DATALOGIC™

DX6400

QUICK REFERENCE GUIDE

CONTENTS

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

SERVICES AND SUPPORT

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

- **PRODUCTS**

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

  - **Genius™** a utility program, which allows device configuration using a PC. It provides RS232 interface configuration.

- **SERVICES & SUPPORT**

  - **Datalogic Services** - Warranty Extensions and Maintenance Agreements
  - **Authorised Repair Centres**

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  E-mail form and listing of Datalogic Subsidiaries

DX6400-100-010 MASTER/SLAVE MODEL

Figure A
① Laser Beam Output Window

Figure B

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

Figure C

① Main/Aux. Interface 25-pin D-sub Male Connector
② Lonworks 9-pin Male Connector
③ Lonworks 9-pin Female Connector

Available Models:

DX6400 - 100 - 0**XX**

Decoder Model
10 = Master/Slave
12 = Ethernet

Technical Features:

ELECTRICAL FEATURES		
Supply voltage	15 to 30 Vdc	
Power consumption	18 W typical	
	24 W Max. (including startup current)	
Communication Interfaces	**Main (isolated)**	**Baud Rate**
	RS232	1200 to 115200
	RS485 full-duplex	1200 to 115200
	RS485 half-duplex	1200 to 115200
	20 mA Current Loop (INT-30 with C-BOX 100 only)	19200
	Auxiliary	
	RS232	1200 to 115200
	Other	
	Lonworks	1.25 Mb/s
Inputs External Trigger 1, 3 auxiliary digital inputs	(optocoupled NPN or PNP)	
Outputs 3 software programmable digital outputs	(optocoupled)	

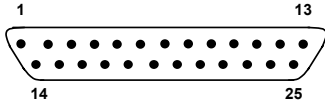| **OPTICAL FEATURES**	
Light receiver	Avalanche photodiode
Wavelength	630 to 680 nm
Safety class	Class 2 - EN60825-1; Class II - CDRH
Light source	Up to 2 semiconductor laser diodes
Laser control	Security system to turn laser off in case of motor slow down
READING FEATURES	
Scan rate	up to 1500 scans/s (750 per leg)
Maximum resolution Max. reading distance Max. reading width Max. depth of field	(see reading diagram)
USER INTERFACE	
LCD Display	2 lines by 16 characters LCD
Keypad	3 keys
LED indicators	Power ON (red) Phase ON (yellow) TX data (green)
SOFTWARE FEATURES	
Readable Codes	Interleaved 2/5 Code 39 Standard Codabar Code 128 EAN128 Code 93 (standard and full ASCII) EAN/UPC EAN/UPC (including Add-on 2 and Add-on 5)
Code selection	Up to 10 codes during one reading phase
Headers and Terminators	Transmitted messages can be personalized using up to 128-byte headers and 128-byte terminators
Operating modes	On Line Automatic Test PackTrack
Configuration modes	Genius™ utility program
Parameter storage	Non-volatile internal FLASH
ENVIRONMENTAL FEATURES	
Operating temperature Storage temperature Humidity	0° to +40 °C (+32° to +104 °F) -20° to +70 °C (-4° to +158 °F) 90% non condensing
Ambient light immunity	10000 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
PHYSICAL FEATURES	
Mechanical dimensions	225.9 x 149.8 x 116.8 mm (8.89 x 5.90 x 4.60 in)
Weight	2.1 kg. (4.62 lbs)

Accessories:

Name	Description	Part Number
BTK-6000	Bus terminator kit (5 pcs)	93ACC1710
CAB-6001	25-pin scanner to C-BOX100 cable 1 m	93A051190
CAB-6002	25-pin scanner to C-BOX100 cable 2 m	93A051200
CAB-6005	25-pin scanner to C-BOX100 cable 5 m	93A051210
CAB-6010	25-pin scanner to C-BOX100 cable 10 m	93A051271
CAB-6011	26-pin scanner to C-BOX100 cable 1 m (Ethernet version)	93A051221
CAB-6012	26-pin scanner to C-BOX100 cable 2 m (Ethernet version)	93A051222
CAB-6015	26-pin scanner to C-BOX100 cable 5 m (Ethernet version)	93A051223
CAB-6101	9-pin scanner/scanner connection cable 1 m	93A051220
CAB-6102	9-pin scanner/scanner connection cable 2 m	93A051230
CAB-6105	9-pin scanner/scanner connection cable 5 m	93A051240
CAB-6112	9-pin scanner to scanner no power cable 2 m	93A051224
CAB-6115	9-pin scanner to scanner no power cable 5 m	93A051225
CAB-6305	25-pin power cable Fam 6k 5 m	93ACC1768
CAB-6310	25-pin power cable Fam 6k 10 m	93ACC1752
CAB-6502	Fam 6K-8K cross cable 2.5 m	93A051288
CAB-6505	Fam 6K-8K cross cable 5 m	93A051289
C-BOX 100	Passive connection box	93ACC1510
C-BOX 300	Profibus-DP connection box	93A301000
C-BOX 310	Profibus-DP connection box with display	93A301030
C-BOX 400	Devicenet connection box	93A301010
C-BOX 410	Devicenet connection box with display	93A301040
FBK-6000	Fast bracket kit (2 pcs)	93ACC1721
INT-30	20 m.A. C.L. interface board for C-BOX 100	93A151022
PH-1	Photocell kit – PNP	93ACC1791
MEP-543	Photocell kit - NPN	93ACC1728
PG6002	Single unit power supply (US)	93ACC1718
PG6001	Single unit power supply (UK)	93ACC1719
PG6000	Single unit power supply (EU)	93ACC1720
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
OEK-2	Optical encoder (10 m cable + spring)	93ACC1770
OEK-1	Optical encoder kit + 10 m	93ACC1600

Electrical Connections:

The DX6400 reader provides a 25-pin male D-sub connector for connection to power supply, Host interface (Main and Aux), and input/output signals.
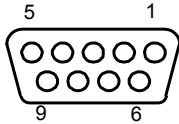
Two 9-pin connectors provide access to the scanner's local Lonworks network used for both input and output connections to build a multi-sided or omni-station system.

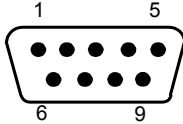The details of the connector pins are indicated in the following table:

25-pin D-Sub Connector Pinout			
Pin	**Name**	**Function**	
1	CHASSIS	Chassis - internally connected to GND Cable shield connected to chassis	
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	**25-pin male D-sub Connector**
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/PS A	External trigger (polarity insensitive) for PS	
19	EXT_TRIG/PS B	External trigger (polarity insensitive) for PS	
6	IN2/ENC A	Input signal 2 (polarity insensitive) for Encoder	
10	IN2/ENC B	Input signal 2 (polarity insensitive) for Encoder	
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	GND	Supply voltage – negative pin	

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	

* Do not leave floating, see Reference Manual for connection details.

