

LAUDA Integral

Process thermostats for professional external thermostating across a wide temperature range from -90 up to 320 °C



Application examples

- Process technology
- Process engineering
- Production
- Research
- Thermostating of stirrer tanks
- Temperature control of reactors in chemistry, pharmacy or biotechnology
- Thermal tests on test stands
- Use in material tests

Extremely flexible and rapid temperature change

Integral T and XT process thermostats are particularly suited for external temperature control of reactors, mini plants and calorimeters. They provide broad temperature ranges and rapid temperature changes. The temperature of external applications can be controlled precisely with defined heating and cooling speeds. With

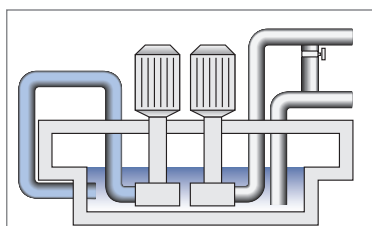
the Integral T, internal circulation allows temperature control independently of external current resistances. The Integral XT units work on the basis of the flow principle with a cold-oil blanket. As a result, significantly greater temperature ranges and quicker temperature changes are possible.

Your advantages at a glance



The Integral T advantages

Your benefits



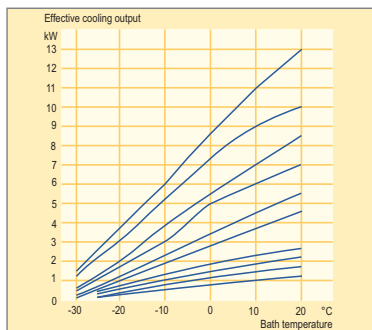
- Small active internal volume
- Bypass valve between inlet and outlet as a standard feature

- Rapid temperature change and effective control of exothermic reactions
- Pressure reducer to protect pressure-sensitive applications and glass



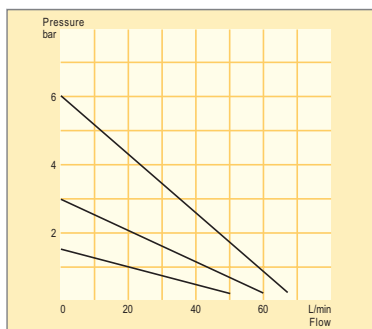
- Pivoting control unit with clear keypad and large display

- Easily accessible yet splash-water protected interfaces
- Easy and intuitive to operate



- Specific equipment range with heating outputs up to 9 kW and cooling outputs up to 13 kW
- Limited target temperature range from -30 to 150 °C

- Application-specific temperature control with high heating and cooling speeds
- Economical temperature control by limitation to essential functions



- Strong submersible pump, large expansion volume with overflow connection
- Additional pump as a standard feature with T 4600 units and larger
- Enhanced pump and low-pressure pump available as options

- Suitable for large external circuits
- Full cooling capacity independent from external flow
- May be adapted to various applications



- Compact design, all devices fitted with castors
- Remote control options available with use of accessory

- Saves valuable laboratory space
- Flexible positioning
- Mounting and sub-assembly option

LAUDA Integral T

Integral T Process thermostats up to 2.7 kW

Integral T process thermostats make rapid thermostating with powerful heating and cooling outputs combined with a small active internal volume possible. This minimises thermal drift and exothermic reactions are effectively controlled. Its compact construction is space-saving and the castor set makes the Integral T mobile.

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

From the T 4600 units and larger, 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 applications).

