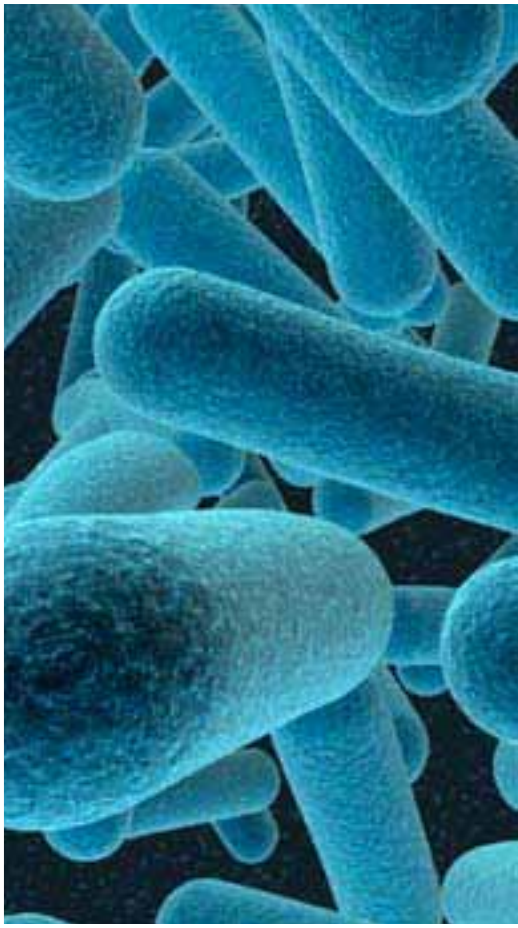
Termaks as

For more than **50 Years...**

CREATES THE ENVIRONMENT YOU NEED



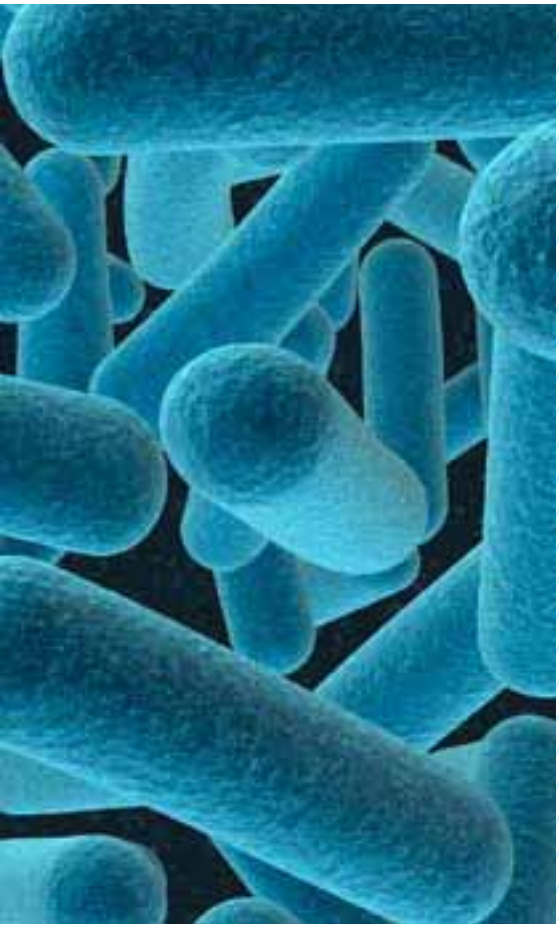


ABOUT **TERMAKS**

Termaks is one of the leading suppliers of laboratory drying ovens, laboratory incubators, cooled incubator and environmental chambers in Scandinavia.

We enjoy a rapidly growing market worldwide, based on our selected distributors in Asia, America and Europe – all with a good local knowledge and a wellestablished position within the supply of laboratory equipment.

