

# The fontsize package

*A small package to change the font size*

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The `fontsize` package allows you to set arbitrary sizes for the main font of the document, through the `fontsize=⟨size⟩` option. The value for the `⟨size⟩` can be given in any unit recognized by TeX (for example: `6mm`, `1ex`, `11.5pt`). If the unit is not declared it defaults to `pt`. So `fontsize=11` is the same as `fontsize=11pt`. See the example below.

## Caveat

Although effective with any value for the `⟨size⟩` (as long as the font is scalable!), the package is meant for small font size changes. For truly optimal results you should not use this package at all. Rather, a `.clo` file should be defined for each main size, even if this is pretty hard work. Particularly, you should define `\parindent` accordingly to the used size.

## Credits

The code is a a minimal part of the `scrextend`, with few minor changes to make it completely independent of the Koma bundle (see [1]).

## An example

```
\usepackage[fontsize=10.5]{fontsize}
```

The `\tiny` size is: **5.25 pt**.  
The `\baselineskip` is 6.29997pt

The `\scriptsize` size is: **7.00005 pt**.  
The `\baselineskip` is 8.40002pt

The `\footnotesize` size is: **8.7501 pt**.  
The `\baselineskip` is 10.50009pt

The `\small` size is: **9.58131 pt**.  
The `\baselineskip` is 11.49754pt

The `\normalsize` size is: **10.5 pt**.  
The `\baselineskip` is 12.59996pt

The `\large` size is: **12.59996 pt.**

The `\baselineskip` is 15.1199pt

The `\Large` size is: **15.12003 pt.**

The `\baselineskip` is 18.14398pt

The `\LARGE` size is: **18.14397 pt.**

The `\baselineskip` is 21.77269pt

The `\huge` size is: **21.77705 pt.**

The `\baselineskip` is 26.13239pt

The `\Huge` size is: **26.12407 pt.**

The `\baselineskip` is 31.3488pt

## References

- [1] Frank Neukam, Markus Kohm, Axel Kielhorn, *KOMA – Script. A versatile L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> bundle*. <https://www.ctan.org/pkg/koma-script>
- [2] Hendri Adriaens, *The xkeyval package*, <https://www.ctan.org/pkg/xkeyval>.
- [3] Philipp Lehman, Joseph Wright, *The etoolbox Package. An e-T<sub>E</sub>X Toolbox for Class and Package Authors*, <https://www.ctan.org/pkg/etoolbox>.

## 1 The Code

```
1 \ifpackageloaded{xkeyval}{}\RequirePackage{xkeyval}
2 \ifpackageloaded{etoolbox}{}\RequirePackage{etoolbox}

Here begins the scrextend code. Only a few names have changed. The
value for \@fontsizefilebase is set to custom instead of scrsiz.
3 \providecommand*\@fontsizefilebase{custom}
4 \DeclareOptionX{fontsize}[10]{%
5   \expandafter\@defaultunits\expandafter\@tempdima#1 pt\relax\@nnil
6   \edef\@tempa{#1}%
7   \setlength{\@tempdimb}{\@tempdima}%
8   \edef\@tempb{\strip@pt\@tempdimb}%
9   \addtolength{\@tempdimb}{-10\p}%
10  \edef\@ptsize{\strip@pt\@tempdimb}%
```

```

11 \edef\@tempa{%
12   \noexpand\makeatletter
13   \noexpand\InputIfFileExists{\@fontsizefilebase\@tempa.clo}{%
14     \noexpand\PackageInfo{fontsize}{%
15       File '@fontsizefilebase\@tempa.clo' used to setup font sizes}%
16     }{%
17       \noexpand\changefontsize{#1}%
18     }%
19     \noexpand\catcode'\noexpand\@=\the\catcode'\@
20   }%
21   \expandafter\AtEndOfPackage\expandafter{\@tempa}%
22 }
23 \ProcessOptionsX*\relax

