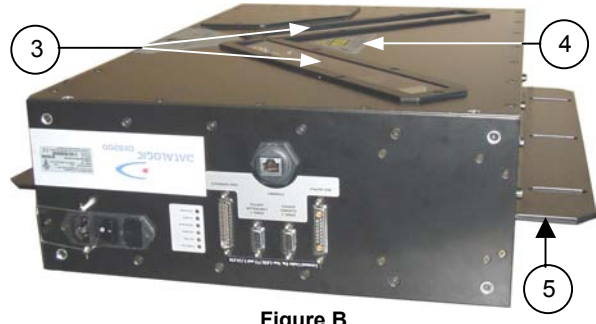


# DX8200 Controller Quick Reference Guide

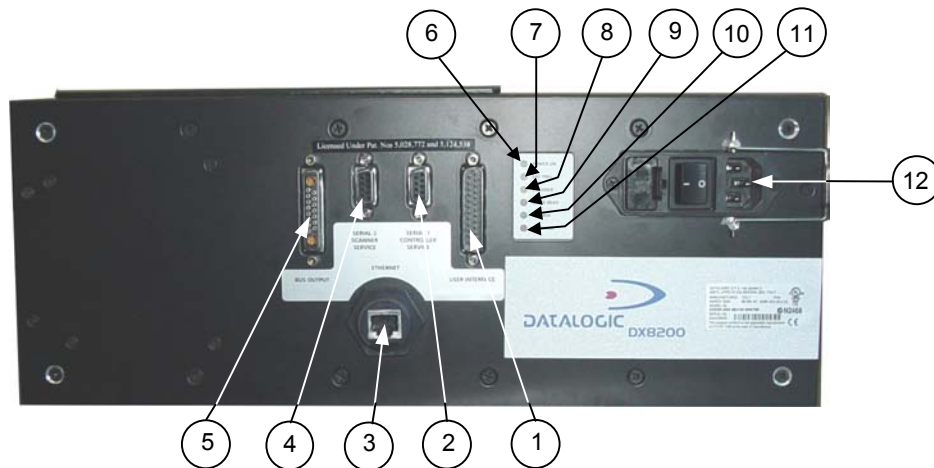


**Figure A**



**Figure B**

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>① Control Panel</li> <li>② Product Label</li> <li>③ Laser Output Windows</li> </ul> | <ul style="list-style-type: none"> <li>④ Laser Warning Label</li> <li>⑤ Mounting Rails</li> </ul> |
|--|---|



**Figure C**

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>① Host Interface Connector</li> <li>② Reserved Connector</li> <li>③ Ethernet connector</li> <li>④ RS232 Debug Connector</li> <li>⑤ Lonworks Network Connector</li> <li>⑥ Power ON LED</li> </ul> | <ul style="list-style-type: none"> <li>⑦ Presence Sensor LED (N.A.)</li> <li>⑧ Encoder LED</li> <li>⑨ Good Read LED</li> <li>⑩ TX Data LED</li> <li>⑪ Network LED</li> <li>⑫ VAC Power Panel (for VAC models only)<br/>Fuses, Power Switch, Power Connector,</li> </ul> |
|---|---|



**NOTE**

*For further details on product installation, see the complete Reference Manual. The DX8200 Controller can be configured through the Windows-based Genius™ software program available on the CD-ROM included with this product.*

### Electrical Safety

This product conforms to the applicable requirements contained in the European Standard for electrical safety EN-60950-1 at the date of manufacture.



This symbol refers to operations that must be performed by qualified personnel only. Example: opening the device.



This symbol refers to operations where there is danger of electrical shock. Before opening the device make sure the power cable is disconnected to avoid electric shock.

#### For AC models

This device must be installed to a power source equipped with on/off switch or breaker within range of the operator as protection against grounding failures.

This device is protected against overloading by correct value fuses. For protection fuse replacement make sure correct value fuses are installed. See "Replacing the Protection Fuses" in the Reference Manual on the CD-ROM.

### Laser Safety

The following information is provided to comply with the rules imposed by international authorities and refers to the correct use of the DX8200 Controller scanner.

#### Standard Regulations

This scanner utilizes up to 3 low-power laser diodes. Although staring directly at the laser beam momentarily causes no known biological damage, avoid staring at the beam as one would with any very strong light source, such as the sun. Avoid that the laser beam hits the eye of an observer, even through reflective surfaces such as mirrors, etc.

This product conforms to the applicable requirements of both EN 60825-1 and CDRH 21 CFR 1040 at the date of manufacture. 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.

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.

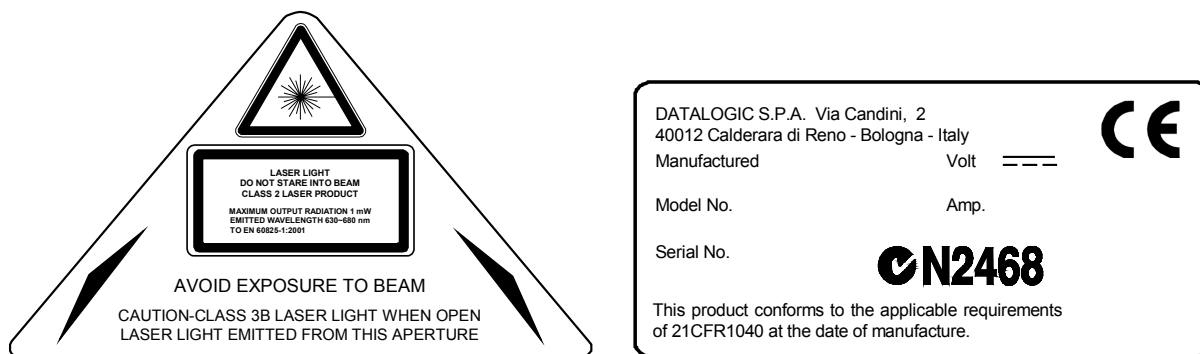


**WARNING**

Use of controls or adjustments or performance of procedures other than those specified herein may result in exposure to hazardous visible laser light.

