



Process thermostats for professional external thermostating
in an extremely wide temperature range from **-90 up to 300 °C**



  Process thermostats for professional external thermostating in an extremely wide temperature range from -90 up to 300 °C

Integral T: Powerful for indirect thermostating tasks



Heating and cooling in process management



Thermostating of engine test benches



Pilot plant for producing functional fluids by means of the emulsion polymerization method

Integral T process thermostats are particularly suitable for the external thermostating of reactors, mini plants and calorimeters, whereby wide temperature ranges and fast temperature changes are essential.

Fields of application: process engineering, production, research

Extremely flexible and reliable

Powerful immersion pumps and a large expansion volume with overflow connection make the Integral T process thermostats suitable even for large circuits. An independent internal circulation (the more powerful versions even have an additional circulation pump) ensures smooth operation, independent of external flow resistances. Integral T process thermostats come equipped with an overtemperature and low-level protection. All process parameters and internal values are clearly depicted.

Rapid and powerful process thermostats

LAUDA Integral process thermostats provide powerful cooling and heating performance in a compact unit. Thanks to their practically oriented temperature range of between -30 and 120 °C (optionally up to 150 °C), they can be deployed on a general basis in the fields of research, applications engineering and production. Example uses include temperature control of technical processes in laboratories or mini-plants and temperature control for a calorimeter, where broad ranges of temperature and rapid temperature changes are key factors. Integral units can also be used for temperature control of dosing and metering systems as well as of potting units (e.g. for sealing electronic components). Additionally, they can be used for indirect thermostating of external vessels with defined rates of heating and cooling even when larger volumes are involved (e.g. in agitator tanks).

LAUDA Integral process thermostats delight with their high reserve capacities and reliability. The small internal liquid volumes enable particularly rapid temperature changes. External devices can be accurately thermostated with defined heating-up

and cooling-down speeds. The Integral automatic cooling and efficient proportional cooling control the process such that it is highly precise and saves up to 75 per cent energy.

Integral XT: Split-second temperature changes for dynamic applications

LAUDA Integral XT process thermostats enable extremely rapid temperature changes due to the small internal volume of thermally active heat transfer medium. The devices operate by the highly efficient continuous flow principle with a broad working temperature range from -90 up to 300 °C.

Applications for LAUDA Integral XT process thermostats

The LAUDA Integral XT process thermostats are used everywhere where rapid temperature changes and high cooling and heating rates are required. Typical fields of application are temperature control in stirring vessels in the chemicals industry or in glass, enamelled or stainless steel reactors in pharmacy and biotechnology. Other applications are temperature tests on test benches or material stress tests in which components made of different materials are exposed to extreme temperatures within short times.

Convenient operation in a closed circuit

The thermally active heat transfer medium in the Integral XT does not get in direct contact with the ambient air. To achieve volume compensation in case of temperature changes, a non-thermostated expansion vessel is used. This operating principle offers numerous advantages to users. At low temperatures, condensation of air humidity is minimised, while smell nuisances are minimised at high temperatures. The long service life of the heat transfer liquid is ensured by the low rate of evaporation and oxidation. The system can be operated across the entire temperature range from -90 up to 200 °C without changing the media.

Working above the fire point of the heat transfer liquid is permissible if this is sufficiently high above the temperature in the expansion vessel (at least 25K according to DIN EN 61010-1). All these factors simplify the thermostating process and result in significantly lower operating costs.

High-pressure pump Integral XT

If increased pressures are required, a high-pressure pump is available for the LAUDA Integral XT process thermostats XT 150 to XT 950 W. The pump is connected between the pump outlet and the inlet of the external system with hoses and doubles the pressure from 2.9 to 5.8 bar.



Space-saving connection of the external system to Integral XT



Rapid material stress tests for materials at extreme temperatures



Reliable temperature control of glass reactors in the chemicals and pharmaceutical industries

With their high heating, cooling and pump capacities, LAUDA Integral XT process thermostats create a new thermostating dimension in process engineering. The basic principle comprises

a circulation thermostat with a very small internal volume and non-perfused expansion vessel.



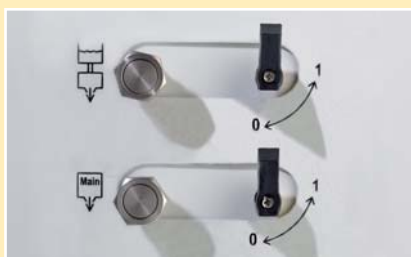
Ideal for glass apparatus



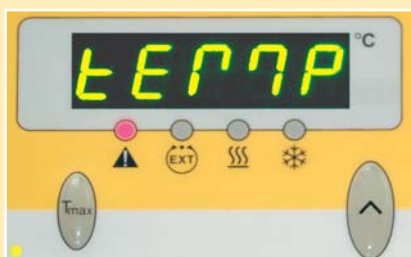
The pressure booster pump is connected with hoses to the process thermostat and doubles the pressure



Easy filling from the top



Practical drain taps



Alarm indication in the event of a malfunction overtemperature

The powerful Vario pump - always the right choice

The flow rate of the magnetically coupled Vario pump can be adjusted in 8 stages on the command console to guarantee optimum flow rate for all connected consumers. Alternatively, for pressure-sensitive systems such as glass apparatus, the Vario pump can be set to a defined flow pressure, which must not be exceeded. Side-mounted pump connections make it easy to rapidly connect external systems. Large connection dimensions enable large line cross sections, thereby minimising pressure losses and facilitating high flow rates for rapid heat transfer. If increased pressures are required, a high-pressure pump is available for the LAUDA Integral XT process thermostats XT 150 to XT 950 W. The pump is connected between the pump outlet and the inlet of the external system with hoses and doubles the pressure from 2.9 to 5.8 bar.

Easy to use

The process thermostats are filled via a recessed filler nozzle on the top of the devices. The smaller LAUDA Integral XT devices have handles on the sides and the front, as well as castors underneath the device at the back to facilitate lifting and moving. A central draining tap on the front makes it easy to change the bath liquid whenever required. The floor-mounted Integral XT devices in the medium and larger sizes have four castors underneath, making it easy to move them near to an external system. Multiple side-mounted draining valves enable rapid and complete draining of the thermostating liquid from the entire system.

Safety as the utmost priority

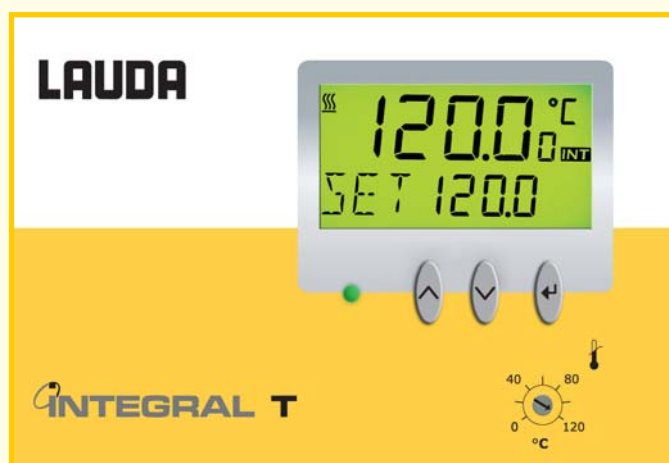
Numerous additional functions ensure a safe thermostating process. The SelfCheck Assistant automatically detects faults and indicates these on the display. In addition to key basic functions such as protection against overtemperature, pump overload, low levels and excess levels, the process thermostats have a flow control system. This is important for preventing freezing or overheating of the thermostating system.

The LAUDA Integral T is the trademark which stands for extremely efficient process thermostats in a compact design. As generalists for fast, precise thermostating in the external circuit, they

easily master the most demanding tasks. The most popular fields of applications are process engineering, production and research.

LAUDA Integral control unit T: efficient program control for process engineering

The control unit T is built into the front side of the Integral, and is coordinated specifically to match process engineering processes with external control. The programmer has numerous practical special functions, such as temperature ramps, jumps and holds. The user-friendly keypad and a large display offer all-round comfort.

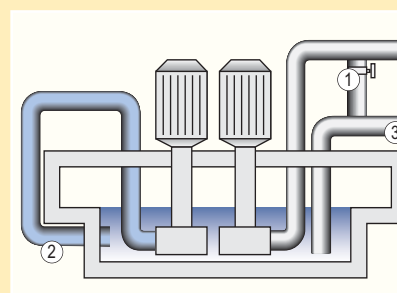


The T control unit can simply be flipped open. The following interfaces are then accessible from below: connector for stand-by contact input, malfunction (alarm) contact output, analog inputs and outputs, external Pt 100 and serial RS 232/RS 485 interface.

From the T 4600 units onwards, the Integral T is equipped with an additional pump allowing for more powerful circulation in the internal circuit. An adjustable bypass valve between the supply pipe and the bath of the external circuit allows for pressure reduction (e.g. in order to protect pressure-sensitive appliances)