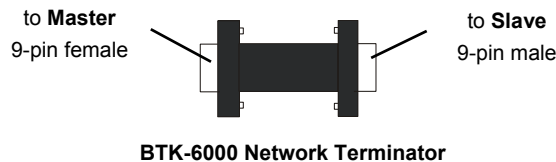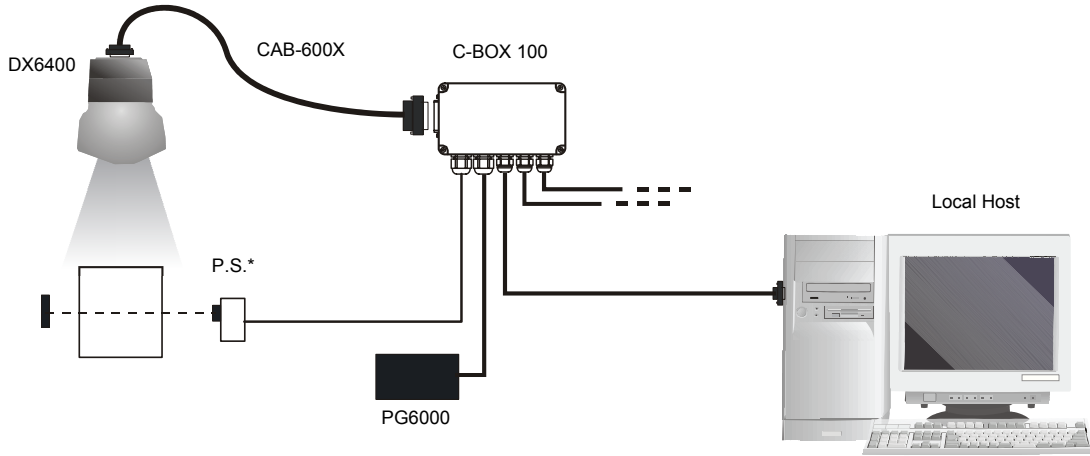| 9-pin Lonworks Connector Pinout			
Pin	**Name**	**Function**	
1	CHASSIS	Cable shield internally connected by capacitor to chassis	
9	VS	Supply voltage – positive pin	
2	GND	Supply voltage – negative pin	
6	VS_I/O	Supply voltage of I/O circuit	
3	Ref_I/O	Reference voltage of I/O circuit	**9-pin Local Lonworks Connectors**
4	SYS_ENC_I/O	System signal	
5	SYS_I/O	System signal	
7	LON A	Lonworks line (polarity insensitive)	
8	LON B	Lonworks line (polarity insensitive)	

Network Termination:

When building a local Lonworks system the network must be properly terminated by positioning a BTK-6000 terminator on the DX6400 master reader (BTK-6000 female side) and on the last slave reader (BTK-6000 male side).
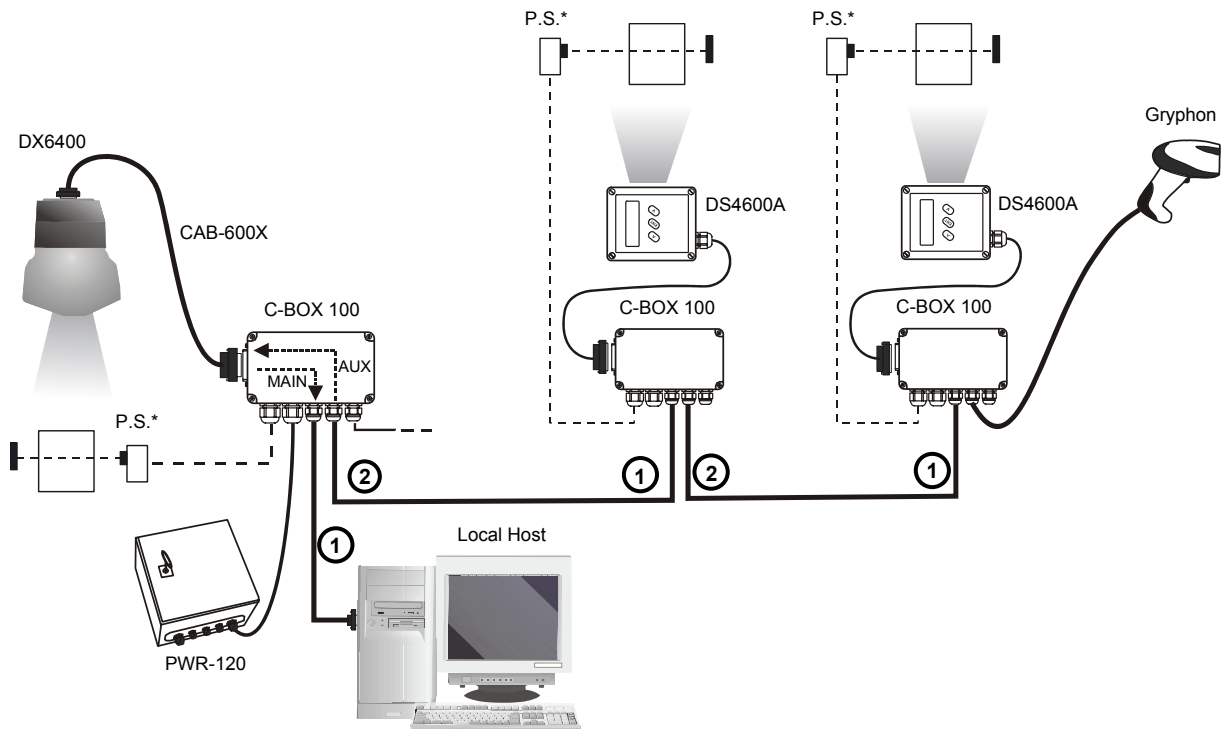
to **Master**
9-pin female

to **Slave**
9-pin male

BTK-6000 Network Terminator

Connectivity:

Point-to-Point Layout

DX6400

CAB-600X

C-BOX 100

Local Host

P.S.*

PG6000

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

Pass Through Layout

P.S.*

P.S.*

Gryphon

DX6400

CAB-600X

DS4600A

DS4600A

C-BOX 100
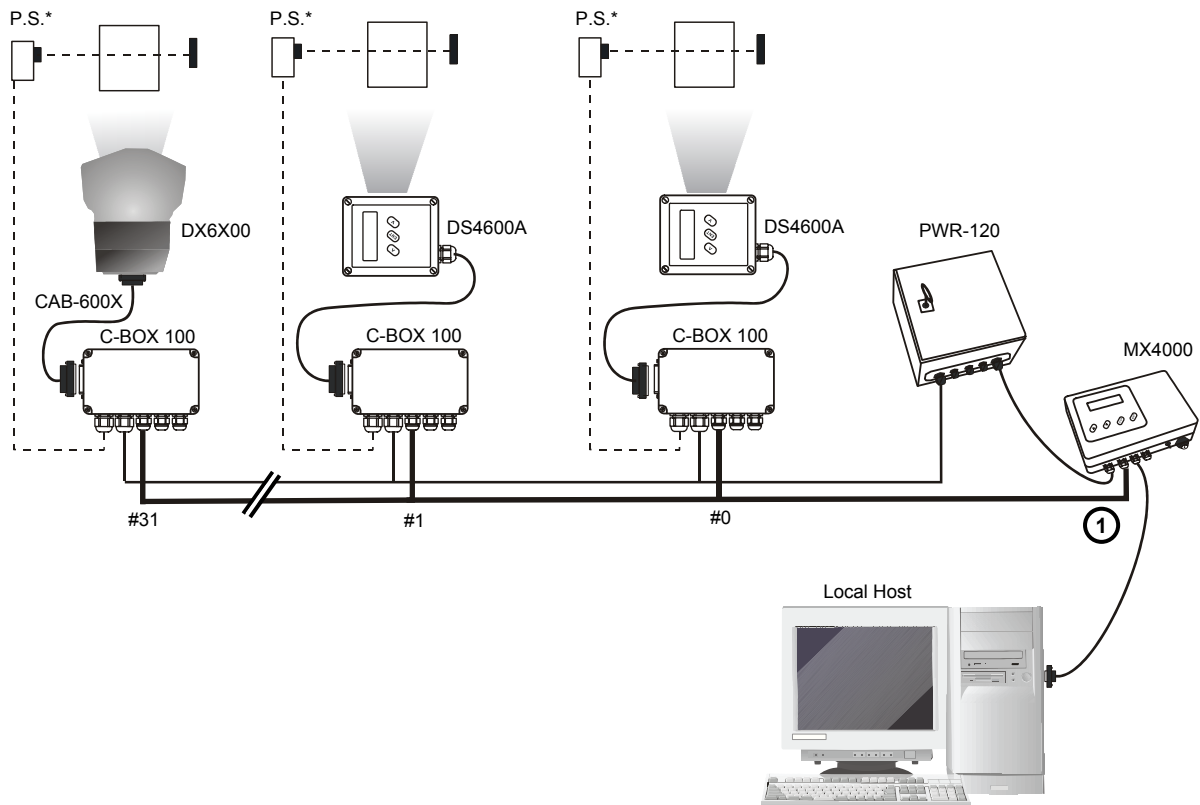
AUX

MAIN

C-BOX 100

C-BOX 100

P.S.*

② ① ② ①

① Local Host

PWR-120

① Main Serial Interface ② Auxiliary Serial Interface

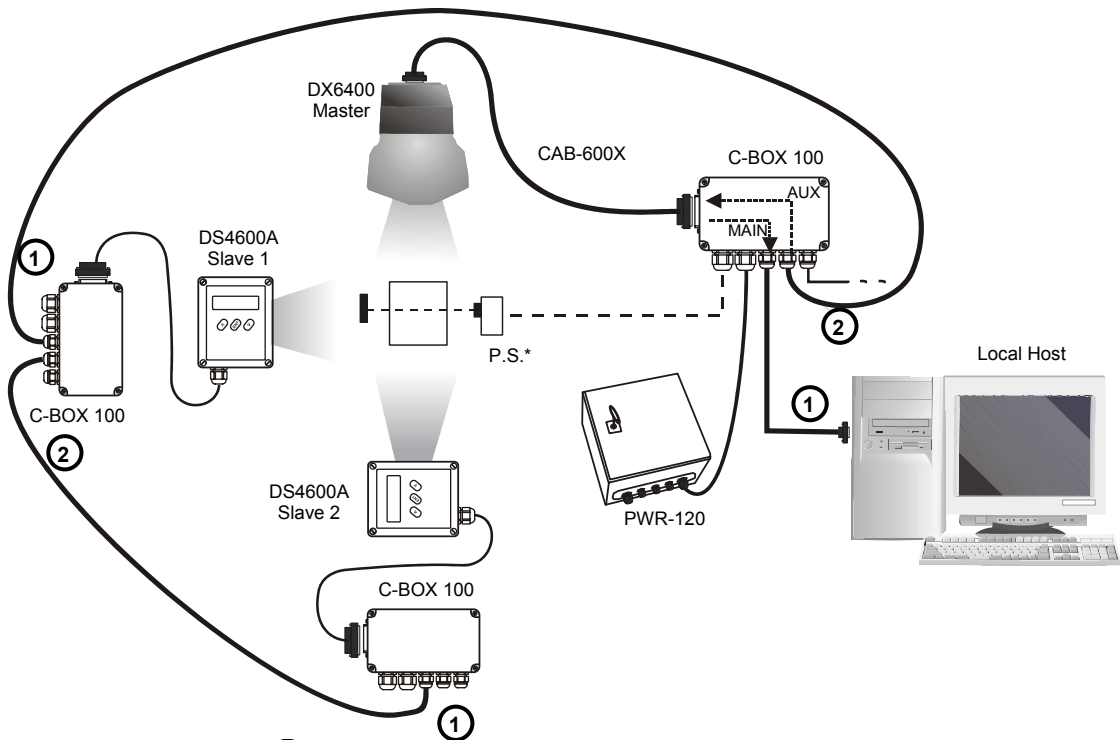* P.S. (Presence Sensor) connected to External Trigger/PS input.

