	B-LINE (RxD/TxD-P)	Received/Transmitted data-P
4	CNTR-P**	Repeater control signal
5	DGND	Data ground (M5V)
6	+5 V	Voltage plus (P5V)
7	Free	
8	A-LINE (RxD/TxD-N)	Received/Transmitted data
9	CNTR-N**	Repeater control signal



Profibus 9-pin D-sub Female Connector

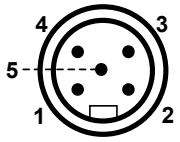
* signal is optional

** signal is optional; RS485 level

DeviceNet Version

DEVICENET CONNECTOR

Pin	Name	Function
2	V+	Supply voltage – positive pin
5	CAN_L	CAN bus data line – L
1	SHIELD	Shield
4	CAN_H	CAN bus data line – H
3	V-	Supply voltage – negative pin

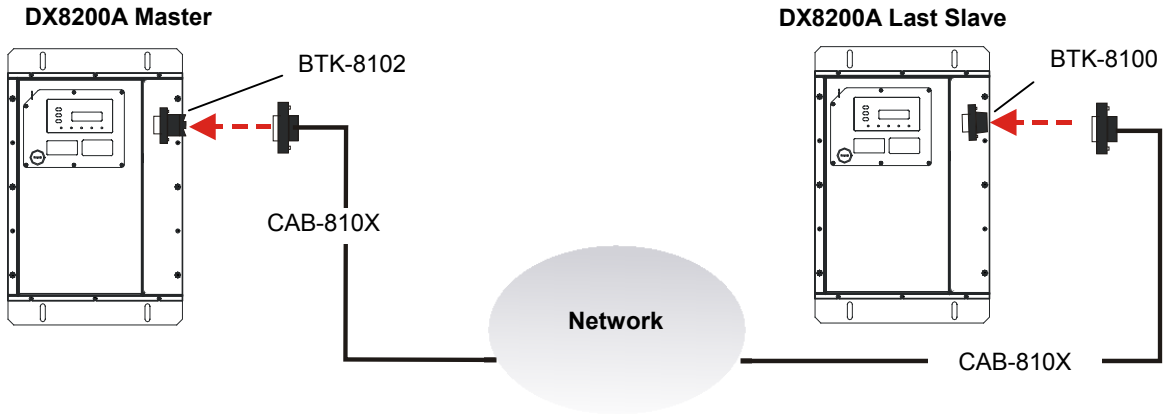


5-pin male DeviceNet Connector

Network Termination:

When building a Lonworks system the network must be properly terminated by positioning the BTK-8102 Lonworks terminator in the DX8200A master reader and the BTK-8100 Lonworks bus return in the last DX8200A slave reader.

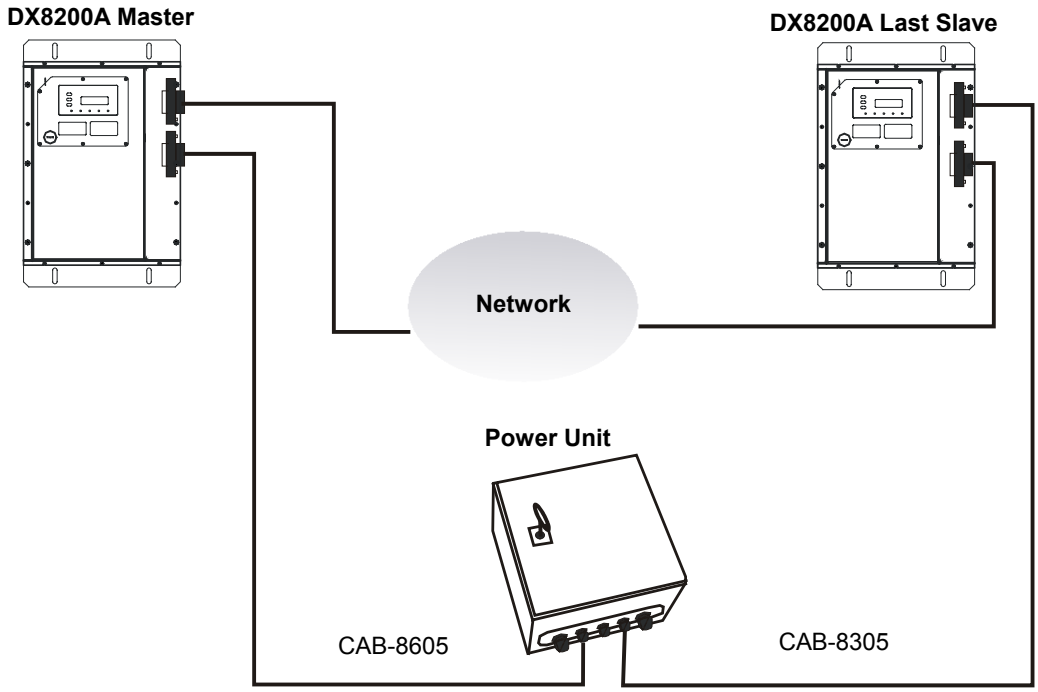
The BTK-8100 bus return provides a connector to be inserted in the Lonworks 17-pin female connector of the last slave reader in the network; while the BTK-8102 Lonworks terminator provides a different connector to be inserted in the Lonworks 17-pin male connector of the master reader:



BTK-8102 and BTK-8100

Two cables are also provided as accessories to terminate and power the network: CAB-8605 and CAB-8305.