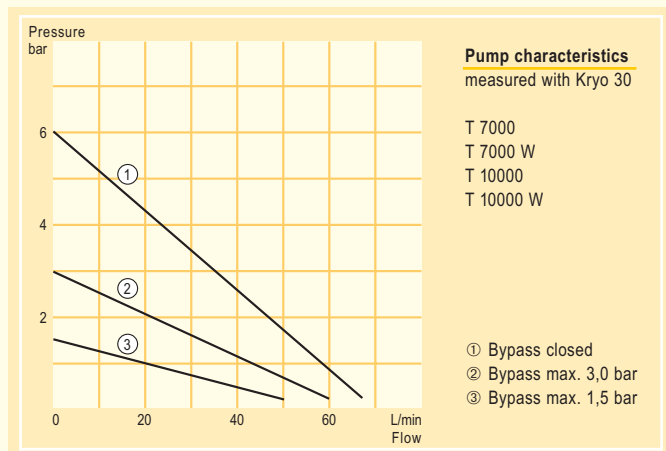
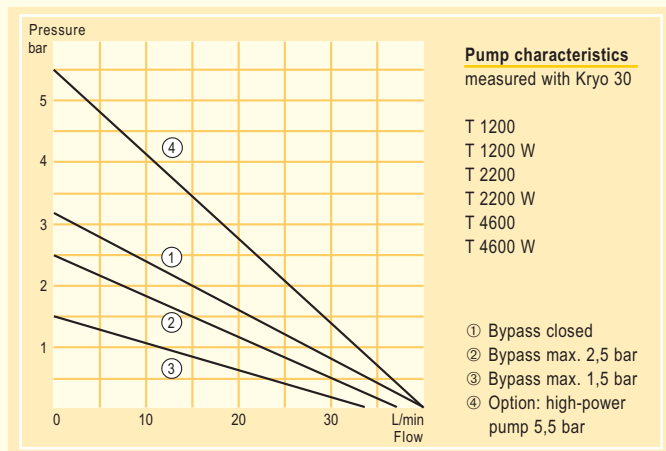
- ❖ Programmer with max. 150 temperature/time segments, divided into 5 programs, with loop, change and pause function
- ❖ Parallel display of 2 temperature values with a resolution of 0.1 °C
- ❖ Discharge pressure display
- ❖ External control via Pt 100 temperature probe or standard signal
- ❖ User calibration and LAUDA 2-point calibration
- ❖ Analogue inputs (3) and outputs (2), e.g. for control system. Can be configured to 0...10 V or 0/4...20 mA
- ❖ Malfunction indication for low level, overtemperature, pumps and cooling compressor
- ❖ Remote "malfunction" display via neutral contact
- ❖ Stand-by switch via neutral contact
- ❖ RS 232/485 interface for PC and LAUDA Wintherm Plus control software

Control unit that simply flips open



- ① Bypass
- ② Internal circuit
- ③ External circuit

 Process thermostats from -30 up to 150 °C



Options T 1200...T 2200 W

Enlarged temperature range up to 150 °C · high-power pump 4 bar · flow control instrument · low-pressure pump 1 bar, 30 L/min

Recommended accessories T 1200...T 2200 W

Fibre strengthened rubber tubing · insulation for rubber tubing · 4-port manifold · metal tube · remote control

For further accessories please request the comprehensive LAUDA accessories brochure.

There is always the right Integral for the most varied tasks

All LAUDA Integral T process thermostats offer high temperature stability. They are also available in water-cooled version (W). The units differ according to their cooling, heating and pump capacities. The T 1200 and T 2200 process thermostats both have a 3.2 bar pump and are distinguished by having a cooling capacity of 1.2 to 2.7 kW respectively.



Process thermostat T 2200

Technical features		T 1200	T 1200 W	T 2200	T 2200 W
Working temperature range	°C	-25...120 *	-25...120 *	-25...120 *	-25...120 *
Temperature stability	±K	0.2	0.2	0.2	0.2
Heater power	kW	2.25	2.25	2.25	2.25
Cooling output at 20 °C	kW	1.2	1.6	2.2	2.7
Pump pressure max.	bar	3.2	3.2	3.2	3.2
Pump flow max.	L/min	40	40	40	40
Internal volume	L	3...7	3...7	3...7	3...7
Cat. No. 230 V; 50 Hz		LWP 101	LWP 102	LWP 103	LWP 104
Cat. No. 208...230 V; 60 Hz		LWP 801	LWP 802	LWP 803	LWP 804

* Optional from -25 up to 150 °C

Integral T process thermostats make possible rapid thermostating with powerful heating and cooling capacities combined with a small active internal volume. This minimises thermal

ballast and exothermic reactions are effectively controlled. Its compact construction is space-saving and makes the Integral T mobile.

Two pumps for more capacity

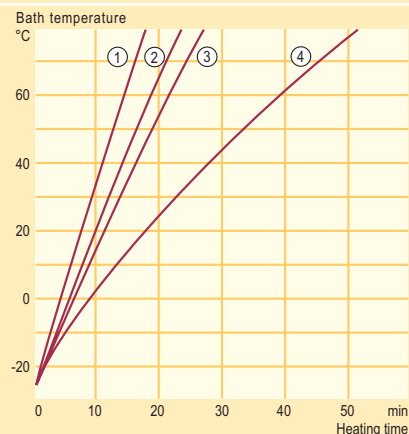
The more powerful T 4600 to T 10000 W Integral process thermostats have a second pump for circulation in addition to the powerful circulating pump via an internal plate-type heat exchanger and thus provides efficient and space-saving cooling. This provides a refrigeration capacity of 4.6 to 13 kW at 20 °C with the smallest internal bath volume. For these units we recommend the use of water/glycole mixtures as bath liquid for temperatures up to 90 °C.



