Installation Guide

MaxiScan 3300
Fixed-position Scanner

Intermec

A **UNOVA** Company

Regulatory Statements

Intermec hereby declares that the MaxiScan 3300 has been tested and found compliant with the below listed standards as required by the EMC Directive 89/336/EEC as amended by 92/31/EEC and by the Low Voltage Directive 73/23/EEC as amended by 93/68/EEC:

EN55022 (1992) Class A   EN50082-2 (1995)   EN60950 (1993)

Note: This is a Class A product. In a residential environment, it may cause harmful interference. In this case the user may be required to take appropriate measures.

USA: This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment is intended for operation in an industrial environment, in compliance with the requirements for a Class A device, pursuant to part 15 of the FCC Rules. It generates, uses and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause interference to radio communications. If this equipment causes interference, the user will be required to correct the interference at the user's own expense.

This equipment complies with the UL 1950 standard.

Canada: This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

This equipment complies with the UL 1950 standard.
Cet équipement est conforme à la norme UL 1950.

Australia-New Zealand: This equipment has been tested and found to conform to the Australian EMC framework concerning Class A digital devices, prescribed by the Australian and New-Zealand standard AS/NZS 3548. N309

Mexico: *Este equipo cumple con la certificatión NOM.*

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Technical information: http://datacapture.intermec.com

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Laser warnings

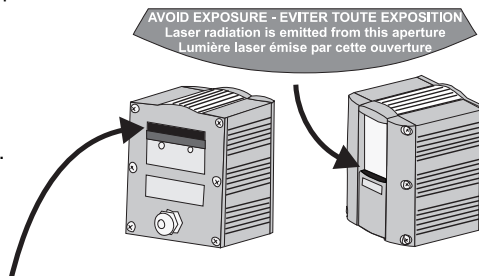Stick warning labels onto the product if they are not already present.

Collez les étiquettes d'avertissement sur votre produit.

Bringen Sie Warnetiketten auf dem Produkt an.

Fije la etiqueta de advertencia en el producto.

Un'etichetta di avviso per il laser è da applicare sul prodotto.

Cole as etiquetas de precaução no equipamento.

AVOID EXPOSURE - EVITER TOUTE EXPOSITION
Laser radiation is emitted from this aperture
Lumière laser émise par cette ouverture

ENGLISH (EU)
CAUTION
LASER LIGHT - DO NOT STARE INTO BEAM
660 nm LASER DIODE - 1.0 MILLIWATT MAX OUTPUT
CLASS 2 LASER PRODUCT

ENGLISH (USA)
CAUTION
LASER RADIATION - DO NOT STARE INTO BEAM
660 nm LASER DIODE - 1.0 MILLIWATT MAX OUTPUT
CLASS II LASER PRODUCT

FRANÇAIS
ATTENTION
RAYONNEMENT LASER   NE
PAS REGARDER DANS LE FAISCEAU
660 nm - 1.0 MILLIWATT MAX
APPAREIL A RAYONNEMENT LASER DE CLASSE 2

ITALIANO
ATTENZIONE
RADIAZIONE LASER - NON FISSARE IL FASCIO
660 nm - 1.0 MILLIWATT MAX
APPARECCHIO LASER DI CLASSE 2

DEUTSCH
VORSICHT
LASERSTRAHLUNG NICHT IN DEN STRAHL BLICKEN
660 nm - 1.0 MILLIWATT MAX
LASER KLASSE 2

SVENSKA
VARNING
VARING LASERSTRALNING STIRRA EJ IN I STRALEN
660 nm - 1.0 MILLIWATT MAX
LASER KLASS 2

PORTUGUÊS
ATENÇÃO
LUZ DE LASER NÃO OLHAR NA DIREÇÃO DO FEIXE
660 nm - 1.0 MILLIWATT MAX
EQUIPAMENTO LASER CLASSE 2

ESPAÑOL
¡CUIDADO!
LUZ LÁSER - NO MIRE HACIA EL RAYO
660 nm - 1.0 MILLIWATT MAX
CATEGORIA 2 PRODUCTO LÁSER

CAUTION – Use of controls or adjustments or performance of procedures other than those specified herein result in hazardous laser light.

VORSICHT – Bei einer anders als hier beschriebenen Verwendung der Bedienelemente oder Veränderungen oder einer anderen Ausführung der Arbeitsabläufe entsteht gefährliches Laserlicht.

ATTENTION – L'utilisation de contrôles/commandes ou de réglages ou l'exécution de procédures autres que ceux précisés par le présent document provoquent une lumière laser dangereuse.

Contents

1 Before you start

Introduction

The MaxiScan 3300 is a compact multi-functional moving beam industrial bar code scanner providing line, raster and omni-directional scan patterns. The MaxiScan 3300's unique ability to generate different patterns under software control stems from its Ac|tive Line Control (ALC) optics technology. Multi-function means that the MaxiScan 3300 is equally suited to line and multi-line scanning in fixed applications in identification, tracking, process control and sortation.

This *Installation Guide* explains how to install and set up your MaxiScan 3300 in order to operate successfully in most working situations.

You can use the EasySet setup software to set up the MaxiScan 3300. See Section 5—*Setup* for details.

For part numbers see Section 8 — Accessories

For multi-scanner network or multihead configurations, use the optional MaxiScan 3010.

Checklist of items for your installation

All systems
- ❏ MaxiScan 3300 (S/N greater than 01000)
- ❏ EasySet System configuration software (on the CD-ROM)
- ❏ MaxiScan 3300 *Installation Guide*

Depending on your installation requirements (see Section 2—*Installation*), you will also need:
- ❏ Intermec 7 to 25 VDC mains power supply adapter
- ❏ Intermec standard RS-232 "Y" cable (also used to download setup commands from the EasySet System configuration software)

Optional items
- ❏ MaxiScan Connection System (MCS)
- ❏ Intermec standard RS-232 "straight" cable for use with the MCS (the standard RS-232 "Y" cable is not required)
- ❏ MaxiScan 3010 (MNS) for network or multihead installations

For part numbers
see Section 8 —
Accessories

❏ MaxiScan 3010 *Installation Guide*

❏ MaxiScan 3010 network cable

❏ MaxiScan 3010 cable terminator

❏ MaxiScan 3010 download cable

Integration considerations

Environment Make sure the operating environment is suitable for your MaxiScan 3300 model, as prescribed in Section 8—*Technical characteristics*.

Reading distance High-density bar codes require a shorter reading distance than low-density bar codes. Reading distance is less critical for medium density bar codes (see *Reading distance* in Section 8—*Technical characteristics*).

Reading filters To optimize reading efficiency, use EasySet to activate an optimization filter when you set up your MaxiScan. There are filters for barcode density, contrast and reading distance. If you have problems reading a barcode, try a different filter.

Setup Test the setup before you install the MaxiScan permanently.

Symbologies Use standard symbologies best suited to your application. Some symbologies (Interleaved 2 of 5 for example) are less reliable than others.

Use as few symbologies as possible.

The use of fixed barcode lengths and check digits increases reading efficiency and security.

I/O synchronization An external input synchronization device can be used to activate the MaxiScan 3300. This will ensure longer life for the motors and the laser diode, and allow you to detect unsuccessful read attempts.

Specular reflection Slightly skew the scanner or labels to avoid 90° specular reflection (label exactly perpendicular to scanner) in any part of the scan.

Number of scans A good read usually requires a minimum of 5 scans.

Cables and connections Remember to take into account the length of the operating cables and power supply cable when you install your MaxiScan 3300.Remember to take into account the length of the operating cables and power supply cable when you install your MaxiScan 3300.
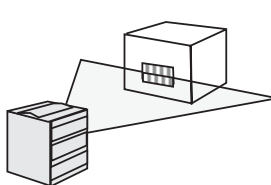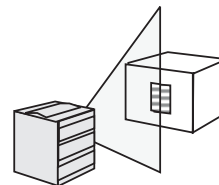
Optional adjustable stand

Using the adjustable stand is more flexible than fixing the MaxiScan 3300 directly to the work surface. Refer to the product specifications in Section 8—*Technical characteristics*.

Depth of field

There is more depth of field when the laser beam is horizontal with regard to the MaxiScan 3300:
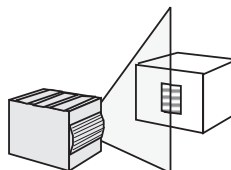

more depth of field   **less depth of field**

If your application mostly needs a vertical beam, it is better to install the MaxiScan 3300 on its side, in order to ensure an optimal scan pattern:

more depth of field

Location and reading position

Tilt
- Prevents reading of a bar code if all the bars are not inside the reading beam
- Reduces the number of effective scans for the bar code

good read   read OK   no read
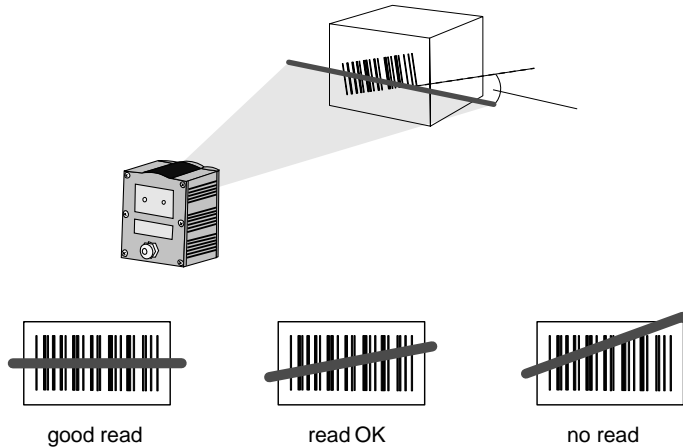
Pitch
- Reduces bar width and is much more critical for high-density barcodes
- Reading may be possible with a pitch angle up to ± 70°
- Reduce pitch to increase reading efficiency
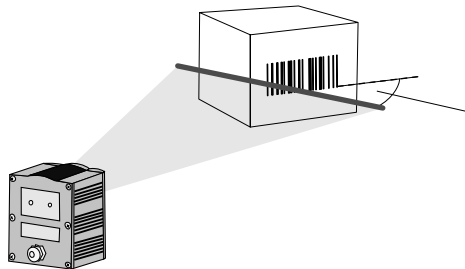
Skew
- Reduces bar height

- Reading may be possible with a skew angle up to ± 40°

- Reduce skew to increase reading efficiency

- A small skew angle (2–3° minimum) is necessary to prevent specular reflection

Reading moving bar codes

Choosing between picket fence and ladder reading

Picket fence reading generally requires more scans per code in pass-through applications than with ladder reading.

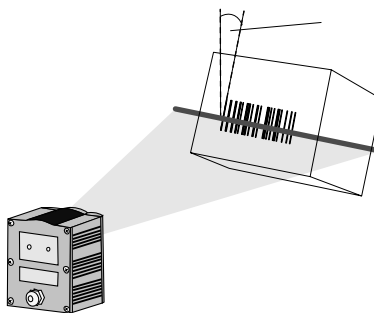Ladder reading generally requires fewer scans per code in pass-through applications than with picket fence reading, and can read over the whole code height, which is good for high-speed pass-through with variable label quality and different label positions.