The laser light is visible to the human eye and is emitted from the windows on the lower side of the reader (Figure B, 3).

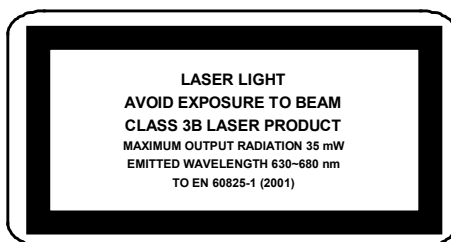
Warning labels indicating exposure to laser light and the device classification are applied onto the body of the scanner (Figure B, 4 and Figure A, 2):



**Warning and device class labels**

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

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 (35 mW at 630~680 nm).

### Power Supply

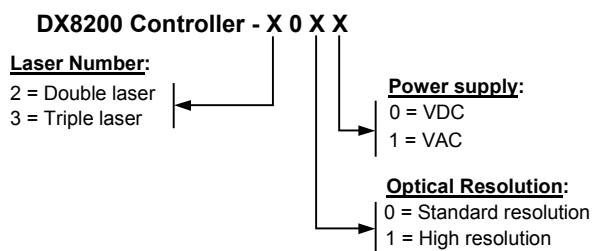
The supply voltage for correct operation of the scanner depends on the models:

- **between 20 and 30 VDC, supplied to the Lonworks Network connector, for DX8200 Controller-X0X0 models**
- **between 85 and 264 VAC, supplied through the VAC power cable, for DX8200 Controller-X0X1 models.**

A security system allows the laser to activate only once the motor has reached the correct rotational speed; consequently, the laser beam is generated after a slight delay from the power on of the scanner.

During power up of the scanner there is a current peak of about 3A caused by the motor startup.

**Model Description:**



**Technical Features:**

ELECTRICAL FEATURES (Note 1)			OPTICAL FEATURES		
	<b>Models X0X1</b>	<b>Models X0X0</b>	<b>Light Source</b>	Up to 3 VLDs	
<b>Supply Voltage</b>	85 – 264 VAC	20 - 30 VDC	<b>Wavelength</b>	630 to 680 nm	
<b>Current Consumption maximum</b>	0.4 ~ 0.2 A	1.5 ~ 1.0 A	<b>Safety Class</b>	Class 2-EN 60825-1; Class II-CDRH	
			<b>Light Receiver</b>	Avalanche photodiode	
			<b>Laser Control</b>	Security system to turn laser off in case of motor slow down	
<b>Communication</b>	<b>Main (isolated)</b>	<b>Baud Rate</b>	<b>READING FEATURES</b>		
<b>Interfaces</b>	RS232	1200 to 115200	<b>Scan Rate</b>	500-1000 scans/s	
	RS485 full-duplex		19200	<b>USER INTERFACE</b>	
	RS485 half-duplex			<b>LED Indicators</b>	Power ON Encoder Good Read TX Data Network (Lonworks)
	20 mA C.L. (INT-60)				
	<b>Auxiliary</b>				
	RS232				
	<b>Other</b>				
	Lonworks network	1,25 Mb/s			
<b>Inputs</b>	(optocoupled NPN or PNP)				
<b>Ext. Trigger, Encoder, 2 aux. digital inputs</b>					
<b>Outputs</b>	(optocoupled open emitter, open collector)				
<b>3 software programmable digital outputs</b>					

SOFTWARE FEATURES		ENVIRONMENTAL FEATURES	
<b>Readable Code Symbologies</b>	Interleaved 2/5 Code 39 standard Codabar Code 128/EAN 128 Code 93 (standard & full ASCII) EAN/UPC	<b>Operating Temperature</b>	0° to +50 °C (+32 to +122 °F)
		<b>Storage Temperature</b>	-20° to +70 °C (-4° to +158 °F)
		<b>Humidity</b>	90% non condensing
		<b>Vibration Resistance</b>	EN 60068-2-6 test FC 1.5 mm @ 5 to 9.1 Hz; 0.5 G @ 9.1 to 150 Hz; 2 hours on each axis
<b>Code Selection</b>	Up to 10 codes during one reading phase	<b>Shock Resistance</b>	EN 60068-2-27 test EA 15 G; 11 ms; 3 shocks on each axis in each direction
<b>Headers and Terminators</b>	Up to 128-byte headers and 128-byte terminators		
<b>Operating Modes</b>	Pack-Track™	<b>Protection Class</b>	IP54
<b>Config. Mode</b>	Genius™ utility program	<b>PHYSICAL FEATURES</b>	
<b>Parameter Storage</b>	Non-volatile internal FLASH	<b>Dimensions mm (inch)</b>	576 x 513 x 150 mm (22.7 x 20.2 x 5.9 in)
		<b>Weight</b>	about 22 Kg (48.5 lbs.)

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

**Accessories:**

Name	Description	Part Number
CAB-8101	Cable master/slave 1 m	93A051020
CAB-8102	Cable master/slave 2 m	93A051030
CAB-8105	Cable master/slave 5 m	93A051040
CAB-8305	Cable power + termination 5 m	93A051268
INT-60	20 mA C.L. interface board	93A151021
PWR-120	Power unit 110/230 V AC - 24 V DC	93ACC1530
BTK-8000	Terminator kit (5 pcs)	93ACC1090

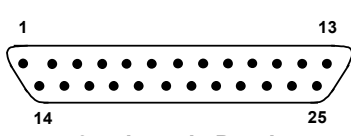
**Electrical Connections:**

The DX8200 is equipped with the following connectors for electrical connections:

- Host Interface Connector (serial interface and I/O signals) (male, 25 pins)
- Ethernet Connector (RJ45)
- Lonworks Network Connector (female, 17 pins)
- RS232 Debug Connector – for Service only (female, 9 pins)
- Reserved Connector (female, 9 pins)

