

°LAUDA



°FAHRENHEIT. °CELSIUS. °LAUDA.

ECO

Economic and high-performance temperature control



Temperature range: $-50^{\circ} \dots 200^{\circ}\text{C}$

Class designation: III FL

(suitable for flammable and non-flammable liquids)

ECO – TWO DIFFERENT IMMERSION THERMOSTATS

Differentiation in performance und price

ECO Silver



ECO Gold



Temperature range:
20 °C ... 200 °C

Powerful circulating pump:
0,55 bar/ 22 L/min

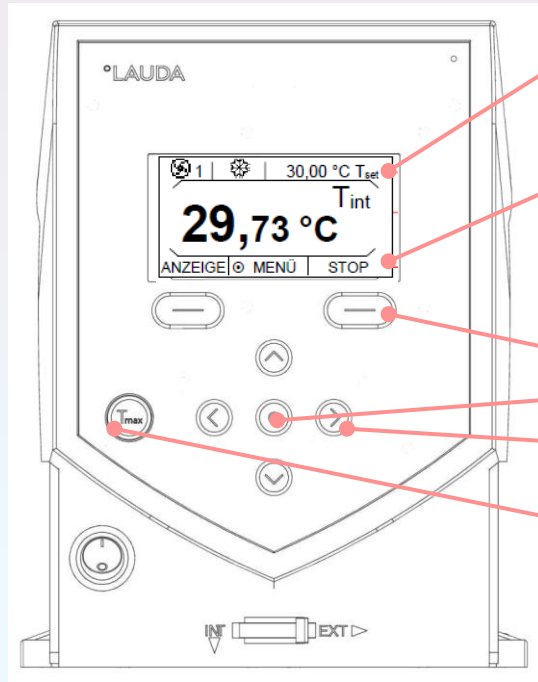
Heating capacity:
Silver: 2,0 kW @ 230V

Gold: 2,6 kW @ 230 V

ECO – TWO DIFFERENT IMMERSION THERMOSTATS

Control display and panel

ECO Silver with LCD display



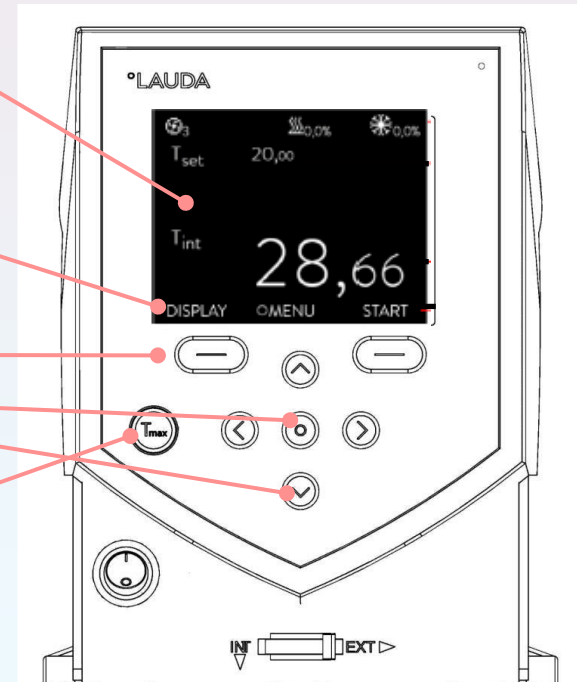
Display

- Display of the internal or external temperature value (T_{int} or T_{ext})
- Soft-key bar

Control Panel

- Soft keys left & right
- Enter key
- Cursor keys for up, down, left and right
- Key T_{max}: Display and adjustment of the over-temperature switch-off point