Process thermostat T 7000

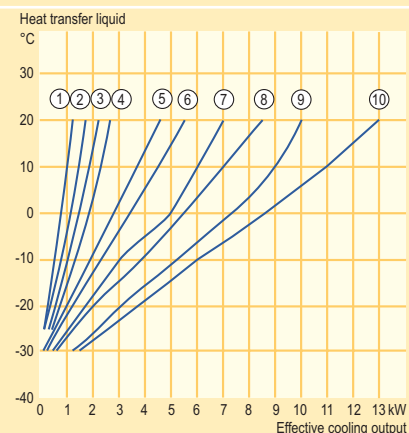
Heating curves (only 230 V version) Bath liquid: Kryo 30 External volume: 10 L

- ① T 10000 · T 10000 W
- ② T 4600 · T 4600 W
- ③ T 7000 · T 7000 W
- ④ T 1200 · T 1200 W
 T 2200 · T 2200 W



Cooling output

- ① T 10000 W
- ② T 10000
- ③ T 7000 W
- ④ T 7000
- ⑤ T 4600 W
- ⑥ T 4600
- ⑦ T 2200 W
- ⑧ T 2200
- ⑨ T 1200 W
- ⑩ T 1200



Options T 4600...T 10000 W

Enlarged temperature range up to 150 °C ·
 flow control instrument · high-power pump
 5.5 bar (only T 4600, T 4600 W)


Recommended accessories T 4600...T 10000 W

Fibre strengthened rubber tubing · insulation
 for rubber tubing · 4-port manifold · metal
 tube

For further accessories please request
 the comprehensive LAUDA accessories brochure.

Technical features		T 4600	T 4600 W	T 7000	T 7000 W	T 10000	T 10000 W
Working temperature range	°C	-30...120 *	-30...120 *	-30...120 *	-30...120 *	-30...120 *	-30...120 *
Temperature stability	±K	0.2	0.2	0.3	0.3	0.3	0.3
Heater power	kW	6.0	6.0	6.0	6.0	9.0	9.0
Cooling output at 20 °C	kW	4.6	5.5	7.0	8.5	10.0	13.0
Pump pressure max.	bar	3.2	3.2	6.0	6.0	6.0	6.0
Pump flow max.	L/min	40	40	60	60	60	60
Internal volume	L	6...18	6...18	8...20	8...20	8...20	8...20
Cat. No. 400 V; 3~/N/PE; 50 Hz		LWP 205	LWP 206	LWP 207	LWP 208	LWP 209	LWP 210
Cat. No. 440...480 V; 3~/PE; 60 Hz		-	-	LWP 607	LWP 608	LWP 609	LWP 610
Cat. No. 208 V; 3~/PE; 60 Hz		LWP 305	LWP 306	-	-	-	-

* Optional from -30 up to 150 °C

 Professional thermostating for pilot-plant and mini-plant purposes

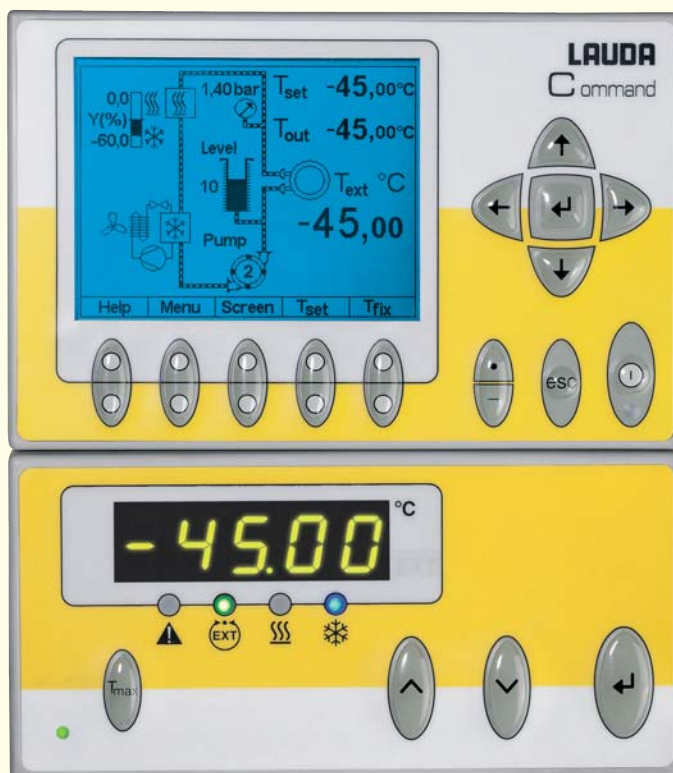
LAUDA Integral Control unit XT: Easy operation via the detachable Command console

The Integral XT process thermostats are operated via the Command console which is also used in the LAUDA Proline range. The console is easily removable and can be used as a remote control. The easy menu-driven operation makes operation intuitive and simplifies fast changes of the settings. An

additional extension cable on the Command console enables operation of the device and process surveillance from a distance of up to 50 metres. An opto-decoupled RS 232/485 interface is integrated in the Command console as standard for connection to a PC.

