FACTORY AUTOMATION

PROGRAMMING

SOFTWARE VisoSetup

PEPPERL+FUCHS
VISOLUX

VISOSETUP PROGRAMMING

To suit your specific application, the Standard Application program may be configured from a PC using the VisoSetup interface utility program shipped on the diskette with the VB12.

1. Code Setup Menu

The scanner can read most standard barcode types. In the Code Selection menu you can choose up to 6 codes.

You can read one of up to 6 selected codes during a reading phase, or multiple codes within the same reading phase.

1.1 Options For All Codes

Multi Label

The Multi Label parameter selects the decoding mode for the scanner.

Selection	Description
- Disabled:	Single-label decoding mode. In single label mode only one barcode can be read in each reading phase, however it can be determined automatically from up to 6 enabled codes. The scanner stops decoding as soon as a code is read. The result of this code will be produced according to the selections made for message format. If no code is read during the reading phase, the Global No Read message is produced.
- Enabled:	Multi-label decoding mode. In multi label mode the barcodes selected (up to 6), will all be read in the same reading phase. All the selected codes in the reading phase must be read. If the reading phase terminates before all the codes are read, a Global No Read message will be produced, unless it is disabled, in which case a Local No Read will be produced.

See also:
Local No Read Character
Global No Read Character

NOTE
In case of Multi Label, the codes will be distinguished EITHER by the parameters that are used to configure them, OR by the contents. If two (or more) codes have the same configuration parameters, the scanner will transmit two (or more) codes ONLY if the codes have different contents, otherwise the scanner will transmit only one code.

Decoding Safety

The Decoding Safety control verifies that an N number of decodes are performed with the same result before code reading is accepted as valid.

Selection	Description
1:	Control disabled
2 to 10:	N number of decodes

Decoding Severity Level

It may occur that some codes could produce either MISREADS or an excessive No Read Rate due to: poor print quality, damaged print, or an excessively pitched reading angle. Through the Decoding Severity Level parameter, these undesirable effects could be improved.

The severity level can be increased to avoid MISREADs.
A lower severity level could improve the Good Read Rate.

Selection	Description
1 to 5	1 = lowest severity level 5 = highest severity level

Default: 3

NOTE
Excessive increase or decrease of this value tends to produce the opposite effect.

Global No Read Character

This character will be sent if the scanner is unable to decode one or more barcodes in the reading phase.

Selection	Description
a character from NUL (00H) to ~ (7EH).	
Disabled (7FH).	the Local No Read characters of each code are used to signal the no read condition for each code independently from the others.

Default: CAN (18H).

NOTE
If enabled, it overrides the Local No Read characters and is sent if at least one of the expected codes is not read.

CAUTION
This character must not be disabled if single label mode is used otherwise an error will be produced.

1.2 Options For Each Code

Code Type

You can select up to 6 different codes in a wide range of symbologies. The following is the complete list of all the available code types:

2/5 INTERLEAVED	PLESSEY	EAN13 Add On 2	UPCE Add On 5
CODE 39	PHARMACODE	EAN8 Add On 2	EAN/UPC Without Add On
CODE 39 FULL ASCII	ALL EAN/UPC	UPCA Add On 2	EAN/UPC Add On 2
CODABAR	EAN13	UPCE Add On 2	EAN/UPC Add On 5
CODE 128	EAN8	EAN13 Add On 5	/UPC Add On
EAN 128	UPCA	EAN8 Add On 5	
CODE 93	UPCE	UPCA Add On 5	

Check Digit

The check digit control can be enabled to improve decoding safety: it is generally the last digit aligned to the right of the code and verifies the validity of the preceding digits.
The calculation technique and number of check digits depend on the code selected.
It is advised to enable the check digit whenever correct code identification is difficult.

NOTE
Code 128, EAN 128, EAN/UPC, Code 93 include check digits in their definitions: for these symbologies the Check Digit control is not allowed.

Check Digit Tx

This option allows the check digit to be included in the code transmitted.

It is effective ONLY if the check digit is enabled. Otherwise it is ignored.

NOTE
Check Digit Tx is effective ONLY for Code 2/5 Interleaved, Code 39, Codabar and Plessey.

Codabar Start/Stop Tx

The Start/stop character transmission can be Enabled or Disabled by selecting this parameter.

NOTE
This parameter is available only if the Codabar code type is selected.

Code Length

The code length (in number of characters) can be specified in order to be accepted for decoding.