Termaks AS can look back on more than 50 years of



activity. The company was founded in 1952, and the first years it supplied exclusively the Norwegian market with environmental laboratory equipment. From the base in Bergen on the Norwegian West coast the activity has increased, so today we export our products to nearly 30 countries throughout the world. Approximately 80% of the turnover is export.

Termaks products are marketed by a net of well established and skilled distributors who are able to give excellent support regarding both sales and service.

INCUBATORS, BACTERIOLOGICAL CABINETS

Series consists of five different cabinets with sizes from 23 litres up to 420 litres.

There are two different types of controllers available. The Basic (see page 9) and the Special (see page 10) Interior housing and shelves are in stainless steel. All cabinets are equipped with a glass inner door.

Externally, the cabinets are constructed of electrolytically galvanized steel sheets, coated with a grey epoxy polyester paint (RAL 7035).

The three smallest models are table models that are stackable. By means of brackets they can be wall mounted. The two biggest models stand on the floor and have adjustable feet.

KEY FEATURES

- Temperature range up to 70 °C
- PID Temperature controller
- Digital calibration
- Alarm
- Timer
- Data logging
- Safety thermostat
- Glass innerdoor
- 4 speed fan

ACCESSORIES

	TM1201	TM1202	TM1203	TM1204	TM1205
Internal power socket 230V	✓	✓	✓	✓	✓
Rack, Socket 50 cm high	–	✓	✓	–	–
Socket w/material cabinet	–	–	–	✓	✓
Set of Castors	–	–	–	✓	✓
Door Lock	✓	✓	✓	✓	✓
Wall Bracket	✓	✓	✓	–	–
Access Port 30 mm	✓	✓	✓	✓	✓

– Not available

(BASIC)

The basic is recommended when you operate with the same temperature throughout the whole process, and do not need written documentation.

TEMPERATURE CONTROLLER

The controller is very easy to operate and has a large, green display. It has a number of functions, such as adjustable alarm limits, acoustic alarm, data logging, timer, 4 fan speeds and PID control of the temperature. The controller has passed the tests for the highest class of EMC requirement for the heavy industry (EN 50081-1 and EN 50082-1), tested by NEMCO EMC-lab.

CALIBRATION

Digital calibration of temperature is easily operated by entering new constants from the keyboard into the microprocessor.

ALARM

The controller is equipped with both flashing and acoustic alarms. Alarm limits can be set both below and above the set temperature.

TIMER

The timer starts only when the set temperature is reached. It can also be programmed with a delayed start option. There is an acoustic end-of-cycle warning.

DATA LOGGING

The controller records maximum and minimum temperatures, and the average temperature is also calculated. The recording starts after the initial stabilisation.

