TIME type variables

TIME types mainly serve for timing purposes. The most common type in programs is simple TIME, such as in connection with IEC timings, like this:

```
#Ttimer(IN:=#start,
        PT:=t#12s);
```

		#start	FALSE

These will be discussed later, but in the example above, the time (PT) is specified in TIME format, with 12 seconds written as **t#12s**.

TIME is a DINT type variable that stores time in 32 bits, measured in milliseconds. The stored value can be positive or negative, and the rules for negative integers apply, meaning negative TIME values cannot be represented in hexadecimal or binary form.

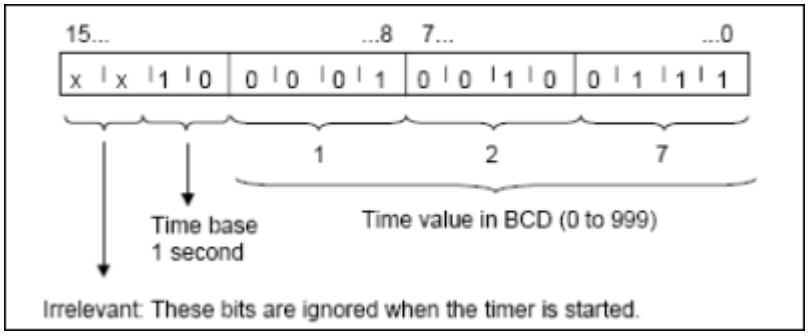
The same rules apply to the LTIME type, but it stores nanoseconds in an LINT variable, using 64 bits. Interestingly, the maximum value of LTIME is 106,751 days, or about 292 years.

The S5TIME type was included among the variables for downward compatibility; it was the default (and only) time type during the S5 PLC era.

Type	Length (form)	Value Range HEX	Value Range DEC	Example
TIME	32 bit (DINT)	0 .. 7FFF_FFFF	T#-24d20h31m23s648ms .. T#+24d20h31m23s647ms	T#12s, 16#ABCD
LTIME	64 bit (LINT)	0 .. 7FFF_FFFF_ FFFF_FFFF	LT#-106751d23h47m16s 854ms775us808ns .. LT#+106751d23h47m16s 854ms775us807ns LT#12s	LTIME#12s, 16#ABCD
S5TIME	16 bit		S5T#0H_0M_0S_0MS .. S5T#2H_46M_30S_0MS	S5T#10s, S5TIME#10s

S5TIME

- Underscores in time and date are optional
- It is not necessary to specify all time units (for example: T# 5h10s is valid)
- Maximum time value = 9,990 seconds or 2H_46M_30S



Time base	Binary Code

10 ms	00
100 ms	01
1 s	10
10 s	11

More information:
TIA Datatypes: S7 data types summary table