

# How to Convert Standard Time to Military Time (and Vice Versa) in Excel

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## Understanding Temporal Data Formats in Microsoft Excel

In the professional realm of data management, **Microsoft Excel** stands as the primary tool for organizing and analyzing temporal information. One of the most common challenges users face is navigating the differences between the **12-hour clock**, frequently referred to as standard time, and the **24-hour clock**, commonly known as **military time**. Standard time is the conventional method used in civilian life, utilizing "AM" and "PM" designations to distinguish between morning and afternoon. Conversely, military time provides a concise, four-digit format that eliminates ambiguity, making it the preferred standard for the **military**, aviation, and emergency services.

The ability to transition seamlessly between these two formats is essential for maintaining accurate records and ensuring that **data analysis** remains consistent across different departments or international borders. **Microsoft Excel** provides a variety of built-in functions and sophisticated formatting options to facilitate these conversions. By mastering these techniques, users can automate what would otherwise be a tedious manual entry process, thereby reducing the likelihood of human error in their **spreadsheets**.

Converting time values involves more than just changing the visual representation of numbers; it requires an understanding of how **Excel** stores time as a fractional part of a 24-hour day. In this environment, 12:00 PM is stored as 0.5, while midnight is 0.0. This underlying **data structure** allows for complex calculations, but it also necessitates the use of specific formulas to translate these serial numbers into the human-readable strings associated with **military time** or standard time formats. This guide will explore the precise methodologies required to execute these conversions effectively.

Whether you are managing a global logistics network or simply organizing a personal schedule, the utility of a well-formatted **spreadsheet** cannot be overstated. Throughout the following sections, we will delve into the specific **Excel formulas** and formatting procedures required to manipulate time data. By the conclusion of this article, you will possess a comprehensive understanding of how to leverage functions like **TEXT** and **TIMEVALUE** to maintain a professional and highly functional workbook.

## The Logic of Converting Standard Time to Military Format

The primary mechanism for transforming a standard 12-hour time into a 24-hour military string is the **TEXT function**. This function is designed to convert a numeric value into a text string while applying a specific format code. In the context of time, the **TEXT function** takes the serial number representing the time and reinterprets it based on a user-defined pattern. This is particularly useful when you need the military time to be treated as a text label rather than a raw number for **data visualization** purposes.

To initiate this conversion, **Excel** requires a format code that specifies how the hours and minutes should appear. For military time, the standard code is "HHMM," which instructs the software to display two digits for the hour and two digits for the minutes without any separators like colons. This format is highly efficient for **database** entry and is recognized globally as the **ISO 8601** standard for time representation in many technical documents. Using this method ensures that your data remains clean and uniform.

It is important to note that when using the **TEXT function**, the resulting output is a **string**. While this is ideal for display and sorting, it may require further conversion if you intend to perform mathematical operations on the resulting military time. However, for most reporting and documentation needs, the string format is the most reliable way to preserve the leading zeros that are characteristic of **military time**. Below, we provide the foundational formula used for this specific transformation.

You can use the following formulas to convert between standard time and military time in Excel:

#### **Formula 1: Convert Standard Time to Military Time**

**=TEXT(A2,"HHMM")**

This particular formula converts the standard time in cell **A2** to military time.

### **Practical Application: Executing Standard to Military Conversion**

In a practical **workflow**, you might encounter a column of data representing appointment times in standard format. To convert these efficiently, you would apply the **TEXT function** to the first entry and then utilize **Excel's** "fill handle" to propagate the formula through the rest of the dataset. This automated approach is far superior to manual typing, especially when dealing with thousands of rows in a **big data** environment. The following example illustrates how this process looks in a standard **user interface**.

Suppose you have a list of times such as "1:30 PM" or "9:15 AM" in column A. By applying the formula in the adjacent column, "1:30 PM" becomes "1330" and "9:15 AM" becomes "0915." This transition provides a clear, sorted view of the day's events without the clutter of "AM" or "PM" markers. It also allows for easier integration with other **software** systems that may require 24-hour time inputs for scheduling or **logistics** management.

The following examples show how to use each formula in practice.

