

# The selinput package

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## Abstract

This package selects the input encoding by specifying between input characters and their glyph names.

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## 1 Documentation

### 1.1 Introduction

L<sup>A</sup>T<sub>E</sub>X supports the direct use of 8-bit characters by means of package inputenc. However you must know and specify the encoding, e.g.:

```
\documentclass{article}
\usepackage[latin1]{inputenc}
% or \usepackage[utf8]{inputenc}
% or \usepackage[??]{inputenc}
\begin{document}
  Umlauts: ÄÖÜäöüß
\end{document}
```

If the document is transferred in an environment that uses a different encoding, then there are programs that convert the input characters. Examples for conversion of file `test.tex` from encoding latin1 (ISO-8859-1) to UTF-8:

```
recode ISO-8859-1..UTF-8 test.tex
recode latin1..utf8 test.tex
iconv --from-code ISO-8859-1
      --to-code UTF-8
      --output testnew.tex
      test.tex
iconv -f latin1 -t utf8 -o testnew.tex test.tex
```

However, the encoding name for package `inputenc` must be changed:

```
\usepackage[latin1]{inputenc} → \usepackage[utf8]{inputenc}
```

Of course, unless you are using some clever editor that knows package `inputenc`, recodes the file and adjusts the option at the same time. But most editors can perhaps recode the file, but they let the option untouched.

Therefore package `selinput` chooses another way for specifying the input encoding. The encoding name is not needed at all. Some 8-bit characters are identified by their glyph name and the package chooses an appropriate encoding, example:

```
\documentclass{article}
\usepackage{selinput}
\SelectInputMappings{
  adieresis={ä},
  germandbls={ß},
  Euro={€},
}
\begin{document}
  Umlauts: ÄÖÜäöüß
\end{document}
```

## 1.2 User interface

`\SelectInputEncodingList {⟨encoding list⟩}`

`\SelectInputEncodingList` expects a comma separated list of encoding names. Example:

```
\SelectInputEncodingList{utf8,ansinew,mac-roman}
```

The encodings of package `inputenx` are used as default.

`\SelectInputMappings {⟨mapping pairs⟩}`

A mapping pair consists of a glyph name and its input character:

```
\SelectInputMappings{
  adieresis={ä},
  germandbls={ß},
  Euro={€},
}
```

The supported glyph names can be found in file `ix-name.def` of project `inputenx` [1]. The names are basically taken from Adobe's glyphlists [2, 3]. As many pairs are needed as necessary to identify the encoding. Example with insufficient pairs:

```

\SelectInputEncodingSet{latin1,latin9}
\SelectInputMappings{
  adieresis={ä},
  germandbls={ß},
}
Umlauts: ÄÖÜäöüß and Euro: ¤ (wrong)

```

The first encoding `latin1` passes the constraints given by the mapping pairs. However the Euro symbol is not part of the encoding. Thus a mapping pair with the Euro symbol solves the problem. In fact the symbol alone already succeeds in selecting between `latin1` and `latin9`:

```

\SelectInputEncodingSet{latin1,latin9}
\SelectInputMappings{
  Euro={€},
}
Umlauts: ÄÖÜäöüß and Euro: €

```

### 1.3 Options

**warning:** The selected encoding is written by `\PackageInfo` into the `.log` file only. Option `warning` changes it to `\PackageWarning`. Then the selected encoding is shown on the terminal as well.

**ucs:** The encoding file `utf8x` of package `\ucs` requires that the package itself is loaded before. If the package is not loaded, then the option `ucs` will load package `ucs` if the detected encoding is UTF-8 (limited to the preamble, packages cannot be loaded later).

**utf8=...:** The option allows to specify other encoding files for UTF-8 than L<sup>A</sup>T<sub>E</sub>X's `utf8.def`. For example, `utf8=utf-8` will load `utf-8.def` instead.

### 1.4 Encodings

Package `stringenc` [4] is used for testing the encoding. Thus the encoding name must be known by this package. Then the found encoding is loaded by `\inputencoding` by package `inputenc` or `\InputEncoding` if package `inputenx` is loaded.

The supported encodings are present in the encoding list, thus usually the encoding names do not matter. If the list is set by `\SelectInputEncodingList`, then you can use the names that work for package `inputenc` and are known by package `stringenc`, for example: `latin1`, `x-iso-8859-1`. Encoding file names of package `inputenx` are prefixed with `x-`. The prefix can be dropped, if package `inputenx` is loaded.

