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Chapter 1 Description

1.1 Notice

The manufacturer shall not be liable for technical or editorial errors or omissions contained herein; nor for incidental or consequential damages in connection with the furnishing, performance, or use of this publication.

FCC Approval

This device had been test in accordance with the procedures given in ANSI C63.4 (1992) and confirmed to complies with the limits for a CLASS B digital pursuant to part 15 of the FCC Rules.

CE Standards

The CE mark as shown here indicates this product had been tested in accordance with the procedures given in European Council Directive 89/336/EEC and confirmed to comply with the European Standard EN55022:1994/ A1: 1995 Class B, EN 55024/1998.

1.2   Introduction

The Decoder is an advanced and versatile decoding facility for barcoding systems .It works with variety of bar code types, reading devices, and computer interfaces. It discriminates about twenty different symbologies automatically.

This menu provide an easy way to config the decoding options and interface selections by scanning bar codes listed in the menu.

1.3   Codes Read

Codes Read
ALL UPC/EAN/JAN , Code 39, Code 39 Full ASCII, Code 128, Interleave 25, Industrial 25, Matrix 25, CODABAR/NW7, Code 11, MSI/PLESSEY, Code 93, China Postage, Code32/Italian Pharmacy Others available upon request.

1.4   Installation

Unpacking –
Remove the scanner from its packing and check it for damage. If the scanner was defected in transit, please contact your vendor immediately. Be sure that you keep the packing with all accessories contains in the package for your returning of service.

Connecting the scanner –
Keyboard wedge/RS-232C/USB:
Connect the 10-pins RS-45 male connector into the bottom of the scanner and you will hear a "click" when the connection is made.

Power supply for RS-232C scanner–
There are 3 ways to supplying the power, use external +5V power supply, use optional power cable (KBDC) which taking the power from KB wedge or if the host supports +5V power from pin 9.

Installing the scanner to the Host System –
1. Turn off the host system.
2. Connect the power if needed.
3. Connect to the proper port on the host system.
4. Turn on the host system.

Switching cable –
Before removing the cable from the scanner, it is recommended that the power on the host system is off and the power supply has been disconnected from unit.

1. Find the small "Pin-hole" on the bottom of the unit.
2. Use a bended regular paperclip and insert the tip into the hole.
3. You will head a "click", then gentle on the strain-relief of the cable and it will slide out of the scanner.
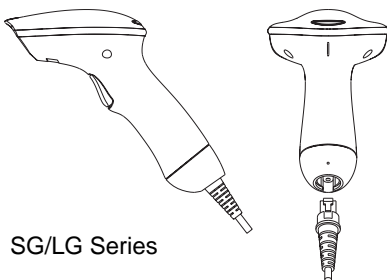
SG/LG Series

SD Series

5
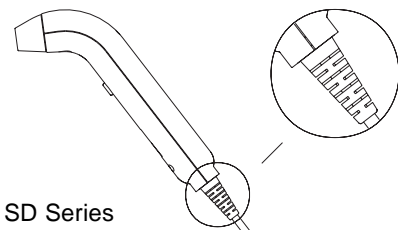
1.5 Pin Assignment

A> Input Port for Mini Decoder
DB 9 Male

Pin No.	Wand / Slot Reader	CCD / Laser Scanner
1	N.C.	S.O.S.
2	DATA	DATA
3	N.C.	N.C.
4	N.C.	N.C.
5	N.C.	TRIGGER
6	N.C.	P. E.
7	GND	GND
8	SHIELD	SHIELD
9	+5V	+5V
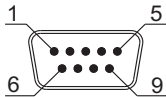
B> Output Port
1. PC Keyboard Output

DIN 5 MALE

Pin No.	Function
1	HOST CLK
2	HOST DATA
4	GND
5	Vcc(+5V)
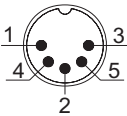
DIN 5 FEMALE

Pin No.	Function
1	KB CLK
2	KB DATA
4	GND
5	Vcc(+5V)
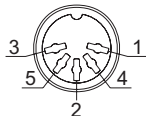
MiniDIN 6 MALE

Pin No.	Function
1	HOST DATA
3	GND
4	Vcc
5	HOST CLK
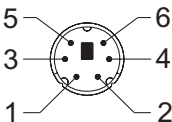
MiniDIN 6 FEMALE

Pin No.	Function
1	KB DATA
3	GND
4	Vcc
5	KB CLK
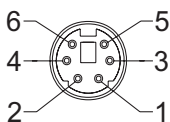
2. RS-232 Output
   DB 9 Female

Pin No.	Function
2	TXD
3	RXD
5	GND
7	CTS
8	RTS
Power Lead	Vcc (+5V)
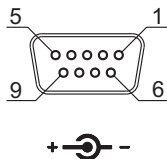
3. WAND Emulation Output
   DB 9 Female

Pin No.	Function
2	DATA
7	GND
9	Vcc (+5V)
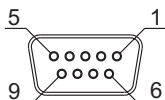
4. ADB Interface

MiniDIN 4 MALE		MiniDIN 4 FEMALE	
Pin No.	Function	Pin No.	Function
1	ADB	1	ADB
3	Vcc	3	Vcc
4	GND	4	GND
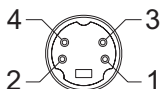
5. NEC 9801 Interface
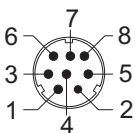
MiniDIN 8 MALE		MiniDIN 8 FEMALE	
Pin No.	Function	Pin No.	Function
1	RST	1	RST
2	GND	3	GND
3	RDY	4	RDY
4	RXD	5	RXD
5	RTY	4	RTY
8	+5V	5	+5V
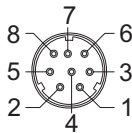
1.6 Specification

	SD20X	SD30X	SD80X
Interface			TTL, Keyboard
Code Read	ALL UPC/EAN/JAN , Code 39, Code 39 CODABAR/NW7, Code 11, MSI/PLE		
Width of Window	60mm	80mm	60mm
Depth of Field	25mm	25mm	100mm
Resolution			
Ambient Light	1500Lux	1500Lux	1500Lux
Scan Speed	100	100	100
Voltage			
Operating Temperature			0ºC
Storage Temperature			-20ºC
Relative Humidity			20%
Cable			

	SD90X	SD100X	SG30X	LG3XX
	, RS232, USB and WAND Emulation			
	Full ASCII, Code 128, Interleave 25, Industrial 25, Matrix 25, SSEY, Code 93, China Postage, Code32/Italian Pharmacy			
	80mm	75mm	50mm	50mm
	150mm	100mm	300mm	300mm
	0.127mm(5 mil)			
	1500Lux	1500Lux	100,000Lux	100,000Lux
	100	100	270	36 - 100
	DC +5V ± 5%			
	to 40ºC (32ºF to 104ºF)			
	to 60ºC (-4ºF to 140ºF)			
	to 85% (Non-Condensing)			
	Straight, 5 ft.			

