

HMI

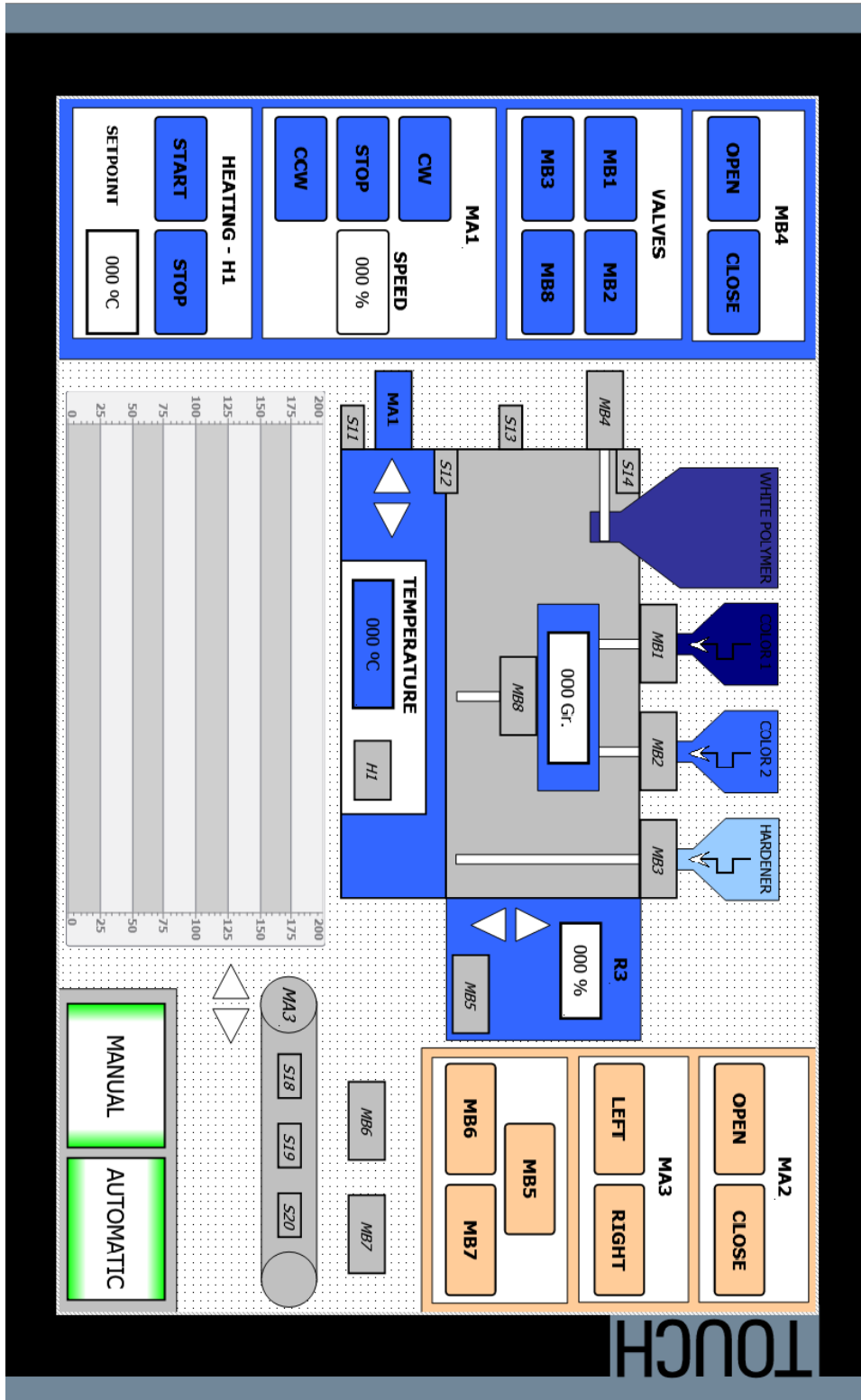
<Industrial Control>

Submitted by:
<Marco Túlio F. Hudson WS>



