

ISO 8601 datetime

Full ISO datetime with optional fractional seconds and timezone.

```
^\d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z|[\+-]\d{2}:\d{2})?$$
```

Token-by-token breakdown

Token	Meaning
^	start of string (or line in multiline mode)
\d{4}	exactly 4 times: digit (0–9)
-	literal text “-”
\d{2}	exactly 2 times: digit (0–9)
-	literal text “-”
\d{2}	exactly 2 times: digit (0–9)
T	literal text “T”
\d{2}	exactly 2 times: digit (0–9)
:	literal text “:”
\d{2}	exactly 2 times: digit (0–9)
:	literal text “:”
\d{2}	exactly 2 times: digit (0–9)
(	start of a capturing group
\.	literal “.”
\d+	one or more: digit (0–9)
)?	end of group, optional (zero or one)
(	start of a capturing group
Z	literal text “Z”
	OR — try the alternative
[\+-]	any of: “+”, “-”
\d{2}	exactly 2 times: digit (0–9)
:?	optional (zero or one): the literal “:”
\d{2}	exactly 2 times: digit (0–9)
)?	end of group, optional (zero or one)
\$	end of string (or line in multiline mode)

Quick usage in 7 languages

JavaScript `const re = /^^\d{4}-\d{2}-\d{2}T\d{2}:\d{2}:\d{2}(\.\d+)?(Z|[\+-]\d{2}:\d{2})?$/;`
`re.test(value);`

Python	<pre>import re re.match(r"^\\d{4}-\\d{2}-\\d{2}T\\d{2}:\\d{2}:\\d{2}(\\.\\d+)?(Z [-+]\\d{2}:?\\d{2})?\$", value)</pre>
Java	<pre>Pattern.compile("^\\d{4}-\\d{2}-\\d{2}T\\d{2}:\\d{2}:\\d{2}(\\.\\d+)?(Z [-+]\\d{2}:?\\d{2})?\$").matcher(value).matches();</pre>
C# / .NET	<pre>Regex.IsMatch(value, @"^\\d{4}-\\d{2}-\\d{2}T\\d{2}:\\d{2}:\\d{2}(\\.\\d+)?(Z [-+]\\d{2}:?\\d{2})?\$");</pre>
Go	<pre>regexp.MustCompile(`^\\d{4}-\\d{2}-\\d{2}T\\d{2}:\\d{2}:\\d{2}(\\.\\d+)?(Z [-+]\\d{2}:?\\d{2})?\$`) .MatchString(value)</pre>
Ruby	<pre>/^\\d{4}-\\d{2}-\\d{2}T\\d{2}:\\d{2}:\\d{2}(\\.\\d+)?(Z [-+]\\d{2}:?\\d{2})?\$/ .match?(value)</pre>
PHP	<pre>preg_match('~^\\d{4}-\\d{2}-\\d{2}T\\d{2}:\\d{2}:\\d{2}(\\.\\d+)?(Z [-+]\\d{2}:?\\d{2})?\$~', \$value);</pre>

Common pitfalls

- **Anchored to the whole string.** This pattern uses `^` and `$`, so it requires the entire input to match. To find it inside a longer text, drop the anchors and use the global (`g`) flag.
- **Escape it correctly per language.** In Java and JavaScript strings each backslash must be doubled (`\\d`); in Python, Go, and C# use raw/verbatim strings so the backslashes survive.
- **Validate beyond format.** Matching the format doesn't guarantee the value is real. Confirm the iso 8601 datetime against a source of truth (database, API, or checksum) where it matters.