

# The `currency` package\*

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## 1 Introduction

This package creates macros for defined currencies which follow the ISO 4217 codes, with various formatting options for both the currency (code, symbols, names, ...) and the numbers (using `siunitx`).

The currency code ISO 4217 specifies the code of the currency as a three-letters code. The first two ones are the code of the country according to ISO 3166. The last one is the name of the currency name.

## 2 Licence

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This work has the LPPL maintenance status ‘maintained’.

The Current Maintainer of this work is Antoine Lejay.

## 3 Documentation and sources

This package is documented in `currency.doc`.

A source of this package is hosted in

<https://github.com/antoinelejay/currency>

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\*This document corresponds to `currency` v0.1, dated 2017/05/25.

## 4 Implementation

### 4.1 Dependencies

```
1 \RequirePackage{siunitx}
2 \RequirePackage{pgfkeys}
3 \RequirePackage{etoolbox}
4 \RequirePackage{xparse}
5 \RequirePackage{expl3}
6 \RequirePackage{textcomp}
7 \RequirePackage{eurosym}
```

The unit could be printed before or after

```
8 \newif\ifcurrencynumber
9 \pgfkeys{/currency/.cd,number/.is if=currencynumber,number=true}
10 \newif\ifprintbefore
11 \pgfkeys{/currency/pre/.is if=printbefore}
12 \pgfkeys{/currency/name/.initial=ZZZ}
13 \pgfkeys{/currency/symbol/.initial=\textcurrency}
```

Defines a style currency, which is general and empty. The styles are then called in order - the currency style - currency (initially empty) - the options passed to the command

```
14 \pgfkeys{/currency/currency/.style={}}
15 \newcommand{\CurrencySetup}[1]{%
16   \pgfkeys{/currency/currency/.style={#1}}%
17 }
18 \newcommand{\CurrencySetupAppend}[1]{%
19   \pgfkeys{/currency/currency/.append style={#1}}%
20 }
```

### 4.2 Names and symbols definitions

The commands `\currencyName`, `\currencyNames`, `\currencyISO` and `\currencySymbol` are used internally every time a currency is called to define the name, the plural, the ISO code and the symbol associated to a currency.

```
21 \pgfkeys{/currency/name/.store in=\currencyName}
22 \pgfkeys{/currency/plural/.store in=\currencyNames}
23 \pgfkeys{/currency/plural/.initial=\currencyName s}
24 \pgfkeys{/currency/iso/.store in=\currencyISO}
25 \pgfkeys{/currency/symbol/.store in=\currencySymbol}
```

### 4.3 Keys for formatting

Several keys are devoted to insert tokens before or after the unit and the amount, set up the font, ...

```
26 % between the symbol and the num if before
27 \pgfkeys{/currency/pre-between/.initial={~}}
28 % between the symbol and the num if after
29 \pgfkeys{/currency/post-between/.initial={~}}
```

```

30 % tokens that are inserted before
31 \pgfkeys{/currency/before/.initial={}}
32 % append to before
33 \pgfkeys{/currency/before+/.code={\pgfkeys{/currency/before/.append={#1}}}}
34 % prepend to before
35 \pgfkeys{/currency/before</.code={\pgfkeys{/currency/before/.prefix={#1}}}}
36 \pgfkeys{/currency/after/.initial={}} % tokens that are inserted after
37 % append to after
38 \pgfkeys{/currency/after+/.code={\pgfkeys{/currency/after/.append={#1}}}}
39 % prepend to after
40 \pgfkeys{/currency/after</.code={\pgfkeys{/currency/after/.prefix={#1}}}}
41 \pgfkeys{/currency/font/.initial={}} % for setting up the fonts
42 % append to the font definition
43 \pgfkeys{/currency/font+/.code={\pgfkeys{/currency/font/.append={#1}}}}
44 % the prefix before the name
45 \pgfkeys{/currency/prefix/.initial={}}

```

Several options are given for printing the kind of unit (iso, plural, name, symbol).

```

46 %
47 \pgfkeys{/currency/kind/.is choice}
48 \pgfkeys{/currency/kind/iso/.code=%
49     {\def\currencyunit{\currencyISO}}}
50 \pgfkeys{/currency/kind/plural/.code=%
51     {\def\currencyunit{\currencyNames}\printbeforefalse}}
52 \pgfkeys{/currency/kind/name/.code=%
53     {\def\currencyunit{\currencyName}\printbeforefalse}}
54 \pgfkeys{/currency/kind/symbol/.code=%
55     {\def\currencyunit{\currencySymbol}}}
56 \pgfkeys{/currency/kind=iso}