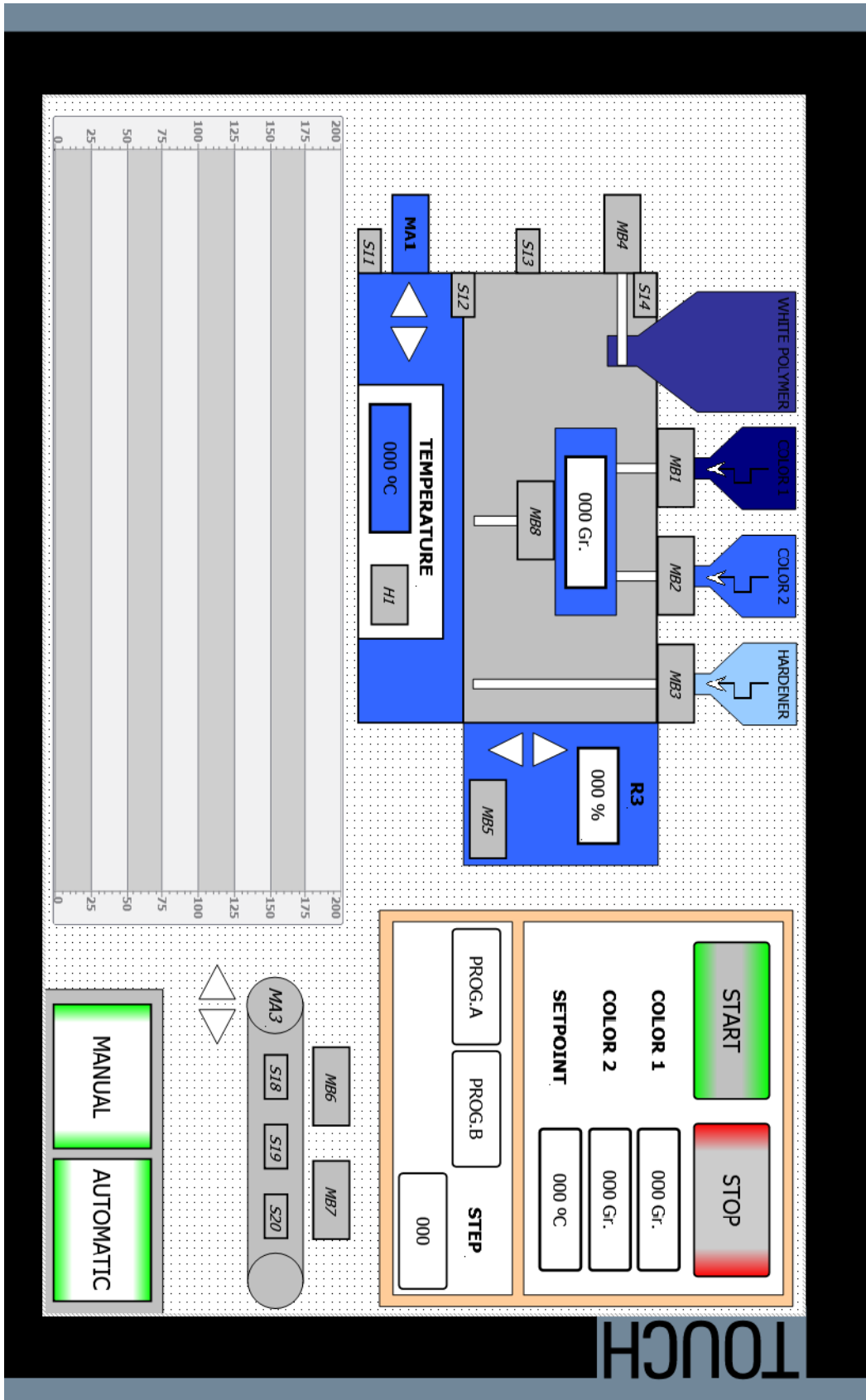
MODULE B - PROGRAMMING

HMI – SCREEN “MANUAL”