Multiplexer Layout

1 RS485 HD Main Interface

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

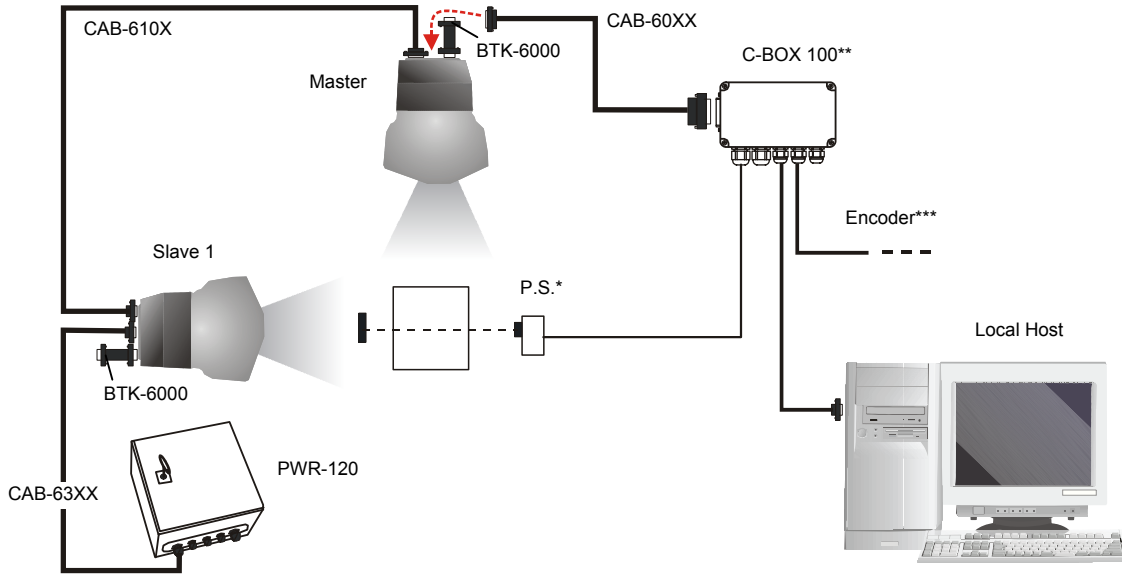**RS232 Master/Slave Layout**

1 Main Serial Interface   2 Auxiliary Serial Interface

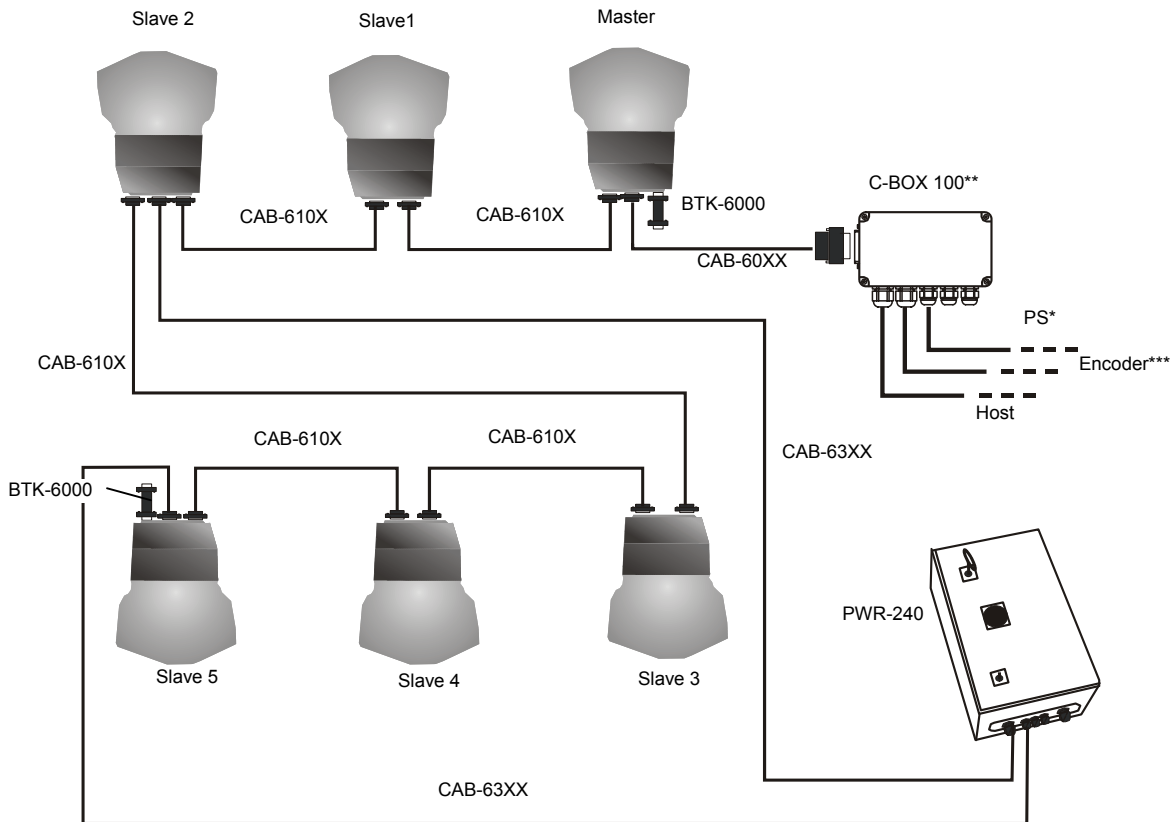*   P.S. (Presence Sensor) connected to External Trigger/PS input.

Local Lonworks Network

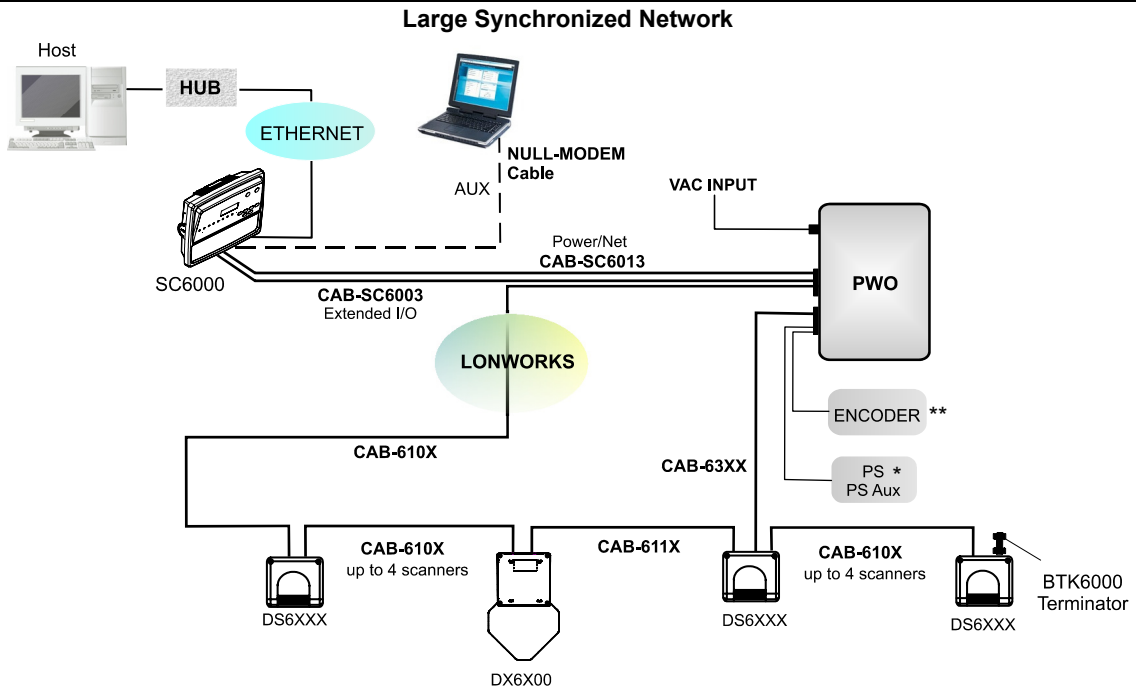**Small Synchronized Network with 2 readers**

*   P.S. (Presence Sensor) connected to External Trigger/PS input.
**   C-BOX 100 modified to accept scanner power.
***   Encoder connected to IN2/ENC input.

Local Lonworks Network

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

*   P.S. (Presence Sensor) connected to External Trigger/PS input.
**   C-BOX 100 modified to accept scanner power.
***   Encoder connected to IN2/ENC input.

Large Synchronized Network

* P.S. (Presence Sensor) connected to External Trigger/PS input.
** Encoder connected to ENC input.

