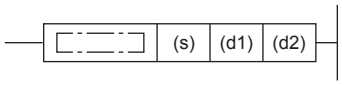
Hour meter

HOURM

FX5S FX5UJ FX5U FX5UC

This instruction measures the on time of the input contact in units of hour.

Ladder diagram	Structured text
	ENO:=HOURM(EN,s,d1,d2);

FBD/LD

Setting data

■Descriptions, ranges, and data types

Operand	Description	Range	Data type	Data type (label)
(s)	Time after which the alarm (d2) is set to on (unit: hour)	—	16-bit signed binary	ANY16
(d1)	Device for storing the measured current value (latched (battery backed) type data register)	—	16-bit signed binary	ANY16_ARRAY (Number of elements: 2)
(d2)	Device to be turned on when timeout occurs (alarm output)	—	Bit	ANY_BOOL
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	$	
(s)	○	○	○	○	—	—	○	○	—	—	—
(d1)	—	○	—	—	—	—	○	—	—	—	—
(d2)	○	○*1	—	—	—	—	—	—	—	—	—

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

Processing details

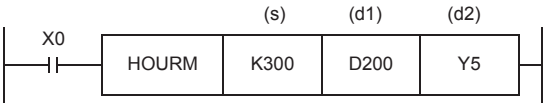
- This instruction measures the period of time for which the input contact is on in units of hour, and turns on the device specified by (d2) when the accumulated ON time exceeds the time (16-bit binary data) specified in (s).
- In (s), specify the period of time until the device specified by (d2) is turned on in units of hour.
- The measured current value in units of hour is stored in (d1).
- The measured current value of less than one hour (in units of second) is stored in (d1)+1.
- (d2) is set to on when the current value in (d1) exceeds the time specified by (s).
- Specify a latched (battery backed) type data register as (d1) so that the current value data can be continuously used even after the power to CPU module turns off. If a general data type register is used, the current value data is cleared when the power to the CPU module is turned OFF or when the controller mode switches from STOP to RUN.
- Even after the alarm output specified by (d2) turns ON, the measurement is continued.
- When the current value reaches the maximum value of 16-bit data, the measurement is stopped. For continuing the measurement, clear the current value stored in (d1) to (d1)+1.

Precautions

- Two devices are occupied by (d1). Make sure that these devices are not used by other machine controls.

Program example

In the program example shown below, when the accumulated X0 ON time exceeds 300 hours, Y5 turns ON.
The current value less than one hour is stored in D201 in units of second.



(s) : Time after which (d2) is set to ON
Specify a value in units of hour.
(d1) : Current value in units of hour
(d1)+1 : Current value less than one hour (unit: second)
(d2) : Alarm output destination
Turns ON when the current value (d1) reaches or exceeds the time specified in (s).
(In this example, the alarm output destination turns ON when the current value becomes 300 hours.)

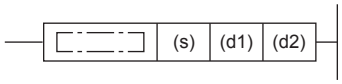
Operation error

Error code (SD0/SD8067)	Description
2820H	The device areas specified by (d1) exceed the corresponding device range.
3405H	The value of (s) is negative.

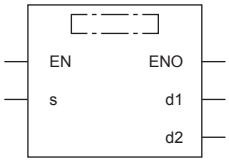
DHOURM

FX5S FX5UJ FX5U FX5UC

This instruction measures the on time of the input contact in units of hour.

Ladder diagram	Structured text
	ENO:=DHOURM(EN,s,d1,d2);

FBD/LD



Setting data

■Descriptions, ranges, and data types

Operand	Description	Range	Data type	Data type (label)
(s)	Time after which the alarm (d2) is set to on (unit: hour)	—	32-bit signed binary	ANY32
(d1)	Device for storing the measured current value (latched (battery backed) type data register)	—	32-bit signed binary	ANY32_ARRAY (Number of elements: 2)
(d2)	Device to be turned on when timeout occurs (alarm output)	—	Bit	ANY_BOOL
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	$	
(s)	○	○	○	○	○	○	○	○	—	—	—
(d1)	—	○	—	—	—	—	○	—	—	—	—
(d2)	○	○*1	—	—	—	—	—	—	—	—	—

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

Processing details

- This instruction measures the period of time for which the input contact is on in units of hour, and turns on the device specified by (d2) when the accumulated ON time exceeds the time (32-bit binary data) specified in (s).
- In (s)+1 and (s), specify the period of time until the device specified by (d2) is turned on in units of hour.
- The measured current value in units of hour is stored in (d1)+1 and (d1). ((d1)+1: highest-order, (d1): lowest-order)
- The measured current value of less than one hour (in units of second) is stored in (d1)+2.
- (d2) is set to on when the current value in (d1)+1 and (d1) exceeds the time specified by (s).
- Specify a latched (battery backed) type data register as (d1) so that the current value data can be continuously used even after the power to CPU module turns off. If a general data type register is used, the current value data is cleared when the power to the CPU module is turned OFF or when the controller mode switches from STOP to RUN.
- Even after the alarm output specified by (d2) turns ON, the measurement is continued.
- When the current value reaches the maximum value of 32-bit data, the measurement is stopped. For continuing the measurement, clear the current value stored in (d1) to (d1)+2.

Precautions

- Three devices are occupied by (d1). Make sure that these devices are not used by other machine controls.

Operation error

Error code (SD0/SD8067)	Description
2820H	The device areas specified by (d1) exceed the corresponding device range.
3405H	The value of (s) is negative.