**Host Interface Connector**

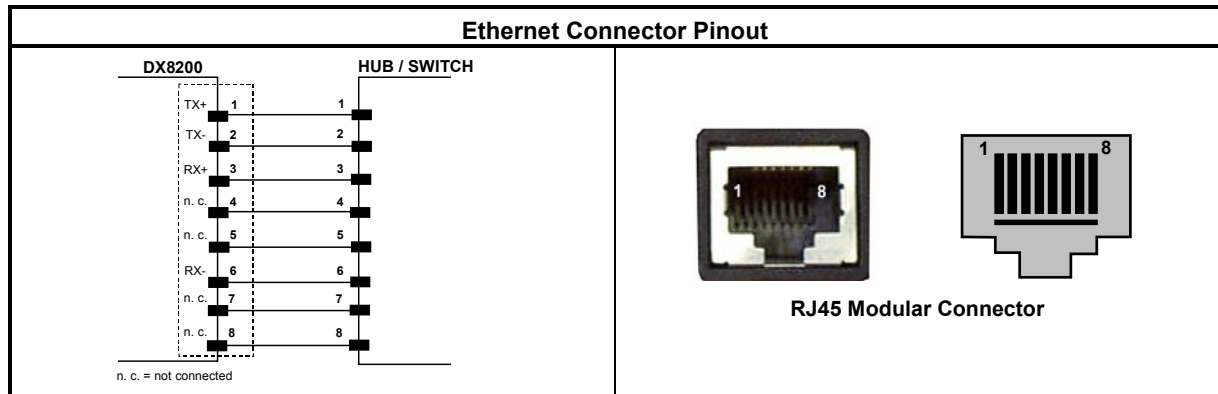
The 25-pin male D-sub connector provides connection to Host interface (Main and Aux), and input/output signals.

Host Interface Connector Pinout				
Pin	Name	Function	 <p style="text-align: center;"><b>25-pin male D-sub</b></p>	
1	Shield	Internally connected by capacitor 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		
18	EXT_TRIG A	External trigger (polarity insensitive)		
19	EXT_TRIG B	External trigger (polarity insensitive)		
6	ENC A	Encoder input signal (polarity insensitive)		
10	ENC B	Encoder input signal (polarity insensitive)		
14	IN3A	Input signal 3		
15	IN4A	Input signal 4		
24	IN_REF	Common reference of IN3 and IN4		
9, 13	VS	VDC I/O supply voltage – positive pin		
23, 25	GND	VDC I/O supply voltage – negative pin		
Pin	RS232	RS485 Full-Duplex	RS485 Half-Duplex	20 mA C.L. (INT-60 Only)
2	TX	TX485+	RTX485+	CLOUT+
3	RX	RX485+		CLIN+
4	RTS	TX485-	RTX485-	CLOUT-
5	CTS	RX485-		CLIN-
7	GND_ISO	GND_ISO	GND_ISO	GND*

\* For 20 mA C.L. connections, GND is the same of the scanner power supply.

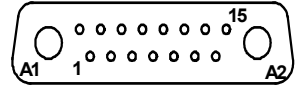
### Ethernet Connector

The Ethernet Connector can be used for Host interface.



### Lonworks Network Connector

This connector is used to connect the DX8200 Controller (Master) to the network of Slave scanners.

Lonworks Network Connector Pinout			
Pin	Name	Function	
A1	GND	Supply Voltage (negative pin)	
A2	VS	Supply Voltage 20 to 30 Vdc (positive pin)	
1	Shield A	 <p><b>17-pin female</b></p>	
3	Shield B		
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)
13	SYS_ENC		Regenerated Encoder output
15	Refer		Reference voltage of I/O circuit

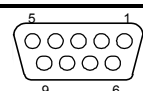
### Network Termination

When building a local Lonworks system the network must be properly terminated by positioning a terminator on the last slave reader (see Connectivity).

### RS232 Debug Connector

The use of this connector is reserved for Service:

RS232 Debug Connector Pinout		
Pin	Name	Function
2	TXD	Transmitted data
3	RXD	Received data
5	GND	Ground



