



DS2400 Laser Barcode Reader Quick Reference Guide

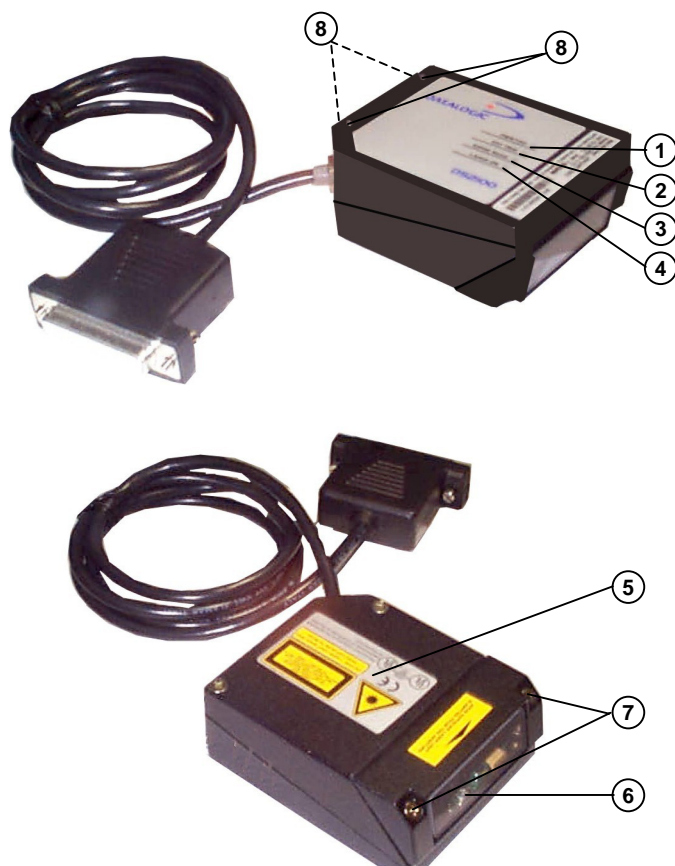


Figure A

- | | |
|--------------------------|----------------------------------|
| ① Power On / Data TX LED | ⑤ Warning and Device Class Label |
| ② External Trigger LED | ⑥ Laser Beam Output Window |
| ③ Good Read LED | ⑦ Accessory Mounting Holes |
| ④ Laser On LED | ⑧ Mounting Holes |

For further details on product installation, see the complete Installation Manual.

DS2400 can be configured through the WinHost Windows-based software program available on the installation CD-ROM.

For configuration it is necessary to create a cable connecting the scanner to the PC as indicated in the "How To Build A Simple Interface Test Cable" section of this guide.

POWER SUPPLY

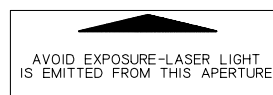
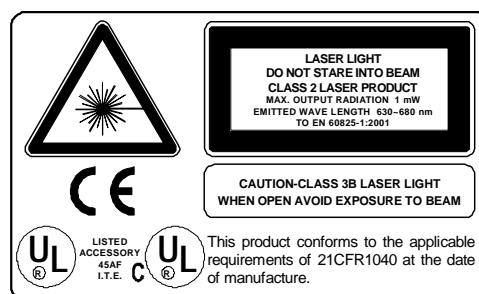
- This product is intended to be installed by Qualified Personnel only.
- Models DS2400-XXX0:
This accessory device is intended to be supplied by a UL Listed Power Unit with «Class 2» or LPS power source which supplies power directly to the scanner via the 25-pin connector.

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.

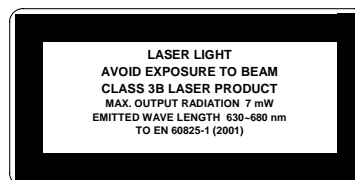
There is a safety device which allows the laser to be switched on only if the motor is rotating above the threshold for its correct scanning speed.

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



Warning and Device Class Labels

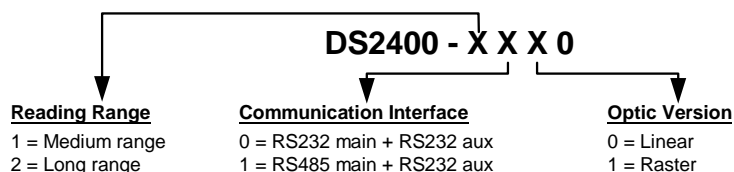
The laser diode used in this device is classified as a class 3B laser product according to EN 60825-1 regulations and as a Class IIIb laser product according to CDRH regulations. As it is not possible to apply a classification label on the laser diode used in this device, the following label is reproduced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



Laser Diode Class Label

Any violation of the optic parts in particular can cause radiation up to the maximum level of the laser diode (7 mW at 630 to 680 nm).