```

Options are also define for printing the cents (true, false, always).

```

57 \pgfkeys{/currency/cents/.is choice}
58 \pgfkeys{/currency/cents/true/.code=%
59     {\sisetup{zero-decimal-to-integer=true}}}
60 \pgfkeys{/currency/cents/false/.code=%
61     {\sisetup{zero-decimal-to-integer=true,round-precision=0}}}
62 \pgfkeys{/currency/cents/always/.code=%
63     {\sisetup{zero-decimal-to-integer=false,round-integer-to-decimal=true}}}
64 \pgfkeys{/currency/cents=true}

```

## 4.4 Dealing with unknown keys

The unknown keys are passed to the `\num` command of `siunitx`, which use the  $\text{\LaTeX}$ 3 syntax and not the `pgf` one.

```

65 \ExplSyntaxOn
66 \pgfkeys{/currency/.unknown/.code={%
67 \edef\Unknown{\pgfkeyscurrentname=\pgfkeyscurrentvalue}%
68 \keys_set:nV {siunitx} {\Unknown}%

```

```

69    }}%
70 \ExplSyntaxOff

```

## 4.5 Setting the precision

The key `base` is used to set the precision. Its value is passed to the key `round-precision` of `siunitx`.

```

71 \ExplSyntaxOn
72 \pgfkeys{/currency/base/.code={%
73 \edef\SetPrecision{round-precision=\pgfkeyscurrentvalue}%
74 \keys_set:nV {siunitx} {\SetPrecision}%
75    }}%
76 \ExplSyntaxOff

```

## 4.6 Defining new currencies

The first argument is the name of the currency, normally its ISO symbol (3 letters). This commands defines two global commands.

`\DefineCurrency` Define the parameters for a new currency. The first parameter is a three letters code of type `XXX` (actually, it should be any suitable word). Global commands `\dXXX` (for printing currency with an amount) and `\cXXX` (for printing only the symbols) are then defined, as well as a style under the `pgfkey /currency/XXX`.

```

77 \newcommand{\DefineCurrency}[2]{%
78 \pgfkeys{/currency/#1/.style={#2}}}%
79 % define the currency with digits as \dXXX
80 \global\expandafter\DeclareDocumentCommand\csname d#1\endcsname{o m}{%
81 \begingroup%
82 % default parameters, to put outside
83 \sisetup{round-mode=places,round-precision=2}
84 \IfNoValueTF{##1}%
85   {\pgfkeys{/currency/.cd,#1,currency}}%
86   {\pgfkeys{/currency/.cd,#1,currency,##1}}%
87 \ifbool{currencynumber}%
88   {\sisetup{parse-numbers=true}}%
89   {\sisetup{parse-numbers=false}}%
90 \edef\value{##2}% store the value of the currency
91 %
92 \ifprintbefore%
93 % true clause / print the unit before
94 \pgfkeys{/currency/font}%
95 \pgfkeys{/currency/before}%
96 \text{\pgfkeys{/currency/prefix}\currencyunit}%
97 \pgfkeys{/currency/pre-between}%
98 \num{\value}\pgfkeys{/currency/after}%
99 \else% print the unit after
100 \pgfkeys{/currency/font}%
101 \pgfkeys{/currency/before}%

```

```

102 \num{\value}%
103 \pgfkeys{/currency/post-between}%
104 \text{\pgfkeys{/currency/prefix}\currencyunit}%
105 \pgfkeys{/currency/after}%
106 \fi%
107 \endgroup%
108 }%
109 % define the currency symbol as \cXXX with one optional argument
110 \global\expandafter\DeclareDocumentCommand\csname c#1\endcsname{o}{%
111 \begingroup%
112 \IfNoValueTF{##1}%
113 {\pgfkeys{/currency/.cd,#1,currency}}}%
114 {\pgfkeys{/currency/.cd,#1,currency,##1}}}%
115 \pgfkeys{/currency/font}%
116 \pgfkeys{/currency/before}%
117 \text{\pgfkeys{/currency/prefix}\currencyunit}%
118 \pgfkeys{/currency/after}%
119 \endgroup%
120 }%
121 }%

```

## 4.7 Predefined styles

Some styles are defined to shorten the typesetting.

```

122 \pgfkeys{/currency/@iso/.style={kind=iso}}
123 \pgfkeys{/currency/@symb/.style={kind=symbol}}
124 \pgfkeys{/currency/@sy/.style={kind=symbol}}
125 \pgfkeys{/currency/@name/.style={kind=name}}
126 \pgfkeys{/currency/@na/.style={kind=name}}
127 \pgfkeys{/currency/@plural/.style={kind=plural}}
128 \pgfkeys{/currency/@pl/.style={kind=plural}}

```

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