Large Synchronized Network with DX6400 and DS6XXX Scanners

DATALOGIC™

DX6400-100-012 ETHERNET MODEL

Figure A

① Laser Beam Output Window

Figure B

① Programming Keypad
② TX Data LED (Green)
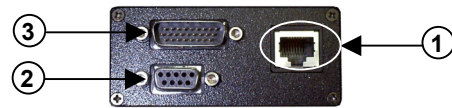③ Phase On LED (Yellow)
④ Power On LED (R
⑤ LCD Display

Figure C

① RJ45 Modular Connector for Ethernet Interface
② Lonworks 9-pin Female Connector
③ Main/Aux. Interface 26-pin D-Sub Male Connector

Available Models:

DX6400 - 100 - 0XX

Decoder Model
10 = Master/Slave
12 = Ethernet

Technical Features:

ELECTRICAL FEATURES		
Supply voltage	15 to 30 Vdc	
Power consumption	18 W typical	
	24 W Max. (including startup current)	
Communication Interfaces	**Main (isolated)**	**Baud Rate**
	RS232	1200 to 115200
	RS485 full-duplex	1200 to 115200
	RS485 half-duplex	1200 to 115200
	20 mA Current Loop (INT-30 with C-BOX 100 only)	19200
	Auxiliary	
	RS232	1200 to 115200
	Other	
	Lonworks	1.25 Mb/s
Model–Dependent Communication Interfaces	Ethernet	10 or 100 Mb/s
Inputs External Trigger 1, 3 auxiliary digital inputs	(optocoupled NPN or PNP)	
Outputs 3 software programmable digital outputs	(optocoupled)	

OPTICAL FEATURES	
Light receiver	Avalanche photodiode
Wavelength	630 to 680 nm
Safety class	Class 2 - EN60825-1; Class II - CDRH
Light source	Up to 2 semiconductor laser diodes
Laser control	Security system to turn laser off in case of motor slow down

READING FEATURES	
Scan rate	up to 1500 scans/s (750 per leg)
Maximum resolution Max. reading distance Max. reading width Max. depth of field	(see reading diagram)

USER INTERFACE	
LCD Display	2 lines by 16 characters LCD
Keypad	3 keys
LED indicators	Power ON (red) Phase ON (yellow) TX data (green)

SOFTWARE FEATURES	
Readable Codes	Interleaved 2/5 Code 39 Standard Codabar Code 128 EAN128 Code 93 (standard and full ASCII) EAN/UPC EAN/UPC (including Add-on 2 and Add-on 5)
Code selection	Up to 10 codes during one reading phase
Headers and Terminators	Transmitted messages can be personalized using up to 128-byte headers and 128-byte terminators
Operating modes	On Line Automatic Test PackTrack
Configuration modes	Genius™ utility program
Parameter storage	Non-volatile internal FLASH

ENVIRONMENTAL FEATURES	
Operating temperature Storage temperature Humidity	0° to +40 °C (+32° to +104 °F) -20° to +70 °C (-4° to +158 °F) 90% non condensing
Ambient light immunity	10000 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	IP50

PHYSICAL FEATURES	
Mechanical dimensions	225.9 x 149.8 x 116.8 mm (8.89 x 5.90 x 4.60 in)
Weight	2.1 kg. (4.62 lbs)

Accessories:

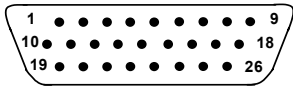| Name	Description	Part Number
BTK-6000	Bus terminator kit (5 pcs)	93ACC1710
CAB-6001	25-pin scanner to C-BOX100 cable 1 m	93A051190
CAB-6002	25-pin scanner to C-BOX100 cable 2 m	93A051200
CAB-6005	25-pin scanner to C-BOX100 cable 5 m	93A051210
CAB-6010	25-pin scanner to C-BOX100 cable 10 m	93A051271
CAB-6011	26-pin scanner to C-BOX100 cable 1 m (Ethernet version)	93A051221
CAB-6012	26-pin scanner to C-BOX100 cable 2 m (Ethernet version)	93A051222
CAB-6015	26-pin scanner to C-BOX100 cable 5 m (Ethernet version)	93A051223
CAB-6101	9-pin scanner/scanner connection cable 1 m	93A051220
CAB-6102	9-pin scanner/scanner connection cable 2 m	93A051230
CAB-6105	9-pin scanner/scanner connection cable 5 m	93A051240
CAB-6112	9-pin scanner to scanner no power cable 2 m	93A051224
CAB-6115	9-pin scanner to scanner no power cable 5 m	93A051225
CAB-6305	25-pin power cable Fam 6k 5 m	93ACC1768
CAB-6310	25-pin power cable Fam 6k 10 m	93ACC1752
CAB-6502	Fam 6K-8K cross cable 2.5 m	93A051288
CAB-6505	Fam 6K-8K cross cable 5 m	93A051289
C-BOX 100	Passive connection box	93ACC1510
C-BOX 300	Profibus-DP connection box	93A301000
C-BOX 310	Profibus-DP connection box with display	93A301030
C-BOX 400	Devicenet connection box	93A301010
C-BOX 410	Devicenet connection box with display	93A301040
FBK-6000	Fast bracket kit (2 pcs)	93ACC1721
INT-30	20 m.A. C.L. interface board for C-BOX 100	93A151022
PH-1	Photocell kit – PNP	93ACC1791
MEP-543	Photocell kit - NPN	93ACC1728
PG6002	Single unit power supply (US)	93ACC1718
PG6001	Single unit power supply (UK)	93ACC1719
PG6000	Single unit power supply (EU)	93ACC1720
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
OEK-2	Optical encoder (10 m cable + spring)	93ACC1770
OEK-1	Optical encoder kit + 10 m	93ACC1600

Electrical Connections:

The DX6400 Ethernet reader provides a 26-pin male D-sub connector for connection to power supply and input/output signals.

An Ethernet connector is used for connection to the remote Host (for ex. Remote PC connected via Internet), while a local Lonworks 9-pin female connector connects the Ethernet master to the first slave reader of the system.

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

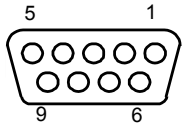| 26-pin D-Sub Connector Pinout			
Pin	Name	Function	
1	CHASSIS	Chassis - internally connected to GND Cable shield connected to chassis	
20	RXAUX	Receive data of auxiliary RS232 (referred to GND)	
21	TXAUX	Transmit data of auxiliary RS232 (referred to GND)	
8	OUT 1+	Configurable digital output 1 – positive 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	**26-pin male D-sub Connector**
18	EXT_TRIG/PS A	External trigger (polarity insensitive) for PS	
19	EXT_TRIG/PS B	External trigger (polarity insensitive) for PS	
6	IN2/ENC A	Input signal 2 (polarity insensitive) for Encoder	
10	IN2/ENC B	Input signal 2 (polarity insensitive) for Encoder	
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	

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	

* Do not leave floating, see Reference Manual for connection details.