Chapter 2 Configuration - General

2.1 Flow Chart

```
                        ┌──────────────┐   ┌──────────┐   ┌──────────┐
                        │    Start     │   │  Recall  │   │ Set All  │
                        │ Configuration│   │ Parameter│   │ Defaults │
                        └──────────────┘   └──────────┘   └──────────┘

                        ┌────────────────────────┐
                        │  Interface Selection    │
                        │  Input Port Selection   │
                        │     Communication       │
                        │       Parameters        │
                        │  Bar Codes Parameters   │
                        │      MSR Parameters     │
                        │    Misc .Parameters     │
                        │          etc.           │
                        └────────────────────────┘

              ┌──────────────┐         ┌──────────────┐
              │    Abort     │         │     End      │
              │ Configuration│         │ Configuration│
              └──────────────┘         └──────────────┘

                                  ┌──────────────┐
                                  │     Save     │
                                  │  Parameters  │
                                  └──────────────┘
```
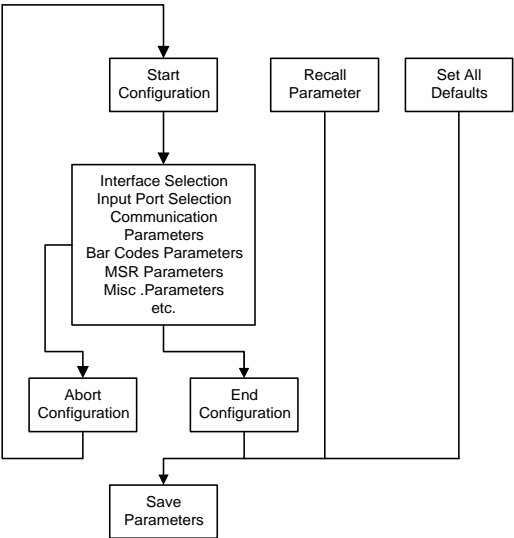
2.2 Loop of Programming

The philosophy of programming parameters has been shown on the flow chart of 2.1. Basically user should

1. Scan Start of Configuration.
2. Scan all necessary labels for parameters that meet applications.
3. Scan End of Configuration to end the programming.
4. To permanently save the settings you programmed, just scan label for Save Parameters.
5. To go back to the Default Settings, just scan label for Set All Defaults.

2.3 Factory Default Settings

The factory default settings are shown with < > and bold in the following sections. You can make your own settings by following the procedures in this manual. If you want to save the settings permanently, you should scan the label of "Save Parameters" in chapter 2.4, otherwise the settings will not be saved after the decoder power is off, and all settings will go back to previous settings.

By scanning "Set All Default" label, the settings will go back to the factory default settings.

2.4 Main Page of Configuration

Save Parameters

```
%$ + / 0
```

Recall Stored Parameters

```
%$ + / 1
```

Set All Defaults

```
%$ + / 2
```

Start Configuration

```
%$ + / 3
```

End Configuration

```
%$ + / 4
```

Abort Configuration

```
%$ + / 6
```

Version Information

```
%$ + / 5
```

Save Parameters -
The parameter settings will be saved permanently.

Recall Stored Parameters -
Replace the current parameters by the parameters you saved last time.

Set All Defaults -
Set all the parameters to the factory default settings.

Abort Configuration -
Terminate current programming status.

Version Information -
Display the decoder version information and date code.

Chapter 3 Interface and Reading Mode Selection

3.1 Interface Selection

<Keyboard Mode>

||||||| ||| ||| ||| ||| |||
%0 0 U0

RS232 Mode

||||||| ||| ||| ||| ||| |||
%0 0 U8

WAND Emulation

||||||| ||| ||| ||| ||| |||
%0 0 M2

OCIA Mode

||||||| ||| ||| ||| ||| |||
%0 0 M4

USB Mode

||||||| ||| ||| ||| ||| |||
%0 X O8

3.2 Memory Function

<Enable>

||||||| ||| ||| ||| ||| |||
%0 X I 2

Disable

||||||| ||| ||| ||| ||| |||
%0 X I 0

3.3 Reading Mode Selection

<Good Read OFF>

```
%0271
```

Trigger ON/OFF
```
%0270
```

Continuous/Trigger OFF
```
%0272
```

Testing
```
%0275
```

Continuous/Auto Power On
```
%0273
```

Flash
```
%0274
```

Flash/Auto Power On
```
%0276
```

Reserved1
```
%0277
```

Reserved2
```
%09F8
```

Reserved3
```
%09F9
```

Reserved4
```
%09FA
```

Reserved5
```
%09FB
```

Ch.4 Communication Parameters

4.1 RS232 Mode Parameters

A> Set Up BAUD Rate

600

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0Y70

1200

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0Y71

2400

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0Y72

4800

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0Y73

<9600>

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0Y77

19200

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0Y74

38400

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0Y75

B> Set Up Data Bits

7 Data Bits

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0Y80

<8 Data Bits>

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0Y88

C> Set Up Stop Bits

<1 Bit>

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0YO8

2 Bits

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0YO0

D> Set Up Parity

<None>

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 YN7

Even

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 YN2

Odd

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 YN3

Mark

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 YN1

Space

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 YN0

E> Handshaking

RTS/CTS Enable

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 1 8 8

<RTS/CTS Disable>

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 1 8 0

ACK/NAK Enable

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 1 4 4

<ACK/NAK Disable>

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 1 4 0

XON/XOFF Enable

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 3 K 4

<XON/XOFF Disable>

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 3 K 0

4.2 Keyboard Wedge Mode Parameters
A> Terminal Type

<IBM PC/AT, PS/2>

||||||||||||||||||||||||
%0ZF0

IBM PC/XT

||||||||||||||||||||||||
%0ZF1

IBM PS/2 25, 30

||||||||||||||||||||||||
%0ZF2

NEC 9800

||||||||||||||||||||||||
%0ZF3

Apple Desktop Bus(ADB)