Picket fence reading

picket fence
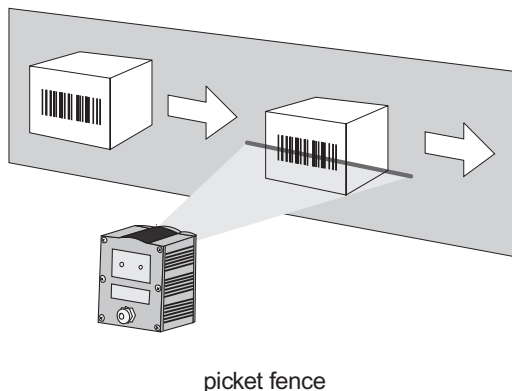
Calculating pass-through speed:

$$\text{number of scans} = \frac{\text{scan rate x (scan width - code width)}}{\text{pass-through speed}} - 2$$

Example:
scan width	=	20 cm
code width	=	10 cm
scan rate	=	450 scans/sec
conveyor speed	=	1 meter / sec (100 cm / sec)

[450 * (20 - 10) / 100] - 2 = 43 so there will be 43 full scans on the code

The code width value will vary slightly according to the degree of tilt and pitch.

Increase the scan width (adjust the reading distance) and decrease the code width and pass-through speed to increase the number of scans.

Remain within the product specifications for reading distance and barcode density as prescribed in Section 8—*Technical characteristics.*

Ladder reading

ladder

Calculating pass-through speed:

$$\text{number of scans} = \frac{\text{code height x scan rate}}{\text{pass-through speed}} - 2$$

Example:

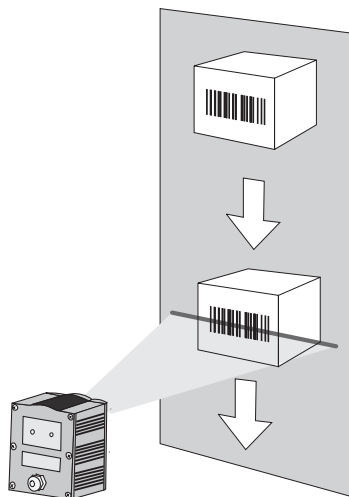|		
code height	=	2.5 cm
conveyor speed	=	1 meter / sec (100 cm / sec)
scan rate	=	450 scans / sec

[(2.5 * 450) / 100] - 2 = 9.25 so there will be 9 full scans on the code

The code height value will vary slightly according to the degree of tilt and skew.

Increase the code height and decrease the pass-through speed to increase the number of scans;

$$\text{minimum code height} = \frac{\text{pass-through speed x (number of scans + 2)}}{\text{scan rate}}$$

If we suppose that 5 scans is a good minimum, the formula becomes:

$$\text{number of scans} = \frac{\text{code height x scan rate}}{\text{pass-through speed}} - 2$$

Remain within the product specifications for reading distance and barcode density as prescribed in Section 8—*Technical characteristics*.

Scan angles

horizontal scan angle = 40°

vertical sweep angle = 30°

horizontal sweep angle = 30°

vertical scan angle = 40°
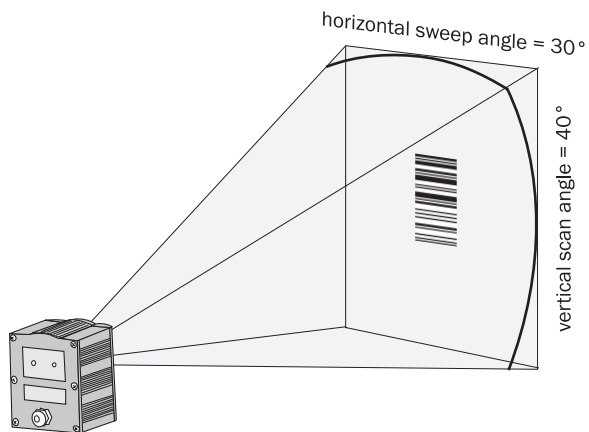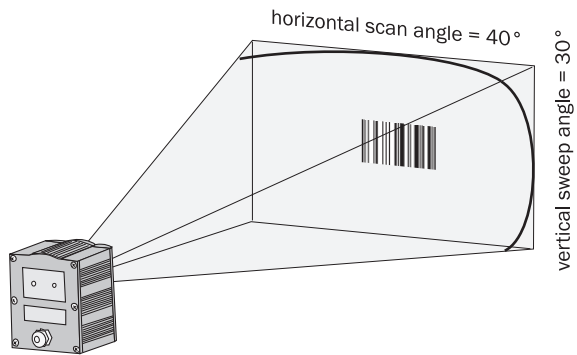
Scan patterns

single line

- picket fence and ladder reading
- set scan rate/position (scan width depends on reading distance)
- picket fence—increase scan width to increase the number of scans
- ladder—if possible, limit scan width to just over width of code in order to avoid wasted scans

raster

- picket fence only—do not use for ladder reading!
- good for poor quality or damaged labels (read same code at different heights) or variable label position
- useful for multicode applications
- set scan rate/sweep angle (scan area depends on reading distance and sweep angle)
- if possible, limit raster or pattern to height of code in order to avoid wasted scans

lissajous curves

- undefined orientation, curved surfaces
- more directions = lower effective scan rate per line

multipattern sequence

- for variable orientation and position
- suitable for static reading or slow pass-through applications
- cross pattern provides good coverage with codes with greater height than width

circle sweep

- suitable for labels on circular surfaces, such as CD-ROMs or tires

2 Installation

Dimensions / mounting points / laser light plane
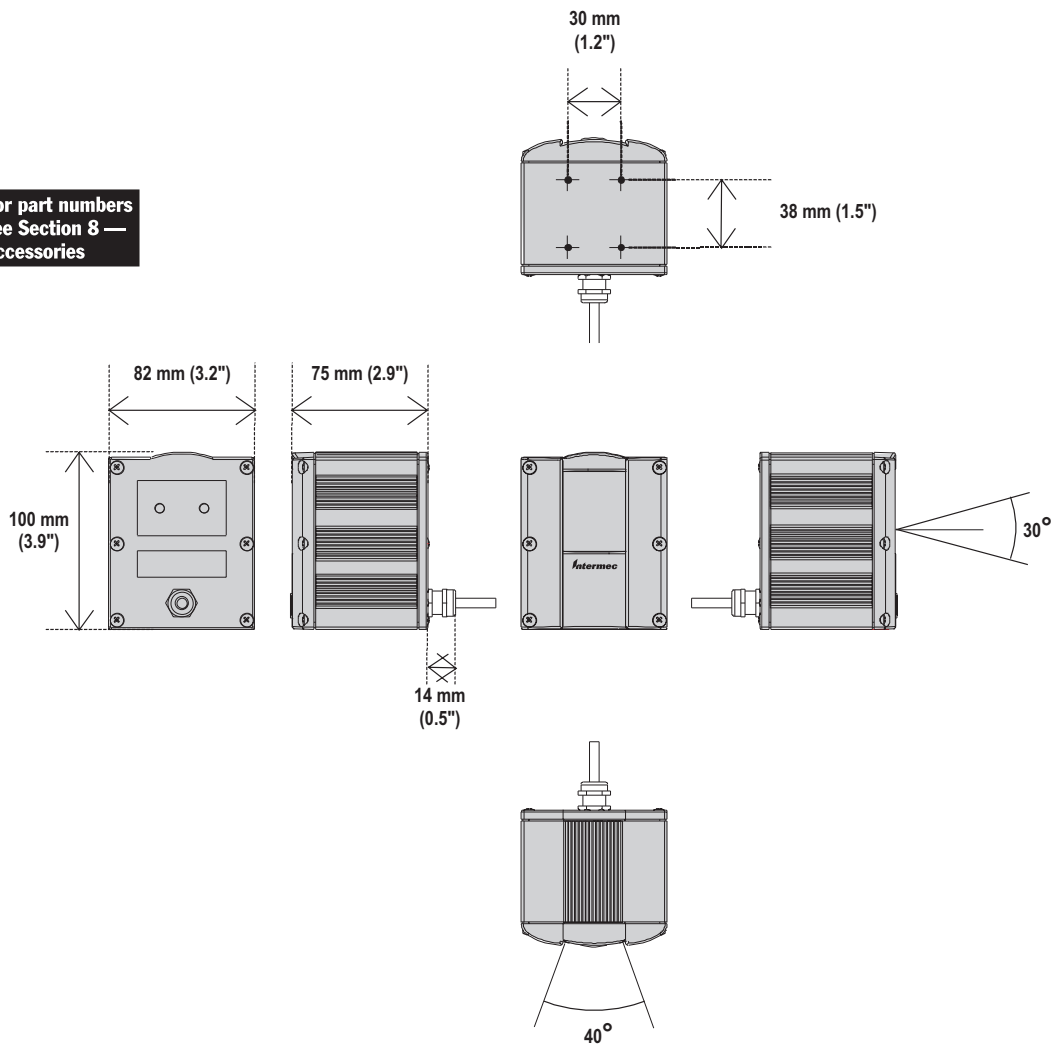
30 mm (1.2")

38 mm (1.5")

For part numbers
see Section 8 —
Accessories

82 mm (3.2")   **75 mm (2.9")**

100 mm (3.9")

14 mm (0.5")

30°

40°

Optional adjustable stand

4 x M 4
5 mm (0.2") depth

4 x Ø 4

For part numbers
see Section 8 —
Accessories

30 mm (1.18")

38 mm (1.5")

92.5 mm
(3.64")

52 mm (2.01")

