

# Unit Conversions Tool

The RLM-12C Finance Center has a powerful Unit Conversions tool to quickly convert a unit value into all the available units within a category at once.

To show this tool, press the [OPT] key and select the “Units Conversion” option. The following keypad will appear:

Select Units Category	Units Conversion Table
Area (m <sup>2</sup> )	C.G.S. Ergs +3.600000E+15
<b>Energy (kg·m<sup>2</sup>/s<sup>2</sup>)</b>	<b>eV</b> +2.246944E+27
Force (kg·m/s <sup>2</sup> )	i.cal International Calories +85,984,522.79
Length (m)	J Joules +360,000,000.00
Mass (kg)	<b>kWh</b> Kilowatt-hours +100.00
Power (kg·m <sup>2</sup> /s <sup>3</sup> )	MMBtu Millions Btus +0.34

Unit Conversion

Back Button      Show This Help View      Show Actions Menu      Settings

In the left side table, select a category of the units you want to convert and all the available units in that category will be shown at the table in the right side.

Simply type a value with the calculator keypad, then press “STO” and touch the unit row in the right list to enter that value in the touched unit. Then, the Unit Conversion toll will calculate all the other units equivalent values automatically. Also, units arithmetics can be performed using **STO** **+** or **STO** **-** functions (see the example below).

## **Example: Unit Conversion and Arithmetics**





Add 11.36 feet plus 5.75 inches plus 2 meters plus 25 centimeters and minus 0.1 chains, what is the total length expressed in yards?

### **Solution:**

First, expand the RLM-12 Finance Center to show the “Options Selection Menu” and select the “Units Conversion” option. Then, in the “Select Unit Category” table touch the “**Length (m)**” category and follow the next sequence:

<b>Keystrokes</b>	<b>Description</b>
Type "11.36" & <b>STO</b> "ft" row	Type 11.36, press "STO" and touch the "ft" row in the unit list to enter it 11.36 feet.
Type "5.75" & <b>STO</b> <b>+</b> "in" row	Type 5.75, press "STO +" and touch the "in" row in the unit list to add 5.75 inches to the conversion.
Type "2" & <b>STO</b> <b>+</b> "m" row	Type 2, press "STO +" and touch the "m" row in the unit list to add 2 meters to the conversion.
Type "25" & <b>STO</b> <b>+</b> "cm" row	Type 25, press "STO +" and touch the "cm" row in the unit list to add 25 centimeters to the conversion.
Type "0.1" & <b>STO</b> <b>-</b> "ch" row	Type 0.1, press "STO -" and touch the "ch" row in the unit to subtract 3 chains from the conversion.
Touch the "yd" row	Recalls and display the total conversion value in yards. <b>Result = 4.21 (yds)</b>

## Toolbar Button Action

	Close the view and get back to the Options Selection Menu. If the Unit Editor is shown then gets back to the Units Conversion view.
	Shows the Help View with the this topic selected.
	Pop up the Action Menu for the Units Conversion View (see “Actions Menu” below).
	Shows the “General Settings” view to customize the RLM-12 Finance Center application.

## Actions Menu Items

<b>New Category</b>	Shows a text input dialog to type the name of a new custom category to be created.
<b>Edit Category</b>	Shows a text input dialog to edit the name of the selected category.
<b>Delete Category</b>	Deletes the selected category.
<b>New Unit</b>	Shows the “Unit Editor” view to specify a <b>New</b> unit to be added to the selected category.
<b>Edit Unit</b>	Shows the “Unit Editor” view to <b>Edit</b> the selected unit.
<b>Delete Unit</b>	Deletes the selected unit from the category.
<b>Email Table</b>	Shows an email composer view to send by email the current unit conversion table.
<b>Reset to Factory</b>	Reloads the default units database. All the custom categories and custom units will be lost.
<b>Cancel</b>	Close the actions menu.

# Unit Editor View

The Unit Editor view allows you to edit an existing unit or create a new one.





