

## Common Barcodes:

### UPC-A:

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The UPC-A barcode is the standard for items that are typically sold to the public. UPC-A barcodes are used for most edible consumer products.

UPC-A barcodes contain numeric data only, and require a checksum character that may be optionally printed as text.

The UPC-A barcode is composed of one system character, a five-digit manufacturer number, a five-digit product number, and a system-supplied checksum number, for a total of 12 digits.

A system of **0**, a manufacturer of **12345**, and a product number of **67890** would print as follows:



Regular UPC-A coded items have a system character of **0**. If you are creating your own UPC-A identifiers for use solely within your own operation, use system character **4** as the first character of the field to be barcoded.

Both two-digit and five-digit supplementals are supported for the UPC-A barcodes. Based on the length of the characters provided as input (13 or 16 characters, not including the checksum digit). If an incorrect number of characters is provided, or a letter or space is included, a barcode generation error occurs and will print on the label.

### UPC-E:

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The UPC-E barcode is the smallest barcode available. It contains the same information as the but the 10 data characters (manufacturer number + product number) and checksum characters compressed into six characters by suppressing zeros. For UPC-E, the data characters must least four zeros.



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A system of **0**, a manufacturer of **12300**, and a product number of **00064** would print as follows:

Like UPC-A, UPC-E barcodes are either 11, 13, or 16 numeric digits, and require a checksum character that may be optionally printed as text. Both two-digit and five-digit supplementals are supported for the UPC-E barcodes in the same manner as UPC-A.

### EAN/JAN-13 / EAN/JAN-8:

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Both EAN/JAN barcodes are used for products that require a country origin. EAN/JAN barcodes contain numeric data only, and require a checksum character that may be optionally printed as text.

EAN/JAN-13 is used to encode 12 digits plus a checksum character (for a total of 13 characters), while EAN/JAN-8 is used to encode seven digits plus a checksum character (for a total of eight characters).

The first two digits are used to identify the country of origin, the next 10 digits (five digits for EAN/JAN-8) are data characters, and the last digit is the system-supplied checksum character.

Both two-digit and five-digit supplementals are supported for the EAN/JAN barcodes in the same manner as UPC-A.

Examples of EAN/JAN-13 and EAN/JAN-8 barcodes are shown:

EAN/JAN-13



EAN/JAN-8



### Code 39 (3 of 9):

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The Code 39 barcode is probably the most commonly used barcode because it allows numbers, letters, and some punctuation to be barcoded. From two to 30 characters can be supplied in the data to be barcoded.

Spaces can be barcoded, and any lower case letters in the input data are converted to upper case.

The Code 39 barcode is self-checking, but you may also select to add a checksum digit to end of the barcode.

Code 39 barcodes are one of the few barcode types that allow you to control the width of the wide bar by defining it as a ratio of the narrow bar. The only other barcode types that allow width control are Extended Code 39 and Interleaved 2 of 5 barcodes.

The available ratios are **2 to 1** (wide bar is twice as wide as narrow bar), **3 to 1**, and **5 to 2**. Note that when the **5 to 2** ratio is selected, all barcode widths are doubled.

An example of the Code 39 barcode is shown:



### Extended Code 39

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The Extended Code 39 barcode is the expanded version of the Code 39 barcode. The Extended Code 39 supports every character in the ASCII character set, allowing full support of upper and lower case letters, as well as control codes.

Like Code 39, from two to 30 characters can be supplied in the data to be barcoded for Extended Code 39.

The Extended 39 barcode requires twice as many bars (twice the width) per character as Code 39. Two ASCII characters are generated for each character to be encoded.

Extended Code 39 is also self-checking, but supports printing of a checksum digit at the end of the barcode. Variable width ratios for wide bars can also be specified for Extended Code 39, as described above for Code 39 barcodes.

An example of the Extended Code 39 barcode is shown:



### Interleaved 2 of 5

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The Interleaved 2 of 5 barcode (also called code 25) is a numeric-only barcode that prints out a little larger than the UPC-A barcode when 10 digits are encoded. The Interleaved 2 of 5 barcode allows from two to 30 digits.

The Interleaved 2 of 5 barcode requires an even number of digits to be encoded. CounterPoint automatically appends a leading zero if the number of data characters (including the checksum character, if used) is odd.