9-pin Lonworks Connector Pinout			
Pin	Name	Function	
1	CHASSIS	Cable shield internally connected by capacitor to chassis	
9	VS	Supply voltage – positive pin	
2	GND	Supply voltage – negative pin	
6	VS_I/O	Supply voltage of I/O circuit	
3	Ref_I/O	Reference voltage of I/O circuit	
4	SYS_ENC_I/O	System signal	
5	SYS_I/O	System signal	**9-pin female Local Lonworks Connector**
7	LON A	Lonworks line (polarity insensitive)	
8	LON B	Lonworks line (polarity insensitive)	
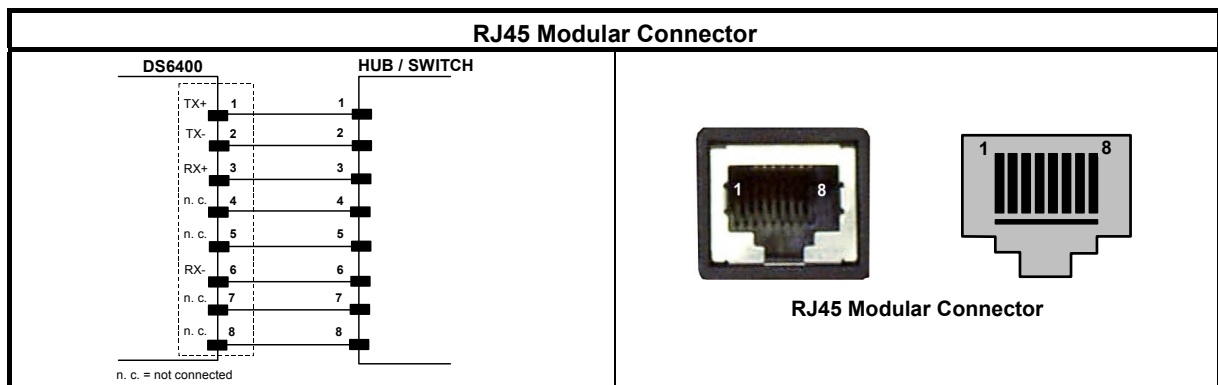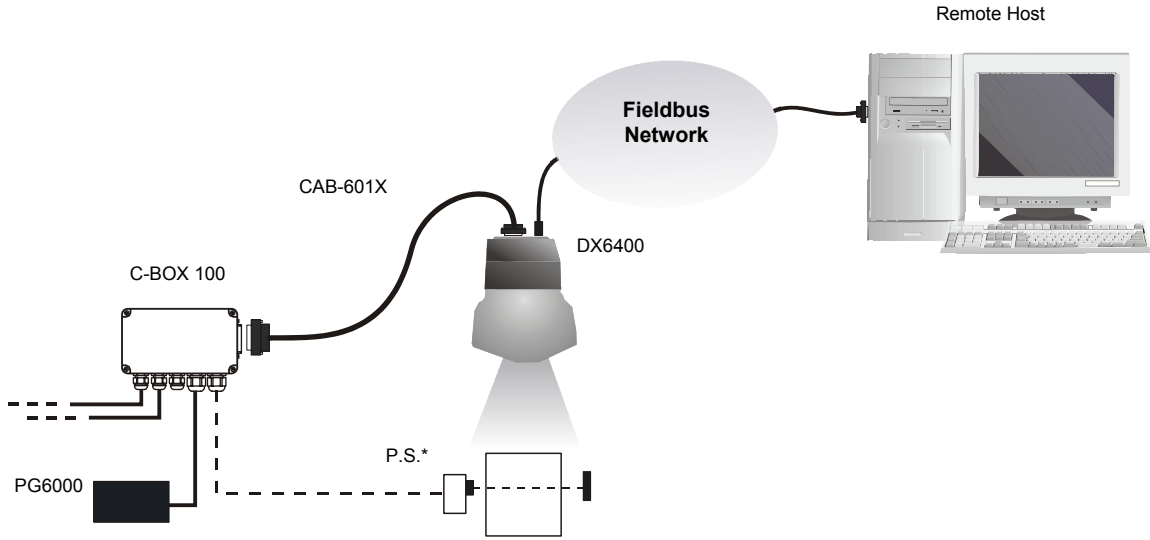
RJ45 Modular Connector

RJ45 Modular Connector

Connectivity:

Point-to-Point Layout

Remote Host

Fieldbus
Network

CAB-601X

DX6400

C-BOX 100

P.S.*

PG6000

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

Pass Through Layout

Remote Host

P.S.*   P.S.*   P.S.*

Gryphon

Fieldbus
Network

DX6500   DS4600A   DS4600A

CAB-601X   C-BOX 100   C-BOX 100   C-BOX 100

AUX

PWR-120

②   ① ②   ①

① Main Serial Interface   ② Auxiliary Serial Interface

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

Local Lonworks Network

Fieldbus Small Synchronized Network
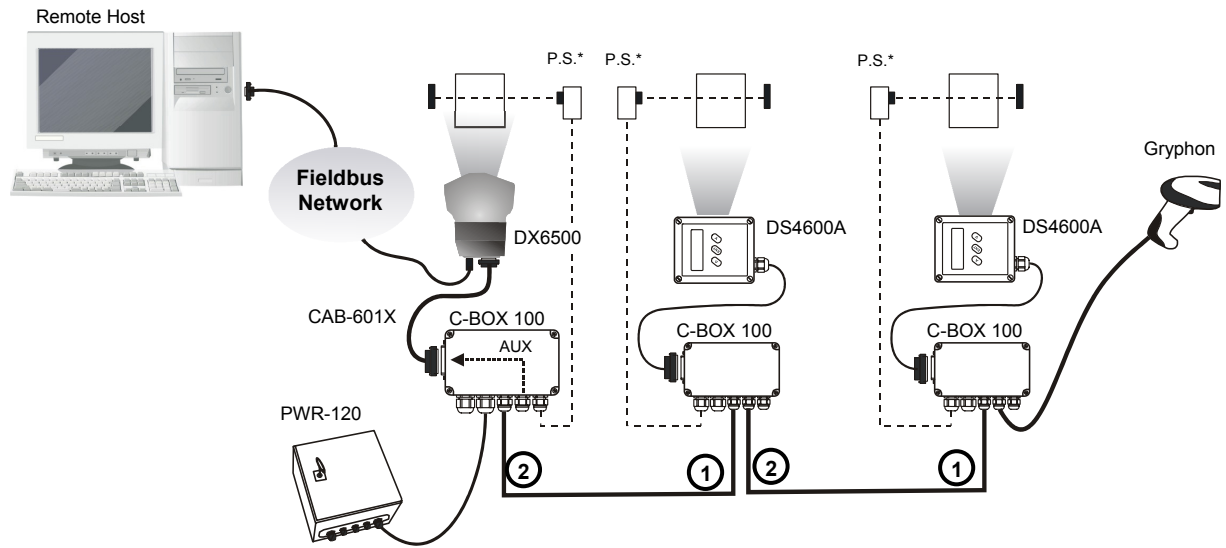
*   P.S. (Presence Sensor) connected to External Trigger/PS input.

**   C-BOX 100 modified to accept scanner power.

***   The Slave scanners are Master/Slave models, which allow Lonworks network propagation.

****   Encoder connected to IN2/ENC input.

COMMON FEATURES

C-BOX 100 Pinout for DX6400:

The table below gives the pinout of the C-BOX 100 terminal block connectors. Use this pinout when the DX6400 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/PS A (polarity insensitive) for PS		
28	EXT TRIG/PS B (polarity insensitive) for PS		
29	IN 2/ENC A (polarity insensitive) for Encoder		
30	IN 2/ENC B (polarity insensitive) for Encoder		
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	TX232	TX485+	RTX485+	
12, 16	RTS232	TX485-	RTX485-	see INT-30 instructions
17	RX232	* RX485+		
18	CTS232	* RX485-		
10, 14, 19	SGND Main Isolated	SGND Main Isolated	SGND Main Isolated	
9, 13		RS485 Cable Shield	RS485 Cable Shield	

*   Do not leave floating, see Reference Manual for connection details.

