

Example 5: Temperature control in a room
(File: EN_5.pm2)

Specification:

The ambient temperature of a room is controlled in heat mode by a heating resistor and a fan and in cool mode by a fan only. A 0 - 10 V signal can be provided by a temperature probe via a converter.

A switch can be used to deactivate control.

On-screen display:

Heat or cool mode is displayed.

The ambient temperature and the setpoint are displayed.

The control operation is to take account of a hysteresis of +2°C from on to off and -3°C from off to on, controlled by the TRIGGER FBD.

Table of inputs/outputs:

INPUTS		OUTPUTS	
I1	ON/OFF switch	O1	Heating resistor
I2	Mode selection	O2	Fan
I7	0 - 10 V input		
I8	Setpoint		

Model required:

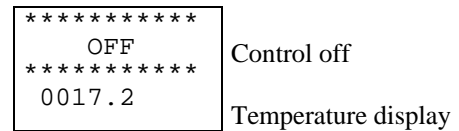
Millenium II 8 inputs/4 outputs:

SA12 S 24 VDC.

Program description:

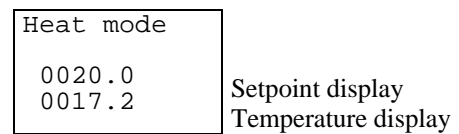
Input I1 =0: Control off

Example display:

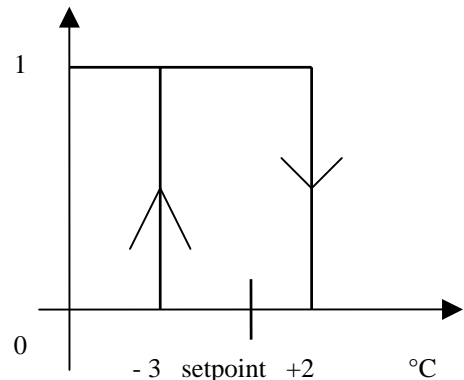


Input I1 =1: Control on

Example display:



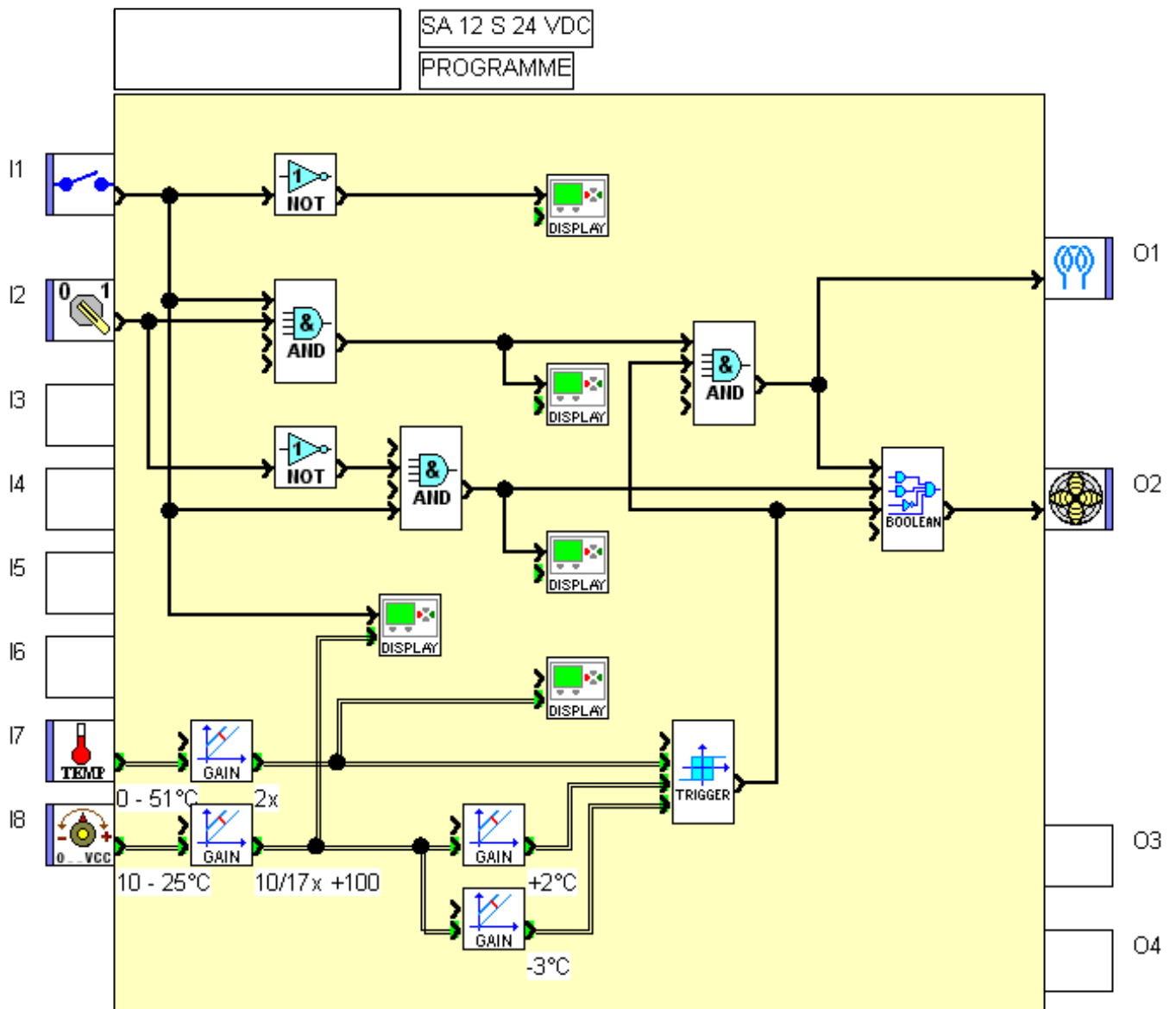
Hysteresis



Application advantages:

Use of 0 - 10 V analogue inputs

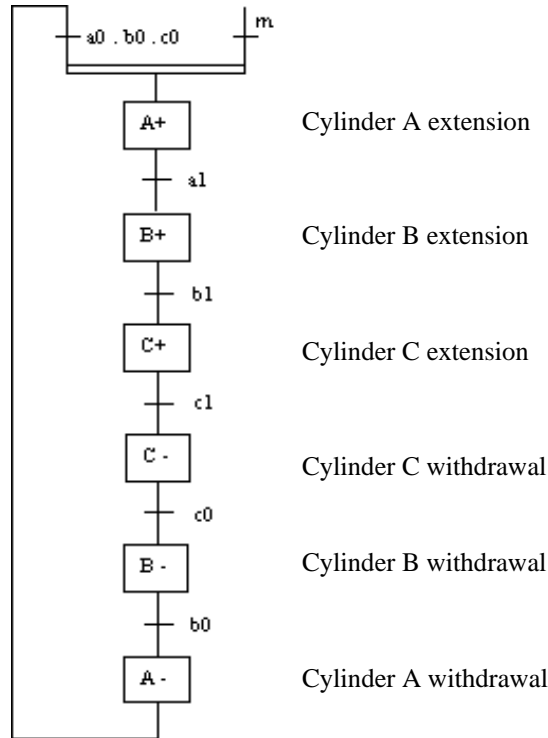
Temperature control Logic diagram (EN_5.pm2)



Example 6: Movement of three cylinders (U cycle)
 (File: EN_6.pm2)

Specification:

An industrial machine comprising three cylinders A, B and C which must function as shown in the sequential function chart below:



Condition "m" corresponds to the activation of the ON/OFF button. The withdrawal and extension of cylinder rods A, B and C are measured by limit switches (a0, a1), (b0, b1) and (c0, c1) respectively.

Button "B" on the *Millenium II* must be able to withdraw the rods of the three cylinders in order to initialise the system.

The *Millenium II* outputs will be connected to the actuators of cylinders A, B and C (4/2 bistable valve modules).

Table of inputs/outputs:

INPUTS		OUTPUTS	
I1	ON/OFF	O1	Cylinder A: A+
I2	Limit switch a0	O2	Cylinder B: B+
I3	Limit switch a1	O3	Cylinder C: C+
I4	Limit switch b0	O4	Cylinder C: C-
I5	Limit switch b1	O5	Cylinder B: B-
I6	Limit switch c0	O6	Cylinder A: A-
I7	Limit switch c1		

Model required:

Millenium II 12 inputs/8 outputs:
 SA20 R 24 VAC.
 SA20 S 24 VDC.

Program description:

The system can be initialised using the "B" button on the front panel of the *Millenium II*.

Press B: Initialise
 Release B: Withdraw cylinders

Application advantages:

Controlling the withdrawal of the three rods using a button on the *Millenium II* avoids the use of an additional input which could be used to manage other systems, because this is a 12/8 model.

Movement of three cylinders (U cycle)
 Logic diagram (EN_6.pm2)

