

# The **telprint** package

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## 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\catcode61\catcode48\catcode32=10\relax%
3 \catcode13=5 % ^~M
4 \endlinechar=13 %
5 \catcode35=6 % #
6 \catcode39=12 % '
7 \catcode44=12 % ,
8 \catcode45=12 % -
9 \catcode46=12 % .
10 \catcode58=12 % :
11 \catcode64=11 % @
12 \catcode123=1 % {
13 \catcode125=2 % }
14 \expandafter\let\expandafter\x\csname ver@telprint.sty\endcsname
15 \ifx\x\relax % plain-TeX, first loading
16 \else
17 \def\empty{}%
18 \ifx\x\empty % LaTeX, first loading,
19 % variable is initialized, but \ProvidesPackage not yet seen
20 \else
```

```

21 \expandafter\ifx\csname PackageInfo\endcsname\relax
22 \def\x#1#2{%
23 \immediate\write-1{Package #1 Info: #2.}%
24 }%
25 \else
26 \def\x#1#2{\PackageInfo{#1}{#2, stopped}}%
27 \fi
28 \x{telprint}{The package is already loaded}%
29 \aftergroup\endinput
30 \fi
31 \fi
32 \endgroup%

```

Package identification:

```

33 \begingroup\catcode61\catcode48\catcode32=10\relax%
34 \catcode13=5 % ^~M
35 \endlinechar=13 %
36 \catcode35=6 % #
37 \catcode39=12 % '
38 \catcode40=12 % (
39 \catcode41=12 % )
40 \catcode44=12 % ,
41 \catcode45=12 % -
42 \catcode46=12 % .
43 \catcode47=12 % /
44 \catcode58=12 % :
45 \catcode64=11 % @
46 \catcode91=12 % [
47 \catcode93=12 % ]
48 \catcode123=1 % {
49 \catcode125=2 % }
50 \expandafter\ifx\csname ProvidesPackage\endcsname\relax
51 \def\x#1#2#3[#4]{\endgroup
52 \immediate\write-1{Package: #3 #4}%
53 \xdef#1{#4}%
54 }%
55 \else
56 \def\x#1#2[#3]{\endgroup
57 #2[#3]}%
58 \ifx#1@undefined
59 \xdef#1{#3}%
60 \fi
61 \ifx#1\relax
62 \xdef#1{#3}%
63 \fi
64 }%
65 \fi
66 \expandafter\x\csname ver@telprint.sty\endcsname
67 \ProvidesPackage{telprint}%
68 [2008/08/11 v1.10 Formatting of German phone numbers (HO)]%

```

## 2.2 Catcodes

```

69 \begingroup\catcode61\catcode48\catcode32=10\relax%
70 \catcode13=5 % ^~M
71 \endlinechar=13 %
72 \catcode123=1 % {
73 \catcode125=2 % }
74 \catcode64=11 % @
75 \def\x{\endgroup
76 \expandafter\edef\csname TELAtEnd\endcsname{%
77 \endlinechar=\the\endlinechar\relax
78 \catcode13=\the\catcode13\relax

```

```

79      \catcode32=\the\catcode32\relax
80      \catcode35=\the\catcode35\relax
81      \catcode61=\the\catcode61\relax
82      \catcode64=\the\catcode64\relax
83      \catcode123=\the\catcode123\relax
84      \catcode125=\the\catcode125\relax
85    }%
86  }%
87  \x\catcode61\catcode48\catcode32=10\relax%
88  \catcode13=5 % ^^M
89  \endlinechar=13 %
90  \catcode35=6 % #
91  \catcode64=11 % @
92  \catcode123=1 % {
93  \catcode125=2 % }
94  \def\TMP@EnsureCode#1#2{%
95    \edef\TELAtEnd{%
96      \TELAtEnd
97      \catcode#1=\the\catcode#1\relax
98    }%
99    \catcode#1=#2\relax
100 }
101 \TMP@EnsureCode{33}{12}% !
102 \TMP@EnsureCode{36}{3}% $
103 \TMP@EnsureCode{40}{12}% (
104 \TMP@EnsureCode{41}{12}% )
105 \TMP@EnsureCode{42}{12}% *
106 \TMP@EnsureCode{43}{12}% +
107 \TMP@EnsureCode{44}{12}% ,
108 \TMP@EnsureCode{45}{12}% -
109 \TMP@EnsureCode{46}{12}% .
110 \TMP@EnsureCode{47}{12}% /
111 \TMP@EnsureCode{91}{12}% [
112 \TMP@EnsureCode{93}{12}% ]
113 \TMP@EnsureCode{126}{13}% ~ (active)
114 \edef\TELAtEnd{\TELAtEnd\noexpand\endinput}

```

## 2.3 Package macros