## Example 1: Convert Standard Time to Military Time

Suppose we have the following list of standard times in Excel:

|    | A                    | B | C | D | E |
|----|----------------------|---|---|---|---|
| 1  | <b>Standard Time</b> |   |   |   |   |
| 2  | 1:15:22 AM           |   |   |   |   |
| 3  | 4:15:00 AM           |   |   |   |   |
| 4  | 7:12:05 AM           |   |   |   |   |
| 5  | 11:15:01 AM          |   |   |   |   |
| 6  | 12:15:00 PM          |   |   |   |   |
| 7  | 4:59:55 PM           |   |   |   |   |
| 8  | 8:13:11 PM           |   |   |   |   |
| 9  | 10:15:22 PM          |   |   |   |   |
| 10 | 11:59:56 PM          |   |   |   |   |
| 11 |                      |   |   |   |   |
| 12 |                      |   |   |   |   |
| 13 |                      |   |   |   |   |
| 14 |                      |   |   |   |   |
| 15 |                      |   |   |   |   |

We can type the following formula into cell **B2** to convert the standard times to military times:

**=TEXT(A2,"HHMM")**

We can then click and drag this formula down to each remaining cell in column B:

|    | A                    | B                    | C | D | E |
|----|----------------------|----------------------|---|---|---|
| 1  | <b>Standard Time</b> | <b>Military Time</b> |   |   |   |
| 2  | 1:15:22 AM           | 0115                 |   |   |   |
| 3  | 4:15:00 AM           | 0415                 |   |   |   |
| 4  | 7:12:05 AM           | 0712                 |   |   |   |
| 5  | 11:15:01 AM          | 1115                 |   |   |   |
| 6  | 12:15:00 PM          | 1215                 |   |   |   |
| 7  | 4:59:55 PM           | 1659                 |   |   |   |
| 8  | 8:13:11 PM           | 2013                 |   |   |   |
| 9  | 10:15:22 PM          | 2215                 |   |   |   |
| 10 | 11:59:56 PM          | 2359                 |   |   |   |
| 11 |                      |                      |   |   |   |
| 12 |                      |                      |   |   |   |
| 13 |                      |                      |   |   |   |
| 14 |                      |                      |   |   |   |
| 15 |                      |                      |   |   |   |
| 16 |                      |                      |   |   |   |

Column B now displays each standard time from column A as a military time.

## Expanding Precision: Incorporating Seconds into Military Time

In certain high-stakes environments, such as **computer science** logging or scientific research, the simple hour-and-minute format may lack the necessary precision. In these cases, it is vital to include seconds in your **military time** conversion. **Microsoft Excel** accommodates this by allowing for the expansion of the format code within the **TEXT function**. By adding "SS" to the format string, you ensure that every second of the day is accounted for in your records.

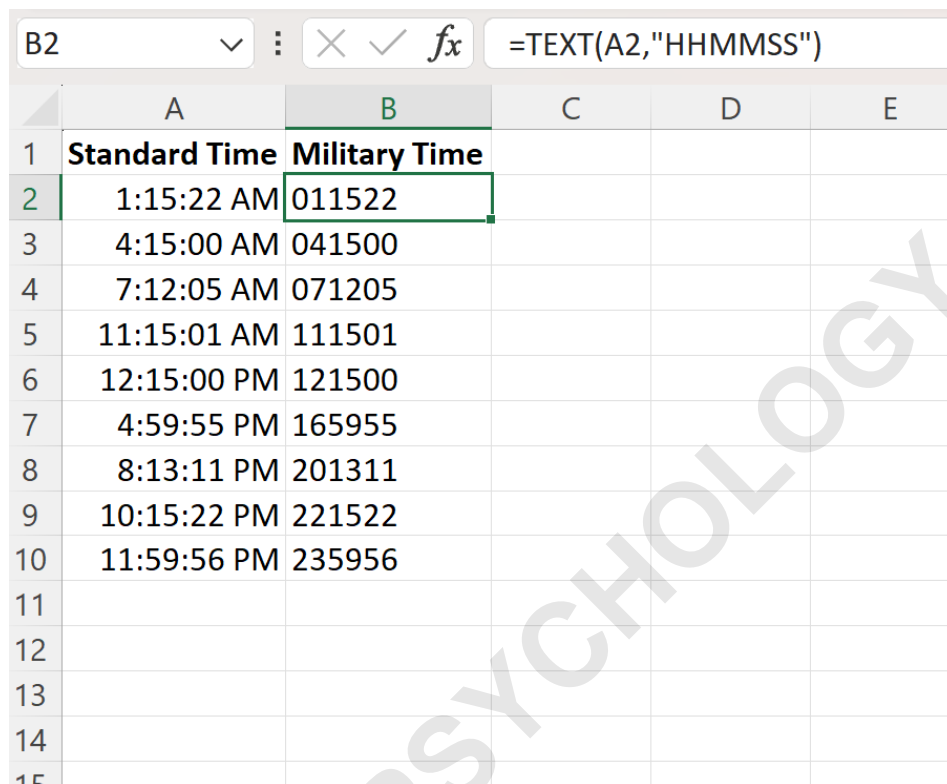
The transition from "HHMM" to "HHMMSS" is straightforward but significantly increases the detail of your **data**. For instance, a time recorded as "4:20:15 PM" would be converted to "162015." This level of detail is often required for **audit trails** or when synchronizing events across multiple servers in a **network**. It maintains the rigid structure of military time while providing the granular detail necessary for modern technical applications.