Mount the scanner using the ST-237 mounting bracket which assures an angle of 16°, as indicated in the figure below, in order to obtain an angle of 90° between the two scan lines. This guarantees an omni directional reading of the barcode, if the code label satisfies the ACR™ 4 conditions (see Scanner Reference Manual for details).

DX6400 Mounting Position

! WARNING	*When installing several scanners, take care to position them correctly so that no laser beam enters the reading window perpendicularly and at the same level of the output beam of the other scanners. This condition could occur more frequently for side mounted applications. If these precautions are not followed, it may occur that the laser of the blinded scanner starts blinking due to an internal circuit which temporarily turns the laser off when detecting a power anomaly. To resolve this problem, it is sufficient to slightly change the inclination and position of one of the two scanners involved.*

FLASH™ Dynamic Focus:

The DX6400 has an innovative linear motor designed to control the focus position of the scanner via software. This dynamic system, called FLASH™, is able to move the focus position rail to rail, from the minimum position to the maximum position.

The FLASH™ functionalities (i.e. the driving modes of the linear motor) are programmed via the Genius™ software tool and can operate in the following modes:

- Fixed mode: the focus is set to the desired position via software (expressed in cm);

- Continuous mode: the focus position is continuously running from a minimum position to a maximum position with a defined frequency;

- Triggered mode: the focus position can be set depending on the received external input (photocell, barrier, serial message, etc.);

- D-Flash™ mode: the focus position can be set depending on the measured distance between the scanner and the scanned object. This is the most innovative and flexible function that makes different software implementations possible. The D-Flash™ development has been based on the minimum distance detected. Thus, it can apply to the widest variety of applications. Further developments of D-Flash™ will be provided according to the specific application needs.

Reading Conditions:

- ANSI Grade B minimum
- 600 scans/sec per leg

The following tables describe the requirements for standard applications.

Minimum Code Height for Omnidirectional Reading (mm)							
Conveyor Speed (m/s)		0.5	1	1.5	2	2.5	3
2/5 Inteleaved Code Resolution (mm)	0.38	14	16	18	20	22	24
	0.50	18	19	21	23	25	27
	0.60	21	22	24	26	28	30
	1.00	34	35	36	37	39	41

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)	0.38	12	13	15	17	19	21
	0.50	15	16	17	19	21	24
	0.60	18	19	20	21	23	26
	1.00	28	29	30	31	32	34

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)	0.38	10	12	14	16	18	20
	0.50	12	13	16	18	20	22
	0.60	14	15	17	19	21	24
	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)	0.38	16	18	20	22	24	26
	0.50	20	22	24	26	28	30
	0.60	23	25	27	29	31	34
	1.00	36	38	40	42	44	47

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)	0.38	11	12	13	15	17	19
	0.50	13	14	15	16	18	20
	0.60	15	16	17	18	19	22
	1.00	24	25	26	27	28	29

Table 5

Reading Diagrams:

DX6400-100-0XX – Resolution: 0.38 mm/15 mils
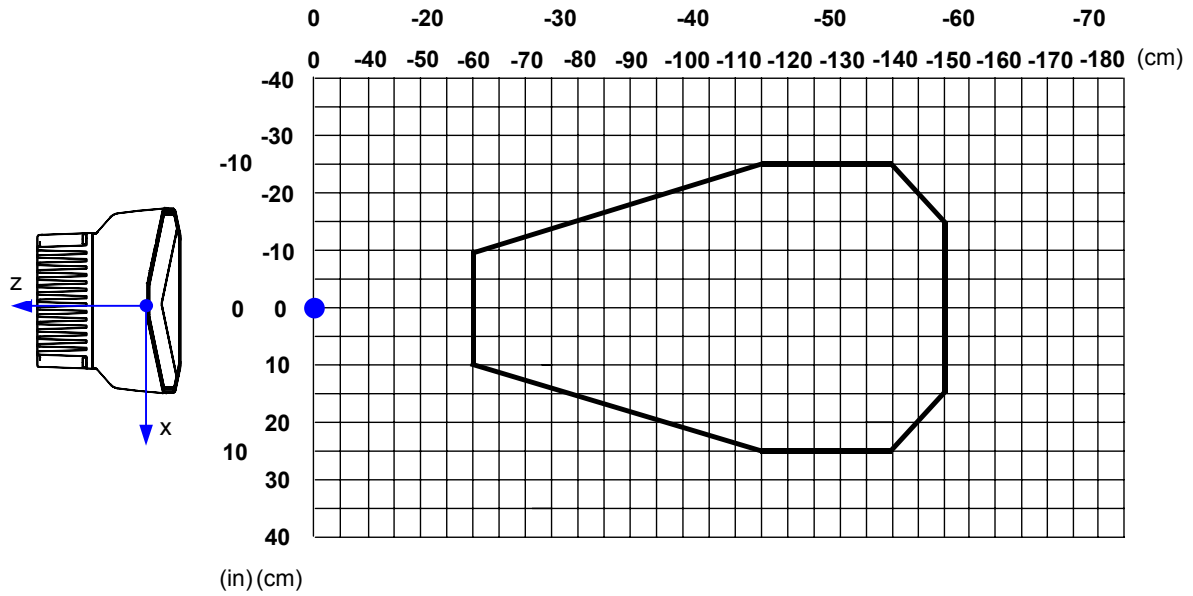
Note: x = 0 and z = 0 correspond to the edge of the DX6400 scanner as shown in the figure above.

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

DX6400-100-0XX – Resolution: 0.50 mm/20 mils
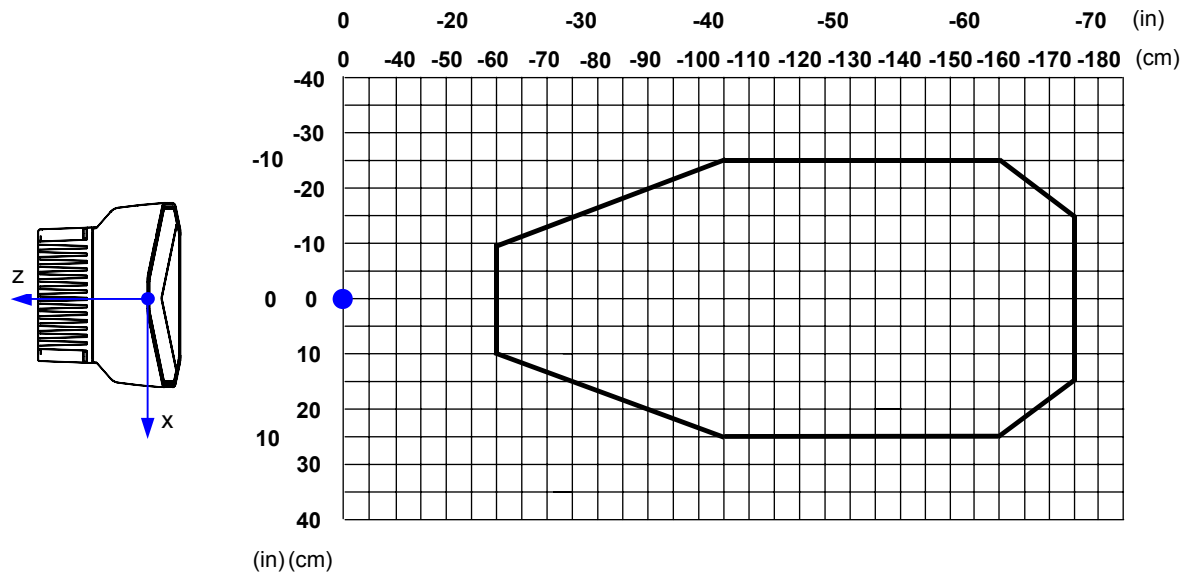

Note: x = 0 and z = 0 correspond to the edge of the DX6400 scanner as shown in the figure above.