52 mm (2.01")
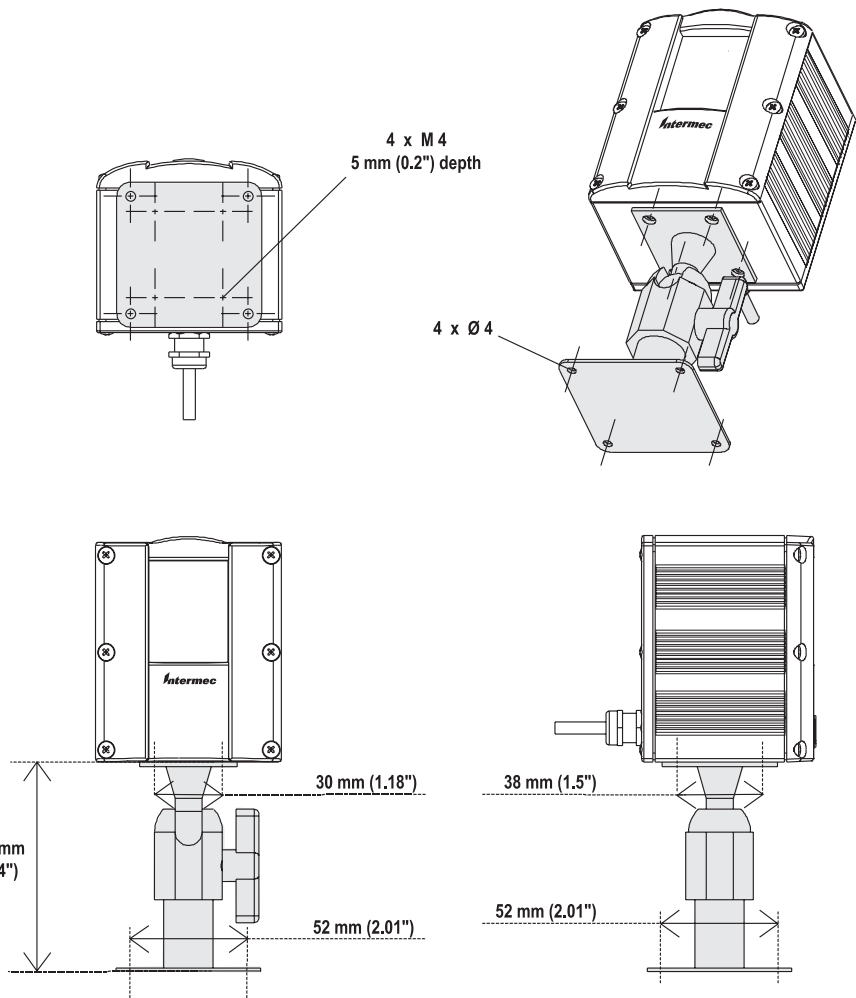
MaxiScan Connection System (MCS) dimensions

30 mm
(1.18")

SYNCHROS   HOST

113 mm (4.45")

70 mm
(2.76")

RS-232 C configuration

For part numbers see Section 8 — Accessories

Intermec power supply

MaxiScan 3300

Intermec RS-232 "Y" cable

host system
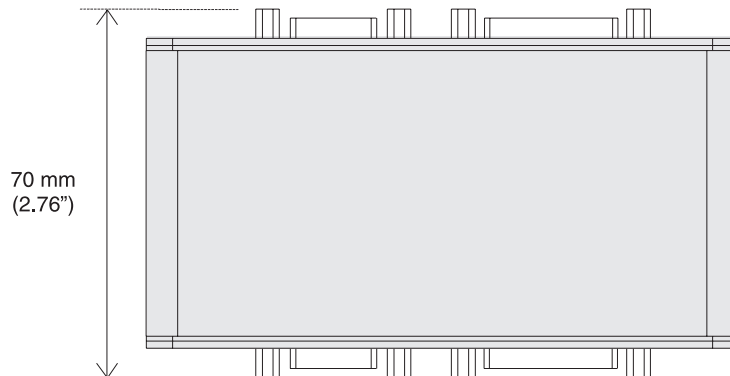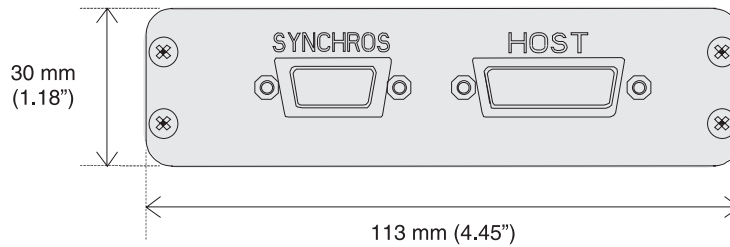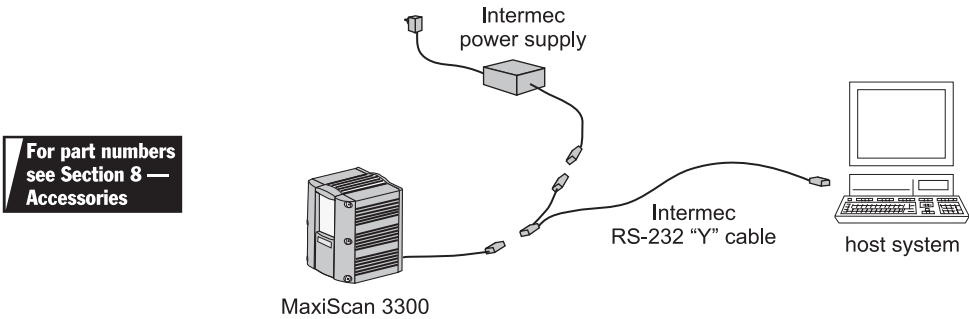
RS-232 C with synchronization configuration

host system

Intermec RS-232 cable MCS/host

Intermec or user I/O synchronization device and cable

MaxiScan Connection System (MCS)

MaxiScan 3300

Intermec power supply
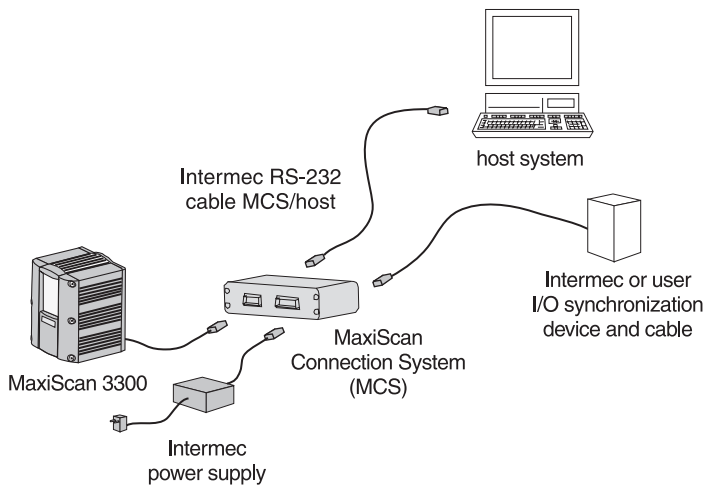
RS-422 / RS-485 configuration

user
power supply

user cables
to connect
to user application

host system

**For part numbers
see Section 8 —
Accessories**

SubD
15-position
female

user
I/O synchronization
device

MaxiScan 3300

Passive current loop configuration

user cable
with current loop to connect
to user application

user application

MaxiScan
Connection System
(MCS)

MaxiScan 3300

Intermec
power supply
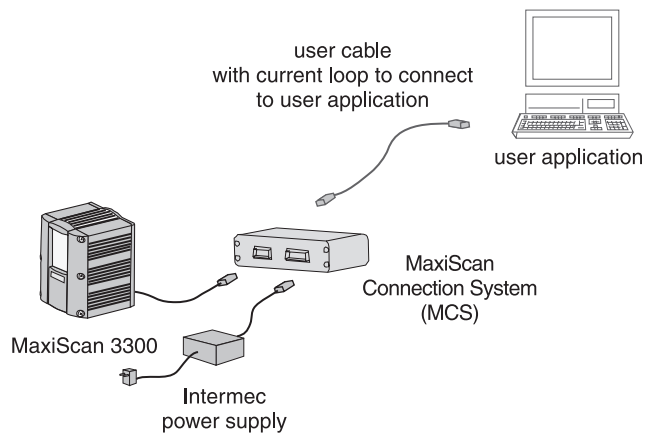
MaxiScan 3010 (MNS) configuration

The MaxiScan 3010 can be connected to the MaxiScan 3300 in two ways. The example below is taken from the MaxiScan 3010 *Installation Guide*. See the Guide for full details.

For part numbers see Section 8 — Accessories

MaxiScan 3300

MaxiScan Connection System

Power supply and I/O synchros

RS - 485 bus

MaxiScan 3300

MaxiScan Connection System

Power supply and I/O synchros

bus termination

MaxiScan 3010

Power supply and I/O synchros
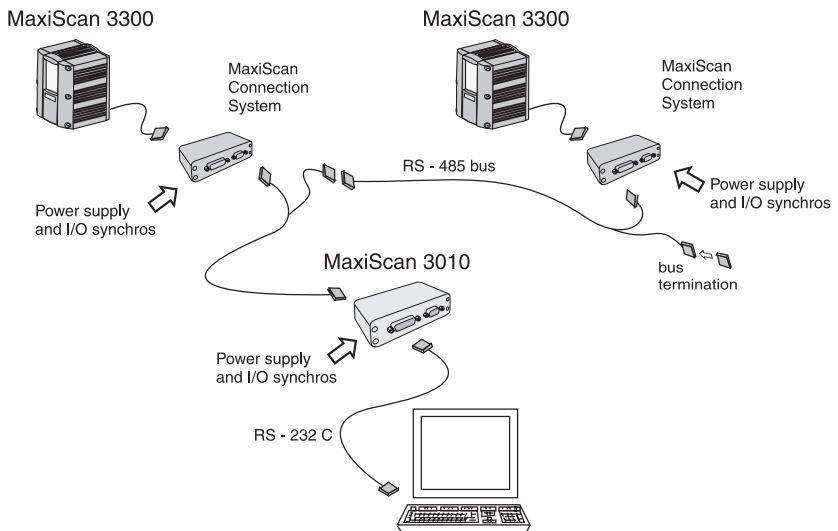
RS - 232 C

3 Connections

MaxiScan 3300 pinout

15-pin subD female connector

> **Both the 7 to 25 VDC power supply pins must be powered.**
> **Both GND pins must be used.**

Pin	Function
1	Receive data (RS-232 C) / RX- (RS-422 / 485)
2	Transmit data (RS-232 C) / TX- (RS-422 / 485)
3	Clear to send (RS-232 C) / RX+ (RS-422 / 485)
4	Request to send (RS-232 C) / TX+ (RS-422 / 485)
5	Positive synchronization input (SI+)
6	Negative synchronization input (SI-)
7	Positive synchronization output (SO+)
8	Negative synchronization output (SO-)
9	Not connected
10	Power in (7 to 25 VDC 10 Watt unregulated)
11	Power ground
12	Shield
13	Power ground
14	Power in (7 to 25 VDC 10 Watt unregulated)
15	Not connected

RS-232 C pinout

I/O sync max current 20 mA
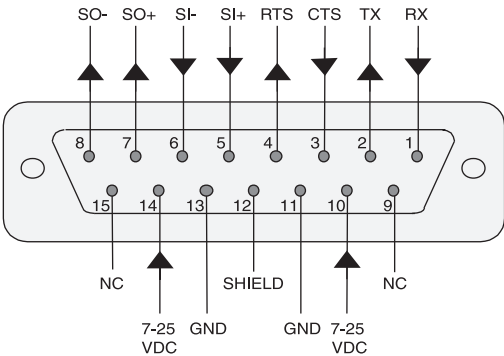
SO- SO+ SI- SI+ RTS CTS TX RX

