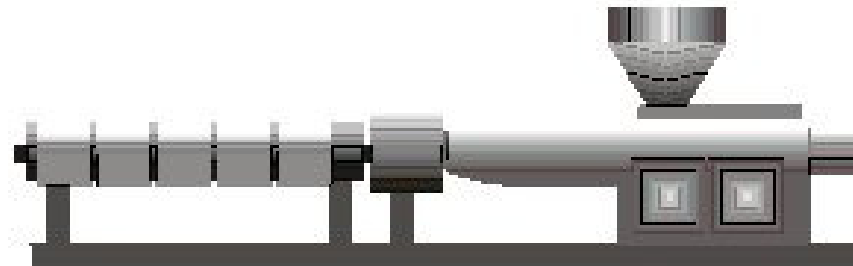


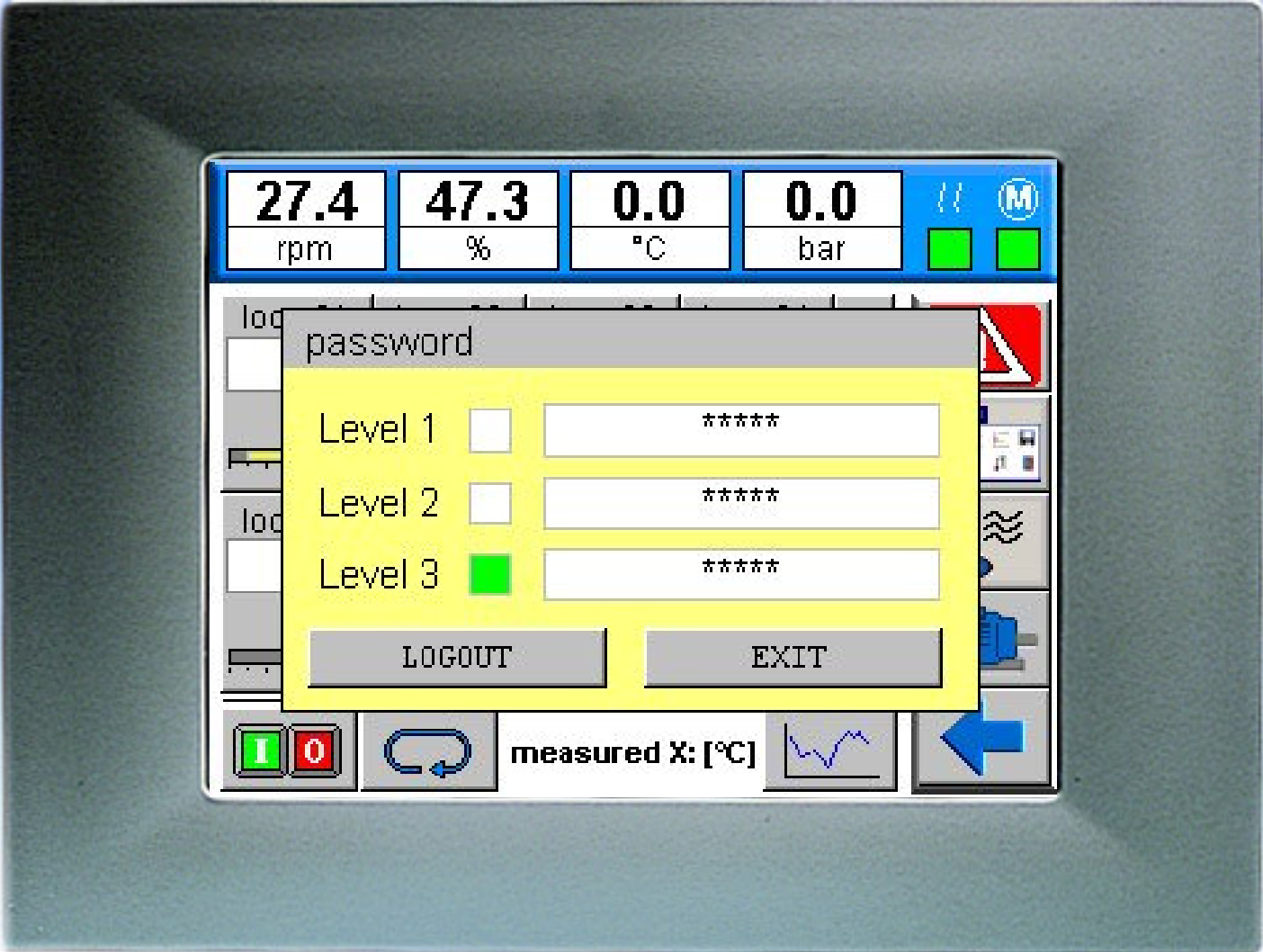
## extrusion control system



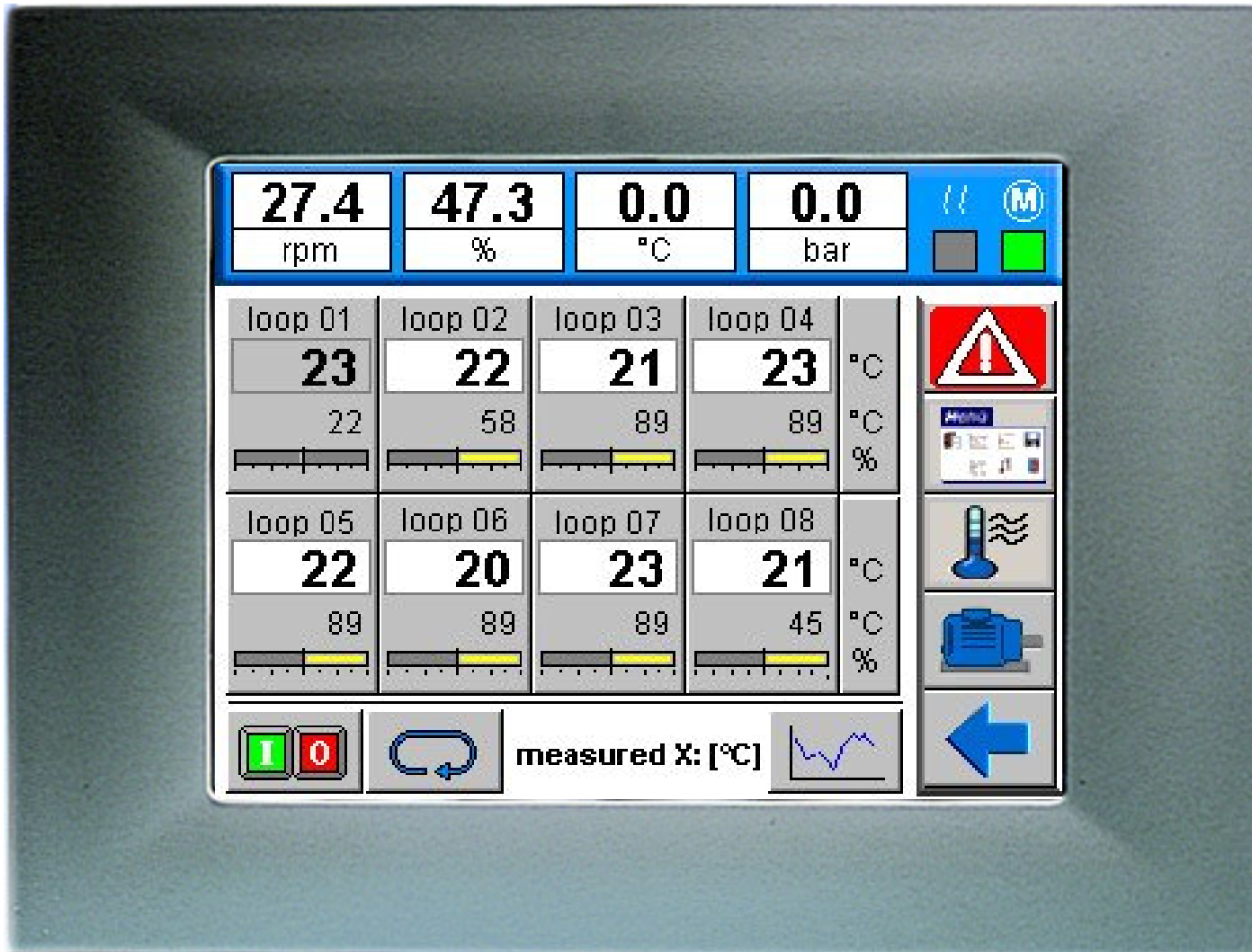
PMA Prozeß- und Maschinen-  
Automation GmbH  
Miramstraße 87  
D-34123 Kassel  
Phone: +49 561 5051307  
eMail: mailbox@pma-online.de