Selection	Description
Variable:	all the possible code lengths are accepted.
Fixed from 1 to 48:	only one code length is accepted.

NOTE
For EAN and UPC code families the Code Length is not selectable. A fixed code length selection is advised whenever possible.

NOTE
For the Plessey code type the Code Length must be calculated taking into consideration the two check digits (enabled or not) which are not usually printed.

Minimum And Maximum Code Length

Codes, whose lengths are within the range of values specified by these parameters, will be accepted for decoding.

Selection	Description
- 1 to 48	Code length in number of characters.

NOTE
The value set as maximum acceptable code length must always be greater than the value set for the minimum code length. These parameters are configurable when the Code Length is set as Variable.

Bar Count

The Bar Count allows you to further specify the number of elements in the read code for Code 128 and EAN 128.

For these codes, the same number of barcode elements (bars + spaces) can be associated with a different number of characters.

Selection	Description
- Variable.	To select the correct number of characters, set Code Length to t the desired fixed value and Bar Count to Variable.
- 25 to 307 in steps of 6.	Fixed number of characters. To select a particular barcode length in elements, set Bar Count to the desired fixed value and Code Length to Variable.

See also:
Code Length

Code Position in Scan Line

The codes can be identified by their position with respect to the other codes in the same scan line.

Selection	Description
Variable	The code can be found in any position in a scan line.
between 1 and 15	Fixed code position. The code must be the first (second, third, ... or fifteenth) in a scan line.

Example:
6 barcode labels are on each box of product A that passes the device for barcode reading. Only 4 of these barcodes need to be read. Multi Label barcode reading is enabled.

i)   For barcodes in a fixed order, that is each barcode is always in the same position, one solution might be:
Code 1 through 2 in position 1 through 2 respectively
Code 3 in position 4 and Code 4 in position 6
In this case the barcodes in position 3 and 5 are not read.

ii)   For barcodes in random order, that is each barcode may be in a different position from box to box:
define Code 1 through 4 as variable.
In this case 2 of the 6 barcodes will not be read and the position of the 4 barcodes that are read can change from box to box.

NOTE
When using this option it is strongly advised to always specify the total number of codes present in the scan line.

See also:
Total Codes in Scan Line.

Total Codes in Scan Line

This parameter defines the total number of codes that must be present in the scan line where the code has to be read.

Selection	Description
Variable	The code can be found in a scan line with any number of codes (up to 15)
between 1 and 15	Fixed value: the code can be found in a scan line with a total of 1 (2, 3 ... 15) codes.

NOTE
Refer to the example in Code Position in Scan Line.

Matching Strings

A code can be identified by its content. A pattern matching string of up to four characters is programmable for each code.

If the code to be read does not match the defined string, a No Read character will be returned.
Select one character for each matching string.

Selection	Description
- a character from NUL (00H) to ~ (7EH)	
- Any Character (80H)	
- Any String (81H)	Any character or any sequence of characters can replace the matching string when attempting the match
Disabled (7FH).	

Example:
To match any code starting with an A use the matching string:
A   ANY STRING
To match a code of 3 characters ending with an S use the matching string:
ANY CHAR   ANY CHAR   S
To match any code starting with C O D , use the matching string:
C O D ANY STRING
To match a code of 4 characters equal to C O D E , use the matching string:
C O D E

See also:
No Read

Local No Read Character

This option is useful when one or more codes are not read in the reading phase.
You can define the Local No Read character to use for each code.

Selection	Description
- a character from NUL (00H) to ~ (7EH).	

Default: CAN (18H).

NOTE
The Local No Read character cannot be disabled. However, it is overridden by the Global No Read character if enabled.

See also:
No Read

2. Main Interface Menu

2.1 Configuration

The following parameters must be selected under Configuration.

For specific information regarding configuration for different layout types, see the Guide To Rapid Configuration.

Baud Rate

Baud rate is the transmission speed [bit/s] in a communication line.

Data Transmission

Selection	Description
Enabled	All data (code messages) are sent on the main interface independently from the RS232 auxiliary interface selections.
Disabled	No data is sent on the main interface.

2.2 MUX32 Protocol

As MUX32 is the operating protocol, the Multidrop Address parameter must be set.

Refer to your local P+F distributor for more information about the MUX32 protocol.

Multidrop Address

When using the scanner in a Multiplexer layout, a Multidrop address must be selected.

For RS485 Master/Slave layouts the multidrop address must be selected for the slave scanners.

Selection	Description
from 0 to 31	Multidrop Address of the slave scanner in a multiplexer layout.
from 0 to 4	Multidrop Address of the slave scanner in an RS485 Master/Slave layout.

3. Auxiliary Interface Menu

The following parameters must be selected for the RS232 auxiliary interface:

Communication Mode

Selection	Description
Standard	No data is transmitted on the auxiliary interface. ONLY configuration through Host Mode can be accomplished through the RS232 auxiliary serial interface.
Local Echo	Data is transmitted on the RS232 auxiliary interface independently from the main interface selection. Host Mode programming can also be accomplished in this mode. For the description of this layout refer to the scanner Installation manual under "Typical Layouts".

Baud Rate

Baud rate is the transmission speed [bit/s] in a communication line.

Parity

Parity is a parameter indicating the presence of a control bit in the communication protocol frame.

Data Bits

Data Bits is a parameter indicating the number of bits composing the data packet of the communication protocol frame.

Stop Bits

Stop Bits is a parameter indicating the number of stop bits in the data packet of the communication protocol frame.

Handshake

Handshake is a communication control used to protect against data loss.

Selection	Description
None	No Handshake
Xon/Xoff protocol	Software Handshake

4. Output Lines Menu

4.1 Output Configuration

Two Output Lines are provided. Both can be programmed in terms of Event, Idle State and Mode.

Event

The event which activates the output line can be chosen among the following selections. One or more lines can be configured to activate in response of the same event.

Selection	Description
No read	The No Read event occurs whenever a code cannot be read or decoded. In this case, the output line(s) will be driven as well as the selected Global or Local No Read Character(s) being sent on the serial interface.
Right	The Right event occurs whenever a code is successfully decoded. In this case, the output line(s) will be driven whenever a barcode is read successfully in single-label mode or all the barcodes in a scan line or reading phase are read successfully for multi-label mode.
Wrong	The Wrong event occurs when a code is successfully decoded but does not match the Verifier code. Therefore it is meaningful only if the Verifier mode is enabled. In this case, the output line (or lines) will be driven whenever a code is successfully decoded but does not match the Verifier code.
Wrong/No Read	The output line(s) will be driven whenever a Wrong or a No Read event occurs, therefore it is meaningful only if the Verifier mode is enabled.

Idle State

This parameter allows to select the Idle/Active state of the output.

Each output can be represented with a NPN transistor; this transistor acts like a switch: so, when the transistor is OFF, it acts like an OPEN switch. On the contrary, when the transistor is ON, it acts like a CLOSED switch.

Selection	Description
Normally open	The idle state of the output line is open, that is, the NPN transistor is OFF (like an open switch).When the output is activated, the transistor goes ON (like a closed switch).
Normally closed	The idle state of the output line is closed, that is, the NPN transistor is ON (like a closed switch).When the output is activated, the transistor goes OFF (like an open switch).

NOTE
Refer to the Installation Manual for hardware setup of the outputs.

Output Mode

Selection	Description
Disabled	The line is forced to the idle state. Level When the reading condition programmed for the output is satisfied, the output leaves the idle state and is activated. The line returns to the idle state at the start of the next reading phase.
Pulse	When the reading condition programmed for the output is satisfied, the output leaves the idle state and a pulse is generated with programmable duration.

4.2 Output Lines Activation

Output Lines Active

Selection	Description
On Decoding	the output line is activated as soon as the code has been decoded.
After Reading Phase Off	the output line is activated after the reading phase is terminated.

5. Data Format Menu

5.1 Data Format

The Data Format menu allows to set the parameters concerning the general functions relative to the message format.

The general message format is:
<HEADERS> <DATA> <TERMINATORS>

where:

For Multi-Label disabled (Single-Label reading):

<DATA> =   <DATA PACKET>

For Multi-Label enabled:

<DATA> =   <DATA PACKET #1> <DPS> <DATA PACKET #2> <DPS> ... <DATA PACKET #n>

<DATA PACKET>	= [<CI> <CODE FIELD>]
<CI>	= Code Identifier
<CODE FIELD>	=[<CODE> <FC>] or [<FC> <CODE>] depending on Data Justification
<CODE>	= Barcode
<FC>	= Fill Character
<DPS>	= Data Packet Separator(s)
n	= up to 6

Headers

Up to 4 single character headers can be defined and transmitted as a block preceding the barcode(s).

Selection   Description

a character from NUL (00H) to ~ (7EH)

Disabled (7FH)

Default: STX (02H)   for the first header
               Disabled (7FH)   for the other headers

Code Field Length

Defines the length in characters of the message relative to each <CODE FIELD> as described in Data Format. The <CODE FIELD>is comprised of the Barcode and Fill Characters.

Selection   Description

Variable   The code is transmitted as it is read. There are no Fill Characters. In case of a No Read condition, only one No Read Character (Global or Local) is sent.

Code Length   Selecting this value is meaningful when the Multi Label reading mode is enabled and the Global No Read Character is disabled. The following no-read situations can occur:
1)   When the expected code has a fixed Code Length, or is a fixed length code by definition (i.e. EAN 8):the Code Field is filled with a number of Local No Read Characters corresponding to the fixed length of the code that should have been read. See Example.
2)   When the expected code has a variable Code Length, or a code family with mixed code lengths has been set (i.e. ALL EAN/UPC):the Code Field is filled with only one Local No Read Character as in Variable.

1 to 50   The code is either truncated if longer than the fixed value or filled with a Fill Character if shorter. In case of a No Read condition, only one No Read Character (Global or Local) is sent plus the relative number of Fill Characters.

Example:
The scanner must read 2 codes, respectively of 6 and 10 digits. The Local No Read Character for both codes is set to '0'. The Code Field Separator in the Data format menu is set to ' '.The scanner will send:
123456 1234567890 If both codes are read.
123456 0000000000
or   If only one code is read.
000000 1234567890
000000 0000000000 If no code is read.

NOTE
The Code Field Length parameter is valid for all codes in the same manner.
This option also affects the length of the No Read and Reader Failure messages.

Data Justification

Selection   Description

Left   The code is aligned to the Left of the field.

Right   The code is aligned to the Right of the field.

Example:
For barcode "12345" with Fill Character "-" (2DH) and Code Field Length of 10 characters, the result of the different alignment will be:
Left aligned = ...< Code Identifier ><12345-----> ...
Right aligned =   ...< Code Identifier ><-----12345> ...

NOTE
The Data Justification parameter is valid for all codes in the same manner.
The Data Justification parameter is configurable only if a fixed Code Field Length has been selected.

Fill Character

The Fill Character is inserted into each character position of a code field that has more characters (as defined in Code Field Length) than exist in the barcode read.

Selection   Description

a character from NUL (00H) to ~ (7EH).

Default: SPACE (20H).

Example:
For barcode "12345" with Fill Character "-" (2DH) and Code Field Length of 10 characters, the result of the different alignment will be:
Left aligned = ...< Code Identifier ><12345-----> ...
Right aligned =   ...< Code Identifier ><-----12345> ...

NOTE
The Fill Character parameter is valid for all codes in the same manner.
The Fill Character parameter is configurable only if a fixed Code Field Length has been selected.

Reader Failure Character

The Reader Failure Character is used to signal a failure of the reading device.

Selection   Description

a character from NUL (00H) to ~ (7EH)

Default: BEL (07H).

Example:
... < Header > < Reader Failure Character > <Terminator>

NOTE
This character cannot be disabled.

Data Packet Separators

The Data Packet Separators (<DPS>)are used to separate <DATA PACKETS> in the
reading phase (Multi-Label enabled). If selected, they occur between each <DATA PACKET>
as described in Data Format.
You can use one or two characters to define the <DPS>.

Selection   Description

a character from NUL (00H) to ~ (7EH).

Disabled (7FH).

Default:
CR (0DH).   for the first data packet separator
LF (0AH).   for the second data packet separator

Example:
Data Packet Separator #1 is defined as CR (0DH) and Data Packet Separator #2 is defined
as LF (0AH).Both separators will be sent together.... <DATA PACKET #1> <CRLF> <DATA
PACKET #2> <CRLF> etc. ...

Terminators

Up to 4 single character terminators can be defined and transmitted as a block following the
barcode(s).

Selection   Description

a character from NUL (00H) to ~ (7EH)

Disabled (7FH)

Default:
CR (0DH).   for the first terminator
LF (0AH).   for the second terminator
Disabled (7FH)   for the remaining two terminators

Reading Phase Error Character

The Reading Phase Error Character signals an incorrect management of the External Trigger
inputs detected by the scanner.

Selection   Description

a character from NUL (00H) to ~ (7EH)   the reading phase error character is positioned
                                             after the Info Field Separators.

Disabled (7FH)

Default: Disabled

Info Field Separators

Info Field Separators are transmitted between different fields of a message to separate them.
In the Standard Application Program, they are transmitted between the <DATA PACKET>
and the Reading Phase Error Character (if enabled).
You can use one or two characters to define the Info Field Separator.

