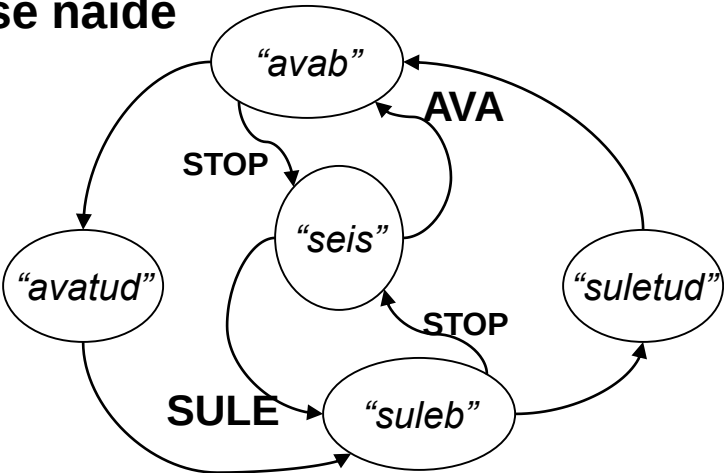
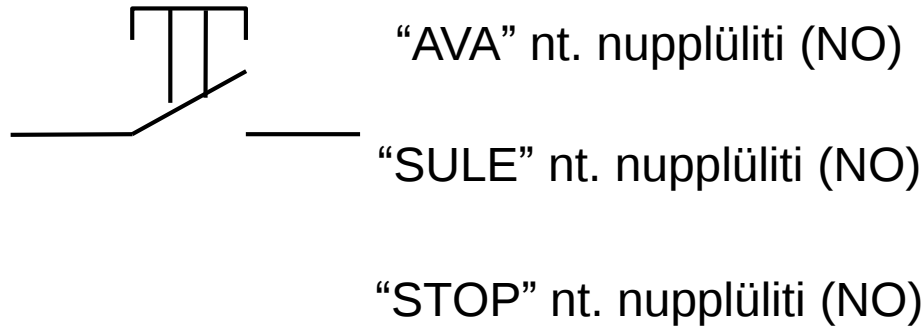


Väravat avava ja sulgeva mootori juhtimise näide

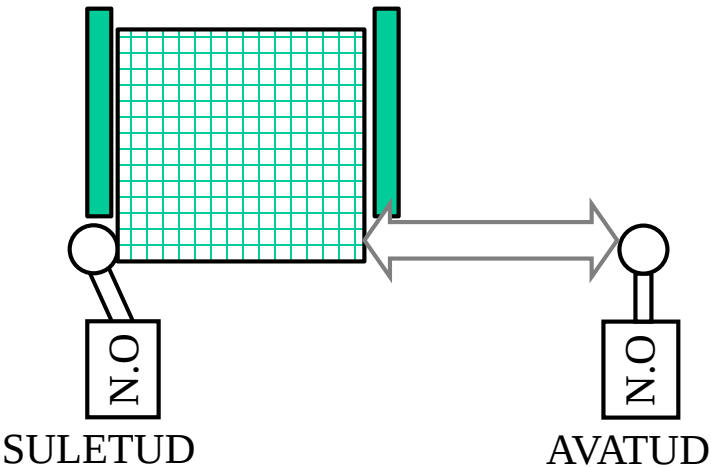
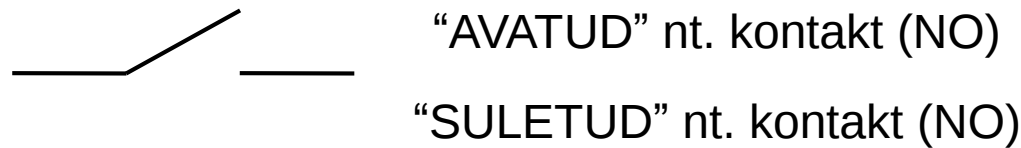
Värava võimalikud diskreetsed olekud:



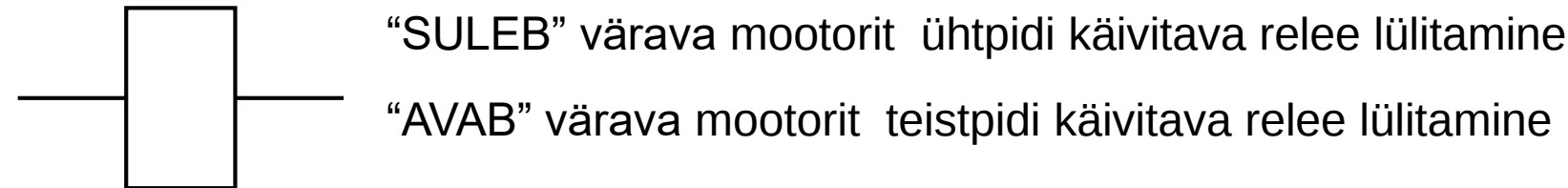
Värava juhtimise käsklused:



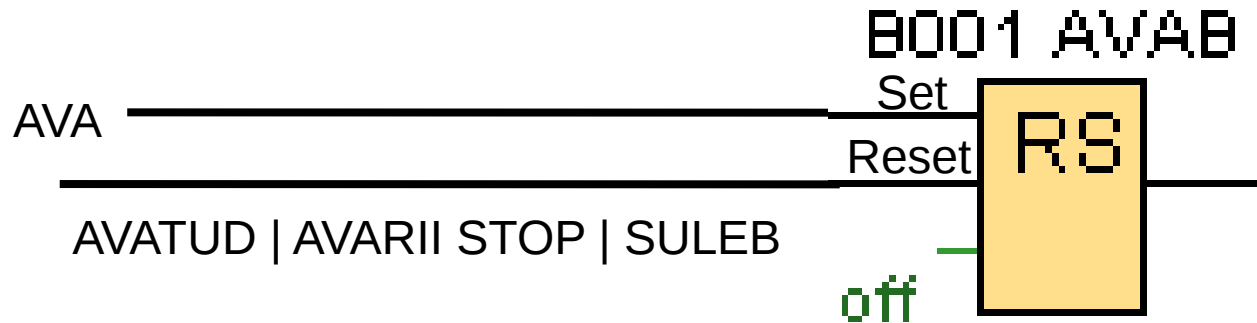
Värava olekut näitavad andurid:



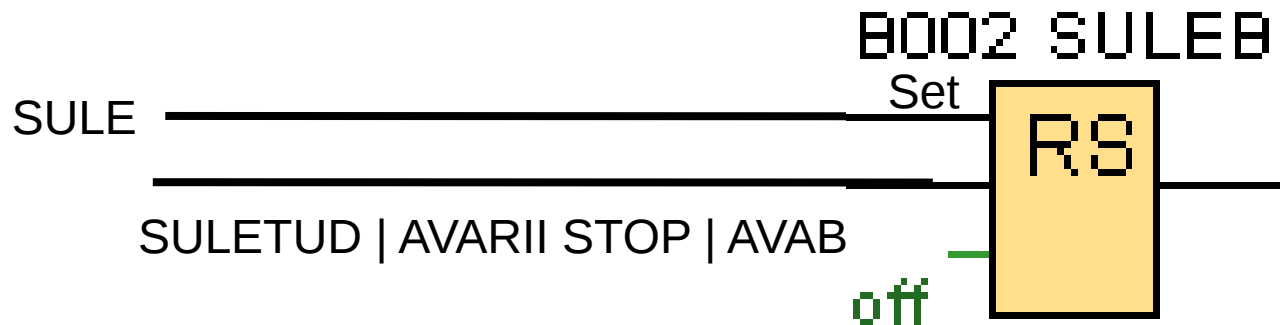
Värava liigutamiseks antavad pingestamised mootorile:



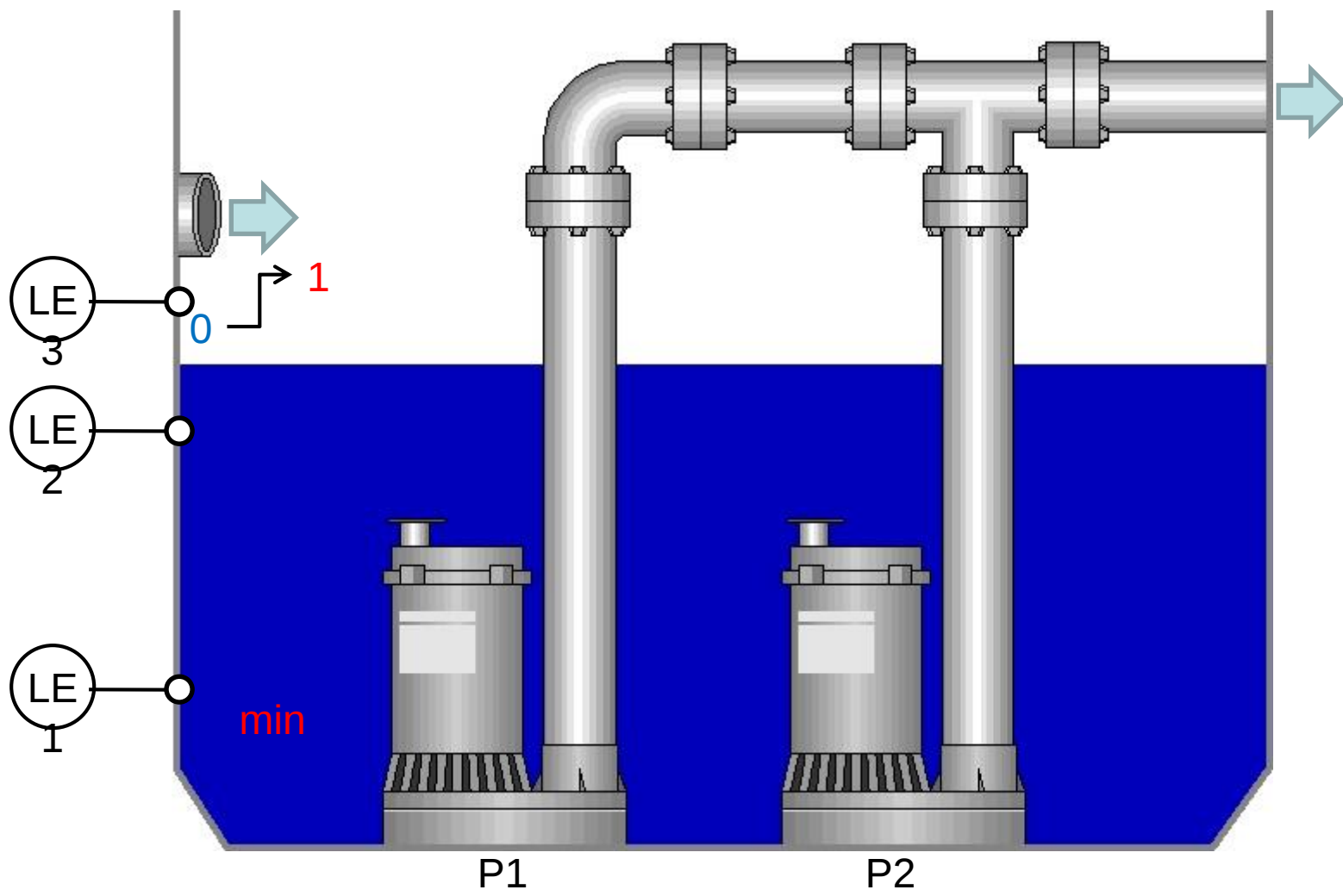
Värava juhtimise käitumise peamine funktsionaalsus

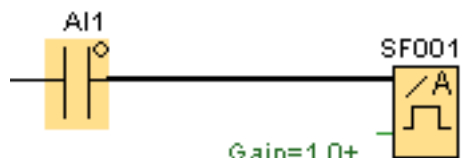


Avatust näitava numbrilise muutuja väärtus ≥ 100 siis lülitub andur “AVATUD”