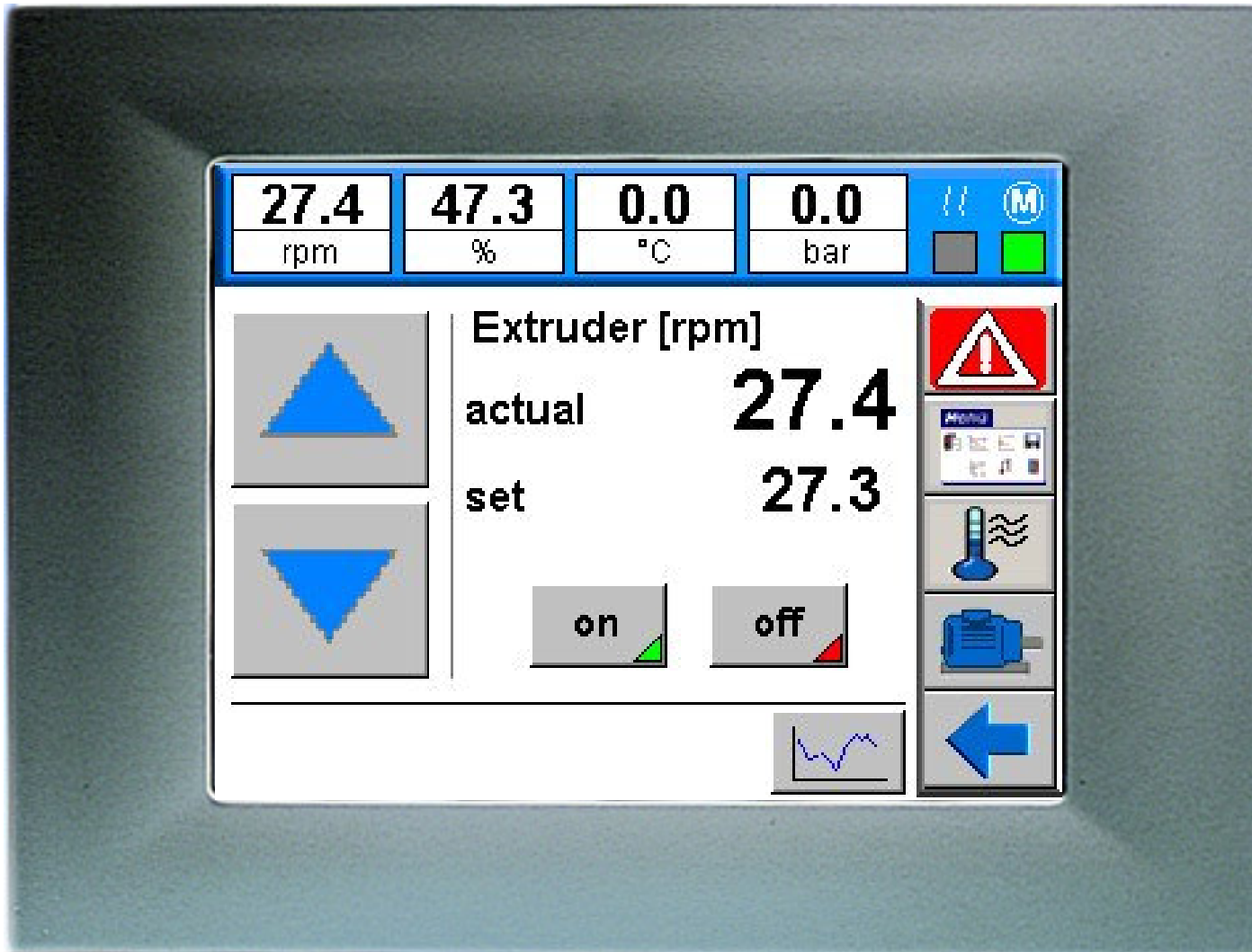


# 3 operator levels