8 7 6 5 4 3 2 1

15 14 13 12 11 10 9

NC SHIELD NC

7-25 VDC GND GND 7-25 VDC

15-pin subD female connector

**Both the 7 to 25 VDC power supply pins must be powered.
Both GND pins must be used.**

Pin	Function
1	Receive data (RS-232 C)
2	Transmit data (RS-232 C)
3	Clear to send (RS-232 C)
4	Request to send (RS-232 C)
5	Positive synchronization input (SI+)
6	Negative synchronization input (SI-)
7	Positive synchronization output (SO+)
8	Negative synchronization output (SO-)
9	Not connected
10	Power in (7 to 25 VDC 10 Watt unregulated)
11	Power ground
12	Shield
13	Power ground
14	Power in (7 to 25 VDC 10 Watt unregulated)
15	Not connected

RS-422 pinout
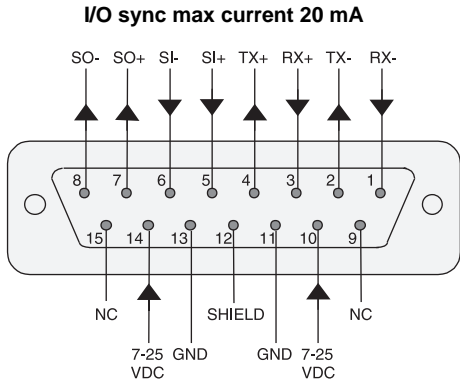
RS-422: install resistor = user cable characteristic impedance between pins 1 and 3

I/O sync max current 20 mA

SO- SO+ SI- SI+ TX+ RX+ TX- RX-

8 7 6 5 4 3 2 1

15 14 13 12 11 10 9

NC   SHIELD   NC

7-25 GND   GND 7-25
VDC   VDC

MaxiScan 15-pin subD female connector

1 2 3 4 5 6 7 8

9 10 11 12 13 14 15
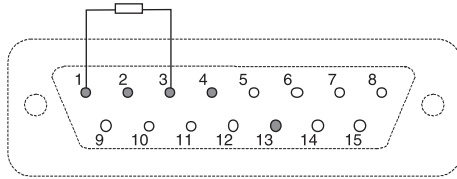
host 15-pin subD male connector

**Both the 7 to 25 VDC power supply pins must be powered.
Both GND pins must be used.**

Pin	Function
1	Receive data RX- (RS-422)
2	Transmit data TX- (RS-422)
3	Receive data RX+ (RS-422)
4	Transmit data TX+ (RS-422)
5	Positive synchronization input (SI+)
6	Negative synchronization input (SI-)
7	Positive synchronization output (SO+)
8	Negative synchronization output (SO-)
9	Not connected
10	Power in (7 to 25 VDC 10 Watt unregulated)
11	Power ground
12	Shield
13	Power ground
14	Power in (7 to 25 VDC 10 Watt unregulated)
15	Not connected

RS-485 pinout

RS-485: connect pins 1 and 2 and connect pins 3 and 4. Install resistor = user cable characteristic impedance between pins 1 and 3

I/O sync max current 20 mA

SO- SO+ SI- SI+ TX+ RX+ TX- RX-

8 7 6 5 4 3 2 1

15 14 13 12 11 10 9

NC   SHIELD   NC

7-25 GND   GND 7-25
VDC   VDC

MaxiScan 15-pin subD female connector
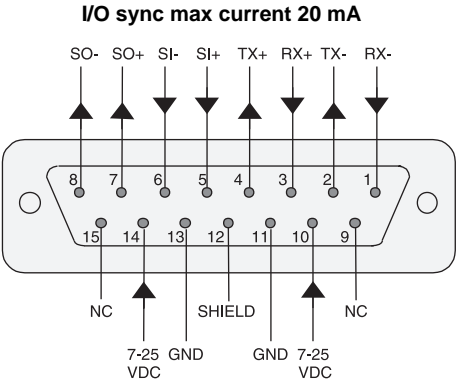

1 2 3 4 5 6 7 8

9 10 11 12 13 14 15

host 15-pin subD male connector

Both the 7 to 25 VDC power supply pins must be powered. Both GND pins must be used.

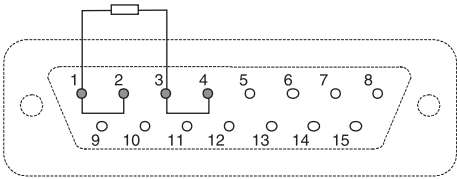| Pin	Function
1	Receive / transmit data RX- / TX- (RS-485)
2	Receive / transmit data RX- / TX- (RS-485)
3	Receive / transmit data RX+ / TX+ (RS-485)
4	Receive / transmit data RX+ / TX+ (RS-485)
5	Positive synchronization input (SI+)
6	Negative synchronization input (SI-)
7	Positive synchronization output (SO+)
8	Negative synchronization output (SO-)
9	Not connected
10	Power in (7 to 25 VDC 10 Watt unregulated)
11	Power ground
12	Shield
13	Power ground
14	Power in (7 to 25 VDC 10 Watt unregulated)
15	Not connected

4 Input / output synchronization

Input synchronization

Reading can be triggered by an external device (opto-coupled cell, automated machine, electrical control device) connected to pins 5 and 6. The MaxiScan 3300 can send a message to the host system when reading is activated by an input synchronization device.

Current on   Reading is active when current flows between SI+ and SI- (pins 5 and 6). It remains active until there is a good read or until the current stops flowing (setup option).

Current off   Reading is active when no current flows between SI+ and SI- (pins 5 and 6). It remains active until there is a good read or until the current starts to flow (setup option).

Input pulse   The MaxiScan 3300 starts to read for a programmable duration when a change-of-state pulse is detected between SI+ and SI-.

Software   Reading is triggered when a start character is received and remains active until a stop character is received, or until the duration has elapsed. The start and stop characters and the duration are user-programmable. See EasySet for more details.

Output synchronization

An external device (switch, alarm, indicator light) can be triggered by a good read or unsuccessful read by the MaxiScan 3300. The external device is connected to pins 7 and 8.

Output trigger

Good read   The output device is triggered when the MaxiScan 3300 performs a good read.

No read   The output device is triggered in the absence of a read by the MaxiScan 3300 within a given period of time. An input synchronization trigger is required (no read = no read before timeout).

Hardware action

Current on   The output device operates when current flows between SO+ and SO- (pins 7 and 8). The output device stops operating when the

current stops flowing. An output trigger function (good read or no read) must be activated.

Current off   The output device operates when no current flows between SO+ and SO- (pins 7 and 8). The output device stops operating when the current starts to flow. An output trigger function (good read or no read) must be activated.
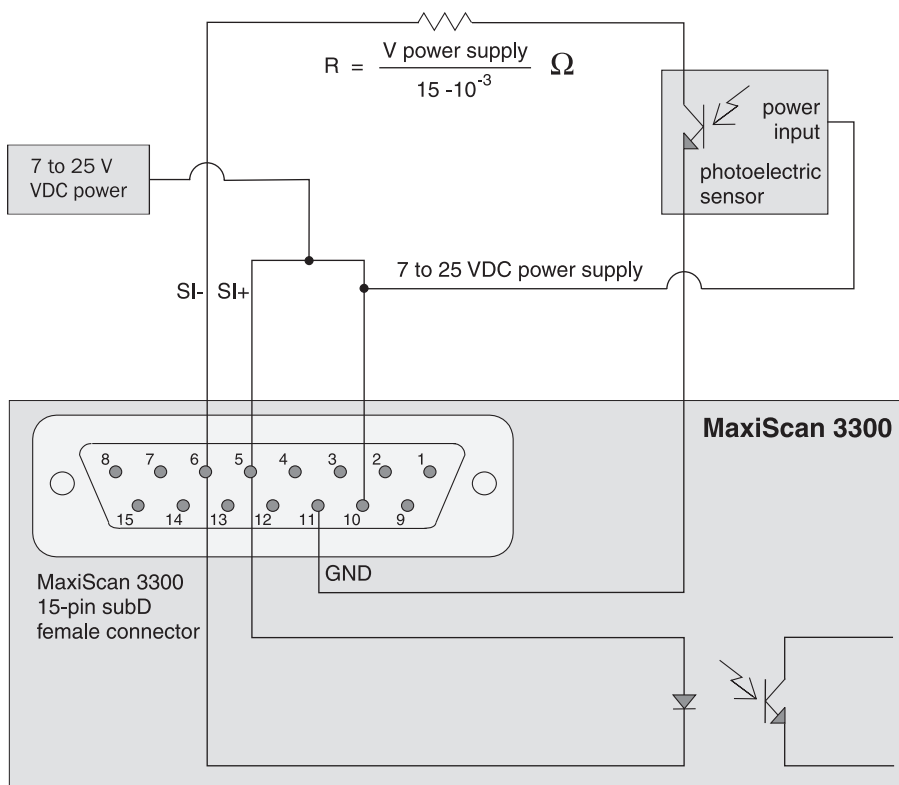
Software action

The MaxiScan sends a message following a good read or no read. This software output can be combined with an action (current on or current off).

Input / output configuration examples

Input synchronization—direct connection

Reading is triggered by an opto-coupled cell, as shown in the generic example below. Current provided by the external input device must be limited to 20 mA max (15 mA is a good average value).

Although not recommended, you can replace the photoelectric cell in the example below with a mechanical switch. Note that the resulting "bouncing" phenomenon must be filtered either by the external system or by activating the "antibounce" parameter in EasySet. To find this parameter quickly, launch EasySet, select the MaxiScan 3300 product icon, deactivate the "Step-by-step mode", and select "antibounce" from the drop-down list in the search box.

$$R = \frac{V \text{ power supply}}{15 - 10^{-3}} \ \Omega$$

power input

photoelectric sensor

7 to 25 V VDC power

7 to 25 VDC power supply

SI- SI+

MaxiScan 3300

8 7 6 5 4 3 2 1

15 14 13 12 11 10 9

MaxiScan 3300 15-pin subD female connector

GND

Output synchronization—direct connection—example 1

Relay-controlled output device

Current provided by the external input device must be limited to 20 mA max (15 mA is a good average value—choose a relay value <15 mA).