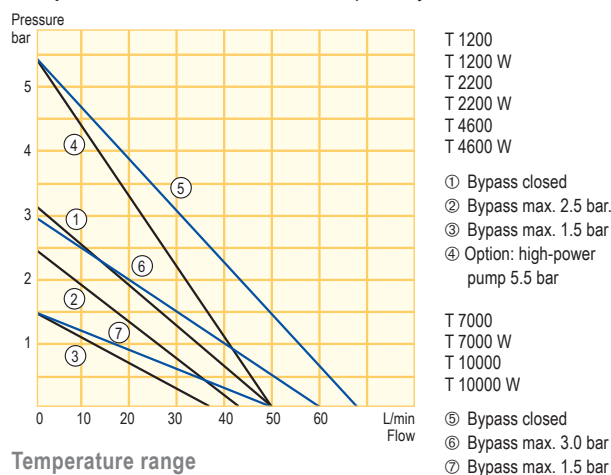


Process thermostat T 2200



- Programmer with max. 150 temperature/time segments, for up to 5 programs
- Parallel display of 2 temperature values and discharge pressure
- External control via Pt100 temperature probe or standard signal
- Analogue inputs (3) and outputs (2), can be configured to 0...10 V or 0/4...20 mA
- Error message for low level, overtemperature, pumps and cooling compressor
- Remote "malfunction" display and stand-by switch via neutral contact
- RS 232/485 interface for PC and LAUDA Wintherm Plus control software

Pump characteristics Heat transfer liquid: Kryo 30



Temperature range

-25...120 °C (optional up to 150 °C)

Options T 1200...T 2200 W

Extended temperature range up to 150 °C · flow control instrument · low-pressure pump 1 bar, 30 L/min*** · high-power pump 5.5 bar***

Additional accessories T 1200...T 2200 W

Fiber-reinforced rubber tubing · insulation for rubber tubing · metal hose · 4-port manifold · remote control



All technical data on page 98 and following
Other power supply variants on page 105

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

* Working temperature range is equal to ACC range

** Available from -25 up to 150 °C upon request

*** Using such a pump changes the available cooling capacity

Integral T Process thermostats up to 13 kW

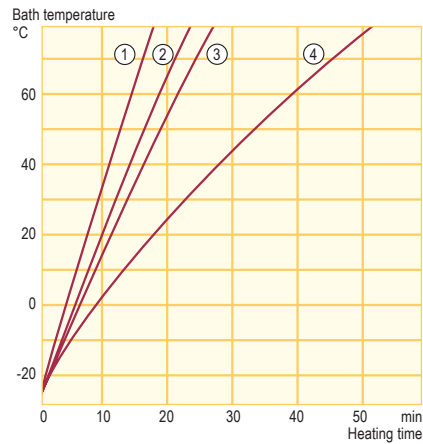
The more powerful T 4600 to T 10000 W Integral process thermostats have a second pump for circulation in addition to the powerful circulating pump via an internal plate-type heat exchanger and therefore provide efficient and space-saving cooling. This enables a cooling output of 4.6 to 13 kW at 20 °C with the smallest internal bath volume.



Process thermostat T 7000

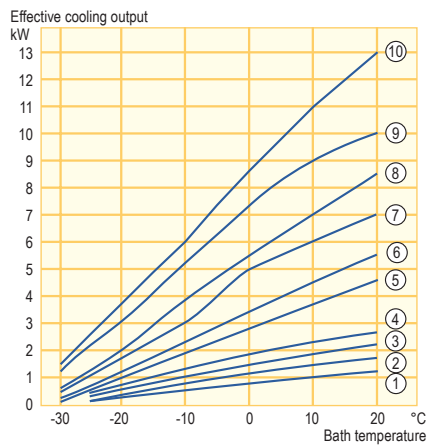


Heating curves Heat transfer liquid: Kryo 30 External volume: 10 L



- 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 Heat transfer liquid: Ethanol



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

Temperature range

-30...120 °C (optional up to 150 °C)

Options T 4600...T 10000 W:

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

Additional accessories T 4600...T 10000 W:

Fiber-reinforced rubber tubing · insulation for rubber tubing · metal hose · 4-port manifold · remote control



All technical data on page 98 and following
Other power supply variants on page 105

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

* Working temperature range is equal to ACC range

** Available from -30 up to 150 °C upon request

*** Using such a pump changes the available cooling capacity

LAUDA Integral XT

Extremely broad temperature range and rapid temperature changes:
LAUDA Integral XT



Application examples

- Temperature control of stirrer tanks
- Temperature control of reactors in chemistry, pharmacy or biotechnology
- Thermal tests on test stands
- Use in material tests

LAUDA Integral XT process thermostats allow extremely rapid temperature changes, resulting from the small, internal, thermally active heat transfer medium. The instruments work according to the highly

efficient flow principle with a broad working temperature range. The process thermostats are used where rapid temperature changes or high refrigeration and heating performance are required.