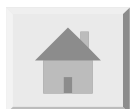
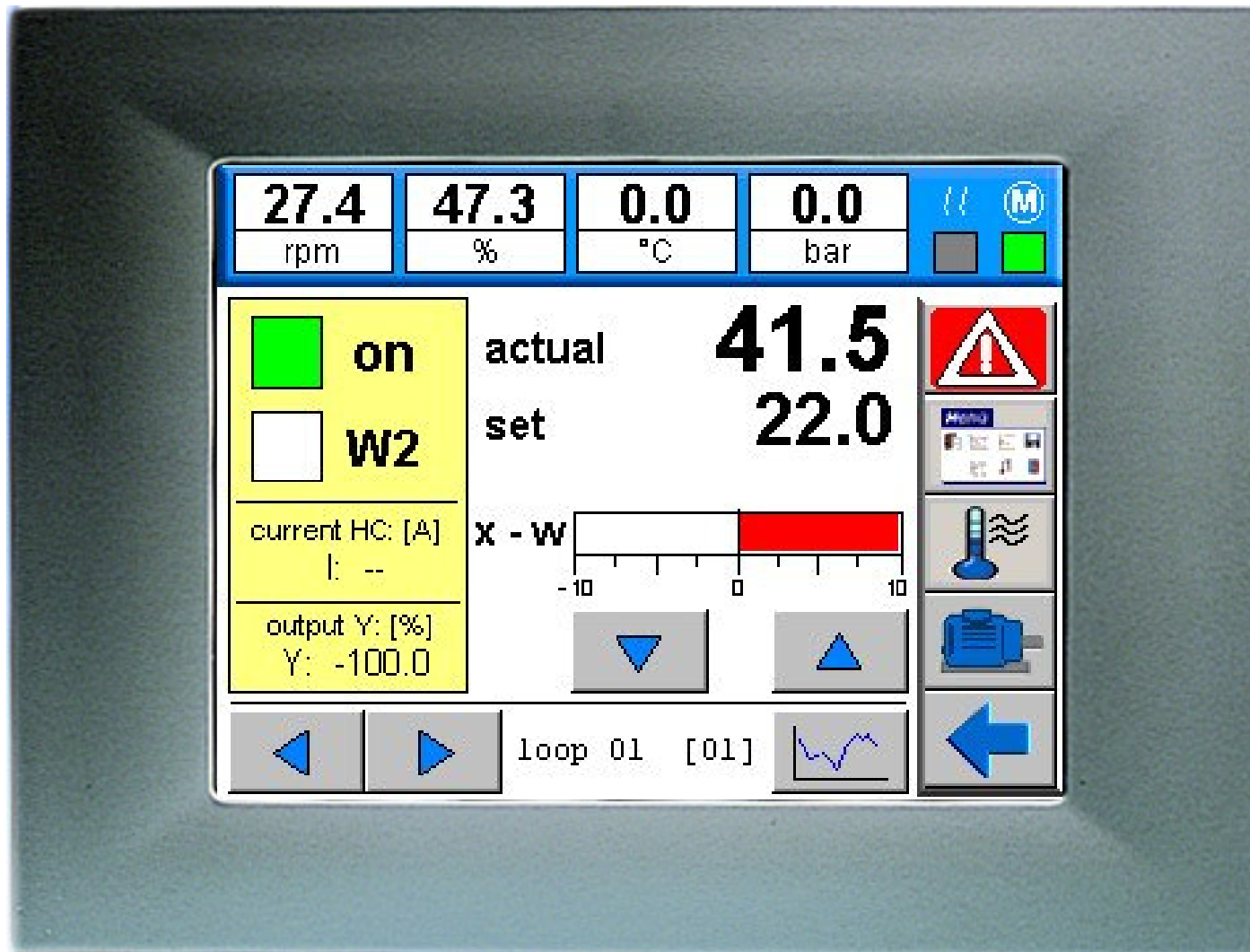


