NLS-EM1300
1D Barcode Scanning Engine
Integration Guide

Pre-release version

Disclaimer

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About this guide

Introduction

This NLS-EM1300（"EM1300"）Scan Engine Integration Guide provides general instructions for OEM integration.

Chapter Description

About EM1300: The chapter of About EM1300 gives a brief description of the EM1300. It covers the general, overall specifications of the EM1300.

Mechanical Interface: The chapter of Mechanical Interface describes the mechanical interface of the EM1300. It includes the dimensions and locations of EM1300 mechanical components.

Electrical Interface: The chapter of Electrical Interface describes the electrical interface of the EM1300. It mainly explains the EM1300 interface socket and flexible cable. Samples of schematics are also included.

Software Interface: The chapter of Software Interface describes the software interface of EM1300.

EM1300 Development Tools: The chapter of EM1300 Development Tools lists the development tools and brief descriptions of the tools.

Programming the Engine: The chapter of Configuration lists all the configurations of EM1300. The configuration can be done through pre-printed configuration barcodes, serial port commands, and/or Quickset, a Newland software package.

Graphic Notations

Tool – Handy item for a task.

Attention – Important subject to be aware of or to avoid.

Tips – Helpful information about a topic or a feature.

Example – Illustration of how to use a feature.

If you have a problem with your equipment, contact the Newland Support Center in your region. Before calling, have the model number, serial number, and several of your barcodes at hand.

Call the support Center from a phone near the scanning equipment so that the service person can try to talk you through your problem. If the equipment is found to be working properly and the problem is barcode readability, the Support Center will request samples of your bar codes for analysis at our plant.

If your problem cannot be solved over the phone, you may need to return your equipment for servicing. I f that is necessary, you will be given specific directions.

Note: Newland Auto-ID Tech. is not responsible for any damages incurred during shipment.

For service information, warranty information or technical assistance contact or call the Support Center listed below. For the latest service information go to *http://www.nlscan.com*

About EM1300

Introduction

EM1300 is an embedded barcode reading engine. Its gray scale CCD image capturer and the Newland patented UIMG, a Computerized Image Recognition System, ensure the fast scanning and decoding accuracy on different barcode media such as paper, plastic card, and metal surface. It can be easily integrated into OEM equipments or systems (hand-held, portable, and mounted) to provide solutions for image capture, barcode reading, and barcode message processing.

EM1300 Software Development Kit is provided for easy and quick development of OEM applications.

Highlights of the EM1300

- » Compact design allowing easy integration into OEM equipments and systems.
- » Outstanding decoding performance for major 1D barcodes.
- » High performance CPU ensuring fast and accurate scans.
- » Easy OEM software development and firmware upgrade.

Unpacking

Remove EM1300 and accessories from the package. Check for missing parts and inspect for damage. EM1300 is packed in anti-static bag. Please handle accordingly.

If there is any damage or missing parts, please contact your supplier at once. Keep the original package for return services, if necessary.

Outline of EM1300

The outline of EM1300 is shown in Figure 1. The topside has the electrical control components, including a flexible cable socket, Interface Socket, through which EM1300 interfaces with external device.

The front side has the optical components, such as Image Lens, through which EM1300 captures image, Aiming Light, which sends a rectangular, green light beam for aiming, and, illumination lights, which illuminates the barcode.

The bracket covers the sides and bottom of the Engine. Two mounting holes on the bottom side are available for mounting the Engine to external device.

The back side is CCD circuit for image capture.

Interface Socket

Camera Lens

Illumination LED
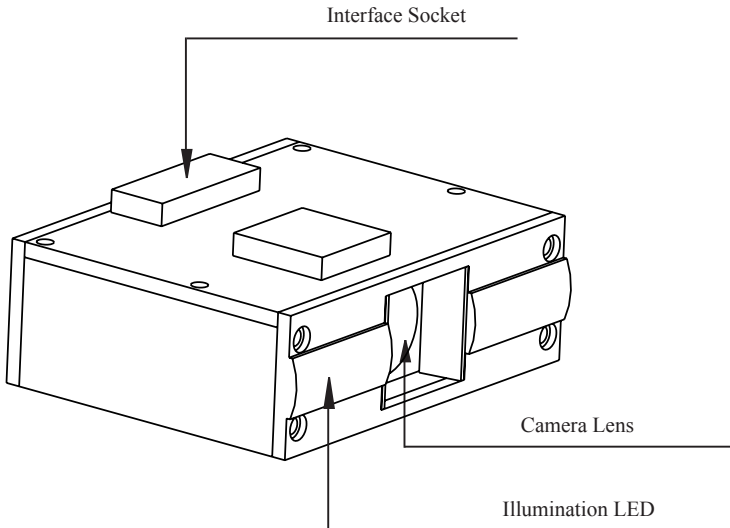
Figure 1.   EM1300 Outline

Here is the EM1300 Decode Zone.

The view angle of the camera is 42°. Following figure shows the decode zone of the engine.
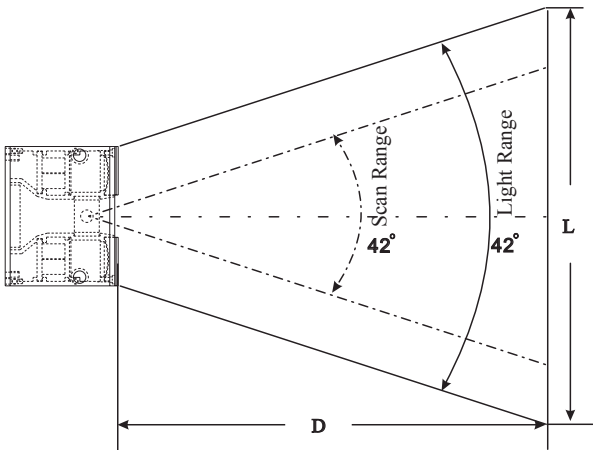
L:The minimum window of OEM device
D:The distance of the engine scan window to the OEM device window

Decode Distances

Following table lists the decode ranges of EM1300 for different barcode types and densities.

Barcode	Density (mil)	Near (mm)	Far (mm)
1D Code	5	40	90
*PDF417	5	40	90
*PDF417	10	30	180

*: In order to read PDF417, EM1300 needs a module which customers ordered specially.

About EM1300

Performance	
CPU	72M
Memory	SRAM: 20K , Flash 128K
Interface	TTL232
Image Sensor	CCD
Resoluing	2500
Decode rate	200 decodes/sec (default) , 500 decodes/sec (MAX)
Symbologies	Code128, EAN-13, EAN-8, Code39, UPC-A, UPC-E, Codabar, China post 25, Interleaved 2 of 5, ISBN/ISSN, Code 93, etc.
Precision	≥ 4mil
Light Source	LED(622 nm - 628 nm)
Light Intensity	265 LUX (130 mm)
Depth of Scan Field	20 mm ~ 500 mm
Print Contrast Signal	≥ 25%
Pitch	30°
Yaw	45°
Illumination	0 ~ 100,000 LUX

Mechanical/ Electrical		
Power Consumption		0.2 W
Voltage		DC 3.3 V
Current	Max	62 mA
	Working	33 mA
	Idle	1 μ A
Weight		18g

Environment	
Operate Temperature	-5℃ - +45℃
Storage Temperature	-40℃ - +60℃
Humidity	5% - 95% (non-condensing)
Certificates	FCC Part15 Class B, CE EMC Class B

Mechanical Interface

Introduction

This section describes theMechanical Interface.

EM1300 Front View

Following figures show the dimensions of EM1300. The figure 2 EM1300 Front View has the width and height dimensions. The height of the EM1300 is from the bottom of EM1300 to the top of highest component on the topside.
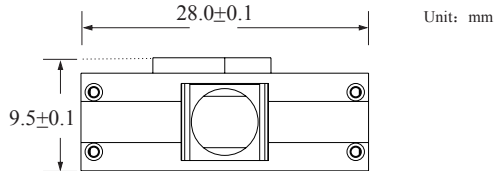
Figure 2.   EM1300 Front View

EM1300 Right Side View

The Figure 3 EM1300 Right Side View has the length dimensions.
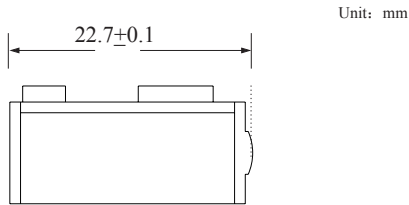
Figure 3.   EM1300 Right Side View

EM1300 Bottom View

The figure 4 EM1300 Bottom View has the mounting screw specifications. The mounting screw is M1.4, 1.4mm screw. The length of the screw into EM1300 must be less than 3 mm.

Figure 4.   EM1300 Bottom View

Mechanical Interface
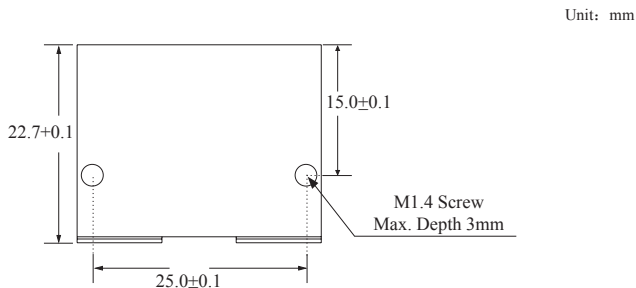
Interface Socket

EM1300 uses a 12-pins flex cable socket to interface with external device (Host), such as EVK1300, the EM1300 Evaluation Kit. Figure 5 below shows the socket. For reference purpose, the EM1300 Evaluation Kit uses a connector, part number MOLEX 527451296, to connect the flex cable.
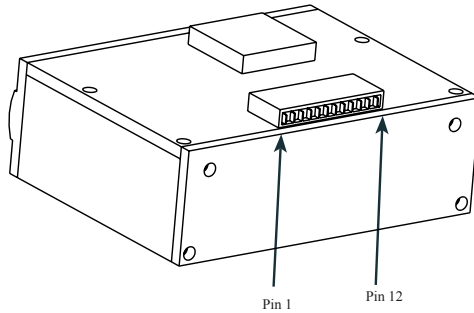
Figure 5.   Interface Socket

Interface Socket Pin Assignment and Definitions

Pin	Signal Name	Type*	Description
PIN 1	Flash Download	I	Operation Mode Control: » Flash Download Mode – Level Low when engine is powered on; » Normal Mode – otherwise.
Pin 2	VCC	P	DC 3.3 $\pm$ 0.3V
Pin 3	Ground	P	Ground
Pin 4	RXD	I	RS233 Receiving, TTL
Pin 5	TXD	O	RS232 Transmission, TTL
Pin 6	Reserved for CTS	I	Reserved for CTS, not implemented
Pin 7	Reserved for RTS	O	Reserved for RTS, not implemented
Pin 8	N/C	I	Not connected
Pin 9	Beeper	O	Beeper output, low current output
Pin 10	DLED	O	Decode LED, low current output
Pin 11	N/C		Not connected
Pin 12	Trigger	I	Trigger read and decode

* Pin Type Definitions: I – Input, O – Output, and P – Power.

Housing Structure

The housing for the Engine should make sure that no pressure should be put on the Engine. There should have sufficient space for the flexible cable and stress release of the cable should also be considered.

Scan Window

A scan window is needed to protect camera lens, aiming light, and illumination lights. This scan window design should follow:

- » Housing must not block or shade illumination LED's aiming light, and camera lens.
- » Use high transparent and scratch resistant material. Please refer to following specifications:

Total light transmittance (%)	≥90% (ASTM D 1008)
haze (%)	<1.0% (ASTM D 1008)
Stylus	≥4H (JIS K 5400)

- » The gap between housing window and illumination LED (highest point) should be less than 5 mm.
- » The window must be perpendicular to the surface of the front plate of the EM1300.

