$f(x)$ Expressions in Calculator

Expressions allow you to include the following elements:

- References to other fields of the input dataset (via field names) or other expressions *previously computed in the same **Calculator** node* (via expression names). To avoid errors, make sure the expression you are referencing appears higher than the current one in the expression list.
- References to variables on the input port. (Use the `Var.` prefix to access input variables.)

> **Note:** Names of fields, variables, and expressions are case-insensitive.

- Parentheses that define the order of operations
- Mathematical and relational operators
- Logical operators (`and` , `or` , `not` , or `xor`) and values (`true` (`1`) and `false` (`0`))
- Functions as described in the syntax reference (see Function List)
- String expressions in double quotes (e.g., `"string expression"`)
- Integer and real numbers
- Single-line and multi-line comments

> **Note:** Mathematical operations (such as addition or subtraction) on the `date/time` data may produce a real number with a fractional part. By default, the result equals the number of days (integer part) and the number of hours (fractional part). For example, the subtraction operation `02.01.2020 12:00 - 01.01.2020 00:00` returns `1.5` . The node will interpret it as one full day (24 hours) and 12 hours.

Caching

Enable caching in **Calculator** expressions when you use the `Data()` function for recursive value computation.

We also recommend to use caching with functions whose result depends on the time of computation, such as `Random()` , `Today()` , and similar functions.

Code pane toolbar

The code pane toolbar provides several commands for quick and convenient access.

- **Preview** (F3): Use this button to display up to *100* rows of the result table for calculation check.
  - **Console**: Open this pane at the bottom of the **Preview** window to view errors found during expression evaluation. If there are no errors, the **Console** pane remains empty.
    - Use the **Show** and **Hide** buttons on the top right to expand or collapse the **Console** pane.
- Logical operators:
  - **AND**: Logical AND
  - **OR**: Logical OR
  - **NOT**: Logical NOT
  - **XOR**: Logical XOR (exclusive OR)
- Comparison operators:
  - **=** (equal to)
  - **<>** (not equal to)
  - **<** (less than)
  - **>** (greater than)
  - **<=** (less than or equal to)
  - **>=** (greater than or equal to)
- Templates:
  - **Number**: Enter a real number. (The command inserts `0.0` into the expression code.)
  - **String**: Enter a string value (inserts `""`).
  - **Date**: Enter a date (inserts `StrToDate("____-__-__", "YYYY-MM-DD")`).
  - **Time**: Enter a time value (inserts `StrToDate("__:__:__", "HH:NN:SS")`).
- Logical values:
  - **FALSE**: Insert `False`
  - **TRUE**: Insert `True`

Comments

The **Calculator** supports two types of comments:

- **Single-line comment:** Begin these with `//`. The comment continues to the end of the line.
- **Multi-line comment:** Begin these with `/*` and end them with `*/`. The comment includes all the characters in between.

In the code area, use Ctrl + / to comment or uncomment code.

▼ Comment example:

>

```
// Single-line comment example.

IF(IsNull(gate_one),gate_two,gate_one) // a single-line comment
continues to the end of the line.

/* A multi-line comment
   includes all characters
   between slash-asterisk
   and asterisk-slash. */
```

Read on: JavaScript Syntax in Calculator