**9-pin female**

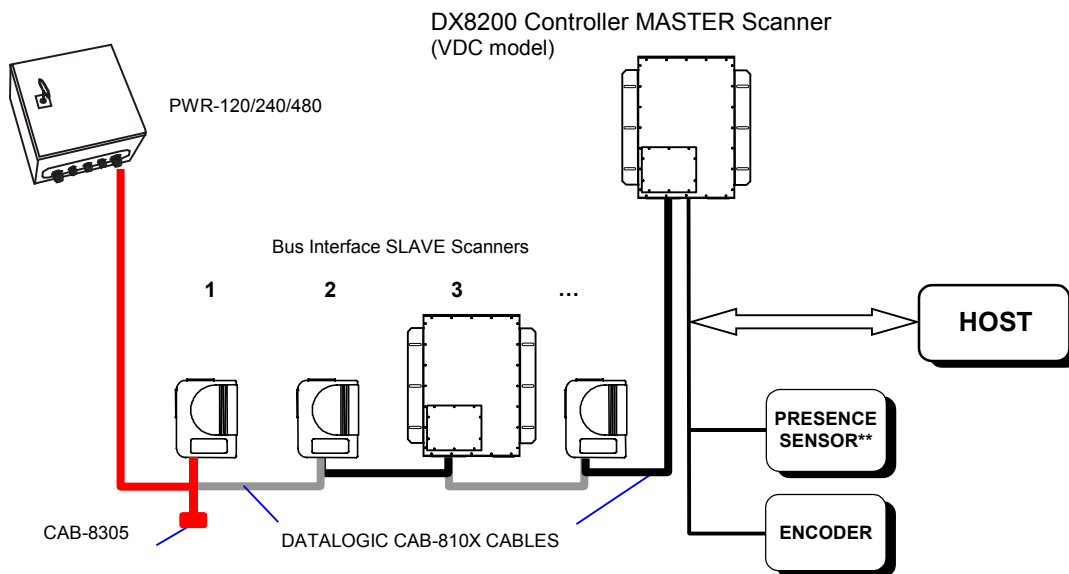
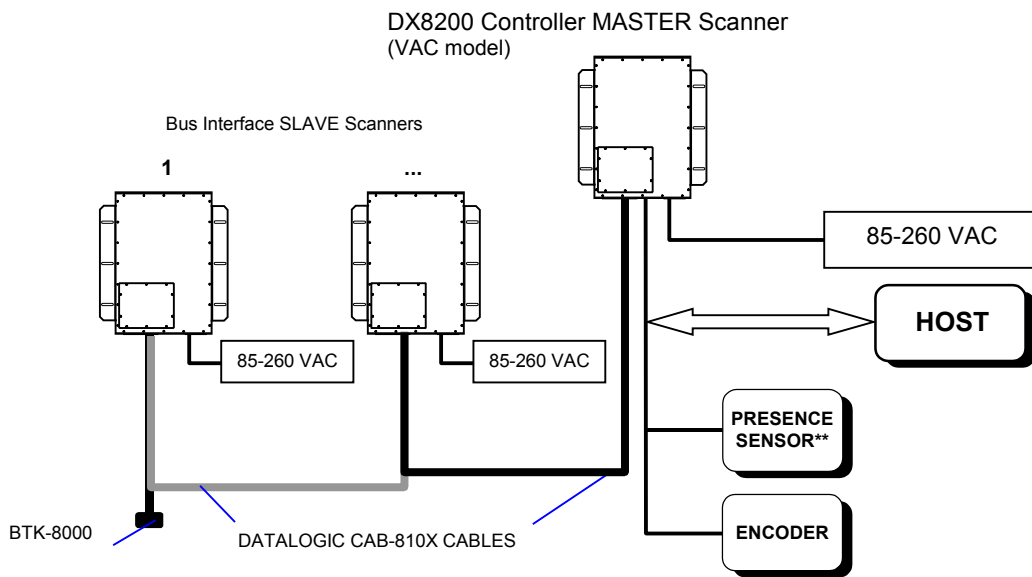
**Connectivity:**

DX8200 Controller is always Master on the Lonworks network. It interprets data from each Slave scanner and performs the correct barcode assignment to the parcel using the PackTrack™ operating mode.

External devices such as a presence sensor and an encoder are all connected to the DX8200 Controller, which is also connected to a Host PC.

A single DX8200 Controller provides a Lonworks communication line having up to 5\* scanners. The last scanner requires the termination connector BTK-8000. The maximum allowable length for the entire bus cabling is 65 m.

The following figures show 2 possible layouts for the DX8200 Controller.

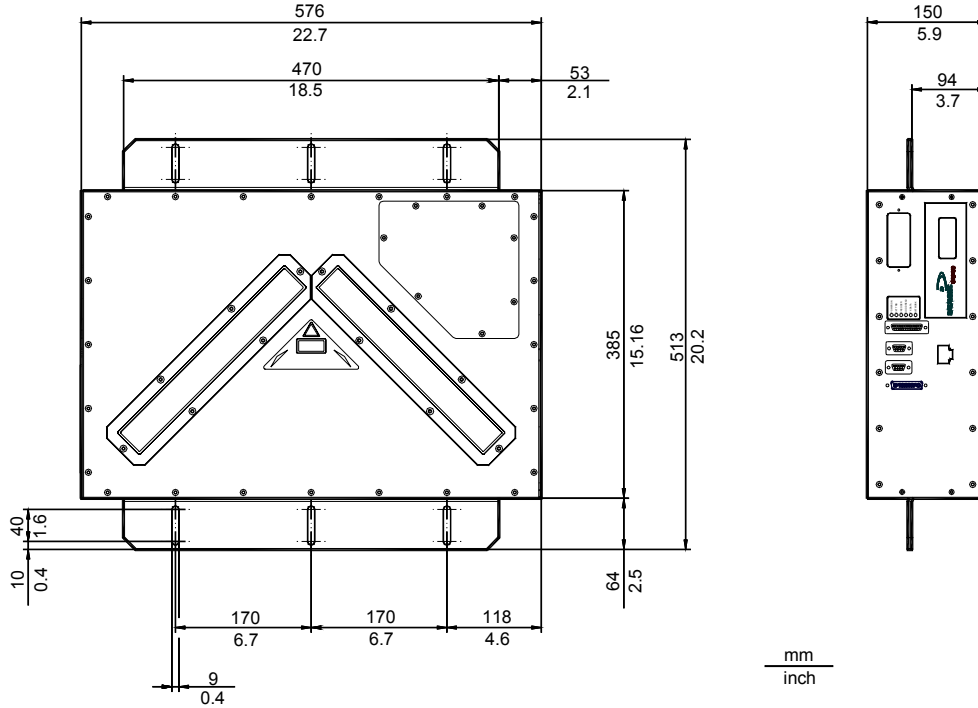


\*\* Presence Sensor connected to External Trigger Input

\* The maximum number of scanners on the Lonworks cluster is 6 (1 DX8200 controller + 5 slaves). Positive environmental conditions (i.e reduced number of barcodes, conveyor speed, reading area dimensions...) to be evaluated case by case, may further increase the number of slaves up to the theoretical limit of 13.

**Mechanical Installation:**

There are two mounting rails on the sides of the scanner for installation.

