Two-point heating control (without hysteresis)

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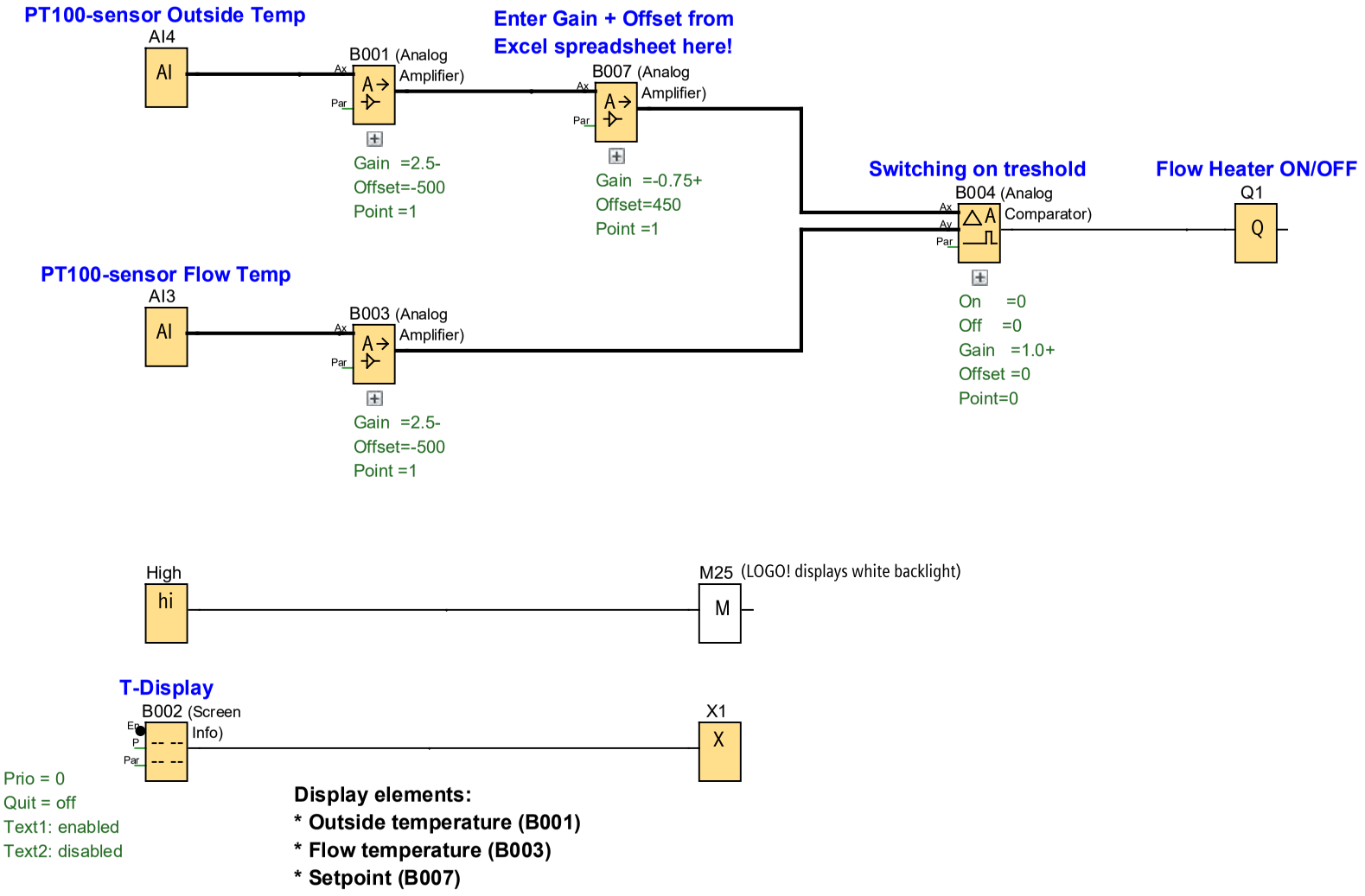