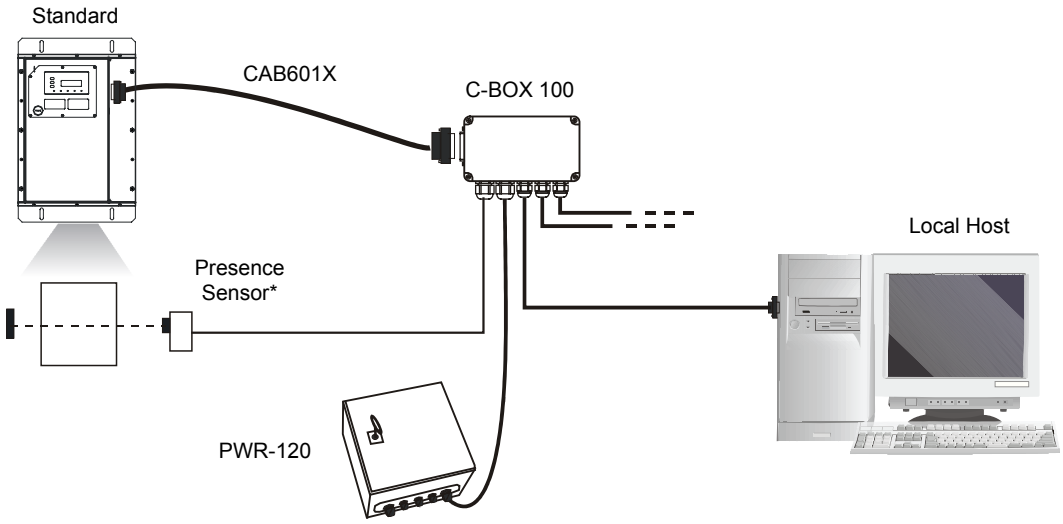
CAB-8605 is a power and Lonworks termination cable to be used for connecting the DX8200A master to an external power unit within the network; while CAB-8305 is a power and bus return cable to be used for connecting the last DX8200A slave to an external power unit. **This two cables must be used only for VDC models**.



CAB-8605 and CAB-8305

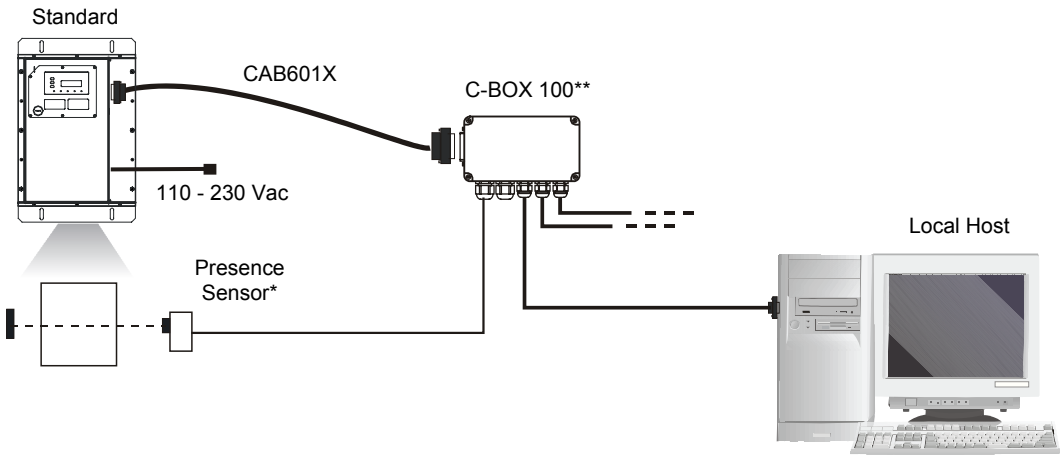
Connectivity:

Point-to-Point Layout



* P.S. (Presence Sensor) connected to External Trigger input.

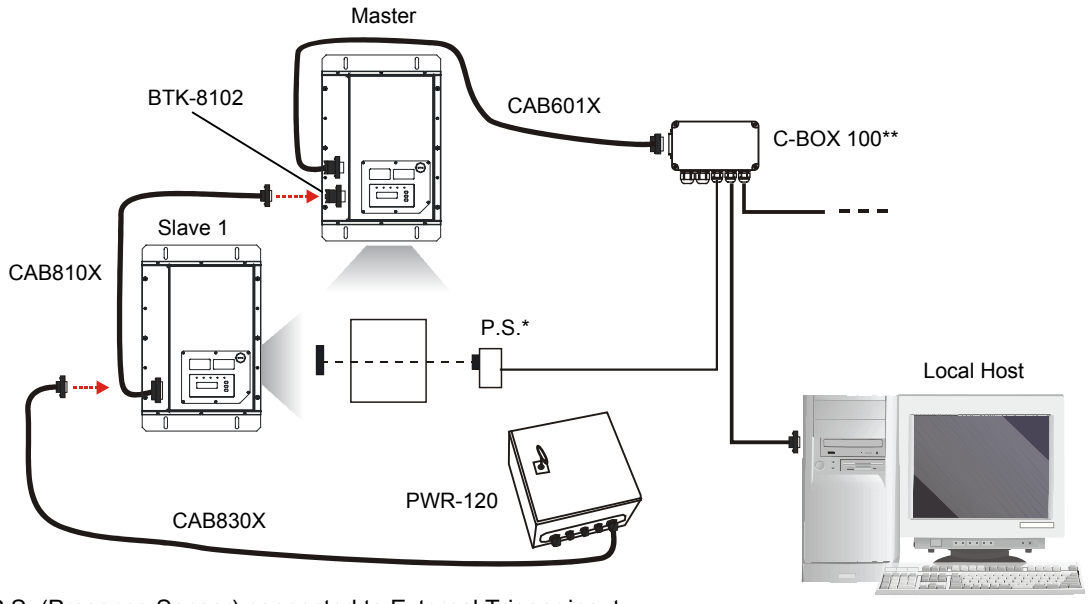
Point-to-Point for Standard DC Models



* P.S. (Presence Sensor) connected to External Trigger input.
** C-BOX 100 modified to accept scanner power