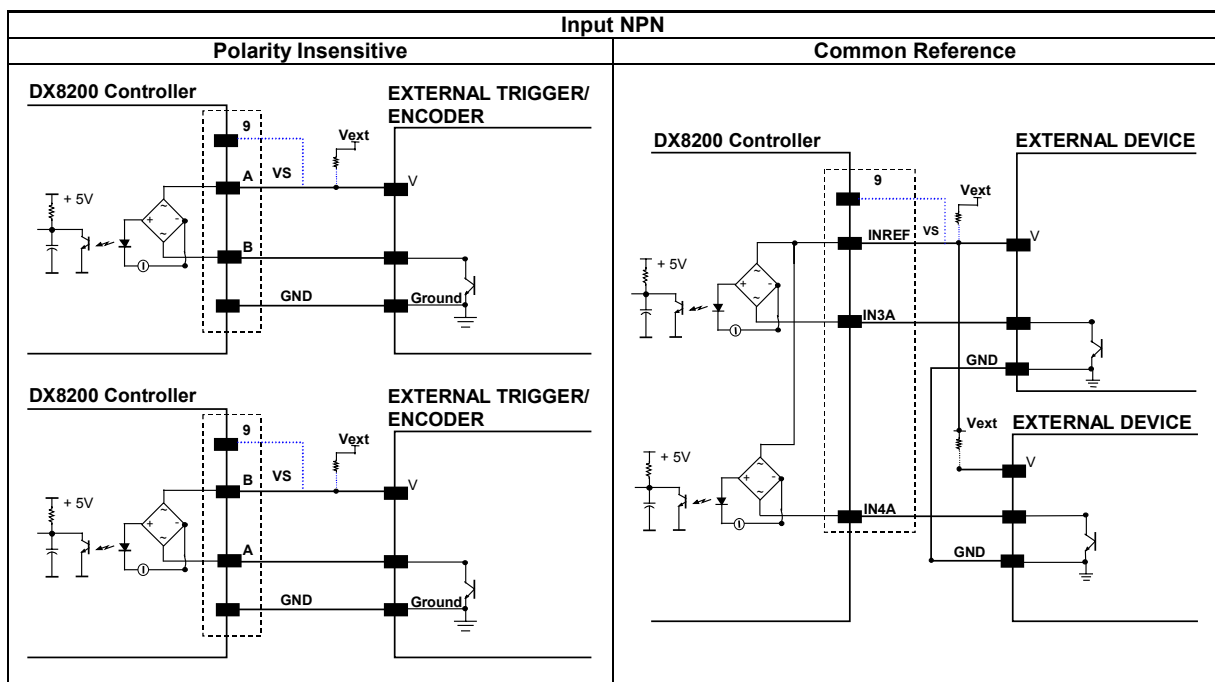


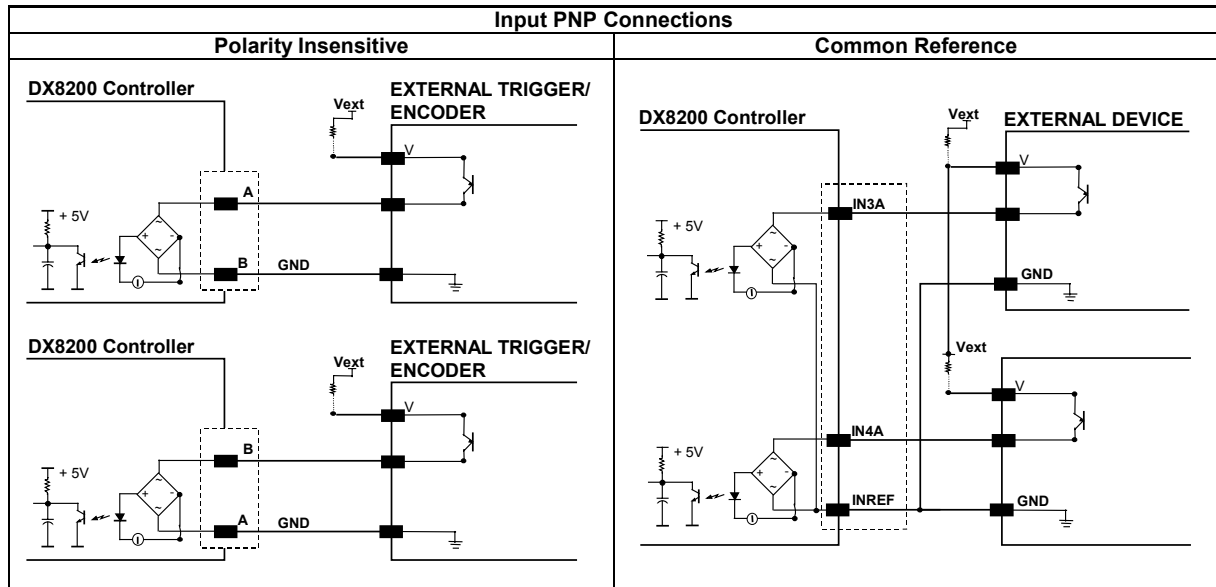
**Input/Output Connections:**

The electrical features of the inputs are:

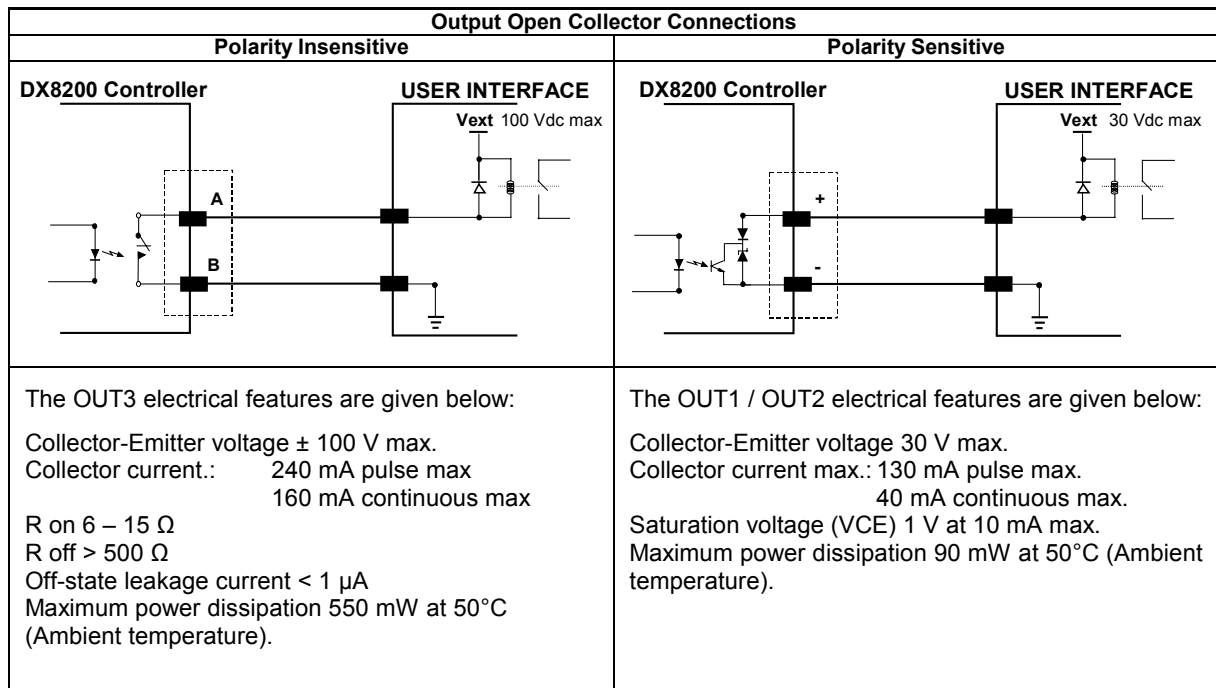
**Maximum voltage 30 V**

**Maximum current 10 mA**





The electrical features of the outputs are given below:





**Reading Conditions:**

- ANSI Grade B minimum codes or better

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 performance for your application.

Minimum Code Height for Omnidirectional Reading (mm)							
Conveyor Speed (m/s)	0.5	1	1.5	2	2.5	3	
<b>2/5 Interleaved Code Resolution (mm)</b>	0.25	10	12	14	17	19	21
	0.30	12	14	16	18	20	22
	0.33	13	14	17	19	21	23
	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	
<b>Code 39 Code Resolution (mm)</b>	0.25	9	10	12	15	17	19
	0.30	10	11	13	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	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	
<b>Code 128 – Ean 128 Code Resolution (mm)</b>	0.25	7	9	12	14	16	18
	0.30	8	10	12	15	17	19
	0.33	9	11	13	15	17	19
	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

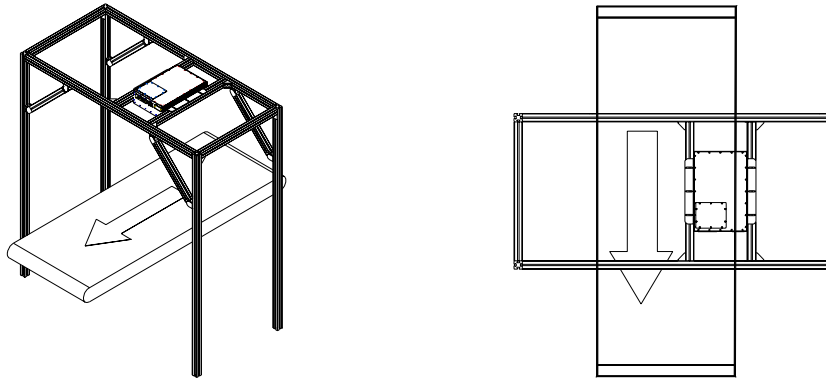
Minimum Code Height for Omnidirectional Reading (mm)							
Conveyor Speed (m/s)	0.5	1	1.5	2	2.5	3	
<b>Codabar Code Resolution (mm)</b>	0.25	12	14	16	18	20	22
	0.30	13	15	17	20	22	24
	0.33	14	16	18	20	23	25
	0.38	16	18	20	22	24	26
	0.50	20	22	24	26	28	30
	0.60	23	25	27	29	31	34
	1.00	36	38	40	42	44	47

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)	0.25	8	9	11	13	15	17
	0.30	9	10	11	14	16	18
	0.33	9	10	12	14	16	18
	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

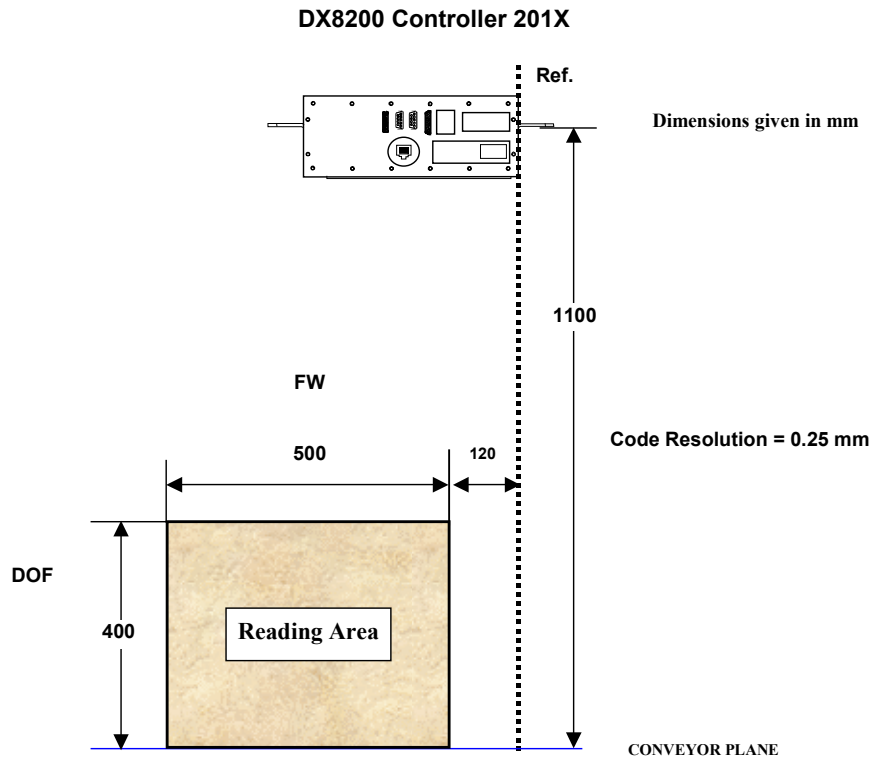
Table 5

The following drawings show the relative position of the scanner with respect to the conveyor movement and the reading diagrams given refer to this application layout.