Temperature

Electrical and other components generate heat. Especially under continuous operation, the temperature of the Engine will be high. The methods below are for heat concerns:

- » A radiator on top of the engine is recommended
- » Do not surround or wrap the Engine by rubber or any material that obstruct the heat dissipation.

Electrical Interface

Introduction

This section describes the electrical specifications of the interface signals.

The table below lists the interface input and output level voltage ranges

Signal Type	Voltage Level	Voltage Range
Input	High	2.0V - 3.6V
	Low	-0.3V - 0.6V
Output	High	2.4V - 3.3V
	Low	0V - 0.4V
Serial Input		3.3V
Serial Output		3.3V

Trigger Input

When the Trigger line is pull low for 10 ms, the Engine starts a read. The Engine keeps reading until a successful reading or the line is high. After a successful reading, the line must go high in order to make another read.

A Sample Schematic of Trigger Input Circuit

Here is a schematic from the evaluation board, EVK1300. The signal can connect to external device's output port.
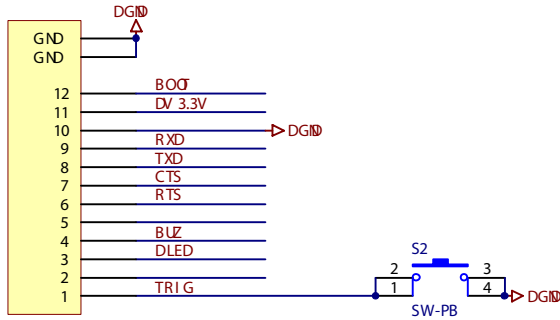
Here are the descriptions of the output signals, beeper and LED. They can be used to detect the status of the scanning and the state of the Engine.

LED Output

When the Engine completes the initialization, the LED line is high. The LED line goes low for 50 ms twice with 50 ms in between after a successful reading and, if programmed, transmission of the code message.

Beeper Output

Table below is the definitions of the beeper outputs:

Beep Pattern	Definition
Low-higher-higher-higher	Power ON completed
1 beep	Successful reading of an ordinary barcode
2 beeps	Successful reading of a programming barcode
3 short low-2 high	Reading failure
1 long low	Unknown Character, Virtual Keypad (USB connection)

A Sample Schematic of LED Circuit:

Here is the LED circuit used in the evaluation board, EVK1300.
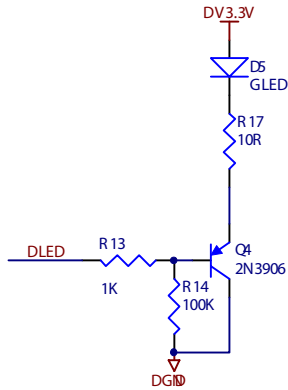
A Sample Schematic of Beeper Circuit:

Here is a beeper circuit used in the evaluation board, EVK1300.
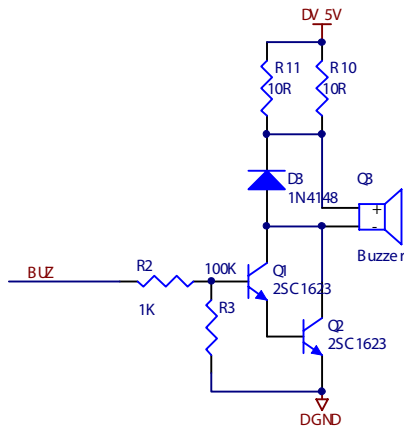
Software Interface

Introduction

The simpliest way to interface with EM1300 is to just listen to the serial output from the Engine. Leave the trigger, reset, beeper, and LED signals to the hardware. With proper configuration, the default firmware will send the decoded barcode messages through the serial output. However, if more controls of the Engine are required, the rest of this section describes the software interface with the Engine.

EM1300 will start a reading when the trigger pin of the flex cable is pulled low (hard trigger) or when EM1300 is configured in the sensor mode and it senses the trigger condition is met (auto scan).

Hard Trigger

If the trigger line is connected to an output port of external device, the control software of the external device (Host) can pull the line low. The Engine will start to read barcode after 10 ms. The engine will keep reading until it acquired a barcode image that has a recognized barcode, valid or not.

If a valid reading is found, the default function is that the beeper line will send a 1-beep pattern and the decoded barcode message will be sent through the serial out line.

Auto Scan

The Engine can be in sensor mode (or auto scan mode.) (See Configuration section for detail.) When the ambient light changes, the Engine will automatically make a read. If a valid read is found, the default function is to send the decoded barcode messages.

Continuous Scan Mode

Another scan mode is continuous scan mode. When the Engine is in this mode it will keep acquiring images and trying to read a code. When it reads a code it sends the code to the serial port.

This section introduces the serial communication. The default serial port configuration is baud rate of 9600, 8 data bits, no parity bit, and 1 stop bit. It is important to match the serial port configuration between EM1300 and the Host. Both EM1300 and Host can initiate communication.

EM1300 Initiated Data Upload

EM1300 initiates communication only to send system information on power on, when enabled, and barcode messages. No reply from Host is expected.

System Information

Name	Description
Dev	Device type
Ver	BIOS version
Date	BIOS version establishing time
S/N	Device serial number
ESN	User-defined device serial number
Interface	1 types of communication interfaces:RS232, baud rate, parity check, data bits, stop bit
1D	List of enabled 1D symbols. Each code is divided by comma. Additional features of the code are appended as: 1. "+" connects features 2. Min Message Length -> Max Message Length 3. "No Check Digit" or "Check Digit" 4. "Fixed Lengths: 2~64, even value" in the form of 2 4 6 8 10 12...
Scan Mode	Scan Mode: 1. Manual Scan = "Hand-held Mode" 2. Auto Scan = "Continuous Mode" 3.Induced Scan = "Sensor(smart) Mode"

Barcode Message

The message upload format is in binary. It is the binary value of the decoded barcode value including prefix, suffix, and so on.

There are two methods to determine the end of barcode message.

Method 1: LED Signal

At end of the data upload, the Engine will set the LED line low for 150 ms.

Host can read the LED line input to detect the end of data upload, if the line is connected to the input port.

Method 2: Inter-Character Timeout

Host could use inter-character timeout to determine the end of data upload. An inter-character timeout means the longest delay time between 2 consecutive (binary) characters in a sequence of (binary) characters sent over serial line. It is usually enabled only after the first character is received to avoid unwanted timeout events during the waiting of a message.

The inter-character timeout value should be set to about 5 times of a character's transmission time. When the inter-character timeout occurs, it is the end of data upload. For example, 5 ms can be used as an inter-character timeout for the baud rate of 9600, 8 data bit, no parity bit, and one stop bit.

EM1300 Development Tools

Introduction

Sections below list some EM1300 development tools. A brief introduction to each tool is included.

Here is a brief introduction to the EM1300 Evaluation Kit, EKV3000. The layout of the EVK1300 circuit board is shown in figure below. The board contains beeper, LED, trigger button, and reset button. A USB connector is for the power and communication. An alternative RS232 is for communication. The J1 connector is where the EM1300 flex cable connects to.

Software Development Kit
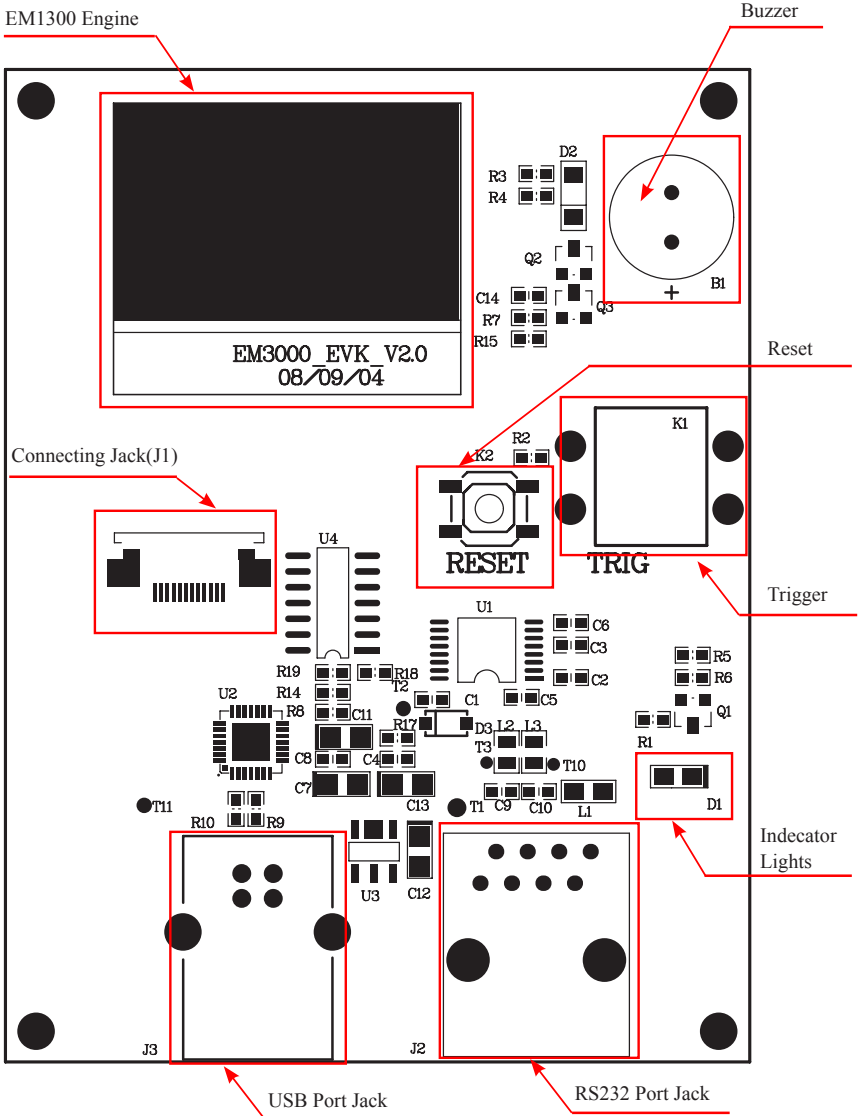
A software development kit is available for all EM series embedded engines. It allows Customers to develop their applications in EM series engines.

Introduction

There are 2 ways to program (configure) the Engine, Code Programming and Command Programming.

Code Programming

The Engine reads a set of specially encoded barcodes to program options and features. In the following sections, we will explain the options and features available and provide the barcodes to program them.

This method of programming the Engine is most straight forward. However, it requires manually readings of each barcode. As all manual operations, errors are more likely to occur.

Command Programming

The Host can send the Pro CMD strings to program the Engine. In the following sections, the Pro CMD strings will be included with the barcodes for Code Programming.

This method of programming the Engine could be automated. A software program can be developed to download all the configuration data to the Engine. The program can also verify the download.

Note: The programming results are restored in non-volatile memory. They will not be lost when the Engine is powered off.

Tools

Code Programming ON

Code Programming OFF

** Code Programming Off
【Pro CMD：99900032】

This is the notation to disable the Code Programming.

There are 3 parts of a notation:

> The first part of the notation is the barcode for Code Programming

> The second part of the notation is the name of the options or features, such as Disable Code Programming. If there is "**" in front of the name, it means the notation is factory default.

> The third part of the notation is the corresponding Pro CMD string of the Code Programming.

Tools

Code Programming ON

Code Programming OFF

Read the "Code Programming ON" barcode to activate "Code Programming" function. More than one Code Programming barcodes can be read to configure the Engine.

If an option or feature needs additional parameters, such as digits, they can be found at the end of this chapter.

The value of code programming can be sent to the Host. For factory default, "No Send Pro Code Value", the value of programming codes will not be sent to the Host; by reading "Send Pro Code Value", the reader will send the value of Programming Code to the Host.