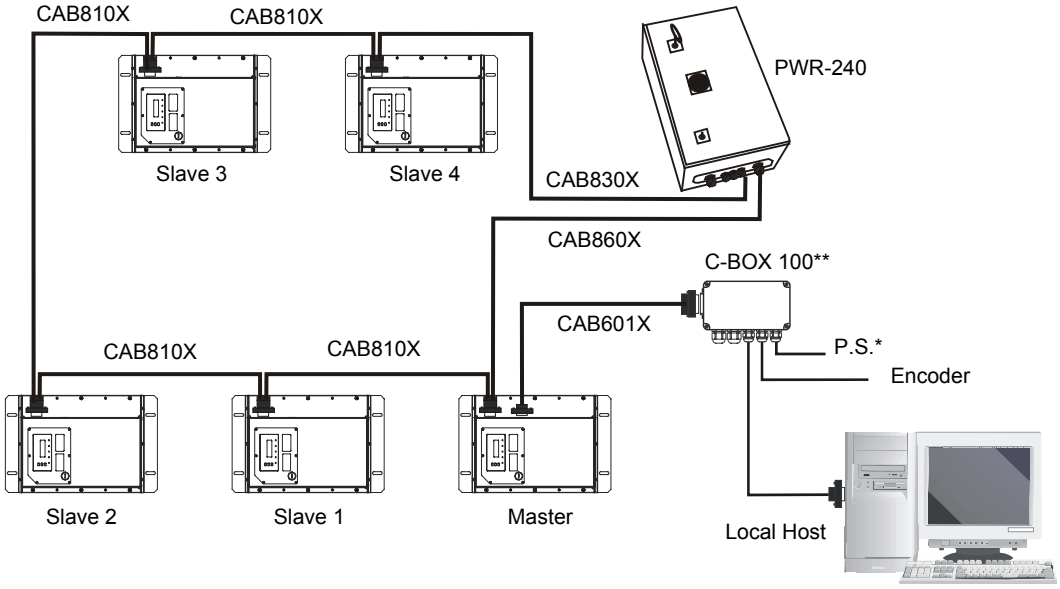
Point-to-Point for Standard AC Models

Local Lonworks Networks



* P.S. (Presence Sensor) connected to External Trigger input.
** C-BOX 100 modified to accept scanner power

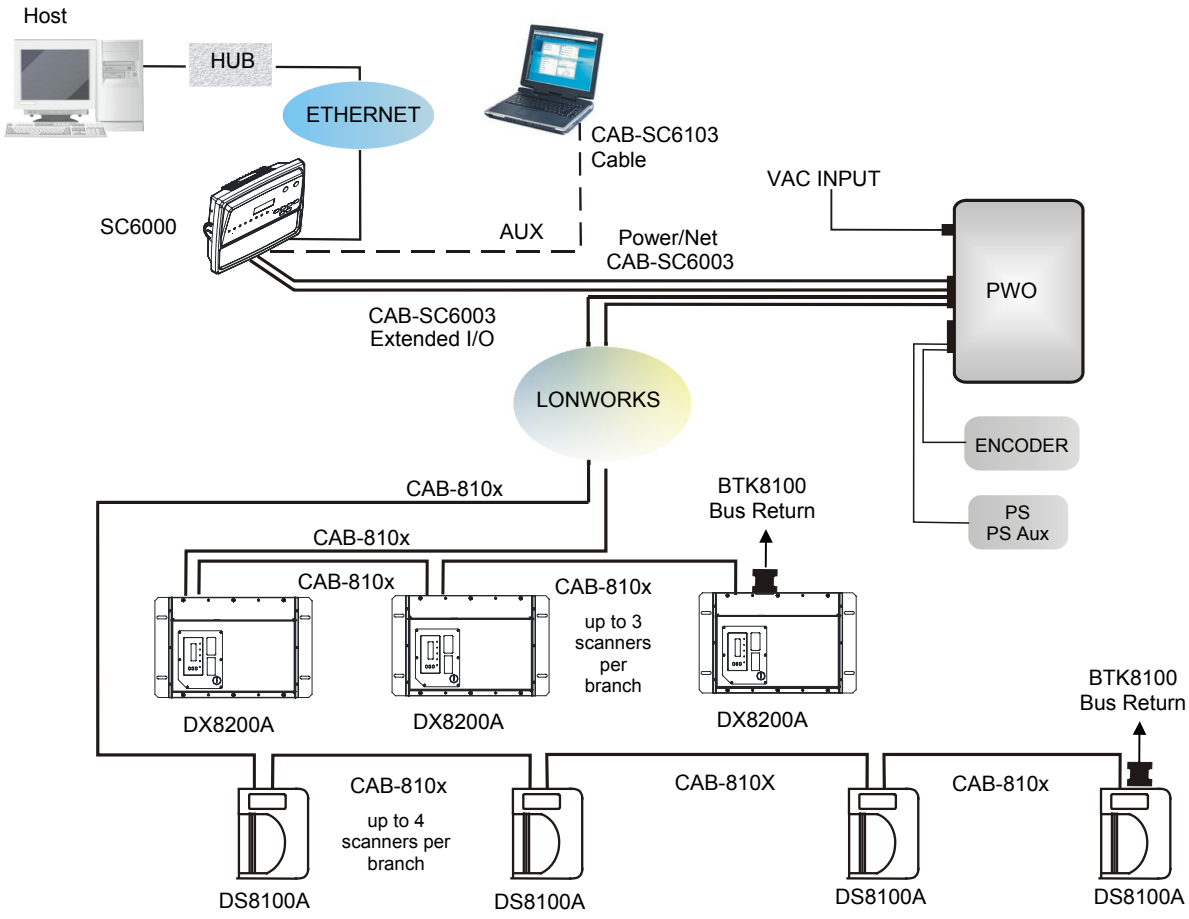
Small Synchronized Network with 2 Readers