An external power supply must be grounded with the MaxiScan 3300. In the example below, the VCC external power supply can be sourced on pin 10.

$$R = \frac{VCC}{15 \cdot 10^{-3}} \ \Omega$$

Output device

SO-   SO+   GND

MaxiScan 3300
15-pin subD
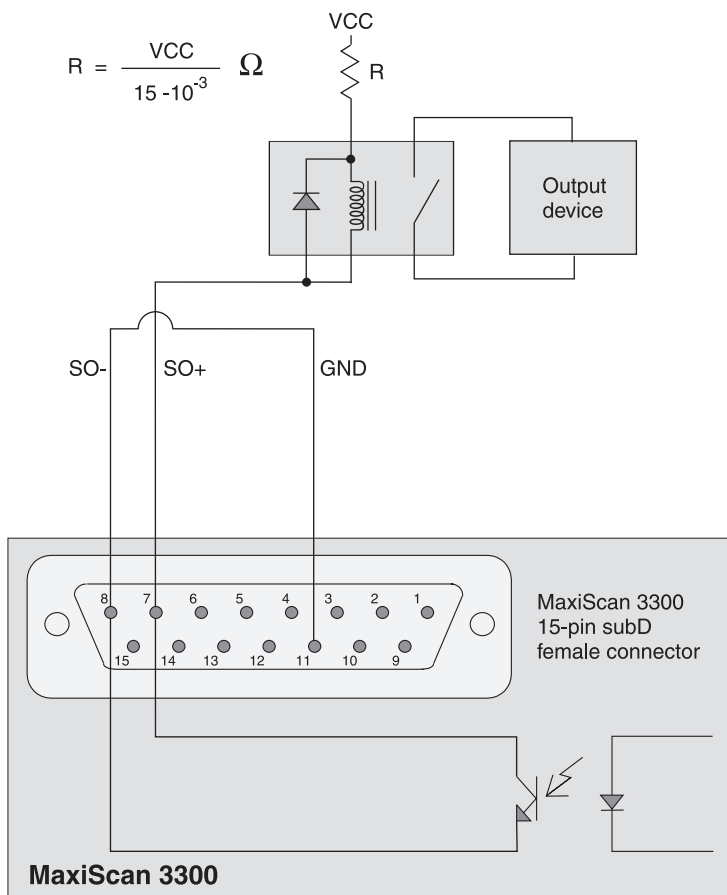female connector

MaxiScan 3300

Output synchronization—direct connection—example 2

PLC-controlled output device

Current provided by the external input device must be limited to 20 mA max (15 mA is a good average value).

An external power supply must be grounded with the MaxiScan 3300. In the example below, the VCC external power supply can be sourced on pin 10.
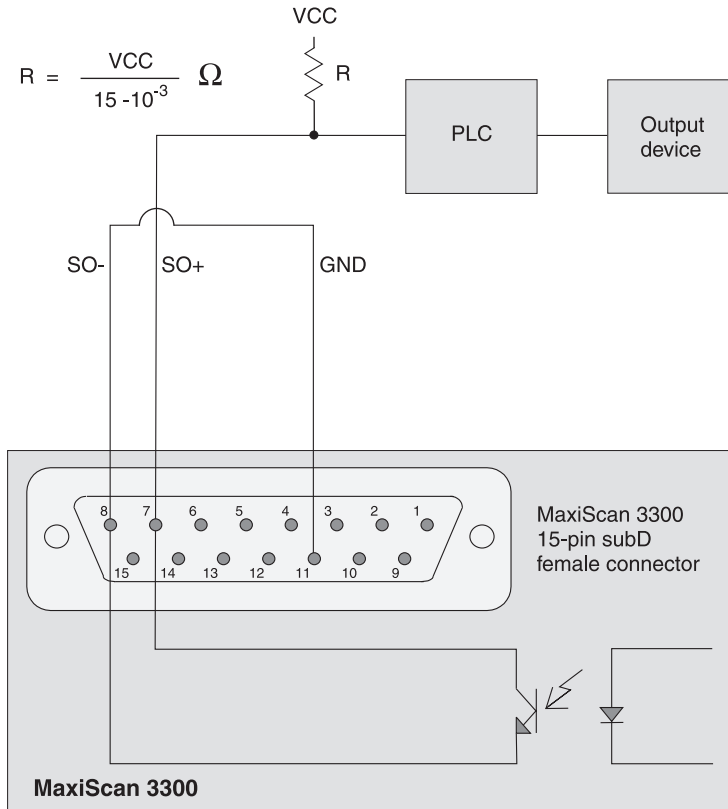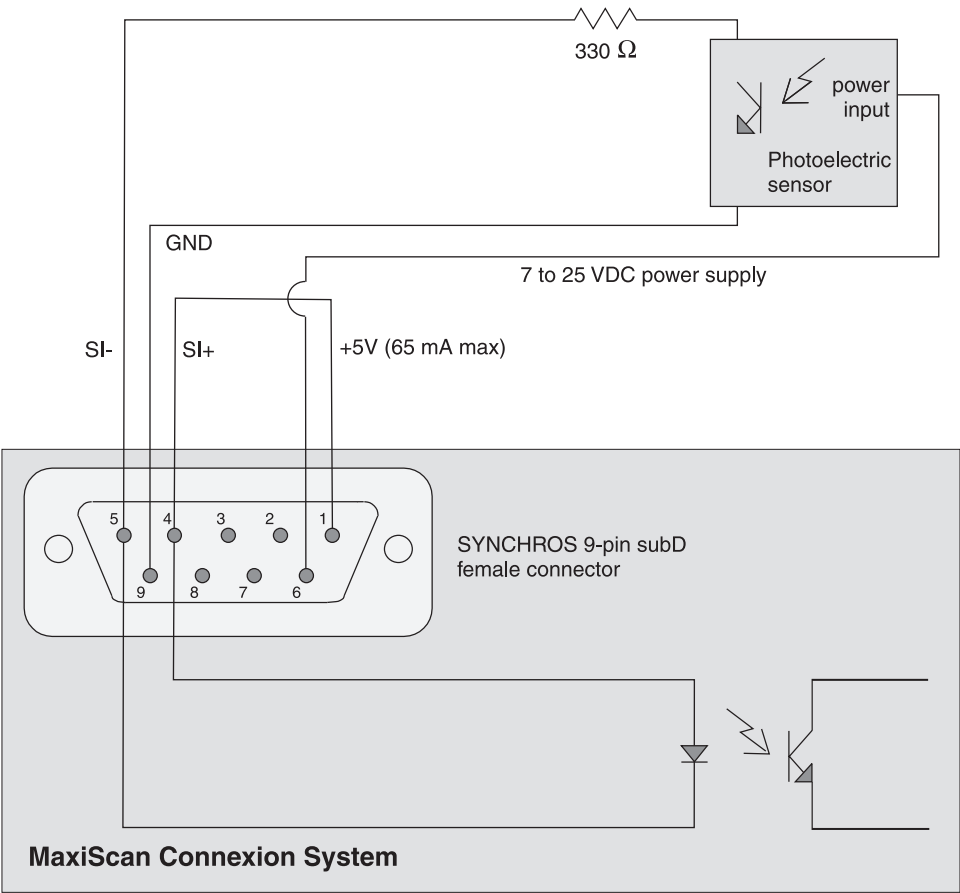
$$R = \frac{VCC}{15 \cdot 10^{-3}} \; \Omega$$

Input synchronization—MCS connection box

Intermec recommends the optional *Optical Sensor Input Synchro*, which comes ready-to-use and requires no additional external component.

For part numbers see Section 8 — Accessories

Reading is triggered by an opto-coupled cell, as shown in the generic example below. Current provided by the external input device must be limited to 20 mA max (15 mA is a good average value).

Although not recommended, you can replace the photoelectric cell in the example below with a mechanical switch. Note that the resulting "bouncing" phenomenon must be filtered either by the external system or by activating the "antibounce" parameter in EasySet. To find this parameter quickly, launch EasySet, select the MaxiScan 3300 product icon, deactivate the "Step-by-step mode", and select "antibounce" from the drop-down list in the search box.

330 Ω

power input

Photoelectric sensor

GND

7 to 25 VDC power supply

SI-   SI+   +5V (65 mA max)

5 4 3 2 1

9 8 7 6

SYNCHROS 9-pin subD female connector

MaxiScan Connexion System

Output synchronization—MCS connection unit—example 1

Relay-controlled output device

Current provided by the external input device must be limited to 20 mA max (15 mA is a good average value—choose a relay value <15 mA).
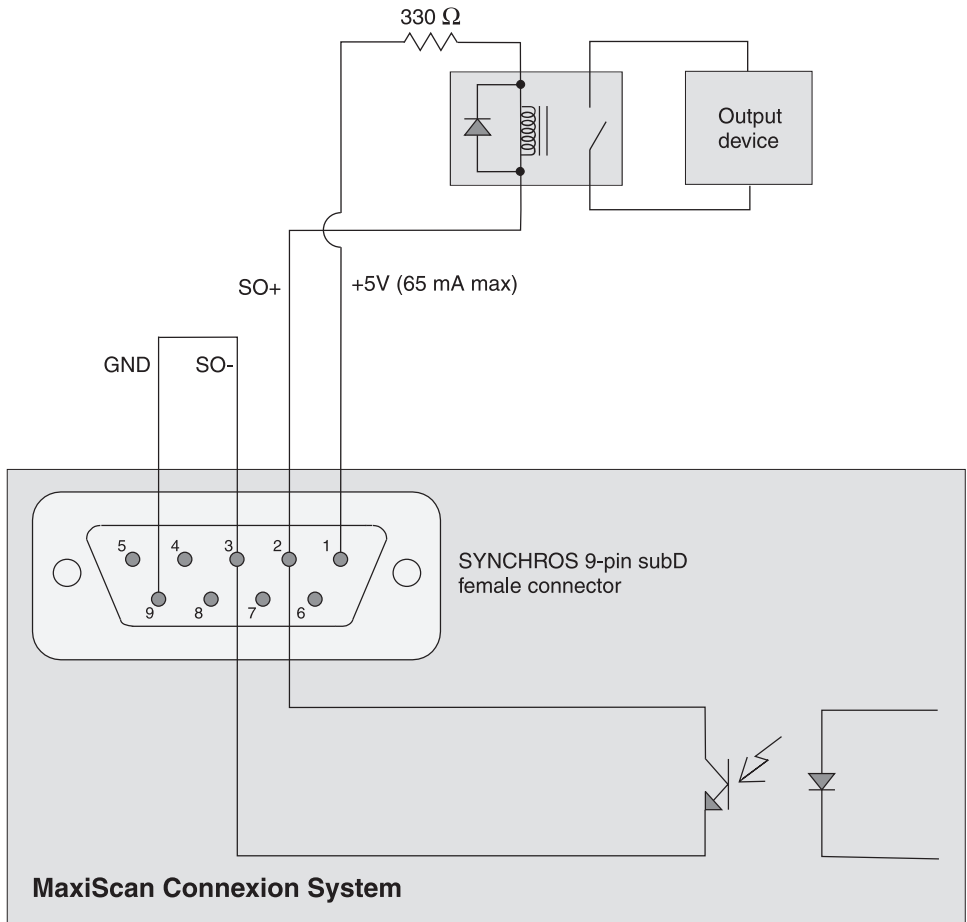
Output synchronization—MCS connection unit—example 2

PLC-controlled output device

Current provided by the external input device must be limited to 20 mA max (15 mA is a good average value).

