

# The **telprint** package

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2008/08/11 v1.10

## Abstract

Package **telprint** provides `\telprint` for formatting German phone numbers.

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# 1 Documentation

## 1.1 Introduction

This is a very old package that I have written to format phone numbers. It follows German conventions and the documentation is mainly in German.

## 1.2 Short overview in English

L<sup>A</sup>T<sub>E</sub>X:

```
\usepackage{telprint}
\telprint{123/456-789}
```

plain-T<sub>E</sub>X:

```
\input telprint.sty
\telprint{123/456-789}
```

**\telprint**      **\telprint{...}** formats the explicitly given number. Digits, spaces and some special characters ('+', '/', '-', '(', ')', '~', ' ') are supported. Numbers are divided into groups of two digits from the right. Examples:

```
\telprint{0761/12345}      ==> 07\,61/1\,23\,45
\telprint{01234/567-89}    ==> 0\,12\,34/5\,67\leavevmode\hbox{-}89
\telprint{+49 (6221) 297}  ==> +49~(62\,21)~2\,97
```

### 1.2.1 Configuration

The output of the symbols can be configured by **\telhyphen**, **\telslash**, **\telleftparen**, **\telrightparen**, **\telplus**, **\teltilde**. Example:

```
\telslash{\,/\,}\ \telprint{12/34} ==> 12\,/\/,34
```

**\telspace**      **\telspace** configures the space between digit groups.

**\telnumber**    **\telnumber** only formats a number in digit groups; special characters are not recognized.

## 1.3 Documentation in German

**\telprint**      • **telprint#1**  
Der eigentliche Anwenderbefehl zur formatierten Ausgabe von Telefonnummern. Diese dürfen dabei nur als Zahlen angegeben werden (, da sie tokenweise analysiert werden). Als Trenn- oder Sonderzeichen werden unterstützt: '+', '/', '-', '(', ')', '~', ' '. Einfache Leerzeichen werden erkannt und durch Tilden ersetzt, um Trennungen in der Telefonnummer zu verhindern. (Man beachte aus gleichem Grunde die **\hbox** bei '-'). Beispiele:

```
\telprint{0761/12345}      ==> 07\,61/1\,23\,45
\telprint{01234/567-89}    ==> 0\,12\,34/5\,67\leavevmode\hbox{-}89
\telprint{+49 (6221) 297}  ==> +49~(62\,21)~2\,97
```

Der Rest enthält eher Technisches:

**\telspace**      • **\telspace#1**  
Mit diesem Befehl wird der Abstand zwischen den Zifferngruppen angegeben (Default: \,). (Durch **\telspace{}** kann dieser zusätzliche Abstand abgestellt werden.)

<code>\telhyphen</code>	<ul style="list-style-type: none"> <li>• <code>\telhyphen#1</code> Dieser Befehl gibt die Art des Bindestriches, wie er ausgegeben werden soll. In der Eingabe darf jedoch nur der einfache Bindestrich stehen: <code>\telprint{123-45}</code>, jedoch NIE <code>\telprint{123--45}</code>! Kopka-Bindestrich-Fans geben an: <code>\telhyphen{\leavevmode\hbox{--}}</code></li> </ul>
<code>\telslash</code> <code>\telleftparen</code> <code>\telrightparen</code> <code>\telplus</code> <code>\teltilde</code> <code>\telnumber</code>	<ul style="list-style-type: none"> <li>• <code>\telslash#1, \telleftparen#1, \telrightparen#1, \telplus#1, \teltilde</code> Diese Befehle konfigurieren die Zeichen <code>'/'</code>, <code>'('</code>, <code>')'</code>, <code>'+'</code> und <code>'~'</code>. Sie funktionieren analog zu <code>\telhyphen</code>.</li> <li>• <code>\telnumber#1</code> Richtung interner Befehl: Er dient dazu, eine Zifferngruppe in Zweiergruppen auszugeben. Die einzelnen Zahlen werden im Tokenregister <code>\TELtoks</code> gespeichert. Abwechselnd werden dabei zwischen zwei Token (Zahlen) <code>\TELx</code> bzw. <code>\TELy</code> eingefügt, abhängig von dem wechselnden Wert von <code>\TELswitch</code>. Zum Schluss kann dann einfach festgestellt werden ob die Nummer nun eine geradzahlige oder ungeradzahlige Zahl von Ziffern aufwies. Dem entsprechend wird <code>\TELx</code> mit dem Zusatzabstand belegt und <code>\TELy</code> leer definiert oder umgekehrt. )</li> <li>• <code>\TEL...</code> interne Befehle, Technisches: <code>\TELsplit</code> dient zur Aufteilung einer zusammengesetzten Telefonnummer (Vorwahl, Hauptnummer, Nebenstelle). In dieser Implementation werden als Trennzeichen nur <code>'/'</code> und <code>'-'</code> erkannt. Die einzelnen Bestandteile wie Vorwahl werden dann dem Befehl <code>\telnumber</code> zur Formatierung uebergeben.</li> <li>• Die Erkennung von einfachen Leerzeichen ist um einiges schwieriger: Die Tokenentrennung ueber Parameter <code>#1#2</code> funktioniert nicht für einfache Leerzeichen, da TeX sie <i>niemals</i> als eigenständige Argumente behandelt! (The TeXbook, Chapter 20, p. 201)  (Anmerkung am Rande: Deshalb funktionieren die entsprechenden Tokenmakros auf S. 149 des Buches „Einführung in TeX“ von N. Schwarz (3. Aufl.) nicht, wenn im Tokenregister als erstes ein einfaches Leerzeichen steht!)</li> </ul>

## 2 Implementation

```
1 (*package)
```

### 2.1 Reload check and package identification

Reload check, especially if the package is not used with L<sup>A</sup>T<sub>E</sub>X.

```

2 \begingroup
3 \catcode44 12 % ,
4 \catcode45 12 % -
5 \catcode46 12 % .
6 \catcode58 12 % :
7 \catcode64 11 % @
8 \catcode123 1 % {
9 \catcode125 2 % }
10 \expandafter\let\expandafter\x\csname ver@telprint.sty\endcsname
11 \ifx\x\relax % plain-TeX, first loading
12 \else
13 \def\empty{}%
14 \ifx\x\empty % LaTeX, first loading,
15 % variable is initialized, but \ProvidesPackage not yet seen
16 \else
17 \catcode35 6 % #
18 \expandafter\ifx\csname PackageInfo\endcsname\relax
19 \def\x#1#2{%
20 \immediate\write-1{Package #1 Info: #2.}%

```

```

21      }%
22      \else
23        \def\x#1#2{\PackageInfo{#1}{#2, stopped}}%
24      \fi
25      \x{telprint}{The package is already loaded}%
26      \aftergroup\endinput
27    \fi
28  \fi
29 \endgroup

```

Package identification:

```

30 \begingroup
31   \catcode35 6 % #
32   \catcode40 12 % (
33   \catcode41 12 % )
34   \catcode44 12 % ,
35   \catcode45 12 % -
36   \catcode46 12 % .
37   \catcode47 12 % /
38   \catcode58 12 % :
39   \catcode64 11 % @
40   \catcode91 12 % [
41   \catcode93 12 % ]
42   \catcode123 1 % {
43   \catcode125 2 % }
44   \expandafter\ifx\csname ProvidesPackage\endcsname\relax
45     \def\x#1#2#3[#4]{\endgroup
46       \immediate\write-1{Package: #3 #4}%
47       \xdef#1{#4}%
48     }%
49   \else
50     \def\x#1#2[#3]{\endgroup
51       #2[#{#3}]%
52       \ifx#1\@undefined
53         \xdef#1{#3}%
54       \fi
55       \ifx#1\relax
56         \xdef#1{#3}%
57       \fi
58     }%
59   \fi
60 \expandafter\x\csname ver@telprint.sty\endcsname
61 \ProvidesPackage{telprint}%
62 [2008/08/11 v1.10 Formatting of German phone numbers (HO)]