Selection   Description

a character from NUL (00H) to ~ (7EH).

Disabled (7FH).

Default:
CR (0DH).   for the first separator
LF (0AH).   for the second separator

Example:
Info Field Separator #1 is defined as CR (0DH) and Info Field Separator #2 is defined as LF
(0AH).Both separators will be sent together.... <DATA PACKET> <CRLF> <READING
PHASE ERROR CHARACTER> <TERMINATOR >

Code Identifier Tx

A Code Identifier String is included in the output message.

Selection   Description

Enabled   The code identifier string is inserted before the code.

Disabled

Example:
... < Code Identifier > < CODE 1 > < Code Field Separator > ...

See also:
Code Identifier Characters

5.2 Data Transmission

The Data Transmission sub-menu allows to set the parameters concerning the message format transmission mode.

Header Tx Start

The Header Tx Start parameter selects the transmission of the header after reading phase ON or with the Data.

Data Tx Start

The Data Tx Start parameter selects the transmission of the output message on decoding or after reading phase OFF.

5.3 Code Identifiers

Code Identifier Characters

The Code Identifier is a 3-character ASCII string associated with the code and is useful when decoding several codes.

Selection	Description
a character from NUL (00H) to ~ (7EH)	
Disabled (7FH)	a shorter string is defined

Default:

CODE	CODE IDENTIFYING CHARACTERS
2/5INTERLEAVED	] I 0
CODE 39	] A 0
CODE 39 FULL ASCII	] A 4
CODABAR	] F 0
CODE 128	] C 0
EAN 128	] C 1
CODE 93	] G 0
PLESSEY	] P 0
EAN 13	] E 0
EAN 8	] E 4
UPCA	] E 0
UPCE	] E 7
EAN13 ADD-ON 2	] E 1
EAN8 ADD-ON 2	] E 5
UPCA ADD-ON 2	] E 1
UPCE ADD-ON 2	] E 8
EAN13 ADD-ON 5	] E 2
EAN8 ADD-ON 5	] E 6
UPCA ADD-ON 5	] E 2
UPCE ADD-ON 5	] E 9

6. Operating Modes

The scanner allows the selection of 4 different operating modes to satisfy various application needs and barcode reading system testing.

6.1 Operating Mode Selection

On-Line

The scanner is connected to an external Presence Sensor using EXT TRIG+ and EXT TRIG- inputs.
During the active phase of the presence sensor, the scanner tries to acquire and correctly decode the code.

- If the operation is successful, the barcode characters are transmitted on the serial interface in the format defined by the current configuration. If an output line is selected for the Right Event, it is activated.
- If a code cannot be decoded, a no read message is sent. If an output line is selected for the No Read Event, it is activated.

NOTE
For hardware details refer to the Installation Manual. For the reading phase end refer to Reading Phase Off.

See also:
When On-Line is selected, the following options are available:
External Trigger
Reading Phase Timeout

Serial-On-Line

In Serial-On-Line mode the reading phase starts when the Serial Start Character is received on the serial interface and ends when the Serial Stop Character is received or when a programmed Reading Phase Timeout expires.

- If decoding is correct, the data is transmitted on the serial port as defined by the configuration. The output line selected for the Right Event is driven and the relative message is transmitted on the serial interface.
- In case of a no read, a no read message is transmitted on the serial interface. The output line selected for the No Read Event is driven and the relative message is transmitted on the serial interface.

NOTE
The Serial Start and Serial Stop characters can be selected from the list of ASCII characters in the VisoSetup menu and must be different from each other. For correct operating of the scanner, the start/stop characters must not coincide with control characters already used (e.g. ESC to enable Host Mode programming).The Reading Phase Timeout value must always be defined if the Serial Stop Character is not.

See also:
When Serial-On-Line mode is selected, the following options are available:
Serial Start Character
Serial Stop Character
Reading Phase Timeout

Automatic

The scanner does not require connections with external presence sensors in this operating mode.

In this mode the device is continuously scanning. The reading phase is enabled when a barcode enters the reading zone of the scanner and is terminated after an N number of scans without a code, where N is set using the Automatic Threshold selection. The next reading phase will begin when a code again enters the reading zone of the scanner.

The N number of scans without a code must be selected to assure code identification in the reading zone.

Code transmission is identical to the other operating modes except that there is no transmission on the serial port in the case of a No Read condition.