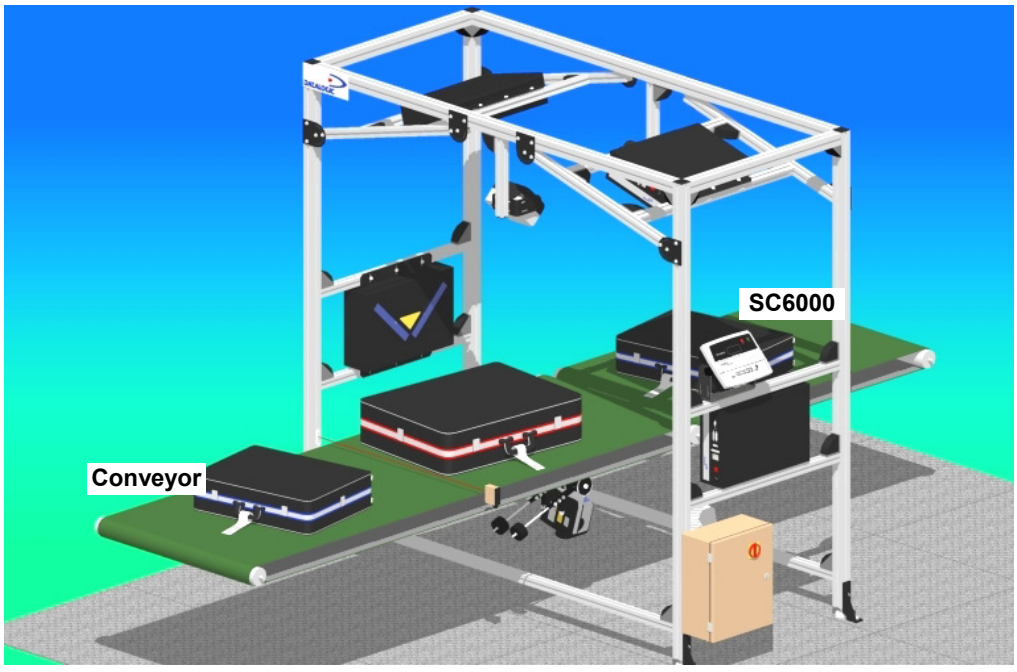
* P.S. (Presence Sensor) connected to External Trigger input.
** C-BOX 100 modified to accept scanner power

Small Synchronized Network with more than 2 Readers and Single Power Unit

Local Lonworks Networks



Large Synchronized Network with DX8200A and DS8100A Scanners



Large Synchronized Network Reading Station

COMMON FEATURES

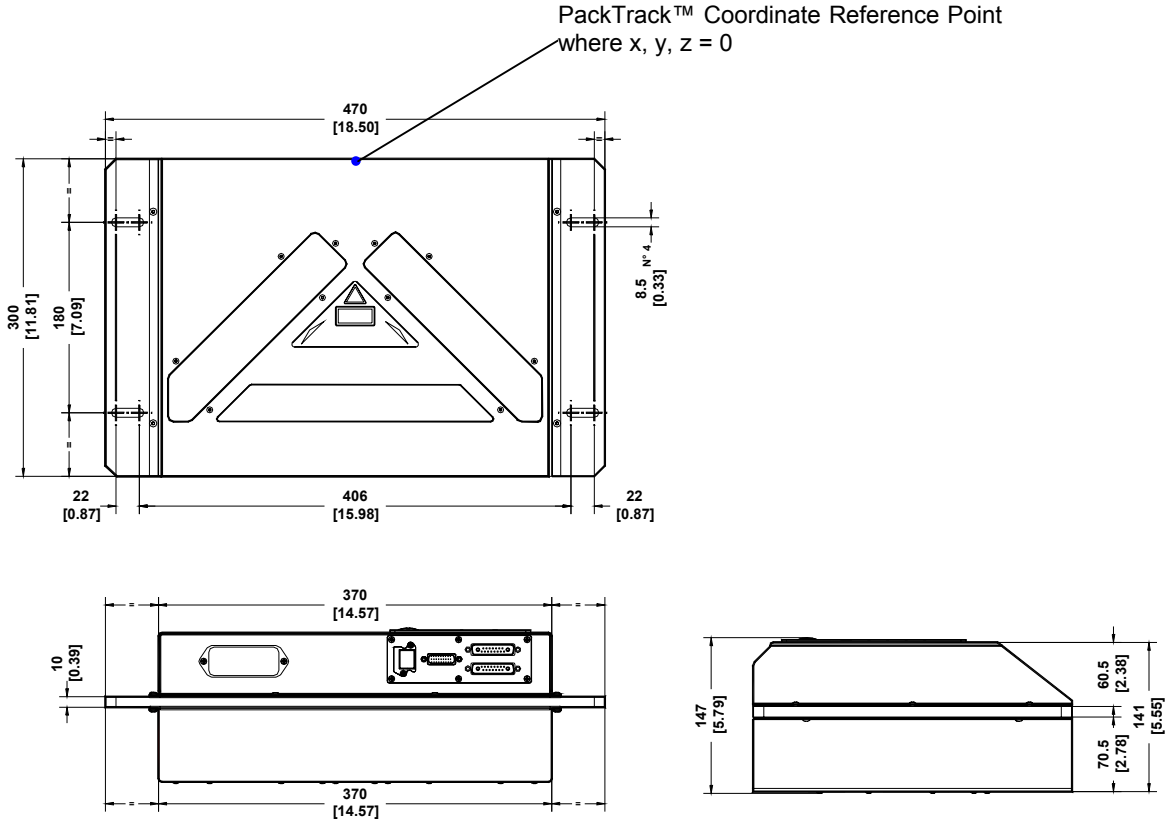
C-BOX 100 Pinout for DX8200A:

The table below gives the pinout of the C-BOX 100 terminal block connectors. Use this pinout when the DX8200A reader is connected in a network by means of the C-BOX 100:

C-BOX 100 Terminal Block Connectors				
Power				
1, 3, 5	VS			
2, 4, 6	GND			
7, 8	EARTH GROUND			
20, 40	Reserved			
Inputs				
27	EXT TRIG A (polarity insensitive)			
28	EXT TRIG B (polarity insensitive)			
29	IN 2A (polarity insensitive)			
30	IN 2B (polarity insensitive)			
31, 33	IN 3A (polarity insensitive)			
32, 34	IN 4A (polarity insensitive)			
36	IN 3B/IN 4B Reference (polarity insensitive)			
Outputs				
21	OUT 1+			
22	OUT 1-			
23	OUT 2+			
24	OUT 2-			
25	OUT 3A (polarity insensitive)			
26	OUT 3B (polarity insensitive)			
Auxiliary Interface				
35	TX AUX			
37	RX AUX			
38, 39	GND			
Main Interface				
	RS232	**RS485 Full-Duplex**	**RS485 Half-Duplex**	**20 mA C.L.** (with INT-30 only)
11, 15	TX 232	TX 485+	RTX 485+	see INT-30 instructions
12, 16	RTS 232	TX 485-	RTX 485-	
17	RX 232	RX 485+		
18	CTS 232	RX 485-		
10, 14, 19	SGND Main Isolated	SGND Main Isolated	SGND Main Isolated	
9, 13		RS485 Cable Shield	RS485 Cable Shield	

Mechanical Installation:

DX8200A can be installed to operate in any position. There are 4 slots (dia. 8.5 mm) on the sides of the scanner for mounting. The diagram below can be used for installation; refer to the Reading Diagrams for correct positioning of the scanner with respect to the reading zone and scanner orientation.



DX8200A Overall Dimensions

NOTE

For further details on product installation, see the complete Reference Manual available on the configuration CD-ROM included with this product.

Reading Conditions:

- ANSI Grade B minimum

The following tables describe the requirements for standard applications. Please contact Datalogic for specific advice on maximizing the reading performance possibilities to obtain the best possible performance for your application.

Minimum Code Height for Omnidirectional Reading (mm)							
Conveyor Speed (m/s)		**0.5**	**1**	**1.5**	**2**	**2.5**	**3**
2/5 Interleaved Code Resolution (mm)	**0.25**	11	13	15	17	19	21
	0.30	12	14	16	18	20	23
	0.33	13	15	17	19	21	23
	0.38	14	16	18	20	23	25
	0.50	18	19	22	24	26	28
	0.72	24	26	27	29	32	34
	1.00	33	34	35	37	39	41

Ratio 3:1

Table 1

Minimum Code Height for Omnidirectional Reading (mm)							
Conveyor Speed (m/s)		**0.5**	**1**	**1.5**	**2**	**2.5**	**3**
Code 39 Code Resolution (mm)	**0.25**	9	11	13	15	17	19
	0.30	10	11	14	16	18	20
	0.33	11	12	14	16	18	20
	0.38	12	13	15	17	19	21
	0.50	15	16	17	19	21	23
	0.72	20	22	23	24	25	27
	1.00	27	28	29	30	32	33

Ratio 3:1; Interdigit = Module Size

Table 2

Minimum Code Height for Omnidirectional Reading (mm)							
Conveyor Speed (m/s)		**0.5**	**1**	**1.5**	**2**	**2.5**	**3**
Code 128 – Ean 128 Code Resolution (mm)	**0.25**	8	10	12	14	16	18
	0.30	9	11	13	15	17	19
	0.33	9	11	13	15	18	20
	0.38	10	12	14	16	18	20
	0.50	12	14	16	18	20	22
	0.72	16	18	19	21	24	26
	1.00	22	23	24	26	28	30

Table 3

Minimum Code Height for Omnidirectional Reading (mm)							
Conveyor Speed (m/s)		**0.5**	**1**	**1.5**	**2**	**2.5**	**3**
Codabar Code Resolution (mm)	**0.25**	8	10	12	14	16	18
	0.30	9	11	13	15	17	19
	0.33	9	11	13	15	18	20
	0.38	10	12	14	16	18	20
	0.50	13	14	16	18	20	22
	0.72	17	18	19	21	24	26
	1.00	23	24	25	26	28	30

Ratio 3:1; Interdigit = Module Size

Table 4

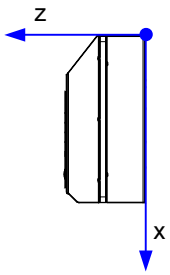
Minimum Code Height for Omnidirectional Reading (mm)							
Conveyor Speed (m/s)		**0.5**	**1**	**1.5**	**2**	**2.5**	**3**
EAN 8-13, UPC-A Code Resolution (mm)	**0.25**	8	9	11	13	15	18
	0.30	9	10	12	14	16	18
	0.33	9	10	12	14	16	19
	0.38	10	11	13	15	17	19
	0.50	12	13	14	16	19	21
	0.72	16	18	19	20	21	23
	1.00	22	23	24	25	26	27