Performance profile of the Integral XT:

- ❖ High-resolution, back-lit graphic LCD display for depicting the entire thermostating system, and with individually-adjustable surface
- ❖ Real-time clock combined with timer function
- ❖ Editable programmer for up to 150 segments in five programs
- ❖ Nine pre-defined sets of parameters can be selected for the control
- ❖ Function lights for heating, cooling and external control
- ❖ Error reports by means of bright LED lights, acoustic alarm and clear text message
- ❖ Vario pump with eight steps and adjustable limit of the pump pressure
- ❖ Integrated external control with cascade connection
- ❖ Supply temperature limit for the gentle heating of the external system
- ❖ Integrated opto-decoupled RS 232/485 interface as standard
- ❖ Graphic display of the temperature variation. The display is freely scalable.
- ❖ Menu-driven operation in German, English, French or Spanish



The LAUDA Integral XT process thermostats are equipped with the Command console as standard. Thanks to the intuitive menu-driven operation, the device settings are particularly easy

to use. Due to the large graphics, all the information essential to the thermostating process is available to the user at a glance.

The entire process at a glance

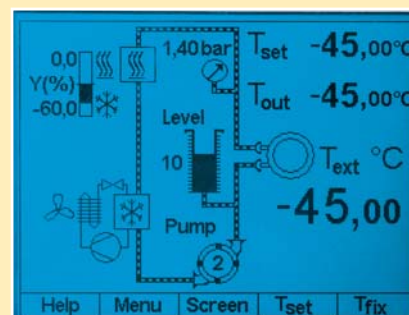
The schematic process diagram on the high-resolution graphic display of the Command console displays all the device parameters required for the thermostating process at a glance. The user can also choose to define different views in order to obtain a clearer overview of the key information required in each case.

Liquid changeover made easy

Users are provided with plenty of guidance to ensure that the Integral XT is put into operation rapidly and safely. The automatic filling program simplifies the process of filling the system with thermostating liquid. The automatic degassing program conditions the thermostating liquid and ensures reliable removal of highly-volatile compounds from the thermostating system during operation. When changing the external system or the thermostating liquid, the emptying program helps the user to drain all the bath liquid out of the system.

Flexible interface design

A wide variety of optional interfaces are available to facilitate incorporation of the Integral XT in a central process control system. A sensor connection for an external Pt 100 and an RS 232/485 interface are included as standard. In addition, the following modules can be installed by means of Plug and Play or alternatively retrofitted at a later date. Please refer to page 37 for a detailed description of the modular interface concept.



The most important parameters are visualised in various forms.



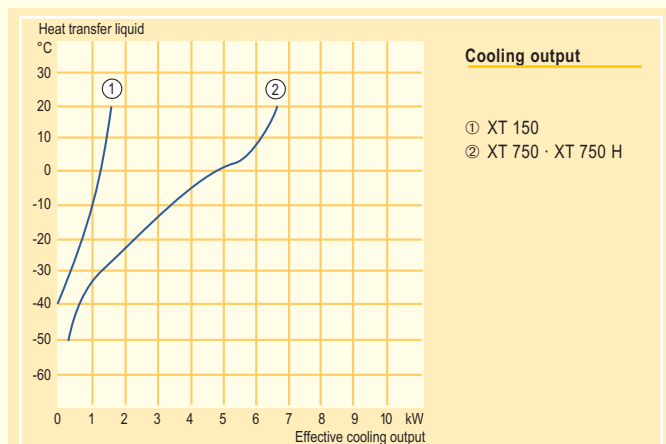
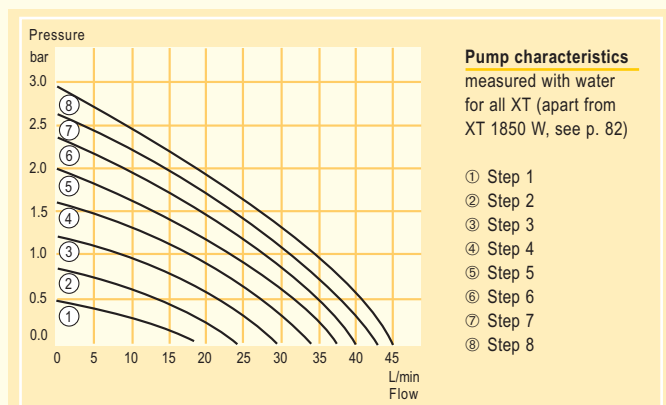
An interface concept with replaceable interface modules enables flexible operation.