## 2 Implementation

```

1 (*package)
2 \NeedsTeXFormat{LaTeX2e}
3 \ProvidesPackage{selinput}
4 [2007/09/09 v1.2 Select input encoding (H0)]%

5 \RequirePackage{inputenc}
6 \RequirePackage{kvsetkeys}[2006/10/19]
7 \RequirePackage{stringenc}[2007/06/16]
8 \RequirePackage{kvoptions}

\SelectInputEncodingList

9 \newcommand*{\SelectInputEncodingList}{%
10 \let\SIE@EncodingList\@empty

```

```

11 \kvsetkeys{SelInputEnc}%
12 }

\SelectInputMappings

13 \newcommand*{\SelectInputMappings}[1]{%
14   \SIE@LoadNameDefs
15   \let\SIE@StringUnicode\@empty
16   \let\SIE@StringDest\@empty
17   \kvsetkeys{SelInputMap}{#1}%
18   \ifx\SIE@StringUnicode\SIE@StringDest\\%
19     \PackageError{selinput}{%
20       No mappings specified%
21     }\@ehc
22   \else
23     \EdefUnescapeHex\SIE@StringUnicode\SIE@StringUnicode
24     \let\SIE@Encoding\@empty
25     \@for\SIE@EncodingTest:=\SIE@EncodingList\do{%
26       \ifx\SIE@Encoding\@empty
27         \StringEncodingConvertTest\SIE@temp\SIE@StringUnicode
28                               {utf16be}\SIE@EncodingTest{%
29           \ifx\SIE@temp\SIE@StringDest
30             \let\SIE@Encoding\SIE@EncodingTest
31           \fi
32         }{%}%
33       \fi
34     }%
35     \ifx\SIE@Encoding\@empty
36       \StringEncodingConvertTest\SIE@temp\SIE@StringDest
37                               {ascii}\SIE@EncodingTest{%
38         \def\SIE@Encoding{ascii}%
39         \SIE@Info{selinput}{%
40           Matching encoding not found, but input characters%
41           \MessageBreak
42           are 7-bit (possibly editor replacements).%
43           \MessageBreak
44           Hence using ascii encoding%
45         }%
46       }{%}%
47     \fi
48     \ifx\SIE@Encoding\@empty
49       \PackageError{selinput}{%
50         Cannot find a matching encoding%
51       }\@ehd
52     \else
53       \ifx\SIE@Encoding\SIE@EncodingUTFviii
54         \SIE@LoadUnicodePackage
55         \ifx\SIE@UseUTFviii\@empty
56           \else
57             \let\SIE@Encoding\SIE@UseUTFviii
58           \fi
59         \fi
60         \begingroup\expandafter\expandafter\expandafter\endgroup
61         \expandafter\ifx\csname InputEncoding\endcsname\relax
62           \inputencoding\SIE@Encoding
63         \else
64           \InputEncoding\SIE@Encoding
65         \fi
66         \SIE@Info{selinput}{Encoding ‘\SIE@Encoding’ selected}%
67       \fi
68     \fi
69 }

```

\SIE@LoadNameDefs

```

70 \def\SIE@LoadNameDefs{%
71   \begingroup
72   \endlinechar=\m@ne
73   \catcode92=0 % backslash
74   \catcode123=1 % left curly brace/beginning of group
75   \catcode125=2 % right curly brace/end of group
76   \catcode37=14 % percent/comment character
77   \@makeother\[
78   \@makeother\]
79   \@makeother\.
80   \@makeother\ (
81   \@makeother\)
82   \@makeother\/
83   \@makeother\-
84   \let\InputenxName\SelectInputDefineMapping
85   \InputIfFileExists{ix-name.def}{-}{%
86     \PackageError{selinput}{%
87       Missing 'ix-name.def' (part of package 'inputenx')%
88     }\@ehd
89   }%
90   \global\let\SIE@LoadNameDefs\relax
91   \endgroup
92 }

```

\SelectInputDefineMapping

```

93 \newcommand*{\SelectInputDefineMapping}[1]{%
94   \expandafter\gdef\csname SIE@@#1\endcsname
95 }

96 \kv@set@family@handler{SelInputMap}{%
97   \@onelevel@sanitize\kv@key
98   \ifx\kv@value\relax
99     \PackageError{selinput}{%
100       Missing input character for '\kv@key'%
101     }\@ehc
102   \else
103     \@onelevel@sanitize\kv@value
104     \ifx\kv@value\@empty
105       \PackageError{selinput}{%
106         Input character got lost?\MessageBreak
107         Missing input character for '\kv@key'%
108       }\@ehc
109     \else
110       \ifundefined{SIE@@\kv@key}{%
111         \PackageWarning{selinput}{%
112           Missing definition for '\kv@key'%
113         }%
114       }{%
115         \edef\SIE@StringDest{%
116           \SIE@StringDest
117           \kv@value
118         }%
119         \edef\SIE@StringUnicode{%
120           \SIE@StringUnicode
121           \csname SIE@@\kv@key\endcsname
122         }%
123       }%
124     \fi
125   \fi
126 }

127 \kv@set@family@handler{SelInputEnc}{%