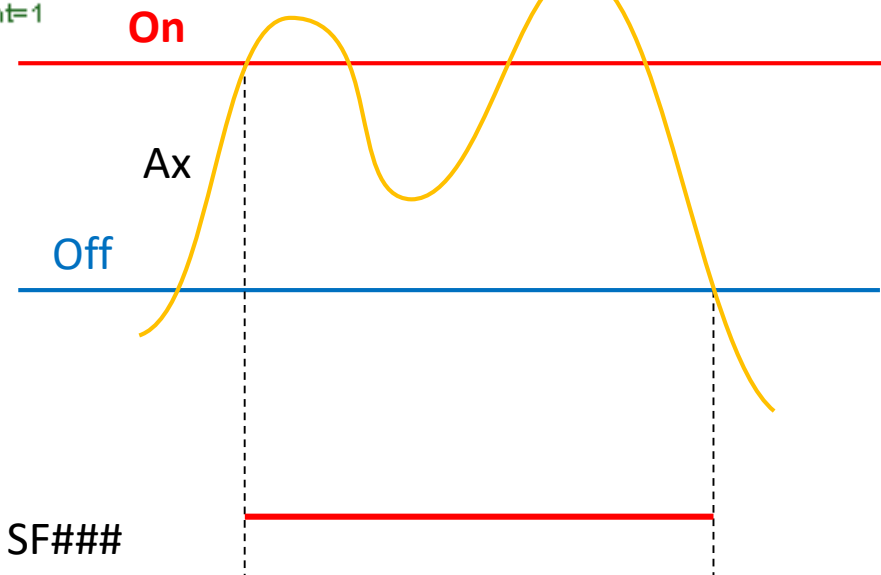


Avatust näitava numbrilise muutuja väärtus ≤ 0 siis lülitub andur “SULETUD”





Gain=1.0+
Offset=0
On=-20000
Off=180
Point=1

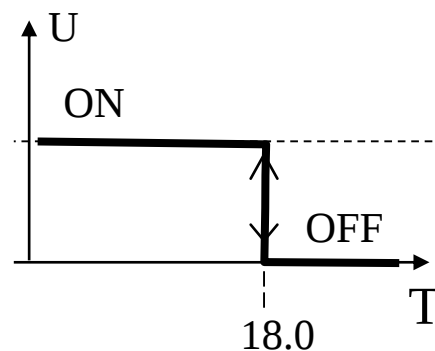


SF001 [Analog threshold trigger]

Parameter	Comment
Block name	
Sensor	0 ... 10 V
Measurement Range	
Minimum	0
Maximum	1000
Parameter	
Gain	1,00
Offset	0
Threshold	
On	
-20000	Reference
Off	
180	Reference
Decimal places in the message text	1 +1234.5
☐ Protection Active	

OK Cancel Help

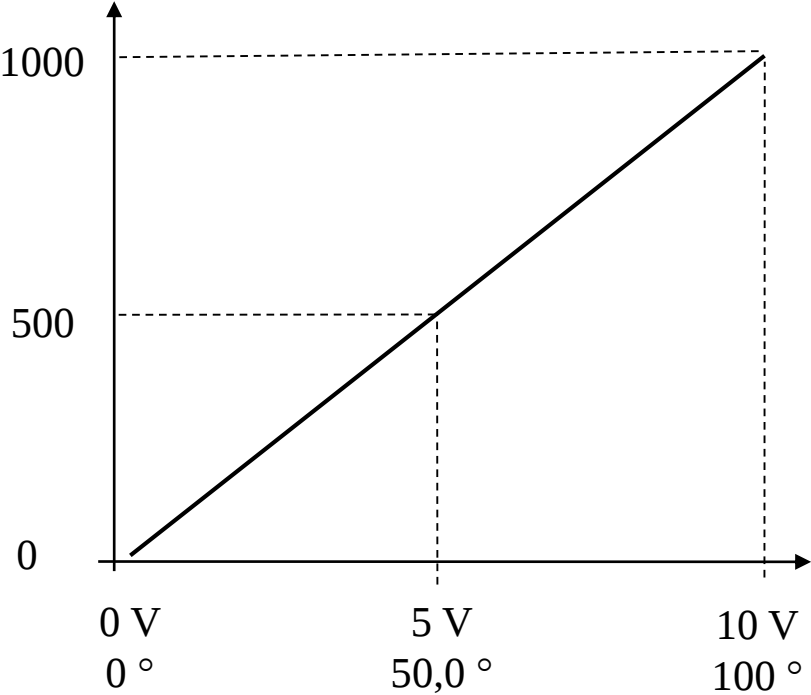
Väärtuse ületamise
tuvastamine ilma
hüstereesita