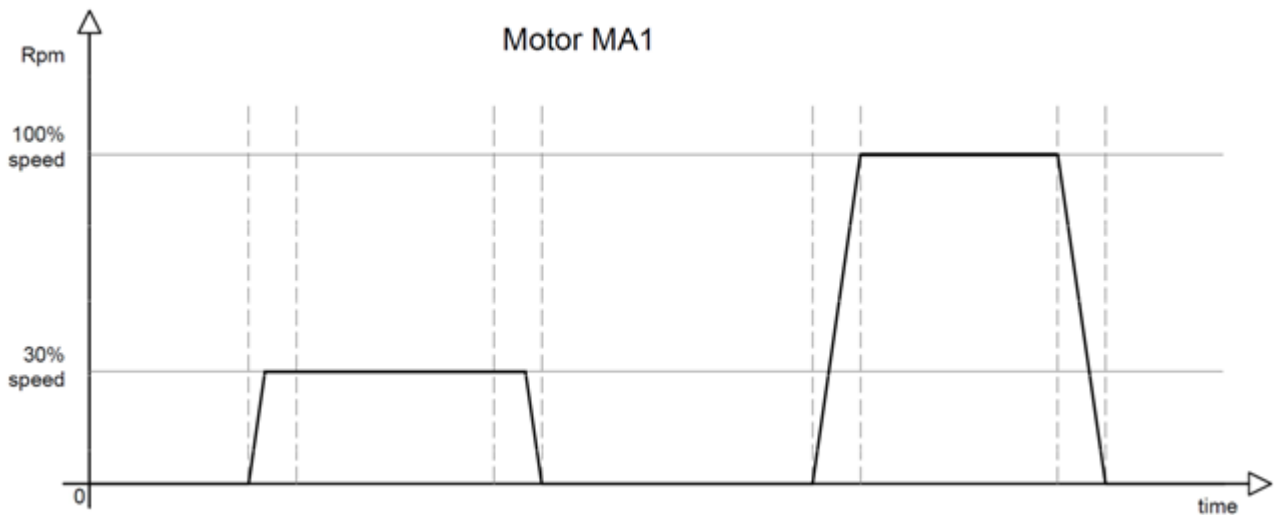
HMI – SCREEN “AUTOMATIC”





VSD

The changes in speed and the 0-speed will be reached in 3 seconds.
The ramps must be programmed in the variable speed device (VSD).



PLC Inputs / Outputs

SYMBOL	TYPE	COMMENT
K3:DI-BIT_0	BOOL	PLC - Input (K3)
S11	BOOL	PLC - Input (K3)
S12	BOOL	PLC - Input (K3)
S13	BOOL	PLC - Input (K3)
S14	BOOL	PLC - Input (K3)
MA2_Open (MA2_Right - Q5)	BOOL	PLC - Output (K3)
MA2_Close (MA2_Left - Q6)	BOOL	PLC - Output (K3)
Q8 (Contactor for T2)	BOOL	PLC - Output (K3)
Q9 (Contactor for VSD)	BOOL	PLC - Output (K3)
P10	BOOL	PLC - Output (K3)
P11	BOOL	PLC - Output (K3)
P12	BOOL	PLC - Output (K3)
P13	BOOL	PLC - Output (K3)
K2-AO_CH0	INT	PLC - Output (K2)
K2-AO_CH1	INT	PLC - Output (K2)
K2-AI_CH0	INT	PLC - Input (K2)
S5	BOOL	Sirius ACT Module - Input (A5)
S4	BOOL	Sirius ACT Module - Input (A5)
S3_L	BOOL	Sirius ACT Module - Input (A5)
S3_R	BOOL	Sirius ACT Module - Input (A5)
P1	BOOL	Sirius ACT Module - Output (A5)



P2	BOOL	Sirius ACT Module - Output (A5)
S15	BOOL	ET200SP - Input (K6)
S16	BOOL	ET200SP - Input (K6)
S17	BOOL	ET200SP - Input (K6)
S10	BOOL	ET200SP - Input (K6)
S21	BOOL	ET200SP - Input (K6)
K8:AI:U_CH0 (R2)	INT	ET200SP - Input (K6)
K8:AI:U_CH1 (R3)	INT	ET200SP - Input (K6)
K9:AQ-U_CH0	INT	ET200SP - Output (K9)
MA3_Right (Q10)	BOOL	ET200SP - Output (K7)
MA3_Left (Q11)	BOOL	ET200SP - Output (K7)
MB1	BOOL	ET200SP - Output (K7)
MB2	BOOL	ET200SP - Output (K7)
MB3	BOOL	ET200SP - Output (K7)
MB4	BOOL	ET200SP - Output (K7)
P16	BOOL	ET200SP - Output (K7)
S6	BOOL	IO-Link - Input (K10 + Pos.18)
S7	BOOL	IO-Link - Input (K10 + Pos.18)
S8	BOOL	IO-Link - Input (K10 + Pos.18)
S9	BOOL	IO-Link - Input (K10 + Pos.18)
P14	BOOL	IO-Link - Output (K10 + Pos.18)
MB5	BOOL	IO-Link - Output (K10 + Pos.18)
P15	BOOL	IO-Link - Output (K10 + Pos.18)
S18	BOOL	ET200Eco - Input (A6)
S19	BOOL	ET200Eco - Input (A6)
S20	BOOL	ET200Eco - Input (A6)
MB6	BOOL	ET200Eco - Output (A6)
MB7	BOOL	ET200Eco - Output (A6)
MA1_Speed	REAL	VSD (by Profinet)
MA1_CW	BOOL	VSD (by Profinet)
MA1_CCW	BOOL	VSD (by Profinet)