ECO Gold with colored TFT display



REAR VIEW OF ECO SILVER/GOLD

Full interface flexibility

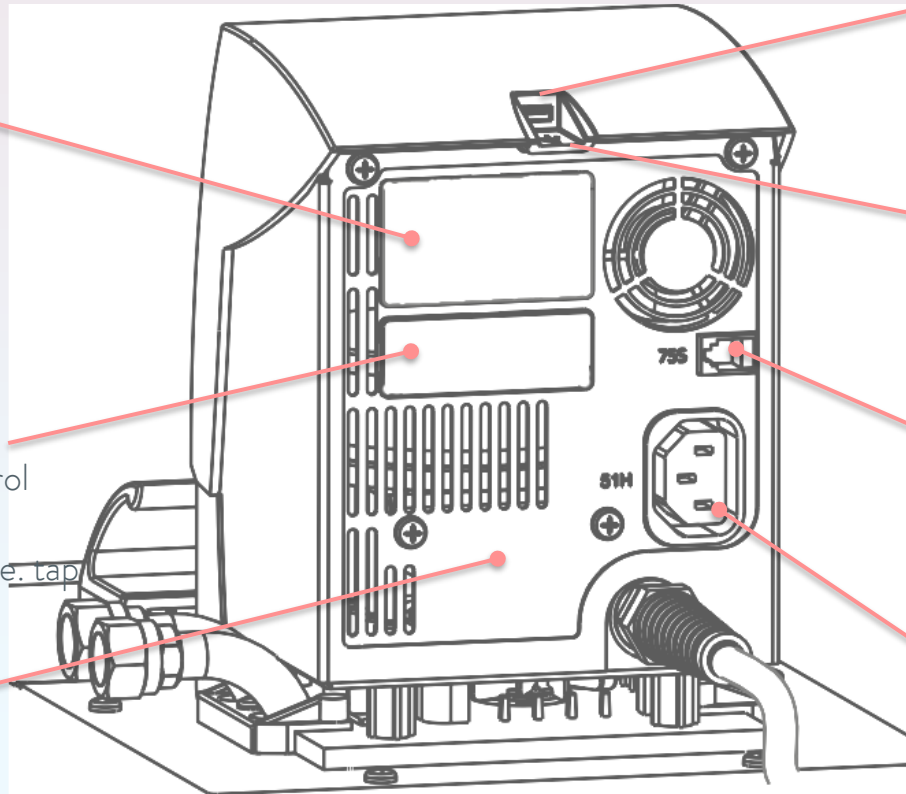
Module slot for

- Analog
- RS 232/485
- Ethernet
- EtherCAT
- Profibus module
- Contact module

Pt100/LiBus-Modul for

- Ext. temperature control
- Connection of further electronic accessory (i.e. tap water cooling valve, Command etc.)

Type plate



USB Interface (Mini plug)

- Connection to a PC
- Software updates

Control cable socket for

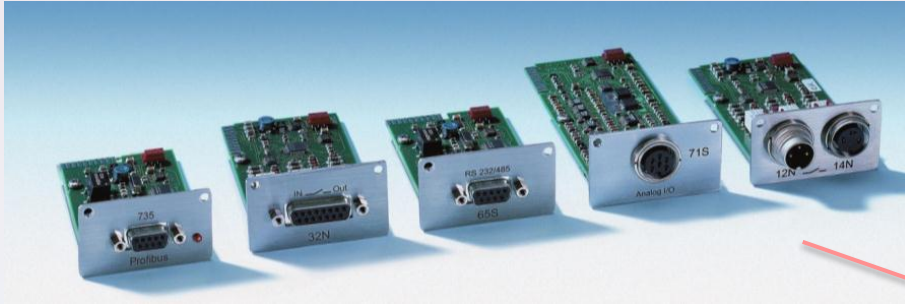
- Smart-Cool-System for units with cooling capacity > 650W