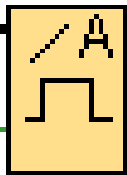
Mis on “juhitav muutuja”?

AI tõlgendamise võimalus

PLC-s



SF001 I aste



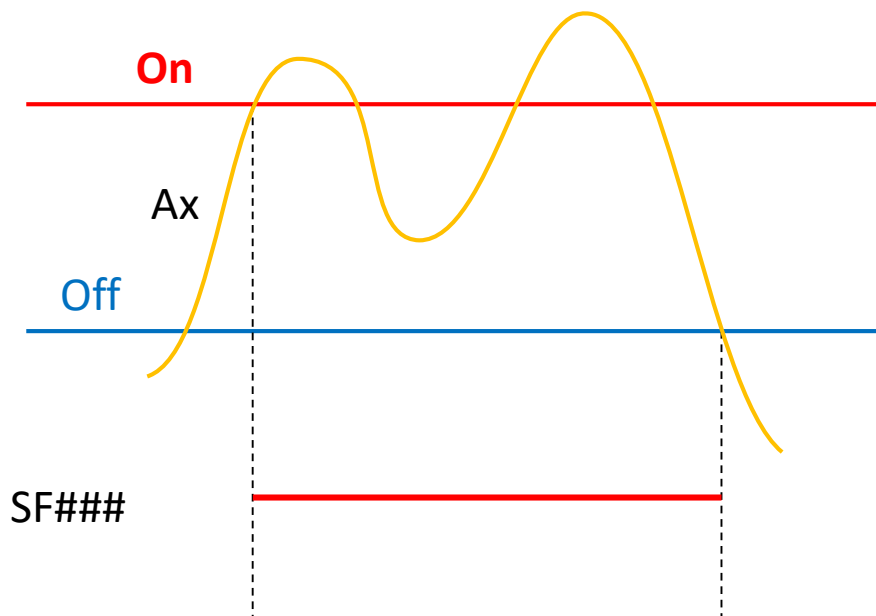
Analog threshold trigger

Gain=1.0+

Offset=0

On=230

Off=220



Temperatuuri
juhtimine
On/Off režiimis

SF001 I aste [Analog threshold trigger]

Parameter Comment

Sensor: 0 ... 10 V

Analog settings

Measurement Range

Minimum: 0

Maximum: 1000

Parameter

Gain:

Offset:

Threshold

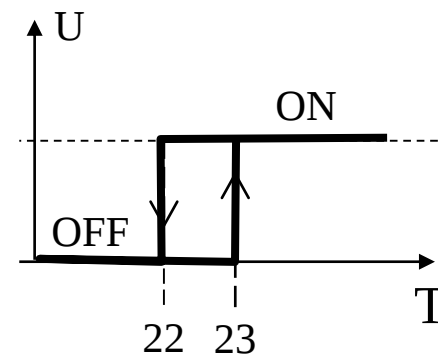
On

230 Reference

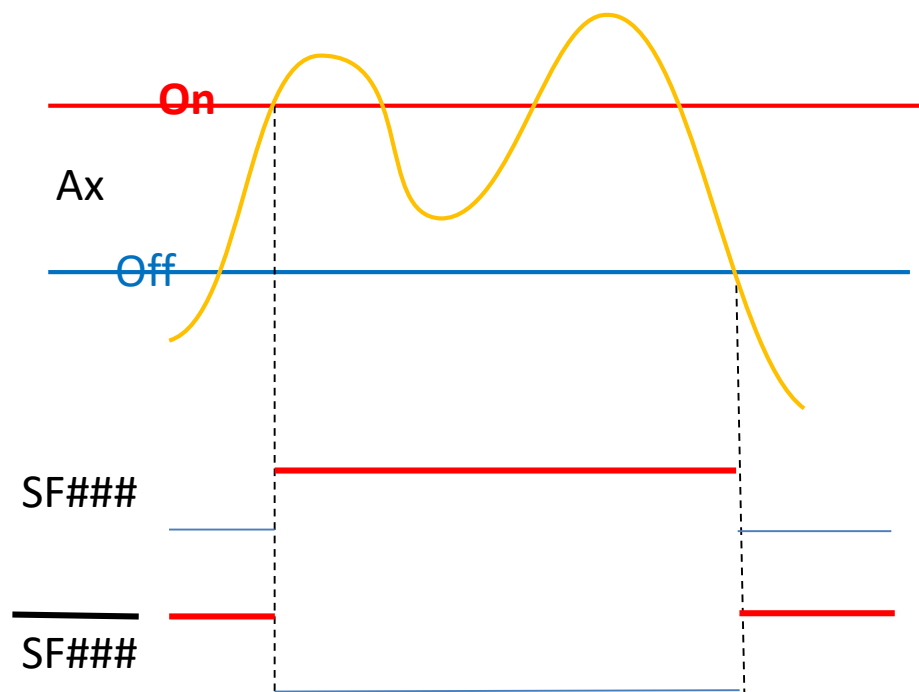
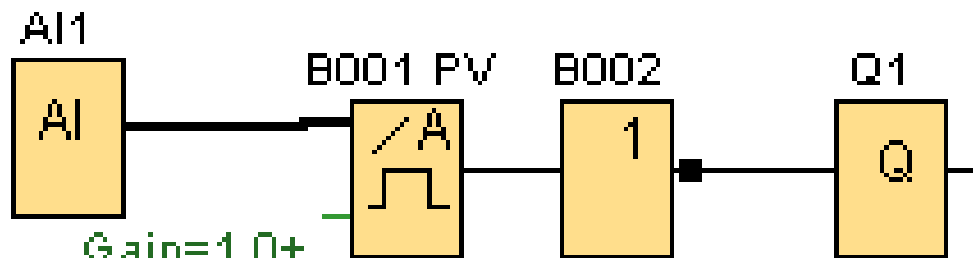
Off

220 Reference

OK



Analog threshold trigger



SF001 [Analog threshold trigger]

Parameter Comment

Sensor: 0 ... 10 V

Analog settings

Measurement Range

Minimum: 0

Maximum: 1000

Parameter

Gain: 1.00

Offset: 0

Threshold

On

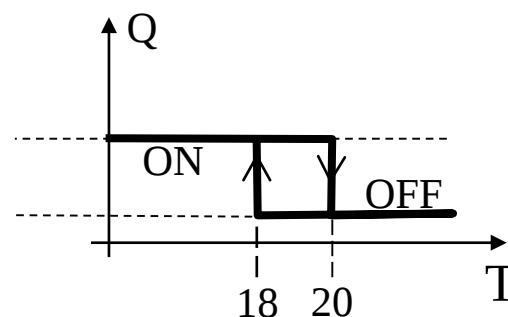
200 Reference

Off

180 Reference

Decimal places

Decimal places in the message text: 1 +1234.5

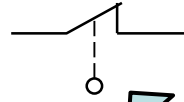


Temperatuuri
juhtimine
On/Off režiimis

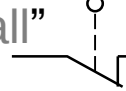
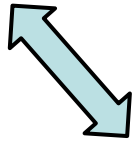
päikesesirmi juhtimine