Control HMI / PLC Variables

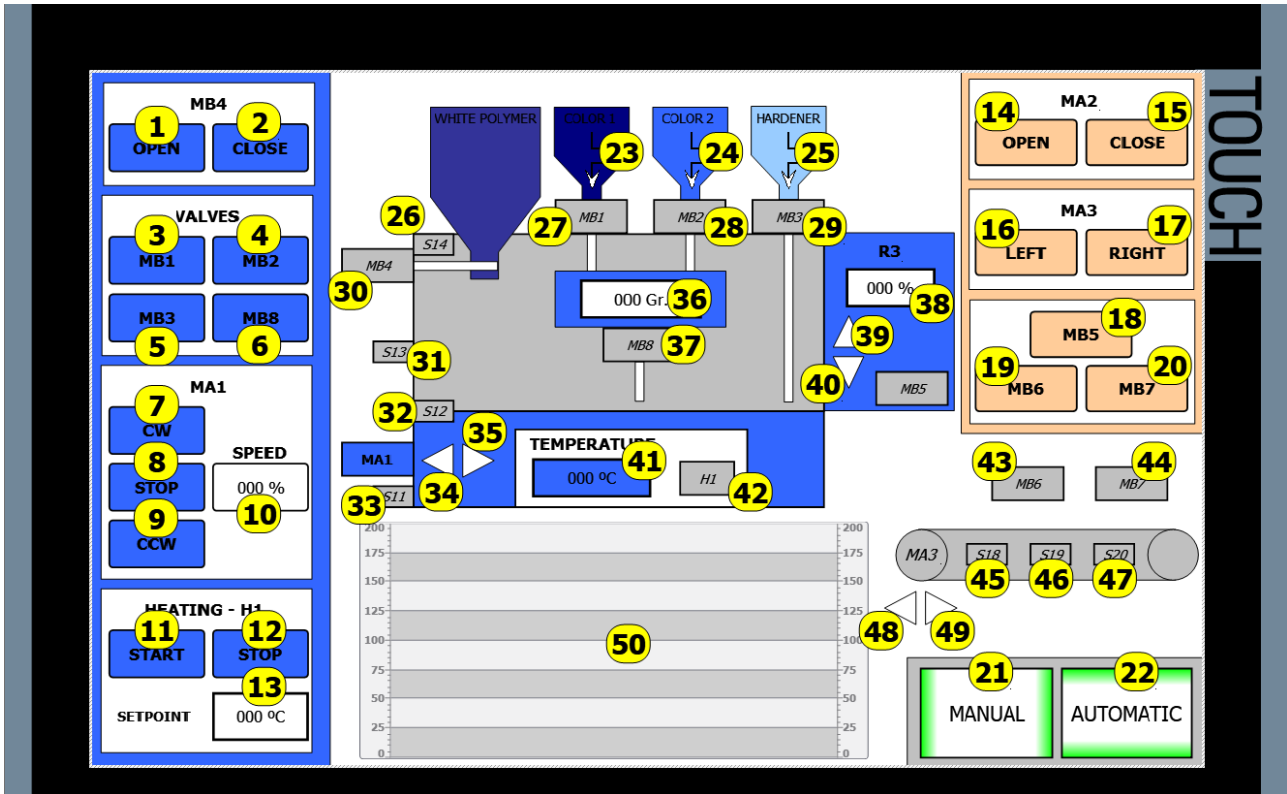
SYMBOL	TYPE	COMMENT
Emergency	BOOL	PLC-Variable
Reset	BOOL	PLC-Variable
Mode_Auto	BOOL	PLC-Variable
Mode_Manual	BOOL	PLC-Variable
MB4_Open	BOOL	PLC-Variable
MB4_Close	BOOL	PLC-Variable
MB1_Button	BOOL	PLC-Variable