```

## 2.2 Catcodes

```

63 \begingroup
64   \catcode123 1 % {
65   \catcode125 2 % }
66   \def\x{\endgroup
67     \expandafter\edef\csname TELAtEnd\endcsname{%
68       \catcode35 \the\catcode35\relax
69       \catcode64 \the\catcode64\relax
70       \catcode123 \the\catcode123\relax
71       \catcode125 \the\catcode125\relax
72     }%
73   }%
74 \x
75 \catcode35 6 % #
76 \catcode64 11 % @
77 \catcode123 1 % {
78 \catcode125 2 % }

```

```

79 \def\TMP@EnsureCode#1#2{%
80   \edef\TELAtEnd{%
81     \TELAtEnd
82     \catcode#1 \the\catcode#1\relax
83   }%
84   \catcode#1 #2\relax
85 }
86 \TMP@EnsureCode{33}{12}% !
87 \TMP@EnsureCode{36}{3}% $
88 \TMP@EnsureCode{40}{12}% (
89 \TMP@EnsureCode{41}{12}% )
90 \TMP@EnsureCode{42}{12}% *
91 \TMP@EnsureCode{43}{12}% +
92 \TMP@EnsureCode{44}{12}% ,
93 \TMP@EnsureCode{45}{12}% -
94 \TMP@EnsureCode{46}{12}% .
95 \TMP@EnsureCode{47}{12}% /
96 \TMP@EnsureCode{61}{12}% =
97 \TMP@EnsureCode{126}{13}% ~ (active)

```

## 2.3 Package macros

```

98 \ifx\DeclareRobustCommand\UnDeFiNeD
99   \def\DeclareRobustCommand#1[1]{\def#1##1}%
100   \def\TELreset{\let\DeclareRobustCommand=\UnDeFiNeD}%
101   \input infwarerr.sty\relax
102   \@PackageInfo{telprint}{%
103     Macros are not robust!%
104   }%
105 \else
106   \let\TELreset=\relax
107 \fi

```

\telspace

```

108 \DeclareRobustCommand*\telspace[1]{\def\TELspace{#1}}
109 \telspace{ }$ , $ {}

```

\telhyphen

```

110 \DeclareRobustCommand*\telhyphen[1]{\def\TELhyphen{#1}}
111 \telhyphen{\leavevmode\hbox{-}}% \hbox zur Verhinderung der Trennung

```

\telslash

```

112 \DeclareRobustCommand*\telslash[1]{\def\TELslash{#1}}
113 \telslash{/}%

```

\telleftparen

```

114 \DeclareRobustCommand*\telleftparen[1]{\def\TELleftparen{#1}}
115 \telleftparen{(}%

```

\telrightparen

```

116 \DeclareRobustCommand*\telrightparen[1]{\def\TELrightparen{#1}}
117 \telrightparen{)}%

```

\telplus

```

118 \DeclareRobustCommand*\telplus[1]{\def\TELplus{#1}}
119 \telplus{+}%

```

\teltilde

```

120 \DeclareRobustCommand*\teltilde[1]{\def\TELtilde{#1}}
121 \teltilde{~}%