"Pole ülal"



"Pole all"



piirasendid

nt. I 01

nt. I 02

nt. I 04

nt. I 03

tuulekiirus

valgustugevus

käsijuhtimine

"Pole ülal"

"Pole all"

"AVAB"

"Torm"

"SULEB"

"Päike"

"AVA" 

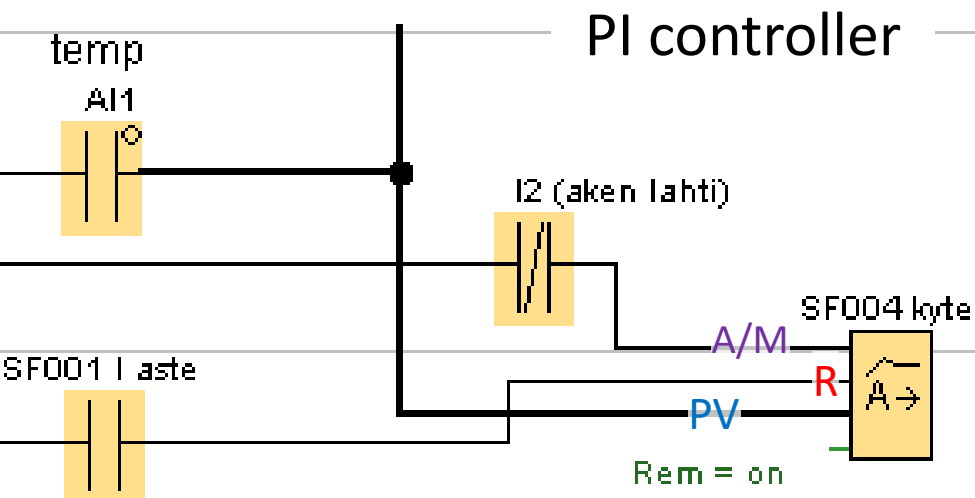
"SULE" 



L1

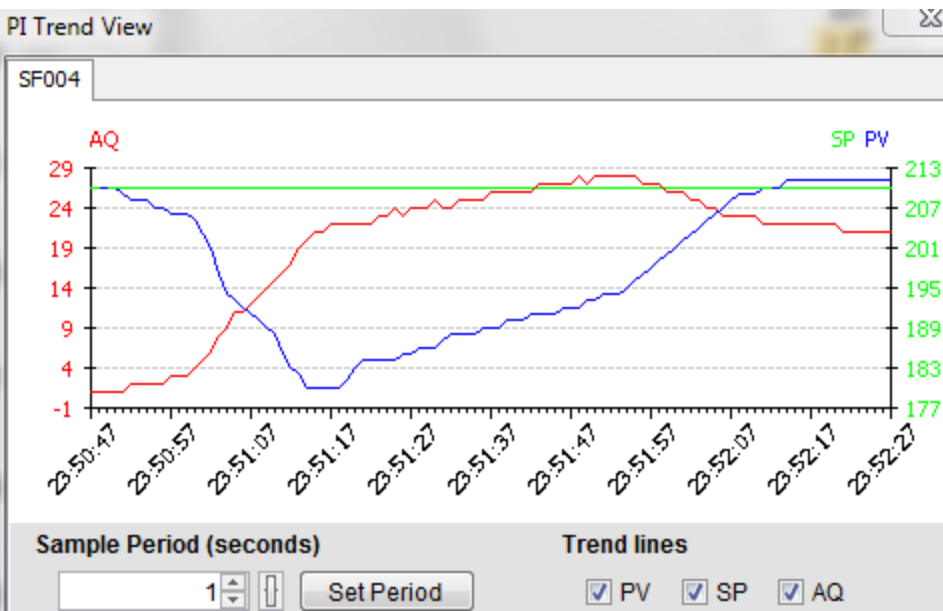
N

$AVA \ \& \ \overline{SULE} \ \vee \ \overline{TORM} \) \ \& \ Pole_ülal = AVAB$
 $(SULE \ \vee \ Päike) \ \& \ \overline{AVA} \ \& \ \overline{Torm} \ \& \ Pole_all = SULEB$