||||||||||||||||||||||||
%0ZF4

IBM 5550

||||||||||||||||||||||||
%0ZF5

IBM 122 Key (1)

||||||||||||||||||||||||
%0ZF6

IBM 102 Key

||||||||||||||||||||||||
%0ZF7

IBM 122 Key (2)

||||||||||||||||||||||||
%0ZF8

Reserved 1

||||||||||||||||||||||||
%0ZF9

Reserved 2

||||||||||||||||||||||||
%0ZFA

Reserved 3

||||||||||||||||||||||||
%0ZFB

Reserved 4

||||||||||||||||||||||||
%0ZFC

Reserved 5

||||||||||||||||||||||||
%0ZFD

B> Upper/Lower Case

<No Change>

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 3 3 0

Upper Case

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 3 3 1

Lower Case

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 3 3 2

C> Send Character by ALT Method

Enable

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 3 O8

<Disable>

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 3 O0

D> Select Numerical Pad

ON

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 1 K4

<OFF>

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 1 K0

18

4.3 Output Characters Parameters

A> Select Terminator

<CR+LF>

```
%7 S2 +
```

None

```
%7 S7 +
```

CR

```
%7 S0 +
```

LF

```
%7 S1 +
```

Space

```
%7 S4 +
```

HT(TAB)

```
%7 S3 +
```

STX-ETX

```
%7 S5 +
```

B> Time-out Between Characters

<0 ms>

||||||| || ||| ||| ||| ||| |||
%0070

5 ms

||||||| || ||| ||| ||| ||| |||
%0071

10 ms

||||||| || ||| ||| ||| ||| |||
%0072

25 ms

||||||| || ||| ||| ||| ||| |||
%0073

50 ms

||||||| || ||| ||| ||| ||| |||
%0074

100 ms

||||||| || ||| ||| ||| ||| |||
%0075

200 ms

||||||| || ||| ||| ||| ||| |||
%0076

300 ms

||||||| || ||| ||| ||| ||| |||
%0077

4.4 Wand Emulation Mode Parameters

A> TTL Level Representation

<Bar Equals High>

||||||| |||||||| ||||| ||| ||||
%02K4

Bar Equals Low

||||||| |||||||| ||||| ||| ||||
%02K0

B> Scan Speed Selection

<Fast>

||||||| |||||||| ||||| ||| ||||
%0288

Slow

||||||| |||||||| ||||| ||| ||||
%0280

C> Output Format Selection

<Output as Code 39>

||||||| |||||||| ||||| ||| ||||
%02O8

Output as Code 39
Full ASCII

||||||| |||||||| ||||| ||| ||||
%02O0

Output as Original
Code Format

||||||| |||||||| ||||| ||| ||||
%0XK4

4.5 OCIA Mode Parameters

<NCR 8 Bit Format>

```
%02J0
```

NCR 9 Bit Format

```
%02J1
```

Spectra-Physics

```
%02J2
```

Nixdorf

```
%02J3
```

Ch.5 Bar Codes & Others

5.1 Symbologies Selection

UPC-A **<ON>**

||||||||||||||||||||||||||
%0A44

OFF

||||||||||||||||||||||||||
%0A40

UPC-E **<ON>**

||||||||||||||||||||||||||
%0BO8

OFF

||||||||||||||||||||||||||
%0BO0

EAN-13/JAN-13 **<ON>**

||||||||||||||||||||||||||
%0A22

OFF

||||||||||||||||||||||||||
%0A20

EAN-8/JAN-8 **<ON>**

||||||||||||||||||||||||||
%0A11

OFF

||||||||||||||||||||||||||
%0A10

CODE 39 **<ON>**

||||||||||||||||||||||||||
%0EO8

OFF

||||||||||||||||||||||||||
%0EO0

CODE 128 **<ON>**

||||||||||||||||||||||||||
%0FO8

OFF

||||||||||||||||||||||||||
%0FO0

CODABAR/NW7 **<ON>**

||||||||||||||||||||||||||
%0JO8

OFF

||||||||||||||||||||||||||
%0JO0

23

Interleave 25 **<ON>**

```
%0 GO8
```

OFF

```
%0 GO0
```

Industrial 25 ON

```
%0 HO8
```

<OFF>

```
%0 HO0
```

Matrix 25 ON

```
%0I O8
```

<OFF>

```
%0I O0
```

CODE 93 ON

```
%0 KO8
```

<OFF>

```
%0 KO0
```

CODE 11 ON

```
%0 L O8
```

<OFF>

```
%0 L O0
```

China Postage ON

```
%0 MO8
```

<OFF>

```
%0 MO0
```

MSI/PLESSEY ON

```
%0 NO8
```

<OFF>

```
%0 NO0
```

BC412 ON

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 OO8

<OFF>

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 OO0

Code 2 of 6 ON

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 PO8

<OFF>

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 PO0

Telepen ON

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 TO8

<OFF>

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 TO0

Reserved4 ON

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 QO8

<OFF>

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 QO0

Reserved5 ON

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 RO8

<OFF>

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 RO0

Reserved6 ON

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 SO8

<OFF>

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 SO0

Select All Bar Codes

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%1 A/ +

5.2 UPC/EAN/JAN Parameters

A> Reading Type

UPCA=EAN13 ON

||||||||||||||||||||||||
%0AK4

UPCA=EAN13<OFF>

||||||||||||||||||||||||
%0AK0

ISBN Enable

||||||||||||||||||||||||
%0B88

ISBN **<Disable>**

||||||||||||||||||||||||
%0B80

ISSN Enable

||||||||||||||||||||||||
%0B44

ISSN **<Disable>**

||||||||||||||||||||||||
%0B40

Decode with Supplement

||||||||||||||||||||||||
%01O0

<Autodiscriminate Supplement>

||||||||||||||||||||||||
%01O8

B> Supplementals Set Up

<Not Transmit>

||||||||||||||||||||||||
%0B33

Transmit 2 Code

||||||||||||||||||||||||
%0B31

Transmit 5 Code

||||||||||||||||||||||||
%0B32

Transmit 2&5 Code