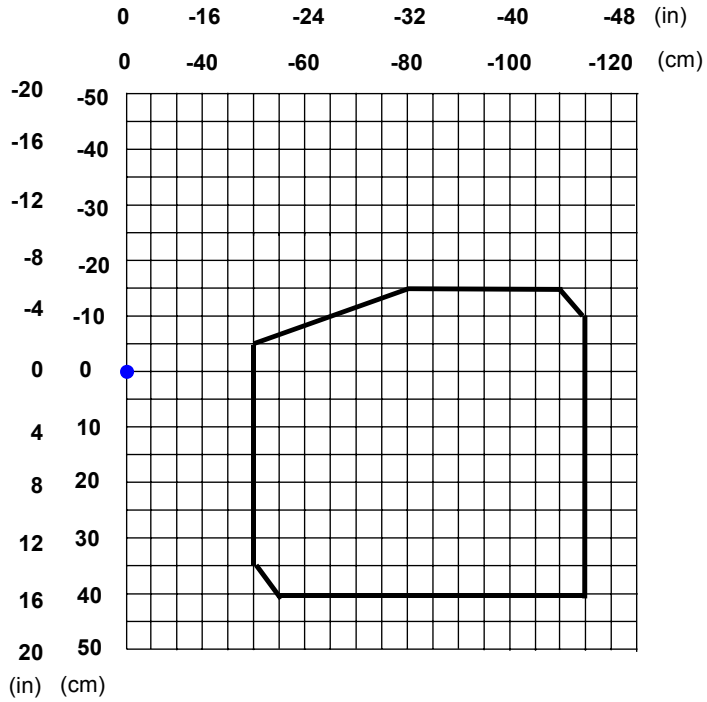
Table 5

Reading Diagrams:

Note: x = 0 and z = 0 correspond to the edge of the DX8200A scanner as shown in the figure below.

DX8200A-3X3X (0.25 mm/10 mils)

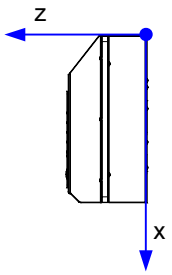


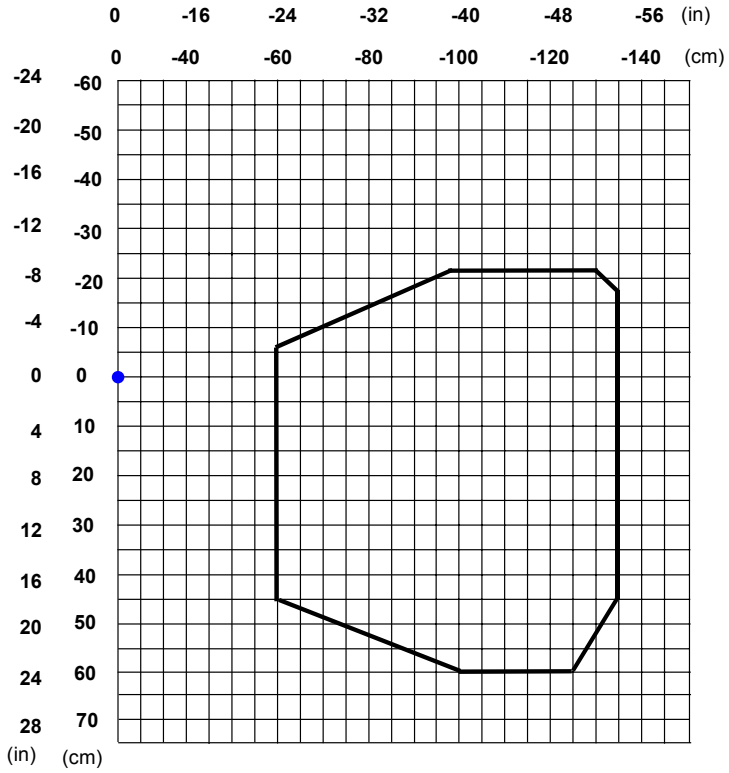


CONDITIONS

Code = Interleaved 2/5 or Code 39
PCS = 0.90

DX8200A-3X2X (0.30 mm/12 mils)

