

ThermoMixers

Product Overview

BlockThermostats

Suction Systems



HLC. The program which satisfies all wishes.

Versatile:

The HLC ThermoMixers and Block-Thermostats can be used in most different ways:

- with the plugged Operation Unit BT 03 as a compact unit,
- with the Operation Unit BT 03 up to 10 m away from the Mixer MKR 13,
- with a computer for data input and data transfer via a USB interface,
- without Operation Unit with a program earlier set or with a process card.

Easy operation

On an illuminated large LED display all set and actual values are shown simultaneously. The operation guidance is easy to understand and can be chosen in English or German.

Nevertheless if work is done with or without a program there is always a comfortable and user-friendly operation.

Precise

The HLC units have a very even temperature distribution.

A new, self-optimising digital controller and the excellent position of the temperature sensor "inside" the block guarantee an accuracy and reproducibility of +/- 0.1°C.

Future oriented

The insulation is attached to the exchangeable blocks, they simply will be mounted to the tempering unit. This makes special solutions at low costs possible and guarantees the use of accessories for future working methods and developments.

20 standard blocks are available for all HLC ThermoMixers and BlockThermostats; special blocks can be produced at reasonable prices.

Long-living

The specially hard anodised aluminium housing and the solid and sophisticated technique guarantee stable value and steadiness.

And: even after years the HLC ThermoMixers and BlockThermostats stays good looking and ready for use.

1



Three HLC innovative products facilitating work in the laboratory:

Clear and ergonomic - the operator guidance

A modern navigation element facilitates operation and is leading through the program safely and clearly.

With 5 buttons only you pass the complete program safety and comfortable.

Clear, well legible and illuminated information on the display informs you about the status and the corresponding further steps to take.

2



Comfortable and precise - the Microprocessor Control 3

A new, self-optimising digital controller guarantees highest reliability in operation and high accuracy even at extreme temperatures.

Up to 9 complete programs with 30 program steps in total and temperature curves can be set individually.

The ThermoMixers and BlockThermostats also can be controlled by a computer via USB interface.

3



Unique and flexible - the modular Control System S 03

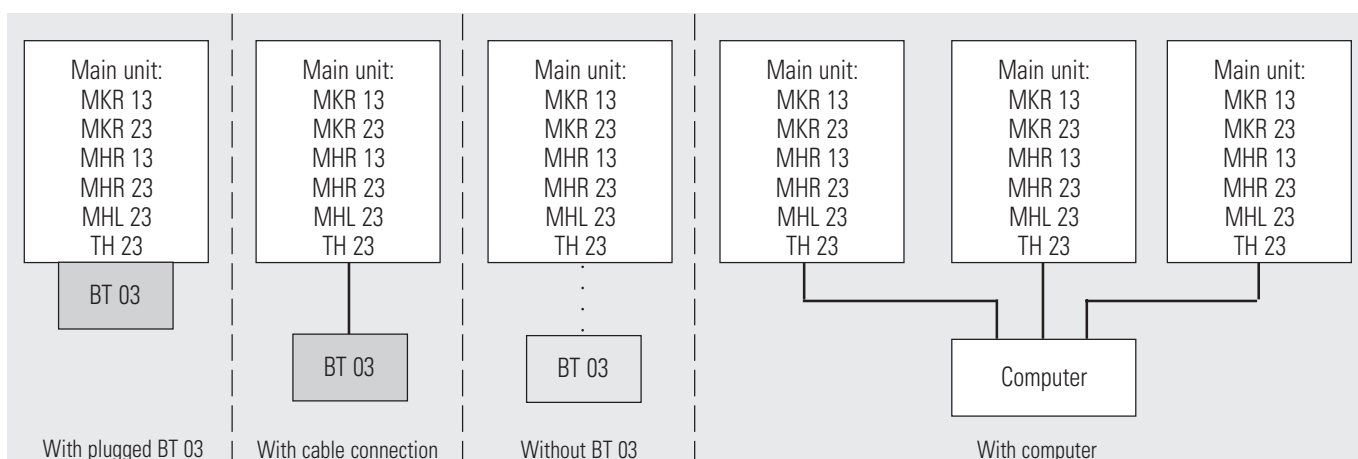
With only one control unit or by computer you can operate as many HLC ThermoMixers and BlockThermostats as required.

Programmed once the units are working also without control unit or computer.

In addition the data can be stored on a process card.

There is no way to work more comfortable and faster: insert card and start unit - the process is running immediately and independently.

The different versions of the Operation System S 03:



The Operation Unit BT 03

The Operation Unit BT 03 has an illuminated large LED display for simultaneous display of all set and actual values, with operator guidance.

