Instruction Manual

UR 3 Heating Control
- digital controller with OTC

Regulus

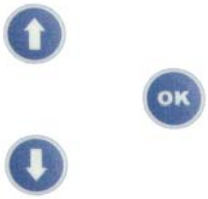
EN
v. 1.0

Description:

UR 3 Heating Control is a digital controller with heating water control using OTC depending on the outside temperature and time program.
It has two inputs for Pt1000 sensors and is able to control a 3-way mixing valve and a pump. The controller is power supplied by 230 V mains, it has a real time circuit with backup and is fitted with a 2line x 8character LCD display.

Warning: Read the Instruction Manual before using the controller. Keep the Manual for later use.

Using the Heating Control:



The controller is equipped with 3 pushbuttons. In the display mode, they are used for shifting between basic display, temperature display and thermostat mode. In the Setting mode, the arrows are used to increase or reduce the values to be set. The value is confirmed by pressing OK and the next value is displayed.

Basic Display:

When energized for the first time, the controller displays the firmware version shortly and the turns to the basic display, showing the day, time, outdoor temperature and a S (W) character - Summer (Winter) mode. The character "." means there is no call for heat from a room thermostat.

1 - *day (Mo - Su)*
2 - *outdoor temp. [°C]*
3 - *time (hh:mm)*
4 - Winter mode + no call for heat from a room thermostat

Temperature display:

Data will be displayed by pressing the UP arrow in the basic display mode (pressing the DOWN arrow lights up the display).

Display of heating water temperature and outdoor temperature.

1 - *heating water temperature [°C]*
2 - *outdoor temperature [°C] .*

Pressing the UP arrow once again will display the calculated temperature of heating water and controller mode.

1 - *heating water temperature calculated from the heating curve*
2 - *current mode (setback/comfort)*

Controller settings:

In order to start adjusting the controller, press **OK**. The controller will turn off outlets for a mixing valve and enter the setting mode. Use the UP or DOWN arrows to scroll to the item desired, then press **OK**. Repeat in the next level, scroll to the desired parameter and press **OK**. Use **UP** or **DOWN** arrows to increase or decrease the parameter value.

When you have set all the desired parameters, scroll to **EXIT** and **SAVE** and press OK. The display will read "**saving...**" and then return to the basic screen.

Menu items are: **Temp.**, **Time**, **Program Mo-Fr**, **Program Sa-Su**, **OTC**, **Valve**, **Correc., Others** and **EXIT and SAVE**.

Individual **Menu** parameters are listed on the next page.