```

```

\TELtoks
122 \newtoks\TELtoks

\TELnumber
123 \def\TELnumber#1#2\TELnumberEND{%
124   \begingroup
125   \def\0{#2}%
126   \expandafter\endgroup
127   \ifx\0\empty
128     \TELtoks=\expandafter{\the\TELtoks#1}%
129     \ifnum\TELswitch=0 %
130       \def\TELx{\TELspace}\def\TELy{}%
131     \else
132       \def\TELx{}\def\TELy{\TELspace}%
133     \fi
134     \the\TELtoks
135   \else
136     \ifnum\TELswitch=0 %
137       \TELtoks=\expandafter{\the\TELtoks#1\TELx}%
138       \def\TELswitch{1}%
139     \else
140       \TELtoks=\expandafter{\the\TELtoks#1\TELy}%
141       \def\TELswitch{0}%
142     \fi
143   \TELnumber#2\TELnumberEND
144 \fi
145 }

\telnumber
146 \DeclareRobustCommand*\telnumber*[1]{%
147   \TELtoks={}%
148   \def\TELswitch{0}%
149   \TELnumber#1\TELnumberEND
150 }

\TELsplit
151 \def\TELsplit{\futurelet\TELfuture\TELDosplit}

\TELDosplit
152 \def\TELDosplit#1#2\TELsplitEND
153 {%
154   \def\TELsp{ }%
155   \expandafter\ifx\TELsp\TELfuture
156     \let\TELfuture=\relax
157     \expandafter\telnumber\expandafter{\the\TELtoks}~%
158     \telprint{#1#2}% Das Leerzeichen kann nicht #1 sein!
159   \else
160     \def\TELfirst{#1}%
161     \ifx\TELfirst\empty
162       \expandafter\telnumber\expandafter{\the\TELtoks}%
163       \TELtoks={}%
164     \else\if-\TELfirst
165       \expandafter\telnumber\expandafter{\the\TELtoks}\TELhyphen
166       \telprint{#2}%
167     \else\if/\TELfirst
168       \expandafter\telnumber\expandafter{\the\TELtoks}\TELslash
169       \telprint{#2}%
170     \else\if(\TELfirst
171       \expandafter\telnumber\expandafter{\the\TELtoks}\TELleftparen
172       \telprint{#2}%
173     \else\if)\TELfirst

```

```

174     \expandafter\telnumber\expandafter{\the\TELtoks}\TELrightparen
175     \telprint{#2}%
176   \else\if+\TELfirst
177     \expandafter\telnumber\expandafter{\the\TELtoks}\TELplus
178     \telprint{#2}%
179   \else\def\TELtemp{~}\ifx\TELtemp\TELfirst
180     \expandafter\telnumber\expandafter{\the\TELtoks}\TELtilde
181     \telprint{#2}%
182   \else
183     \TELtoks=\expandafter{\the\TELtoks#1}%
184     \TELsplit#2{}\TELsplitEND
185     \fi\fi\fi\fi\fi\fi\fi
186   \fi
187 }

```

\telprint

```

188 \DeclareRobustCommand*{\telprint}[1]{%
189   \TELtoks={}%
190   \TELsplit#1{}\TELsplitEND
191 }

192 \TELreset\let\TELreset=\UnDeFiNeD
193 \TELAtEnd
194 \</package>

```

## 3 Test

### 3.1 Catcode checks for loading

```

195 <*test1>

196 \catcode'\{=1 %
197 \catcode'\}=2 %
198 \catcode'\#=6 %
199 \catcode'\@=11 %
200 \expandafter\ifx\csname count@\endcsname\relax
201   \countdef\count@=255 %
202 \fi
203 \expandafter\ifx\csname @gobble\endcsname\relax
204   \long\def\@gobble#1{}%
205 \fi
206 \expandafter\ifx\csname @firstofone\endcsname\relax
207   \long\def\@firstofone#1{#1}%
208 \fi
209 \expandafter\ifx\csname loop\endcsname\relax
210   \expandafter\@firstofone
211 \else
212   \expandafter\@gobble
213 \fi
214 {%
215   \def\loop#1\repeat{%
216     \def\body{#1}%
217     \iterate
218   }%
219   \def\iterate{%
220     \body
221     \let\next\iterate
222   \else
223     \let\next\relax
224   \fi
225   \next
226 }%