```

```

128 \@onelevel@sanitize\kv@key
129 \ifx\kv@value\relax
130   \ifx\SIE@EncodingList\@empty
131     \let\SIE@EncodingList\kv@key
132   \else
133     \edef\SIE@EncodingList{\SIE@EncodingList,\kv@key}%
134   \fi
135 \else
136   \@onelevel@sanitize\kv@value
137   \PackageError{selinput}{%
138     Illegal key value pair (\kv@key=\kv@value)\MessageBreak
139     in encoding list%
140   }\@ehc
141 \fi
142 }

```

\SIE@LoadUnicodePackage

```

143 \def\SIE@LoadUnicodePackage{%
144   \@ifpackageloaded\SIE@UnicodePackage}{%
145     \RequirePackage\SIE@UnicodePackage\relax
146   }%
147   \SIE@PatchUCS
148   \global\let\SIE@LoadUnicodePackage\relax
149 }
150 \let\SIE@show\show
151 \def\SIE@PatchUCS{%
152   \AtBeginDocument{%
153     \expandafter\ifx\csname ver@ucsencs.def\endcsname\relax
154     \else
155       \let\show\SIE@show
156     \fi
157   }%
158 }
159 \SIE@PatchUCS

160 \AtBeginDocument{%
161   \let\SIE@LoadUnicodePackage\relax
162 }

```

\SIE@EncodingUTFviii

```

163 \def\SIE@EncodingUTFviii{utf8}
164 \@onelevel@sanitize\SIE@EncodingUTFviii

```

\SIE@EncodingUTFviiix

```

165 \def\SIE@EncodingUTFviiix{utf8x}
166 \@onelevel@sanitize\SIE@EncodingUTFviiix

167 \let\SIE@UnicodePackage\@empty
168 \let\SIE@UseUTFviii\@empty
169 \let\SIE@Info\PackageInfo

170 \SetupKeyvalOptions{%
171   family=SelInput,%
172   prefix=SelInput%
173 }
174 \define@key{SelInput}{utf8}{%
175   \def\SIE@UseUTFviii{#1}%
176   \@onelevel@sanitize\SIE@UseUTFviii
177 }
178 \DeclareBoolOption{ucs}
179 \DeclareVoidOption{warning}{%
180   \let\SIE@Info\PackageWarning
181 }

```

```

182 \ProcessKeyvalOptions{SelInput}
183 \ifSelInput@ucs
184   \def\SIE@UnicodePackage{ucs}%
185   \ifx\SIE@UseUTFviii\@empty
186     \let\SIE@UseUTFviii\SIE@EncodingUTFviii
187   \fi
188 \else
189   \ifx\SIE@UseUTFviii\@empty
190     \@ifpackageloaded{ucs}{%
191       \let\SIE@UseUTFviii\SIE@EncodingUTFviii
192     }{%
193       \let\SIE@UseUTFviii\SIE@EncodingUTFviii
194     }%
195   \fi
196 \fi

```

\SIE@EncodingList

```

197 \edef\SIE@EncodingList{%
198   utf8,%
199   x-iso-8859-1,%
200   x-iso-8859-15,%
201   x-cp1252,% ansinew
202   x-mac-roman,%
203   x-iso-8859-2,%
204   x-iso-8859-3,%
205   x-iso-8859-4,%
206   x-iso-8859-5,%
207   x-iso-8859-6,%
208   x-iso-8859-7,%
209   x-iso-8859-8,%
210   x-iso-8859-9,%
211   x-iso-8859-10,%
212   x-iso-8859-11,%
213   x-iso-8859-13,%
214   x-iso-8859-14,%
215   x-iso-8859-15,%
216   x-mac-centeuro,%
217   x-mac-cyrillic,%
218   x-koi8-r,%
219   x-cp1250,%
220   x-cp1251,%
221   x-cp1257,%
222   x-cp437,%
223   x-cp850,%
224   x-cp852,%
225   x-cp855,%
226   x-cp858,%
227   x-cp865,%
228   x-cp866,%
229   x-nextstep,%
230   x-dec-mcs%
231 }%
232 \@onelevel@sanitize\SIE@EncodingList
233 </package>