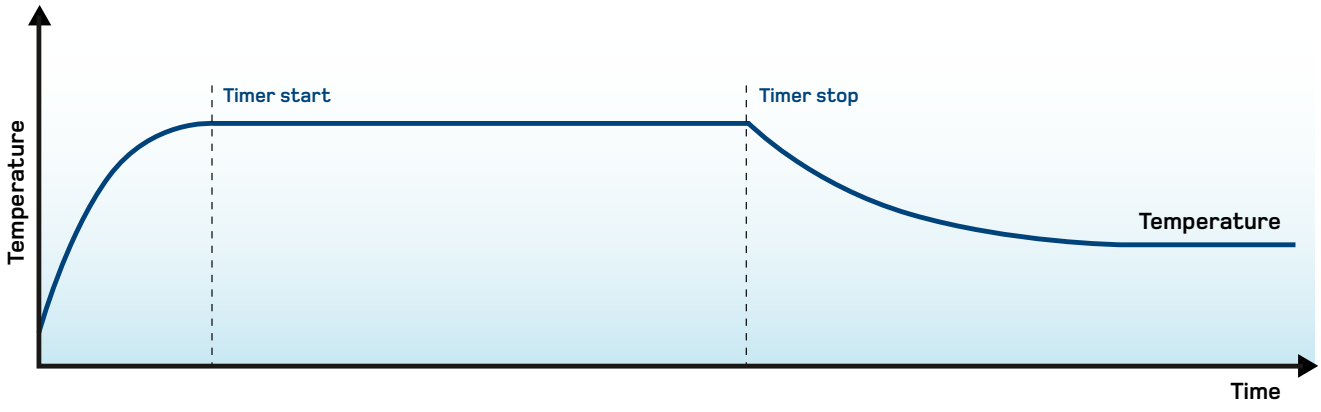
SAFETY

All models are designed to satisfy the requirements of the international standard IEC 1010-1. The power inlets are fused.

All cabinets are equipped with a separate electronic safety thermostat, class 3.1, that takes over the temperature control in the case of a controller failure.

VENTILATION

All models in this series are equipped with a ventilator fan that can be regulated at 4 different speeds. On the three smallest models there is an infinitely variable air valve.



(SPECIAL)

When more accurate regulation is required, and if different temperatures are to be programmed, choose the Special series. The operation of the regulator is done by the 5 buttons and is more or less self-explanatory. In addition to the features described on the Basic, the Special has the following options:

10 FAN SPEEDS

(Basic is 4)

AUTOMATIC SAFETY THERMOSTAT

A safety thermostat system is integrated in the electronic control system. The safety thermostat is automatically set whenever a new temperature is set.

REAL TIME PROGRAM (OPTIONAL)

The program system can handle up to twenty settings of temperature. A setting is made active when the real time matches the time connected to a particular setting. The changes can be done a number of times every day, on a specific day of the week, or on a specific week of the year, or a combination of all of them.

TEMPERATURE RAMPING

The temperature can be ramped towards a new setting at a defined rate. The system can be automatically adjusted for European Daylight Saving Time, DST.

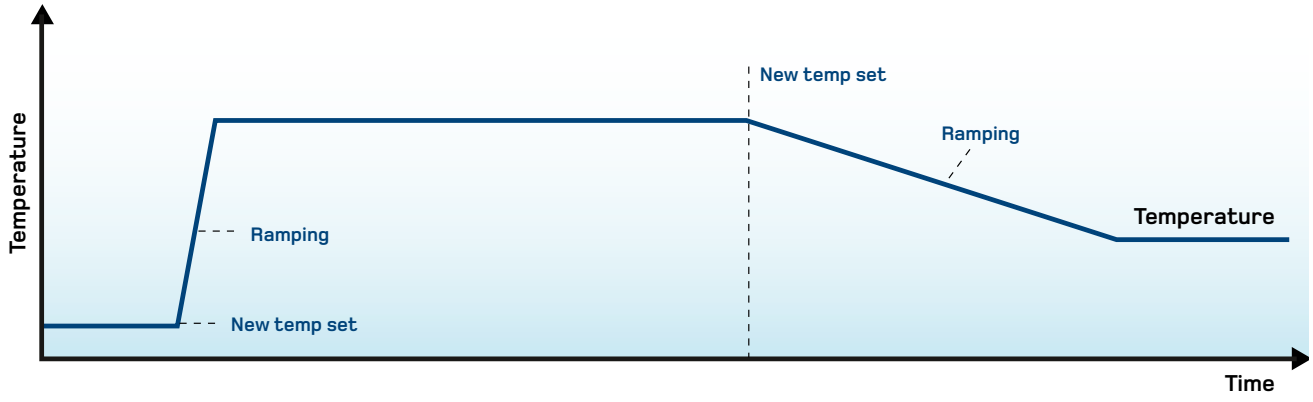
PRINTER REPORT (OPTIONAL)

An optional thermal printer (SEIKO OPU-414) can be connected to the serial data port on the cabinet. The date, time and temperature can be printed on an adjustable time rate, down to one minute. Events, such as new settings and alarm conditions can also be printed. By using a PC instead of a printer, remote settings and monitoring are possible.