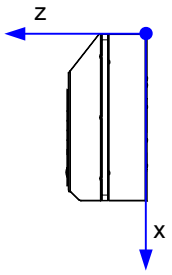


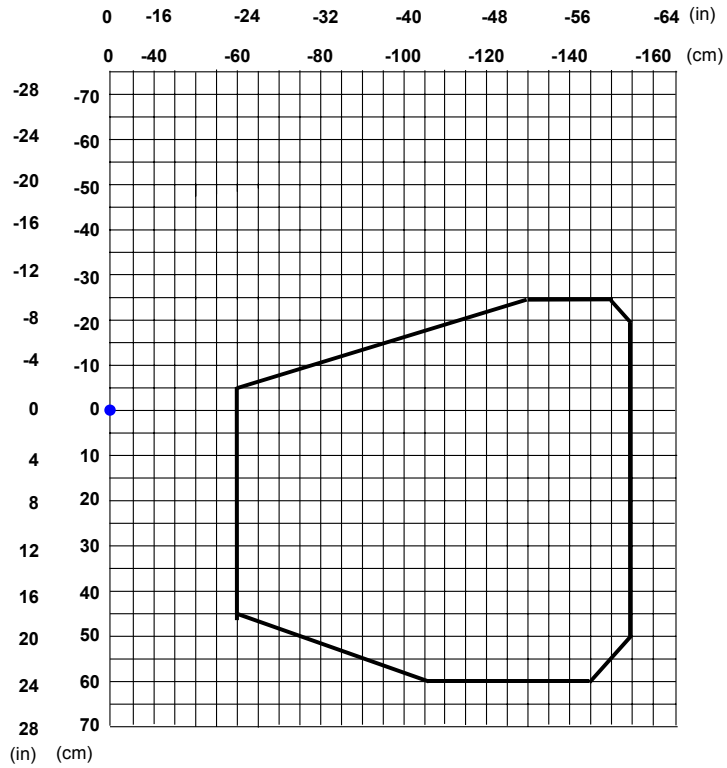


CONDITIONS

Code = Interleaved 2/5 or Code 39
PCS = 0.90

DX8200A-3X1X (0.38 mm/15 mils)

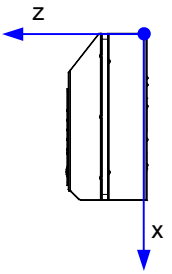


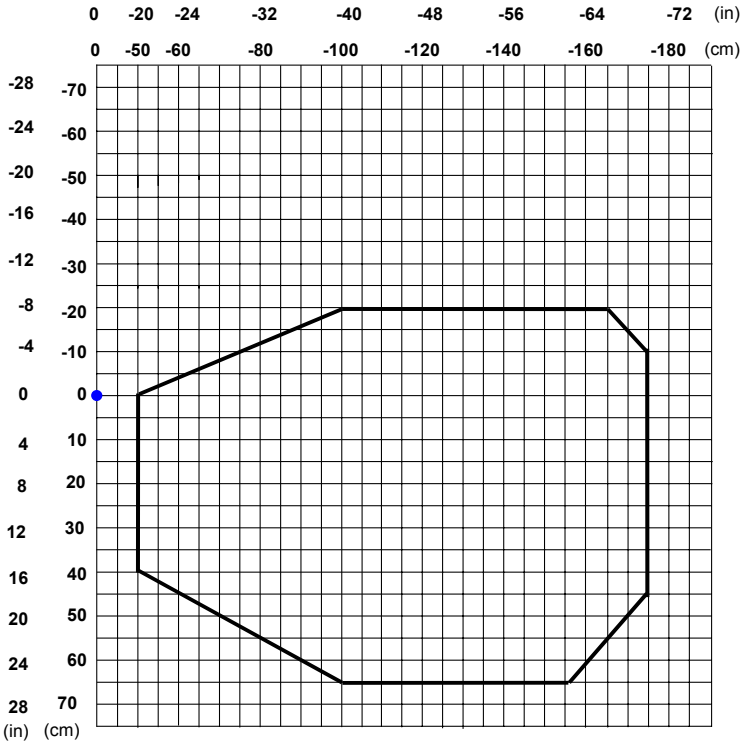


CONDITIONS

Code = Interleaved 2/5 or Code 39
PCS = 0.90

DX8200A-3X1X (0.50 mm/20 mils)





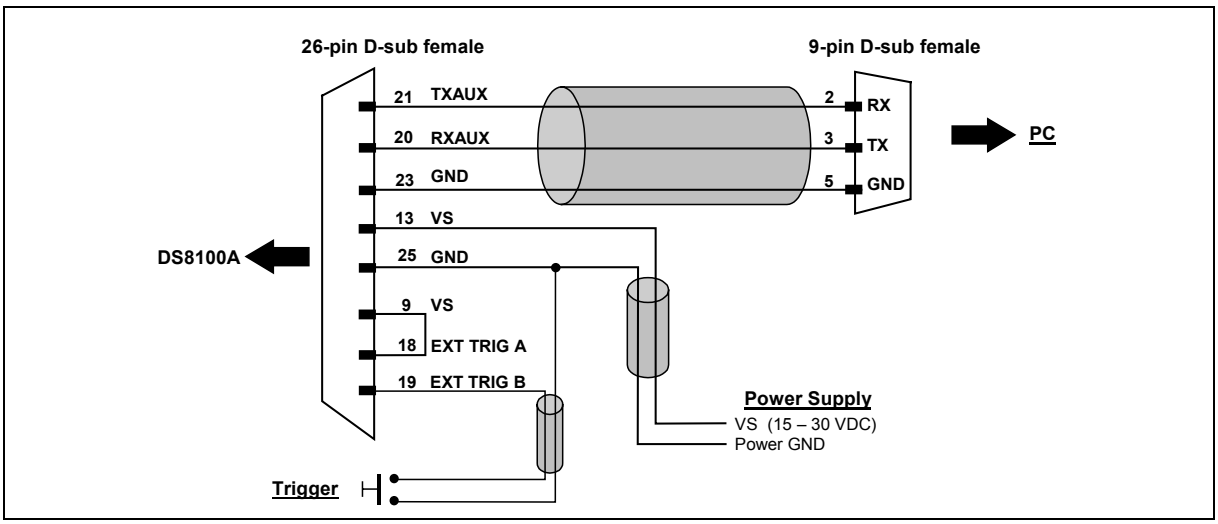
CONDITIONS

Code = Interleaved 2/5 or Code 39
PCS = 0.90

User Interface:

How To Build A Simple Interface Test Cable:

The following wiring diagram shows a simple test cable including power, external (push-button) trigger and PC RS232 COM port connections.