||||||||||||||||||||||||
%0B30

26

C> Check Digit Transmission

UPC-A Check Digit
Transmission **<ON>**

```
%0 AI 2
```

OFF

```
%0 AI 0
```

UPC-E Check Digit
Transmission **<ON>**

```
%0 BI 2
```

OFF

```
%0 BI 0
```

**EAN-8 Check Digit
Transmission <ON>**

```
%0 A8 8
```

OFF

```
%0 A8 0
```

**EAN-13 Check Digit
Transmission <ON>**

```
%0 AH1
```

OFF

```
%0 AH0
```

5.3 Code 39 Parameters

A> Type of Code

<Standard>

||||| ||| ||||||| ||| ||| |||| |||
%0EH1

Full ASCII

||||| ||| ||||||| ||| ||| |||| |||
%0EH0

Italian Pharmacy/Code 32
<OFF>

||||| ||| ||||||| ||| ||| |||| |||
%0E80

Italian Pharmacy/
Code 32 ON

||||| ||| ||||||| ||| ||| |||| |||
%0E88

B> Check Digit Transmission

**<Do Not Calculate
Check Digit>**

||||| ||| ||||||| ||| ||| |||| |||
%0EM2

Calculate Check Digit
& Transmit

||||| ||| ||||||| ||| ||| |||| |||
%0EM6

Calculate Check Digit
& Not Transmit

||||| ||| ||||||| ||| ||| |||| |||
%0EM4

C> Output Start/Stop Character

Enable

||||| ||| ||||||| ||| ||| |||| |||
%0E44

<Disable>

||||| ||| ||||||| ||| ||| |||| |||
%0E40

28

D> Decode Asterisk

Enable

%0E22

<Disable>

%0E20

E> Set Up Code Length

To set the fixed length:
1. Scan the "Begin" label of the desired set.
2. Go to the Decimal Value Tables in Appendix A, scan label(s) that represents the length to be read.
3. Scan the "Complete" label of the desired set.
Repeat the steps 1 - 3 to set additional lengths.

<Variable>

%4E1+

Fix Length (2 Sets Available)
1. 1st Set Begin

%4E00

2. Decimal Value
   (Appendix A)

3. 1st Set Complete

%4E01

1. 2nd Set Begin

%4E00

2. Decimal Value
   (Appendix A)

3. 2nd Set Complete

%4E02

Minimum Length
1. Begin

%2+-/

2. Decimal Value
   (Appendix A)

3. Complete

%2C0+

29

5.4 Code 128 Parameters

A> Check Digit Transmission

Do Not Calculate
Check Digit

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0FN1

Calculate Check
Digit & Transmit

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0FN7

**<Calculate Check Digit
& Not Transmit>**

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0FN5

B> Append FNC2

ON

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0F88

<OFF>

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0F80

C> Set Up Code Length

To set the fixed length:
1. Scan the "Begin" label of the desired set.
2. Go to the Decimal Value Tables in Appendix A, scan label(s) that represents the length to be read.
3. Scan the "Complete" label of the desired set.

Repeat the steps 1 - 3 to set additional lengths.

<Variable>

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%4 F 1 +

Fix Length (2 Sets Available)

1. 1st Set Begin

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%4 F 0 0

2. Decimal Value
(Appendix A)

3. 1st Set Complete

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%4 F 0 1

1. 2nd Set Begin

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%4 F 0 0

2. Decimal Value
(Appendix A)

3. 2nd Set Complete

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%4 F 0 2

Minimum Length

1. Begin

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%2 + - /

2. Decimal Value
(Appendix A)

3. Complete

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%2 C 1 +

5.5 Interleave 25 Parameters

A> Check Digit Transmission

<Do Not Calculate Check Digit>

```
%0 GN3
```

Calculate Check Digit & Transmit

```
%0 GN7
```

Calculate Check Digit & Not Transmit

```
%0 GN5
```

B> Set Up Number of Character

<Even>

```
%0 G8 8
```

Odd

```
%0 G8 0
```

C> Brazilian Banking Code

<Disable>

```
%0 G4 0
```

Enable

```
%0 G4 4
```

D> Set Up Code Length

To set the fixed length:
1. Scan the "Begin" label of the desired set.
2. Go to the Decimal Value Tables in Appendix A, scan label(s) that represents the length to be read.
3. Scan the "Complete" label of the desired set.

Repeat the steps 1 - 3 to set additional lengths.

<Variable>

||||||||||||||||||||||||||||||
%4 G1 +

Fix Length (2 Sets Available)

1. 1st Set Begin

||||||||||||||||||||||||||||||
%4 G0 0

2. Decimal Value
(Appendix A)

3. 1st Set Complete

||||||||||||||||||||||||||||||
%4 G0 1

1. 2nd Set Begin

||||||||||||||||||||||||||||||
%4 G0 0

2. Decimal Value
(Appendix A)

3. 2nd Set Complete

||||||||||||||||||||||||||||||
%4 G0 2

Minimum Length

1. Begin

||||||||||||||||||||||||||||||
%2 + - /

2. Decimal Value
(Appendix A)

3. Complete

||||||||||||||||||||||||||||||
%2 C2 +

5.6 Industrial 25 Parameters

A> Check Digit Transmission

<Do Not Calculate Check Digit>

||||||||||||||||||||||||||||||||
%0 HN3

Calculate Check Digit & Transmit

||||||||||||||||||||||||||||||||
%0 HN7

Calculate Check Digit & Not Transmit

||||||||||||||||||||||||||||||||
%0 HN5

B> Set Up Code Length

To set the fixed length:
1. Scan the "Begin" label of the desired set.
2. Go to the Decimal Value Tables in Appendix A, scan label(s) that represents the length to be read.
3. Scan the "Complete" label of the desired set.