```

The command `\ctm@setlength` has the same definition as `\scr@setlength` of `scrextend.sty`.

```

24 \newcommand*{\ctm@setlength[4]{%
25   \ifdim #2<\ifdim #2=\z@ \z@ \else \p@\fi
26   \ifdim #3<\ifdim #3=\z@ \z@ \else \p@\fi
27   \ifdim #4<\ifdim #4=\z@ \z@ \else \p@\fi
28   \setlength{#1}{\p@ \@plus\p@ \@minus\p@}%
29   \else
30   \setlength{#1}{\p@ \@plus\p@ \@minus#4}%
31   \fi
32   \else
33   \ifdim #4<\ifdim #4=\z@ \z@ \else \p@\fi
34   \setlength{#1}{\p@ \@plus#3 \@minus\p@}%
35   \else
36   \setlength{#1}{\p@ \@plus#3 \@minus#4}%
37   \fi
38   \fi
39   \else
40   \ifdim #3<\ifdim #3=\z@ \z@ \else \p@\fi
41   \ifdim #4<\ifdim #4=\z@ \z@ \else \p@\fi
42   \setlength{#1}{#2 \@plus\p@ \@minus\p@}%
43   \else
44   \setlength{#1}{#2 \@plus\p@ \@minus#4}%
45   \fi
46   \else
47   \ifdim #4<\ifdim #4=\z@ \z@ \else \p@\fi
48   \setlength{#1}{#2 \@plus#3 \@minus\p@}%
49   \else
50   \setlength{#1}{#2 \@plus#3 \@minus#4}%
51   \fi
52   \fi
53   \fi
54 }

```

The command `\changefontsize` has the same definition as `\changefontsizes` of `scrextend.sty`.

```

55 \providecommand*{\changefontsize}[2][1.2\@tempdima]{%
56   \@defaultunits\@tempdima#2pt\relax\@nnil
57   \setlength{\@tempdimc}{\@tempdima}%

```

```

58 \addtolength{\@tempdimc}{-10\p}%
59 \edef\@ptsize{\strip@pt\@tempdimc}%
60 \@defaultunits\@tempdimb#1pt\relax\@nnil
61 \setlength{\@tempdimc}{\dimexpr (100\@tempdimb / \@tempdima * \p)}%
62 \edef\@tempb{\the\@tempdimc}%
63 \setlength{\@tempdimc}{\@tempdima}%
64 \def\@tempa##1##2##3##4##5\@nnil{\def##1{##2.##3##4}}%
65 \expandafter\@tempa\expandafter\@tempb\@tempb\@nnil%
66 \ctm@setlength{\abovedisplayskip}%
67 {.8333\@tempdimb}{.1667\@tempdimb}{.5\@tempdimb}%
68 \ctm@setlength{\abovedisplayshortskip}{\z@}{.25\@tempdimb}{\z@}%
69 \ctm@setlength{\belowdisplayshortskip}%
70 {.5\@tempdimb}{.25\@tempdimb}{.25\@tempdimb}%
71 \setlength{\belowdisplayskip}{\abovedisplayskip}%
72 \edef\normalsize{%
73 \noexpand\@setfontsize\noexpand\normalsize
74 {\the\@tempdima}{\the\@tempdimb}%
75 \abovedisplayskip \the\abovedisplayskip
76 \abovedisplayshortskip \the\abovedisplayshortskip
77 \belowdisplayskip \the\belowdisplayskip
78 \belowdisplayshortskip \the\belowdisplayshortskip
79 \let\noexpand\@listi\noexpand\@listI
80 }%
81 \setlength{\@tempdima}{0.9125\@tempdimc}%
82 \setlength{\@tempdimb}{\@tempb\@tempdima}%
83 \ctm@setlength{\abovedisplayskip}%
84 {.8333\@tempdimb}{.1667\@tempdimb}{.5\@tempdimb}%
85 \ctm@setlength{\abovedisplayshortskip}{\z@}{.25\@tempdimb}{\z@}%
86 \ctm@setlength{\belowdisplayshortskip}%
87 {.5\@tempdimb}{.25\@tempdimb}{.25\@tempdimb}%
88 \setlength{\belowdisplayskip}{\abovedisplayskip}%
89 \edef\small{%
90 \noexpand\@setfontsize\noexpand\small
91 {\the\@tempdima}{\the\@tempdimb}%
92 \abovedisplayskip \the\abovedisplayskip
93 \abovedisplayshortskip \the\abovedisplayshortskip
94 \belowdisplayskip \the\belowdisplayskip
95 \belowdisplayshortskip \the\belowdisplayshortskip
96 \let\noexpand\@listi\noexpand\@listi@small
97 }%
98 \setlength{\@tempdima}{.83334\@tempdimc}%
99 \setlength{\@tempdimb}{\@tempb\@tempdima}%
100 \ctm@setlength{\abovedisplayskip}%
101 {.8333\@tempdimb}{.1667\@tempdimb}{.5\@tempdimb}%
102 \ctm@setlength{\abovedisplayshortskip}{\z@}{.25\@tempdimb}{\z@}%
103 \ctm@setlength{\belowdisplayshortskip}%
104 {.5\@tempdimb}{.25\@tempdimb}{.25\@tempdimb}%
105 \setlength{\belowdisplayskip}{\abovedisplayskip}%
106 \edef\footnotesize{%
107 \noexpand\@setfontsize\noexpand\footnotesize
108 {\the\@tempdima}{\the\@tempdimb}%
109 \abovedisplayskip \the\abovedisplayskip

```

```

110 \abovedisplayshortskip \the\abovedisplayshortskip
111 \belowdisplayskip \the\belowdisplayskip
112 \belowdisplayshortskip \the\belowdisplayshortskip
113 \let\noexpand\@listi\noexpand\@listi@footnotesize
114 }%
115 \setlength{\@tempdima}{.66667\@tempdimc}%
116 \setlength{\@tempdimb}{\@tempb\@tempdima}%
117 \edef\scriptsize{%
118 \noexpand\@setfontsize\noexpand\scriptsize
119 {\the\@tempdima}{\the\@tempdimb}%
120 }%
121 \setlength{\@tempdima}{.5\@tempdimc}%
122 \setlength{\@tempdimb}{\@tempb\@tempdima}%
123 \edef\tiny{%
124 \noexpand\@setfontsize\noexpand\tiny
125 {\the\@tempdima}{\the\@tempdimb}%
126 }%
127 \setlength{\@tempdima}{1.2\@tempdimc}%
128 \setlength{\@tempdimb}{\@tempb\@tempdima}%
129 \edef\large{%
130 \noexpand\@setfontsize\noexpand\large
131 {\the\@tempdima}{\the\@tempdimb}%
132 }%
133 \setlength{\@tempdima}{1.44\@tempdimc}%
134 \setlength{\@tempdimb}{\@tempb\@tempdima}%
135 \edef\Large{%
136 \noexpand\@setfontsize\noexpand\Large
137 {\the\@tempdima}{\the\@tempdimb}%
138 }%
139 \setlength{\@tempdima}{1.728\@tempdimc}%
140 \setlength{\@tempdimb}{\@tempb\@tempdima}%
141 \edef\LARGE{%
142 \noexpand\@setfontsize\noexpand\LARGE
143 {\the\@tempdima}{\the\@tempdimb}%
144 }%
145 \setlength{\@tempdima}{2.074\@tempdimc}%
146 \setlength{\@tempdimb}{\@tempb\@tempdima}%
147 \edef\huge{%
148 \noexpand\@setfontsize\noexpand\huge
149 {\the\@tempdima}{\the\@tempdimb}%
150 }%
151 \setlength{\@tempdima}{2.488\@tempdimc}%
152 \setlength{\@tempdimb}{\@tempb\@tempdima}%
153 \edef\Huge{%
154 \noexpand\@setfontsize\noexpand\Huge
155 {\the\@tempdima}{\the\@tempdimb}%
156 }%
157 \normalsize
158 \setlength{\@tempdimb}{\f@baselineskip}%
159 \ctm@setlength{\parsep}%
160 {.3333\@tempdimb}{.1667\@tempdimb}{.0833\@tempdimb}%
161 \ctm@setlength{\topsep}%

```

```

162 { .6667\@tempdimb}{.1667\@tempdimb}{.3333\@tempdimb}%
163 \@tempswafalse
164 \begingroup
165 \def\@list@extra{\aftergroup\@tempwattrue}%
166 \csname @listi\endcsname
167 \endgroup
168 \edef\@listi{\leftmargin\leftmargin1
169   \topsep \the\topsep
170   \parsep \the\parsep
171   \itemsep \parsep
172   \if@tempwa\noexpand\@list@extra\fi
173 }%
174 \let\@listI\@listi
175 \ctm@setlength{\parsep}%
176 { .1667\@tempdimb}{.0833\@tempdimb}{.0833\@tempdimb}%
177 \ctm@setlength{\topsep}%
178 { .3333\@tempdimb}{.1667\@tempdimb}{.1667\@tempdimb}%
179 \@tempswafalse
180 \begingroup
181 \def\@list@extra{\aftergroup\@tempwattrue}%
182 \csname @listi\endcsname
183 \endgroup
184 \edef\@listi@small{\leftmargin\leftmargin1
185   \topsep \the\topsep
186   \parsep \the\parsep
187   \itemsep \parsep
188   \if@tempwa\noexpand\@list@extra\fi
189 }%
190 \ctm@setlength{\parsep}%
191 { .125\@tempdimb}{.0625\@tempdimb}{.0625\@tempdimb}%
192 \ctm@setlength{\topsep}%
193 { .25\@tempdimb}{.125\@tempdimb}{.125\@tempdimb}%
194 \@tempswafalse
195 \begingroup
196 \def\@list@extra{\aftergroup\@tempwattrue}%
197 \csname @listi\endcsname
198 \endgroup
199 \edef\@listi@footnotesize{\leftmargin\leftmargin1
200   \topsep \the\topsep
201   \parsep \the\parsep
202   \itemsep \parsep
203   \if@tempwa\noexpand\@list@extra\fi
204 }%
205 \ctm@setlength{\parsep}%
206 { .1667\@tempdimb}{.0833\@tempdimb}{.0833\@tempdimb}%
207 \ctm@setlength{\topsep}%
208 { .3333\@tempdimb}{.1667\@tempdimb}{.0833\@tempdimb}%
209 \@tempswafalse
210 \begingroup
211 \def\@list@extra{\aftergroup\@tempwattrue}%
212 \csname @listii\endcsname
213 \endgroup

```

```

214 \edef\@listii{\leftmargin\leftmarginii
215 \labelwidth=\dimexpr \leftmargin-\labelsep
216 \topsep \the\topsep
217 \parsep \the\parsep
218 \itemsep \parsep
219 \if@tempswa\noexpand\@list@extra\fi
220 }%
221 \ctm@setlength{\topsep}%
222 {.1667\@tempdimb}{.0833\@tempdimb}{.0833\@tempdimb}%
223 \setlength{\partopsep}{\z@ \@plus\z@ \@minus\p@}%
224 \@tempwafalse
225 \begingroup
226 \def\@list@extra{\aftergroup\@tempwattrue}%
227 \csname @listiii\endcsname
228 \endgroup
229 \edef\@listiii{\leftmargin\leftmarginiii
230 \labelwidth=\dimexpr \leftmargin-\labelsep
231 \topsep \the\topsep
232 \parsep \z@
233 \partopsep \the\partopsep
234 \itemsep \topsep
235 \if@tempswa\noexpand\@list@extra\fi
236 }%
237 \@tempwafalse
238 \begingroup
239 \def\@list@extra{\aftergroup\@tempwattrue}%
240 \csname @listiv\endcsname
241 \endgroup
242 \edef\@listiv{\leftmargin\leftmarginiv
243 \labelwidth=\dimexpr \leftmargin-\labelsep\relax
244 \if@tempswa\noexpand\@list@extra\fi
245 }%
246 \@tempwafalse
247 \begingroup
248 \def\@list@extra{\aftergroup\@tempwattrue}%
249 \csname @listv\endcsname
250 \endgroup
251 \edef\@listv{\leftmargin\leftmarginv
252 \labelwidth=\dimexpr \leftmargin-\labelsep\relax
253 \if@tempswa\noexpand\@list@extra\fi
254 }%
255 \@tempwafalse
256 \begingroup
257 \def\@list@extra{\aftergroup\@tempwattrue}%
258 \csname @listvi\endcsname
259 \endgroup
260 \edef\@listvi{\leftmargin\leftmarginvi
261 \labelwidth=\dimexpr \leftmargin-\labelsep\relax
262 \if@tempswa\noexpand\@list@extra\fi
263 }%
264 \@listi
265 \setlength{\@tempdimb}{\f@baselineskip}%

```

```

266 \setlength{\footnotesep}{.555\@tempdimb}%
267 \ctm@setlength{\skip\footins}%
268 {.75\@tempdimb}{.3333\@tempdimb}{.1667\@tempdimb}%
269 \ctm@setlength{\floatsep}%
270 {\@tempdimb}{.1667\@tempdimb}{.1667\@tempdimb}%
271 \ctm@setlength{\textfloatsep}%
272 {1.6667\@tempdimb}{.1667\@tempdimb}{.3333\@tempdimb}%
273 \setlength{\intextsep}{\floatsep}%
274 \setlength{\dblfloatsep}{\floatsep}%
275 \setlength{\dbltextfloatsep}{\textfloatsep}%
276 \setlength{\@fptop}{\z@ \@plus 1fil}%
277 \setlength{\@fpsep}{.6667\@tempdimb \@plus 2fil}%
278 \setlength{\@fpbot}{\@fptop}%
279 \setlength{\@dblfpbot}{\@fptop}%
280 \setlength{\@dblfpsep}{\@fpsep}%
281 \setlength{\@dblfpbot}{\@fptop}%
282 \ctm@setlength{\partopsep}{.2\@tempdimb}{.1\@tempdimb}{.1\@tempdimb}%
283 }
284 \endinput

```

## Change History

v0.1

General: First public release . . . 1

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