






7.13.3 Internal and external control parameter sets

If a thermostat is used for a number of applications, which always leads to a change of the control parameters, these control parameters (up to 9 sets) can be saved in the thermostat and activated again as required.

Also saving is useful for finding the best control parameters; in this way external management of the control parameters can be avoided.

There are 9 sets (each for internal and external sets of control parameters) saved at the factory. In this menu the control parameters cannot be edited, they are only displayed.

- With **Activate** the currently valid control parameters are used.
- With **Upload actual** the actual ones are read in and saved (for later reuse).
- With **Default** the set of control parameters saved at the works is loaded again (in this case the control parameters set by the customer are lost).

Command					Control parameter sets	
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Control Parameters</p> <p>Control para. sets</p> <p>Tv manual/auto</p> <p>Self Adaption</p> </div> <div style="width: 45%; border: 1px solid black; padding: 5px;"> <p>Set 1</p> <p>Set 2</p> <p>Set 3</p> <p>Set 4</p> <p>Set 5</p> <p>Set 6</p> <p>Set 7</p> <p>Set 8</p> <p>Set 9</p> </div> </div>					<ul style="list-style-type: none"> – Open the device parameter menu via the soft key  Menu. – With the cursor keys continue to: → Control → Control Parameters → Control para. sets. – The adjacent window appears. Set 1 to Set 9. – Select the desired set with  and confirm with . – Select the desired set to be changed with  and confirm with . 	
Help	Menu	End	T _{set}	T _{fix}		
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Status</p> <p>intern</p> <p>extern</p> </div> <div style="width: 45%; border: 1px solid black; padding: 5px;"> <p>Activate</p> <p>Upload actual</p> <p>Default</p> </div> </div>					<ul style="list-style-type: none"> – In the setting window (see left) the selected set is listed under internal or external in the display. – Under Status the previously selected set: <ul style="list-style-type: none"> is activated, is read in and the set, who was saved at the factory, is restored. 	
Help	Menu	End	T _{set}	T _{fix}		

Editing the control parameter sets

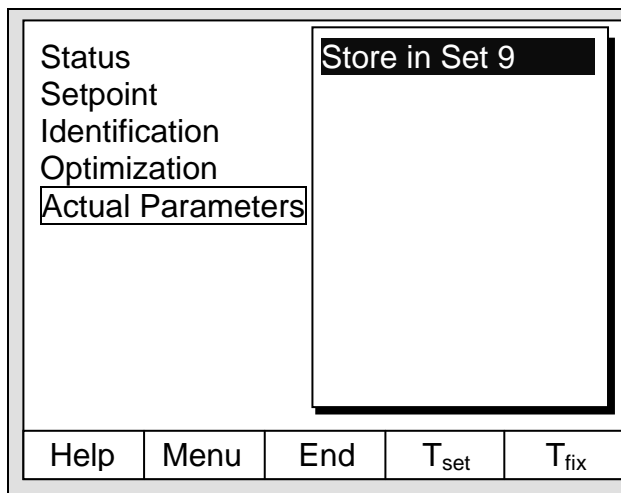
The change in the control parameters is explained in Section 7.15.3 / 7.15.4 (internal / external). Once the value has been changed and confirmed, the set number, e.g. **Set 3** and **Upload actual**, the new value is accepted into the control parameter set to be changed (Set 3) via the command **Control parameter sets**.

7.13.4 Self Adaption (only COMMAND)

The function Self Adaption can be used to detect automatically the optimal control parameters for internal or external control.
 This function is available from software version 2.18 of Command. For thermostats with an older software version a software update is necessary.
 The Self Adaption determines the parameters by a test run of the thermostat. In this case the thermostat and, if applicable, the external application must be ready for operation. (⇒ 6).
 The Self Adaption will be performed with the actually set pump step. Best results can be achieved with high pump steps.
 The test run must be performed at a passive system, this means that during the test run a exo- or endthermic reaction mustn't take place.
 The test run takes depending on the external application about 30 minutes to 3 hours. The bath temperature will oscillate in this time less than about ±15 Kelvin around the set temperature. After the test run the detected control parameters will be taken over as control parameters automatically.

