

Micro 2004 Short form user manual v. 4.3

The desired cell is selected by 10 point Storage cell selector-switch on middle of the front panel..

The only knob in the front panel is called Display Selector-knob. It is used to select the parameter what is shown in the Display. The knob is free

turning and does not have any "home" position. When the Display Selector is turned, it moves the Cursor led on front panel. The cursor led is yellow and shows what parameter is currently in the Display.

Settings and their descriptions (Full description of the settings in "full user manual")

Note! Before you can change settings you have to open a password. Press first TIME-button and immediately after that INFO-button. Make sure to press buttons in a rapid sequence (less than one second between buttons).

Type	Setting name	Description
Product	Desired product temperature	The exact desired storing temp. for product (°C)
	Max. (permitted) product temperature	Can only be seen, not user settable. Set by installators parameter "Control accuracy" (°C)
	Min. (permitted) product temperature	Can only be seen, not user settable. Set by installators parameter "Control accuracy" (°C)
	Max. cool down speed	Used for slow-down cooling and heating (°C/24h)
	Temperature balancing interval	Time between temp. balancing cycles (hours)
	Temperature balancing time	Fan running time for each balancing cycle (min.)
	Product sensor activating LED's. (Total of four LED's)	To select product sensors to be calculated into the "main" product temp. At up-right corner of the front panel.
Room	Max. product/roof difference	Max. difference before heat blanket removal starts (°C)
Duct	Desired product/duct difference	Desired product/duct temp. difference during cooling and heating (°C)
	Min. duct humidity	To set starting point (humidity) of humidification (%RH)
Outside	Min. temp. diff. between outside air and product	Used to set when outside air can be used (is cold enough or warm enough) for cooling or heating
Outside	Min. permitted outside RH (humidity)	To prevent use of too dry outside air for cooling (outside cooling starts anyway if product temp. differs from desired temp. more than 2 x "Control accuracy")
Cooling machine	Cooling machine running time before defrosting	To set accumulated cooling machine running time since last defrosting before new defrosting starts (hours)
	Defrosting time	Duration of defrosting period (min.)
	Desired defrosting switch off temp.	When evaporator temp. sensor reaches setting the defrost heaters are stopped to avoid over heating. (°C)

INFO (green button)

Shows the alarm reasons. Press INFO button and keep pressed to get a code for the alarm reason. If there is more than one alarm, the codes for the others can be seen one by one by turning Display Selector (keep INFO pressed). See below a list of Micro2004 system alarms v.4.3) of possible alarms reasons.

Programming clock (green button)

Can be used to block-out high priced electricity. To block hours, press and keep

pressed the Programming Clock down, turn Display Selector to get on wanted hour and set it by pushing Display Selector. To reset hour, select it and push Display Selector again.

Alarm stop (red button)

Stops the alarm buzzer and alarm output (relay) and stops the alarm status light in front panel from blinking. Alarms are cancelled until a new reason for alarm appears. Note! Stops all alarms in all cells in that Micro (not in the other Micro's in the same network).

Alarms and warnings

There are total of 9 alarm/warning LED's. Some show status individually for every cell controlled by Micro and some are common for all cells controlled by that Micro.

Note! Alarms and warnings are not transferred from other Micros in a network.

<u>Separately for each cells:</u>	<u>Common for all cells in that Micro:</u>
Alarm: Product temp. above alarm limit	Check power, power supply voltage below low limit
Alarm: Product temp. below alarm limit	Check communication, comm. problem between Micro and I/O units
Warning: Product temp. above warning limit	System alarm 1, internal problem in Micro 2004
Warning: Product temp. below warning limit	System alarm 2, external reason (other than Micro 2004 source)

Running time counters

To zero running time counters select one and keep Display Selector knob pressed 10 seconds.

Note: To see Recirculation hours, select Outside and press also INFO-button at the same time.

Micro2004 system alarms v.4.3

E000	No warnings	Ex12	Fan failure
Ex01	Equipment alarm / low power	Ex13	Forced stop
Ex02	Realtime clock is not running	Ex14	Forced defrost
Ex03	RemDigi 1, no communication	Ex15	Selected product sensor cannot be used for control
Ex04	RemAna 1, no communication	Ex16	Fault in product temp.sensor
Ex05	RemDigi 2, no communication	Ex17	Fault in duct temp.sensor
Ex06	RemAna 2, no communication	Ex18	Fault in outside temp.sensor
Ex07	Reserved	Ex19	Duct temp. is rising during cooling
Ex08	Reserved	Ex20	Duct temp. is lowering during heating
Ex09	Product temp. out of alarm limits	Ex21	Outside humidity is preventing cooling
Ex10	General alarm	Ex22	Outside humidity is preventing drying
Ex11	Manual control		

Note 1: "x" stands for a number of storage cell for 1...10 possible cells in the system.

Note 2: To see all alarms: press INFO-button and turn Display Selector-knob at the same time.

User settable parameters (for each storage cell individually)

To get into parameter settings subprogram: Select (with Display Selector knob) sensor no. 1 and keep Display Selector knob pressed 5 seconds, wait for display check and change the parameters you want. If you do not change anything, the subprogram stops and main program gains control in 30 seconds.

<u>P.no</u>	<u>Description of the parameter function</u>	<u>Value range</u>	<u>Unit</u>	<u>Default value</u>
x00	Heating allowed (0=no, 1=Out, 2=out/heater)	0-2		2
x01	Heat blanket run time (0=not in use)	0-100	min	10
x02	Drip time (0=not in use)	0-100	min	2
x03	Roof heating diff. (0=not in use)	0-50	C	0
x04	Defrost temp. control (pulsing) during defrost	OFF/ON		OFF
x05	Outside humidity check during cooling	OFF/ON		OFF
x06	Outside humidity check during drying	OFF/ON		OFF
x07	Relative RH=1, absolute humidity =2	1-2		1
x08	Max. allowed relative humidity	1-100	%	90
x9	Absolute humidity diff. (product-out)	0-20	g/kg	10
x10	Manual control causes alarm	OFF/ON		ON
x11	Forced stop causes alarm	OFF/ON		ON
x12	Forced defrost causes alarm	OFF/ON		ON
x13	Product low-limit alarm	0-40		0
x14	Product high-limit alarm	0-40		20

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