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

User Interface:

RS232 PC-side connections			
9-pin male connector		25-pin male connector	
Pin	**Name**	**Pin**	**Name**
2	RX	3	RX
3	TX	2	TX
5	GND	7	GND
7	RTS	4	RTS
8	CTS	5	CTS

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.
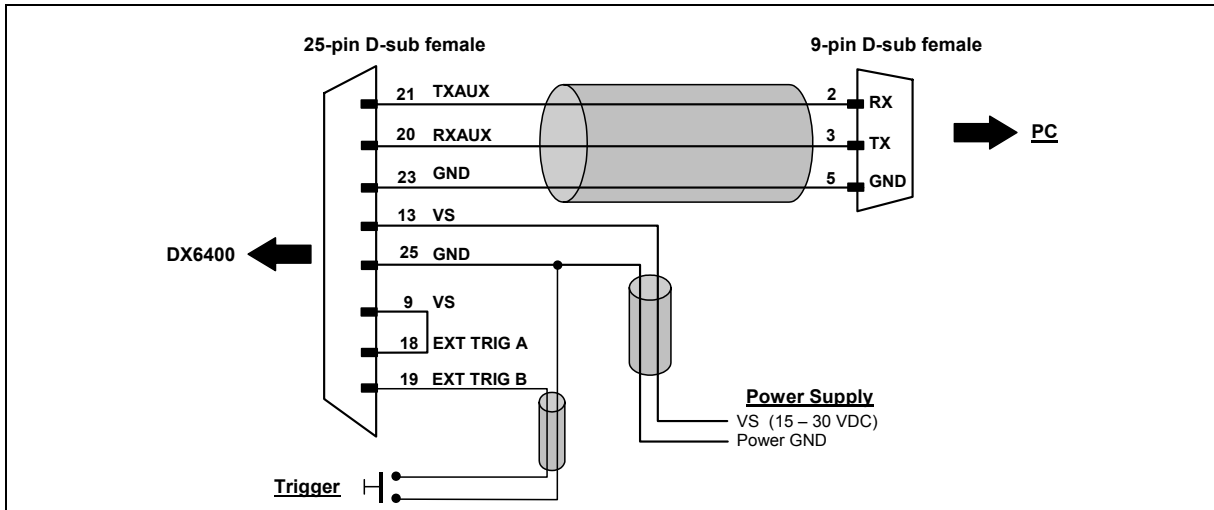
Compliance:

Laser Safety

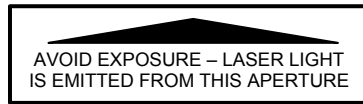**Figure A**
1 Laser Safety Label
2 Identification Label

Figure B
1 Warning and Device Class Label

The scanner is classified as a Class 2 laser product according to EN 60825-1 regulations and as a Class II laser product according to CDRH regulations.
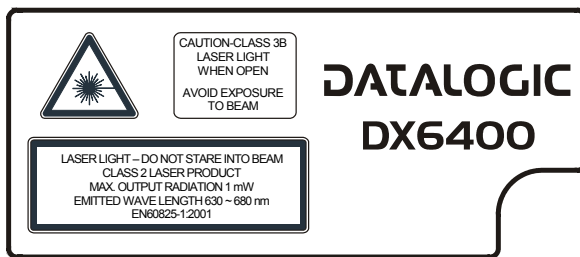
Disconnect the power supply when opening the device during maintenance or installation to avoid exposure to hazardous laser light.

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).

AVOID EXPOSURE – LASER LIGHT
IS EMITTED FROM THIS APERTURE

Laser Safety Label

CAUTION-CLASS 3B
LASER LIGHT
WHEN OPEN

AVOID EXPOSURE
TO BEAM

DATALOGIC
DX6400

LASER LIGHT – DO NOT STARE INTO BEAM
CLASS 2 LASER PRODUCT
MAX. OUTPUT RADIATION 1 mW
EMITTED WAVE LENGTH 630 ~ 680 nm
EN60825-1:2001

Warning and Device Class Label

DATALOGIC S.p.A. Via Candini, 2
40012 LIPPO DI CALDERARA DI RENO (BO) ITALY
MANUFACTURED VOLT ⎓ Amp.
JANUARY 2005   15-30 DC   1.5-0.7
MODEL No.
Ⓒ N2468
SERIAL No. ||||||||||||||||||||||||||||||||| CE
This product conforms to the applicable requirements
of 21CFR 1040 at the date of manufacture. □

Device Identification Label

The laser diode used in this device is classified as a Class 3B laser product according to EN 60825-1 regulations and as a Class IIIb laser product according to CDRH regulations. Any violation of the optic parts in particular can cause radiation up to the maximum level of the laser diode (35 mW at 630 ~ 680 nm).

Power Supply

- **This product is intended to be installed by Qualified Personnel only.**

- **All DX6400 Models:**

  This device is intended to be supplied by a UL Listed Power Unit marked "Class 2" or LPS power source which supplies power directly to the scanner via the 25/26-pin connector.

CE Compliance

Warning:
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 adequate measures.

Patents

This product is covered by one or more of the following patents:

U.S. patents: 5,483,051; Re. 36,251; 6,049,406; 5,992,740; 6,347,740B1; 6,629,639B2; 6,394,352B1; 6,742,710B2; 7,161,685B1; 6,688,524B1; 6,443,360 B1; 7,195,162B2.

European patents: 652,530B1; 786,734B1; 789,315B1; 851,376B1; 1,363,228B1; 959,426B9; 1,300,798B1.

Additional patents pending.

⊙DATALOGIC™ DECLARATION OF CONFORMITY CE 07

Datalogic Automation S.r.l.
Via S. Vitalino 13
40012 - Lippo di Calderara
Bologna - Italy

dichiara che
declares that the
déclare que le
bescheinigt, daß das Gerät
declare que el

DX6400-XXX-XXX, 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:
der nachstehend 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	**92/31/EEC, 93/68/EEC**	emendamenti successivi
	and		further amendments
	et		ses successifs amendements
	und		späteren Abänderungen
	y		succesivas enmiendas

2006/95/EC 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 (Class A ITE), August 1994: **Amendment A1 (Class A ITE), October 2000**:	LIMITS AND METHODS OF MEASUREMENTS OF RADIO DISTURBANCE CHARACTERISTICS OF INFORMATION TECHNOLOGY EQUIPMENT
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, April 2nd, 2007

Lorenzo Girotti
Product & Process Quality Manager