Power connector for

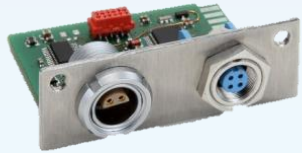
- refrigeration part

WIDE RANGE OF INTERFACES

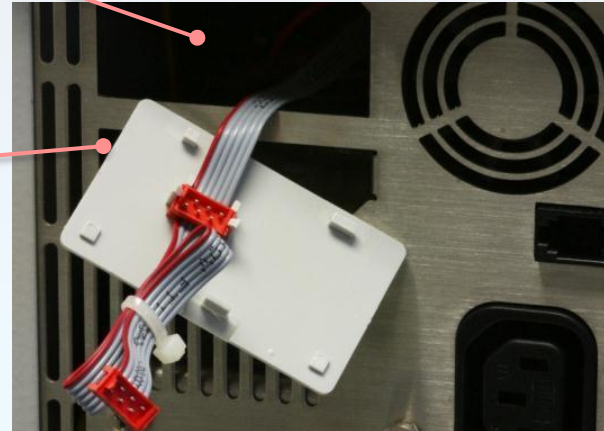
“Plug & Use” - easy to install



RS 232 / Analog / Profibus / Ethernet / Contact module / EtherCAT



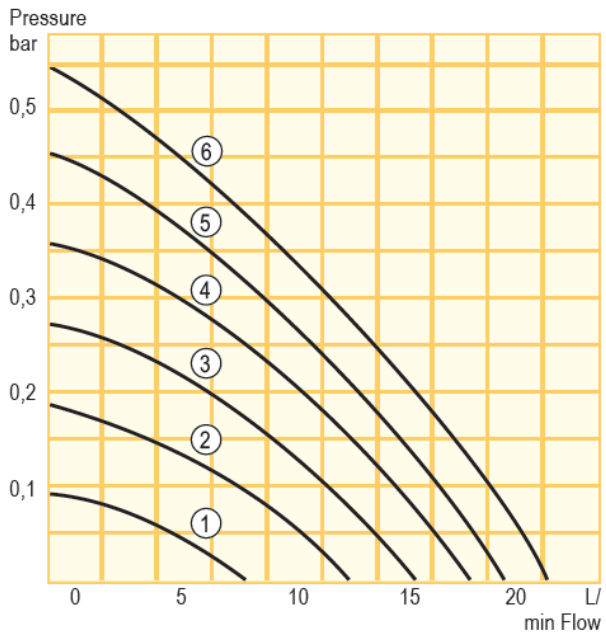
Pt100/LiBus module



ECO - PUMP

Identical pump of ECO Silver and ECO Gold

Pump characteristics Heat transfer liquid: Water



- ① Step 1
- ② Step 2
- ③ Step 3
- ④ Step 4
- ⑤ Step 5
- ⑥ Step 6

- Pressure pump (Vario pump) with 6 pump levels
Discharge pressure max.: 0.6 bar
Discharge flow max.: 22 L/min
- Flow distribution for adjustment between int./ext. circulation
Continuous full range adjustment (100:0 – 50:50 – 0:100)
Easy front access

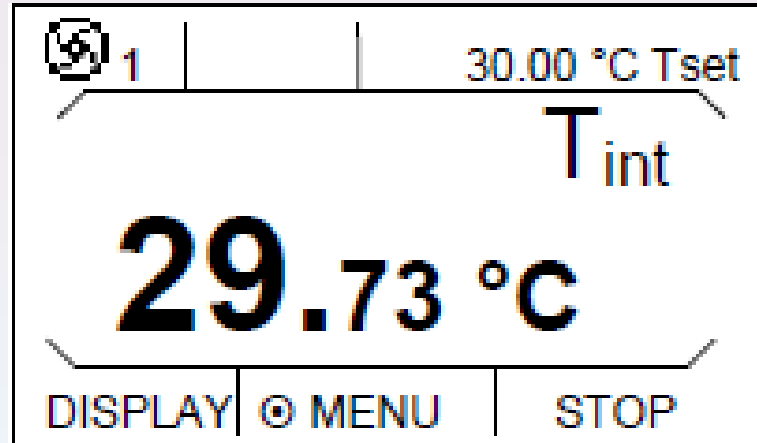
Switch at the front of the control unit



- Pump capacity adjustment to application and bath size
- Division of the flow between internal and external circulation