Using the seconds-inclusive formula is just as easy as the basic version. You simply modify the second argument of the function to reflect the desired output. This flexibility is what makes **Excel** such a powerful tool for **information technology** professionals who must manage diverse data types. Below is the refined formula and an example of its implementation in a live workbook.

**Note:** If you'd like to display the seconds in the military time as well, you can use the following formula instead:

**=TEXT(A2,"HHMMSS")**

The following screenshot shows how to use this formula in practice:



|    | A                    | B                    | C | D | E |
|----|----------------------|----------------------|---|---|---|
| 1  | <b>Standard Time</b> | <b>Military Time</b> |   |   |   |
| 2  | 1:15:22 AM           | 011522               |   |   |   |
| 3  | 4:15:00 AM           | 041500               |   |   |   |
| 4  | 7:12:05 AM           | 071205               |   |   |   |
| 5  | 11:15:01 AM          | 111501               |   |   |   |
| 6  | 12:15:00 PM          | 121500               |   |   |   |
| 7  | 4:59:55 PM           | 165955               |   |   |   |
| 8  | 8:13:11 PM           | 201311               |   |   |   |
| 9  | 10:15:22 PM          | 221522               |   |   |   |
| 10 | 11:59:56 PM          | 235956               |   |   |   |
| 11 |                      |                      |   |   |   |
| 12 |                      |                      |   |   |   |
| 13 |                      |                      |   |   |   |
| 14 |                      |                      |   |   |   |
| 15 |                      |                      |   |   |   |

## Decoding Military Strings with TimeValue and String Manipulation

Converting in the opposite direction--from **military time** back to standard time--requires a slightly more complex logical approach. Since military time is often stored as a four-digit **string** or number, **Excel** does not immediately recognize it as a temporal value. To bridge this gap, we must use **string functions** like **LEFT** and **RIGHT** to extract the hour and minute components, and then use **concatenation** to insert a colon between them.

The **LEFT function** is utilized to grab the first two characters of the military time (the hours), while the **RIGHT function** captures the last two characters (the minutes). Once these are isolated, the **TIMEVALUE function** is employed to convert the resulting "HH:MM" string into a serial number that **Excel** can understand as a valid time. This process is a classic example of **data cleaning**, where raw input is transformed into a structured format suitable for standard reporting.

The **TIMEVALUE** function is particularly powerful because it recognizes various text representations of time and converts them into the mathematical equivalent used by the software's engine. Without this step, **Excel** would treat "1430" as a simple integer, making it impossible to apply **time-based formatting** or perform duration calculations. The formula provided below demonstrates this sophisticated multi-step conversion process.

### Formula 2: Convert Military Time to Standard Time

```
=TIMEVALUE(LEFT(A2,2)&":"&RIGHT(A2,2))
```

This particular formula converts the military time in cell **A2** to standard time.