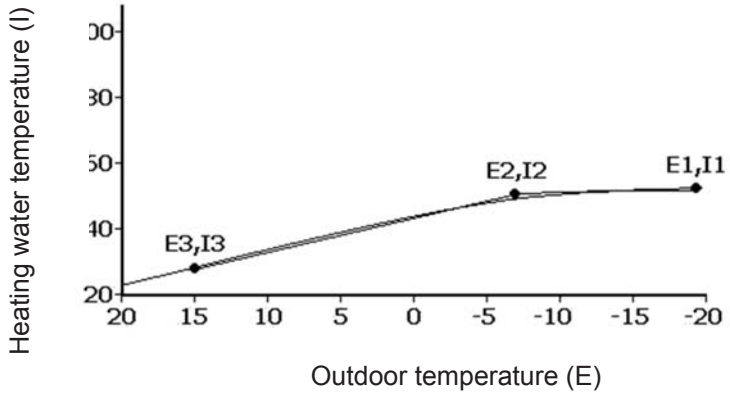
Menu / parameter	Default value	Setting range	Description
Temp.			
T setbck	18 °C	10 - 35 °C	setting the desired setback temperature
T comf.	22 °C	10 - 35 °C	setting the desired comfort temperature
Time			setting the time and day
hours		0 - 23	setting the hours
minutes		0 - 59	setting the minutes
day		1 - 7	setting the day, Mo-Su
Note: when you have set the day and pressed **OK**, the display will read “save”. Press OK once again to confirm saving the set values, the controller then returns to the **Time** menu. .			
Program Mo-Fr			setting a time program for Monday to Friday
c 1 hour	5 h	0 - 23	setting the hour for 1st switch to comfort mode
c 1 min	0 min	0 - 59	setting the minute for 1st switch to comfort mode
r 1 hour	9 h	0 - 23	setting the hour for 1st switch to setback mode
r 1 min	0 min	0 - 59	setting the minute for 1st switch to setback mode
c 2 hour	16 h	0 - 23	setting the hour for 2nd switch to comfort mode
c 2 min	0 min	0 - 59	setting the minute for 2nd switch to comfort mode
r 2 hour	22 h	0 - 23	setting the hour for 2nd switch to setback mode
r 2 min	0 min	0 - 59	setting the minute for 2nd switch to setback mode
Program Sa-Su			setting a time program for Saturday and Sunday
k 1 hour	7 h	0 - 23	setting the hour for 1st switch to comfort mode
k 1 min	0 min	0 - 59	setting the minute for 1st switch to comfort mode
u 1 hour	7 h	0 - 23	setting the hour for 1st switch to setback mode
u 1 min	5 min	0 - 59	setting the minute for 1st switch to setback mode
k 2 hour	7 h	0 - 23	setting the hour for 2nd switch to comfort mode
k 2 min	10 min	0 - 59	setting the minute for 2nd switch to comfort mode
u 2 hour	22 h	0 - 23	setting the hour for 2nd switch to setback mode
u 2 min	0 min	0 - 59	setting the minute for 2nd switch to setback mode
OTC			adjusting the heating curve and the heating water temperature
E1	-8 °C	-20 to +30 °C	1st point of heat curve, outdoor temp.
I1	50 °C	0 to +80 °C	1st point of heat curve, heating water temperature
E2	10 °C	-20 to +30 °C	2nd point of heat curve, outdoor temp.
I2	40 °C	0 to +80 °C	2nd point of heat curve, heating water temperature
E3	25 °C	-20 to +30 °C	3rd point of heat curve, outdoor temp.
I3	50 °C	0 to +80 °C	3rd point of heat curve, heating water temperature
setback	0 °C	0 to +20 °C	setting the heating water temperature reduction in setback mode
max. t*	60 °C	+10 to +80 °C	max. temperature of heating water demanded by controller with OTC
Valve			setting parameters for mixing valve
step	15	2 - 30	setting valve overrun time in tens of seconds (one step is about one tenth of the valve shift time)
period	2 min	1 - 15 min	period of repeating controller intervention

** Note: Depending on the mixing valve control settings, the temperature may exceed this value for a short time*

Menu / parameter	Default value	Setting range	Description
Correc.			setting of sensor corrections
T heat	0 °C	0 - 10 °C	correction for heating water sensor
T out	0 °C	0 - 10°C	correction for outdoor sensor
Others			other parameters
Time Sum	1 h	1 - 48 h	transition time to summer mode
t. Summer	18 °C	0 - 30 °C	transition temperature to summer mode
Time Win	2 h	1 - 48 h	transition time to winter mode
t. Winter	15 °C	0 - 30 °C	transition temperature to winter mode
room OFF	1	0/1	pump switching by room thermostat
unblock	1	0/1	anti-blocking operation
EXIT and SAVE			the controller returns to display mode by pressing OK

The controller returns from MENU to display mode also when no button is pressed for 80 sec. At the same time, changes are saved.

Heating curve adjustment:



The controller calculates the desired heating water temperature with respect to the outdoor temperature and the 2- or 3-point heating curve. Using a 3-point curve is recommended that should precisely represent the insulation qualities of the building. Should the value of I3 be zero, the controller will use just a line through points E1, I1 and E2, I2.

Summer / Winter mode:

When the outdoor temperature rises above the value set by parameter t. Summer and remains so for Time Sum, the controller will switch to Summer mode, closing the valve and switching off the circulation pump.

When the outdoor temperature drops below the value set by parameter t. Winter and remains so for Time Win, the controller will switch to Winter mode, running the circulation pump and starting operation of the mixing valve.

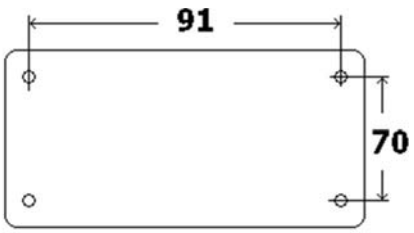
Function of switching off the circulation pump by a room thermostat:

If the parameter room OFF is set to 1, the circulation pump will be switched off by a room thermostat when its contacts are open.

Function of unblock:

When the parameter unblock is set to 1, each Tuesday at 4 p.m. the pump and valve will run shortly, unless they have run during the last week (e.g. in Summer mode). This way they are protected against seizing.