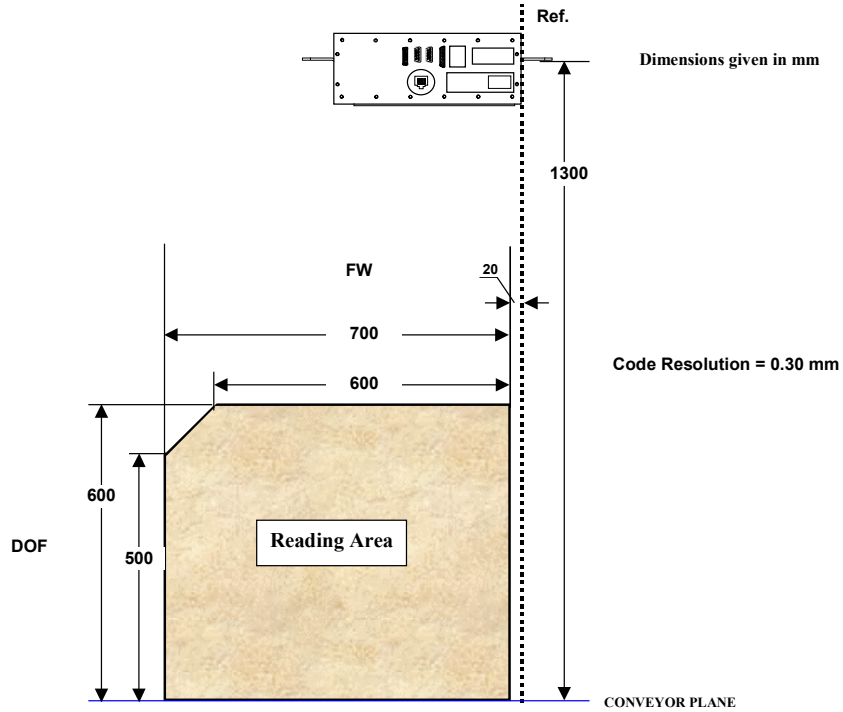


**Reading Diagrams:**

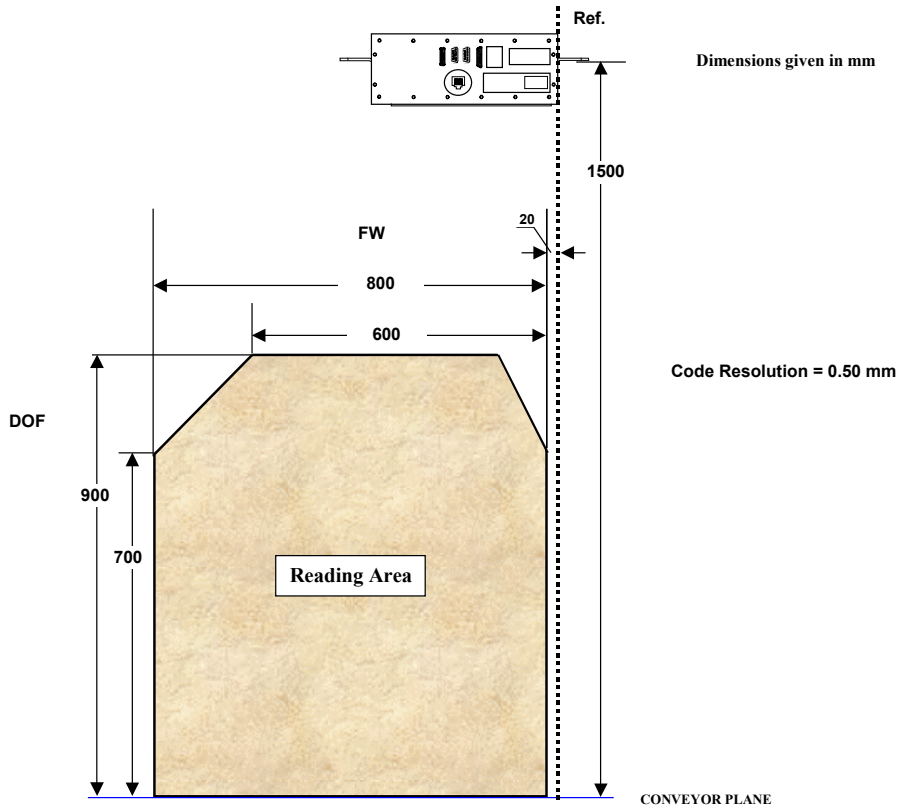
The following general drawing can be used with the table below to define the Reading Area of the various scanner models and code densities.