Your advantages at a glance

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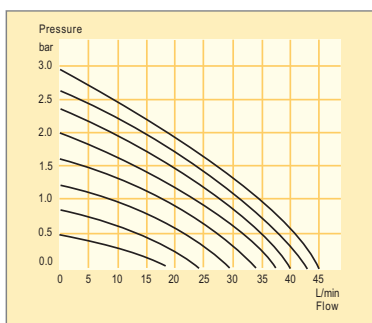
The Integral XT advantages

Your benefits



- Removable Command remote control with graphic LCD
- Automatic adjustment of the control parameters via integrated software for adaptive control
- Also available as explosion-proof version

- Easy and intuitive operation, quick setting changes
- Saves time-consuming calculation of control parameters
- Operation in ex-zones



- Eight-level Vario pump adjustment
- Infinitely variable control of pump pressure
- Magnetically coupled pump

- Application-specific adaptation of flow and pressure to the application
- Pressure reduction to protect pressure-sensitive applications
- No sealing problems at the pump shaft across the entire temperature range



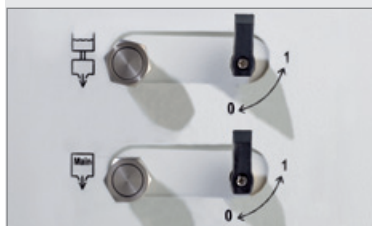
- Two slots for interface modules available
- RS 232/485 interface included

- High flexibility for the user for the broadest range of system integrations



- Recessed filling inlet on the top of the equipment
- Practical drain taps on the sides of the equipment

- Simple filling with heat transfer liquid from the top of the unit
- Quick and complete drainage of the heat transfer liquid from the system



- Software-based/controlled filling and draining
- Automatic degassing after filling process

- Professional and safe start-up
- Temperature control of external application without gas introduction



- SelfCheck assistant shows equipment status clearly on the display

- High level of operating safety and constant monitoring of all equipment functions

LAUDA Integral XT

Integral XT Air-cooled process thermostats down to -80 °C

The LAUDA Integral XT process thermostats are ideally designed for the requirements of rapid and precise temperature control of an external application in process plant and pilot plant environments. The air-cooled process thermostats offer high performance in a small footprint while still providing functionality across a wide temperature range. The special high-temperature version enables process temperatures up to 300 °C. The models XT 750 S and XT 750 HS are available with increased heater power. 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.

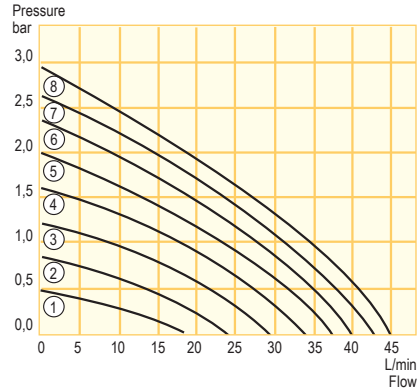


Integral XT 750

All types

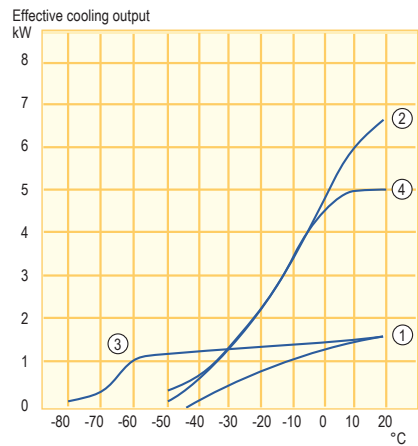


Pump characteristics for all XT except for XT 1850 W, XT 1850 WS Heat transfer liquid: Water



- 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 Heat transfer liquid: Ethanol



- ① XT 150
- ② XT 750 · XT 750 H
- ③ XT 280
- ④ XT 550

Temperature range
-80...300 °C

Included accessories

Command remote control with RS 232/485 interface



All technical data on page 98 and following
Other power supply variants on page 105