MB2_Button	BOOL	PLC-Variable
MB3_Button	BOOL	PLC-Variable
MB8_Button	BOOL	PLC-Variable
MB8	BOOL	PLC-Variable
MA1_CW_Button	BOOL	PLC-Variable
MA1_Stop_Button	BOOL	PLC-Variable
MA1_CCW_Button	BOOL	PLC-Variable
Start_Heating	BOOL	PLC-Variable
Stop_Heating	BOOL	PLC-Variable
Heating_Setpoint	REAL	PLC-Variable
Temperature	REAL	PLC-Variable
Heater_PWM	REAL	PLC-Variable
Heater_ON	BOOL	PLC-Variable
Hysteresis	REAL	PLC-Variable
Point_On	REAL	PLC-Variable
Point_Middle	REAL	PLC-Variable
MA2_Close_Button	BOOL	PLC-Variable
MA2_Open_Button	BOOL	PLC-Variable
MA3_Left_Button	BOOL	PLC-Variable
MA3_Right_Button	BOOL	PLC-Variable
Drain_tk4	BOOL	PLC-Variable
MB5_Button	BOOL	PLC-Variable
MB6_Button	BOOL	PLC-Variable
MB7_Button	BOOL	PLC-Variable
Balance	REAL	PLC-Variable
Thickness	REAL	PLC-Variable
Button_A	BOOL	PLC-Variable
Button_B	BOOL	PLC-Variable
Program_A	BOOL	PLC-Variable
Program_B	BOOL	PLC-Variable
Step	REAL	PLC-Variable
Start	BOOL	PLC-Variable
Stop	BOOL	PLC-Variable
Color1_Gr	REAL	PLC-Variable
Color2_Gr	REAL	PLC-Variable
Pause	BOOL	PLC-Variable
Cycle_active	BOOL	PLC-Variable
MA1_Speed_Injection	REAL	PLC-Variable
Time	Time	PLC-Variable



Details: Screen Manual



POSITION	VARIABLE	ACTION	COMMENT
1	MB4_Open	Button Event	Set bit while key is pressed
2	MB4_Close	Button Event	Set bit while key is pressed
3	MB1_Button	Button Event	Set bit while key is pressed
4	MB2_Button	Button Event	Set bit while key is pressed
5	MB3_Button	Button Event	Set bit while key is pressed
6	MB8_Button	Button Event	Set bit while key is pressed
7	MA1_CW_Button	Button Event	Set bit while key is pressed
8	MA1_Stop_Button	Button Event	Set bit while key is pressed
9	MA1_CCW_Button	Button Event	Set bit while key is pressed
10	MA1_Speed	Output field	Range: 0 to 110%
11	Start_Heating	Button Event	Set bit while key is pressed
12	Stop_Heating	Button Event	Set bit while key is pressed
13	Heating_Setpoint	Input/Output field	Range: 50 to 200 °C
14	MA2_Open_Button	Button Event	Set bit while key is pressed
15	MA2_Close_Button	Button Event	Set bit while key is pressed
16	MA3_Left_Button	Button Event	Set bit while key is pressed
17	MA3_Right_Button	Button Event	Set bit while key is pressed
18	MB5_Button	Button Event	Set bit while key is pressed
19	MB6_Button	Button Event	Set bit while key is pressed
20	MB7_Button	Button Event	Set bit while key is pressed