```

```

227 \let\repeat=\fi
228 }%
229 \def\RestoreCatcodes{}
230 \count@=0 %
231 \loop
232 \edef\RestoreCatcodes{%
233 \RestoreCatcodes
234 \catcode\the\count@=\the\catcode\count@\relax
235 }%
236 \ifnum\count@<255 %
237 \advance\count@ 1 %
238 \repeat
239
240 \def\RangeCatcodeInvalid#1#2{%
241 \count@=#1\relax
242 \loop
243 \catcode\count@=15 %
244 \ifnum\count@<#2\relax
245 \advance\count@ 1 %
246 \repeat
247 }
248 \expandafter\ifx\csname LoadCommand\endcsname\relax
249 \def\LoadCommand{\input telprint.sty\relax}%
250 \fi
251 \def\Test{%
252 \RangeCatcodeInvalid{0}{47}%
253 \RangeCatcodeInvalid{58}{64}%
254 \RangeCatcodeInvalid{91}{96}%
255 \RangeCatcodeInvalid{123}{255}%
256 \catcode'\@=12 %
257 \catcode'\=0 %
258 \catcode'\{=1 %
259 \catcode'\}=2 %
260 \catcode'\#=6 %
261 \catcode'\[=12 %
262 \catcode'\]=12 %
263 \catcode'\%=14 %
264 \catcode'\ =10 %
265 \catcode13=5 %
266 \LoadCommand
267 \RestoreCatcodes
268 }
269 \Test
270 \csname @@end\endcsname
271 \end
272 </test1>

```

## 4 Installation

### 4.1 Download

**Package.** This package is available on CTAN<sup>1</sup>:

[CTAN:macros/latex/contrib/oberdiek/telprint.dtx](#) The source file.

[CTAN:macros/latex/contrib/oberdiek/telprint.pdf](#) Documentation.

**Bundle.** All the packages of the bundle ‘oberdiek’ are also available in a TDS compliant ZIP archive. There the packages are already unpacked and the documentation files are generated. The files and directories obey the TDS standard.

---

<sup>1</sup>[ftp://ftp.ctan.org/tex-archive/](http://ftp.ctan.org/tex-archive/)



`CTAN:install/macros/latex/contrib/oberdiek.tds.zip`

*TDS* refers to the standard “A Directory Structure for T<sub>E</sub>X Files” ([CTAN:tds/tds.pdf](#)). Directories with `texmf` in their name are usually organized this way.

## 4.2 Bundle installation

**Unpacking.** Unpack the `oberdiek.tds.zip` in the TDS tree (also known as `texmf` tree) of your choice. Example (linux):

```
unzip oberdiek.tds.zip -d ~/texmf
```

**Script installation.** Check the directory `TDS:scripts/oberdiek/` for scripts that need further installation steps. Package `attachfile2` comes with the Perl script `pdfatfi.pl` that should be installed in such a way that it can be called as `pdfatfi`. Example (linux):

```
chmod +x scripts/oberdiek/pdfatfi.pl
cp scripts/oberdiek/pdfatfi.pl /usr/local/bin/
```

## 4.3 Package installation

**Unpacking.** The `.dtx` file is a self-extracting `docstrip` archive. The files are extracted by running the `.dtx` through plain-T<sub>E</sub>X:

```
tex telprint.dtx
```

**TDS.** Now the different files must be moved into the different directories in your installation TDS tree (also known as `texmf` tree):

<code>telprint.sty</code>	→ <code>tex/generic/oberdiek/telprint.sty</code>
<code>telprint.pdf</code>	→ <code>doc/latex/oberdiek/telprint.pdf</code>
<code>test/telprint-test1.tex</code>	→ <code>doc/latex/oberdiek/test/telprint-test1.tex</code>
<code>telprint.dtx</code>	→ <code>source/latex/oberdiek/telprint.dtx</code>

If you have a `docstrip.cfg` that configures and enables `docstrip`’s TDS installing feature, then some files can already be in the right place, see the documentation of `docstrip`.