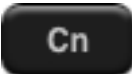
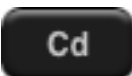


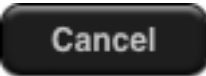
To show this view, press the Actions Menu button and select the “New Unit” or “Edit Unit” options (as an example, the Fahrenheit degrees conversion definition is shown).

The screenshot shows a dark-themed dialog box titled "Unit Definition; Category: Temperature (°K)". It contains the following elements:

- Label:** °F
- Desc.:** Farenheit Degrees
- Formula:**  $S.I. \text{ value} = (Fn / Fd) \cdot \text{Unit value} + (Cn / Cd)$
- Fn:** 5
- Cn:** 2298.35
- Fd:** 9
- Cd:** 9
- Buttons:** Cancel and Done

The unit conversion formula is limited to a linear model with a factor and a constant. It represents the base conversion of the value in the current Unit to its equivalence in the S.I. system units (meter, kilogram, second, kelvin degree, Volt, Ampere, radian, etc...).

The buttons description and functionality of this tool is summarized in the following table.

Button	Button Actions
	Shows a Text input view to type the unit symbol.
	Shows a Text input view to type the unit description.
	Stores the displayed number as the unit multiplication factor numerator.
	Stores the displayed number as the unit multiplication factor denominator.
	Stores the displayed number as the unit addition constant numerator.
	Stores the displayed number as the unit addition constant denominator.
 	Adds the defined unit to the current category if the “New Unit” was selected in the Actions Menu; or updates the current unit if the “Edit Unit” was selected in the Actions Menu.
	Closes the view to get back to the Units Conversion tool.

# Default Units Database

The Unit Conversion tool comes with 175 factory defined units grouped in 10 categories. All of them are shown in the following tables.

Area (m <sup>2</sup> )					
Symbol	Description	Fn	Cn	Fd	Cd
<b>ac</b>	Acres	4.0468726099E+03	0	1	1
<b>ch<sup>2</sup></b>	Square Chains	4.0468726099E+02	0	1	1
<b>cin</b>	Circular Inches	5.0670747910E-04	0	1	1
<b>cm<sup>2</sup></b>	Square Centimeters	1.0000000000E-04	0	1	1
<b>CM</b>	Circular Mills	5.0670747910E-10	0	1	1
<b>dm<sup>2</sup></b>	Square Decimeters	1.0000000000E-02	0	1	1
<b>ft<sup>2</sup></b>	Square Feets	9.2903040000E-02	0	1	1
<b>fth<sup>2</sup></b>	Square Fathoms	3.3445228000E+00	0	1	1
<b>fu<sup>2</sup></b>	Square Furlongs	4.0468726000E+04	0	1	1
<b>ha</b>	Hectares	1.0000000000E+04	0	1	1
<b>in<sup>2</sup></b>	Square Inches	6.4516000000E-04	0	1	1
<b>km<sup>2</sup></b>	Square Kilometers	1.0000000000E+06	0	1	1
<b>m<sup>2</sup></b>	Square Meters	1.0000000000E+00	0	1	1
<b>MCM</b>	Mil Circular Mills	5.0670747910E-07	0	1	1
<b>mi<sup>2</sup></b>	Square Miles	2.5899881103E+06	0	1	1
<b>nmi<sup>2</sup></b>	Square Nautical Miles	3.4299040000E+06	0	1	1
<b>mm<sup>2</sup></b>	Square Millimeters	1.0000000000E-06	0	1	1
<b>rd<sup>2</sup></b>	Square Rods	2.5292953812E+01	0	1	1
<b>su.ft<sup>2</sup></b>	Square Survey Feets	9.2903412000E-02	0	1	1
<b>su.in<sup>2</sup></b>	Square Survey Inches	6.4516258333E-04	0	1	1
<b>su.mi<sup>2</sup></b>	Square Survey Miles	2.5899984703E+06	0	1	1
<b>su.yd<sup>2</sup></b>	Square Survey Yards	8.3613070452E-01	0	1	1
<b>yd<sup>2</sup></b>	Square Yards	8.3612736000E-01	0	1	1