AQ 0...1000

PI Trend View



SF004 kyte [PI controller]

Parameter Comment

Sensor

Sensor: 0 ... 10 V

Analog settings

Measurement Range

Minimum: 0

Maximum: 1000

Parameter

Gain: 1.00

Offset: 0

Output

Set value (SP)

210 Reference

Manual output (Mq)

0 Reference

Parameter:

Parameter set: Temperature fast

Controller amplification (KC): 0.50

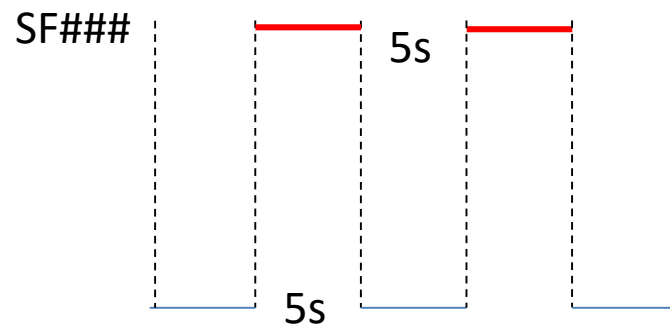
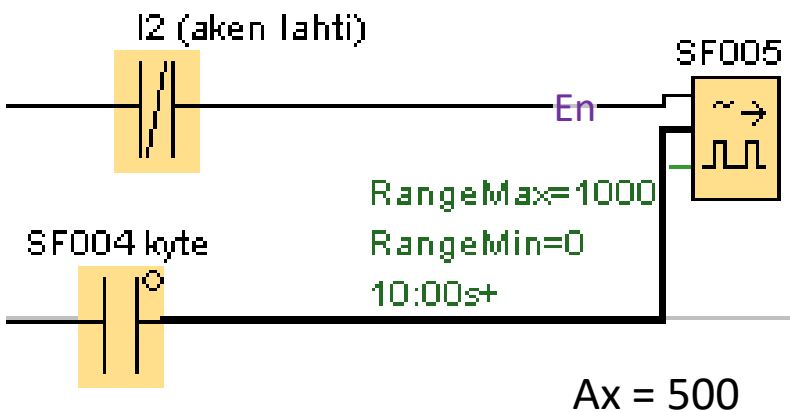
☒ Integration time (TI): 0 : 30 Minutes (m:s)

Direction (Dir): ☒ Upwards (+)

☐ Downwards (-)

OK Cancel

PWM



SF005 [PWM]

Parameter	Comment
Sensor:	No sensor

Analog settings

Measurement Range	Parameter
Minimum: 0	Gain: 1.00
Maximum: 1000	Offset: 0

Range

Range Min: 0	Range Max: 1000
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Periodic time

10	:	0	Seconds (s:1/1...	Reference
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OK Cancel

Ruumi soojenemise simuleerimine kontrollis

$$(t_{\tilde{o}} - t_{v\tilde{o}}) * H * d\tau = -C_H * dt$$

$$\frac{dt}{d\tau} = -\frac{H}{C_H} (t_{\tilde{o}} - t_{v\tilde{o}}) + \frac{P}{C_H}$$

$t_{\tilde{o}}$ – siseõhu temperatuur

$t_{v\tilde{o}}$ – välisõhu temp.

H – hoone soojuserikaad [W/K]

C_H – hoone soojuserimahtuvus [J/K]

Takti ts kaupa arvutamine:

$$t_{\tilde{o}}(k) = t_{\tilde{o}}(k-1) + ts \left(-\frac{H}{C_H} (t_{\tilde{o}}(k-1) - t_{v\tilde{o}}(k-1)) + \frac{P}{C_H} \right)$$

kütte ja sooja vee juhtim