ECO SILVER

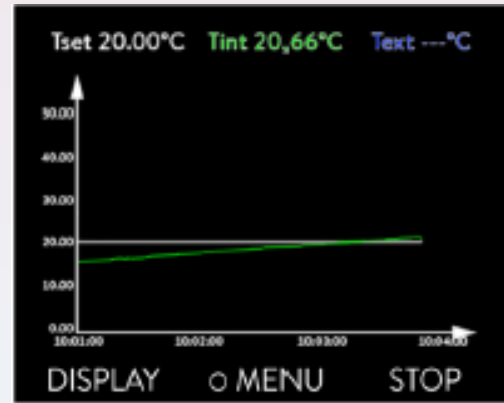
Large LCD display + an ambient light sensor



- Resolution 0.01°C
- Intuitive operator guidance
- Menu in various languages: (i.e. German, English, French, Spanish, Russian etc.)
- 1-point calibration by the user
- Programmer with 1 program and 20 temperature/time segments

ECO GOLD

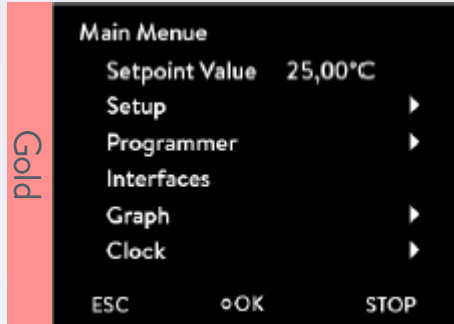
Large TFT color display and graphical representation of the temperature curve



- Resolution 0.01°C
- Intuitive operator guidance
- Menu in various languages (i.e. German, English, French, Spanish, Russian etc.)
- 1-point calibration by the user
- Programmer with 5 programs and 150 temperature/time segments
- Graphical display of temperature curve

PROGRAMMER

ECO Silver is less comprehensive and user-friendly than the programmer of ECO Gold



Main menu



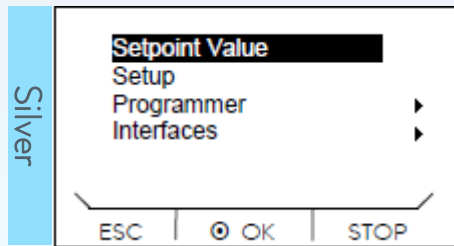
5 Programs
With max. 150 Segments

No.	Tend	hh	mm	Tolerance
Start	30.00	--	--	0.1
1	50.00	0	20	0.0
2	50.00	0	20	0.0
3	70.00	0	20	0.1
4	60.00	0	30	0.0
5	30.00	0	0	0.0

Select one program

No.	Pump	S1	S2	S3
Start	2	off	---	off
1	2	off	---	off
2	3	off	---	off
3	4	off	---	off
4	2	off	---	off
5	2	off	---	off

Edit the program



Main menu

1 Program
With max. 20 Segments

	Tend	hh:mm	Tol.
1	35.00	--:--	0.1
2	40.00	00:10	0.1
3	50.00	00:20	0.0
4	70.00	00:50	0.1