Energy (kg·m <sup>2</sup> /s <sup>2</sup> )					
Symbol	Description	Fn	Cn	Fd	Cd
<b>BOE</b>	Oil Barrel	6.1193239452E+09	0	1	1
<b>BTU</b>	British Thermal Units	1.0550558526E+03	0	1	1
<b>cal</b>	Calories	4.1867400000E+00	0	1	1
<b>CFe</b>	Cubic feet of Std. Natural Gas	1.0909277516E+06	0	1	1
<b>E<sub>h</sub></b>	Hartrees	4.3597441700E-18	0	1	1
<b>erg</b>	C.G.S. Ergs	1.0000000000E-07	0	1	1
<b>eV</b>	Electronvolts	1.6021764620E-19	0	1	1
<b>i.cal</b>	International Calories	4.1868000000E+00	0	1	1
<b>J</b>	Joules	1.0000000000E+00	0	1	1
<b>kWh</b>	Kilowatt-hours	3.6000000000E+06	0	1	1
<b>MMBtu</b>	Millions Btus	1.0550558526E+09	0	1	1

Force (kg·m/s <sup>2</sup> )					
Symbol	Description	Fn	Cn	Fd	Cd
<b>dyne</b>	C.G.S. Dynes	1.0000000000E-05	0	1	1
<b>GRf</b>	Grain Force	6.3546023075E-04	0	1	1
<b>kgf</b>	Kilogram Force	9.8066500000E+00	0	1	1
<b>kp</b>	Kiloponds	9.8066500000E+00	0	1	1
<b>N</b>	Newtons	1.0000000000E+00	0	1	1
<b>lbf</b>	Pound Force	4.4482216153E+00	0	1	1
<b>ozf</b>	Ounce Force	2.7801385095E-01	0	1	1
<b>ozl</b>	Ouncedals	8.6409346485E-03	0	1	1
<b>pdl</b>	Poundals	1.3825495438E-01	0	1	1
<b>Tonf</b>	Short Ton Force	8.8964432305E+03	0	1	1

Length (m)					
Symbol	Description	Fn	Cn	Fd	Cd
<b>au</b>	Astronomical Unit	1.4959787069E+11	0	1	1
<b>ch</b>	Chains	2.0116840234E+01	0	1	1
<b>cm</b>	Centimeters	1.0000000000E-02	0	1	1
<b>Fath</b>	Fathoms	1.8288036576E+00	0	1	1
<b>ft</b>	Feet	3.0480000000E-01	0	1	1
<b>fu</b>	Furlongs	2.0116800000E+02	0	1	1
<b>g.mi</b>	Geographic Miles	1.8553176000E+03	0	1	1
<b>hu</b>	Hubbles	9.4605284050E+24	0	1	1
<b>in</b>	Inches	2.5400000000E-02	0	1	1
<b>km</b>	Kilometers	1.0000000000E+03	0	1	1
<b>ld</b>	Earth to Moon Distance	3.8440100000E+08	0	1	1
<b>ldy</b>	Light-Day	2.5902068371E+13	0	1	1
<b>lhr</b>	Light-Hour	1.0792528488E+12	0	1	1
<b>lmin</b>	Light-Minute	1.7987547480E+10	0	1	1
<b>lsec</b>	Light-Second	2.9979245800E+08	0	1	1
<b>lyr</b>	Light-Year	9.4605284049E+15	0	1	1
<b>m</b>	Meters	1.0000000000E+00	0	1	1
<b>mi</b>	Miles	1.6093440000E+03	0	1	1
<b>mm</b>	Milimeters	1.0000000000E-03	0	1	1
<b>nmi</b>	Nautic Miles	1.8520000000E+03	0	1	1
<b>pcs</b>	Parsecs	3.0856781858E+16	0	1	1
<b>rd</b>	Rods	5.0292100584E+00	0	1	1
<b>st.mi</b>	Statue Mile	1.6093472187E+03	0	1	1
<b>su.ft</b>	Survey Feet	3.0480060960E-01	0	1	1
<b>su.fu</b>	Survey Furlongs	2.0116840234E+02	0	1	1
<b>su.in</b>	Survey Inches	2.5400050800E-02	0	1	1
<b>su.lg</b>	Survey Leagues	4.8280416561E+03	0	1	1
<b>su.yd</b>	Survey Yards	9.1440182880E-01	0	1	1
<b>swt</b>	Siriusweit	1.5428390929E+17	0	1	1
<b>yd</b>	Yards	9.1440000000E-01	0	1	1



