

Calculation

o perform a currency conversion, simply activate the display associated to the desired input currency (e.g. NLG) and type the amount you want to convert (e.g. 1354.50):

hen press Return or Enter to convert and display the result (e.g. 614.65 EUR).

et's now describe in detail how this result is obtained. We'll consider 3 different situations: national currency to euro conversion, euro to national currency conversion and national currency to national currency conversion.

National Currency to Euro Conversion

he Euro Assistant Pro window lists two currencies, a national currency (i.e. an EMU national currency or a non-EMU currency) and euro. The national currency's display is active and contains the amount you want to convert. After you press Return or Enter, Euro Assistant Pro:

- rounds the input value according to the current rounding amount for the input currency;
- divides the obtained value by the input currency's euro conversion or exchange rate;
- rounds the obtained value according to the current euro rounding amount;
- writes the result in the euro display.

Euro to National Currency Conversion

he Euro Assistant Pro window lists two currencies, a national currency (i.e. an EMU national currency or a non-EMU currency) and EUR. The EUR display is active and contains the amount you want to convert. After you press Return or Enter, Euro Assistant Pro:

- rounds the euro input value according to the current euro rounding amount;
- multiplies the obtained value by the national currency's euro conversion or exchange rate;
- rounds the obtained value according to the current rounding amount for the national currency;
- writes the result in the national currency's display.

National Currency to National Currency Conversion

he Euro Assistant Pro window lists two national currencies (i.e. EMU national currencies or non-EMU currencies). The active display contains the amount you want to convert. After you press Return or Enter, Euro Assistant Pro:

- rounds the input value according to the current rounding amount for the input currency;
- divides the obtained value by the input currency's euro conversion or exchange rate;

- multiplies the obtained value by the output currency's euro conversion or exchange rate;
- rounds the obtained value according to the current rounding amount for the output currency;
- writes the result in the output currency's display.

Notice that when you convert a national currency to another national currency (e.g. DEM to BEF), Euro Assistant Pro effectively performs a double conversion: from the input national currency to euro (e.g. from DEM to EUR) and then from euro to the output national currency (e.g. from EUR to BEF). This double conversion has always sense, when the two national currencies are EMU currencies or when one of them is an EMU currency, because euro conversion rates are fixed. The double conversion is just indicative instead, when both currencies are non-EMU currencies and their euro exchange rates (which float) refer to two different moments.

Reconversion Errors

If you perform a conversion from a currency with a rounding amount of low intrinsic value to a currency with a rounding amount of high intrinsic value and then convert the result back to the original currency, then a reconversion error may occur, that is the final result may slightly differ from the input value.

Let's consider for instance a conversion from ITL to EUR, with ITL rounded to 1 ITL and EUR rounded to 0.01 EUR. The ITL rounding amount has a lower intrinsic value than the EUR rounding amount (1 ITL \approx 0.0005 EUR < 0.01 EUR). Therefore if you convert an ITL amount to EUR and then back to ITL, the final amount may differ from the initial amount.

EUR = 325,000 ITL = 325,000 / 1,936.27
 EUR 167.8484922... EUR \approx 167.85

167.85 EUR = 167.85 * 1.936.27 ITL =
 325,002.9195 ITL \approx 325,003 ITL

Conversely, if you perform a conversion from a currency with an high intrinsic value rounding amount to a currency with a low intrinsic value rounding amount and then convert the result back to the original currency, then no reconversion error occurs. Considering this time the EUR to ITL conversion, we have for instance:

250.00 EUR = 250.00 * 1,936.27 ITL = 484,067.5 ITL \approx 484,068 ITL
 484,068 ITL = 484,068 / 1,936.27 EUR = 250.0002582... EUR \approx 250.00 EUR

Reconversion errors may occur when you switch to another display after having performed a conversion. This happens because Euro Assistant Pro always considers the active display as input display: when you activate a new display, Euro Assistant Pro automatically performs a new conversion with the new active display's content as input amount.

Let's consider the following example: convert 30,000 ITL to ATS, DEM and EUR, then click the DEM display to activate it. Euro Assistant Pro performs a second conversion with 30.30 DEM as input amount. A reconversion error occurs (29,997 ITL \neq 30,000 ITL) and the ATS amount slightly changes, because now it is the result of the conversion of 30.30 DEM. The EUR amount is unaffected, because the EUR rounding amount (0.01 EUR) is the one with the highest intrinsic value.

Calculating and Converting Expressions

It is not unusual that you have to convert the result of a calculation - typically a sum or a percentage. Euro Assistant Pro gives you the possibility to enter an algebraic expression into the active display, to calculate its result and to convert this result.

To tell Euro Assistant Pro you are about to enter an expression, type Equals ('='). Then enter your expression. Euro Assistant Pro supports the 4 algebraic operators ('+', '-', '*', '/') and parentheses ('(', ')').

Press Return or Enter to end your entry. Euro Assistant Pro first checks the expression's syntax. In case of incorrect syntax, it beeps and waits for you to correct the mistake. In case of correct syntax it calculates the expression's result. If the result exceeds Euro Assistant Pro's calculation range (the input amount must range from -100.000.000.000 to 100.000.000.000) or is invalid (e.g. your expression contains a division by zero), Euro Assistant Pro writes 'E r r o r' in the active display and zeroes its content.

In case of correct syntax and valid result, Euro Assistant Pro writes the rounded result in the active display and converts this amount to all other listed currencies.

Notice that Euro Assistant Pro is "frozen" during the introduction of an expression: most menu commands are disabled, the two buttons in the Euro Assistant Pro window (the Rate button and the Rounding button) are disabled and you can't switch to another display or to another currency.

Algebraic expressions can also be pasted from the clipboard to the active display. In this case '=' can be omitted. If the syntax of the clipboard content is incorrect, then zero is pasted. If the result of the clipboard expression is invalid or exceeds Euro Assistant Pro's calculation range, then 'E r r o r' is displayed in the active display and zero is pasted.

In case of correct syntax and valid result, Euro Assistant Pro pastes the rounded result in the active display and converts it to all other listed currencies.

Calculating Series Conversions: Importation

It may happen that you have to convert a series of amounts (a price list or a monthly sales report for instance). Euro Assistant Pro offers you the possibility to import these amounts listed in a text file or clipping and to automatically perform all conversions. At the end of the importation the Euro Assistant Pro window displays the last calculated conversion and the Tape window stores all performed conversions.

To import a list of numeric values you can either:

- store all values in a text file, with subsequent values separated by a return, a tab, a comma (if the comma is not decimal separator) or a space. Then import the file by choosing the "Import..." command in the File menu. In the displayed "Open" dialog box, specify the desired input currency.

- store all values in a text file, with subsequent values separated by a return, a tab, a comma (if the comma is not decimal separator) or a space. Then drag the file icon on the desired input currency's ISO code in the Euro Assistant Pro window.

- drag a clipping containing the values you want to convert on the desired input currency's ISO code in the Euro Assistant Pro window.

Notice that Euro Assistant Pro also imports algebraic expressions and inserts a zero input value in case of an out of range value or an invalid value.

Calculation Range

Euro Assistant Pro accepts input amounts whose absolute value ranges from 0 and 100.000.000.000.