# Temperature overview

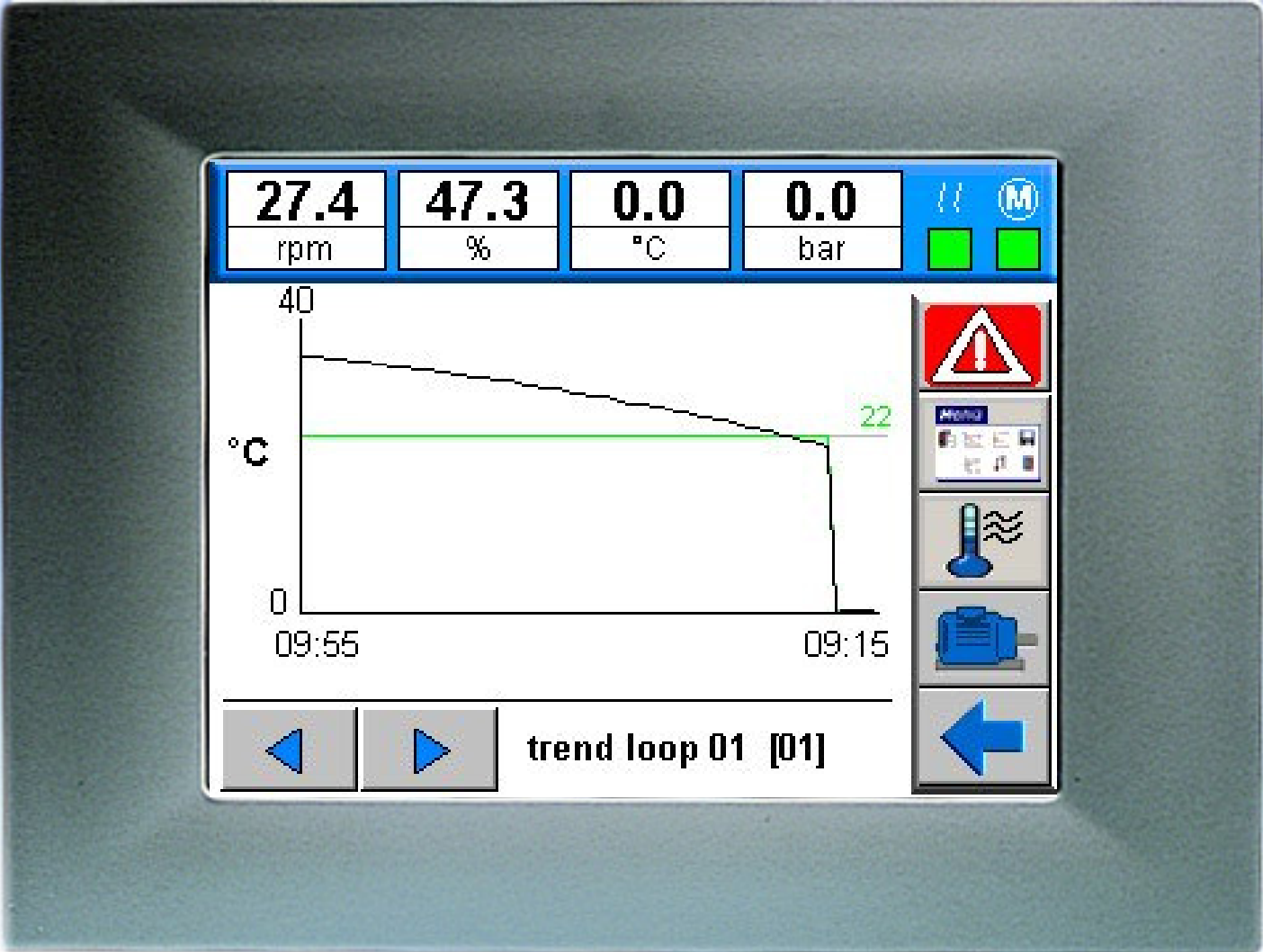




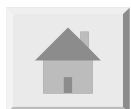