Mass (kg)					
Symbol	Description	Fn	Cn	Fd	Cd
<b>dr</b>	Drams	1.7718451953E-03	0	1	1
<b>GR</b>	Grains	6.4798910000E-05	0	1	1
<b>gr</b>	Grams	1.0000000000E-03	0	1	1
<b>kg</b>	Kilograms	1.0000000000E+00	0	1	1
<b>lb</b>	Pounds	4.5359237000E-01	0	1	1
<b>ICWT</b>	Long Hundredweights	5.0802345440E+01	0	1	1
<b>ITon</b>	Long Tons	1.0160469088E+03	0	1	1
<b>me</b>	Electron Mass	9.1093826000E-31	0	1	1
<b>mg</b>	Miligrams	1.0000000000E-06	0	1	1
<b>mp</b>	Proton Mass	1.6726217100E-27	0	1	1
<b>m<math>\mu</math></b>	Neutron Mass	1.6749272800E-27	0	1	1
<b>oz</b>	Ounces	2.8349523125E-02	0	1	1
<b>sCWT</b>	Short Hundredweights	4.5359237000E+01	0	1	1
<b>slug</b>	C.G.S. Slugs	1.4593902937E+01	0	1	1
<b>st</b>	Stones	6.3502931800E+00	0	1	1
<b>sTon</b>	Short Tons	9.0718474000E+02	0	1	1
<b>T</b>	Metric Tons	1.0000000000E+03	0	1	1
<b>t.dr</b>	Troy Drams	3.8879346000E-03	0	1	1
<b>t.lb</b>	Troy Pounds	3.7324172160E-01	0	1	1
<b>t.oz</b>	Troy Ounces	3.1103475000E-02	0	1	1

Power (kg·m <sup>2</sup> /s <sup>3</sup> )					
Symbol	Description	Fn	Cn	Fd	Cd
<b>aW</b>	ab Watts	1.0000000000E-07	0	1	1
<b>CV</b>	Cheveau Vapour Metric	7.3549875000E+02	0	1	1
<b>HP</b>	Horsepower	7.4569987158E+02	0	1	1
<b>stW</b>	Stat Watts	1.0000000000E-07	0	1	1
<b>W</b>	Watts	1.0000000000E+00	0	1	1
<b>W.a</b>	Air Watts	9.9827425305E-01	0	1	1