### Implementation: Transforming Military Time back to Standard Format

When implementing the military-to-standard conversion, you will initially notice that the output looks like a **decimal** value. Do not be alarmed; this is simply how **Excel** natively views time. For example, "0600" (6:00 AM) will appear as 0.25. To make this data readable for a general audience, you must apply the correct **Number Format** from the **Home** tab ribbon. This step is crucial for effective **data communication**.

By selecting the **Time** format, you instruct **Excel** to display that decimal as a standard 12-hour clock value complete with the appropriate "AM" or "PM" suffix. This transformation is vital for creating user-friendly **dashboards** or schedules that are accessible to individuals who are not accustomed to the 24-hour system. The following example walks through the visual steps of this conversion process within the **spreadsheet** environment.

### Example 2: Convert Military Time to Standard Time

Suppose we have the following list of military times in Excel:

|    | A                    | B | C | D | E |
|----|----------------------|---|---|---|---|
| 1  | <b>Military Time</b> |   |   |   |   |
| 2  | 0115                 |   |   |   |   |
| 3  | 0415                 |   |   |   |   |
| 4  | 0715                 |   |   |   |   |
| 5  | 1011                 |   |   |   |   |
| 6  | 1215                 |   |   |   |   |
| 7  | 1458                 |   |   |   |   |
| 8  | 1659                 |   |   |   |   |
| 9  | 1730                 |   |   |   |   |
| 10 | 1802                 |   |   |   |   |
| 11 |                      |   |   |   |   |
| 12 |                      |   |   |   |   |
| 13 |                      |   |   |   |   |
| 14 |                      |   |   |   |   |
| 15 |                      |   |   |   |   |
| 16 |                      |   |   |   |   |

We can type the following formula into cell **B2** to convert the military times to standard times:

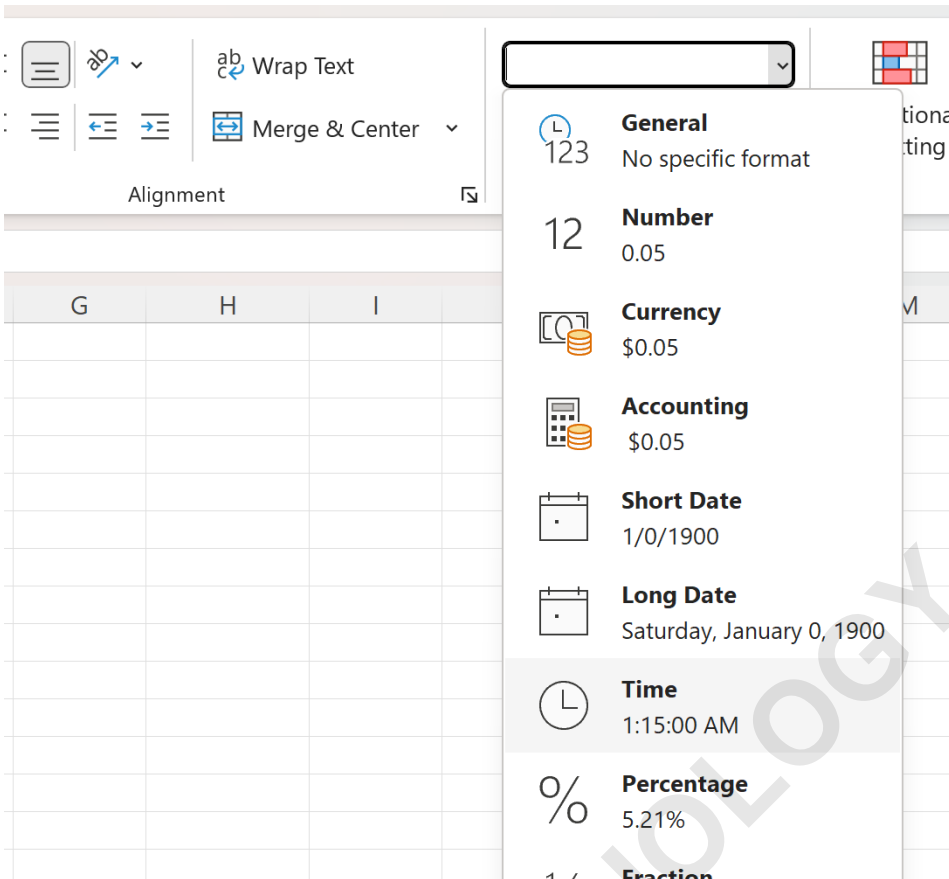
**=TIMEVALUE(LEFT(A2,2)&":"&RIGHT(A2,2))**

