

Dynamic change of the HMI performance of a CPU-31x with the FC 630

FC 630 time assignment for HMI services (human machine interface)

[as from firmware versions: **V2.3.2 / V2.1.6 / V2.0.10**]

Function	Type	No.	Family	ID	Time stamp
Change time assignment for HMI services	FC	630	COMM	SET_TSF	Not applicable

Parameters:

Variable	Name	Data type	Memory area	Parameter description specific/general
INPUT	TSB	BYTE	I, Q, M, D, L	<p>Time factor This parameter is for setting the multiplier for the internal task time.</p> <ul style="list-style-type: none"> • Possible range of values: 1-255 • 0: restores the initial status • 1: corresponds to the default setting <p>Note: The CPU cycle time increases by approx. 6.25 percent per unit for TSB</p>
INPUT	TS2	BYTE	I, Q, M, D, L	<p>Time factor This parameter is for setting the multiplier for the internal task time.</p> <ul style="list-style-type: none"> • Possible range of values: 1-255 • 0: restores the initial status • 1: corresponds to the default setting <p>Note: The CPU cycle time increases by approx. 6.25 percent per unit for TS2</p>
OUTPUT	RET_VAL	INT	I, Q, M, D, L	Return value

Brief description

You can use this function to change the time assignment for the HMI and PG services of an S7-300 CPU. The function sets the time assignment for the internal tasks according to the values of the TSx parameters.

The function works synchronously and only has to be called once. The time assignment set remains until the power is switched off.

- In the case of STOP followed by a restart, the time assignment is retained.
- In the case of power on/off and overall reset, the time assignment is reset to its original value.

The FC number (630) is not mandatory and can be renamed.

Effects / consequences

The time for processing HMI or PG services for PG services (e.g. Download) becomes ever shorter.

The cycle time of the CPU increases proportionally to the TSx values specified. There is an increase in cycle time of approx. 6.25 percent per unit.



The setting "Cycle load through communication" remains unchanged. Despite this, the "Cycle load through communication" is affected by a possibly longer cycle time. **Incorrect implementation of the FC630 might lead to error functions, in particular the CPU cycle time might increase enormously!**

General note:

Using the function diminishes the porting capability of the program. Be careful in using the function, because the block cannot be downloaded to other CPUs and firmware versions that are not supported (see above).

Function value:

The output parameter RET_VAL indicates whether or not the function has been executed correctly. If the function value 0 is returned, there has been no error. If an error occurs, a corresponding function value is returned. Evaluation of the RET_VAL should run according to the points in section 2.1 "Error evaluation of the output parameter RET_VAL" of the S7 manual.

Function value	Explanation
0	No error, both time factors are valid and have been accepted.
800x	An error has occurred, restart the block.

Sample program:

The following sample program shows the call frame of the FC 630:

```
CALL FC 630
  TSB :=B#16#6           // HMI services
  TS2 :=B#16#4           // e.g. MMC accesses
  RET_VAL :=MW210
```

In this example, the time factor for HMI services is set to 0x06. This corresponds to a 6x time assignment for HMI services and a resulting cycle time increase of up to 40%.