Creator:	adbejo0		Project:	Zweipunkt-Heizungsregelung (Prinzip)	Customer:	SIEMENS AG
Checked:	Beyer	C:\Program Files\Siemens\LOGOComfort_V[illegible]\Samples\Siemens.gif		Two-point heating control (manin principle)	Diagram No.:	
Date:	1/24/06 3:28 PM/8/27/25 12:15 PM		File:	two-point_heating_control_FBD.lsc	Page:	1 / 4

Requirement:

A two-point heating control circuit where the outside temperature and flow temperature is measured by two PT100 temperature sensors. If the outside temperature drops, the flow temperature is to be increased and vice versa.

LOGO!-solution:

Comparrison of the Outside & Flow temperatures happen at function block B004.
If the switching on treshold is reached, the heating turns off.
The slope of the heating curve is affected by the parameters of the analog amplifier B007 (refer to the excel-spreadsheet).
In the analog comparator each threshold is "0", this means its output will switch on if the difference of Ax and Ay i greater than 0.
(Ax and Ay are the input signals of the analog comparator.)

In detail:
- B003: Scaling of the sensor connected to AI3, resolution 0.1°C
- B001: Scaling of the sensor connected to AI4, resolution 0.1°C
- B007: Gain and Offset of the outside temperature, (enter the parameters which have been calculated of the excel-spreadsheet)
- B004: Compares outside temperature with flow temperature

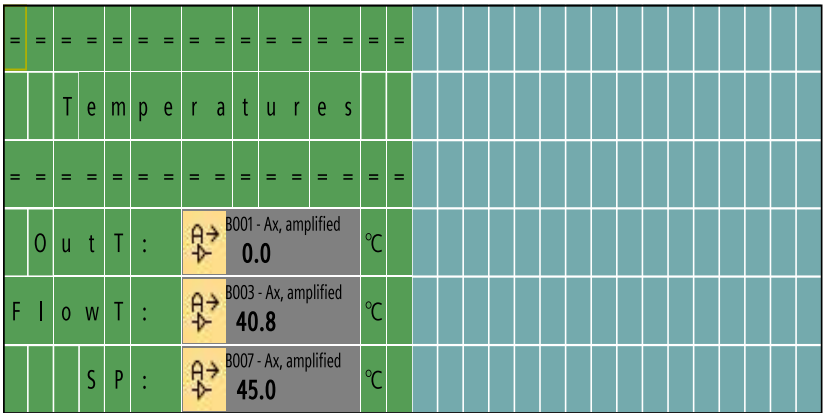
Components used:

- AI3 PT100 Temperature sensor for flow temperature
- AI4 PT100 Temperature sensor for outside temperature
- Q1 Heating on/off
- LOGO! 12/24RC
- LOGO! AM2 PT100

Advantages:

- Low-cost solution with LOGO! opposite to conventional heating controls.
- Can be easily adjusted to the individual requrements.

Block Number (Type)	Parameter
B001(Analog Amplifier) : (Analog Amplifier)	Gain =2.5- Offset=-500 Point =1
B002(Message texts) : (Screen Info)	Prio = 0 Quit = off Text1: enabled Text2: disabled



--> Ticker setting
- CBC
- Line1: N
- Line2: N
- Line3: N
- Line4: N
- Line5: N
- Line6: N

Message Destination
- LOGO! Display

Line4.8 B001-Ax
Line4.15 ℃
Line5.8 B003-Ax
Line5.15 ℃
Line6.8 B007-Ax
Line6.15 ℃

B003(Analog Amplifier) : (Analog Amplifier)	Gain =2.5- Offset=-500 Point =1
B004(Analog Comparator) : (Analog Comparator)	On =0 Off =0 Gain =1.0+ Offset =0 Point=0
B007(Analog Amplifier) : (Analog Amplifier)	Gain =-0.75+ Offset=450 Point =1

Connection	Label
AI3	
AI4	
M25	LOGO! displays white backlight
Q1	
X1	