## 4.4 Refresh file name databases

If your T<sub>E</sub>X distribution (teT<sub>E</sub>X, mikT<sub>E</sub>X, ...) relies on file name databases, you must refresh these. For example, teT<sub>E</sub>X users run `texhash` or `mktextlsr`.

## 4.5 Some details for the interested

**Attached source.** The PDF documentation on CTAN also includes the `.dtx` source file. It can be extracted by AcrobatReader 6 or higher. Another option is `pdftk`, e.g. unpack the file into the current directory:

```
pdftk telprint.pdf unpack_files output .
```

**Unpacking with L<sup>A</sup>T<sub>E</sub>X.** The `.dtx` chooses its action depending on the format:

**plain-T<sub>E</sub>X:** Run `docstrip` and extract the files.

**L<sup>A</sup>T<sub>E</sub>X:** Generate the documentation.

If you insist on using L<sup>A</sup>T<sub>E</sub>X for `docstrip` (really, `docstrip` does not need L<sup>A</sup>T<sub>E</sub>X), then inform the autodetect routine about your intention:

```
latex \let\install=y\input{telprint.dtx}
```

Do not forget to quote the argument according to the demands of your shell.

**Generating the documentation.** You can use both the `.dtx` or the `.drv` to generate the documentation. The process can be configured by the configuration file `ltxdoc.cfg`. For instance, put this line into this file, if you want to have A4 as paper format:

```
\PassOptionsToClass{a4paper}{article}
```

An example follows how to generate the documentation with pdfL<sup>A</sup>T<sub>E</sub>X:

```
pdflatex telprint.dtx
makeindex -s gind.ist telprint.idx
pdflatex telprint.dtx
makeindex -s gind.ist telprint.idx
pdflatex telprint.dtx
```

## 5 History

### [1996/11/28 v1.0]

- Erste lauffähige Version.
- Nur `'-'` und `'/'` als zulässige Sonderzeichen.

### [1997/09/16 v1.1]

- Dokumentation und Kommentare (Posting in `de.comp.text.tex`).
- Erweiterung um Sonderzeichen `'(, ')`, `'+'`, `'~'` und `' '`.
- Trennungsverhinderung am `'hyphen'`.

### [1997/10/16 v1.2]

- Schutz vor wiederholtem Einlesen.
- Unter L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> Nutzung des `\DeclareRobustCommand`-Features.

### [1997/12/09 v1.3]

- Temporäre Variable eingespart.
- Posted in newsgroup `de.comp.text.tex`:  
“**Re: Generisches Markup für Telefonnummern?**”<sup>2</sup>

### [2004/11/02 v1.4]

- Fehler in der Dokumentation korrigiert.

### [2005/09/30 v1.5]

- Konfigurierbare Symbole: `'/'`, `'(, ')`, `'+'` und `'~'`.

### [2006/02/12 v1.6]

- LPPL 1.3.
- Kurze Übersicht in Englisch.
- CTAN.

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<sup>2</sup>Url: <http://groups.google.com/group/de.comp.text.tex/msg/86b3a86140007309>

[2006/08/26 v1.7]

- New DTX framework.

[2007/04/11 v1.8]

- Line ends sanitized.

[2007/09/09 v1.9]

- Catcode section added.
- Missing docstrip tag added.

[2008/08/11 v1.10]

- Code is not changed.
- URLs updated.

## 6 Index

Numbers written in *italic* refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in *roman* refer to the code lines where the entry is used.

Symbols			
<code>\#</code>	198, 260	<code>\count@</code>	201, 230, 234, 236, 237, 241, 243, 244, 245
<code>\%</code>	263	<code>\countdef</code>	201
<code>\,</code>	109	<code>\csname</code>	10, 18, 44, 60, 67, 200, 203, 206, 209, 248, 270
<code>\@</code>	199, 256	<b>D</b>	
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