Test

Test mode allows the position of the reader and the associated reading features to be verified.
The code is continuously read in this mode. After 100 scans, the values relative to an internal counter and the decoded code are displayed and transmitted on the serial interface.

The counter reports the percentage of good reads of the label.

Example:
The following message could be displayed:

Counter value	Code
090%	12345ABC
010%	No Read

NOTE
Only one barcode label must be read for each reading cycle.
Test mode must only be used during the installation phase of the scanner. Enable decoding to a fixed code length to improve the performance in Test mode.

See also:
Test On

6.2 Operating Mode Options

The available options depend on the operating mode selected.

External Trigger

In On-Line operating mode an external trigger (Presence Sensor) is used to determine the reading phase of the scanner. The External Trigger is typically an NPN or PNP photocell or a switch, and it must be connected between the EXT TRIG+ and EXT TRIG- inputs, as described in the Installation Manual.

The External Trigger parameter provides application flexibility, so that through software configuration it is possible to determine the active reading phase, independently from the type of hardware used in the External Trigger circuit.

Selection	Description
Standard	The input is active (reading phase is ON) when current flows in the External Trigger circuit; the transistor is activated (ON) or the switch is closed. The input status is idle when the transistor or switch is open.
Inverse	The input is active (reading phase is ON) when no current flows in the External Trigger circuit; the transistor is deactivated (OFF) or the switch is open. The input status is idle when the transistor or switch is closed.

External Trigger Filter

Selection	Description
Disabled	
Enabled	the anti-disturbance hardware filter implemented on the External Trigger input (see Installation Manual) is increased by 15 ms.

Serial Start Character

In Serial-On-Line mode the Serial Start Character is an ASCII character which, when received on the serial interface, is the event starting phase. During the active phase the scanner tries to decode the enabled barcodes.

Selection	Description
a character from NUL (00H) to ~ (7EH)	

NOTE
This option is available only for Serial-On-Line operating mode. The Serial Start Character and Serial Stop Character characters must be different from each other.

Serial Stop Character

In Serial-On-Line mode the Serial Stop Character is an ASCII character which, when received on the serial interface, is the reading phase end. During the active phase the scanner tries to decode the enabled barcodes.

Selection   Description

a character from NUL (00H) to ~ (7EH)

NOTE
This option is available only for Serial-On-Line operating mode. The Serial Start and Serial Stop characters must be different from each other.

Reading Phase Timeout

The Reading Phase Timeout represents the maximum duration of the reading phase.

Selection   Description

from 30 ms to 4 sec.

Disabled

See also:
Reading Phase Off

NOTE
This option is available only for On-Line and Serial-On-Line operating modes.

Reading Phase Off

The Reading Phase Off parameter sets the event which stops the reading phase.

Selection	Description
Trigger Off /Serial Stop Character	The reading phase terminates if a stop event takes place before the selected Reading Phase Timeout expires. Depending on the operating mode selected, the reading phase stop event can be one of the following: the occurrence of the Serial Stop Character in Serial-On-Line mode or the External Trigger deactivation in On-Line Mode.
Always Timeout	The reading phase always ends when the selected Reading Phase Timeout expires.

See also:
Reading Phase Timeout

NOTE
This option is meaningful only for On-Line and Serial-On-Line operating modes, and if the Reading Phase Timeout is not disabled.

Automatic Threshold

The Automatic Threshold is the number of scans without a code which causes the reading phase end.

This parameter must be selected to assure code identification in the reading zone.

Code transmission is identical to the other operating modes except that there is no transmission on the serial port in the case of a no read condition.

NOTE
This option is available only for Automatic operating mode.

Test On

Provides information on decoding quality or positioning.

The output string shown after 100 scans depends on this parameter.

Selection	Description
Good Read Rate	The counter reports the percentage of good reads of the label.
Positioning Quality	A string showing the positioning quality is sent on the serial interface. The string can have the following values: critical, sufficient, medium, good, very good.

Example.
The following message could be displayed:
Counter value   Code
090%   12345ABC

NOTE
The Test On parameter can be selected only for Test Operating Mode.

6.3 Reading System Layout

The scanner can be used in a stand-alone or in a Master/Slave configuration.

The Master/Slave layout is used to collect data from several devices to build a multi-point or a multi-sided reading system.

Refer to the Installation manual under "Typical Layouts" for the hardware setup.

Refer to the Guide To Rapid Configuration for the configuration procedure of the specific layout.

Device Assignment

The Device Assignment parameter allows to configure the device according to the desired layout.