Repeat the steps 1 - 3 to set additional lengths.

<Variable>

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%4 H1 +

Fix Length (2 Sets Available)

1. 1st Set Begin

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%4 H0 0

2. Decimal Value
(Appendix A)

3. 1st Set Complete

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%4 H0 1

1. 2nd Set Begin

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%4 H0 0

2. Decimal Value
(Appendix A)

3. 2nd Set Complete

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%4 H0 2

Minimum Length

1. Begin

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%2 + - /

2. Decimal Value
(Appendix A)

3. Complete

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%2 C3 +

5.7 Matrix 25 Parameters

A> Check Digit Transmission

\<Do Not Calculate Check Digit\>

```
%01 N3
```

Calculate Check Digit & Transmit

```
%01 N7
```

Calculate Check Digit & Not Transmit

```
%01 N5
```

B> Set Up Code Length

To set the fixed length:
1. Scan the "Begin" label of the desired set.
2. Go to the Decimal Value Tables in Appendix A, scan label(s) that represents the length to be read.
3. Scan the "Complete" label of the desired set.

Repeat the steps 1 - 3 to set additional lengths.

<Variable>

‖‖‖‖‖‖‖‖‖‖‖‖‖
%4 1 1 +

Fix Length (2 Sets Available)

1. 1st Set Begin

‖‖‖‖‖‖‖‖‖‖‖‖‖
%4 1 0 0

2. Decimal Value
   (Appendix A)

3. 1st Set Complete

‖‖‖‖‖‖‖‖‖‖‖‖‖
%4 1 0 1

1. 2nd Set Begin

‖‖‖‖‖‖‖‖‖‖‖‖‖
%4 1 0 0

2. Decimal Value
   (Appendix A)

3. 2nd Set Complete

‖‖‖‖‖‖‖‖‖‖‖‖‖
%4 1 0 2

Minimum Length

1. Begin

‖‖‖‖‖‖‖‖‖‖‖‖‖
%2 + - /

2. Decimal Value
   (Appendix A)

3. Complete

‖‖‖‖‖‖‖‖‖‖‖‖‖
%2 C4 +

37

5.8 CODABAR/NW7 Parameters

A> Set Up Start/Stop Characters Upon Transmission

ON

%0 J H1

<OFF>

%0 J H0

B> Transmission Type of Start/Stop

<A/B/C/D> <Start>

%0 4 VF

A Start

%0 4 V1

B Start

%0 4 V2

C Start

%0 4 V4

D Start

%0 4 V8

<A/B/C/D> <Stop>

%0 4 FF

A Stop

%0 4 F1

B Stop

%0 4 F2

C Stop

%0 4 F4

D Stop

%0 4 F8

C> Set Up Code Length

To set the fixed length:
1. Scan the "Begin" label of the desired set.
2. Go to the Decimal Value Tables in Appendix A, scan label(s) that represents the length to be read.
3. Scan the "Complete" label of the desired set.

Repeat the steps 1 - 3 to set additional lengths.

<Variable>

```
%4 J 1 +
```

Fix Length (2 Sets Available)
1. 1st Set Begin

```
%4 J 0 0
```

2. Decimal Value
   (Appendix A)

3. 1st Set Complete

```
%4 J 0 1
```

1. 2nd Set Begin

```
%4 J 0 0
```

2. Decimal Value
   (Appendix A)

3. 2nd Set Complete

```
%4 J 0 2
```

Minimum Length
1. Begin

```
%2 + - /
```

2. Decimal Value
   (Appendix A)

3. Complete

```
%2 C5 +
```

5.9 Code 93 Parameters

A> Check Digit Transmission

**<Calculate Check 2 Digits
& Not Transmit>**

%0 KN4

Do Not Calculate
Check Digit

%0 KN3

B> Set Up Code Length

To set the fixed length:
1. Scan the "Begin" label of the desired set.
2. Go to the Decimal Value Tables in Appendix A, scan label(s) that represents the length to be read.
3. Scan the "Complete" label of the desired set.

Repeat the steps 1 - 3 to set additional lengths.

<Variable>

||||||||||||||||||||||||||||||||
%4 K 1 +

Fix Length (2 Sets Available)

1. 1st Set Begin

||||||||||||||||||||||||||||||||
%4 K 0 0

2. Decimal Value
   (Appendix A)

3. 1st Set Complete

||||||||||||||||||||||||||||||||
%4 K 0 1

1. 2nd Set Begin

||||||||||||||||||||||||||||||||
%4 K 0 0

2. Decimal Value
   (Appendix A)

3. 2nd Set Complete

||||||||||||||||||||||||||||||||
%4 K 0 2

Minimum Length

1. Begin

||||||||||||||||||||||||||||||||
%2 + - /

2. Decimal Value
   (Appendix A)

3. Complete

||||||||||||||||||||||||||||||||
%2 C6 +

41

5.10 Code 11 Parameters

A> Check Digit Transmission

<Do Not Calculate Check Digit>

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 L N3

Calculate Check 1 Digit & Transmit

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 L N7

Calculate Check 1 Digit & Not Transmit

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 L N5

Calculate Check 2 Digits & Transmit

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 L N6

Calculate Check 2 Digits & Not Transmit

‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%0 L N4

B> Set Up Code Length

To set the fixed length:
1. Scan the "Begin" label of the desired set.
2. Go to the Decimal Value Tables in Appendix A, scan label(s) that represents the length to be read.
3. Scan the "Complete" label of the desired set.

Repeat the steps 1 - 3 to set additional lengths.

