

ISO 8601 duration

Duration like P1Y2M3DT4H5M6S.

```
^P(?:$)(\d+Y)?(\d+M)?(\d+D)?(T(\d+H)?(\d+M)?(\d+(\.\d+)?)S)?)?$
```

Token-by-token breakdown

Token	Meaning
^	start of string (or line in multiline mode)
P	literal text "P"
(?!\$)	start of a negative lookahead — NOT followed by
\$	end of string (or line in multiline mode)
)	end of group
(	start of a capturing group
\d+	one or more: digit (0–9)
Y	literal text "Y"
)?	end of group, optional (zero or one)
(	start of a capturing group
\d+	one or more: digit (0–9)
M	literal text "M"
)?	end of group, optional (zero or one)
(	start of a capturing group
\d+	one or more: digit (0–9)
D	literal text "D"
)?	end of group, optional (zero or one)
(	start of a capturing group
T	literal text "T"
(	start of a capturing group
\d+	one or more: digit (0–9)
H	literal text "H"
)?	end of group, optional (zero or one)
(	start of a capturing group
\d+	one or more: digit (0–9)
M	literal text "M"
)?	end of group, optional (zero or one)
(	start of a capturing group

Token	Meaning
\d+	one or more: digit (0–9)
(	start of a capturing group
\.	literal “.”
\d+	one or more: digit (0–9)
)?	end of group, optional (zero or one)
S	literal text “S”
)?	end of group, optional (zero or one)
)?	end of group, optional (zero or one)
\$	end of string (or line in multiline mode)

Quick usage in 7 languages

JavaScript	<pre>const re = /^P(?:\$)(\d+Y)?(\d+M)?(\d+D)?(T(\d+H)?(\d+M)?(\d+(\.\d+)?)S)?)?\$/; re.test(value);</pre>
Python	<pre>import re re.match(r"^P(?:\$)(\d+Y)?(\d+M)?(\d+D)?(T(\d+H)?(\d+M)?(\d+(\.\d+)?)S)?)?\$", value)</pre>
Java	<pre>Pattern.compile("^P(?:\$)(\d+Y)?(\d+M)?(\d+D)?(T(\d+H)?(\d+M)?(\d+(\.\d+)?)S)?)?\$") .matcher(value).matches();</pre>
C# / .NET	<pre>Regex.IsMatch(value, @"^P(?:\$)(\d+Y)?(\d+M)?(\d+D)?(T(\d+H)?(\d+M)?(\d+(\.\d+)?)S)?)?\$");</pre>
Go	<pre>regexp.MustCompile(`^P(?:\$)(\d+Y)?(\d+M)?(\d+D)?(T(\d+H)?(\d+M)?(\d+(\.\d+)?)S)?)?\$`).MatchString(value)</pre>
Ruby	<pre>/^P(?:\$)(\d+Y)?(\d+M)?(\d+D)?(T(\d+H)?(\d+M)?(\d+(\.\d+)?)S)?)?\$/ .match?(value)</pre>
PHP	<pre>preg_match('~^P(?:\$)(\d+Y)?(\d+M)?(\d+D)?(T(\d+H)?(\d+M)?(\d+(\.\d+)?)S)?)?\$', \$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 duration against a source of truth (database, API, or checksum) where it matters.