- Interface modules
- ❖ RS 232/485 interface
 - ❖ Analogue module
 - ❖ Contact module SUB-D socket
 - ❖ Contact module NAMUR
 - ❖ Profibus module

 Process thermostats from -90 up to 300 °C

Air-cooled Integral XT for a broad temperature range



All Integral XT with:
Command console with RS 232/485 interface

With their compact design, air-cooled process thermostats offer high performance in a small space while still providing functionality over a wide temperature range. Using the LAUDA Kryo 55 bath liquid, temperatures from -50 to 200 °C can be utilised without changing the bath liquid. The special high-temperature version enables process temperatures of up to 300 °C. This makes it ideal for reactor thermostating in chemical or pharmaceutical processes. The large expansion vessel in the LAUDA Integral XT absorbs temperature-induced changes in volume, thereby ensuring smooth operation even in large connected external systems.



Integral XT 750



Technical features		XT 150	XT 750	XT 750 H
Operating temperature range	°C	-45...200	-50...200	-50...300
Temperature stability at -10 °C,	±K	0.05	0.05	0.05
Heating capacity max.	kW	3.5	5.2	5.2
Cooling capacity at 20 °C	kW	1.5	6.7	6.7
Pump pressure max.	bar	2.9	2.9	2.9
Flow max.	L/min	45	45	45
Filling volume min.	L	2.6	5.0	5.3
Filling volume of expansion vessel	L	5.5	6.7	6.7
Cat. No. 400 V; 3~/PE; 50 Hz		LWP 112 (230 V; 50 Hz)	LWP 520	LWP 522
Cat. No. 208-220 V; 3~/PE; 60 Hz		LWP 812 (220 V; 60 Hz)	LWP 720	LWP 722

The LAUDA Integral XT process thermostats are ideally designed for the requirements of rapid and precise temperature control of an external consumer in trial plant and mini-plant. Dynamic

processes or other difficult thermostating tasks are safely mastered thanks to the use of high-performance technology.

Water-cooled Integral XT for maximum performance

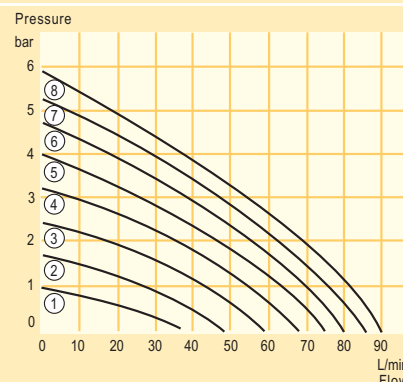
Independent of variations in ambient temperature, water-cooled process thermostats achieve consistently high cooling performance. The temperature of the ambient air remains virtually unchanged thanks to the dissipation of the process heat through the cooling water. This is a particular advantage in setups similar to production as in trial plants or in the Miniplant, where work is conducted under the most constrained conditions. Water-cooled Integral XT systems are also the perfect choice for air-conditioned spaces, since they do not overstretch or place an unnecessary burden on air-conditioning systems.



Integral XT 350 HW

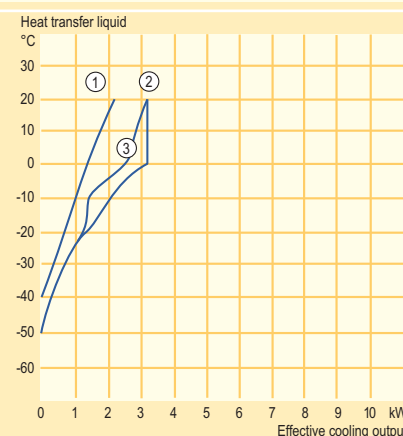
Pump characteristics
 measured with water
 for all XT (apart from
 XT 1850 W, see p. 82)

- ① Step 1
- ② Step 2
- ③ Step 3
- ④ Step 4
- ⑤ Step 5
- ⑥ Step 6
- ⑦ Step 7
- ⑧ Step 8



Cooling output

- ① XT 250 W
- ② XT 350 W
- ③ XT 350 HW



All Integral XT with:


Command console with RS 232/485 interface



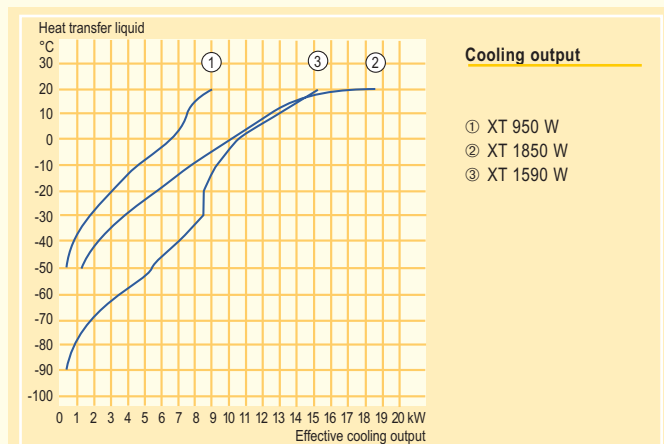
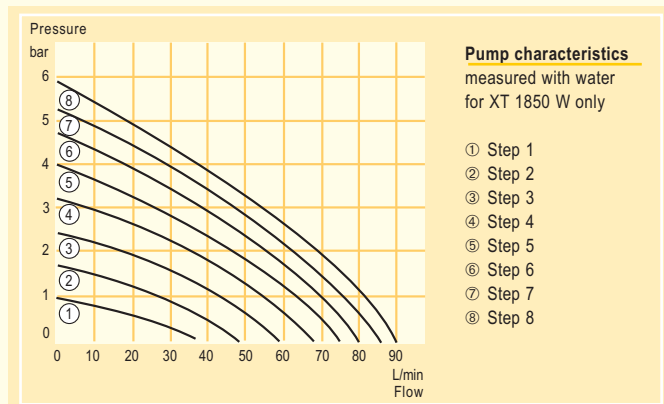
NEW



Technical features	XT 250 W	XT 350 W	XT 350 HW	
Operating temperature range	°C	-45...200	-50...200	-50...300
Temperature stability at -10 °C,	±K	0.05	0.1	0.1
Heating capacity max.	kW	3.5	2.65	3.5
Cooling capacity at 20 °C	kW	2.1	3.1	3.1
Pump pressure max.	bar	2.9	2.9	2.9
Flow max.	L/min	45	45	45
Filling volume min.	L	2.6	5.0	5.3
Filling volume of expansion vessel	L	5.5	6.7	6.7
Cat. No. 400 V; 3~/PE; 50 Hz	LWP 113 (230 V; 50 Hz)	LWP 117 (230 V; 50 Hz)	LWP 119 (230 V; 50 Hz)	
Cat. No. 208-220 V; 3~/PE; 60 Hz	LWP 813 (220 V; 60 Hz)	LWP 817 (220 V; 60 Hz)	LWP 819 (220 V; 60 Hz)	

 Process thermostat for thermostating from -90 up to 200 °C

Water-cooled Integral XT up to -90 °C



The new LAUDA Integral XT 1590 W is the first process thermostat up to -90 °C. It features outstanding cooling capacity even at low temperatures. Driven by a two-stage compressor system the new unit fits perfectly to applications wherever ultra-deep temperatures down to -90 °C and rapid temperature changes are required. The water-cooled unit reaches up to 15 kW cooling capacity whilst the maximum heater power is 5.3 kW.

NEW



Integral XT 1590 W

All Integral XT with:
Command console with RS 232/485 interface



Technical features		XT 950 W	XT 1850 W	XT 1590 W
Operating temperature range	°C	-50...200	-50...200	-90...200
Temperature stability at -10 °C,	±K	0.1	0.3	0.3
Heating capacity max.	kW	5.2	10.4	5.3
Cooling capacity at 20 °C	kW	9.0	18.5	15.0
Pump pressure max.	bar	2.9	5.8	2.9
Flow max.	L/min	45	90	45
Filling volume min.	L	5.0	9.0	10.5
Filling volume of expansion vessel	L	6.7	17.4	17.5
Cat. No. 400 V; 3~/PE; 50 Hz		LWP 521	LWP 532	LWP 542
Cat. No. 208-220 V; 3~/PE; 60 Hz		LWP 721	LWP 732	LWP 742

This page offers you a selection of important accessories for the LAUDA Integral T. On the next page you can find accessories for the LAUDA Integral XT. Please see the LAUDA accessories brochure for further accessories.

Cat.-No.:	Designation	Temp. Range °C
RKJ 031	Polymere tube 1/2", fibre strengthened	-40...80
RKJ 103	Polymere tube 1/2", with textile insert	-40...120
RKJ 032	Polymere tube 3/4", fibre strengthened	-40...80
RKJ 104	Polymere tube 3/4", with textile insert	-40...120
RKJ 033	Polymere tube 1", fibre strengthened	-40...80
RKJ 105	Polymere tube 1", with textile insert	-40...120