\<Variable\>

%4L1+

Fix Length (2 Sets Available)

1. 1st Set Begin

%4L00

2. Decimal Value
   (Appendix A)

3. 1st Set Complete

%4L01

1. 2nd Set Begin

%4L00

2. Decimal Value
   (Appendix A)

3. 2nd Set Complete

%4L02

Minimum Length

1. Begin

%2+-/

2. Decimal Value
   (Appendix A)

3. Complete

%2C7+

43

5.11 MSI/PLESSEY Code Parameters

A> Check Digit Transmission

<Do Not Calculate Check Digit>

||||||||||||||||||||||||||
%0 NN3

Calculate Check Digit & Transmit

||||||||||||||||||||||||||
%0 NN7

Calculate Check Digit & Not Transmit

||||||||||||||||||||||||||
%0 NN5

B> Set Up Code Length

To set the fixed length:
1. Scan the "Begin" label of the desired set.
2. Go to the Decimal Value Tables in Appendix A, scan label(s) that represents the length to be read.
3. Scan the "Complete" label of the desired set.

Repeat the steps 1 - 3 to set additional lengths.

\<Variable\>

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%4 N1 +

Fix Length (2 Sets Available)

1. 1st Set Begin

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%4 N0 0

2. Decimal Value
(Appendix A)

3. 1st Set Complete

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%4 N0 1

1. 2nd Set Begin

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%4 N0 0

2. Decimal Value
(Appendix A)

3. 2nd Set Complete

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%4 N0 2

Minimum Length

1. Begin

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%2 +- /

2. Decimal Value
(Appendix A)

3. Complete

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%2 C9 +

5.12 BC 412 Code Parameters

A> Check Digit Transmission

Do Not Calculate
Check Digit

%0 ON3

**<Calculate Check
Digit & Transmit>**

%0 ON7

Calculate Check Digit
& Not Transmit

%0 ON5

B> Set Up Code Length

To set the fixed length:
1. Scan the "Begin" label of the desired set.
2. Go to the Decimal Value Tables in Appendix A, scan label(s) that represents the length to be read.
3. Scan the "Complete" label of the desired set.

Repeat the steps 1 - 3 to set additional lengths.

<Variable>

||||||||||||||||||||||||||||
%4 O1 +

Fix Length (2 Sets Available)

1. 1st Set Begin

||||||||||||||||||||||||||||
%4 O0 0

2. Decimal Value
   (Appendix A)

3. 1st Set Complete

||||||||||||||||||||||||||||
%4 O0 1

1. 2nd Set Begin

||||||||||||||||||||||||||||
%4 O0 0

2. Decimal Value
   (Appendix A)

3. 2nd Set Complete

||||||||||||||||||||||||||||
%4 O0 2

Minimum Length

1. Begin

||||||||||||||||||||||||||||
%2 + - /

2. Decimal Value
   (Appendix A)

3. Complete

||||||||||||||||||||||||||||
%2 CA+

5.13 Code 2 of 6 Parameters

A> Check Digit Transmission

Do Not Calculate
Check Digit

||||||||||||||||||||||||||
%0 PN3

**\<Calculate Check
Digit & Transmit\>**

||||||||||||||||||||||||||
%0 PN7

Calculate Check Digit
& Not Transmit

||||||||||||||||||||||||||
%0 PN5

B> Set Up Code Length

To set the fixed length:
1. Scan the "Begin" label of the desired set.
2. Go to the Decimal Value Tables in Appendix A, scan label(s) that represents the length to be read.
3. Scan the "Complete" label of the desired set.

Repeat the steps 1 - 3 to set additional lengths.

<Variable>

%4 P1 +

Fix Length (2 Sets Available)

1. 1st Set Begin

%4 P0 0

2. Decimal Value
   (Appendix A)

3. 1st Set Complete

%4 P0 1

1. 2nd Set Begin

%4 P0 0

2. Decimal Value
   (Appendix A)

3. 2nd Set Complete

%4 P0 2

Minimum Length

1. Begin

%2 + - /

2. Decimal Value
   (Appendix A)

3. Complete

%2 CB +

49

5.14 Telepen Parameters

A> Type of Code

<Telepen ASCII>

||||||||||||||||||||||||||||||
%0T80

Telepen Numeric

||||||||||||||||||||||||||||||
%0T88

B> Check Digit Transmission

Do Not Calculate
Check Digit

||||||||||||||||||||||||||||||
%0TN3

Calculate Check
Digit & Transmit

||||||||||||||||||||||||||||||
%0TN7

**<Calculate Check Digit
& Not Transmit>**

||||||||||||||||||||||||||||||
%0TN5

C> Set Up Code Length

To set the fixed length:
1. Scan the "Begin" label of the desired set.
2. Go to the Decimal Value Tables in Appendix A, scan label(s) that represents the length to be read.
3. Scan the "Complete" label of the desired set.

Repeat the steps 1 - 3 to set additional lengths.

<Variable>

%4 T 1 +

Fix Length (2 Sets Available)

1. 1st Set Begin

%4 T 0 0

2. Decimal Value
(Appendix A)

3. 1st Set Complete

%4 T 0 1

1. 2nd Set Begin

%4 T 0 0

2. Decimal Value
(Appendix A)

3. 2nd Set Complete

%4 T 0 2

Minimum Length

1. Begin

%2 + - /

2. Decimal Value
(Appendix A)

3. Complete

%2 C F +

Ch.6 Miscellaneous Parameters
6.1   Language Selection

<US English>

||||||||||||||||||||||||||
%0 Z V0

UK English

||||||||||||||||||||||||||
%0 Z V1

Italian

||||||||||||||||||||||||||
%0 Z V2

Spanish

||||||||||||||||||||||||||
%0 Z V3

French

||||||||||||||||||||||||||
%0 Z V4

German

||||||||||||||||||||||||||
%0 Z V5

Swedish

||||||||||||||||||||||||||
%0 Z V6

Switzerland

||||||||||||||||||||||||||
%0 Z V7

Hungarian

||||||||||||||||||||||||||
%0 Z V8

Japanese

||||||||||||||||||||||||||
%0 Z V9

Belgium

```
%0ZVA
```

Portuguese

```
%0ZVB
```

Denmark

```
%0ZVC
```

Netherlands

```
%0ZVD
```

Turkey

```
%0ZVE
```

Reserved1

```
%0ZVF
```

6.2 Bar Code ID

ON

||||||||||||||||||||||||||||||||
%0 0 H1

<OFF>

||||||||||||||||||||||||||||||||
%0 0 H0

Default

||||||||||||||||||||||||||||||||
%9 1 3 +

With this function ON, a leading character will be added to the output string while scanning code, user may refer to the following table to know what kind of bar code is being scanned.