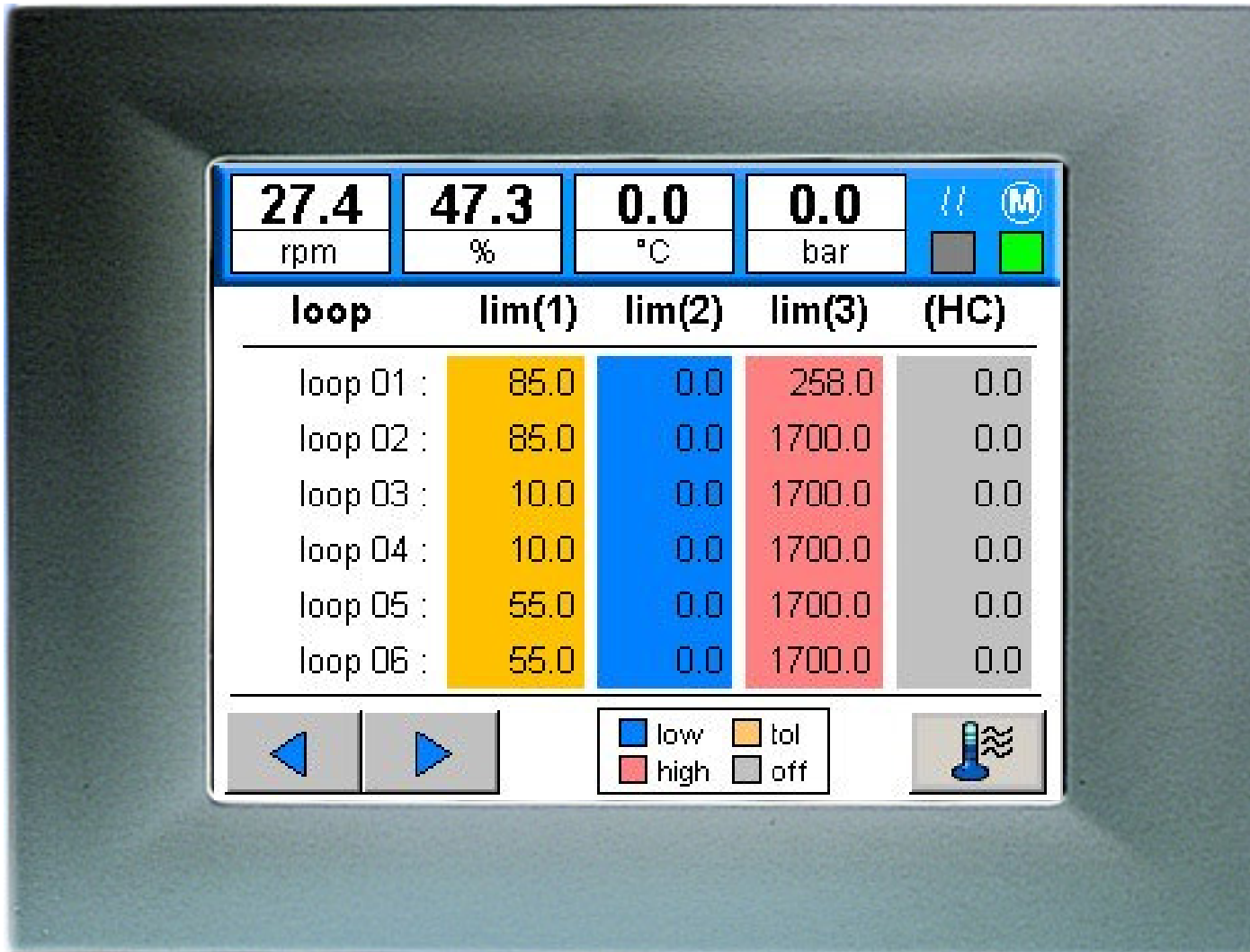
# Temperature controller page