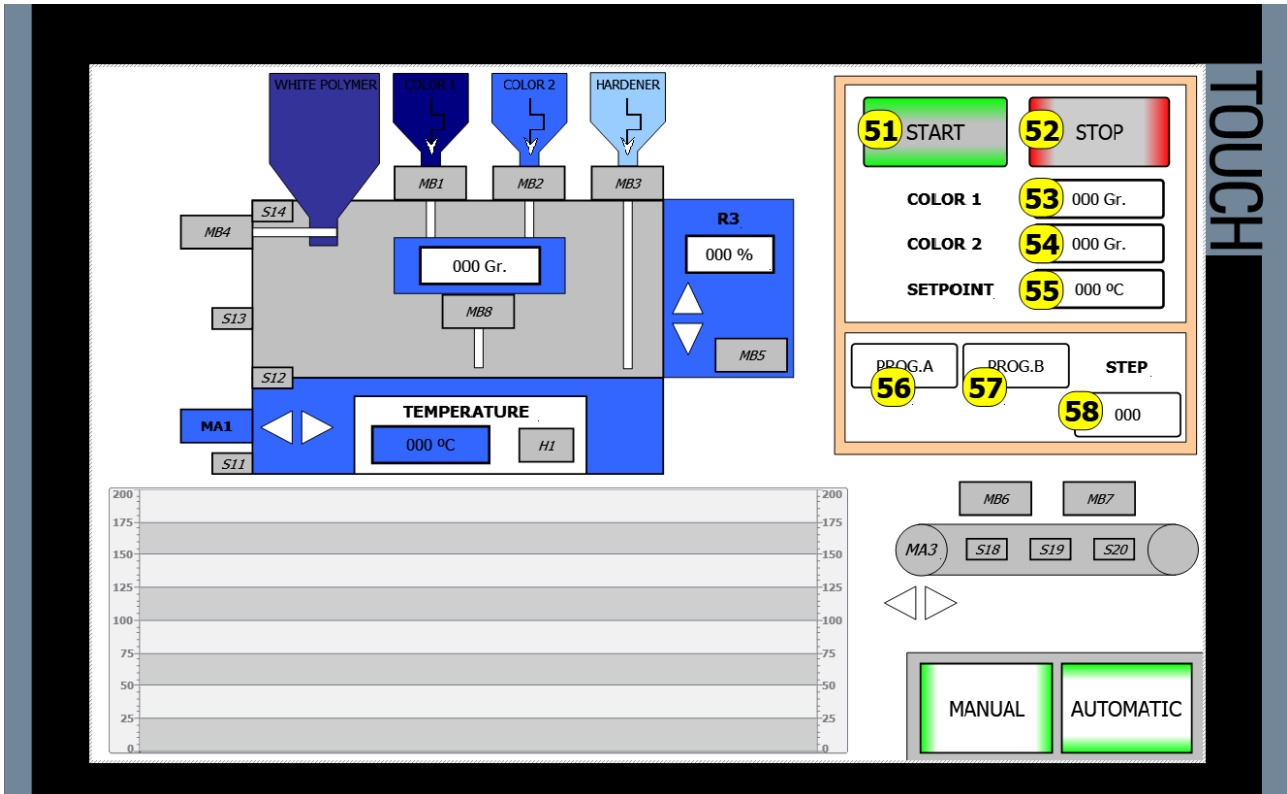
21	---	Button Event	Activate Screen "Manual"
	Mode_Manual	Background Control Color	State "0" = WHITE State "1" = GREEN
22	---	Button Event	Activate Screen "Automatic"
	Mode_Auto	Background Control Color	State "0" = WHITE State "1" = GREEN
23	S15	Visibility	State "0" = Visible
			State "1" = Invisible
24	S16	Visibility	State "0" = Visible
			State "1" = Invisible
25	S17	Visibility	State "0" = Visible
			State "1" = Invisible
26	S14	Background Control Color	State "0" = GRAY
			State "1" = GREEN
27	MB1	Background Control Color	State "0" = GRAY
			State "1" = GREEN
28	MB2	Background Control Color	State "0" = GRAY
			State "1" = GREEN
29	MB3	Background Control Color	State "0" = GRAY
			State "1" = GREEN
30	MB4	Background Control Color	State "0" = GRAY
			State "1" = GREEN
31	S13	Background Control Color	State "0" = GRAY
			State "1" = GREEN
32	S12	Background Control Color	State "0" = GRAY
			State "1" = GREEN
33	S11	Background Control Color	State "0" = GRAY
			State "1" = GREEN
34	MA1_CCW	Background Control Color	State "0" = WHITE
			State "1" = GREEN
35	MA1_CW	Background Control Color	State "0" = WHITE
			State "1" = GREEN
36	Balance	Output field	Range: 0 to 500
37	MB8	Background Control Color	State "0" = GRAY
			State "1" = GREEN
38	Thickness	Output field	Range: 0 to 100
39	MA2_Open	Background Control Color	State "0" = WHITE
			State "1" = GREEN
40	MA2_Close	Background Control Color	State "0" = WHITE
			State "1" = GREEN
41	Temperature	Output field	Range: 0 to 200
42	Heater_ON	Background Control Color	State "0" = GRAY
			State "1" = GREEN