The operation is easy and comfortable done with 5 buttons.

- **With plugged Operation Unit BT 03**

When the operation unit is plugged into the main unit the work is done with high comfort.

- **With cable connection between BT 03 and the main unit**

It is possible to pull-off the BT 03 from the main unit and to connect it with a ThermoMixer or BlockThermostat by using the cable VK.

- **Without Operation Unit BT 03**

The main unit can be used without BT 03 and without computer.

A program once set (via BT 03, the process card or a computer) can be repeated constantly without having plugged in an operation unit.

- **With computer**

Every HLC main unit has a button "Start/Stop", a yellow LED showing operation, a red alarm LED and an USB interface.

A computer can be connected via this interface.

- **With process card**

Every HLC main unit with S 03 control can be equipped with a card reader for operation with a HLC process card.

On this process card the data of a complete process can be stored individually.

When the unit has been started the data stored on this card will be worked off completely and independently.

The comfortable, programmable Microprocessor Control 3:

Precise process control by keypress:

The operation is done by 5 buttons. The display is showing the operation in a way easy to understand.

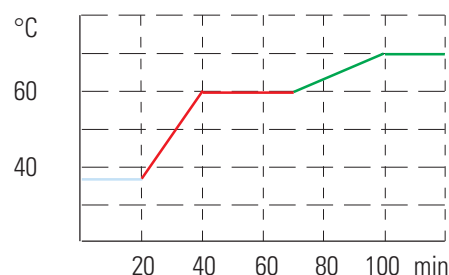
For each display there is an order marked with negative font. If this order shall be executed button "OK" must be pressed.

The programming possibilities:

There are 9 complete programs with 30 program steps in total available - from f. ex. 1 program with 30 steps up to 9 programs with 3 steps each.

Just a few examples for the unique variety and flexibility of the programming possibilities.

Example of a temperature program.



The Economy Microprocessor Control 1:



Operation unit on HLC HeatingThermoMixer MHR 11 with Microprocessor Control 1 M

The 7-segment LED-display has a height of 12,7 mm and thus is very well legible.

Alternatively, the set or the actual value is shown.

The operation is done by 5 buttons.

The adjustment of the shaking frequency on the ThermoMixer is made by a rotary knob.

Absolute easy operation.

A process time of up to 19 hours and 59 minutes can be preselected.

This microprocessor control with a new, self-optimising digital controller offers plainest operation and guarantees a high temperature accuracy.

Resolution, accuracy and reproducibility: +/- 0.1°C.

HLC ThermoMixers - the great selection

Cooling-ThermoMixers, orbital shaking motion



The Comfortable

Art.-No.	Article			
MKR 13	with Operation Unit BT 03	for one thermoblock	+4°C ... +100°C	200 ... 1.500 1/min



The Double-Comfortable

Art.-No.	Article			
MKR 23	with Operation Unit BT 03	for 2 thermoblocks	+10°C ... +70°C	200 ... 1.200 1/min

The sensational INNOVATION

Heating-ThermoMixers, orbital shaking motion



The Orbital

Art.-No.	Article			
MHR 13	with Operation Unit BT 03	for one thermoblock	+23°C ... +130°C	200 ... 1.500 1/min



The Double-Orbital

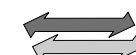
Art.-No.	Article			
MHR 23	with Operation Unit BT 03	for 2 thermoblocks	+23°C ... +130°C	200 ... 1.500 1/min



The Compact

Art.-No.	Article			
MHR 11	with Control 1	for one thermoblock	+23°C ... +130°C	200 ... 1.500 1/min

Heating-ThermoMixers, reciprocal shaking motion



The Reciprocal

Art.-No.	Article			
MHL 23	with Operation Unit BT 03	for 2 thermoblocks	+23°C ... +130°C	200 ... 1.300 1/min

The ThermoMixer with the traditional orbital shaking frequency.

Specially used when in tapered test tubes critical DNA pellets shall be worked out of the conic top to get into solution.

Especially the use of very small probe quantities is a big advantage of the reciprocal shaking motion.

The abrupt shock motion - adjustable in its intensity - lead to a controlled transmission of the mechanical energy to the probe liquid.