Safety Precautions:

Figure A

(1) Warning and Device Class Label

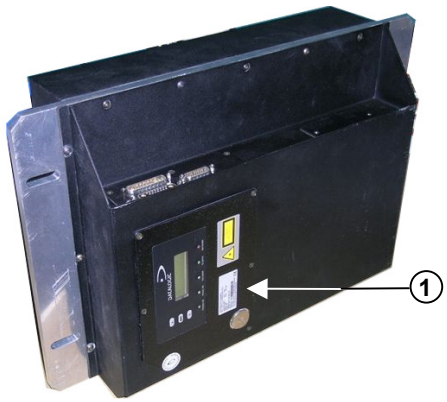


Figure B

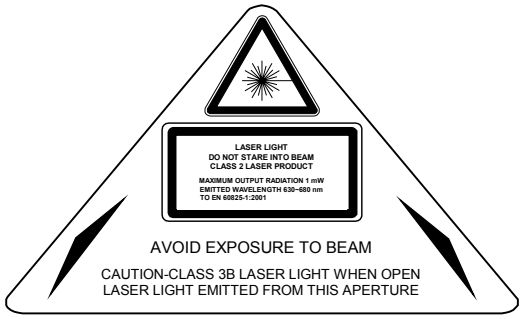
(1) Device Identification Label

The scanner is classified as a Class 2 laser product according to EN60825-1 regulations and as a Class II laser product according to CDRH regulations.

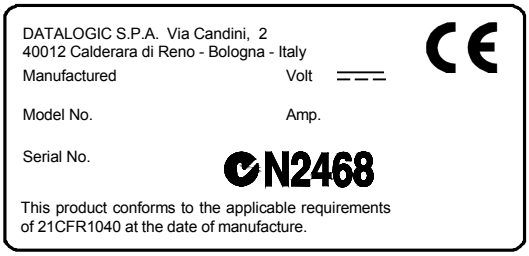
Disconnect the power supply when opening the device during maintenance or installation to avoid exposure to hazardous laser light.

There is a safety device which allows the laser to be switched on only if the motor is rotating above the threshold for its correct scanning speed.

The laser beam can be switched off through a software command (see also the Genius™ Help On-Line).



Warning and Device Class Label



Device Identification Label

The laser diodes used in this device are classified as Class 3B laser products according to EN 60825-1 regulations and as Class IIIb laser products according to CDRH regulations. As it is not possible to apply a classification label on the laser diodes used in this device, the following label is reproduced here:

Laser Diode Class Label

Any violation of the optic parts in particular can cause radiation up to the maximum level of the laser diode (30 mW at 630~680 nm).

Power Supply

This product is intended to be installed by Qualified Personnel only.
For DX8200A VDC models:

- This scanner is intended to be supplied by either a UL Listed power supply marked 'Class 2' or 'LPS', output rated 20 - 30 V dc, minimum 1.75 A or by a UL Listed computer with LPS outputs.
- This scanner must be supplied by a Class II Power Supply Unit conforming to the EN 60950 safety regulation.

WEEE Compliance

DATALOGIC S.p.A.,
Via Candini, 2
40012 - Lippo di Calderara
Bologna - Italy

CE 05

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declares that the
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declare que el

DX8200A-XXXX, Laser Scanner

e tutti i suoi modelli
and all its models
et tous ses modèles
und seine Modelle
y todos sus modelos

sono conformi alle Direttive del Consiglio Europeo sottoelencate:
are in conformity with the requirements of the European Council Directives listed below:
sont conformes aux spécifications des Directives de l'Union Européenne ci-dessous:
den nachstehenden angeführten Direktiven des Europäischen Rats:
cumple con los requisitos de las Directivas del Consejo Europeo, según la lista siguiente:

89/336/EEC EMC Directive	e and et und y	**92/31/EEC, 93/68/EEC**	emendamenti successivi further amendments ses successifs amendements späteren Abänderungen succesivas enmiendas

73/23/EEC Low Voltage Directive

Basate sulle legislazioni degli Stati membri in relazione alla compatibilità elettromagnetica ed alla sicurezza dei prodotti.
On the approximation of the laws of Member States relating to electromagnetic compatibility and product safety.
Basée sur la législation des Etats membres relative à la compatibilité électromagnétique et à la sécurité des produits.
Über die Annäherung der Gesetze der Mitgliedsstaaten in bezug auf elektromagnetische Verträglichkeit und Produktsicherheit entsprechen.
Basado en la aproximación de las leyes de los Países Miembros respecto a la compatibilidad electromagnética y las Medidas de seguridad relativas al producto.

Questa dichiarazione è basata sulla conformità dei prodotti alle norme seguenti:
This declaration is based upon compliance of the products to the following standards:
Cette déclaration repose sur la conformité des produits aux normes suivantes:
Diese Erklärung basiert darauf, daß das Produkt den folgenden Normen entspricht:
Esta declaración se basa en el cumplimiento de los productos con las siguientes normas:

EN 55022, August 1994:	LIMITS AND METHODS OF MEASUREMENTS OF RADIO DISTURBANCE CHARACTERISTICS OF INFORMATION TECHNOLOGY EQUIPMENTS (ITE)
EN 61000-6-2, October 2001:	ELECTROMAGNETIC COMPATIBILITY (EMC). PART 6-2: GENERIC STANDARDS - IMMUNITY FOR INDUSTRIAL ENVIRONMENTS
EN 60950-1, December 2001:	INFORMATION TECHNOLOGY EQUIPMENT - SAFETY – PART 1: GENERAL REQUIREMENTS
EN 60825-1, June 1994: **Amendments A11 (1996), A2 (2001)**	SAFETY OF LASER PRODUCTS – PART 1: EQUIPMENT CLASSIFICATION, REQUIREMENTS AND USER'S GUIDE

Lippo di Calderara, 08/07/2005

Ruggero Cacioppo
Quality Assurance Laboratory Manager