# Trend per loop



# Temperature limits



# Temperature controller state

The screenshot displays a control panel with the following elements:

- Top Row:** Four numerical displays with units below them: 27.4 rpm, 47.3 %, 0.0 °C, and 0.0 bar. To the right are two green indicator lights, one with a double vertical bar icon and the other with an 'M' icon.
- Control Grid:** A 2x4 grid of buttons labeled Z1 through Z8, all of which are green.
- Legend:** A legend to the right of the grid shows three colored squares: green for 'on', blue for 'w2', and grey for 'off'.
- Bottom Row:** Three buttons labeled 'on', 'w2', and 'off', each with a small colored triangle in its bottom-right corner (green for 'on', blue for 'w2', and grey for 'off').
- Right Panel:** A vertical stack of icons: a red warning triangle, a 'Menu' button, a temperature sensor icon, a blue motor icon, and a blue left-pointing arrow.



27.4 rpm    47.3 %    0.0 °C    0.0 bar

**self tuning**

- successful
- faulty
- started
- running

sel    start    stop



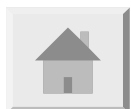
# Loop control parameter

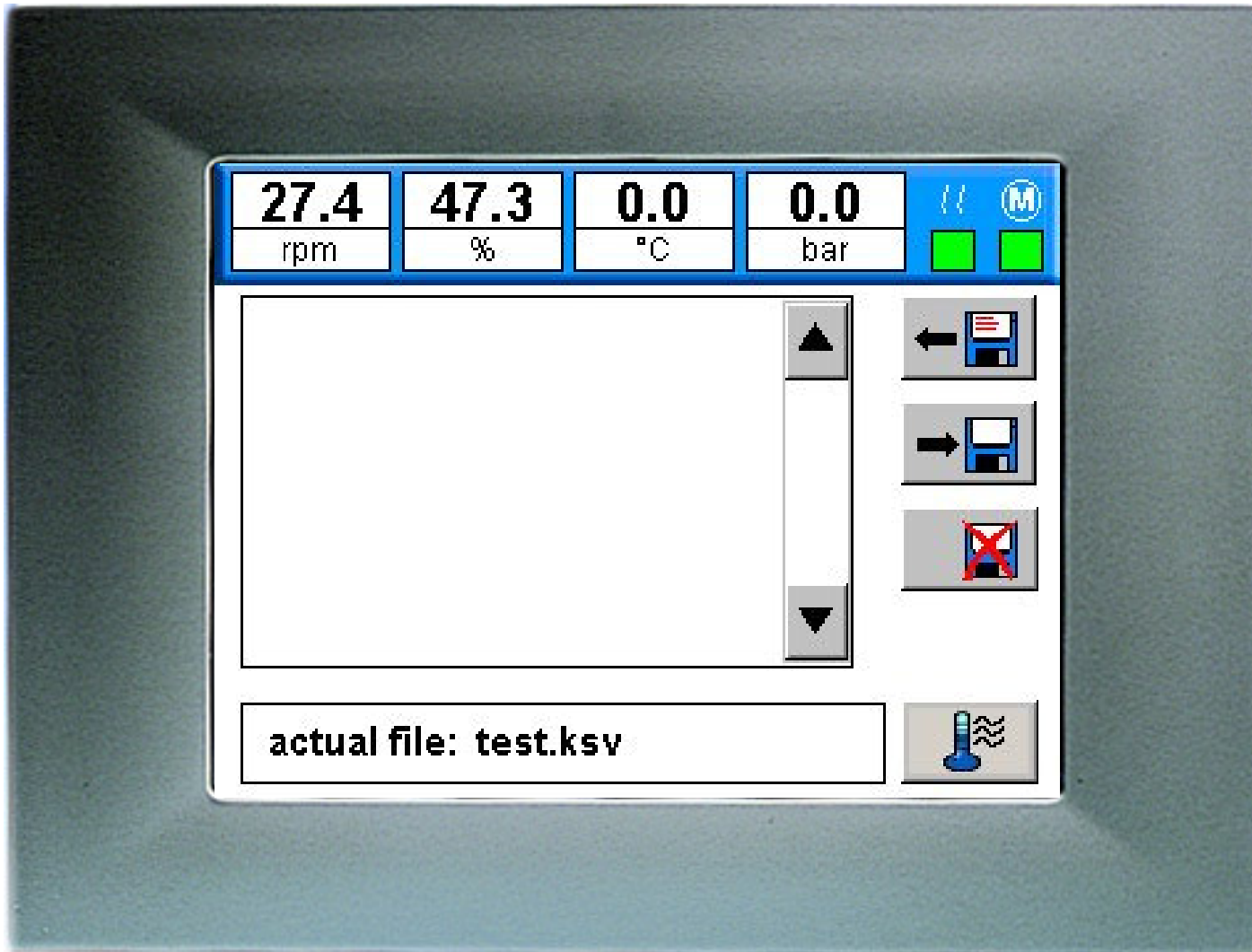
27.4	47.3	0.0	0.0	⏸	(M)
rpm	%	°C	bar	⏸	⏸