```

115 \ifx\DeclareRobustCommand\UnDeFiNeD
116   \def\DeclareRobustCommand*#1[1]{\def#1##1}%
117   \def\TELreset{\let\DeclareRobustCommand=\UnDeFiNeD}%
118   \input infwarerr.sty\relax
119   \@PackageInfo{telprint}{%
120     Macros are not robust!%
121   }%
122 \else
123   \let\TELreset=\relax
124 \fi

\telspace

125 \DeclareRobustCommand*\telspace[1]{\def\TELspace{#1}}
126 \telspace{ }\$, ${}

\telhyphen

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

\telslash

129 \DeclareRobustCommand*\telslash[1]{\def\TELslash{#1}}
130 \telslash{/}%

\telleftparen

```

```

131 \DeclareRobustCommand*\telleftparen}[1]{\def\TELleftparen{#1}}
132 \telleftparen{ }%

\telrightparen

133 \DeclareRobustCommand*\telrightparen}[1]{\def\TELrightparen{#1}}
134 \telrightparen{ }%

\telplus

135 \DeclareRobustCommand*\telplus}[1]{\def\TELplus{#1}}
136 \telplus{+}%

\teltilde

137 \DeclareRobustCommand*\teltilde}[1]{\def\TELtilde{#1}}
138 \teltilde{~}%

\TELtoks

139 \newtoks\TELtoks

\TELnumber

140 \def\TELnumber#1#2\TELnumberEND{%
141   \begingroup
142   \def\0{#2}%
143   \expandafter\endgroup
144   \ifx\0\empty
145     \TELtoks=\expandafter{\the\TELtoks#1}%
146     \ifnum\TELswitch=0 %
147       \def\TELx{\TELspace}\def\TELy{}%
148     \else
149       \def\TELx{}\def\TELy{\TELspace}%
150     \fi
151     \the\TELtoks
152   \else
153     \ifnum\TELswitch=0 %
154       \TELtoks=\expandafter{\the\TELtoks#1\TELx}%
155       \def\TELswitch{1}%
156     \else
157       \TELtoks=\expandafter{\the\TELtoks#1\TELy}%
158       \def\TELswitch{0}%
159     \fi
160     \TELnumber#2\TELnumberEND
161   \fi
162 }

\telnumber

163 \DeclareRobustCommand*\telnumber}[1]{%
164   \TELtoks={}%
165   \def\TELswitch{0}%
166   \TELnumber#1\TELnumberEND
167 }

\TELsplit

168 \def\TELsplit{\futurelet\TELfuture\TELdosplit}

\TELdosplit

169 \def\TELdosplit#1#2\TELsplitEND
170 {%
171   \def\TELsp{ }%
172   \expandafter\ifx\TELsp\TELfuture
173     \let\TELfuture=\relax
174     \expandafter\telnumber\expandafter{\the\TELtoks}~%
175     \telprint{#1#2}% Das Leerzeichen kann nicht #1 sein!

```

```

176 \else
177   \def\TELfirst{#1}%
178   \ifx\TELfirst\empty
179     \expandafter\telnumber\expandafter{\the\TELToks}%
180     \TELToks={}%
181   \else\if-\TELfirst
182     \expandafter\telnumber\expandafter{\the\TELToks}\TELhyphen
183     \telprint{#2}%
184   \else\if/\TELfirst
185     \expandafter\telnumber\expandafter{\the\TELToks}\TELslash
186     \telprint{#2}%
187   \else\if(\TELfirst
188     \expandafter\telnumber\expandafter{\the\TELToks}\TELleftparen
189     \telprint{#2}%
190   \else\if)\TELfirst
191     \expandafter\telnumber\expandafter{\the\TELToks}\TELrightparen
192     \telprint{#2}%
193   \else\if+\TELfirst
194     \expandafter\telnumber\expandafter{\the\TELToks}\TELplus
195     \telprint{#2}%
196   \else\def\TELtemp{~}\ifx\TELtemp\TELfirst
197     \expandafter\telnumber\expandafter{\the\TELToks}\TELtilde
198     \telprint{#2}%
199   \else
200     \TELToks=\expandafter{\the\TELToks#1}%
201     \TELsplit#2{}\TELsplitEND
202     \fi\fi\fi\fi\fi\fi\fi
203 \fi
204 }

```

\telprint