Please refer to the table below for matching code ID of codes read in.

Code Type	ID	Code Type	ID
UPC-A	A	UPC-E	B
EAN-8	C	EAN-13	D
CODE 39	E	CODE 128	F
Interleave 25	G	Industrial 25	H
Matrix 25	I	Codabar/NW7	J
CODE 93	K	CODE 11	L
China Postage	M	MSI/PLESSEY	N
BC412	O	Code 2 of 6	P
Telepen	T		

User Define Code ID

To set the code ID:
1. Scan the symbologies label.
2. Go to the ASCII Tables in Appendix B, scan label that represents the desired code ID.

Note:
User define code ID will override default value. Program will not check the conflict. It is possible to have more than two symbologies which have same code ID.

UPC-A

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%91A+

UPC-E

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%91B+

EAN-13/JAN-13

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%91Y+

EAN-8/JAN-8

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%91Z+

CODE 39

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%91E+

CODE 128

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%91F+

CODABAR/NW7

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%91J+

Interleave 25

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%91G+

Industrial 25

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%91H+

Matrix 25

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%91I+

CODE 93

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%91K+

CODE 11

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%91L+

China Postage

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%91M+

MSI/PLESSEY

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%91N+

BC412

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%91O+

Code 2 of 6

```
%91P+
```

Telepen

```
%91T+
```

Reserved4

```
%91Q+
```

Reserved5

```
%91R+
```

Reserved6

```
%91S+
```

6.3 Reading Level

Bar Equals High

||||||| ||| |||||| |||| ||| ||| |||
%03I2

<Bar Equals Low>

||||||| ||| |||||| |||| ||| ||| |||
%03I0

6.4 Accuracy

<1 Time>

||||||| ||| |||||| |||| ||| ||| |||
%0130

2 Times

||||||| ||| |||||| |||| ||| ||| |||
%0131

3 Times

||||||| ||| |||||| |||| ||| ||| |||
%0132

4 Times

||||||| ||| |||||| |||| ||| ||| |||
%0133

6.5 Buzzer Beep Tone

<High>

||||||| ||| |||||| |||| ||| ||| |||
%01J3

Medium

||||||| ||| |||||| |||| ||| ||| |||
%01J2

Low

||||||| ||| |||||| |||| ||| ||| |||
%01J1

Off

||||||| ||| |||||| |||| ||| ||| |||
%01J0

6.6 Sensitivity of Continuous Reading Mode

<Fast>

||||||||||||||||||||||||||
%0388

Slow

||||||||||||||||||||||||||
%0380

6.7 Notebook Function

Enable

||||||||||||||||||||||||||
%0344

<Disable>

||||||||||||||||||||||||||
%0340

6.8 Reverse Output Characters

<Disable>

||||||||||||||||||||||||||
%03H0

Enable

||||||||||||||||||||||||||
%03H1

6.9 Setup Deletion

To setup the deletion of output characters:

1. Scan the label of the desired set below.
2. Scan the label of the desired symbology.
3. Go to the Decimal Value Tables in Appendix A, scan label(s) that represents the desired position to be deleted.
4. Scan the "Complete" label of "Character Position to be Deleted".
5. Go to the Decimal Value Tables in Appendix A, scan label(s) that represents the number of characters to be deleted.
6. Scan the "Complete" label of "Number of Characters to be Deleted".

Repeat the steps 1 - 6 to set additional deletion.

A> Select Deletion Set Number

1. 1st Set

%800+

2. 2nd Set

%801+

3. 3rd Set

%802+

4. 4th Set

%803+

5. 5th Set

%804+

6. 6th Set

%805+

B> Symbologies Selection

UPC-A

||||||||||||||||||||||||||||||
%81A+

UPC-E

||||||||||||||||||||||||||||||
%81B+

EAN-13/JAN-13

||||||||||||||||||||||||||||||
%81Y+

EAN-8/JAN-8

||||||||||||||||||||||||||||||
%81Z+

CODE 39

||||||||||||||||||||||||||||||
%81E+

CODE 128

||||||||||||||||||||||||||||||
%81F+

CODABAR/NW7

||||||||||||||||||||||||||||||
%81J+

Interleave 25

||||||||||||||||||||||||||||||
%81G+

Industrial 25

||||||||||||||||||||||||||||||
%81H+

Matrix 25

||||||||||||||||||||||||||||||
%81I+

CODE 93

||||||||||||||||||||||||||||||
%81K+

CODE 11

||||||||||||||||||||||||||||||
%81L+

China Postage

||||||||||||||||||||||||||||||
%81M+

MSI/PLESSEY

||||||||||||||||||||||||||||||
%81N+

BC412

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%81O+

Code 2 of 6

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%81P+

Telepen

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%81T+

Resvered4

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%81Q+

Resvered5

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%81R+

All Codes

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%81S+

None

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%814+

C> Character Position to be Deleted

1. Decimal Value
   (Appendix A)   2. Complete

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%820+

D> Number of Characters to be Deleted

1. Decimal Value
   (Appendix A)   2. Complete

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%830+

6.10 Setup Insertion

To setup the insertion of output characters:

1. Scan the label of the desired set.
2. Scan the label of the desired symbology.
3. Go to the Decimal Value Tables in Appendix A, scan label(s) that represents the desired position to be inserted.
4. Scan the "Complete" label of "Character Position to be Inserted".
5. Go to the ASCII Tables in Appendix B or Function Key Tables in Appendix C, scan label(s) that represents the desired characters to be inserted.
6. Scan the "Complete" label of "Characters to be Inserted".