Available Models:



The following tables display each version's reading performance.

Version	Reading Distance	Max Code Resolution mm (mils)	Speed scans/s
1XXX	100 mm (4 in) - 440 mm (17 in) on 0.50 mm (20 mils) codes	0.25 (10)	400 to 1000
2XXX	200 mm (8 in) - 600 mm (23.5 in) on 0.50 mm (20 mils) codes	0.35 (14)	400 to 1000

ELECTRICAL FEATURES		SOFTWARE FEATURES	
Power Supply	10 –30 Vdc	Readable Codes	EAN/UPC (including Add-on 2 and Add-on 5) Code 39 2/5 Interleaved Code 128 EAN 128 Code 93 Codabar Pharmacode
Power Consumption	5 W maximum		
Main Serial Interface	RS232; RS485 Full-Duplex/ Half-Duplex; 20 mA C.L. (only with INT-22 accessory)		
Auxiliary Interface	RS232		
Baudrates	150 to 115200		
Inputs		Headers and Terminators	Up to four header and four terminator characters
External Trigger	(optocoupled NPN or PNP)		
Voltage max.	30 Vdc	Operating Modes	On-Line, Automatic, Serial-On-Line, Test
Current Consumption max.	25 mA		
Outputs) OUT1, OUT2	(optocoupled)	Configuration Modes	Through menus using WinHost utility Host Mode (commands from one of the serial ports)
V _{CE} max.	40 Vdc		
Collector Current max.	40 mA continuous; 130 mA pulsed	Code Selection	Up to six different codes during one reading phase
V _{CE} Saturation	1V at 10 mA max.	Decoding Safety	Can enable multiple good reads of the same code
Power Dissipation max.	90 mW at 40 °C (Ambient temp.)	Parameter Storage	Non-volatile internal EEPROM
OPTICAL FEATURES		ENVIRONMENTAL FEATURES	
Light Source	semiconductor laser diode	Operating Temperature	0° to +40 °C (+32° to +104 °F)
Wavelength	630 to 680 nm	Storage Temperature	-20° to +70 °C (-4° to +158 °F)
Safety Class	Class 2 - EN 60825-1; CDRH	Humidity max	90% non condensing
USER INTERFACE		Vibration Resistance	IEC 68-2-6 test FC 1.5 mm; 10 to 55 Hz; 2 hours on each axis
LED Indicators	Laser ON, Good Read, External Trigger, Data TX / Power ON	Shock Resistance	IEC 68-2-27 test EA 30 G; 11 ms; 3 shocks on each axis
PHYSICAL FEATURES		Protection Class	IP65
Dimensions	68x83.6x34 mm (2.7x3.29x1.3 in)		
Weight	330 g. (11.64 oz)		

Accessories:

Name	Description	Part Number
GFC-2100	90° Reading Device	93A201000
GFC-2000	105° Reading Device	93A201080
INT-22	20 mA Current Loop Interface Board	93A151020
C-BOX 100/200	Connection Box	93ACC1510, 93ACC1520
C-BOX 300/310	Connection Box Profibus	93A301000, 93A301030
MEP-542/543	Photocell Kit NPN/PNP	93ACC1727, 93ACC1728

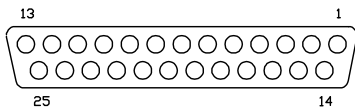
Electrical Connections:

DS2400 is equipped with a cable terminated by a 25-pin female D-sub connector or a 9-pin D-sub connector for connection to the power supply and input/output signals.