HLC BlockThermostats - the simple selection

Cooling-BlockThermostats



The cool Single

Art.-No.	Article
TK 13	with Operation Unit BT 03 for one thermoblock -6°C ... +100°C



The cool Double

Art.-No.	Article
TK 23	with Operation Unit BT 03 for 2 thermoblocks +4°C ... +90°C

Heating-BlockThermostats



The Programmable

Art.-No.	Article
TH 23	with Operation Unit BT 03 for 2 thermoblocks +23°C ... +130°C



The Attractive

Art.-No.	Article
TH 21	with Control 1 for 2 thermoblocks +23°C ... +130°C



The Straight

Art.-No.	Article
TH 21	with Control 1 G for 2 thermoblocks +23°C ... +130°C

NEW

Accessories for the Control 3

Art.-No.	Article
VK 2	Connection cable from BT 03 to Mixer or Thermostat (2 m)
VK x	Every additional meter connection cable (only with VK 2)
PROG	Program for data transfer on CD-Rom
KL	Card reader for operation with a process card
PRC	Process card for storing and reading of a complete process

Exchangeable thermoblocks for all HLC ThermoMixers and BlockThermostats

	Art.-No.	Article
for micro test tubes	BM 02	Exchangeable thermoblock for micro tubes 92 x 0,2 ml tapered
	BM 05	Exchangeable thermoblock for micro tubes 24 x 0,5 ml tapered
	BM 15	Exchangeable thermoblock for micro tubes 24 x 1,5 ml tapered
	BM 20	Exchangeable thermoblock for micro tubes 24 x 2,0 ml parallelly
for test tubes	BP 10	Exchangeable thermoblock for test tubes 24 x d=10,3 mm, 46 mm deep, round bottom, with cover
	BP 12	Exchangeable thermoblock for test tubes 24 x d=12 mm, 20 mm deep, flat bottom
	BP 15	Exchangeable thermoblock for test tubes 24 x d=15 mm, 30 mm deep, flat bottom
	BP 16	Exchangeable thermoblock for test tubes 24 x d=16,3mm, 46 mm deep, round bottom, with cover
for centrifuge tubes	BZ 15	Exchangeable thermoblock for "Falcon"-tubes 14 x 15 ml
	BZ 50	Exchangeable thermoblock for "Falcon"-tubes 6 x 50 ml
for PCR-plates	BC 96	Exchangeable thermoblock for PCR-plates 96 "V"-bottom
	BC 84	Exchangeable thermoblock for PCR-plates 384
for micro-titer-plates	BV 96	Exchangeable thermoblock for micro-titer-plates 96 x Round- and "V"-bottom
	BF 96	Exchangeable thermoblock for micro-titer-plates, flat bottom
for Deep-Well-plates	BD 96	Exchangeable thermoblock for Deep-Well-plates
for other use	BN 10	Exchangeable thermoblock for 36 Rectangular cuvettes 12,5 mm outside
	BO 37	Exchangeable thermoblock without drillings, 37 mm high
	BO 50	Exchangeable thermoblock without drillings, 50 mm high
for hybridation Tempering tub	BY 12	Exchangeable thermoblock for 12 slides
	BW 01	Exchangeable thermoblock as tempering tub for Deep-Well-plates or other tubes, 128 x 85 x 70 mm high
	BI 01	Cover for block insulation

Accessories for all HLC ThermoMixers and BlockThermostats

	Art.-No.	Article
Racks	BR 02	Rack for tubes 0,2 ml
	BR 05	Rack for tubes 0,5 ml
	BR 15	Rack for tubes 1,5 and / or 2,0 ml
Cooling boxes	BK 02	Cooling box for racks 0,2 ml
	BK 05	Cooling box for racks 0,5 ml
	BK 15	Cooling box for racks 1,5 ml and / or 2,0 ml
Tempering head-pieces	BT 01	Tempering head-piece for one thermoblock, transparent, for long tubes
	BT 02	Tempering head-piece for 2 thermoblocks, transparent, for long tubes
Anti-condensate plates	BA 24	Anti-condensate plate for one thermoblock for micro test tubes
	BA 96	Anti-condensate plate for one thermoblock for test plates
Heating Top	BH 10	Heating Top for use with the HLC cooling units

Vacuum Safety Suction Systems - the correct selection



The Automaticals

Art.-No.	Article
AA 02	Vacuum Safety Suction System, with 2 litre bottle, complete with pump, tube, filter etc.
AA 04	Vacuum Safety Suction System, with 4 litre bottle, complete with pump, tube, filter etc.

With automatic vacuum pump, suction capacity: 30 l / min (air)



The Compacts

Art.-No.	Article
AC 02	Vacuum Safety Suction System, with 2 litre bottle, complete with pump, tube, filter etc.
AC 04	Vacuum Safety Suction System, with 4 litre bottle, complete with pump, tube, filter etc.

