



## Laboratory controller

# LTR 4000-C

# LTR 4000-B

- Optimal price performance ratio
- Security circuit according to DIN 12879
- Space-saving



### Laboratory controller LTR 4000-C

After connection of sensor and consumer load the setpoint is digitally indicated by pushing the „SET“ button. It is exactly programmed in high reproductibility by using the coding-switch. Then the security temperature is configured in the display „Overtemp.“ By using the ten-gear potentiometer. After adjusting the PID feedback ( $X_p = 5\%$ ) the appliance is automatically regulating in without overshooting.

In extremely fast controlled systems the capacity is also adjustable to avoid any overshooting and to reach a minimal deviation in regulation.

The pulse length is indicated by a white LED near the capacity rotary button. The burst-firing mode (stepplessly adjustable from 1 to 99%) always works in zero crossover. Thereby a RFI level better than „K“ is realized (Important for nearby installed electronical devices and pcs!).

If the security temperature is reached the appliance is turning off in all poles and a red LED turns to „Alarm“. It is only possible to work again, if the actual temperature sinks under the programmed setpoint temperature and the unlock-key is pushed.

The appliance has an analog output 0-20mA or 4-20mA.

For external controlled measurements an input 0-20mA or 4-20mA is serially integrated (accordingly 0...+400°C linear). The switching to internal setpoint setting is done by a rocker switch. The programmed setpoint temperature is digitally indicated by pushing the „SET“ button. To avoid operating errors the actual temperature is shown permanently when the button is not pushed.

On the backside of the appliance an additional protective contact socket 2A/230V is installed on inquiry. It can be used for operating with stirrer, magnetic valves etc.

### Laboratory controller LTR 4000-B

Like LTR 4000-C, but all actual temperature are permanently indicated on seperate displays. An additional test port is also adaptable! Thereby 3 LED displays and 2 coding-switches are installed on the frontside.

The controller is made for connection of 1 pc. Resistance-thermometer 2x Pt100 or 2 pcs. Resistance-thermometers 1x Pt100 as well as 1 pc. Resistance-thermometer 1x Pt100 for the additional test port.

**Technical datas:**

Type	LTR 4000-C	LTR 4000-B
<b>Housing</b>	Alu-housing, red varnished, Front and back plate anodized	
<b>Dimensions W x H x D in mm</b>	125 x 215 x 135	
<b>Weight kg</b>	2,2	2,4
<b>Measurement range Pt 100</b>	-199,9 + 399,9°C	
<b>Control range Pt 100</b>	0 + 399,9°C	
<b>Measurement and control range of thermocouples</b>	J = 0 + 599,9°C, K = 0 + 999,9°C(0+1200), S = 0 + 999,9°C(0+1700)	
<b>Actual temperature display</b>	13 mm high, red	13 mm high, green
<b>Setpoint temperature indication</b>	Condng-switch	
<b>PID adjustment characteristics</b>	Xp range 0-5% symmetrically to setpoint	
<b>Indication accuracy</b>	± 0,1°C	
<b>Control accuracy</b>	± 0,1°C bei entsprechender Optimierung	
<b>Heating power adjustable</b>	Steplessly from 1 to 99%, RFI level K	
<b>Sensor Pt 100</b>	1 sensor 2 x Pt 100	1 sensor 2x Pt 100 or 2 sensor 1x Pt 100
	Tuchel sockets 7-Polig	
		+ 1 Fühler 1 x Pt 100 für Meßstelle
<b>Sensor thermocouples</b>	each 2 TC sockets for controlling and security TC	
<b>Security circuit DIN 12879</b>	Free selectable, shut-down in all poles	
<b>Analog output</b>	4 - 20 mA / 0 - 20 mA	4 - 20 mA / 0 - 20 mA Option
<b>External setpoint setting</b>	4 - 20 mA / 0 - 20 mA	4 - 20 mA / 0 - 20 mA Option
<b>Breaking capacity</b>	10A / 230 V, ohne resistive load, Option: 15A = 3,3KW	
<b>Interface RSC 232</b>	Option	

**Operating units**

On-Off switch green illuminating, LED display, setpoint potentiometer, ten-gear lockable, "SET" button for setpoint indication, potentiometer for feedback adjustment, red LED "Alarm" and red unlock-kex, "SET" button security temperature indication, potentiometer for adjustment of pulse length with white LED, feeder, 3-pole Tuchel built-in socket for analog output, 4-pole Tuchel socket for external setpoint setting, 7-pole Tuchel socket for resistance-thermometer 2x Pt100, protective contact socket.

Backside: Safety device, if necessary tripod clamp, if necessary socket for stirrer.

**For connection of thermocouples**

Instead of the 7-pole Tuchel socket 2 pcs. Of TC sockets (LTR 4000-C) or 3 pcs. of TC sockets (LTR 4000-B) are installed.

	J (Fe-CuNi)	K (NiCr-Ni)	S (PtTh-Pt)
<b>Range</b>	+20+600°C	+20+1200°C	+20+1700°C
<b>Resolution</b>	0,1°C	1,0°C	1,0°C

Other measurement ranges are possible, for example -100...+800°C for thermocouples type K

Thermocouples on inquiry!

Other executions on inquiry!