Pressure (kg/m·s <sup>2</sup> )					
Symbol	Description	Fn	Cn	Fd	Cd
<b>at</b>	Technical Atmosphere	9.8066500000E+04	0	1	1
<b>atm</b>	Standard atmosphere	1.0132501000E+05	0	1	1
<b>ba</b>	C.G.S. Baryes	1.0000000000E-01	0	1	1
<b>bar</b>	Million dynes per square centimeter	1.0000000000E+05	0	1	1
<b>cmHg</b>	Centimeter of mercury	1.3332239000E+03	0	1	1
<b>ç</b>	Gram-force per square centimeter	9.8066500000E+01	0	1	1
<b>fsw</b>	Foot of sea water	3.0480000000E+03	0	1	1
<b>ftHg</b>	Foot of mercury	4.0636660000E+04	0	1	1
<b>inHg</b>	Inch of mercury conventional	3.3863890000E+03	0	1	1
<b>kgf/cm<sup>2</sup></b>	Kilogram-force per square centimeter	9.8066500000E+04	0	1	1
<b>kgf/m<sup>2</sup></b>	Kilogram-force per square meter	9.8066500000E+00	0	1	1
<b>kgf/mm<sup>2</sup></b>	Kilogram-force per square millimeter	9.8066500000E+06	0	1	1
<b>kp/cm<sup>2</sup></b>	Kilopond per square centimeter	9.8066500000E+04	0	1	1
<b>kp/m<sup>2</sup></b>	Kilopond per square meter	9.8066500000E+00	0	1	1
<b>kp/mm<sup>2</sup></b>	Kilopond per square millimeter	9.8066500000E+06	0	1	1
<b>ksf</b>	Kilopond per square foot	4.7880258980E+04	0	1	1
<b>ksi</b>	Kilopond per square inch	6.8947572932E+06	0	1	1
<b>mHg</b>	Meter of mercury conventional	1.3332240000E+05	0	1	1
<b>mbar</b>	Millibar unit	1.0000000000E+02	0	1	1
<b>mmHg</b>	Millimeter of mercury	1.3332238158E+02	0	1	1
<b>msw</b>	Meters of sea water	1.0000000000E+04	0	1	1
<b>N/m<sup>2</sup></b>	Newton per square meter	1.0000000000E+00	0	1	1
<b>N/mm<sup>2</sup></b>	Newton per square millimeter	1.0000000000E+06	0	1	1
<b>ozf/in<sup>2</sup></b>	Ounce-force per square inch	4.3092233082E+02	0	1	1
<b>Pa</b>	S.I. Pascal pressure unit	1.0000000000E+00	0	1	1
<b>pdl/ft<sup>2</sup></b>	Poundal per square foot	1.4881639436E+00	0	1	1
<b>psf</b>	Pound-force per square foot	4.7880258980E+01	0	1	1
<b>psi</b>	Pound-force per square inch (PSI)	6.8947572932E+03	0	1	1
<b>pz</b>	Meter-ton-second system unit	1.0000000000E+03	0	1	1
<b>Torr</b>	Equivalent to 1mm-Hg at sea level	1.3332236842E+02	0	1	1

Speed (m/s)					
Symbol	Description	Fn	Cn	Fd	Cd
<b>c<sub>0</sub></b>	Speed of light in vacuum	2.9979245800E+08	0	1	1
<b>cm/d</b>	Centimeter per day	1.1574074074E-07	0	1	1
<b>cm/h</b>	Centimeter per hour	2.7777777778E-06	0	1	1
<b>cm/m</b>	Centimeter per minute	1.6666666667E-04	0	1	1
<b>cm/s</b>	Centimeter per second	1.0000000000E-02	0	1	1
<b>ft/d</b>	Feet per day	3.5277777778E-06	0	1	1
<b>ft/h</b>	Feet per hour	8.4666666667E-05	0	1	1
<b>ft/m</b>	Feet per minute	5.0800000000E-03	0	1	1
<b>ft/s</b>	Feet per second	3.0480000000E-01	0	1	1
<b>in/d</b>	Inch per day	2.9398148148E-07	0	1	1
<b>in/h</b>	Inch per hour	7.0555555556E-06	0	1	1
<b>in/m</b>	Inch per minute	4.2333333333E-04	0	1	1
<b>ips</b>	Inch per second	2.5400000000E-02	0	1	1
<b>km/s</b>	Kilometer per second	1.0000000000E+03	0	1	1
<b>kn(UK)</b>	Knots UK nautical miles per hour	5.1477000000E-01	0	1	1
<b>knot</b>	Nautical mile per hour	5.1444444444E-01	0	1	1
<b>kph</b>	Kilometer per hour	2.7777777778E-01	0	1	1
<b>m/d</b>	meter per day	1.1574074074E-05	0	1	1
<b>m/h</b>	meter per hour	2.7777777778E-04	0	1	1
<b>m/m</b>	meter per minute	1.6666666667E-02	0	1	1
<b>m/s</b>	meter per second	1.0000000000E+00	0	1	1
<b>mach</b>	Speed of sound in air	3.4029000000E+02	0	1	1
<b>mi/d</b>	Mile per day	1.8626666667E-02	0	1	1
<b>mi/m</b>	Mile per minute	2.6822400000E+01	0	1	1
<b>mi/s</b>	Mile per second	1.6093440000E+03	0	1	1
<b>mph</b>	Miles per hour	4.4704000000E-01	0	1	1
<b>NM/d</b>	Nautical mile per day	2.1435185185E-02	0	1	1
<b>NM/m</b>	Nautical mile per minute	3.0866666667E+01	0	1	1
<b>NM/s</b>	Nautical mile per second	1.8520000000E+03	0	1	1
<b>yd/d</b>	Yard per day	1.0583333333E-05	0	1	1
<b>yd/h</b>	Yard per hour	2.5400000000E-04	0	1	1
<b>yd/m</b>	Yard per minute	1.5240000000E-02	0	1	1
<b>yd/s</b>	Yard per second	9.1440000000E-01	0	1	1