Selection	Description
Alone	The scanner is in a stand-alone configuration connected to a Host or to a Multiplexer Multidrop network.

The Master/Slave configuration varies according to the types of scanners that will be connected together in the network as Master and Slaves:

Master RS232 (Type A)	VB14
Slave RS232 (Type A)	VB14
Master RS485 (Type B)	VB10, VB12, VB14
Slave RS485 (Type B)	VB10, VB12, VB14
Master RS485 (Type C)	-
Slave RS485 (Type C)	VB10, VB12, VB14
Master RS485 (Type D)	-
Slave RS485 (Type D)	VB10, VB12, VB14

See also :

Number Of Slaves (Type B)

Number of Slaves (Type B)

Allows to set the number of slaves when the Master RS485 (Type B) Device Assignment has been selected.

Selection   Description

1 to 5 slaves

6.4 Reading Parameters Menu

Beam Shutter

The Beam Shutter turns the laser off.

The Beam Shutter option can be used:

- to increase the overall laser diode life when used in high ambient temperature applications (over 35° C).
- to reduce power consumption
- to turn off the laser for safety purposes.

Selection	Description
Disabled	the laser is always on.
Enabled	the laser is always off and all operations are suspended.
Triggered	The laser is turned on when the reading phase starts. It is turned off as soon as the code(s) are read or when the reading phase ends.

NOTE
The Triggered selection is ignored for Automatic and Test Operating Modes.

Overflow

The overflow value signals when to start the decoding process.

Any barcode can be read if preceded and followed by white margins at least three times the size of the widest code element (bar or space). These white margins are called the "Quiet Zones". The overflow value gives information relative to the size of these quiet zones.

The overflow is correlated to the time taken by the laser beam to scan across the quiet zones. Since the relative speed of the laser beam sweeping across the code increases as the distance of the code from the reader increases, the time duration of the quiet zones depends on the reading distance.

The overflow value selected must be greater than the duration of the widest element of the code at the minimum reading distance and less than the time corresponding to the duration of the quiet zones at the maximum reading distance.

VisoSetup automatically calculates the Overflow value: from the Commands menu, choose Overflow and fill in the fields with the values referring to your application.

To calculate the overflow value use the following formula:

$$TD = XB * (1 / LS)$$

where

$$LS = 12.5 * (NS / NM) * (CD + 20)$$

The symbols have the following significance:
TD = time duration of the bar [s]
XB = bar width [mm]
LS = laser speed [mm/s]
NS = number of scans per second
NM = number of mirrors
CD = code distance from the reader [mm]

7. Verifier Menu

7.1 Verifier Options

You can set up this control in VisoSetup using any one of the following methods:

·   Using the Verifier button in the Device Control Window (see procedure below)
·   Using the Store Verifier HW procedure
·   Manually defining the code using the parameters under Verifier Code Values
                 and sending them to the scanner

Using the Verifier button in the Device Control Window

The configuration parameters to allow correct Code Type reading must be saved to the
scanner in order to read the verifier code.

1.   Read the verifier code.

2.   Select the button from the VisoSetup Control Window. The Verifier code will be
        stored in the device RAM and in NON-VOLATILE (EEPROM) memory by default.

See also:
Store in EEPROM

Code Verifier

When a barcode is read, the following results can be obtained on each of the Output Lines:

·   The read barcode matches the Verifier code in memory (Right Event): the
                 scanner transmits the code on the selected serial interface. The output lines
                 selected for the Right Event are activated.
·   The read barcode does not match the Verifier code (Wrong Event): the
                 scanner transmits the code on the selected serial interface. The output lines
                 selected for the Wrong Event are activated.
·   No code is read (No Read Event): the scanner transmits the No Read
                 character. The output lines selected for the No Read Event are activated.
·   It is possible to drive an output line also on the occurrence of either the Wrong
                 or the No Read Event (Wrong/NoRead Event).

Selection	Description
Enabled	Enabling Verifier mode allows the scanner to be used as a Code Verifier.
Disabled	

NOTE
The Verifer mode cannot be activated in Test operating mode. Since the code to be verified
is only one, this function cannot be selected in multi label decoding mode.

See also:
Store in EEPROM

Store Verifier HW

It is possible to indicate to the scanner what code to store as the verifier code by means of
an external hardware input.

The Code Verifier parameter must be enabled and the configuration parameters to allow
correct Code Type reading must be saved to the scanner in order to read the verifier code.