We can then click and drag this formula down to each remaining cell in column B:

|    | A                    | B                    | C | D | E | F |
|----|----------------------|----------------------|---|---|---|---|
| 1  | <b>Military Time</b> | <b>Standard Time</b> |   |   |   |   |
| 2  | 0115                 | 0.052083333          |   |   |   |   |
| 3  | 0415                 | 0.177083333          |   |   |   |   |
| 4  | 0715                 | 0.302083333          |   |   |   |   |
| 5  | 1011                 | 0.424305556          |   |   |   |   |
| 6  | 1215                 | 0.510416667          |   |   |   |   |
| 7  | 1458                 | 0.623611111          |   |   |   |   |
| 8  | 1659                 | 0.707638889          |   |   |   |   |
| 9  | 1730                 | 0.729166667          |   |   |   |   |
| 10 | 1802                 | 0.751388889          |   |   |   |   |
| 11 |                      |                      |   |   |   |   |
| 12 |                      |                      |   |   |   |   |
| 13 |                      |                      |   |   |   |   |
| 14 |                      |                      |   |   |   |   |
| 15 |                      |                      |   |   |   |   |
| 16 |                      |                      |   |   |   |   |
| 17 |                      |                      |   |   |   |   |

By default, the times in column B are shown as decimals.

To format these decimals as times, highlight the cell range **B2:B10** and then click the **Number Format** dropdown on the **Home** tab and then click **Time**:



Column B will now display each military time from column A as a standard time:

|    | A                    | B                    | C | D | E |
|----|----------------------|----------------------|---|---|---|
| 1  | <b>Military Time</b> | <b>Standard Time</b> |   |   |   |
| 2  | 0115                 | 1:15:00 AM           |   |   |   |
| 3  | 0415                 | 4:15:00 AM           |   |   |   |
| 4  | 0715                 | 7:15:00 AM           |   |   |   |
| 5  | 1011                 | 10:11:00 AM          |   |   |   |
| 6  | 1215                 | 12:15:00 PM          |   |   |   |
| 7  | 1458                 | 2:58:00 PM           |   |   |   |
| 8  | 1659                 | 4:59:00 PM           |   |   |   |
| 9  | 1730                 | 5:30:00 PM           |   |   |   |
| 10 | 1802                 | 6:02:00 PM           |   |   |   |
| 11 |                      |                      |   |   |   |
| 12 |                      |                      |   |   |   |
| 13 |                      |                      |   |   |   |
| 14 |                      |                      |   |   |   |
| 15 |                      |                      |   |   |   |
| 16 |                      |                      |   |   |   |
| 17 |                      |                      |   |   |   |

## Optimizing Data Integrity and Regional Settings

While the formulas provided are highly effective, it is important to consider **regional settings** and how they might impact time interpretation. In some locales, the default separator for time is a period rather than a colon. **Microsoft Excel** generally adapts to these settings automatically, but when sharing workbooks across different countries, inconsistencies can arise. Always ensure that your **metadata** and system settings are aligned to prevent errors in time-based calculations.

Furthermore, maintaining **data integrity** requires a consistent approach to data entry. If a dataset contains a mix of three-digit and four-digit military times (e.g., "930" instead of "0930"), the **LEFT** and **RIGHT** functions may yield incorrect results. In such cases, using the **TEXT** function to pad the numbers with leading zeros before performing the conversion is a best practice in **data preprocessing**. This ensures that every entry follows a uniform structure.

Finally, remember that the choice between **military time** and standard time often depends on the end-user's requirements. While **military time** is superior for sorting and data processing, standard time is often more readable for client-facing documents. By mastering both formats, you become a more versatile **data analyst**, capable of tailoring your **Excel** workbooks to meet the specific needs of any professional environment.

The following tutorials explain how to perform other common tasks in Excel:

**How to Convert Decimal to Time in Excel**

**How to Calculate Time Difference in Excel**

**How to Add Hours to Time in Excel**

**How to Use the NOW Function in Excel**

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