Volume (m <sup>3</sup> )					
Symbol	Description	Fn	Cn	Fd	Cd
<b>ac.ft</b>	Acre Feet	1.2334892385E+03	0	1	1
<b>ac.in</b>	Acre-Inch	1.0279015313E+02	0	1	1
<b>BB</b>	Bulk Barrels	1.4158423296E-01	0	1	1
<b>bbl</b>	Oil Barrels	1.5898729493E-01	0	1	1
<b>Bd.Ft</b>	Board-Feet	2.3597372160E-03	0	1	1
<b>Bu</b>	Bushels	3.5239070167E-02	0	1	1
<b>cm<sup>3</sup></b>	Cubic Centimeters	1.0000000000E-06	0	1	1
<b>cup</b>	Cups	2.3658823650E-04	0	1	1
<b>d.Gal</b>	Dry Gallons	4.4048837500E-03	0	1	1
<b>FEU</b>	40ft Containers	7.2491127276E+01	0	1	1
<b>fl.Oz</b>	Fluid Ounce	2.9573529563E-05	0	1	1
<b>ft<sup>3</sup></b>	Cubic Feets	2.8316846592E-02	0	1	1
<b>gal</b>	US. Gallons	3.7854117840E-03	0	1	1
<b>ibbl</b>	Imperial Barrels	1.6365931200E-01	0	1	1
<b>iBu</b>	Imperial Bushels	3.6368736000E-02	0	1	1
<b>iGal</b>	Imperial Gallons	4.5460920000E-03	0	1	1
<b>in<sup>3</sup></b>	Cubic Inches	1.6387064000E-05	0	1	1
<b>Lt</b>	Liters	1.0000000000E-03	0	1	1
<b>m<sup>3</sup></b>	Cubic Meters	1.0000000000E+00	0	1	1
<b>ml</b>	Milliliters	1.0000000000E-06	0	1	1
<b>Peck</b>	Pecks	8.8097675417E-03	0	1	1
<b>pint</b>	Pints	4.7317647300E-04	0	1	1
<b>quart</b>	Quarts	9.4635294600E-04	0	1	1
<b>Tbsp</b>	Tablespoons	1.4786764781E-05	0	1	1
<b>TEU</b>	20ft Containers	3.6245563638E+01	0	1	1
<b>Tsp</b>	Teaspoons	4.9289215938E-06	0	1	1
<b>yds<sup>3</sup></b>	Cubic Yards	7.6455486122E-01	0	1	1

Temperature (°K)					
Symbol	Description	Fn	Cn	Fd	Cd
°C	Celsius Degrees	1.0000000000E+00	273.15	1	1
°F	Fahrenheit Degrees	5.0000000000E+00	2298.35	9	9
°K	Kelvin Degrees	1.0000000000E+00	0.00	1	1
°R	Rankine Degrees	1.0000000000E+02	0.00	180	1
°Re	Reamur Degrees	1.2500000000E+02	273.15	100	1
W.a	Air Watts	9.9827425305E-01	0.00	1	1