SYNCHROS 9-pin subD female connector

MaxiScan Connexion System
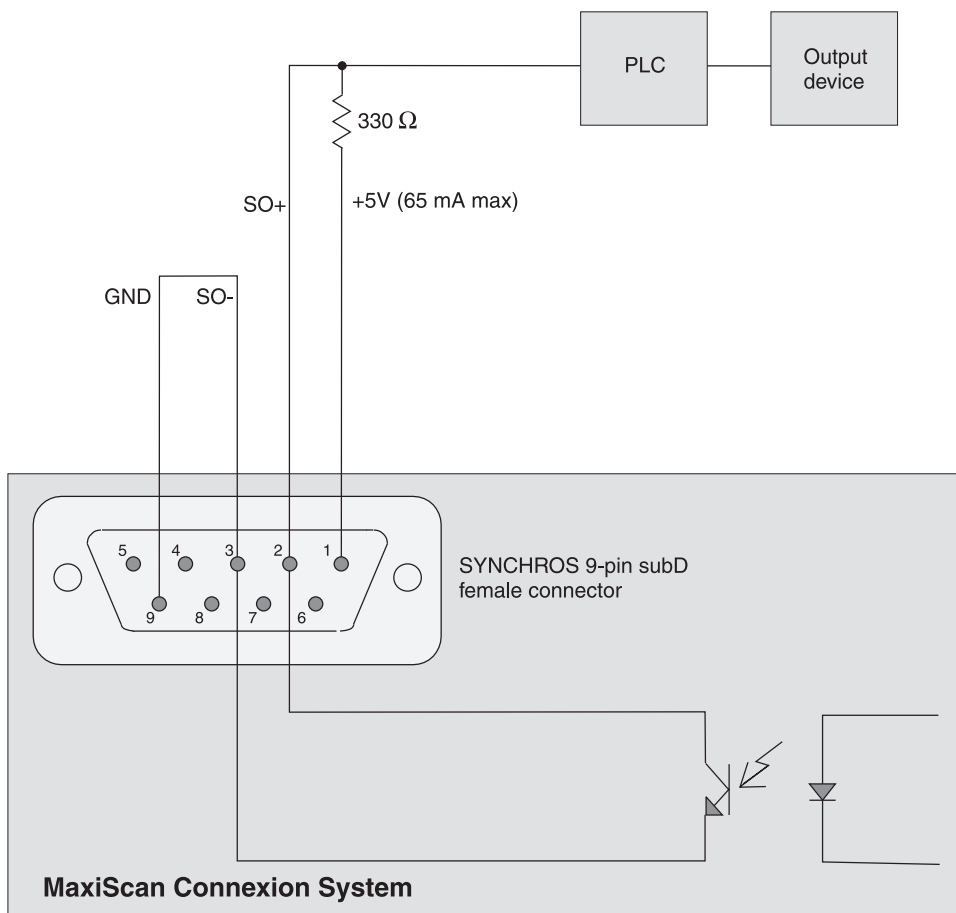
5 Setup

There are three ways to set up your MaxiScan 3300:

- Online setup with EasySet

- Offline setup

- Online setup with slave mode commands

EasySet System configuration software is the easiest way to set up your MaxiScan 3300. You can download your custom settings directly to the MaxiScan 3300 or print out and scan the corresponding configuration bar codes.

EasySet is provided on the Intermec CD-ROM. Software updates are available on the Web at:
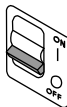
                    http://datacapture.intermec.com

Current EasySet software versions are compatible with Windows 95, 98, and NT environments.
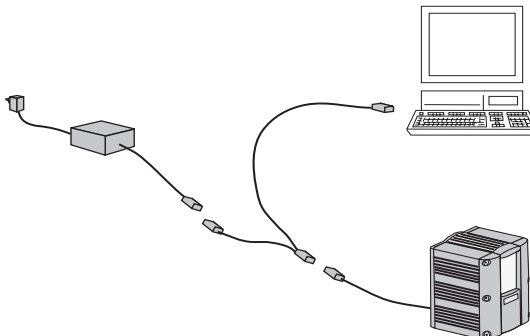
The *Basic offline setup* section (page37) contains the bar codes you need to set up your MaxiScan 3300 in a basic configuration.

Online setup with EasySet

❶ **System power OFF**

❷ **Connect RS-232 C cable**

For part numbers
see Section 8 —
Accessories

❸ **MaxiScan power ON**

❹ **System power ON**
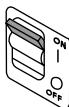
❺ **Start EasySet and select**
  MaxiScan 3300 **from the**
  menu Product > Select

❻ **Click on "Communication > Setup" in the menu bar, and select**
  "Automatic setup" in order to set the COM port parameters

Refer to the EasySet online help for a detailed explanation of how to use the EasySet
System configuration software. You can also set up your MaxiScan 3300 offline with
bar codes printed from EasySet.

Basic offline setup

You can set up your MaxiScan 3300 in a basic configuration by scanning configuration bar codes. Follow the instructions in this section.

Basic setup does not include all the configuration possibilities of the MaxiScan. See Section 2—*Installation* to see other possible configurations. For a complete setup, use the EasySet System configuration software (see the preceding section *Online setup with EasySet*).
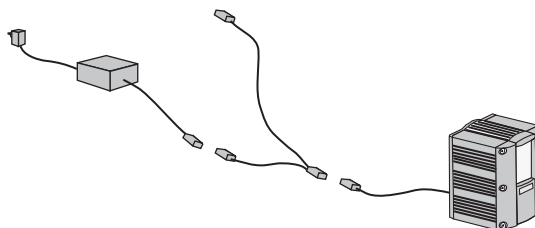
Continuous configuration mode

By default, the MaxiScan remains configurable for one minute whenever it is connected to a power supply. Every time a configuration bar code is read, the configuration timeout recycles for another minute.

If this default behavior suits you, then you can skip Step 3 below.

If you want to deactivate the timeout, read the *Continuous configuration mode* bar code in Step 3 below. Once you have completed configuring your MaxiScan, you should go back to Step 3 and read the *Configuration inhibit after 1 minute* bar code in order to reactivate the one-minute timeout. The one-minute timeout provides optimal scanning performance.

❶ Connect the MaxiScan power supply (or disconnect and reconnect if already connected)

For part numbers see Section 8 — Accessories

⚠ When in the default one minute timeout mode, you must read a bar code at least once every 60 seconds.

❷ Reset factory defaults (optional)

❸ To deactivate the default one minute timeout, read the *Continuous configuration mode* bar code. When your configuration is complete, read the *Configuration inhibit after 1 minute* bar code.

Continuous configuration mode

||| || ||| ||| ||| ||| |||

Configuration inhibit after 1 minute

||| || |||||| |||| |||

❹ **Select interface**

RS-232 C

||| ||| | | ||||||| | || |||||| |||
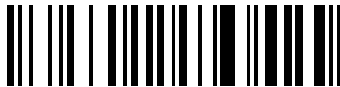
❺ **Customize parameters**

(*) = default value (9600 baud, 7 data bits, even parity, 2 stop bits, postamble = CR + LF)

9600 baud (*)

19200 baud
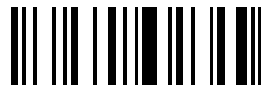
7 data bits (*)

8 data bits

Odd parity

Even parity (*)

No parity

Postamble = Carriage Return

Postamble = none

Postamble = Carriage Return + Line Feed (*)

❻ **Disable all symbologies**

❼ **Select symbologies**

Code 39

UPC-A, UPC-E, EAN-8, EAN-13
(UPC-A -> EAN-13)

Code 128 / EAN 128

UPC-A, UPC-E, EAN-8, EAN-13
(UPC-A -> UPC-A)

❽ **Test symbologies**

Code 39

CODE-39

EAN 13

1234567890128

Code 128

CODE-128

UPC-A

0 01234 50000 7

Online setup with slave mode commands

You can control or configure your MaxiScan 3300 directly from the terminal host system by using the permanently active slave mode. In this mode all setup commands can be sent directly to the MaxiScan 3300 through the RS-232 input port. To create a list of all the data strings you need, you must use the EasySet System configuration software provided on the CD-ROM.

Using EasySet to create a data strings list

1. Launch EasySet and select the MaxiScan 3300 icon by clicking on the menu item "Product > Select"
2. Make sure the "View data string" mode is active (checked) by clicking on the menu item "View > Datastrings"
3. Choose the bar codes you need for your online setup and add them to the *reader setup sheet* (see EasySet online help for more details on how to do this). The setup sheet will display bar codes and corresponding data strings
4. Save your *reader setup sheet* or print it out by clicking on the menu item "File > Save / Save as / Print"

Once the *reader setup sheet* is ready, you can perform your online setup by either reading the bar codes on the sheet or manually entering the data strings.

Example: command *Code 39 - active*

\41\4C\60

The literal string to send is (without the quotes):

"\"   "4"   "1"   "\"   "4"   "C"   "\"   "6"   "0"

Note: if you send the *Display data string mode* command (\46\4E\60):
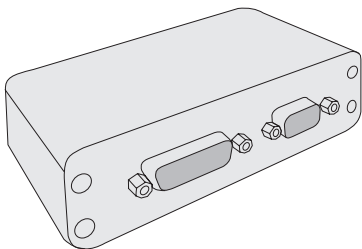
Display data string mode

the MaxiScan 3300 will enter and **remain** in the display data string mode until you disconnect and reconnect the power supply.

6 MaxiScan Connexion System (optional)

The MaxiScan Connexion System (MCS) can be used to connect the MaxiScan 3300 to a host computer, power supply and synchronization device. The MCS is an optional accessory.
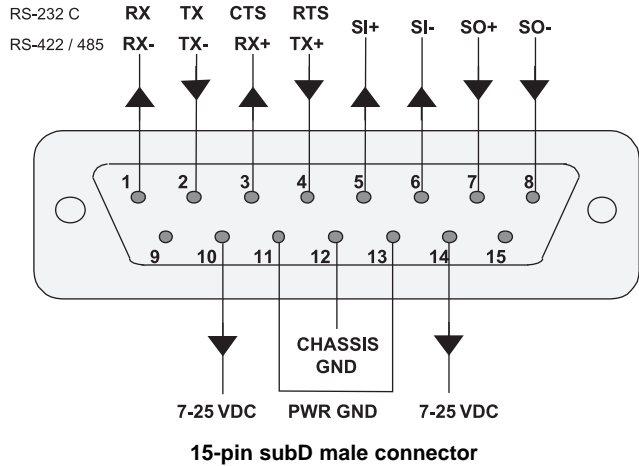
For part numbers see Section 8 — Accessories

Technical characteristics

MCS Port	Type	Connect to	Remarks
Scanner	15-pin subD male	MaxiScan 3300	
Power supply	9-pin subD male	External power supply	7 to 25 V 10 Watt full-wave rectified unregulated power
Host	15-pin subD female	Host computer	· RS-232 C (standard configuration) · RS-422 · RS-485 · Passive Current Loop Each host system interface is software programmable and requires a different cable
Synchros	9-pin subD female	I/O synchronization cable	Input synchronization - reading can be triggered by an external cell, automatic machine, electrical control device Output synchronization - an external device (switch, alarm, indicator light) can be triggered by a good read or unsuccessful read as required