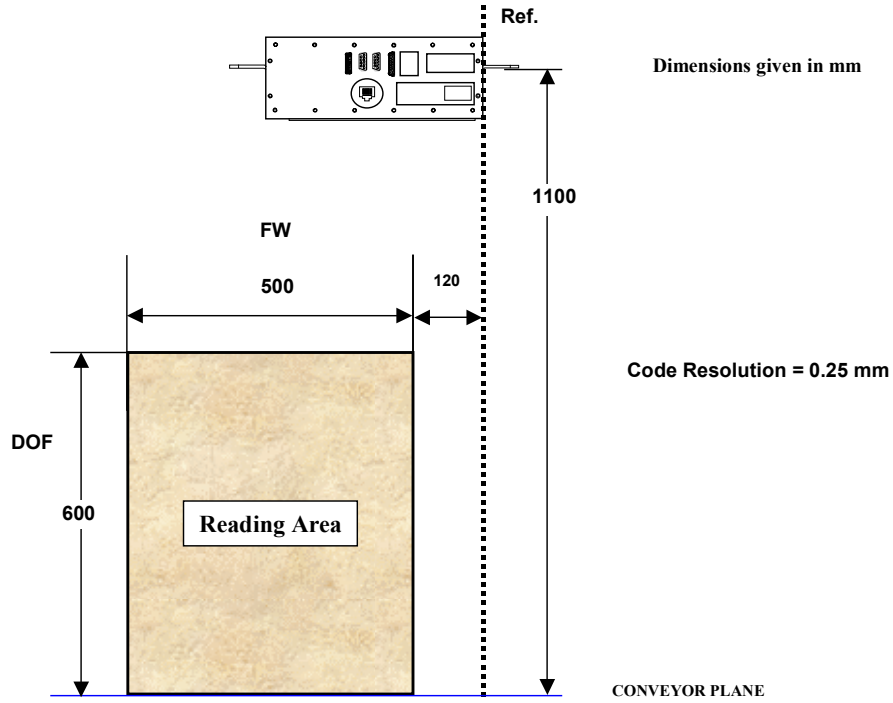
DX8200 Controller 200X



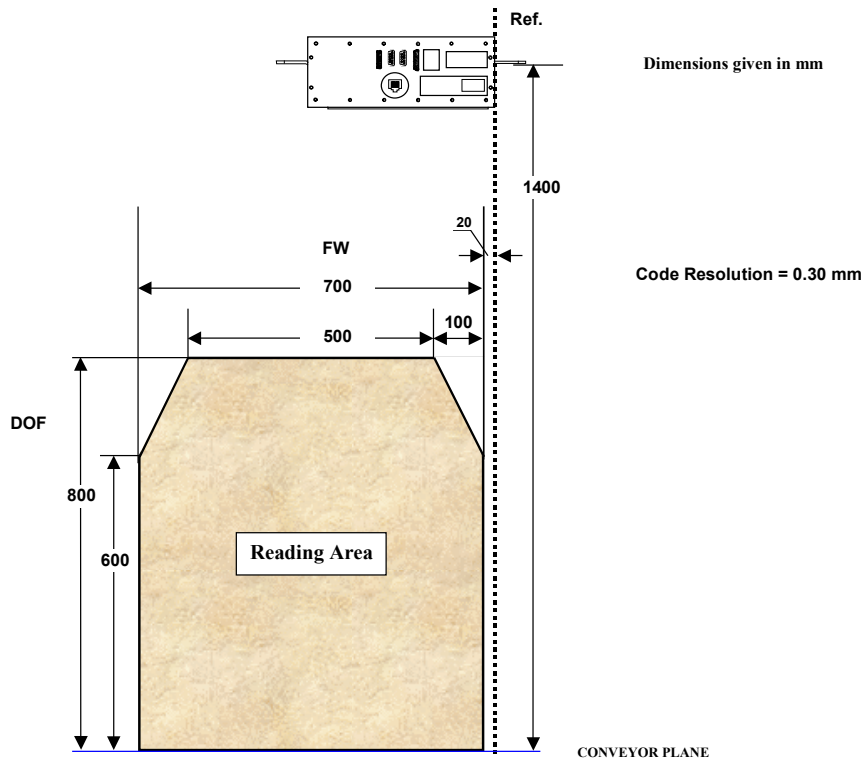
DX8200 Controller 200X



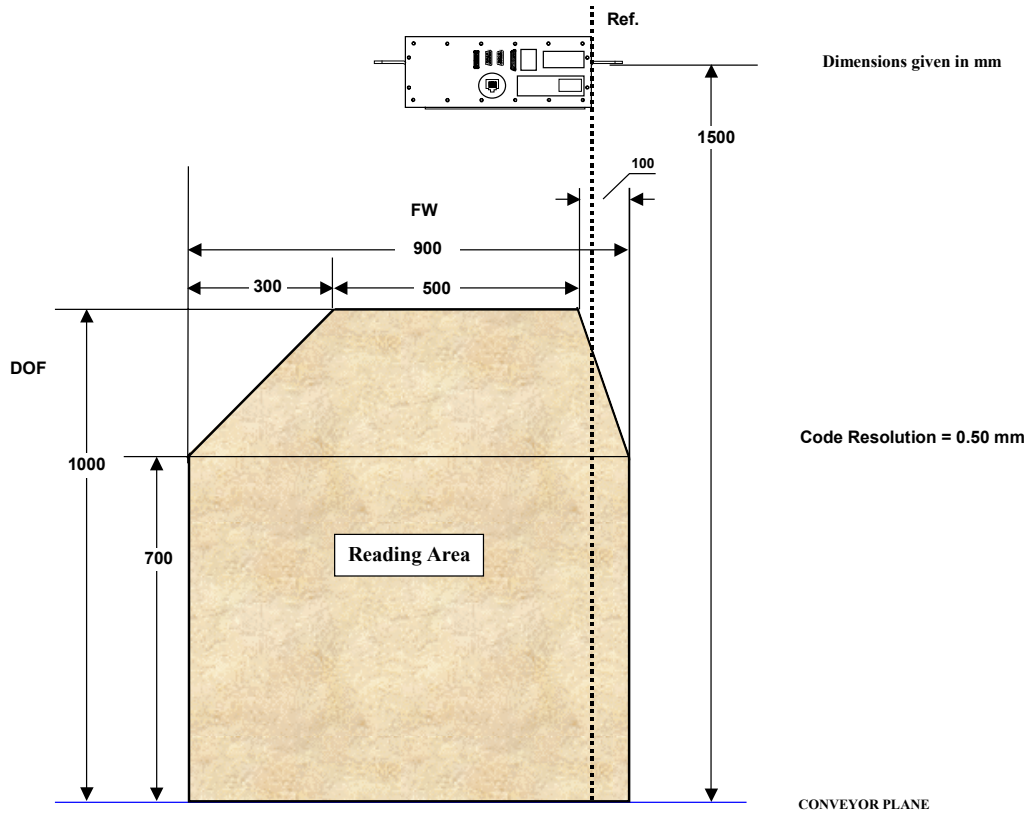
**DX8200 Controller 301X**



**DX8200 Controller 300X**



DX8200 Controller 300X



See the Reference Manual for other reading diagrams.

