The si unit operator

si from eZTemplateUnitOperator - formatting a number with a unit and a decimal or binary prefix (file sizes, lengths, weights) from units.ini, with every parameter, the auto prefix rule and examples rendered on a…

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`si` writes a number with a unit and a prefix: `5242880` bytes as `5.00 MB`, `1500` meters as `1.50 km`. It is registered by `eZTemplateUnitOperator` (`lib/eztemplate/classes/eztemplateunitoperator.php`) through `lib/eztemplate/classes/eztemplateautoload.php`. Units and prefixes come from `settings/units.ini`; the choice between binary and decimal prefixes from `[UnitSettings]` in `site.ini`.

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Parameters

si

Parameter	Type	Required	Default
`unit`	string, a key of `[Base]` in `units.ini`	yes	`false`
`prefix`	`auto`, `decimal`, `binary`, `none` or a prefix name such as `kilo`, `mebi`	no	`auto`
`decimal_count`	integer	no	the locale's decimal count (0 with none)
`decimal_symbol`	string	no	the locale's decimal symbol
`thousands_separator`	string	no	the locale's thousands separator

Input: the number, piped. Returns a string: the number, a space, the prefix symbol and the unit symbol. An unknown unit logs "No such unit" and leaves the number unchanged; an unknown prefix logs "Prefix … not found". Generated reference: si.

Units and prefixes

`[Base]` in `units.ini` maps unit names to symbols: `meter` m, `gram` g, `second` s, `ampere` A, `kelvin` K, `mole` mol, `candela` cd, `byte` B and `bit` b.

The prefix `auto` picks `binary` for the units in `[UnitSettings] BinaryUnits` (`byte;bit` on a

development installation) and `decimal` for all others. Then:

- **decimal** uses `[DecimalPrefixes]` (powers of 10, from yocto to yotta, **including hecto and deca**) and takes the largest prefix not bigger than the number. That is why `150|si( 'meter' )` is `1.50 hm`: name a prefix when you want a familiar one.
- **binary** uses powers of 2. With `[UnitSettings] UseSIUnits=false`, as on a development installation, it uses `[FakeBinaryPrefixes]`, which divide by 1024 but print the familiar `k`, `M`, `G`; with `true` it uses `[BinaryPrefixes]` and prints `Ki`, `Mi`, `Gi`.
- Numbers whose absolute value is below 10 get no prefix and are printed as they are.
- A named prefix (`kilo`, `mebi`...) is looked up in `[BinaryPrefixes]` first, then `[DecimalPrefixes]`; `none` prints the whole number with separators.

Negative numbers get the prefix of their magnitude (`-2000` seconds is `-2.00 ks`).

Examples

File sizes:

Template

```
5|si( 'byte' ) = {5|si( 'byte' )}
2048|si( 'byte' ) = {2048|si( 'byte' )}
5242880|si( 'byte' ) = {5242880|si( 'byte' )}
5242880|si( 'byte', 'kibi' ) = {5242880|si( 'byte', 'kibi' )}
5242880|si( 'byte', 'mega' ) = {5242880|si( 'byte', 'mega' )}
5242880|si( 'byte', 'none' ) = {5242880|si( 'byte', 'none' )}
5242880|si( 'byte', 'auto', 1 ) = {5242880|si( 'byte', 'auto', 1 )}
```

Output:

```
5|si( 'byte' ) = 5 B
2048|si( 'byte' ) = 2.00 kB
5242880|si( 'byte' ) = 5.00 MB
5242880|si( 'byte', 'kibi' ) = 5,120.00 KiB
5242880|si( 'byte', 'mega' ) = 5.24 MB
5242880|si( 'byte', 'none' ) = 5,242,880 B
5242880|si( 'byte', 'auto', 1 ) = 5.0 MB
```

Decimal units, a fixed prefix and a decimal symbol of your own:

Template

```
1500|si( 'meter' ) = {1500|si( 'meter' )}
150|si( 'meter' ) = {150|si( 'meter' )}
150|si( 'meter', 'kilo', 3 ) = {150|si( 'meter', 'kilo', 3 )}
2500|si( 'gram', 'kilo', 1, ',' ) = {2500|si( 'gram', 'kilo', 1, ',' )}
-2000|si( 'second' ) = {-2000|si( 'second' )}
```

Output:

```
1500|si( 'meter' ) = 1.50 km
150|si( 'meter' ) = 1.50 hm
150|si( 'meter', 'kilo', 3 ) = 0.150 km
2500|si( 'gram', 'kilo', 1, ',' ) = 2,5 kg
-2000|si( 'second' ) = -2.00 ks
```

An unknown unit:

Template

```
[{100|si( 'furlong' )}]
```

Output:

```
[100]
```

Logged by the template engine:

```
WARNING eZTemplateUnitOperator: No such unit 'furlong'
```

The examples gave the same output interpreted and compiled on a development installation.

Related pages

- Locale operators: `l10n( 'number' )` without a unit
- PHP string functions: encode and format: `number_format`
- All template operators (generated)
- Free documentation: this page is free to copy, translate and improve under the GNU FDL 1.3.

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