Scanner port pinout

RS-232 C	**RX**	**TX**	**CTS**	**RTS**	**SI+**	**SI-**	**SO+**	**SO-**
RS-422 / 485	**RX-**	**TX-**	**RX+**	**TX+**				

15-pin subD male connector

Pin	Function
1	Receive data (RS-232 C) / RX- (RS-422 / 485)
2	Transmit data (RS-232 C) / TX- (RS-422 / 485)
3	Clear to send (RS-232 C) / RX+ (RS-422 / 485)
4	Request to send (RS-232 C) / TX+ (RS-422 / 485)
5	Positive synchronization input (SI+)
6	Negative synchronization input (SI-)
7	Positive synchronization output (SO+)
8	Negative synchronization output (SO-)
9	Not connected
10	Power in (7 to 25 VDC 10 Watt unregulated)
11	Power ground
12	Shield
13	Power ground
14	Power in (7 to 25 VDC 10 Watt unregulated)
15	Not connected

Power supply 7 to 25V port pinout

**7-25 VDC
(2 wires)**

**GND
(2 wires)**
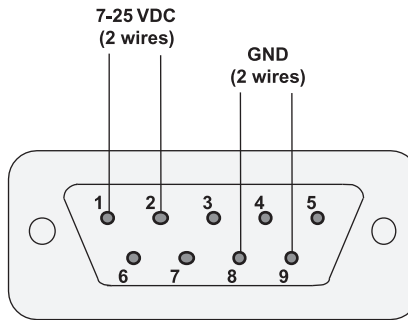
9-pin subD male connector

Pin	Function
1	Power in (7 to 25 VDC 10 Watt unregulated)
2	Power in (7 to 25 VDC 10 Watt unregulated)
3	Not connected
4	Not connected
5	Not connected
6	Not connected
7	Not connected
8	Power ground
9	Power ground

Host port (RS-232 C) pinout
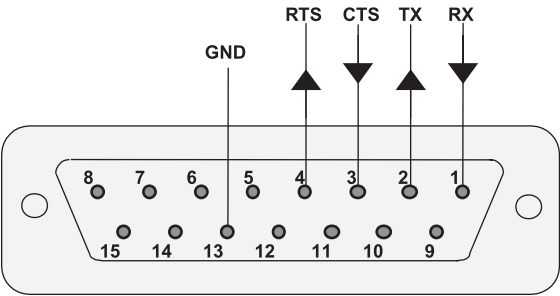
MCS 15-pin subD female connector

Pin	Function
1	Receive data (RS-232 C)
2	Transmit data (RS-232 C)
3	Clear to send (RS-232 C)
4	Request to send (RS-232 C)
5	Not connected
6	Not connected
7	Not connected
8	Not connected
9	Not connected
10	Reserved Current Loop
11	Reserved Current Loop
12	Reserved Current Loop
13	Signal ground (RS-232 C)
14	Reserved Current Loop
15	Reserved Current Loop

Host port (RS-422) pinout
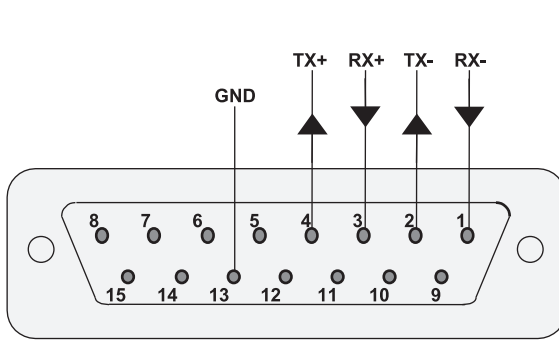
RS-422: install resistor = user cable characteristic impedance between pins 1 and 3

TX+   RX+   TX-   RX-

GND

MCS 15-pin subD female connector
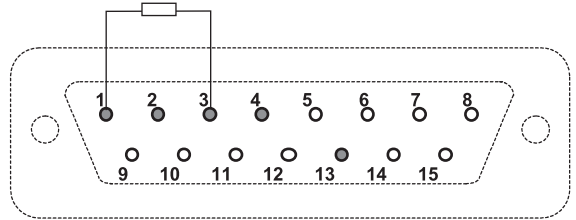
host 15-pin subD male connector

Pin	Function
1	Receive data RX- (RS-422)
2	Transmit data TX- (RS-422)
3	Receive data RX+ (RS-422)
4	Transmit data TX+ (RS-422)
5	Not connected
6	Not connected
7	Not connected
8	Not connected
9	Not connected
10	Reserved Current Loop
11	Reserved Current Loop
12	Reserved Current Loop
13	Signal ground (RS-422)
14	Reserved Current Loop
15	Reserved Current Loop

Host port (RS-485) pinout
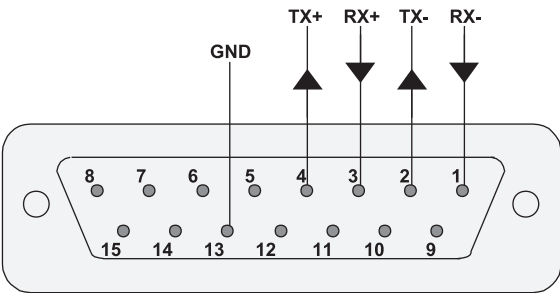
RS-485: connect pins 1 and 2 and connect pins 3 and 4. Install resistor = user cable characteristic impedance between pins 1 and 3
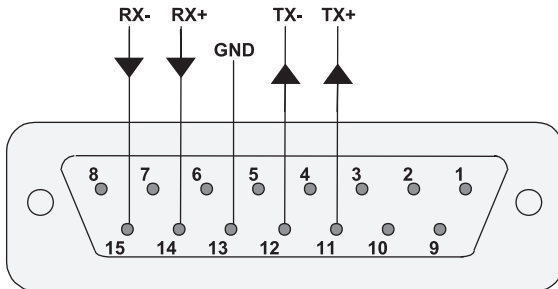
MCS 15-pin subD female connector

host 15-pin subD male connector

Pin	Function
1	Receive / transmit data RX- / TX- (RS-485)
2	Receive / transmit data RX- / TX- (RS-485)
3	Receive / transmit data RX+ / TX+ (RS-485)
4	Receive / transmit data RX+ / TX+ (RS-485)
5	Not connected
6	Not connected
7	Not connected
8	Not connected
9	Not connected
10	Reserved Current Loop
11	Reserved Current Loop
12	Reserved Current Loop
13	Signal ground (RS-485)
14	Reserved Current Loop
15	Reserved Current Loop

Host port passive current loop pinout

Current Loop: connect pins 1 and 10

host 15-pin subD male connector
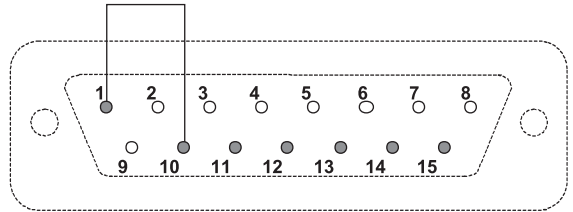
MCS 15-pin subD female connector

Pin	Function
1	Reserved
2	Reserved RS-232 C / RS-422 / 485
3	Reserved RS-232 C / RS-422 / 485
4	Reserved RS-232 C / RS-422 / 485
5	Not connected
6	Not connected
7	Not connected
8	Not connected
9	Not connected
10	Reserved
11	TX+ (Current Loop)
12	TX- (Current Loop)
13	Signal ground (Current Loop)
14	RX+ (Current Loop)
15	RX- (Current Loop)

Synchros port pinout

In all cases, the synchronization current provided by the external input/output device must be limited to 20 mA maximum (15 mA is a good average value).
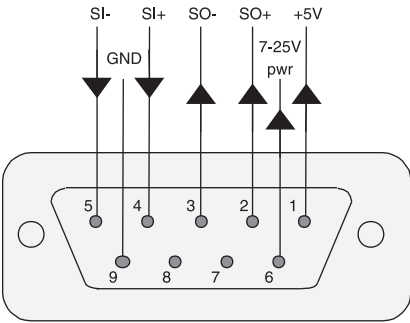
9-pin subD female connector

Pin	Function
1	+5 VDC out (65 mA max)
2	Positive synchronization output (SO+) - 20 mA max
3	Negative synchronization output (SO-) - 20 mA max
4	Positive synchronization input (SI+) - 20 mA max
5	Negative synchronization input (SI-) - 20 mA max
6	7-25 VDC 10 Watt
7	Not connected
8	Not connected
9	Power ground

7 Troubleshooting

This section describes things you can try if you have problems with your MaxiScan 3300 during power-up, configuration and normal operation.

If you can not solve the problem yourself, please contact your Intermec representative.

Before you contact your Intermec representative

Go through the checklists below if you have any of the following problems:

- no LEDs
- no beeps
- error beeps
- no transmission
- incorrect transmission

Setup problems—Checklist

❑ system connected up correctly

❑ system switched on

❑ correct power-up beep indication—2 beeps

❑ first and subsequent configuration bar codes are read before the end of the default one minute configuration timeout. See *Basic offline setup* in Section 5—*Setup* for more information

Reading problems—Checklist

❑ correct symbologies selected for the bar codes you are trying to read

❑ symbologies you read are available for your MaxiScan 3300

❑ all unnecessary symbologies disabled

❑ continuous configuration mode disabled (configuration inhibit after 1 minute selected)

❑ barcode length compatible with minimum / fixed length parameter settings of MaxiScan 3300

❑ MaxiScan 3300 configured for check digit and no check digit present in code

Transmission problems—Checklist

❏ correct data transmission settings selected

❏ inter-character delay value required if transmitted data incomplete or incorrect

General reset of the MaxiScan 3300

If you do not find a solution after checking the above points, you can try a general reset of the MaxiScan 3300.

Reset Factory Defaults resets all the MaxiScan 3300 operating parameters to their factory default settings:

• default RS-232 C data transmission settings
• default symbologies and symbology settings
• default MaxiScan 3300 operating settings: scan patterns, contrast level, resolution adjustment (video channel selection)

After a general reset, you will have to re-enter any custom settings if applicable:

1. Disconnect the MaxiScan 3300 power supply
2. Prepare the MaxiScan 3300 for online setup–connect the standard RS-232 C cable between the HOST port of the MaxiScan Connexion System and the serial port of your PC if it is not already connected
3. Position the Reset Factory Defaults code at a good reading distance in front of the MaxiScan 3300, reconnect the MaxiScan 3300 power supply, and read the code:

Reset Factory Defaults
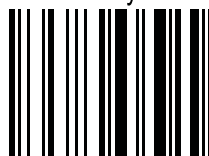
4. Start up the EasySet System configuration software
5. Use EasySet System to download your complete setup to the MaxiScan 3300 (see Section 5—*Setup*)

If you still need help

Contact your Intermec representative with full details of the problem.