Code Programming

In order to avoid misreading, "Code Programming On" barcodes shoud be read to activate "Code Programming" before reading programming barcodes. After programming, "Code Programming OFF" barcode or any common barcode (not programming barcodes)should be read to quit configuration.

Some working parameters could be programmed. The data type of parameters is Dec or Hex and the numbers are also input through programming barcodes. The Appendix of the Integration Guide includes all needed data barcodes.

Programming barcodes are used to program the engine. For factory default, the reader will not send code value to the Host. But if needed, the engine could be programmed to "Send Pro Code Value". And whether the value is sent or not won't affect the programming function.

Code Programming ON
【Pro CMD：99900031】

** Code Programming OFF
【Pro CMD：99900032】

** No Send Pro Code Value
【Pro CMD：99900033】

Send Pro Code Value
【Pro CMD：99900034】

Command Programming

Commands under RS232 connection mean using 0x20-0x7D（the displayable characters）to express all commands information.

1、Configuration State

The engine should be in configuration state when programming functions under RS232 connection. In the state, the engine would only accept and execute the commands from communication and feed back.

Sending certain command to the engine will make it enter or quit the configuration state. Or if in configuration state the engine hasn't received new information for five seconds, the engine will quit the state automatically.

2、Express Regulation

※   Sending "$$$$" and receiving "@@@@" mean entering configuration state successfully.

※   Sending "%%%%" and receiving "^^^^" mean quitting configuration state successfully.

※   Receiving "^^^^" in configuration state means that the engine has quitted the state automatically.

※   In configuration state, every command begins with "#" and ends with ";" .E.g. "#99900030;"

※   In configuration state, if the command is executed successfully, the Host will receive a command which begins with "!" and ends with ";" . E.g. "!99900030;" 。

※   In configuration state, if the command is invalid or executed unsuccessfully, the Host will receive a command which begins with "?" and ends with ";" E.g. "?99976543;"

※   In configuration state, if commands of query type are executed successfully, the host will receive "! xxxxxxxx；" as well as the feedback which begins with "&{ " and ends with "|" . In the last nine characters in feedback, such as "|BF7974B7", "|" is the separating character which separates the feedback information and check value. And other eight characters "BF7974B7" are CRC32's Hex value and arranged from the highest position to the lowest. The feedback information is placed between "{ " and "|" . E.g.: Sending "#99900301;" and receiving "!99900301;&{Firmware v1.7.5;Decoder v1.00.023.C6;|FD25430B}"

If feedback information may have undisplayable characters, it will be expressed in hexadecimal notation. Two characters represent a character value. E.g.

" &{AAAA100423C5008001FF400001FF400001FF400001FF400001FF40000000408000 00408000004000000040800000408000004080000040800000408000004080000004080000408 006FF400006FF400006FF400006FF400004FF400004FF400002FF400004FF400004FF400004F F400001FF400000000000006A75667467646E426863657271776C6F7669736261797A706D52000- 00000000000000000000000000000000000000000000000000000000000000600000FEB2A2F4CCCF D390ADC8D38FF5E6D99DAA|E1DFA587}"

※   In configuration state, if a command is with parameters, it will be composed following the rules which command system defined. For example, the command string which has 0x0D and 0x0A as ending character and be saved is "#99904112;#99900000;#99900015;#99900000;#99900012;#99900020;" 。

Tools

Code Programming ON

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

Code Programming OFF

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Factory Default

Read "Load All Factory Default" to reset all parameters to factory default.

Applicable conditions:

  » User options programming wrong configuration leads to reading malfunction

  » Forget details of previous programming and start over.

  » Restore to default after unusual settings are not needed.

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*Load All Factory Default
【Pro CMD：99900030】

Overall Setup

🔨 Tools

Mode Select

Code Programming ON

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Code Programming OFF

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Shut Down
【Pro CMD：99900100】

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** Hand-held Mode
【Pro CMD：99900110】

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Deep Sleep
【Pro CMD：99900101】

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Auto Mode
【Pro CMD：99900111】

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Sleep
【Pro CMD：99900102】

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Interval Mode
【Pro CMD：99900112】

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Test Mode
【Pro CMD：99900103】

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Sensor Mode
【Pro CMD：99900113】

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Restart
【Pro CMD：99900104】

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Continuous Mode
【Pro CMD：99900114】

Overall Setup

🔨 Tools

Code Programming ON

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For all modes

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Time length to read a barcode
(Default 3 seconds.)
【Pro CMD：99900150】

Code Programming OFF

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For Interval Mode Only

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Interval Length
【Pro CMD：99900151】

For Sensor Mode Only

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Low Sensitivity
【Pro CMD：99900154】

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High Sensitivity
【Pro CMD：99900152】

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User Sensitivity
(Level:0 to F)
【Pro CMD：99900161】

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Medium Sensitivity
【Pro CMD：99900153】

For Auto Mode Only

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Restart Timer After a Valid Reading
【Pro CMD：99900157】

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Disable Reading Same Barcode
【Pro CMD：99900155】

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Do Not Restart Timer After a Valid Reading
【Pro CMD：99900160】

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Enable Reading Same Barcode
【Pro CMD：99900156】

Tools

Security Level

Code Programming ON

Code Programming OFF

Security Level 1
【Pro CMD：99900120】

Security Level 3
【Pro CMD：99900122】

Security Level 2
【Pro CMD：99900121】

Security Level 4
【Pro CMD：99900123】

Beeper

Tools

Beeper

Code Programming ON

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Code Programming OFF

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No Beeper Output
【Pro CMD：99900130】

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Medium Frequency & Medium Volume
【Pro CMD：99900135】

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** High Frequency & Loud Volume
【Pro CMD：99900131】

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Medium Frequency & Low Volume
【Pro CMD：99900136】

||||||||||||||||||||||||||||
High Frequency & Medium Volume
【Pro CMD：99900132】

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Low Frequency & Loud Volume
【Pro CMD：99900137】

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High Frequency & Low Volume
【Pro CMD：99900133】

||||||||||||||||||||||||||||
Low Frequency & Medium Volume
【Pro CMD：99900140】

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Medium Frequency & Loud Volume
【Pro CMD：99900134】

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Low Frequency & Low Volume
【Pro CMD：99900141】

Query Command

Introduction

    After reading interrelated programming barcodes, the engine will feed information needed back to the Host to achieve the purpose of query.

🔨 Tools

Code Programming ON

Code Programming OFF

Query all the information of product
【Pro CMD：99900300】

Query the hardware version
【Pro CMD：99900301】

Query ID
【Pro CMD：99900302】

Query Manufacturing Date
【Pro CMD：99900303】

Query Factory Name
【Pro CMD：99900304】

Query User ID
【Pro CMD：99900305】

Query User Date
【Pro CMD：99900306】

Query User Name
【Pro CMD：99900307】

Query STM32 MCU ID
【Pro CMD：99900310】

Communication Setup

Introduction

Under RS232 connection the engine and the Host use the same communication parameters: baud rate, parity check, data bits select and stop bits select.
The engine also supports virtual keyboard (KBW) and the configuration of KBW also be provided.

Tools

Code Programming ON

Code Programming OFF

Under RS232 connection, the engine and the Host should set communication baud rate to the same to keep normal communication.

Baud rate is the bits transmitted per second (8 bits per bytes). The engine and the Host must communicate at the same baud rate.

The reader supports baud rate as the following:

** 9600
【Pro CMD：99902104】

1200
【Pro CMD：99902101】

2400
【Pro CMD：99902102】

4800
【Pro CMD：99902103】

14400
【Pro CMD：99902105】

19200
【Pro CMD：99902106】

38400
【Pro CMD：99902107】

57600
【Pro CMD：99902110】

115200
【Pro CMD：99902111】

Communication Setup

Code Programming ON

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

Check

Code Programming OFF

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

**No Check
【Pro CMD：99902104】

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

Even Check
【Pro CMD：99902101】

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

Odd Check
【Pro CMD：99902102】

Stop Digit

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

** Stop Digit　1
【Pro CMD：99902131】

Flow Controlling

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

** No Flow Controlling
【Pro CMD：99902140】

Tools

Code Programming ON

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Keyboard Layout

The keyboard could choose any one of the sixteen layouts which were decided previously.

Code Programming OFF

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No.0
【Pro CMD：99902200】

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No.1
【Pro CMD：99902201】

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
No.2
【Pro CMD：99902202】

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
No.3
【Pro CMD：99902203】

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
No.4
【Pro CMD：99902204】

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
No.5
【Pro CMD：99902205】

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No.6
【Pro CMD：99902206】

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No.7
【Pro CMD：99902207】

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
No.8
【Pro CMD：99902210】

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
No.9
【Pro CMD：99902211】

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
No.10
【Pro CMD：99902212】

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
No.11
【Pro CMD：99902213】

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
No.12
【Pro CMD：99902214】

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
No.13
【Pro CMD：99902215】

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No.14
【Pro CMD：99902216】

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
No.15
【Pro CMD：99902117】

Code Programming ON

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Inter-character Delay

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Program Inter-character Delay as 0 ~ 150 ms
【Pro CMD：99902220】

Code Programming OFF

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Characters Transformation

||||||||||||||||||||||
Normal
【Pro CMD：99902230】

||||||||||||||||||||||
Lower
【Pro CMD：999002232】

||||||||||||||||||||||
Upper
【Pro CMD：999002231】

||||||||||||||||||||||
Inverse
【Pro CMD：99902233】

CapsLock

||||||||||||||||||||||
Normal
【Pro CMD：99902230】

||||||||||||||||||||||
Lower
【Pro CMD：999002232】

||||||||||||||||||||||
Upper
【Pro CMD：999002231】

||||||||||||||||||||||
Inverse
【Pro CMD：99902233】

Data Format

Introduction

1D barcodes could contain digits, letters and symbols, etc. 2D barcodes could contain more data, such as Chinese characters and other multi-byte characters. However, in reality, they do not and should not have all the information we need, such as barcode type, date and time of scan, delimiter, and so on, in order to keep the code short and flexible.

Prefix and Suffix are how to fulfill the needs mentioned above. They can be added, removed, and modified while the original barcode message is still in tact.

- -
Barcode processing sequences:
1.   Intercept barcode message
2.   Add Prefix/Suffix
3.   Pack
4.   Terminate with Stop Suffix and transmit
- -

Data Format

Tools

Code Programming ON

Code Programming OFF

** CodeID+User Prefix
【Pro CMD：99904010】

User Prefix+CodeID
【Pro CMD：99904011】

User Prefix · Tools

Code Programming ON

Disable or Enable User Prefix

Code Programming OFF

User Prefix is added before barcode message. For example, if the user prefix is "AB" and the barcode message is "123", the Host receives "AB123".

** Disable User Prefix
【Pro CMD：99904020】

Enable User Prefix
【Pro CMD：99904021】

Program User Prefix

Enable "Program User Prefix". Then program user prefix byte(s). To end the prefix, read "Save programming" The user prefix byte is programmed in its hex values. See example below.

Note: The maximum length for user prefix is 10 bytes.

Program User Prefix
【Pro CMD：99904022】

Example

Program "CODE" as user prefix (The hex of "CODE" are 0x43/0x4F/0x44/0x45):
1. Read "Code Programming ON"
2. Read "Program User Prefix"
3. Read "4,3,4,F,4,4,4,5" in order
4. Read "Save Programming"
5. Read "Code Programming OFF".
6. Read "Allow User Prefix" to enable above programming. "CODE" will appear to the left of a barcode.

Data Format

Code Programming ON

Code Programming OFF

AIM (Automatic Identification Manufactures) defines AIM prefix for many standard barcode formats. The engine will add the identifier before the barcodes. And this identifier is the AIM Prefix.

