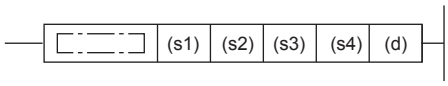
Comparing clock data

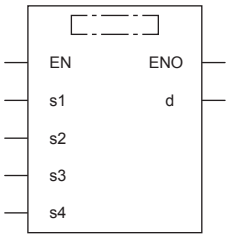
TCMP(P)

FX5S FX5UJ FX5U FX5UC

These instructions compare the time specified by (s1), (s2), and (s3) with the time data specified by (s4), and turn on/off the bit device specified by (d) depending on the size match.

Ladder diagram	Structured text
	ENO:=TCMP(EN,s1,s2,s3,s4,d); ENO:=TCMPP(EN,s1,s2,s3,s4,d);

FBD/LD



Setting data

■Descriptions, ranges, and data types

Operand	Description	Range	Data type	Data type (label)
(s1)	Specify the "hour" of the time comparison	0 to 23	16-bit signed binary	ANY16
(s2)	Specify the "minute" of the time comparison	0 to 59	16-bit signed binary	ANY16
(s3)	Specify the "second" of the time comparison	0 to 59	16-bit signed binary	ANY16
(s4)	Specify the time data (hour, minute, and second)	—	16-bit signed binary	ANY16_ARRAY (Number of elements: 3)
(d)	Specify the Bit device that turns on/off depending on the comparison result	—	Bit	ANYBIT_ARRAY (Number of elements: 3)
EN	Execution condition	—	Bit	BOOL
ENO	Execution result	—	Bit	BOOL

■Applicable devices

Operand	Bit	Word			Double word		Indirect specification	Constant			Others
	X, Y, M, L, SM, F, B, SB, S	T, ST, C, D, W, SD, SW, R	U□\G□	Z	LC	LZ		K, H	E	$	
(s1)	○	○	○	○	—	—	○	○	—	—	—
(s2)	○	○	○	○	—	—	○	○	—	—	—
(s3)	○	○	○	○	—	—	○	○	—	—	—
(s4)	—	○	○	—	—	—	○	—	—	—	—
(d)	○	○*1	—	—	—	—	—	—	—	—	—

*1 T, ST, and C cannot be used.

Processing details

- These instructions compare the time specified by (s1), (s2), and (s3) with the time data specified by (s4), and turn on/off the bit device specified by (d) depending on the size match.

(s1)	hour	(0 to 23)	>	(s4)	hour	(0 to 23)	⇨ (d) = ON
(s2)	minute	(0 to 59)		(s4)+1	minute	(0 to 59)	
(s3)	second	(0 to 59)		(s4)+2	second	(0 to 59)	

(s1)	hour	(0 to 23)	=	(s4)	hour	(0 to 23)	⇨ (d) +1 = ON
(s2)	minute	(0 to 59)		(s4)+1	minute	(0 to 59)	
(s3)	second	(0 to 59)		(s4)+2	second	(0 to 59)	

(s1)	hour	(0 to 23)	<	(s4)	hour	(0 to 23)	⇨ (d) +2 = ON
(s2)	minute	(0 to 59)		(s4)+1	minute	(0 to 59)	
(s3)	second	(0 to 59)		(s4)+2	second	(0 to 59)	

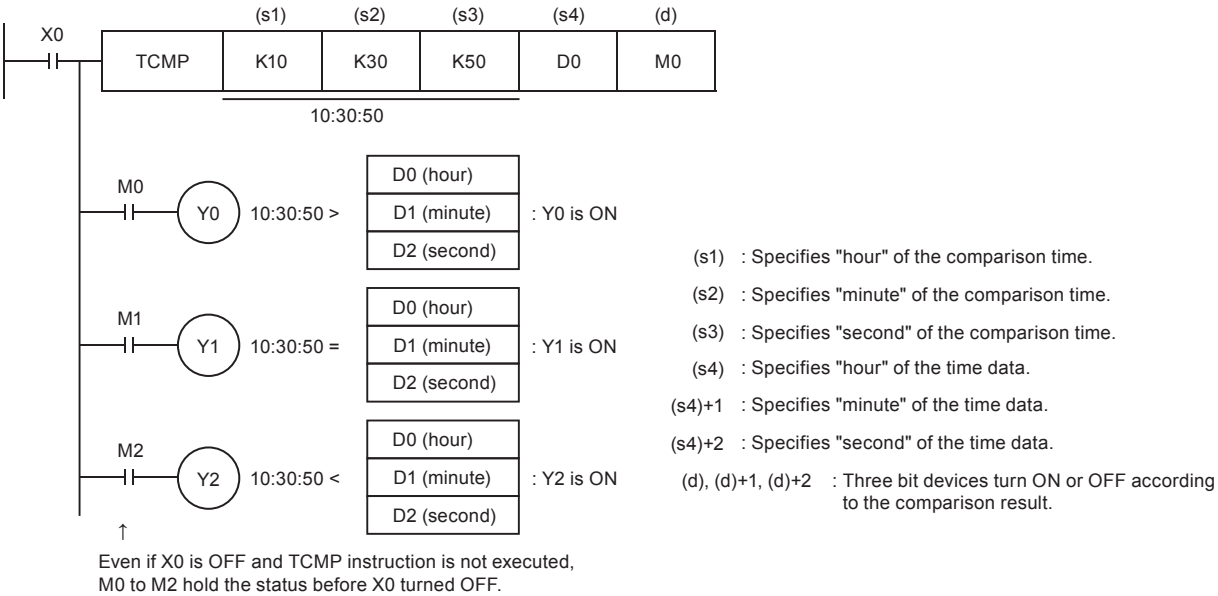
- (d), (d)+1, and (d)+2 hold the state before the command contact is turned off even if, the TCMP instruction is not executed by switching on → off the command contact.

Precautions

- Three devices are occupied by (s4) and (d). Make sure that these devices are not used by other machine controls.
- Specify each operand of the word device after reading the value of the special register used in the TRD(P) instruction when the time (hour, minute, second) of the clock data of the built-in real time clock in the CPU module is used.

Program example

In the program shown below, when X0 is set to ON, the time (10 hours 30 minutes 50 seconds) designated with (s1) to (s3) is compared with the D0 to D2 clock data, and the results are stored in M0 to M2.



Operation error

Error code (SD0/SD8067)	Description
2820H	The device range specified exceeds the corresponding device range.
3405H	The value specified by (s1) and (s4) is outside the following range. 0 to 23
	The value specified by (s2), (s3), (s4)+1, and (s4)+2 is outside the following range. 0 to 59