Repeat the steps 1 - 6 to set additional insertion.

A> Select Insertion Set Number

1. 1st Set

|||||||||||||||||||||||||||||||
%500+

2. 2nd Set

|||||||||||||||||||||||||||||||
%501+

3. 3rd Set

|||||||||||||||||||||||||||||||
%502+

4. 4th Set

|||||||||||||||||||||||||||||||
%503+

5. 5th Set

|||||||||||||||||||||||||||||||
%504+

6. 6th Set

|||||||||||||||||||||||||||||||
%505+

B> Symbologies Selection

UPC-A

||||||||||||||||||||||||||
%51A+

UPC-E

||||||||||||||||||||||||||
%51B+

EAN-13/JAN-13

||||||||||||||||||||||||||
%51Y+

EAN-8/JAN-8

||||||||||||||||||||||||||
%51Z+

CODE 39

||||||||||||||||||||||||||
%51E+

CODE 128

||||||||||||||||||||||||||
%51F+

CODABAR/NW7

||||||||||||||||||||||||||
%51J+

Interleave 25

||||||||||||||||||||||||||
%51G+

Industrial 25

||||||||||||||||||||||||||
%51H+

Matrix 25

||||||||||||||||||||||||||
%51I+

CODE 93

||||||||||||||||||||||||||
%51K+

CODE 11

||||||||||||||||||||||||||
%51L+

China Postage

||||||||||||||||||||||||||
%51M+

MSI/PLESSEY

||||||||||||||||||||||||||
%51N+

BC412

||||||||||||||||||||||||||||
%51O+

Code 2 of 6

||||||||||||||||||||||||||||
%51P+

Telepen

||||||||||||||||||||||||||||
%51T+

Resvered4

||||||||||||||||||||||||||||
%51Q+

Resvered5

||||||||||||||||||||||||||||
%51R+

All Codes

||||||||||||||||||||||||||||
%51S+

None

||||||||||||||||||||||||||||
%514+

C> Character Position to be Inserted

1. Decimal Value
   (Appendix A)

2. Complete

||||||||||||||||||||||||||||
%520+

D> Characters to be Inserted

1. ASCII Table
   (Appendix B)

2. Complete

||||||||||||||||||||||||||||
%530+

64

IR SENSOR

<Disable>

||||||||| ||| |||||||||| |||| ||| ||||||
%0 XH0

Enable

||||||| ||| |||||||||| |||| ||| ||||||
%0 XH1

Appendix A Decimal Value Table

0

1

2

3

4

5

6

7

8

9

Appendix B   ASCII Table

NULL
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SOH
‖‖‖‖‖‖‖‖‖‖‖
01

STX
‖‖‖‖‖‖‖‖‖‖‖
02

ETX
‖‖‖‖‖‖‖‖‖‖‖
03

EOT
‖‖‖‖‖‖‖‖‖‖‖
04

ENQ
‖‖‖‖‖‖‖‖‖‖‖
05

ACK
‖‖‖‖‖‖‖‖‖‖‖
06

BEL
‖‖‖‖‖‖‖‖‖‖‖
07

BS
‖‖‖‖‖‖‖‖‖‖‖
08

HT
‖‖‖‖‖‖‖‖‖‖‖
09

LF
‖‖‖‖‖‖‖‖‖‖‖
0A

VT
‖‖‖‖‖‖‖‖‖‖‖
0B

FF
‖‖‖‖‖‖‖‖‖‖‖
0C

CR
‖‖‖‖‖‖‖‖‖‖‖
0D

SO
‖‖‖‖‖‖‖‖‖‖‖
0E

SI
‖‖‖‖‖‖‖‖‖‖‖
0F

DLE
‖‖‖‖‖‖‖‖‖‖‖
10

DC1
‖‖‖‖‖‖‖‖‖‖‖
11

DC2
‖‖‖‖‖‖‖‖‖‖‖
12

DC3
‖‖‖‖‖‖‖‖‖‖‖
13

DC4
‖‖‖‖‖‖‖‖‖‖‖
14

NAK
‖‖‖‖‖‖‖‖‖‖‖
15

SYN
‖‖‖‖‖‖‖‖‖‖‖
16

ETB
‖‖‖‖‖‖‖‖‖‖‖
17

CAN
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18

EM
‖‖‖‖‖‖‖‖‖‖‖
19

ESC
‖‖‖‖‖‖‖‖‖‖‖
1B

SUB
‖‖‖‖‖‖‖‖‖‖‖
1A

FS
‖‖‖‖‖‖‖‖‖‖‖
1C

RS
‖‖‖‖‖‖‖‖‖‖‖
1E

GS
‖‖‖‖‖‖‖‖‖‖‖
1D

US
‖‖‖‖‖‖‖‖‖‖‖
1F

SPACE

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2F

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31

0

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30

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32

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34

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3A

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3B

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A

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41

B

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||||| |||| ||| ||||
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42

C

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43

D

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||||| |||| ||| ||||
```
44

E

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||||| |||| ||| ||||
```
45

F

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||||| |||| ||| ||||
```
46

G

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||||| |||| ||| ||||
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47

H

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||||| |||| ||| ||||
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48

I

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49

J

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4A

K

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4B

L

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4C

M

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W

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X

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Y

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59

Z

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5A

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5B

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5C

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a
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b
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62

c
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63

d
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64

e
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65

f
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66

g
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67

h
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68

i
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69

j
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6A

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6B

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6C

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79

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7A

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7B

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7C

}
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7D

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7E

DEL
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7F

Appendix C Function Key Table

F1
```
C0
```

F2
```
C1
```

F3
```
C2
```

F4
```
C3
```

F5
```
C4
```

F6
```
C5
```

F7
```
C6
```

F8
```
C7
```

F9
```
C8
```

F10
```
C9
```

F11
```
CA
```

F12
```
CB
```

Insert
```
CC
```

Delete
```
CD
```

Home
```
CE
```

Page Up
```
CF
```

Page Down
```
D0
```

End
```
D1
```

Left
```
D2
```

Right
```
D3
```

Up
```
D4
```

Down
```
D5
```