Command	Self Adaption
<div style="border: 1px solid black; padding: 5px;"> <p>Control Parameters Control para. sets Tv manual/auto Self Adaption</p> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p>Settings</p> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> Help Menu End T_{set} T_{fix} </div>	<ul style="list-style-type: none"> - Open the device parameter menu via the soft key Menu. - With the cursor keys continue to: → Control → Control Parameters → Self Adaption → Settings. - Confirm selection with .
<div style="border: 1px solid black; padding: 5px;"> <p>Status Setpoint Identification Optimization Actual Parameters</p> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p>Start</p> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> Help Menu End T_{set} T_{fix} </div>	<ul style="list-style-type: none"> - The window shown adjacent appears. - With the menu Status the test run of the Self Adaption can be started. When the Self Adaption is finished, the test run will be terminated automatically. - As soon as start is pressed, in the sofkey area the information Adaption on will be displayed followed by the actual status of the test run.

<div style="border: 1px solid black; padding: 5px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Status</td> <td style="width: 70%; text-align: center;">30,00°C</td> </tr> <tr> <td>Setpoint</td> <td></td> </tr> <tr> <td>Identification</td> <td></td> </tr> <tr> <td>Optimization</td> <td></td> </tr> <tr> <td>Actual Parameters</td> <td></td> </tr> </table> <table style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 15%;">Help</td> <td style="width: 15%;">Menu</td> <td style="width: 15%;">End</td> <td style="width: 15%;">T_{set}</td> <td style="width: 15%;">T_{fix}</td> </tr> </table> </div>	Status	30,00°C	Setpoint		Identification		Optimization		Actual Parameters		Help	Menu	End	T _{set}	T _{fix}	<ul style="list-style-type: none"> - With the menu Setpoint the set temperature for the test run can be set. The bath temperature will oscillate less than about ±15 Kelvin around the set temperature. - Change the display in the adjacent window and accept with .
Status	30,00°C															
Setpoint																
Identification																
Optimization																
Actual Parameters																
Help	Menu	End	T _{set}	T _{fix}												
<div style="border: 1px solid black; padding: 5px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Status</td> <td style="width: 70%; text-align: center;">intern</td> </tr> <tr> <td>Setpoint</td> <td>intern + extern</td> </tr> <tr> <td>Identification</td> <td></td> </tr> <tr> <td>Optimization</td> <td></td> </tr> <tr> <td>Actual Parameters</td> <td></td> </tr> </table> <table style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 15%;">Help</td> <td style="width: 15%;">Menu</td> <td style="width: 15%;">End</td> <td style="width: 15%;">T_{set}</td> <td style="width: 15%;">T_{fix}</td> </tr> </table> </div>	Status	intern	Setpoint	intern + extern	Identification		Optimization		Actual Parameters		Help	Menu	End	T _{set}	T _{fix}	<ul style="list-style-type: none"> - With the menu Identification the optimal control parameters for internal control or for the internal control and the external control can be detected automatically. To detect the control parameters for the external application, a temperature probe must be connected to the thermostat.
Status	intern															
Setpoint	intern + extern															
Identification																
Optimization																
Actual Parameters																
Help	Menu	End	T _{set}	T _{fix}												
<div style="border: 1px solid black; padding: 5px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Status</td> <td style="width: 70%; text-align: center;">normal</td> </tr> <tr> <td>Setpoint</td> <td>slow</td> </tr> <tr> <td>Identification</td> <td>fast</td> </tr> <tr> <td>Optimization</td> <td></td> </tr> <tr> <td>Actual Parameters</td> <td></td> </tr> </table> <table style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 15%;">Help</td> <td style="width: 15%;">Menu</td> <td style="width: 15%;">End</td> <td style="width: 15%;">T_{set}</td> <td style="width: 15%;">T_{fix}</td> </tr> </table> </div>	Status	normal	Setpoint	slow	Identification	fast	Optimization		Actual Parameters		Help	Menu	End	T _{set}	T _{fix}	<ul style="list-style-type: none"> - With the menu Optimization the characteristic of the control parameters can be set. - normal : reach the setpoint as fast as possible, a little overshoot is tolerated - slow : no overshoot is tolerated - fast : optimized to be as responsive as possible to exo- or endothermic reactions.
Status	normal															
Setpoint	slow															
Identification	fast															
Optimization																
Actual Parameters																
Help	Menu	End	T _{set}	T _{fix}												



- With the menu **Actual Parameters** the actual set control parameters can be stored in parameter set 9. After the test run the detected control parameters will be taken over as control parameters automatically. If the parameters found do not fulfil your expectations, the before set parameters can be restored (⇒ 7.13.3).