With a powerful membrane pump, suction capacity: 15 l / min (air)



The Simples

Art.-No.	Article
AZ 02	Vacuum Safety Suction System, with 2 litre bottle, complete with pump, tube, filter etc.
AZ 04	Vacuum Safety Suction System, with 4 litre bottle, complete with pump, tube, filter etc.

With a small, silent membrane pump, suction capacity: 4 l / min (air)

Pumps / Accessories for Suction Systems

Pumps

Art.-No.	Article
AP 04	Membrane Vacuum Pump, 4 l / min (air), 250 mbar
AP 15	Membrane Vacuum Pump, 15 l / min (air), 100 mbar
AF 01	Foot-operated switch

Comprehensive parts and options

AE 02	Safety Collection Unit, with 2 litre bottle, complete, but without pump
AE 04	Safety Collection Unit, with 4 litre bottle, complete, but without pump
AL 02	Spare bottle 2 litre, with fast locks in screw cap
AL 04	Spare bottle 4 litre, with fast locks in screw cap
AW 01	Hose clip, in addition to the spare bottles
AS 02	Safety Bottle Holder for 2 litre bottle, anodised aluminium
AS 04	Safety Bottle Holder for 4 litre bottle, anodised aluminium
AV 03	Safety Filter, packing unit: 3 pcs.

Handles and adapters

AM 01	Handle for quantity regulation, for absorption of a Pasteur pipette or similar
AH 01	Handle with trumpet valve, with adapter for absorption of a Pasteur pipette or similar
AR 05	Stainless steel suction adapter, 50 mm long, special for AH 01
AR 15	Stainless steel suction adapter, 150 mm long, special for AH 01
AR 25	Stainless steel suction adapter, 250 mm long, special for AH 01
AR 40	Suction adapter for yellow pipette tips, special for AH 01
AR 48	Adapter with suction rake, 8-canal, for titer plates, autoclavable, special for AH 01
AR 58	Suction rake, 8-canal, for titer plates, autoclavable, as spare part
AY 01	Y-Distributor for connecting several collection units

Delivery and Payment Conditions

1. Validity

These conditions are valid for all offers and sales contracts HLC is the supplier for. Only these conditions – without contradiction – are valid even if other conditions are stated on purchase orders. In this case contradiction is not necessary.

2. Delivery and time of delivery

The week of delivery indicated in the order confirmation is an approximate delivery date stipulated to best knowledge on the order confirmation's day. The utmost is done to keep this delivery time, however claims on delay cannot be made.

3. Delivery

The shipment of the ordered goods is done in the name and for the account and risk of the customer. On request a transport insurance can be effected for the account of the customer.

4. Prices

The prices are understood ex works, unpacked. The minimum amount for a consignment is • 50,00 even if the value of the goods is below.

5. Payment

Service works are payable immediately without discount. Payments are to be made in advance unless otherwise agreed.

6. Reservation of title

The delivered goods (proviso goods) remain the property of the supplier until all payment demands out of the business relation with the customer existing to the time of the actual contract are settled. When the customer is ordering the proviso goods for the purpose of resale he is only allowed to sell the goods in due order. The customer is obliged to insure the proviso goods on own account and sufficiently to the value as new.

7. Complaints

The customer is obliged to inform the seller in writing immediately, latest within 3 working days after receipt of the goods, of any kind of complaint about quantity and condition of the goods including transport damages. For complaints not announced in time the liability of the seller is dropped.

8. Repairs

Repairs and tests of delivered units only will be done in the productions works. The goods must be sent or brought to the seller – duly packed. Costs for packing and despatch will be to the account of the customer. The repair of defects which are due to wrong operation or treatment of goods or due to improper transport will be charged also during time of warranty.

9. Warranty

For new goods a warranty time of 12 months is valid; for spare parts, repairs and used units the legal warranty time of 6 months is valid. The warranty time starts with the day of delivery.

10. Liability

A liability for damages of any kind against the customer or a third party due to culpable neglect of contractual or non-contractual duties or other circumstances is excluded.

11. Returns

Returns of duly ordered goods are subject to prior approval of the seller. In case the supplier takes back goods for reasons of generosity, treatment costs of up to 10 % of the goods value, minimum • 25,00, for testing will be charged. A corresponding credit note only can be compensated by a delivery of goods.

12. Place of settlement and jurisdiction

Place of settlement for deliveries and payments is Bovenden. Place of jurisdiction for all disputes is Göttingen.



HLC BioTech. ThermoMixers, BlockThermostats, Suction Systems. **Perfect in Technique and Design**

For each HLC product you will find a detailed description (leaflet) for download in the internet at www.hlc-biotech.de