8 Technical characteristics

Models	MaxiScan 3300 ST	Standard model
	MaxiScan 3300 HR	High resolution
	Accessories	- MaxiScan Connection System - Mains power supply adapter (15 VDC, 0.65 A, 10 Watt full-wave rectified unregulated) - Adjustable stand
Interface	Host system interfaces	- RS-232 C (standard configuration) - RS-422 - RS-485 - Current loop - passive type (requires MaxiScan Connection System)
	I/O synchronization hardware software	 - input sync from external device (opto-switch, ...) - output sync to external device (conveyor gate switch, ...) - input sync from host system - output sync to host system
Decoding	Symbologies	Codabar, Codablock, Code 39, Code 93, Code 128, MSI Code, Plessey Code, EAN/UPC (including add-on 2-5), Interleaved 2 of 5, Matrix 2 of 5, Standard / Industrial 2 of 5
	Code reconstruction	- Optional for EAN-13, UPC-A - Automatic with 1 fixed length selected for Code 39, CIP 128, Codabar CLSI, MSI Code, Plessey Code
	Decoding rate	Real-time with scanning rate if only one or two symbologies are selected
	Other decoding features	- Multicode reading - Code sorting - Autodiscrimination of symbologies
Scan performance	Scan rate	400 to 700 scans/second 450 scans/second at 40° scan angle (default)
	Scan angle (width)	45° ± 4°
	Sweep angle (raster height)	Adjustable increments to 30° ± 4°
	Depth of field	See the *Reading distance* section below
	Pitch	± 70°

|	Skew	± 40°
	Print contrast ratio	25%
	Minimum resolution	ST: 0.19 mm (7 mil) HR: 0.08 mm (3 mil)
Optical characteristics	Light source	5 mW long-life red laser diode
	Wavelength	660 nm
	Laser class	US CDRH Class II, IEC Class 2
Electrical characteristics	Power supply voltage	7 to 25 VDC full-wave rectified unregulated
	Power requirements	< 3.5 Watt normal operation (higher peaks at power-up)
Physical characteristics	Width x depth x height	82 x 75 x 100 mm (3.2 x 2.9 x 3.9")
	Maximum weight without cord	550 g (19.4 oz)
	Case	Epoxy-coated aluminium
	Mounting	metric screw threads under case - can be mounted in any position
	Connector	15-pin subD
Environmental specifications	Operating temperature	0° to 50° C (32° to 122° F) Note: use input sync device for temperatures > 40° C
	Storage temperature	-40° to 70° C (-40° to 158° F)
	Sealing standards (dust, orrosive chemicals)	IP65 / Nema 12
	Relative humidity	5% to 95% non-condensing
	Maximum ambient lighting	4,000 lux on the code
	Electrostatic discharge	8 kV to any external surface
	Shock	IEC 68-2-27 Ea
	Vibration	IEC 68-2-6 Fc
	Sealing (dust etc.)	IP65 / Nema 12
	CE standards conformity	Emission: EN 50081-2 (1995), EN 55022 (1987) Class A Immunity: EN 50082-2 (1995) Safety: EN 60950 (1993) / IEC 950
	MTBF	20,000 hours according to operating conditions

User interface	Power on	red LED - 2 beeps
	Good read	1 green LED flash - 1 beep
	Configuration error	6 error beeps

Reading distance (MaxiScan 3300 ST)
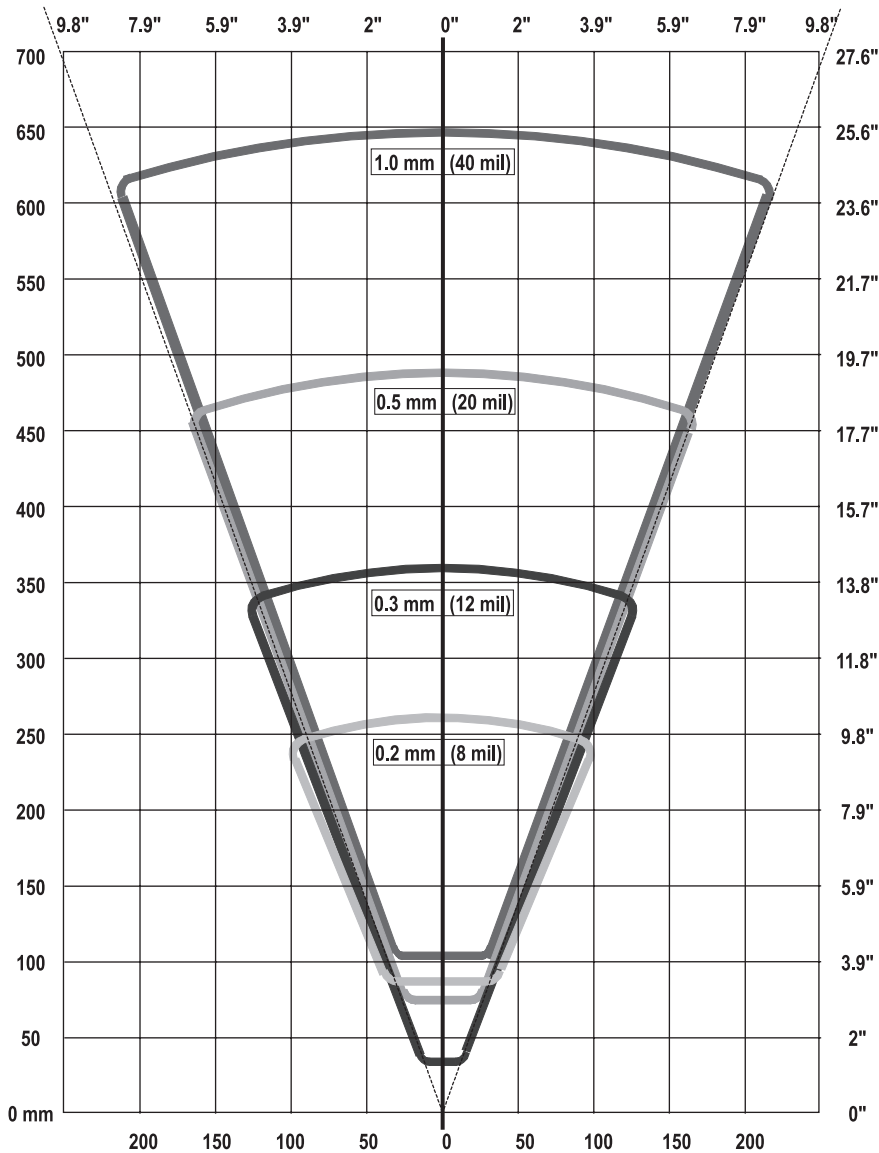
This chart shows the horizontal reading range for the MaxiScan 3300 ST. The values shown are for high-contrast Code 39 with a ratio of 1:3 and correspond to the product default settings. Increased performance is possible with specific configuration setups.

Reading distance (MaxiScan 3300 HR)
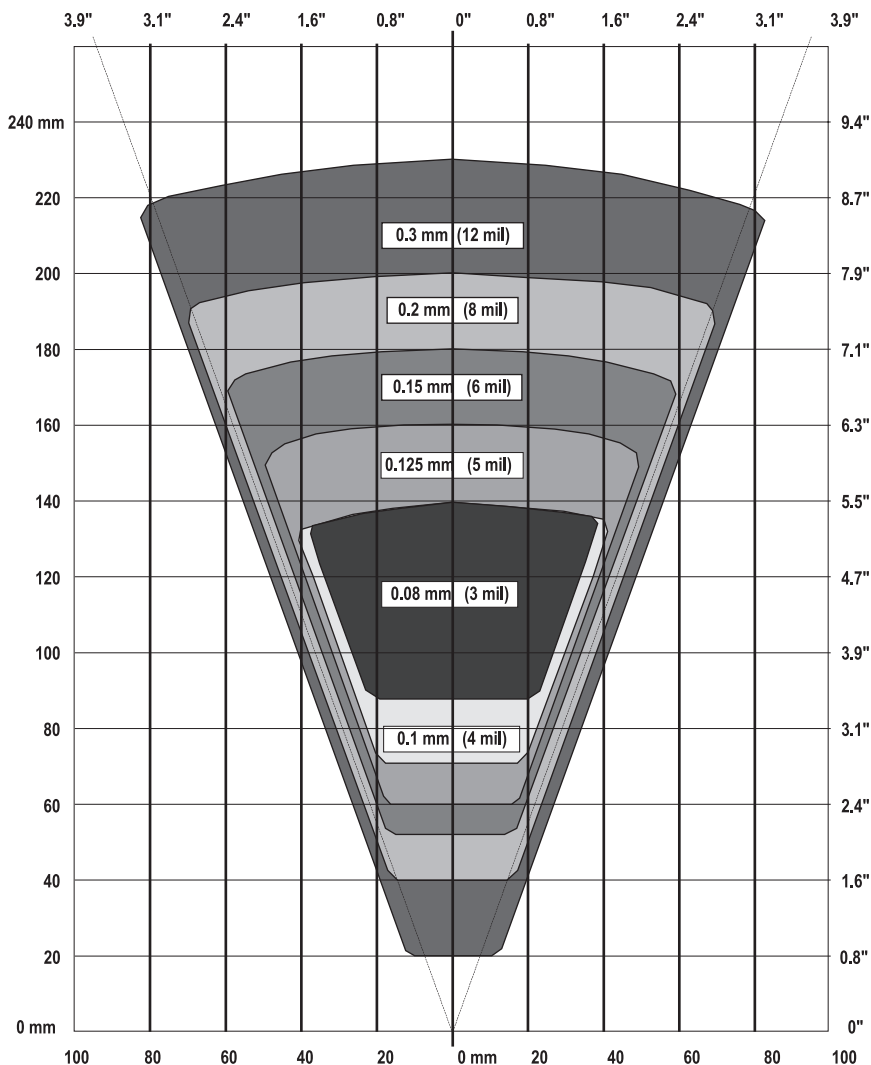
This chart shows the horizontal reading range for the MaxiScan 3300 HR for high density codes. The values shown are for high-contrast Code 39 with a ratio of 1:3 and correspond to the product default settings. Increased performance is possible with specific configuration setups.

Accessories

Cables	RS-232 "Y" cable to connect MaxiScan 3300 to host system or PC. Includes connection for power input and can be used to set up the MaxiScan 3300 with EasySet software	0-530062-02
	RS-232 "straight" cable to connect the MaxiScan Connection System unit to a host system or PC	0-530062-01
Power supply	(15 VDC, 0.65 A, 10 Watt full-wave rectified unregulated)	
	US	3-531029-08
	Europe (except UK)	0-531029-02
	UK	0-531029-04
Accessories	Adjustable raised stand	0-531029-05
	MaxiScan Connection System (MCS)	0-531029-06
	MaxiScan Connection System IP version	0-531029-07
	Optical sensor input synchro	3-500029-03
	MaxiScan 3010 network system (MNS)	3-500049-00
	MaxiScan 3010 Installation Guide	3-500049-01
	MaxiScan 3010 network cable - 1m	3-504039-00
	MaxiScan 3010 network cable - 3m	3-504039-01
	MaxiScan 3010 download cable	3-504039-02
	MaxiScan 3010 terminator	3-500029-01