Installation:



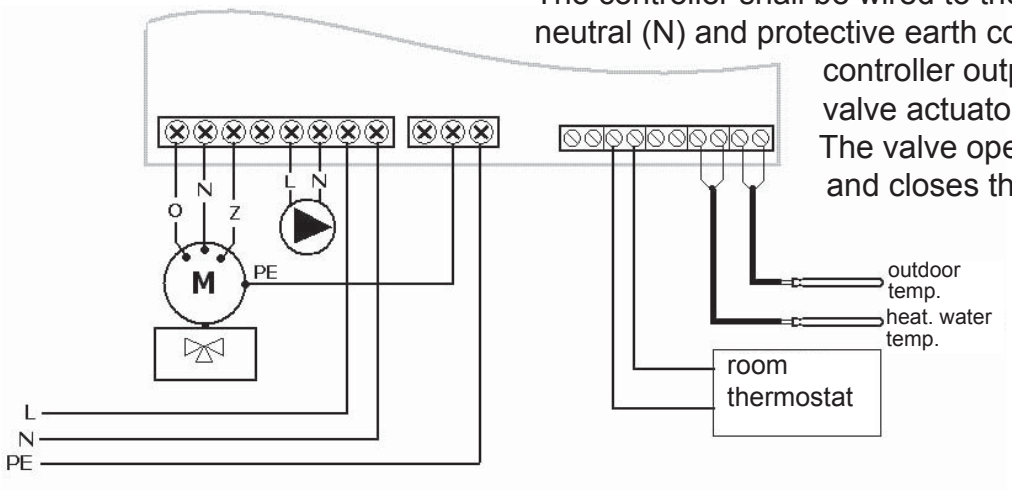
The controller is designed for wall installation with 4 wall plugs and screws. After removing the lid, 4 holes for screws are visible. Use them to screw the controller into the wall plugs with the pitch shown in the fig.

The desired display contrast can be adjusted by a trimmer on the upper board.

Electric wiring:

Wiring may be done by a qualified electrician only!!

The controller shall be wired to the mains using a phase (L), neutral (N) and protective earth conductor (PE). The controller output is intended for a mixing valve actuator.
The valve opens through the (O) wire and closes through the (Z) wire.



Temperature sensors shall be connected to the controller with a shielded twisted two-lead wire. Sensor lines shall be lead apart from power lines.

Technical parameters:

Controller operation parameters		
Parameter	**Value**	**Note**
Power supply:	230 V	+/- 10%
Max. power input:	5 W (both outlets closed)	
Powe input (LCD off)	4 W	
Working temperature	5 to 40 °C	
Working humidity	10 to 95% rel.	non-condensing
Storing temperature	0 to 60 °C	
Storing humidity	10 to 95%	non-condensing
El. protection	IP 20	
Controller inputs		
Parameter	**Value**	**Note**
Number of inputs	2	
Temperature sensor type	Pt 1000	
Controller outputs		
Parameter	**Value**	**Note**
Number of relay outputs	3	
Voltage switched	230 V	+/- 10%
Max. relay current	0,5 A	

Disposal: IMPORTANT INFORMATION ON PROPER DISPOSAL OF EWASTE AS REQUIRED BY THE EC DIRECTIVE 2002/96/EC (WEEE)

Do not dispose of this product as unsorted municipal waste. Please dispose of this product by returning it to the point of sale or to your local municipal collection point for recycling.
Respecting these rules will help to preserve, protect and improve the quality of the environment, protect human health and utilize natural resources prudently and rationally.
The crossed out wheeled bin with marking bar, printed also on the product itself, identifies that the product must be disposed of at a recycling collection site.

WEEE Registration Number: 02771/07-ECZ

WARRANTY CERTIFICATE

HEATING CONTROLLER

REGULUS UR 3

Seller: ..... Date of purchase: .....

WARRANTY CONDITIONS

1. The warranty period is 24 months from the date of purchase..
2. The product shall be installed and commissioned by a competent company or a person trained by the manufacturer.
3. When claiming warranty, this Warranty Certificate must be submitted together with the purchase receipt.
4. The warranty is valid only when the technical conditions set by the Manufacturer, installation manual and instructions in the documentation and on the product itself are maintained.
5. The warranty does not cover defects caused by external conditions or improper operation conditions, defects caused by usual wear and tear, further when the product is not used in compliance with its purpose and when the defect was caused by mechanical damage, improper handling, tampering by a third person, improper installation, improper stocking, natural disaster etc..

COMMISSIONING

Company: ……..

Date: ……..

Rubber stamp print and signature of the installing person:

12/2011

REGULUS spol. s r.o.
Do Koutů 1897/3
143 00 Praha 4
http://www.regulus.eu
E-mail: sales@regulus.cz