```

### 3 Test

```

234 (*test)
235 \NeedsTeXFormat{LaTeX2e}
236 \documentclass{minimal}
237 \usepackage{textcomp}

```

```

238 \usepackage{qstest}

239 (*test1 | test2 | test3)
240 \makeatletter
241 \let\BeginDocumentText\@empty
242 \def\TestEncoding#1#2{%
243   \SelectInputMappings{#2}%
244   \Expect*{\SIE@Encoding}{#1}%
245   \Expect*{\inputencodingname}{#1}%
246   \g@addto@macro\BeginDocumentText{%
247     \SelectInputMappings{#2}%
248     \Expect*{\SIE@Encoding}{#1}%
249     \textbf{\SIE@Encoding:} %
250     \kvsetkeys{test}{#2}\par
251   }%
252 }
253 \def\TestKey#1#2{%
254   \define@key{test}{#1}{%
255     \sbox0{##1}%
256     \sbox2{#2}%
257     \Expect*{wd:\the\wd0, ht:\the\ht0, dp:\the\dp0}%
258     *{wd:\the\wd2, ht:\the\ht2, dp:\the\dp2}%
259     [#1=##1] % hash-ok
260   }%
261 }
262 \RequirePackage{keyval}
263 \TestKey{adieresis}{\a}
264 \TestKey{germandbls}{\ss}
265 \TestKey{Euro}{\texteuro}
266 \makeatother
267 \usepackage[
268   warning,%
269   (test2) utf8=utf-8,
270   (test3) ucs,
271 ]{selinput}
272 (test1 | test3)\inputencoding{ascii}
273 (test2)\inputencoding{utf-8}
274 (test3)\usepackage{ucs}
275 \begin{qstest}{preamble}{%
276   \TestEncoding{x-iso-8859-15}{%
277     adieresis=^e4,%
278     germandbls=^df,%
279     Euro=^a4,%
280   }%
281   \TestEncoding{x-cp1252}{%
282     adieresis=^e4,%
283     germandbls=^df,%
284     Euro=^80,%
285   }%
286 (test1) \TestEncoding{utf8}{%
287 (test2) \TestEncoding{utf-8}{%
288 (test3) \TestEncoding{utf8x}{%
289   adieresis=^c3^a4,%
290   germandbls=^c3^9f,%
291 (test2) Euro=^e2^82^ac,
292 }%
293 \end{qstest}
294 (test3)\let\ifUnicodeOptiongraphics\iffalse
295 \begin{document}
296 \begin{qstest}{document}{%
297 (test3)\makeatletter
298   \BeginDocumentText
299 \end{qstest}

```



```

300 </test1 | test2 | test3>
301 <*test4>
302 \usepackage[warning,ucs]{selinput}
303 \SelectInputMappings{%
304     adieresis=^^c3^^a4,%
305     germandbls=^^c3^^9f,%
306     Euro=^^e2^^82^^ac,%
307 }
308 \begin{qstest}{encoding}{%}
309     \Expect*{\inputencodingname}{utf8x}%
310 \end{qstest}
311 \begin{document}
312     adieresis=^^c3^^a4, %
313     germandbls=^^c3^^9f, %
314     Euro=^^e2^^82^^ac%
315 </test4>
316 <*test5>
317 \usepackage[warning,ucs]{selinput}
318 \SelectInputMappings{%
319     adieresis={"a},%
320     germandbls={{\ss}},%
321     Euro=\texteuro{ },%
322 }
323 \begin{qstest}{encoding}{%}
324     \Expect*{\inputencodingname}{ascii}%
325 \end{qstest}
326 \begin{document}
327     adieresis={"a}, %
328     germandbls={{\ss}}, %
329     Euro=\texteuro{ }%
330 </test5>
331 \end{document}
332 </test>

```

## 4 Installation

### 4.1 Download

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

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

[CTAN:macros/latex/contrib/oberdiek/selinput.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
```

---

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

**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- $\TeX$ :

```
tex selinput.dtx
```

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

```
selinput.sty      → tex/latex/oberdiek/selinput.sty
selinput.pdf      → doc/latex/oberdiek/selinput.pdf
test/selinput-test1.tex → doc/latex/oberdiek/test/selinput-test1.tex
test/selinput-test2.tex → doc/latex/oberdiek/test/selinput-test2.tex
test/selinput-test3.tex → doc/latex/oberdiek/test/selinput-test3.tex
test/selinput-test4.tex → doc/latex/oberdiek/test/selinput-test4.tex
test/selinput-test5.tex → doc/latex/oberdiek/test/selinput-test5.tex
selinput.dtx      → source/latex/oberdiek/selinput.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  $\TeX$  distribution (te $\TeX$ , mik $\TeX$ , ...) relies on file name databases, you must refresh these. For example, te $\TeX$  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 selinput.pdf unpack_files output .
```

**Unpacking with  $\LaTeX$ .** The `.dtx` chooses its action depending on the format:

**plain- $\TeX$ :** Run `docstrip` and extract the files.

**$\LaTeX$ :** Generate the documentation.

If you insist on using  $\LaTeX$  for `docstrip` (really, `docstrip` does not need  $\LaTeX$ ), then inform the autodetect routine about your intention:

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

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

\PassOptionsToClass{a4paper}{article}

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

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