```

205 \DeclareRobustCommand*\telprint}[1]{%
206   \TELToks={}%
207   \TELsplit#1{}\TELsplitEND
208 }

209 \TELreset\let\TELreset=\UnDeFiNeD

210 \TELAtEnd%
211 \</package>

```

## 3 Test

### 3.1 Catcode checks for loading

```

212 \<test1>

213 \catcode'\{=1 %
214 \catcode'\}=2 %
215 \catcode'\#=6 %
216 \catcode'\@=11 %
217 \expandafter\ifx\csname count@\endcsname\relax
218   \countdef\count@=255 %
219 \fi
220 \expandafter\ifx\csname @gobble\endcsname\relax
221   \long\def\@gobble#1{}%
222 \fi
223 \expandafter\ifx\csname @firstofone\endcsname\relax
224   \long\def\@firstofone#1{#1}%
225 \fi
226 \expandafter\ifx\csname loop\endcsname\relax
227   \expandafter\@firstofone
228 \else

```

```

229 \expandafter\@gobble
230 \fi
231 {%
232 \def\loop#1\repeat{%
233 \def\body{#1}%
234 \iterate
235 }%
236 \def\iterate{%
237 \body
238 \let\next\iterate
239 \else
240 \let\next\relax
241 \fi
242 \next
243 }%
244 \let\repeat=\fi
245 }%
246 \def\RestoreCatcodes{}
247 \count@=0 %
248 \loop
249 \edef\RestoreCatcodes{%
250 \RestoreCatcodes
251 \catcode\the\count@=\the\catcode\count@\relax
252 }%
253 \ifnum\count@<255 %
254 \advance\count@ 1 %
255 \repeat
256
257 \def\RangeCatcodeInvalid#1#2{%
258 \count@=#1\relax
259 \loop
260 \catcode\count@=15 %
261 \ifnum\count@<#2\relax
262 \advance\count@ 1 %
263 \repeat
264 }
265 \def\RangeCatcodeCheck#1#2#3{%
266 \count@=#1\relax
267 \loop
268 \ifnum#3=\catcode\count@
269 \else
270 \errmessage{%
271 Character \the\count@\space
272 with wrong catcode \the\catcode\count@\space
273 instead of \number#3%
274 }%
275 \fi
276 \ifnum\count@<#2\relax
277 \advance\count@ 1 %
278 \repeat
279 }
280 \def\space{ }
281 \expandafter\ifx\csname LoadCommand\endcsname\relax
282 \def\LoadCommand{\input telprint.sty\relax}%
283 \fi
284 \def\Test{%
285 \RangeCatcodeInvalid{0}{47}%
286 \RangeCatcodeInvalid{58}{64}%
287 \RangeCatcodeInvalid{91}{96}%
288 \RangeCatcodeInvalid{123}{255}%
289 \catcode'\@=12 %
290 \catcode'\=0 %

```



```

291 \catcode'\%=14 %
292 \LoadCommand
293 \RangeCatcodeCheck{0}{36}{15}%
294 \RangeCatcodeCheck{37}{37}{14}%
295 \RangeCatcodeCheck{38}{47}{15}%
296 \RangeCatcodeCheck{48}{57}{12}%
297 \RangeCatcodeCheck{58}{63}{15}%
298 \RangeCatcodeCheck{64}{64}{12}%
299 \RangeCatcodeCheck{65}{90}{11}%
300 \RangeCatcodeCheck{91}{91}{15}%
301 \RangeCatcodeCheck{92}{92}{0}%
302 \RangeCatcodeCheck{93}{96}{15}%
303 \RangeCatcodeCheck{97}{122}{11}%
304 \RangeCatcodeCheck{123}{255}{15}%
305 \RestoreCatcodes
306 }
307 \Test
308 \csname @@end\endcsname
309 \end
310 </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.

[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
```

---

<sup>1</sup><http://ftp.ctan.org/tex-archive/>

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

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

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  $\text{\TeX}$  distribution (`te $\text{\TeX}$` , `mik $\text{\TeX}$` , ...) relies on file name databases, you must refresh these. For example, `te $\text{\TeX}$`  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  $\text{\LaTeX}$ .** The `.dtx` chooses its action depending on the format:

**plain  $\text{\TeX}$ :** Run `docstrip` and extract the files.

**$\text{\LaTeX}$ :** Generate the documentation.

If you insist on using  $\text{\LaTeX}$  for `docstrip` (really, `docstrip` does not need  $\text{\LaTeX}$ ), 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 `pdf $\text{\LaTeX}$` :

```
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.

**[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.

---

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

## 6 Index

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