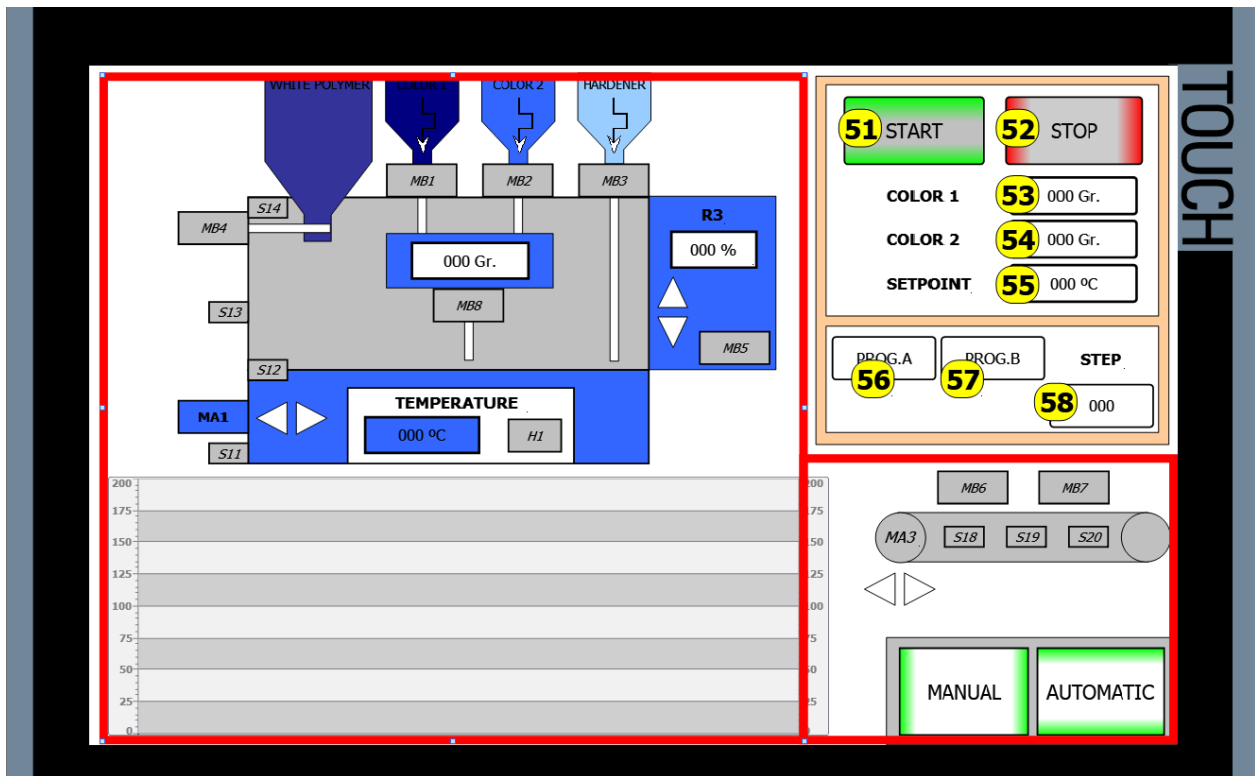
43	MB6	Background Control Color	State "0" = GRAY State "1" = GREEN
44	MB7	Background Control Color	State "0" = GRAY State "1" = GREEN
45	S18	Background Control Color	State "0" = GRAY State "1" = GREEN
46	S19	Background Control Color	State "0" = GRAY State "1" = GREEN
47	S20	Background Control Color	State "0" = GRAY State "1" = GREEN
48	MA3_Left	Background Control Color	State "0" = WHITE State "1" = GREEN
49	MA3_Right	Background Control Color	State "0" = WHITE State "1" = GREEN
POSITION	VARIABLE	ACTION	COMMENT
50	Heating_Setpoint	Trend	Style GREEN; Trend values:999
	Point_ON	Trend	Style BLACK; Trend values:999
	Point_Middle	Trend	Style BLUE; Trend values:999
	Temperature	Trend	Style RED; Trend values:999
	--	Properties - Time axis	Range: 30s
	--	Properties - Temperature axis	Range: 200°C