The use of a checksum character is optional with the Interleaved 2 of 5 barcode. When used, the checksum character prints at the end of the barcode.

Variable width ratios for wide bars can also be specified for Interleaved 2 of 5, as described above for Code 39 barcodes.

An example of the Interleaved 2 of 5 barcode is shown:



## Code 128:

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The Code 128 barcode is a very compact barcode. From two to 30 characters, using the full ASCII 128 character set, can be encoded with this barcode.

There are actually three different character subsets that are provided for this barcode. CounterPoint automatically uses the subset that will result in the smallest barcode, based on the characters in the input data.

Code 128 supports all ASCII 128 characters

Subset A supports numbers, upper-case, and control characters, such as tab and new-line.

Subset B supports numbers, upper and lower case letters.

Subset C supports numbers only.

If a Code 128 barcode contains four or more consecutive numbers, the numbers are encoded in double-density mode (two numbers are encoded into one character width).

Code 128 requires a checksum character that may be optionally printed as text.

An example of the Code 128 barcode is shown:



## Codeabar:

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The Codabar barcode can print numeric characters, as well as six symbols (- \$ : / . +). There are also four special start/stop characters (A, B, C, and D) that must exist in the data to be encoded. From two to 30 characters can be encoded.

This barcode is useful for encoding dollar and mathematical figures because a decimal point, plus sign, minus sign, and dollar sign can be encoded.

Codabar is self-checking, but supports printing of a checksum digit at the end of the barcode, just before the stop character.

An example of the Codabar barcode is shown:



## Zip+4 Postnet


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The Zip+4 Postnet barcode is placed on the lower right of envelopes or postcards to speed mail through the postal service. This barcode takes advantage of reduced postage rates. The barcode is made up of tall and short bars with even spacing between each bar.

Both five-digit and nine-digit zip codes can be encoded into the Postnet barcode (the hyphen in position six of a 10-digit zip code is automatically removed by CounterPoint to ensure a nine-digit zip code). A correction digit is added to each Postnet barcode, and is used by the Post Office's barcode reader to identify reading errors.

Text cannot be printed for Zip+4 Postnet barcodes. When setting up a barcode definition for the Zip+4 Postnet barcode, you should answer **No** to **Print spaces ?** In addition, the bar height you specify in barcode definition is ignored for Postnet barcodes.

The post office has specific requirements for the position of Postnet barcodes on envelopes and post cards. Check with your local post office to ensure that your placement of these barcodes meets these requirements.

An example of a Zip+4 Postnet barcode for zip code 12345-6789 is shown: 

## MSI Plessey

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The MSI Plessey barcode is used most often in the grocery industry for shelf labels.

MSI Plessey is a numeric only barcode, from two to 30 digits. Each barcode consists of a forward start code, the data characters, one or two check digits, and a reverse start code.

The MSI Plessey code is not self-checking, so the use of a checksum is recommended.

An example of the MSI Plessey barcode is shown:



## Code 93 / Extended Code 93

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The Code 93 and Extended Code 93 barcodes are compressed versions of Code 39 and Extended Code 39.

Code 93 has the advantage of encoding the entire Code 39 character set with a smaller character width. However, this is a more difficult image to read and many barcode readers do not support this barcode.

From two to 30 characters can be supplied in the data to be barcoded. Code 93 allows numbers, letters, six symbols (- \$ : / . +), and four control characters. A start and stop character are added to the barcode, along with two check characters. Spaces can be barcoded, and any lower case letters in the input data are converted to upper case.

Extended Code 93 uses Code 93 to encode the entire 128 ASCII character set by using combinations of control characters and basic data characters.

Examples of Code 93 and Extended Code 93 barcodes are shown:



## UCC-128

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The UCC-128 barcode is specifically used for shipping containers for those who ship items with a UPC code.

The UCC-128 barcode is a 19-digit fixed length numeric barcode that uses the doubledensity character subset described above for Code 128.

UCC-128 requires a checksum character. When the UCC-128 barcode is used for keyboard data entry, the barcode and checksum digit should be printed as text below the barcode.

An example of the UCC-128 barcode is shown:

