eqexpl v. 1.1.1
Konstantin Morenko
June 17, 2022

The package is licensed under Creative Commons Attribution-ShareAlike 4.0 International (CC BY-SA 4.0)

The package uses semantic versioning

1 The aim of the package

The package was developed as an answer to the question on tex.stackexchange.com.

The package was developed in order to give the tool to make the «perfect» explanation for equations, not just the enumeration.

This package allows to describe equation’s variables in unified manner through the document.

2 Similar packages

Nomencl: [http://ctan.org/pkg/nomencl](http://ctan.org/pkg/nomencl)

3 Contributors

Konstantin Morenko me@konstantin-morenko.ru

The package is currently hosted on GitHub: [https://github.com/konstantin-morenko/latex-equation-explanation](https://github.com/konstantin-morenko/latex-equation-explanation)

4 Architecture

The list consist of few lengths:

- width of «intro» section (default is empty, 0pt);
- width of spaces between elements (default is 2mm);
- width of item block (default is 5mm);
- width of separator (default is ‘—’);
- the rest of the width of the text block (used to align left side of the explanation text).
5 Usage

First, include the package into preamble with

\usepackage{eqexpl}

Then write an equation and describe the variables

\[ E = mc^2 \]  \hfill (1)

- \( E \) — equivalent energy
- \( m \) — mass
- \( c \) — speed of light \((c \approx 3 \times 10^8 \text{ m/s})\)

using

\begin{equation}
E = mc^2
\end{equation}

\begin{eqexpl}
\item{$E$} equivalent energy
\item{$m$} mass
\item{$c$} speed of light \((c \approx 3 \times 10^8 \text{ m/s})\)
\end{eqexpl}

6 Configure and examples

6.1 Test list

This list is used for next examples:

- \( U \) — voltage at the section, V;
- \( R_s \) — total section resistance, Ohm.

Very\(^{10}\) — very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

6.2 eqexplSetSpace

Set \eqexplSetSpace{0mm}

\( U \) — voltage at the section, V;
\( R_s \) — total section resistance, Ohm.

Very\(^{10}\) — very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

Set \eqexplSetSpace{} (default 2mm)
U — voltage at the section, V;
Rs — total section resistance, Ohm.

Very 46 — very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

Set \texttt{\textbackslash eqexplSetSpace\{10mm\}}

U — voltage at the section, V;
Rs — total section resistance, Ohm.

Very 46 — very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

\subsection{6.3 \texttt{\textbackslash eqexplSetIntro}}

Set \texttt{\textbackslash eqexplSetIntro\{where\}}

where

\texttt{\textbackslash U — voltage at the section, V;}
\texttt{\textbackslash Rs — total section resistance, Ohm.}

Very 46 — very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

Set \texttt{\textbackslash eqexplSetIntro\{in this equation\}}

in this equation

\texttt{\textbackslash U — voltage at the section, V;}
\texttt{\textbackslash Rs — total section resistance, Ohm.}

Very 46 — very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

\subsection{6.4 \texttt{\textbackslash eqexplSetDelim}}

Set \texttt{\textbackslash eqexplSetDelim\{---\} (default)}

\texttt{\textbackslash U — voltage at the section, V;}
\texttt{\textbackslash Rs — total section resistance, Ohm.}

Very 46 — very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

Set \texttt{\textbackslash eqexplSetDelim\{=\}}
\( U = \text{voltage at the section, V;} \)
\( Rs = \text{total section resistance, Ohm.} \)

Very^{46} = \text{very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;}

Set \texttt{eqexplSetDelim{$\to$}}
\( U \to \text{voltage at the section, V;} \)
\( Rs \to \text{total section resistance, Ohm.} \)

Very^{46} \to \text{very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;}

\section*{6.5 eqexplsetItemWidth}

Set \texttt{eqexplsetItemWidth{5mm}} (default)
\( U \to \text{voltage at the section, V;} \)
\( Rs \to \text{total section resistance, Ohm.} \)

Very^{46} \to \text{very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;}

Set \texttt{eqexplsetItemWidth{10mm}}
\( U \to \text{voltage at the section, V;} \)
\( Rs \to \text{total section resistance, Ohm.} \)

Very^{46} \to \text{very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;}

\section*{6.6 Item width for 'begin-end' block}

When we have a long variable name (for example very-very-long), it could lead us to overwhelming the variable name as in the example below

\( long \to \text{just variable} \)
\( very-long \to \text{just variable} \)
\( very-very-long \to \text{just variable} \)

User can set a parameter to the specific environment to use custom item width for current block in opposition to setting it before block to new value and unsetting it to default after the end of the block. For this purpose use \texttt{\begin{eqexpl}[width].}
Set \texttt{\begin{eqexpl}[10mm]}

4
\begin{eqexpl}[20mm]
long — just variable
very — long — just variable
very — very — long — just variable
\end{eqexpl}

Test for backing to default in next block
\begin{eqexpl}
\begin{align*}
long & — just variable
very — long & — just variable
very — very — long & — just variable
\end{align*}
\end{eqexpl}

Set \texttt{\begin{eqexpl}[20mm]
long — just variable
very — long — just variable
very — very — long — just variable
\end{eqexpl} (default)}
\begin{eqexpl}
\begin{align*}
U & —\text{voltage at the section, V;}
R_s & —\text{total section resistance, Ohm.}
\end{align*}
\end{eqexpl}
Very^{46} — very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

Set \texttt{\begin{eqexpl}[1]}
U — voltage at the section, V;
R_s — total section resistance, Ohm.
Very^{46} very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

Set \texttt{\begin{eqexpl}[c]}
U — voltage at the section, V;
R_s — total section resistance, Ohm.
Very^{46} very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very very long line;

5
6.8 Custom delimiter for individual items

Setting \item{U} = \ldots and \item{$\to$}{Rs} = \ldots

\begin{align*}
U &= \text{voltage at the section, V;} \\
Rs &= \text{total section resistance, Ohm.}
\end{align*}