**No AIM Prefix
【Pro CMD：99904030】

Full Characters Mode
【Pro CMD：99904031】

AIM Prefix definitions

Symbols	AIM ID	Hex
Code128 / UCC/EAN-128	C	43
UPC-E / UPC-A / EAN-8 / EAN-13	E	45
Interleaved 2 OF 5 / China Post25	I	49
Code39	A	41
Codabar	F	46
Code93	G	47

Data Format

🔨 Tools

Code Programming ON

Code Programming OFF

Besides AIM prefix, Code ID prefix can be used to denote barcode format and can be customized.

The Code ID prefix MUST be one (1) visible English letter, only.

** No Code ID Prefix
【Pro CMD：99904040】

Allow Code ID Prefix
【Pro CMD：99904041】

Load Code ID Factory Default
【Pro CMD：99904042】

Symbols	Code ID Default	Hex
Code128 / UCC/EAN-128	j	6A
UPC-E / UPC-A	c	63
EAN-8 / EAN-13	d	64
Interleaved 2 OF 5 / China Post25	e	65
Code39	b	62
Codabar	a	61
Code93	i	69

Data Format

🔨 Tools

Code Programming ON

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Disable or Enable User Suffix

User suffix is appended to the right of barcode message. For example, if user suffix is "AB", and the barcode message is "123", The Host receives "123AB".

Code Programming OFF

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**Disable User Suffix
【Pro CMD：99904100】

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Enable User Suffix
【Pro CMD：99904101】

Program User Suffix

Read "Program User Suffix". Then program user suffix byte(s). To end the suffix, read "Save programming". The user suffix byte is programmed in its hex values. See example below.

Note: The maximum length for user suffix is 10 bytes.

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Program User Suffix
【Pro CMD：99904102】

Example

Program "CODE" as user suffix (The hex of "CODE" are 0x43, 0x4F, 0x44, and 0x45):
1.   Read "Code Programming ON"
2.   Read "Program User Suffix"
3.   Read "4,3,4,F,4,4,4,5" in order
4.   Read "Save Programming"
5.   Read "Code Programming OFF"
6.   Read "Allow User Suffix" to enable above programming. "CODE" will appear to the right of a barcode.

Stop Suffix

Tools

Code Programming ON

Code Programming OFF

Disable or Enable Stop Suffix

"Stop Suffix" is the termination for a string of barcode messages. It can not be formatted like other suffix and prefix. It is fixed to the right and the very end of a barcode transmission.

The major difference between "Stop Suffix" and "User Suffix" is that the information and the decoded messages in user suffix could be formatted but couldn't in stop suffix.

**Disable Stop Suffix
【Pro CMD：99904110】

Enable Stop Suffix
【Pro CMD：99904111】

Program Stop Suffix

Read "Program Stop Suffix". Then program stop suffix byte(s). To end the suffix, read "Save programming". The stop suffix byte is programmed in its hex values. See example below.

Note: The maximum length for stop suffix is 10 bytes.

Program Stop Suffix
【Pro CMD：99904112】

Example

Program "CODE" as stop suffix (The hex of "CODE" are 0x43, 0x4F, 0x44, and 0x45):
1.	Read "Code Programming ON"
2.	Read "Program Stop Suffix"
3.	Read "4,3,4,F,4,4,4,5" in order
4.	Read "Save Programming"
5.	Read "Code Programming OFF"
6.	Read "Allow Stop Suffix" to enable above programming. "CODE" will appear to the right of a barcode.

Symbols

 Introduction

Each type of barcode has its unique attribute. With the programming code, the engine will adjust to the changes of these attributes. Disabling reading of the symbols which do not apply will improve reading performance.

Symbols Available

Barcode Type	Factory Default	Barcode Type	Factory Default
Code 128	Allow Reading	Deutshe 12	Forbid Reading
UCC/EAN-128	Allow Reading	COOP 25 (Japanese Matrix 25)	Forbid Reading
AIM128	Forbid Reading	Matrix 25（Europe Matrix 25）	Forbid Reading
ISBT128	Forbid Reading	Industrial 25	Forbid Reading
EAN-8	Allow Reading	Standard 25	Forbid Reading
EAN-13	Allow Reading	China Post 25	Forbid Reading
ISSN	Forbid Reading	Code 39	Allow Reading
ISBN	Forbid Reading	Codabar	Allow Reading
UPC-E	Allow Reading	Code 93	Allow Reading
UPC-A	Allow Reading	Code11	Allow Reading
Interleaved 2 of 5	Forbid Reading	Plessey	Allow Reading
ITF6	Forbid Reading	MSI-Plessey	Allow Reading
ITF14	Forbid Reading	RSS	Allow Reading
Deutshe 14	Forbid Reading		

Code 128

Code Programming ON

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Load Factory Default

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** Load Code 128 Factory Default
【Pro CMD：99910000】

Code Programming OFF

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Enable/Disable Code 128

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** Enable Code 128
【Pro CMD：99910002】

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Disable Code 128
【Pro CMD：99910001】

TIPS When the engine can not read Code 128, please read "Enable Code 128" and try again.

Code 128 Code ID

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Code ID Setting
【Pro CMD：99910005】

Example Example of setting Code 128 Code ID to "p" (0x70)
1. Read Enable Code Programming barcode.
2. Read Code 128 Code ID Setting barcode.
3. Read Following Barcodes: "7", and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

🔨 Tools

Code Programming ON

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Select Message Length

It is used to program the valid reading length of Code 128. The engine will
send an error beep, if the decoded data length does not match the valid length.

Code Programming OFF

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Code 128 Message Length is defined by "Min. Message Length" and
"Max. Message Length".

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Min Message Length (default: 1)
【Pro CMD：99910003】

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Max Message Length (default: 48)
【Pro CMD：99910004】

TIPS

- -
1D bar code Message Length should not exceed 127 bytes. Max Message Length should not
be less than Min Message Length.
- -

Example

To set Min Message Length of Code 128 to 8 bytes and Max Message Length to 12 bytes,
read these programming codes

1、"Code Programming ON"

2、"Select Min Message Length"

3、Digit Code "8", see Digit Code

4、"Save Programming", see Digit Code

5、"Select Max Message Length"

6、Digit Code "1"

7、Digit Code "2"

8、"Save Programming"

9、"Code Programming OFF"

Tools

Code Programming ON

Check Digit

Code Programming OFF

Send Check Digit
【Pro CMD：99910006】

Trans FNC1 to GS
【Pro CMD：99910010】

Do Not Send Check Digit
【Pro CMD：99910007】

Trans FNC1 to ~
【Pro CMD：99910011】

Code Programming ON

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Load Factory Default

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Code Programming OFF

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** Load UCC/EAN-128 Factory Default
【Pro CMD：99910100】

Enable/Disable UCC/EAN-128

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** Enable UCC/EAN-128
【Pro CMD：99910102】

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Disable UCC/EAN-128
【Pro CMD：99910101】

(TIPS) When the engine can not read UCC/EAN-128, please read "Enable UCC/EAN-128" and try again.

UCC/EAN-128 Code ID

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Code ID Setting
【Pro CMD：99910105】

Example Example of setting UCC/EAN-128 Code ID to "p" (0x70)
1. Read Enable Code Programming barcode.
2. Read UCC/EAN-128 Code ID Setting barcode.
3. Read Following Barcodes: "7", and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

Tools

Code Programming ON

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Code Programming OFF

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Select Message Length

> It is used to program the valid reading length of UCC/EAN-128. The engine will send an error beep, if the decoded data length does not match the valid length.
>
> UCC/EAN-128 Message Length is defined by "Min. Message Length" and "Max. Message Length".

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Min Message Length (default: 1)
【Pro CMD：99910103】

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Max Message Length (default: 48)
【Pro CMD：99910104】

TIPS

1D bar code Message Length should not exceed 127 bytes. Max Message Length should not be less than Min Message Length.

Example

To set Min Message Length of UCC/EAN-128 to 8 bytes and Max Message Length to 12 bytes, read these programming codes

1、 "Code Programming ON"
2、 "Select Min Message Length"
3、 Digit Code "8", see Digit Code
4、 "Save Programming", see Digit Code
5、 "Select Max Message Length"
6、 Digit Code "1"
7、 Digit Code "2"
8、 "Save Programming"

9、 "Code Programming OFF"

Symbols

Tools

Code Programming ON

Code Programming OFF

Check Digit

Send Check Digit
【Pro CMD：99910106】

Trans FNC1 to GS
【Pro CMD：99910110】

Do Not Send Check Digit
【Pro CMD：99910107】

Trans FNC1 to ~
【Pro CMD：99910111】

Symbols

Tools

Code Programming ON

Load Factory Default

** Load AIM 128 Factory Default
【Pro CMD：99910200】

Code Programming OFF

Enable/Disable AIM 128

** Enable AIM 128
【Pro CMD：99910202】

Disable AIM 128
【Pro CMD：99910201】

TIPS

When the engine can not read AIM 128, please read "Enable AIM 128" and try again.

AIM 128 Code ID

Code ID Setting
【Pro CMD：99910205】

Example

Example of setting AIM 128 Code ID to "p" (0x70)
1. Read Enable Code Programming barcode.
2. Read AIM 128 Code ID Setting barcode.
3. Read Following Barcodes: "7", and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

Symbols

Code Programming ON

Select Message Length

It is used to program the valid reading length of AIM 128. The engine will
send an error beep, if the decoded data length does not match the valid length.

Code Programming OFF

AIM 128 Message Length is defined by "Min. Message Length" and
"Max. Message Length".

Min Message Length (default: 1)
【Pro CMD：99910203】

Max Message Length (default: 48)
【Pro CMD：99910204】

1D bar code Message Length should not exceed 127 bytes. Max Message Length should not
be less than Min Message Length.

To set Min Message Length of AIM 128 to 8 bytes and Max Message Length to 12 bytes,
read these programming codes

1、"Code Programming ON"
2、"Select Min Message Length"
3、Digit Code "8", see Digit Code
4、"Save Programming", see Digit Code
5、"Select Max Message Length"
6、Digit Code "1"
7、Digit Code "2"
8、"Save Programming"

9、"Code Programming OFF"

Symbols

Tools

Code Programming ON

Load Factory Default

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** Load ISBT 128 Factory Default
【Pro CMD：99910300】

Code Programming OFF

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Enable/Disable ISBT 128

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** Enable ISBT 128
【Pro CMD：99910302】

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Disable ISBT 128
【Pro CMD：99910301】

TIPS

When the engine can not read ISBT 128, please read "Enable ISBT 128" and try again.

ISBT 128 Code ID

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Code ID Setting
【Pro CMD：99910303】

Example

Example of setting ISBT 128 Code ID to "p" (0x70)
1. Read Enable Code Programming barcode.
2. Read ISBT 128 Code ID Setting barcode.
3. Read Following Barcodes: "7", and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

Symbols

Code Programming ON

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Load Factory Default

Code Programming OFF

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** Load EAN-8 Factory Default
【Pro CMD：99910400】

Enable/Disable EAN-8

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** Enable EAN-8
【Pro CMD：9991402】

||||||||||||||||||||||||||||
Disable EAN-8
【Pro CMD：99910401】

TIPS

When the engine can not read EAN-8, please read "Enable EAN-8" and try again.