Select the program

	Pmp	S1	S2	S3
1	1	on	---	off
2	1	on	---	off
3	2	on	---	off
4	2	on	---	off

Edit the program

DIFFERENCES BETWEEN ECO SILVER AND ECO GOLD

Differentiation in performance und price

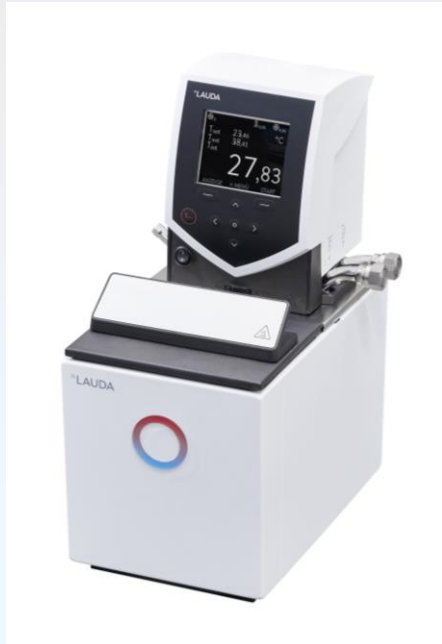
- ECO Silver and Gold have common technical parameters
Temperature range: -50 - 200°C
Cooling capacity: up to 700 W
Pump (max.): 0,55 bar/ 22 L/min
Various interface possibilities
- ECO Gold has a higher heat output
ECO Gold: 2,6 kW @ 230V
ECO Silver: 2,0 kW @ 230 V
- ECO Silver and Gold have the identical menu structure based on easy to understand icons
Menu in various languages (i.e. German, English, French, Spanish, Russian etc.)
1-point calibration by the user
- ECO Gold has a larger color display in which the temperature curve can be shown graphically.
- Comprehensive programmer of ECO Gold
Five programs with 150 temperature-time segments

ECO HEATING THERMOSTATS WITH STAINLESS STEEL BATH

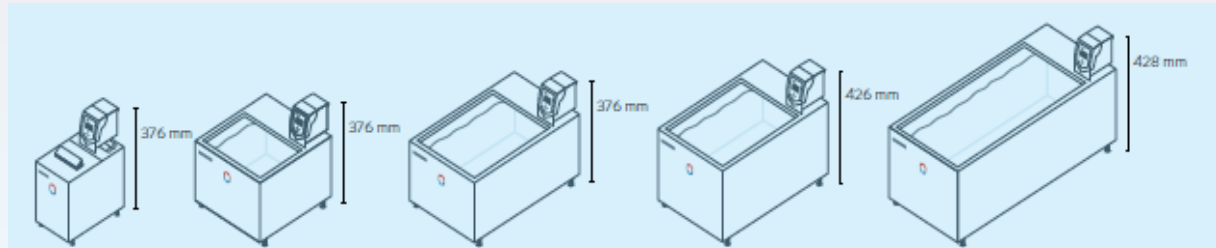
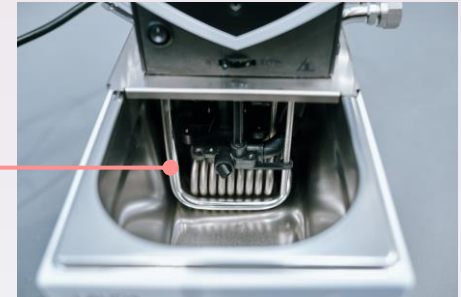
Cooling coil as standard

Temp. range: 20 ... 200 °C

Temp. stability: ±0.01 K



Cooling coil



	E 4 S/G	E 10 S/G	E 20 S/G	E 25 S/G	E 40 S/G
Bath volume	3 – 3.5 L	7.5 – 11 L	13 – 19 L	16 – 25 L	32 – 40 L
Bath depth	150 mm	150 mm	150 mm	200 mm	200 mm
Usable bath depth	130 mm	130 mm	130 mm	180 mm	180 mm

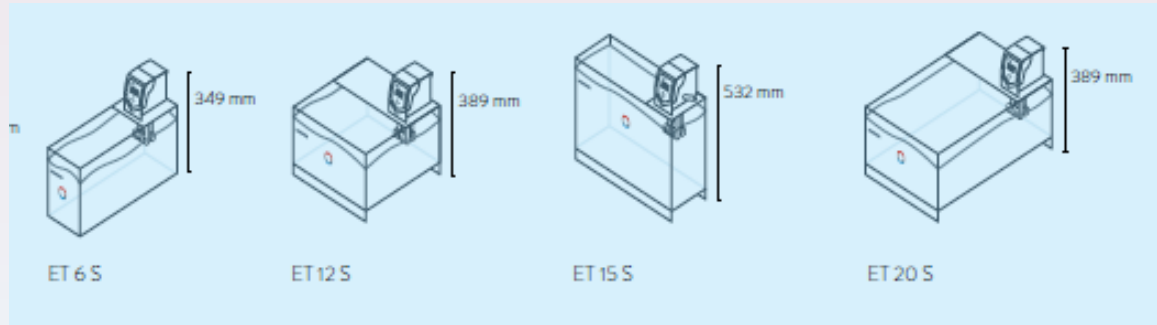
Bath vessels: Inner tank in deep-drawn stainless steel