Cat.-No.:	suitable for
RKJ 009	RKJ 031, RKJ 103
RKJ 013	RKJ 032, RKJ 104
RKJ 017	RKJ 033, RKJ 105

for T 1200...T 4600 W	Length/	d _i	d _e	Temp.
Cat.-No.:	Designation	cm	Thread	Range °C
LZM 075	MTK 100	100	G 3/4	20 47 -60...200
LZM 076	MTK 200	200	G 3/4	20 47 -60...200

for T 7000...T 10000 W	Length/	d _i	d _e	Temp.
Cat.-No.:	Designation	cm	Thread	Range °C
LZM 078	MTK 101	100	G 1 1/4	25 50 -60...200
LZM 079	MTK 201	200	G 1 1/4	25 50 -60...200

d_i = internal diameter; d_e = external diameter

Cat.-No.:	Designation	Connection	Male thread	Maximal Temp.
LWZ 010	Four-port manifold	G 3/4"	4 x 3/4"	120 °C
LWZ 022	Four-port manifold	G 3/4"	4 x 1/2"	120 °C
LWZ 039	Four-port manifold	G 3/4"	4 x 10 mm	120 °C
LWZ 024	Four-port manifold	G 1 1/4"	4 x 3/4"	120 °C



Polymere tubings
reinforced

Special Polymere tubings for high pressure, to be used with circulation chillers Integral T



Insulation tubing
for adding insulation



Metal hoses



Manifold connectors
not suitable for silicone oil

Manifold connectors for joining multiple external systems to a LAUDA Integral T

Options	Cat.-No.:	T 1200	T 1200 W*	T 2200	T 2200 W*	T 4600	T 4600 W*	T 7000	T 7000 W*	T 10000	T 10000 W*
Enlarged temperature range up to 150 °C	LWZ 029	●	●	●	●	●	●	●	●	●	●
Flow control instrument	LWZ 035	●	●	●	●	●	●	-	-	-	-
	LWZ 036	-	-	-	-	-	-	●	●	●	●
Low-pressure pump 1 bar, 30 L/min (see pump characteristics at the top of page 86)	LWZ 041	●	●	●	●	-	-	-	-	-	-
High-power pump 5.5 bar, 40 L/min (see pump characteristics at the top of page 72)	LWZ 031	●	●	●	●	-	-	-	-	-	-
	LWZ 032	-	-	-	-	●	●	-	-	-	-

* W = water-cooled version

| Request your free copy of the comprehensive LAUDA accessories brochure. |

This page offers you a selection of important accessories for the **LAUDA Integral XT**. Please see the LAUDA accessories brochure for further accessories.

Heat transfer liquids



Cat. No.:	Designation	Composition	Temp. Range °C	Packing drum
LZB 109	Kryo 30	Water/antifreeze	-20...90	5 litre
LZB 209	Kryo 30	Water/antifreeze	-20...90	10 litre
LZB 309	Kryo 30	Water/antifreeze	-20...90	20 litre
LZB 124	Kryo 55	Silicone oil	-50...200	5 litre
LZB 224	Kryo 55	Silicone oil	-50...200	10 litre
LZB 324	Kryo 55	Silicone oil	-50...200	20 litre
LZB 107	Ultra 350	Mineral oil	30...350	5 litre
LZB 207	Ultra 350	Mineral oil	30...350	10 litre
LZB 307	Ultra 350	Mineral oil	30...350	20 litre

Metal and polymer hoses (EPDM)



LZM 081

RKJ 032

Cat. No.:	Designation	Length/cm	Temp. Range °C
LZM 081	MXC 100S	100	-50...300
LZM 082	MXC 200S	200	-50...300
LZM 083	MXC 300S	300	-50...300

With special insulation, can be used for hot and cold area, for all heat transfer liquids.

Slot-in and interface modules



Cat. No.	Designation	Description
LRZ 913	RS 232/485 interface	electrically isolated, 9-pin SUB-D
LRZ 912	Analog module	2 x In, 2 x Out, 0(4)...20 mA or 0...10 V
LRZ 915	Contact module SUB-D	3 x In, 3 x Out, 15-pin SUB-D
LRZ 914	Contact module NAMUR	1 x In, 1 x Out, NE 28, 2 DIN sockets
LRZ 917	Profibus interface	electrically isolated, 9-pin SUB-D

Adapters (for cooling water) and connectors



EOV 206

HKA 152

UD 660



HKA 160

HKA 164

HKA 163

Cat. No.	Designation	Description (I = inner thread, O = outer thread)
HKA 152	Reducer	M30 x 1,5 O on M16 x 1 I
UD 660	Reducer	M30 x 1,5 I on M16 x 1 O
HKA 164	Reducer	M38 x 1,5 O on M30 x 1,5 I
EOV 206	Screw-in stud	M30 x 1,5 O on G 1" O
HKA 160	Adapter	M30 x 1,5 O on spherical line RD = 28
HKA 163	Flange adapter	M38 x 1,5 O on DIN 2633/DN40

Miscellaneous



LWZ 046

LWZ 073

Cat. No.	Designation	Description
LWZ 046	Bypass	Redirects a settable partial flow back to XT. Recommended use for connecting consumers with high hydraulic resistance.
LWZ 073	Ball valve	M30 x 1,5 I on M30 x 1,5 O Temperature range: -30 to 180°C

| Request your free copy of the comprehensive LAUDA accessories brochure. |