EAN-8 Code ID

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Code ID Setting
【Pro CMD：99910416】

Example

Example of setting EAN-8 Code ID to "p" (0x70)
1. Read Enable Code Programming barcode.
2. Read EAN-8 Code ID Setting barcode.
3. Read Following Barcodes: "7" , and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

Symbols

Code Programming ON

Code Programming OFF

2 Digits Addenda Code

　　　2 Digits Addenda Code is the one to the right of an ordinary code.

** Disable 2 Digits Addenda Code
　【Pro CMD：99910405】

Only Read With 2 digits Addenda Code
　【Pro CMD：99910407】

Enable 2 Digits Addenda Code
　【Pro CMD：99910406】

5 Digits Addenda Code

　　　5 Digits Addenda Code is the one to the right of an ordinary code.

** Disable 5 Digits Addenda Code
　【Pro CMD：99910410】

Only Read With 5 digits Addenda Code
　【Pro CMD：99910412】

Enable 5 Digits Addenda Code
　【Pro CMD：99910411】

TIPS

　　" Enable 2 Digits Addenda Code " — read an ordinary code and 2 digits Addenda Code.
　　"Disable 2 Digits Addenda Code " — read an ordinary code only, and ignore 2 digits Addenda Code.
　　" Only Read With 2 digits Addenda Code " — read 2 digits Addenda Code and only read code with 2 digits Addenda Code.

Tools

Code Programming ON

Code Programming OFF

EAN-8 expand to EAN-13

" Do Not Expand to EAN-13 " — keep original type and digits, do not expand.
" Expand to EAN-13 by Adding Leading 0s " — expand to EAN-13 but keep code type.
" Expand Message and Convert to EAN-13 " — expand code digits and convert code type.

** Do Not Expand to EAN-13
【Pro CMD：99910413】

Expand Message and Convert to EAN-13
【Pro CMD：99910415】

Expand to EAN-13 by Adding Leading 0s
【Pro CMD：99910414】

Check Digit

EAN-8 is fixed 8 digits barcode and the last digit is check digit. Check digit is a value caculated from the first seven digits. It is used for checking if the first seven digits are right.

** Transmit Check
【Pro CMD：99910404】

Do Not Transmit Check
【Pro CMD：99910403】

EAN-13
Tools

Code Programming ON

Load Factory Default

Code Programming OFF

** Load EAN-13 Factory Default
【Pro CMD：99910500】

Disable/Enable EAN-13

** Enable EAN-13
【Pro CMD：99910502】

Disable EAN-13
【Pro CMD：99910501】

When the engine can not read EAN-13, please read "Enable EAN-13" and try again.

✎ Tools

Code Programming ON

Check Digit

EAN-13 is fixed 13 digits barcode and the last digit is check digit. Check digit Code Programming OFF
is a value calculated from the first twelve digits. It is used for checking if the
first twelve digits are right.

** Transmit Check
【Pro CMD：99910504】

Do Not Transmit Check
【Pro CMD：99910503】

EAN-13 Code ID

Code ID Setting
【Pro CMD：99910513】

Example

Example of setting EAN-13 Code ID to "p" (0x70)
1. Read Enable Code Programming barcode.
2. Read EAN-13 Code ID Setting barcode.
3. Read Following Barcodes: "7", and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

Symbols

Tools

Code Programming ON

Code Programming OFF

2 Digits Addenda Code

    2 Digits Addenda Code is the one to the right of an ordinary code.

** Disable 2 Digits Addenda Code
【Pro CMD：99910505】

Only Read With 2 digits Addenda Code
【Pro CMD：99910507】

Enable 2 Digits Addenda Code
【Pro CMD：99910506】

5 Digits Addenda Code

    5 Digits Addenda Code is the one to the right of an ordinary code.

** Disable 5 Digits Addenda Code
【Pro CMD：99910510】

Only Read With 5 digits Addenda Code
【Pro CMD：99910512】

Enable 5 Digits Addenda Code
【Pro CMD：99910511】

   " Enable 2 Digits Addenda Code " — read an ordinary code and 2 digits Addenda Code.
   "Disable 2 Digits Addenda Code " — read an ordinary code only, and ignore 2 digits
Addenda Code.
   " Only Read With 2 digits Addenda Code " — read 2 digits Addenda Code and only read
code with 2 digits Addenda Code.

Symbols

Code Programming ON

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Load Factory Default

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** Load ISSN Factory Default
【Pro CMD：99910600】

Code Programming OFF

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Enable/Disable ISSN

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** Enable ISSN
【Pro CMD：99910602】

||||||||||||||||||||||||||
Disable ISSN
【Pro CMD：99910601】

TIPS

When the engine can not read ISSN, please read "Enable ISSN" and try again.

ISSN Code ID

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Code ID Setting
【Pro CMD：99910603】

Example

Example of setting ISSN Code ID to "p" (0x70)
1. Read Enable Code Programming barcode.
2. Read ISSN Code ID Setting barcode.
3. Read Following Barcodes: "7", and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

Symbols

Code Programming ON

Load Factory Default

Code Programming OFF

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** Load ISBN Factory Default
【Pro CMD：99910700】

Enable/Disable ISBN

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** Enable ISBN
【Pro CMD：99910702】

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Disable ISBN
【Pro CMD：99910701】

When the engine can not read ISBN, please read "Enable ISBN" and try again.

Symbols

Code Programming ON

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ISBN Digits

Code Programming OFF

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Use 13 Digits
【Pro CMD：99910704】

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** Use 10 Digits
【Pro CMD：99910703】

ISBN Code ID

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

Code ID Setting
【Pro CMD：99910705】

Example

Example of setting ISBN Code ID to "p" (0x70)
1. Read Enable Code Programming barcode.
2. Read ISBN Code ID Setting barcode.
3. Read Following Barcodes: "7", and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

Symbols

Tools

Code Programming ON

Load Factory Default

Code Programming OFF

** Load UPC-E Factory Default
【Pro CMD：99911000】

Disable/Enable UPC-E

** Enable UPC-E
【Pro CMD：99911002】

Disable UPC-E
【Pro CMD：99911001】

TIPS When the engine can not read UPC-E, please read "Enable UPC-E" and try again.

UPC-E   ✎ Tools

Code Programming ON

Check Digit

UPC-E is fixed 8 digits barcode and the last digit is check digit. Check digit is Code Programming OFF
a value calculated from the first seven digits. It is used for checking if the first
seven digits are right.

** Transmit Check
【Pro CMD：99911004】

Do Not Transmit Check
【Pro CMD：99911003】

UPC-E Code ID

Code ID Setting
【Pro CMD：99911020】

Example of setting UPC-E Code ID to "p" (0x70)
1. Read Enable Code Programming barcode.
2. Read UPC-E Code ID Setting barcode.
3. Read Following Barcodes: "7", and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

E*xample*

Symbols

Code Programming ON

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Code Programming OFF

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2 Digits Addenda Code

    2 Digits Addenda Code is the one to the right of an ordinary code.

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** Disable 2 Digits Addenda
【Pro CMD：99911005】

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Only Read With 2 digits Addenda Code
【Pro CMD：99911007】

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Enable 2 Digits Addenda Code
【Pro CMD：99911006】

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5 Digits Addenda Code

    5 Digits Addenda Code is the one to the right of an ordinary code.

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** Disable 5 Digits Addenda Code
【Pro CMD：99911010】

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Only Read With 5 digits Addenda Code
【Pro CMD：99911012】

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Enable 5 Digits Addenda Code
【Pro CMD：99911011】

   " Enable 2 Digits Addenda Code " — read an ordinary code and 2 digits Addenda Code.
   "Disable 2 Digits Addenda Code " — read an ordinary code only, and ignore 2 digits Addenda Code.
   " Only Read With 2 digits Addenda Code " — read 2 digits Addenda Code and only read code with 2 digits Addenda Code.

Code Programming ON

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Transmit Default "0"

The first byte of UPC-E is default to "0".

Code Programming OFF

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** Do Not Transmit "0"
【Pro CMD：99911013】

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Transmit "0"
【Pro CMD：99911014】

UPC-E Expand to UPC-A

"Do Not Expand" — keep original type and digits, do not expand.

"Expand to UPC-A" — expand to UPC-A but keep code type.

"Expand Message and Convert to UPC-A" — expand code digits and convert code type.

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**Do Not Expand
【Pro CMD：99911015】

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Expand Message and Convert to UPC-A
【Pro CMD：99911017】

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Expand to UPC-A
【Pro CMD：99911016】

UPC-A 🔨 Tools

Code Programming ON

Load Factory Default

** Load UPC-A Factory Default
【Pro CMD：99911100】

Code Programming OFF

Disable/Enable UPC-A

** Enable UPC-A
【Pro CMD：99911102】

Disable UPC-A
【Pro CMD：99911101】

When the engine can not read UPC-A, please read "Enable UPC-A" and try again.

UPC-A Code ID

Code ID Setting
【Pro CMD：99911115】

Example

Example of setting UPC-A Code ID to "p" (0x70)
1. Read Enable Code Programming barcode.
2. Read UPC-A Code ID Setting barcode.
3. Read Following Barcodes: "7", and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

Check Digit

UPC-A is fixed 13 digits barcode and the last digit is Check Digit.Check digit is a value calculated from the first twelve digits. It is used for checking if the first twelve digits are right.

Code Programming ON

Code Programming OFF

**Transmit Check
【Pro CMD：99911104】

Do Not Transmit Check
【Pro CMD：99911103】

Transmit Default "0"

The first byte of UPC-A is default to "0".

** Do Not Transmit "0"
【Pro CMD：99911113】

Transmit "0"
【Pro CMD：99911114】

Symbols

Tools

Code Programming ON

Code Programming OFF

2 Digits Addenda Code

   2 Digits Addenda Code is the one to the right of an ordinary code.

** Disable 2 Digits Addenda Code
【Pro CMD：99911105】

Only Read With 2 digits Addenda Code
【Pro CMD：99911107】

Enable 2 Digits Addenda Code
【Pro CMD：99911106】

5 Digits Addenda Code

   5 Digits Addenda Code is the one to the right of an ordinary code.

** Disable 5 Digits Addenda Code
【Pro CMD：99911110】

Only Read With 5 digits Addenda Code
【Pro CMD：99911112】

Enable 5 Digits Addenda Code
【Pro CMD：99911111】

TIPS

- -
   "Enable 2 Digits Addenda Code" — read an ordinary code and 2 digits Addenda Code.
   "Disable 2 Digits Addenda Code" — read an ordinary code only, and ignore 2 digits
Addenda Code.
   "Only Read With 2 digits Addenda Code" — read 2 digits Addenda Code and only read
code with 2 digits Addenda Code.
- -

Tools

Code Programming ON

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Load Factory Default

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Code Programming OFF

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** Load Interleaved 2 of 5 Factory Default
【Pro CMD：99911200】

Disable/Enable Interleaved 2 of 5

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** Enable Interleaved 2 of 5
【Pro CMD：99911202】

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Disable Interleaved 2 of 5
【Pro CMD：99911201】

When the engine can not read Interleaved 2 of 5, please read "Enable Interleaved 2 of 5" and try again

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Interleaved 2 of 5 Code ID

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Code ID Setting
【Pro CMD：99911210】

Example
Example of setting Interleaved 2 of 5 Code ID to "p" (0x70)
1. Read Enable Code Programming barcode.
2. Read Interleaved 2 of 5 Code ID Setting barcode.
3. Read Following Barcodes: "7", and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

Tools

Code Programming ON

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Code Programming OFF

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Check Digit

Interleaved 2 of 5 may include Check Digit (not compulsory) following its barcode messages. If included, it must be the last digit. It verifies the barcode message.

　　» "NO Check, Transmit All" means to read without check and transmit all bytes including barcode message and Check digit.

　　» "Check, Do Not Transmit Check Digit" means to read and check. If verification is successful, transmit barcode message; if not, engine sends an error beep.

　　» "Check, Transmit All" means to read and check. If verification is successful, transmit all messages; if not, engine sends an error beep.

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** "NO Check, Transmit All"
【Pro CMD：99911203】

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Check, Do Not Transmit Check Digit
【Pro CMD：99911204】

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Check, Transmit All
【Pro CMD：99911205】

When "Check, Do Not Transmit Check digit" is enabled and barcode message length minus one is less than Min Message Length, it will lead to error beep.
E.g.：Reading a 4-byte (include check Digit) Interleaved 2 of 5 with the Min Message Length being 4 bytes and "Check, Do Not Transmit Check digit" enabled leads to error beep.