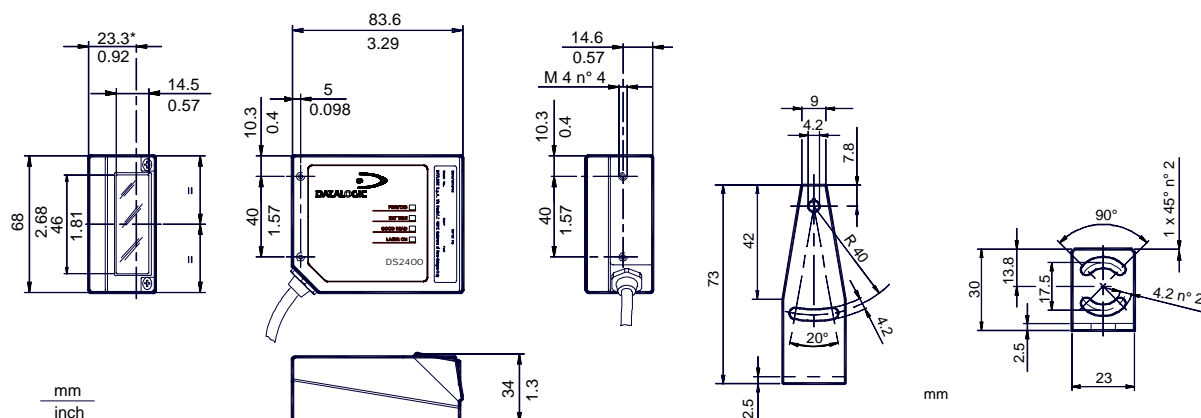


Do not connect GND and SGND to different (external) ground references. GND and SGND are internally connected through filtering circuitry which can be permanently damaged if subjected to voltage drops over 0.8 Vdc.

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

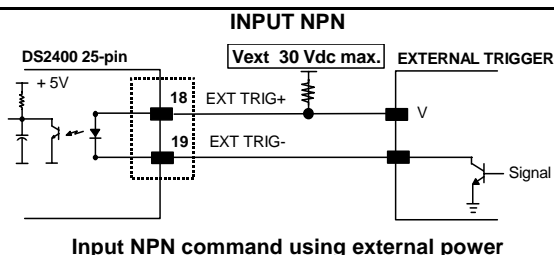
25-pin D-sub female connector pinout				
Pin	Name	Function	 25-pin female connector	
13	VS	Power supply input voltage +		
25	GND	Power supply input voltage -		
1	CHASSIS	Chassis Ground		
9	VS	External Trigger supply voltage +		
18	EXT TRIG+	External Trigger +		
19	EXT TRIG-	External Trigger -		
8	OUT1 +	Output 1 +		
11	OUT2 +	Output 2 +		
12, 22	OUT REF	Output reference		
20	RXAUX	Auxiliary RS232		
21	TXAUX	Auxiliary RS232		
23	CTSAUX	Auxiliary handshake RS232		
24	RTSAUX	Auxiliary handshake RS232		
6, 10, 14, 15, 16, 17	NC	Not Connected		
Pin	RS232	RS485 Full-Duplex	RS485 Half-Duplex	20 mA C.L. (INT-22 Only)
2	TX232	TX485+	RTX485+	CLOUT+
3	RX232	RX485+		CLIN+
4	RTS232	TX485-	RTX485-	CLOUT-
5	CTS232	RX485-		CLIN-
7	SGND	SGND	SGND	

Mechanical Installation:

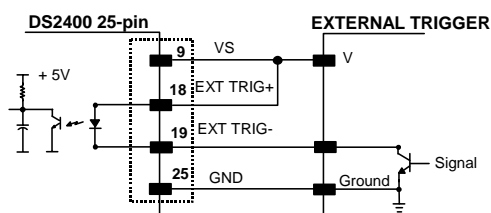


* The quote refers to the scan line

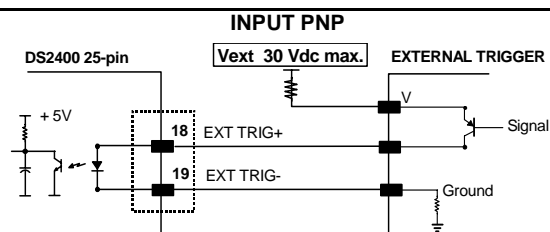
Input/Output Connections:



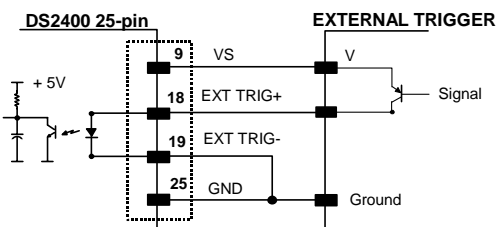
Input NPN command using external power



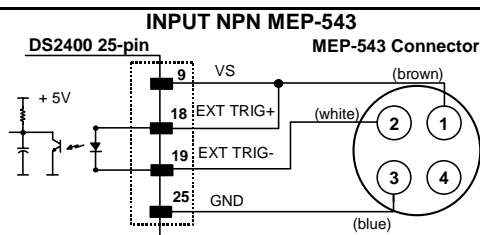
Input NPN command using DS2400 power



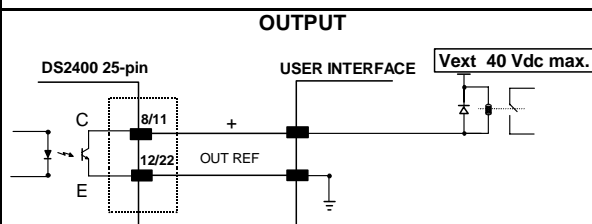
Input PNP command using external power



Input PNP command using DS2400 power



Input NPN command using MEP-543 Photocell



Output open collector connections

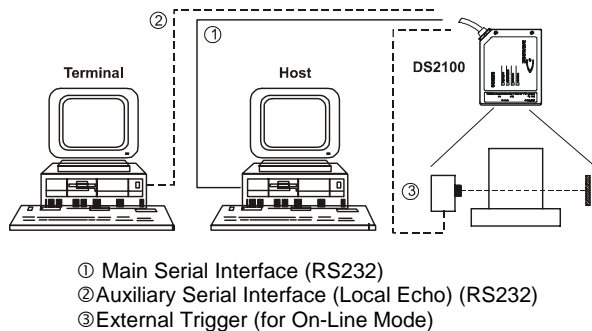
$V_{CE} \text{ max} = 40 \text{ Vdc}$

$I \text{ max} = 40 \text{ mA continuous}$

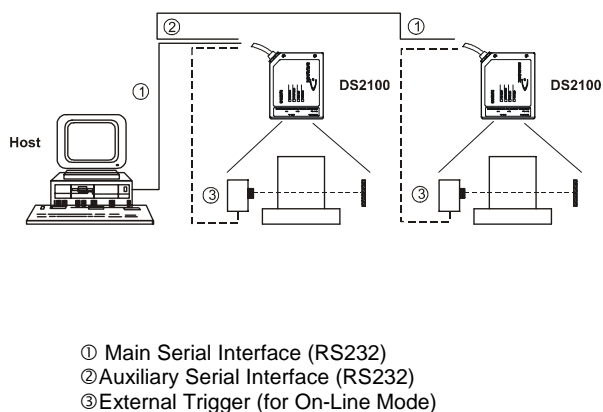
Connectivity:

Available connections for X0XX models

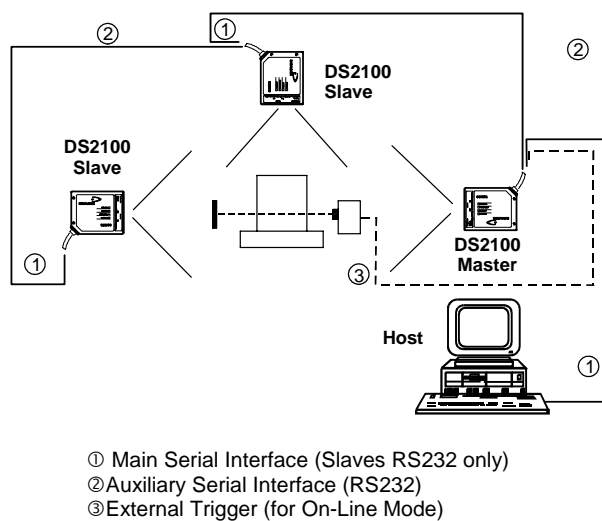
RS232 Point-to-point layout



Pass-through layout

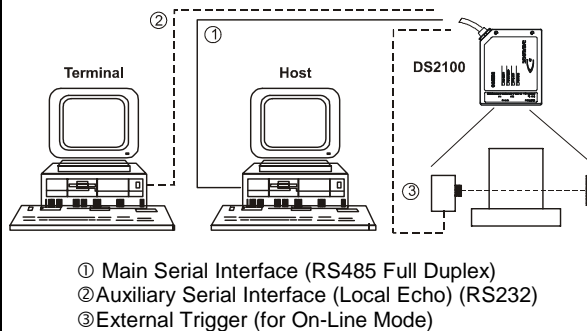


RS232 Master/slave layout

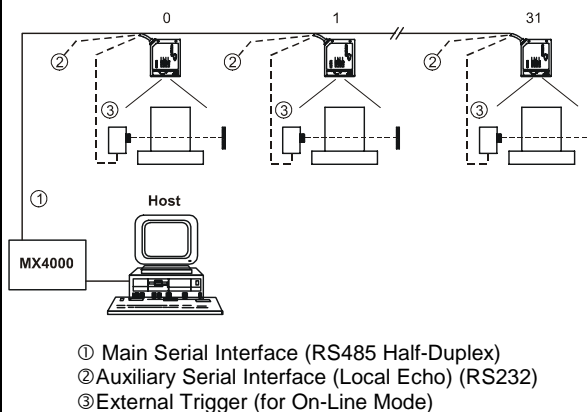


Available connections for X1XX models

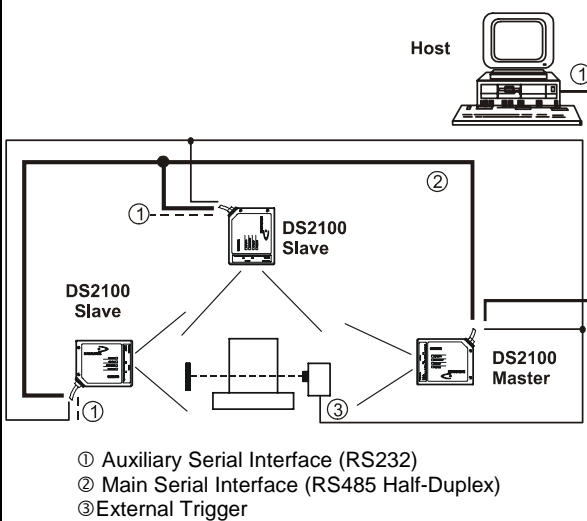
RS485 Point-to-point layout



Multiplexer layout



RS485 Master/slave layout



Reading Diagrams:

DS2400-1XXX (Medium Reading Range)

CONDITIONS

Code = Interleaved 2/5 or Code 39

PCS = 0.90

Pitch angle = 0°

Skew angle = 10°

Tilt angle = 0°

*Code Resolution:

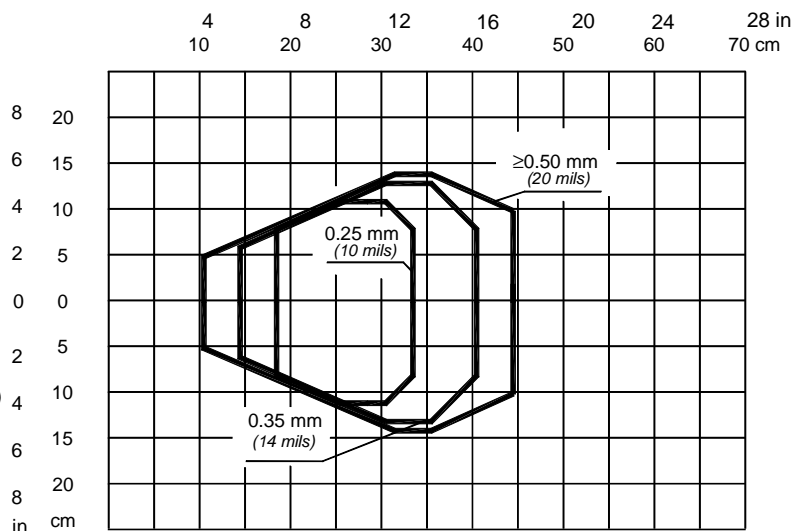
High – for 0.25 mm (10 mils) and 0.35 mm (14 mils) codes

Std – for 0.50 mm (20 mils) codes and greater

* Code Reading Condition = Standard

* Scanning Speed = Speed_3 (800 scans/s)

* Parameters selectable in WinHost.



DS2400-2XXX (Long Reading Range)

CONDITIONS

Code = Interleaved 2/5 or Code 39

PCS = 0.90

Pitch angle = 0°

Skew angle = 10°

Tilt angle = 0°

* Code Resolution:

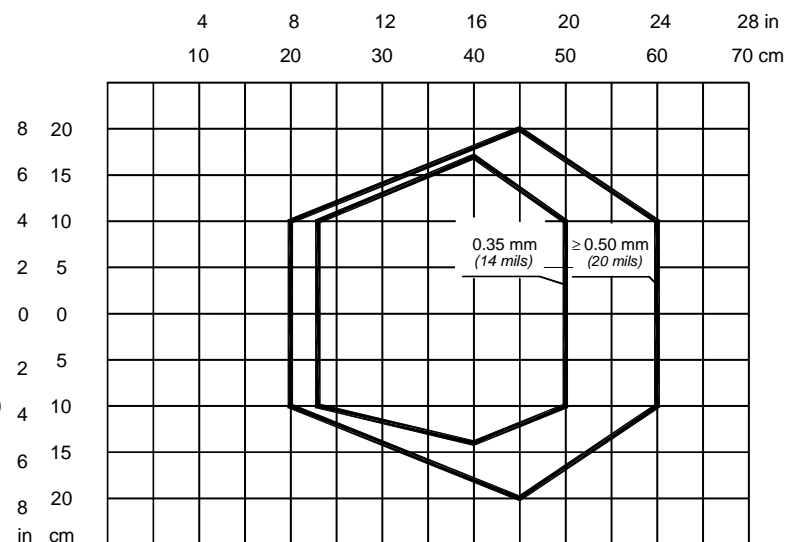
High – for 0.35 mm (14 mils) codes

Std – for 0.50 mm (20 mils) codes and greater

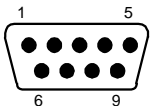
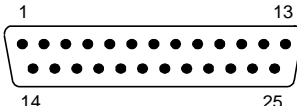
* Code Reading Condition = Standard

* Scanning Speed = Speed_3 (800 scans/s)

* Parameters selectable in WinHost.

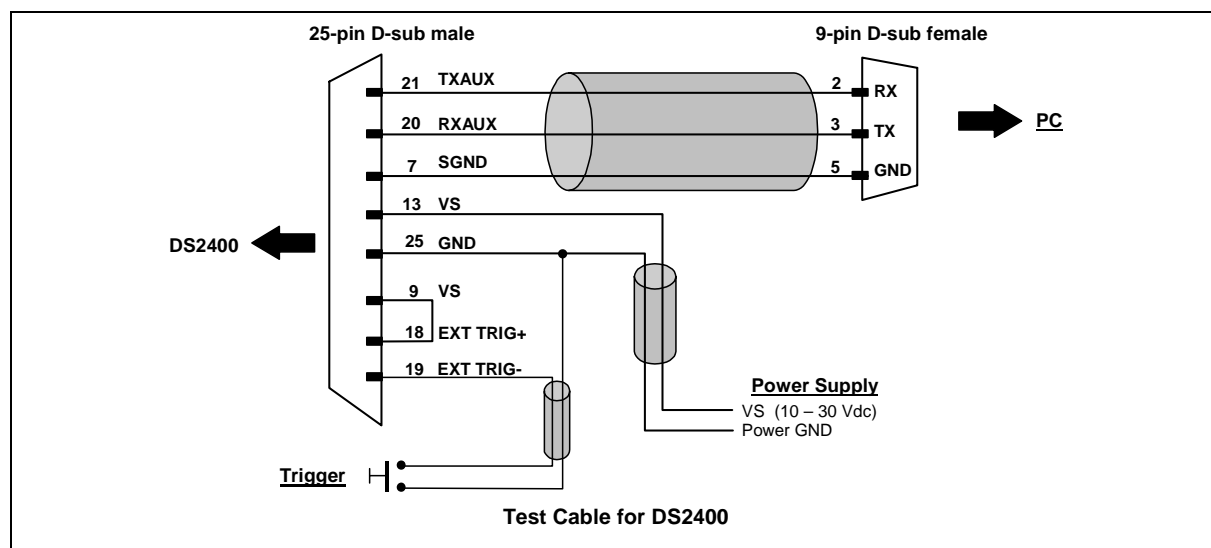


User Interface:

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.





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DS2400-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:
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		sucesivas enmiendas

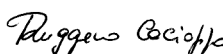
Basate sulle legislazioni degli Stati membri in relazione alla compatibilità elettromagnetica ed alla sicurezza dei prodotti.
On the approximation of the laws of Member States relating to electromagnetic compatibility and product safety.
Basée sur la législation des Etats membres relative à la compatibilité 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 EQUIPMENT (ITE)

EN 61000-6-2, April 1999: ELECTROMAGNETIC COMPATIBILITY (EMC).
PART 6-2: GENERIC STANDARDS - IMMUNITY FOR INDUSTRIAL ENVIRONMENTS

Lippo di Calderara, 21/03/2002


Ruggero Cacioppo
Quality Assurance Supervisor