Details: Screen Automatic



POSITION	VARIABLE	ACTION	COMMENT
51	Start	Button Event	Set bit while key is pressed
52	Stop	Button Event	Set bit while key is pressed
53	Color1_Gr	Input/Output field	Range: 0 to 150
54	Color2_Gr	Input/Output field	Range: 0 to 150
55	Heating_Setpoint	Output field	Range: 0 to 200
56	Button_A	Button Event	Set bit while key is pressed
	Program_A	Background Control Color	State "0" = WHITE State "1" = GREEN
57	Button_B	Button Event	Set bit while key is pressed
	Program_B	Background Control Color	State "0" = WHITE State "1" = GREEN
36	Step	Output field	Range: 0 to 99

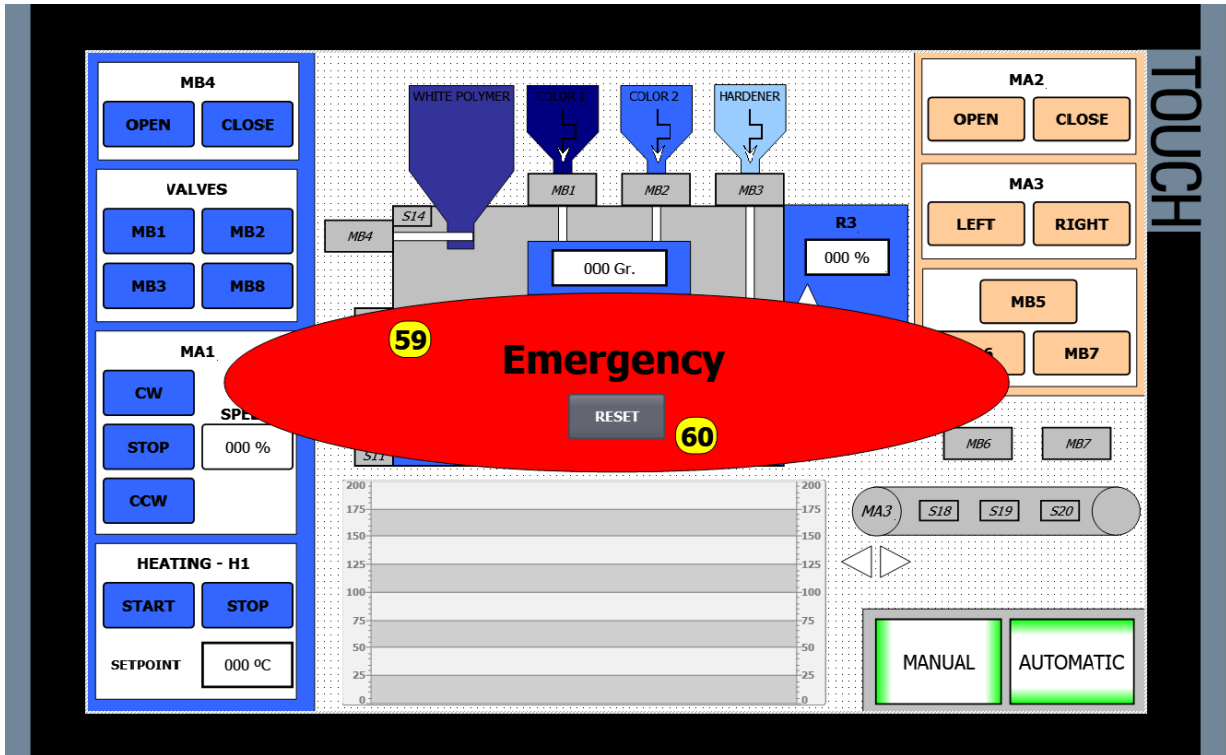


The functions from the drawing of the Screen Automatic are the same from the drawing of the Screen Manual with the exception of the things that are outside the red square in the image.



Details: emergency pop-up

The next function happens in both screens.



POSITION	VARIABLE	ACTION	COMMENT
59	Emergency	Visibility	State "0" = Visible State "1" = Invisible
60	Reset	Button Event	Set bit while key is pressed