Code Programming ON

Select Message Length

It is used to program the valid reading length of Interleaved 2 of 5. The engine Code Programming OFF
will send an error beep, if the decoded data length does not match the valid
length.

Interleaved 2 of 5 Message Length is defined by "Min. Message Length"
and "Max. Message Length"

Min Message Length (default: 1)
【Pro CMD：99911206】

Max Message Length (default: 48)
【Pro CMD：99911207】

1D bar code Message Length should not exceed 127 bytes.
Max Message Length should not be less than Min Message Length.

Example
To set Min Message Length of Interleaved 2 of 5 as 8 bytes, and Max Message length as 12
bytes, read these programming codes:
1. "Code Programming ON"
2. "Select Min Message Length"
3. Digit Code "8", see Digit Code Appendix (Pxxx)
4. "Save Programming", see Digit Code Appendix (Pxxx)
5. "Select Max Message Length"
6. Digit Code "1"
7. Digit Code "2"
8. "Save Programming"
9. "Code Programming OFF"

ITF-6   ☟ Tools

ITF-6 is a fixed length 6 bytes Interleaved 2 of 5 barcode with check digit.
When enabled, ITF-6 precedes 6-byte Interleaved 2 of 5 barcode.

Code Programming OFF

** Load ITF-6 Factory Default
【Pro CMD：99911300】

**Disable ITF-6 User Selection
【Pro CMD：99911301】

Enable ITF-6，Do Not Transmit Check Digit
【Pro CMD：99911302】

Enable ITF-6, Transmit Check Digit
【Pro CMD：99911303】

For instance, when ITF-6 is enabled and Interleaved 2 of 5 is disabled, the ITF-6 and 6
bytes Interleaved 2 of 5 with check digit can be read, but other Interleaved 2 of 5 can not.

ITF-6 Code ID

Code ID Setting
【Pro CMD：99911304】

Example of setting ITF-6 Code ID to "p" (0x70)
1. Read Enable Code Programming barcode.
2. Read ITF-6 Code ID Setting barcode.
3. Read Following Barcodes: "7" , and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

ITF-14

Code Programming ON

Code Programming OFF

ITF-14 is a fixed length of 14 bytes Interleaved 2 of 5 barcode with Check digit. By factory default, it is disabled.

When enabled, ITF-14 precedes 14-byte Interleaved 2 of 5 barcode.

** Load ITF-14 Factory Default
【Pro CMD：99911400】

Enable ITF-14, Do Not Transmit Check Digit
【Pro CMD：99911402】

**Disable ITF-14
【Pro CMD：99911401】

Enable ITF-14, Transmit Check Digit
【Pro CMD：99911403】

For instance, when ITF-14 is enabled and Interleaved 2 of 5 is disabled, the ITF-14 and 14 bytes Interleaved 2 of 5 with check digit can be read, but other Interleaved 2 of 5 can not.

ITF-14 Code ID

Code ID Setting
【Pro CMD：99911404】

Example of setting ITF-14 Code ID to "p" (0x70)
1. Read Enable Code Programming barcode.
2. Read ITF-14 Code ID Setting barcode.
3. Read Following Barcodes: "7", and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

Symbols

Tools

Code Programming ON

Load Factory Default

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** Load **Deutshe14 Factory Default**
【Pro CMD：99911500】

Code Programming OFF

Disable/Enable Deutshe14

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** Enable Deutshe14，Do Not Transmit Check Digit
【Pro CMD：99911502】

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Disable Deutshe14
【Pro CMD：99911501】

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** Enable Deutshe14，Transmit Check Digit
【Pro CMD：99911503】

When the engine can not read Deutshe14, please read "Enable Deutshe14" and try again

Deutshe14 Code ID

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Code ID Setting
【Pro CMD：99911504】

Example of setting Deutshe14 Code ID to "p" (0x70)
1. Read Enable Code Programming barcode.
2. Read Deutshe14 Code ID Setting barcode.
3. Read Following Barcodes: "7", and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

Symbols

Tools

Code Programming ON

Load Factory Default

Code Programming OFF

** Load **Deutshe12 Factory Default**
【Pro CMD：99911600】

Disable/Enable Deutshe12

** Enable Deutshe12，Do Not Transmit Check Digit
【Pro CMD：99911602】

Disable Deutshe12
【Pro CMD：99911601】

** Enable Deutshe12，Transmit Check Digit
【Pro CMD：99911603】

TIPS

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When the engine can not read Deutshe12, please read "Enable Deutshe12" and try again
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Deutshe12 Code ID

Code ID Setting
【Pro CMD：99911604】

Example

Example of setting Deutshe12 Code ID to "p" (0x70)
1. Read Enable Code Programming barcode.
2. Read Deutshe12 Code ID Setting barcode.
3. Read Following Barcodes: "7" , and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

COOP25（Japanese Matrix 25） ⚒ Tools

Code Programming ON

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Load Factory Default

Code Programming OFF

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** Load COOP25 Factory Default
【Pro CMD：99911700】

Enable/ Disable COOP25

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**Enable COOP25
【Pro CMD：99911702】

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Disable COOP25
【Pro CMD：99911701】

When the engine can not read COOP25, please read "Enable COOP25" and try again.

COOP25（Japanese Matrix 25） Code ID

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Code ID Setting
【Pro CMD：99911710】

Example

Example of setting COOP25（Japanese Matrix 25） Code ID to "p"（0x70）
1. Read Enable Code Programming barcode.
2. Read COOP25（Japanese Matrix 25） Code ID Setting barcode.
3. Read Following Barcodes: "7", and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

Symbols

Tools

Code Programming ON

Code Programming OFF

Check Digit

COOP25 may include Check Digit (not compulsory) following its barcode messages. If included, it must be the last digit. It verifies the barcode message.

» "NO Check, Transmit All" means to read without check and transmit all bytes including barcode message and Check Digit.

» "Check, Do Not Transmit Check Digit" means to read and check. If verification is successful, transmits barcode message; if not, engine sends an error beep.

» "Check, Transmit All" means to read and check. If verification is successful, transmits all messages; if not, engine sends an error beep.

** NO Check, Transmit All
【Pro CMD：99911703】

Check, Transmit All
【Pro CMD：99911704】

Check, Do Not Transmit Check Digit
【Pro CMD：99911705】

When "Check, Do Not Transmit Check Digit" is enabled and barcode message length minus one is less than Min Message Length, it will lead to error beep.
E.g.：Reading a 4-byte (include Check Digit) COOP25 with the Min Message Length being 4 bytes and "Check, Do Not Transmit Check Digit" enabled leads to error beep.

Symbols

Tools

Code Programming ON

Select Message Length

It is used to program the valid reading length of COOP25. The engine will send an error beep, if the decoded data length does not match the valid length.

Code Programming OFF

COOP25 Message Length is defined by "Min. Message Length" and "Max. Message Length ".

Min Message Length (default: 1)
【Pro CMD：99911706】

Max Message Length (default: 48)
【Pro CMD：99911707】

TIPS

1D bar code Message Length should not exceed 127 bytes.
Max Message Length should not be less than Min Message Length.

Example

To set Min Message Length of COOP25 to 8 bytes and the Max Message Length to 12 bytes. Read these programming code:
1. "Code Programming ON"
2. "Select Min Message Length"
3. Digit Code "8", see Digit Code (Appendix Pxxx)
4. "Save Programming", see Digit Code (Appendix Pxxx)
5. "Select Max Message Length"
6. Digit Code "1"
7. Digit Code "2"
8. "Save Programming"
9. "Code Programming OFF"

Symbols

Tools

Code Programming ON

Code Programming OFF

Load Factory Default

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** Load Matrix 25 Factory Default
【Pro CMD：99912000】

Enable/ Disable Matrix 25

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**Enable Matrix 25
【Pro CMD：99912002】

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Disable Matrix 25
【Pro CMD：99912001】

When the engine can not read Matrix 25, please read "Enable Matrix 25" and try again.

Matrix 25 Code ID

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Code ID Setting
【Pro CMD：99912010】

Example

Example of setting Matrix 25 Code ID to "p" (0x70)
1. Read Enable Code Programming barcode.
2. Read Matrix 25 Code ID Setting barcode.
3. Read Following Barcodes: "7", and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

Symbols

Tools

Code Programming ON

Code Programming OFF

Check Digit

Matrix 25 may include Check Digit (not compulsory) following its barcode messages. If included, it must be the last digit. It verifies the barcode message.

» "NO Check, Transmit All" means to read without check and transmit all bytes including barcode message and Check Digit.

» "Check, Do Not Transmit Check Digit" means to read and check. If verification is successful, transmits barcode message; if not, engine sends an error beep.

» "Check, Transmit All" means to read and check. If verification is successful, transmits all messages; if not, engine sends an error beep.

** NO Check, Transmit All
【Pro CMD：99912003】

Check, Transmit All
【Pro CMD：99912004】

Check, Do Not Transmit Check Digit
【Pro CMD：99912005】

When "Check, Do Not Transmit Check Digit" is enabled and barcode message length minus one is less than Min Message Length, it will lead to error beep.
E.g.：Reading a 4-byte (include Check Digit) Matrix 25 with the Min Message Length being 4 bytes and "Check, Do Not Transmit Check Digit" enabled leads to error beep.

Tools

Code Programming ON

Code Programming OFF

Select Message Length

It is used to program the valid reading length of Matrix 25. The engine will send an error beep, if the decoded data length does not match the valid length.

Matrix 25 Message Length is defined by "Min. Message Length" and "Max. Message Length".

Min Message Length (default: 1)
【Pro CMD：99912006】

Max Message Length (default: 48)
【Pro CMD：99912007】

1D bar code Message Length should not exceed 127 bytes.
Max Message Length should not be less than Min Message Length.

Example

To set Min Message Length of Matrix 25 to 8 bytes and the Max Message Length to 12 bytes. Read these programming code:
1. "Code Programming ON"
2. "Select Min Message Length"
3. Digit Code "8", see Digit Code (Appendix Pxxx)
4. "Save Programming", see Digit Code (Appendix Pxxx)
5. "Select Max Message Length"
6. Digit Code "1"
7. Digit Code "2"
8. "Save Programming"
9. "Code Programming OFF"

Industrial 25   Tools

Code Programming ON

Load Factory Default

Code Programming OFF

** Load Industrial 25 Factory Default
【Pro CMD：99912100】

Enable/ Disable Industrial 25

**Enable Industrial 25
【Pro CMD：99912102】

Disable Industrial 25
【Pro CMD：99912101】

When the engine can not read Industrial 25, please read "Enable Industrial 25" and try again.

Industrial 25 Code ID

Code ID Setting
【Pro CMD：99912110】

Example

Example of setting Industrial 25 Code ID to "p" (0x70)
1. Read Enable Code Programming barcode.
2. Read Industrial 25 Code ID Setting barcode.
3. Read Following Barcodes: "7", and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

Tools

Code Programming ON

Code Programming OFF

Check Digit

Industrial 25 may include Check Digit (not compulsory) following its barcode messages. If included, it must be the last digit. It verifies the barcode message.

» "NO Check, Transmit All" means to read without check and transmit all bytes including barcode message and Check Digit.

» "Check, Do Not Transmit Check Digit" means to read and check. If verification is successful, transmits barcode message; if not, engine sends an error beep.

» "Check, Transmit All" means to read and check. If verification is successful, transmits all messages; if not, engine sends an error beep.