ECO HEATING THERMOSTATS WITH TRANSPARENT BATH

Cooling coil as standard

Temp. range: 20 ... 100 °C

Temp. stability: ±0.01 K



	ET 6 S/G	ET 12 S/G	ET 15 S/G	ET 20 S/G
Bath volume	5 – 6 L	9.5 – 12 L	13.5 – 15 L	15 – 20 L
Bath depth	160 mm	160 mm	310 mm	160 mm
Usable bath depth	140 mm	140 mm	290 mm	140 mm

Bath vessels: Polycarbonate

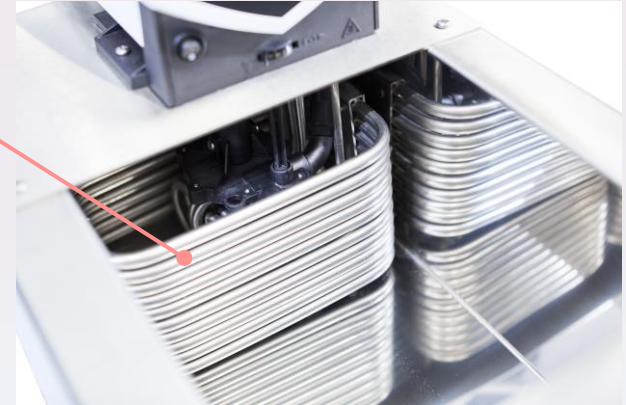
ECO COOLING THERMOSTATS

Temperature range from -30 ... 200 °C



- Temp. Stability: ± 0.02 K
- Cooling machine: air-cooled
- Pump connection set as standard

Evaporator coil



	RE 415 S/G*	RE 420 S/G	RE 630 S/G	RE 1050 S/G	RE 1225 S/G	RE 2025 S/G
Working temp. range	-15 ... 200 °C	-20 ... 200 °C	-30 ... 200 °C	-50 ... 200 °C	-25 ... 200 °C	-25 ... 200 °C
Cooling output	180 W	200 W	300 W	700 W	300 W	300 W
Bath volume	3.3 – 4 L	3.3 – 4 L	4.6 – 5.7 L	8 -10 L	9.3 – 12 L	14 – 20 L
Bath depth	160 mm	160 mm	160 mm	160 mm	200 mm	160 mm
Usable bath depth	140 mm	140 mm	140 mm	140 mm	180 mm	140 mm

* RE 414 GW: water cooled

REFRIGERANT OF ECO COOLING THERMOSTATS

Compliance with the F-Gas Directive

- Fluorinated greenhouse gases

	Refrigerant	Global warming Potential GWP (100a)*	Max. filling quantity	CO ₂ equivalent	Ozone depletion potential ODP
RE 415 S/G RE 420 S/G RE 630 S/G RE 1225 S/G RE 2025 S/G	R-134a	1430	0.065 kg 0.063 kg 0.075 kg 0.075 kg 0.075 kg	0.1 t	0
RE 1050 S/G	R-452A	2140	0.27 kg	0.6 t	

*according to IPCC IV – Time horizon 100 years

- For stationary systems, the use of refrigerants with GWP over 2500 will be prohibited from January 1st, 2020
- Exemption: systems that generate temperatures below -50°C
- This means that devices and systems purchased now can continued to be used after 2020 irrespective of the GWP of the refrigerants being used.
- **These devices comply with the European F-Gases Directive.**

ECO COOLING THERMOSTATS WITH NATURAL REFRIGERANT

ECO with natural refrigerants have the same technical capabilities and are fully safe to use.