To activate the input, connect together pins 18 and 22 (IN1- and GND) of the 25-pin
connector (for example with a push-button), before the active edge of the External Trigger
input (or before the code passes under the laser beam for the Automatic operating mode.
The next read code will be stored as the verifier code in the scanner's RAM and NON-
VOLATILE (EEPROM) memory by default.
Then the two pins must be disconnected.

Selection	Description
Enabled	
Disabled	

See also:
Store in EEPROM

Store In EEPROM

Selection	Description
Enabled	The Verifier code will be stored also in the NON-VOLATILE memory (EEPROM), not only in RAM.
Disabled	The Verifier code will be stored only in RAM.

NOTE
This parameter has no effect in case the Verifier code is manually set through the Character
parameters.

Wrong Code Character

When enabled, the Wrong Code Character is sent each time the read code does not match the Verifier code.

Selection   Description

Disabled

a character from NUL (00H) to ~ (7EH)

NOTE
The Wrong Code Character is sent at the beginning of the <DATA PACKET> as described in Wrong Read.

7.2 Verifier Code Values

Define the verifier code and its relative parameters in the configuration menu.

The Verifier code must be programmed in the scanner as Code 1.
The length of the code must be specified, together with the code itself.
The code is defined by selecting the desired character for each character position. You can also use the special characters Disabled, ANYCHARACTER or ANYSTRING.

The code type will be the same as configured for Code 1.

See also:
Store in EEPROM
Store Verifier Hardware

Verifier Code Length

If the Code Verifier option is enabled in the Verifier Options Section, the length of the code must be specified using the Code Length option, together with the code itself.

Selection   Description

Variable: all the possible code lengths (in number of characters (digits)) are accepted.

from 1 to 32:   only one code length is accepted.

NOTE
The verifier code must be configured in the scanner as Code 1.

Character

Defines the code through the selection of the desired character for each character position.

You can also use the special characters Disabled, ANYCHAR or ANYSTRING. The code type will be the same as configured for Code 1.
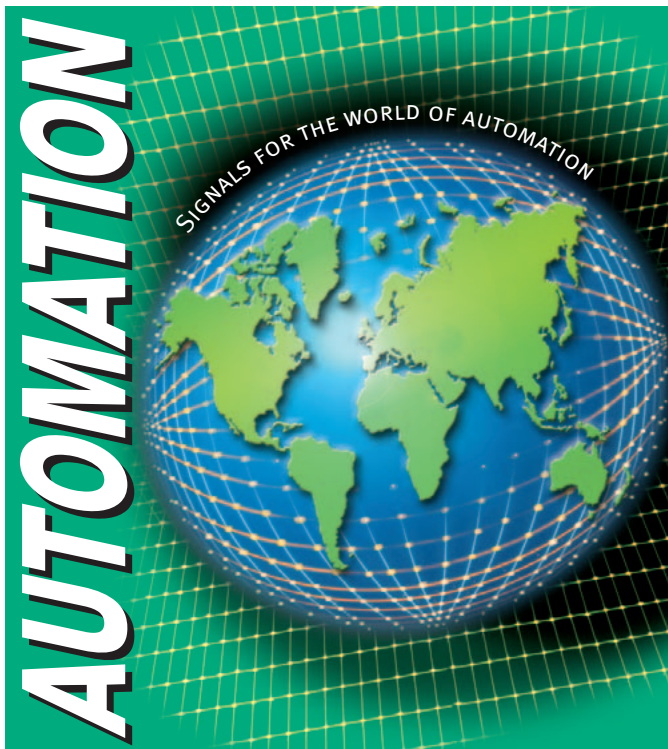
Selection   Description

Disabled   in the Verifier code no character occurs in the current position.

a character from NUL (00H) to ~ (7EH):
Any Character
Any String

www.pepperl-fuchs.com

Worldwide Headquarters
Pepperl+Fuchs GmbH · Königsberger Allee 87
68307 Mannheim · Germany
Tel. +49 621 776-0 · Fax +49 621 776-1000
e-mail: info@de.pepperl-fuchs.com

USA Headquarters
Pepperl+Fuchs Inc. · 1600 Enterprise Parkway
Twinsburg, Ohio 44087 · USA
Tel. +1 330 4253555 · Fax +1 330 4254607
e-mail: sales@us.pepperl-fuchs.com

Asia Pacific Headquarters
Pepperl+Fuchs Pte Ltd. · P+F Building
18 Ayer Rajah Crescent · Singapore 139942
Tel. +65 67799091 · Fax +65 68731637
e-mail: sales@sg.pepperl-fuchs.com

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