** NO Check, Transmit All
【Pro CMD：99912103】

Check, Transmit All
【Pro CMD：99912104】

Check, Do Not Transmit Check Digit
【Pro CMD：99912105】

When "Check, Do Not Transmit Check Digit" is enabled and barcode message length minus one is less than Min Message Length, it will lead to error beep.
E.g.：Reading a 4-byte (include Check Digit) Industrial 25 with the Min Message Length being 4 bytes and "Check, Do Not Transmit Check Digit" enabled leads to error beep.

Code Programming ON

Select Message Length

It is used to program the valid reading length of Industrial 25. The engine will
send an error beep, if the decoded data length does not match the valid length. Code Programming OFF

Industrial 25 Message Length is defined by "Min. Message Length" and
"Max. Message Length".

Min Message Length (default: 1)
【Pro CMD：99912106】

Max Message Length (default: 48)
【Pro CMD：99912107】

TIPS
1D bar code Message Length should not exceed 127 bytes.
Max Message Length should not be less than Min Message Length.

Example
To set Min Message Length of Industrial 25 to 8 bytes and the Max Message Length to 12
bytes. Read these programming code:
1. "Code Programming ON"
2. "Select Min Message Length"
3. Digit Code "8", see Digit Code (Appendix Pxxx)
4. "Save Programming", see Digit Code (Appendix Pxxx)
5. "Select Max Message Length"
6. Digit Code "1"
7. Digit Code "2"
8. "Save Programming"
9. "Code Programming OFF"

Symbols

🔨 Tools

Code Programming ON

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Load Factory Default

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** Load Standard 25 Factory Default
【Pro CMD：99912200】

Code Programming OFF

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Enable/ Disable Standard 25

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**Enable Standard 25
【Pro CMD：99912202】

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Disable Standard 25
【Pro CMD：99912201】

When the engine can not read Standard 25, please read "Enable Standard 25" and try again.

Standard 25 Code ID

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Code ID Setting
【Pro CMD：99912210】

Example of setting Standard 25 Code ID to "p"（0x70）
1. Read Enable Code Programming barcode.
2. Read Standard 25 Code ID Setting barcode.
3. Read Following Barcodes: "7", and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

Code Programming ON

Check Digit

Standard 25 may include Check Digit (not compulsory) following its barcode messages. If included, it must be the last digit. It verifies the barcode message.

Code Programming OFF

» "NO Check, Transmit All" means to read without check and transmit all bytes including barcode message and Check Digit.

» "Check, Do Not Transmit Check Digit" means to read and check. If verification is successful, transmits barcode message; if not, engine sends an error beep.

» "Check, Transmit All" means to read and check. If verification is successful, transmits all messages; if not, engine sends an error beep.

** NO Check, Transmit All
【Pro CMD：99912203】

Check, Transmit All
【Pro CMD：99912204】

Check, Do Not Transmit Check Digit
【Pro CMD：99912205】

When "Check, Do Not Transmit Check Digit" is enabled and barcode message length minus one is less than Min Message Length, it will lead to error beep.
E.g.：Reading a 4-byte (include Check Digit) Standard 25 with the Min Message Length being 4 bytes and "Check, Do Not Transmit Check Digit" enabled leads to error beep.

Tools

Code Programming ON

Select Message Length

It is used to program the valid reading length of Standard 25. The engine will send an error beep, if the decoded data length does not match the valid length.

Code Programming OFF

Standard 25 Message Length is defined by "Min. Message Length" and "Max. Message Length".

Min Message Length (default: 1)
【Pro CMD：99912206】

Max Message Length (default: 48)
【Pro CMD：99912207】

TIPS

1D bar code Message Length should not exceed 127 bytes.
Max Message Length should not be less than Min Message Length.

Example

To set Min Message Length of Standard 25 to 8 bytes and the Max Message Length to 12 bytes. Read these programming code:
1. "Code Programming ON"
2. "Select Min Message Length"
3. Digit Code "8", see Digit Code (Appendix Pxxx)
4. "Save Programming", see Digit Code (Appendix Pxxx)
5. "Select Max Message Length"
6. Digit Code "1"
7. Digit Code "2"
8. "Save Programming"
9. "Code Programming OFF"

Code Programming ON

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Load Factory Default

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** Load Code 39 Factory Default
【Pro CMD：99912400】

Code Programming OFF

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Enable/Disable Code 39

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** Enable Code 39
【Pro CMD：99912402】

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Disable Code 39
【Pro CMD：99912401】

TIPS

When the engine can not read Code 39, please read "Enable Code 39" and try again

Code 39 Code ID

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Code ID Setting
【Pro CMD：99912414】

Example

Example of setting Code 39 Code ID to "p" (0x70)
1. Read Enable Code Programming barcode.
2. Read Code 39 Code ID Setting barcode.
3. Read Following Barcodes: "7", and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

✎ Tools

Code Programming ON

Code Programming OFF

Check Digit

Code 39 may include Check Digit (not compulsory) following its barcode message. It verifies the barcode message.

» "NO Check, Transmit All" means to read without check and transmit all bytes including barcode message and Check Digit.

» "Check, Do Not Transmit Check Digit" means to read and check. If verification is successful, transmits barcode message; if not, engine sends an error beep.

» "Check, Transmit All" means to read and check. If verification is successful, transmits all messages; if not, engine sends an error beep.

** NO Check, Transmit All
【Pro CMD：99912403】

Check, Do not transmit Check Digit
【Pro CMD：99912404】

Check, Transmit All
【Pro CMD：99912405】

When "Check, Do not Transmit Check digit" is enabled and barcode message length minus one is less than Min Message Length, it will lead to error beep.
E.g.：Reading a 4-byte (include check byte) Code 39 with the Min Message Length being 4 bytes and "Check, Do not transmit Check Digit" enabled leads to error beep.

Code Programming ON

Code Programming OFF

Transmit Start & Stop Character

    Code 39 has one "*" before and another after digits as Start & Stop Character.
Transmission of "＊" can be selected.

**Transmit Both "＊"
【Pro CMD：99912407】

Transmit Neither "＊"
【Pro CMD：99912406】

Decode ASCII

    Code 39 can include full ASCII characters. For factory default, the engine only decodes part of them.
Read "Enable Full ASCII decode" to decode full ASCII characters.

**Partial ASCII Decode
【Pro CMD：99912410】

Full ASCII Decode
【Pro CMD：99912411】

Code Programming ON

Select Message Length

  Code 39 Message Length is defined by "Min. Message Length" and
"Max. Message Length ".It is used to program the valid reading length of
Code 39. The engine will send an error beep, if the decoded data length does
not match the valid length.

Code Programming OFF

Min Message Length (default: 1)
【Pro CMD：99912412】

Max Message Length (default: 48)
【Pro CMD：99912413】

1D bar code Message Length should not exceed 127 bytes.
Max Message Length should not be less than Min Message Length.

Example

To set Min Message Length of Code 39 to 8 bytes, and Max Message Length to 12 bytes,
read these programming codes:
1. "Code Programming ON"
2. "Select Min Message Length"
3. Digit Code "8", see Digit Code (Appendix Pxxx)
4. "Save Programming", see Digit Code (Appendix Pxxx)
5. "Select Max Message Length"
6. Digit Code "1"
7. Digit Code "2"
8. "Save Programming"
9. "Code Programming OFF"

Symbols

Tools

Code Programming ON

Load Factory Default

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Code Programming OFF

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** Load Codabar Factory Default
【Pro CMD：99912500】

Enable/Disable Codabar

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** Enable Codabar
【Pro CMD：99912502】

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Disable Codabar
【Pro CMD：99912501】

When the engine can not read Codabar, please read "Enable Codabar" and try again.

Codabar Code ID

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Code ID Setting
【Pro CMD：99912516】

Example

Example of setting Codabar Code ID to "p"（0x70）
1. Read Enable Code Programming barcode.
2. Read Codabar Code ID Setting barcode.
3. Read Following Barcodes: "7", and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

Symbols

Tools

Code Programming ON

Code Programming OFF

Check Digit

Codabar may include Check Digit (not compulsory) following its barcode message. It verifies the barcode message.

» "NO Check, Transmit All" means to read without check and transmit all bytes including barcode message and Check Digit.

» "Check, Do Not Transmit Check Digit" means to read and check. If verification is successful, transmits barcode message; if not, engine sends an error beep.

» "Check, Transmit All" means to read and check. If verification is successful, transmits all messages; if not, engine sends an error beep.

** NO Check, Transmit All
【Pro CMD：99912503】

Check, Transmit All
【Pro CMD：99912504】

Check, Do not transmit Check Digit
【Pro CMD：99912505】

When "Check, Do not Transmit Check digit" is enabled and barcode message length minus one is less than Min Message Length, it will lead to error beep.
E.g.：Reading a 4-byte (include check byte) Codabar with the Min Message Length being 4 bytes and "Check, Do not transmit Check Digit" enabled leads to error beep.

Symbols

Code Programming ON

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Transmit Start & Stop Character

Code Programming OFF

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Do Not Transmit Both Start & Stop Character
【Pro CMD：99912506】

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**Transmit Both Start & Stop Character
【Pro CMD：99912507】

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** Use ABCD/ABCD As Start & Stop Character
【Pro CMD：99912510】

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Use ABCD/TN*E As Start & Stop Character
【Pro CMD：99912511】

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Use abcd/abcd As Start & Stop Character
【Pro CMD：99912512】

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

Use abcd/tn*e As Start & Stop Character
【Pro CMD：99912513】

Codabar   Tools

Code Programming ON

Select Message Length

    Codabar Message Length is defined by "Min. Message Length" and "Max. Message Length ".It is used to program the valid reading length of Codabar. The engine will send an error beep, if the decoded data length does not match the valid length.

Code Programming OFF

Min Message Length (default: 1)
【Pro CMD：99912514】

Max Message Length (default: 48)
【Pro CMD：99912515】

- -
TIPS   1D bar code Message Length should not exceed 127 bytes.
Max Message Length should not be less than Min Message Length.
- -

Example   To set Min Message Length of Codabar to 8 bytes, and Max Message Length to 12 bytes, read these programming codes:
1. "Code Programming ON"
2. "Select Min Message Length"
3. Digit Code "8", see Digit Code (Appendix Pxxx)
4. "Save Programming", see Digit Code (Appendix Pxxx)
5. "Select Max Message Length"
6. Digit Code "1"
7. Digit Code "2"
8. "Save Programming"
9. "Code Programming OFF"

Code 93　　　　　　　　　　　　　　　　　　　　　　　　　 Tools

Code Programming ON

Load Factory Default

Code Programming OFF

** Load Code 93 Factory Default
【Pro CMD：99912600】

Enable /Disable Code 93

**Enable Code 93
【Pro CMD：99912602】

Disable Code 93
【Pro CMD：99912601】

TIPS

When the engine can not read Code 93, please read "Enable Code 93" and try again.

Code 93 Code ID

Code ID Setting
【Pro CMD：99912610】

Example

Example of setting Code 93 Code ID to "p" (0x70)
1. Read Enable Code Programming barcode.
2. Read Code 93 Code ID Setting barcode.
3. Read Following Barcodes: "7", and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

Tools

Code Programming ON

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Code Programming OFF

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

Check Digit

Code 93 may include Check Digit (not compulsory) following its barcode message. It verifies the barcode message.

» "NO Check, Transmit All" means to read without check and transmit all bytes including barcode message and Check Digit.

» "Check, Do Not Transmit Check Digit" means to read and check. If verification is successful, transmits barcode message; if not, engine sends an error beep.

» "Check, Transmit All" means to read and check. If verification is successful, transmits all messages; if not, engine sends an error beep.

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

** NO Check, Transmit All
【Pro CMD：99912603】

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Check, Transmit All
【Pro CMD：99912605】

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Check, Do not transmit Check Digit
【Pro CMD：99912604】

When "Check, Do not Transmit Check digit" is enabled and barcode message length minus one is less than Min Message Length, it will lead to error beep.
E.g.：Reading a 4-byte (include check byte) Code 93 with the Min Message Length being 4 bytes and "Check, Do not transmit Check Digit" enabled leads to error beep.

