

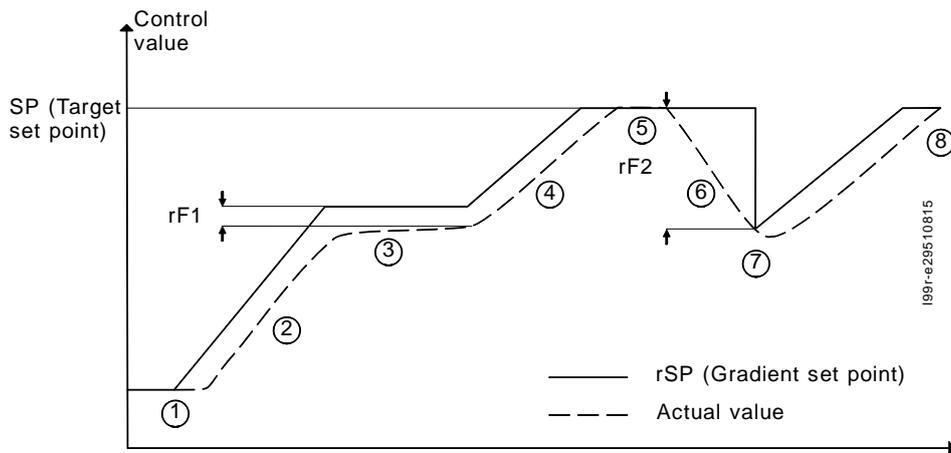
**Function:**

The set point value "SP" set at the controller serves as the target set point value. Once the controller has been switched on, the starting point of the ramp set point value "rSP" is set to the available actual value. Subsequently, the default set point value increases or decreases by the set gradient.

A synchronously running monitoring function causes the ramp set point value to be stopped as soon and as long as the actual value does not follow the default set point value at the set max. distance ("rF1").

The additional function "ramp set point value" switches off as soon as the target set point value is reached, however, it remains in readiness and starts again each time the set point value setting is changed or when the actual value is changed by more than the admissible difference ("rF2").

Operating phases of the ramp function (example)



1. Ramp set point value is set to actual value
2. Set point value increases at set gradient
3. Set point value does not continue to increase as the actual value does not follow
4. Set point value increases again, as actual value has dropped below the max. difference "rF1"
5. Actual value has reached the target set point value, ramp function is switched off
6. Possible malfunction: actual value drops by more than the admissible "rF2"
7. Ramp function is activated, ramp set point value is set to momentary actual value
8. Target set point value is reached again, ramp function is switched off.

**Versions:**

**List No.:**

Standard version

991r.

*Alternative versions*

Separate adjustment for increasing and decreasing gradients

991rhk

ditto, ramp function can be activated via menu, sep. for rising and falling ramp

991rhkbn

bin. input to control the ramp set point value (ramp active, if input bridged)

991rb1

*Possible additional functions*

Additional contact, related to the gradient-status

99fr

binary input for extern stop of ramp function

99b1s14

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**Peculiarities of controllers with ramp set point value**

**Operation:**

**Parameter level 2 (supplement):**

- ZBR** Time base of the ramp in unit per minute "min" or unit per hour "std", factory setting: min.
- Gr** Increase (gradient) of the ramp set point value in K or value (0.0...100.0) per minute or hour (Setting 0.0 = ramp function switched off), factory setting: 0.0
- dSPL** Additional possibility when display is switched over: "r SP" => display of momentary ramp set point value

*Only version 991rhk:*

- Gr1 / Gr H** Setting for **increasing** gradient (**heating**) in K resp. value (0.0...100.0) per minute or hour
- Gr2 / Gr K** Setting for **decreasing** gradient (**cooling**) in K resp. value (0.0...100.0) per minute or hour

**Configuration level (supplement):**

- rF1** "Waiting window": maximum deviation of the ramp set point value from the actual value, as stopping influence on the set point change. Factory setting: 2.0
- rF2** "Start window": minimum deviation of actual value / standard set point value for renewed start of the ramp function. Factory setting: 10.0

**Setpoint level (Supplement):**

*Only version ..bm:*

- Gr H** Ramp function gradient heating activation via menu (on / off)  
Factory setting: on
- Gr K** Ramp function gradient cooling activation via menu (on / off)  
Factory setting: on