- Halogen-free hydrocarbon, propane

	Refrigerant	Global warming Potential GWP (100a)*	CO ₂ equivalent	Ozone depletion potential ODP
RE 415 S/G ... RE 1050 S/G	R-290	3		0

*according to IPCC IV – Time horizon 100 years

- Contributes to reduction of greenhouse effect
 - As powerful as cooling thermostats with conventional refrigerants
 - Wide choice of models with propane (R290) as refrigerant
 - Comply with EU F-gas regulation
 - Safety
 - Cooling circuit hermetically closed and sealed: Risk of leakage reduced to minimum
 - All relevant components with possible source of ignition are protected
-
- Natural refrigerants are superior to conventional ones in their global warming potential, only.

ECO PORTFOLIO

Wide range of device types

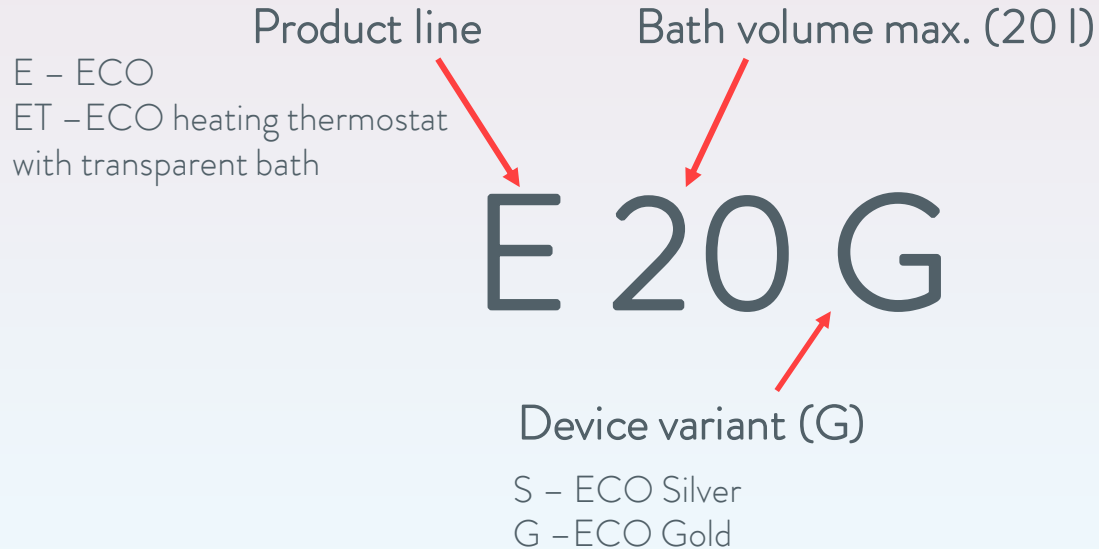
- Immersion thermostats: ECO Silver + ECO Gold
- Heating thermostats with transparent bath
- Cooling thermostats with stainless steel bath
- Cooling thermostats with conventional refrigerants
- Cooling thermostats with natural refrigerants (only EU)

Designation	Number of device types
ECO Silver + ECO Gold	2
ET 4 S/G ... ET 20 S/G	8 = 4 silver + 4 gold
E 4 S/G ... E 40 S/G	10 = 5 silver + 5 gold
RE 415 S/G ... RE 2025 S/G, RE 415 GW	13 = 6 silver + 7 gold
RE 415 S/G ... RE 2025 S/G	12 = 6 silver + 5 gold
Total number	45 device types

- All heating ECO thermostats are available with transparent or stainless-steel bath and with ECO Silver or ECO Gold control head.
- All refrigerated ECO thermostats are available in 4 different versions of the same basic instrument.

DESIGNATION DEVICE TYPES

Concept from Hydro and Alpha transferred to ECO consequently



DESIGNATION DEVICE TYPES

Concept from Hydro and Alpha transferred to ECO consequently