FLASH MEMORY FOR EASY FUTURE UPGRADES

The system software can easily be replaced via a Windows based PC connected to the serial port. This makes it possible to keep the system up to date.

Customers with special functional needs, can get their software on a CD or via the Internet from Termaks.



INCUBATORS, BACTERIOLOGICAL CABINETS

TEMPERATURE CONTROL		TM1201/B/S	TM1202/B/S	TM1203/B//S	TM1204/B/S	TM1205/B//S
Variation	+ / - °C	0,2	0,2	0,2	0,2	0,2
Deviation (spatial)	+ / - %	1	1	1,5	1,5	1,5
Readability / Set ability	°C	1/0,1	1/0,1	1/0,1	1/0,1	1/0,1
Range	°C	t_b-70	t_b-70	t_b-70	t_b-70	t_b-70
Sensor thermocouple "K"		*	*	*	*	*
Controller		PID	PID	PID	PID	PID
Display		LED/LCD	LED/LCD	LED/LCD	LED/LCD	LED/LCD
TIMER						
Minutes / hours		0-999	0-999	0-999	0-999	0-999
Delayed start options		*	*	*	*	*
Real time program		NO/Optional**	NO/Optional**	NO/Optional**	NO/Optional**	NO/Optional**
Printer report		NO/Optional**	NO/Optional**	NO/Optional**	NO/Optional**	NO/Optional**
SAFETY						
Alarm flashing / Acoustic		*	*	*	*	*
Alarm limit settable	°C	*	*	*	*	*
Automatic safety setting	°C	NO/YES	NO/YES	NO/YES	NO/YES	NO/YES
FEATURES						
Fan speed steps		4/10	4/10	4/10	4/10	4/10
Door gasket silicone		*	*	*	*	*
Exhaust valve	ϕ mm	32	32	32	NO	NO
Ventilation slide	0-100 %	*	*	*	NO	NO
Glass inner door		*	*	*	*	*
Data Port, Serial	RS 232	NO/YES	NO/YES	NO/YES	NO/YES	NO/YES
Pot. free alarm output		NO/Optional	NO/Optional	NO/Optional	NO/Optional	NO/Optional
SHELVES						
Standard / Max	pcs	2/7	2/8	4/16	3/13	4/23
Dimensions WxD	mm	320x240	400x330	510x410	600x550	600x550
Max load pr shelf	kg	20	20	20	30	50
Permitted total load	kg	50	50	70	80	100
HEATING						
Heating up time to 37 OC	mins	27	30	33	27	30
Heat transfer at 70 OC	W	65	75	90	170	190
Air changes	p/h	110	50	20	95	60
POWER						
Nominal Power	W	330	330	330	930	930
Nominal voltage	V	230,1~	230,1~	230,1~	230,1~	230,1~
Frequency	Hz	50	50	50	50	50
DIMENSIONS						
Exterior WxDxH	mm	515x455x490	595x550x580	705x625x820	830x730x1170	830x730x1620
Interior WxDxH	mm	325x260x270	405x370x360	515x430x600	602x590x730	602x590x1190
Volume	litres	23	54	133	260	420
WEIGHTS / VOLUME						
Net weight	kg	27	36	56	90	115
Shipping weight	kg	30	41	66	110	140
Shipping volume	dm^3	214	327	558	957	1280

t_b = 5 °C ABOVE AMBIENT
* = STANDARD
** THIS OPTION IS STORED IN THE SYSTEM AND CAN FREELY BE TESTED FOR 30 DAYS. A UNIQUE CODE IS NEEDED IN ORDER TO MAKE IT AVAILABLE FOR PERMANENT USE
THESE TECHNICAL DATA ARE SPECIFIED FOR AN EMPTY CABINET AND AMBIENT TEMPERATURE OF 23 °C
SUBJECT TO TECHNICAL ALTERATION.