**parameter loop 01 [01]**

proportional band XP 1 :	4.0	%	    
proportional band XP 2 :	55.3	%	
integral action TN 1 :	14.0	s	
integral action TN 2 :	14.0	s	
differential action TV 1 :	14.0	s	
differential action TV 2 :	14.0	s	

Navigation buttons: ⏪ ⏩ ⏴ ⏵





# Scaling drive signals

The screenshot displays a control panel with the following data:

27.4	47.3	0.0	0.0	(M)
rpm	%	°C	bar	■ ■

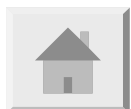
**Scaling drive actual value**

	Input		Display	
Speed	0.0	10.0	0.0	100.0
Load	0.0	10.0	0.0	105.0

**Scaling drive set value**

	Display	
Speed	0.0	100.0
Speed stepping [rpm/tipp]	0.1	

On the right side of the interface, there is a vertical stack of icons: a red warning triangle, a menu icon, a temperature sensor icon, a motor icon, and a blue left-pointing arrow.



# Skaling measurements

The screenshot displays a control panel interface. At the top, four numerical values are shown in large font: 27.4, 47.3, 0.0, and 0.0. Below these values are their respective units: rpm, %, °C, and bar. To the right of these values are two status indicators: a grey square and a green square, with a 'M' icon above the green square.

Below the numerical display is a section titled "Scaling analog Inputs" which contains a table with the following data:

	Input		Display	
Meltemp.	0.0	100.0	0.0	400.0
Meltpress.	0.0	100.0	0.0	350.0

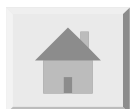
To the right of the table is a vertical stack of icons: a red warning triangle, a menu icon, a thermometer icon, a blue motor icon, and a blue left-pointing arrow.



# General settings

The screenshot displays a control panel interface with the following elements:

- Readouts:** Four numerical values in a row: 27.4 (rpm), 47.3 (%), 0.0 (°C), and 0.0 (bar). To the right are two status indicators: a grey square and a green square with an 'M' icon.
- Configuration Panels:**
  - loop 01 :** name : loop 01, device : 1, channel : 1
  - interface :** RS 485, 09:26.27
  - general :** °C
  - loops used:** 8
  - DigIn Slot-No.:** 5
  - defaults:** A button labeled 'defaults'.
- Navigation and Status:** A vertical stack of icons on the right: a red warning triangle, a menu icon, a thermometer, a printer, and a blue arrow pointing left. At the bottom are left and right arrow buttons, a language selector showing the German flag, and a save button with a floppy disk icon.



<b>27.4</b> rpm	<b>47.3</b> %	<b>0.0</b> °C	<b>0.0</b> bar	(M) ■ ■
limit 1	M-Temp [11]	09:22.26		
current	loop 03 [03]	09:22.26		
current	loop 05 [05]	09:22.26		
current	loop 07 [07]	09:22.26		

▲ ▼ ✓ 🌡