Code 93

Tools

Code Programming ON

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Code Programming OFF

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Select Message Length

It is used to program the valid reading length of Code 93. The engine will send an error beep, if the decoded data length does not match the valid length.
Code 93 Message Length is defined by "Min. Message Length" and
"Max. Message Length ."

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Min Message Length (default: 1)
【Pro CMD：99912606】

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Max Message Length (default: 48)
【Pro CMD：99912607】

TIPS

1D bar code Message Length should not exceed 127 bytes.
Max Message Length should not be less than Min Message Length.

Example

To set Min Message Length of Code 93 to 8 bytes and Max Message Length to 12 bytes, read these programming codes:
1. "Code Programming ON"
2. "Select Min Message Length"
3. Digit Code "8", see Digit Code (Appendix Pxxx)
4. "Save Programming", see Digit Code (Appendix Pxxx)
5. "Select Max Message Length"
6. Digit Code "1"
7. Digit Code "2"
8. "Save Programming"
9. "Code Programming OFF"

Code 11

Code Programming ON

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

Load Factory Default

Code Programming OFF

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

** Load Code 11 Factory Default
【Pro CMD：99912700】

Enable/ Disable Code 11

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**Enable Code 11
【Pro CMD：99912702】

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

Disable Code 11
【Pro CMD：99912701】

When the engine can not read Code 11, please read "Enable Code 11" and try again.

Code 11 Code ID

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Code ID Setting
【Pro CMD：99912715】

Example

Example of setting Code 11 Code ID to "p" (0x70)
1. Read Enable Code Programming barcode.
2. Read Code 11 Code ID Setting barcode.
3. Read Following Barcodes: "7", and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

Code Programming ON

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Check Digit

Code Programming OFF

Code 11 may include Check Digit (not compulsory) following its barcode
messages. If included, it must be the last digit. It verifies the barcode message.

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»　 "NO Check, Transmit All" means to read without check and transmit
all bytes including barcode message and Check Digit.

||||||||||||||||||||
** No Check
【Pro CMD：99912703】

||||||||||||||||||||
Single Check Digit，MOD11
【Pro CMD：99912704】

||||||||||||||||||||
Double Check Digits, MOD11/MOD11
【Pro CMD：99912705】

||||||||||||||||||||
Double Check Digits, MOD11/MOD9
【Pro CMD：99912706】

||||||||||||||||||||
Single Check Digit MOD11（Len <= 10）
Double Check Digits MOD11/
MOD11 （Len > 10）
【Pro CMD：99912707】

||||||||||||||||||||
Single Check Digit MOD11 （Len <= 10）
Double Check Digits MOD11/
MOD9 （Len > 10）
【Pro CMD：99912710】

||||||||||||||||||||
Do not transmit Check Digit
【Pro CMD：99912711】

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Transmit Check Digit
【Pro CMD：99912712】

When "Check, Do Not Transmit Check Digit" is enabled and barcode message length
minus one is less than Min Message Length, it will lead to error beep.
E.g.：Reading a 4-byte (include Check Digit) Code 11 with the Min Message Length being
4 bytes and "Check, Do Not Transmit Check Digit" enabled leads to error beep.

Symbols

Code Programming ON

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Select Message Length

    It is used to program the valid reading length of Code 11. The engine will send an error beep, if the decoded data length does not match the valid length.

Code Programming OFF

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    Code 11 Message Length is defined by "Min. Message Length" and "Max. Message Length".

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Min Message Length (default: 1)
【Pro CMD：99912713】

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Max Message Length (default: 48)
【Pro CMD：99912714】

- -

TIPS

1D bar code Message Length should not exceed 127 bytes.
Max Message Length should not be less than Min Message Length.

- -

Example

To set Min Message Length of Code 11 to 8 bytes and the Max Message Length to 12 bytes. Read these programming code:
1. "Code Programming ON"
2. "Select Min Message Length"
3. Digit Code "8", see Digit Code (Appendix Pxxx)
4. "Save Programming", see Digit Code (Appendix Pxxx)
5. "Select Max Message Length"
6. Digit Code "1"
7. Digit Code "2"
8. "Save Programming"
9. "Code Programming OFF"

Symbols

Code Programming ON

Load Factory Default

Code Programming OFF

** Load Plessey Factory Default
【Pro CMD：99913000】

Enable/ Disable Plessey

**Enable Plessey
【Pro CMD：99913002】

Disable Plessey
【Pro CMD：99913001】

TIPS

- -
When the engine can not read Plessey, please read "Enable Plessey" and try again.
- -

Plessey Code ID

Code ID Setting
【Pro CMD：99913010】

Example

Example of setting Plessey Code ID to "p" (0x70)
1. Read Enable Code Programming barcode.
2. Read Plessey Code ID Setting barcode.
3. Read Following Barcodes: "7", and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

Plessey   ✎ Tools

Code Programming ON

Code Programming OFF

Check Digit

Plessey may include Check Digit (not compulsory) following its barcode
messages. If included, it must be the last digit. It verifies the barcode message.

»   "NO Check, Transmit All" means to read without check and transmit
all bytes including barcode message and Check Digit.

»   "Check, Do Not Transmit Check Digit" means to read and check. If
verification is successful, transmits barcode message; if not, engine sends an
error beep.

»   "Check, Transmit All" means to read and check. If verification is
successful, transmits all messages; if not, engine sends an error beep.

** NO Check, Transmit All
【Pro CMD：99913003】

Check, Transmit All
【Pro CMD：99913004】

Check, Do not transmit Check Digit
【Pro CMD：99913005】

When "Check, Do Not Transmit Check Digit" is enabled and barcode message length
minus one is less than Min Message Length, it will lead to error beep.
E.g.：Reading a 4-byte (include Check Digit) Plessey with the Min Message Length being
4 bytes and "Check, Do Not Transmit Check Digit" enabled leads to error beep.

Code Programming ON

Select Message Length

It is used to program the valid reading length of Plessey. The engine will send an error beep, if the decoded data length does not match the valid length.

Code Programming OFF

Plessey Message Length is defined by "Min. Message Length" and "Max. Message Length".

Min Message Length (default: 1)
【Pro CMD：99913006】

Max Message Length (default: 48)
【Pro CMD：99913007】

TIPS 1D bar code Message Length should not exceed 127 bytes.
Max Message Length should not be less than Min Message Length.

Example

To set Min Message Length of Plessey to 8 bytes and the Max Message Length to 12 bytes. Read these programming code:
1. "Code Programming ON"
2. "Select Min Message Length"
3. Digit Code "8", see Digit Code (Appendix Pxxx)
4. "Save Programming", see Digit Code (Appendix Pxxx)
5. "Select Max Message Length"
6. Digit Code "1"
7. Digit Code "2"
8. "Save Programming"
9. "Code Programming OFF"

Symbols

 Tools

Code Programming ON

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Load Factory Default

Code Programming OFF

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** Load MSI-Plessey Factory Default
【Pro CMD：99913100】

Enable/ Disable MSI-Plessey

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**Enable MSI-Plessey
【Pro CMD：99913102】

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

Disable MSI-Plessey
【Pro CMD：99913101】

When the engine can not read MSI-Plessey, please read "Enable MSI-Plessey" and try again.

MSI-Plessey Code ID

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Code ID Setting
【Pro CMD：99913113】

Example

Example of setting MSI-Plessey Code ID to "p" (0x70)
1. Read Enable Code Programming barcode.
2. Read MSI-Plessey Code ID Setting barcode.
3. Read Following Barcodes: "7", and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

MSI-Plessey

Tools

Code Programming ON

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Code Programming OFF

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Check Digit

MSI-Plessey may include Check Digit (not compulsory) following its barcode messages. If included, it must be the last digit. It verifies the barcode message.

» "NO Check, Transmit All" means to read without check and transmit all bytes including barcode message and Check Digit.

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

** No Check
【Pro CMD：99913103】

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Single Check Digit，MOD10
【Pro CMD：99913104】

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

Double Check Digits, MOD10/MOD10
【Pro CMD：99913105】

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

Double Check Digits, MOD10/MOD11
【Pro CMD：99913106】

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

Do not transmit Check Digit
【Pro CMD：99913107】

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Transmit Check Digit
【Pro CMD：99913110】

When "Check, Do Not Transmit Check Digit" is enabled and barcode message length minus one is less than Min Message Length, it will lead to error beep.
E.g.：Reading a 4-byte (include Check Digit) MSI-Plessey with the Min Message Length being 4 bytes and "Check, Do Not Transmit Check Digit" enabled leads to error beep.

Code Programming ON

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Select Message Length

    MSI-Plessey Message Length is defined by "Min. Message Length" and
"Max. Message Length".It is used to program the valid reading length of

Code Programming OFF

MSI-Plessey. The engine will send an error beep, if the decoded data length

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

does not match the valid length.

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Min Message Length (default: 1)
【Pro CMD：99913111】

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Max Message Length (default: 48)
【Pro CMD：99913112】

- -
1D bar code Message Length should not exceed 127 bytes.
Max Message Length should not be less than Min Message Length.
- -

To set Min Message Length of MSI-Plessey to 8 bytes and the Max Message Length to 12
bytes. Read these programming code:
1. "Code Programming ON"
2. "Select Min Message Length"
3. Digit Code "8", see Digit Code (Appendix Pxxx)
4. "Save Programming", see Digit Code (Appendix Pxxx)
5. "Select Max Message Length"
6. Digit Code "1"
7. Digit Code "2"
8. "Save Programming"
9. "Code Programming OFF"

Symbols

Code Programming ON

Load Factory Default

Code Programming OFF

** Load RSS Factory Default
【Pro CMD：99913200】

Enable/ Disable RSS

**Enable RSS
【Pro CMD：99913202】

Disable RSS
【Pro CMD：99913201】

When the engine can not read RSS, please read "Enable RSS" and try again.

RSS Code ID

Code ID Setting
【Pro CMD：99913203】

E
xample

Example of setting RSS Code ID to "p" (0x70)
1. Read Enable Code Programming barcode.
2. Read RSS Code ID Setting barcode.
3. Read Following Barcodes: "7", and "0"
4. Read Save barcode
5. Read Disable Code Programming barcode.

Appendix

Digit Code

It is must to be read save after read digit code.

Code Programming ON

Code Programming OFF

0
【Pro CMD：99900000】

4
【Pro CMD：99900004】

1
【Pro CMD：99900001】

5
【Pro CMD：99900005】

2
【Pro CMD：99900002】

6
【Pro CMD：99900006】

3
【Pro CMD：99900003】

7
【Pro CMD：99900007】

Appendix

Tools

Code Programming ON

Code Programming OFF

8
【Pro CMD：99900010】

C
【Pro CMD：99900014】

9
【Pro CMD：99900011】

D
【Pro CMD：99900015】

A
【Pro CMD：99900012】

E
【Pro CMD：99900016】

B
【Pro CMD：99900013】

F
【Pro CMD：99900017】

Save and Abort   Tools

Code Programming ON

Code Programming OFF

In order to save the received data "Save" has to be read after data transition
completed. If error occurs when reading data,
the wrong data can be deleted and the setting up can be done again..

Eg, after a program code is received then '1 2 3" in order is received, if then
read "Abort One Data of Current Setting" the "3" will be deleted; if read
"Abort One String of Current Setting" the '123' will be deleted; if read
"Abort Current Setting" both the program code and '123' will be deleted,
the device will be on status of "initiating program code".

Save
【Pro CMD：99900020】

Abort One Data of Current Setting
【Pro CMD：99900021】

Abort Current Setting
【Pro CMD：99900023】

Abort All String of Current Setting
【Pro CMD：99900022】