660 mm



1285 mm



1285 mm



1285 mm



1285 mm

Technical features		XT 150	XT 280	XT 550	XT 750 (XT 750 S)	XT 750 H (XT 750 HS)
Working temperature range*	°C	-45...220	-80...220	-50...220	-50...220	-50...300
Temperature stability at -10 °C	±K	0.05	0.1	0.05	0.05	0.05
Heater power	kW	3.5	4.0	5.3	5.3 (8.0)	5.3 (8.0)
Cooling output at 20 °C	kW	1.5	1.5	5.0	6.7	6.7
Pump pressure max.	bar	2.9	2.9	2.9	2.9	2.9
Pump flow max.	L/min	45	45	45	45	45
Filling volume min.	L	2.6	5.0	5.0	5.0	5.3
Filling volume of expansion vessel	L	5.5	6.7	6.7	6.7	6.7
Cat. No. 400 V; 3/PE; 50 Hz		LWP 112**	LWP 534	LWP 524	LWP 520 (LWP 552)	LWP 522 (LWP 553)

* Working temperature range is equal to ACC range ** 230 V; 50 Hz

Integral XT

Water-cooled process thermostats down to -50 °C

Independent of variations in ambient temperature, Integral XT water-cooled process thermostats achieve constantly high cooling performance. The temperature of the ambient air remains virtually unchanged due to the dissipation of the process heat through the cooling water. This is a particular advantage in setups similar to production as in process plants or in the mini-plant, where work is conducted under the most strained conditions. Water-cooled Integral XT systems are also the perfect choice for air-conditioned spaces, since they do not tax or place an unnecessary burden on air-conditioning systems. The XT 950 WS provides an increased heater power.



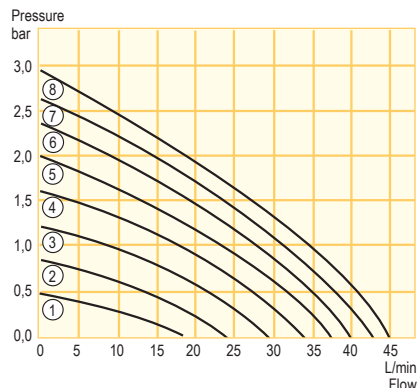
Integral XT 350 HW

All types



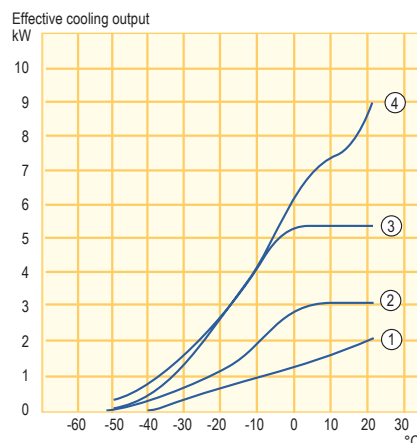
Pump characteristics for all XT except for XT 1850 W, XT 1850 WS

Heat transfer liquid: Water



- 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 Heat transfer liquid: Ethanol



- ① XT 250 W
- ② XT 350 W
- ③ XT 350 HW
- ④ XT 550 W
- ⑤ XT 950 W
- ⑥ XT 950 WS

Temperature range

-50...300 °C

Included accessories

Command remote control with RS 232/485 interface



All technical data on page 98 and following
Other power supply variants on page 105



Technical features		XT 250 W	XT 350 W	XT 350 HW	XT 550 W	XT 950 W (XT 950 WS)
Working temperature range*	°C	-45...220	-50...220	-50...300	-50...220	-50...220
Temperature stability at -10 °C	±K	0.05	0.1	0.1	0.1	0.1
Heater power	kW	3.5	3.5	3.5	5.3	5.3 (8.0)
Cooling output at 20 °C	kW	2.1	3.1	3.1	5.4	9.0
Pump pressure max.	bar	2.9	2.9	2.9	2.9	2.9
Pump flow max.	L/min	45	45	45	45	45
Filling volume min.	L	2.6	5.0	5.3	5.0	5.0
Filling volume of expansion vessel	L	5.5	6.7	6.7	6.7	6.7
Cat. No. 230 V; 50 Hz		LWP 113	LWP 117	LWP 119	-	-
Cat. No. 400 V; 3/PE; 50 Hz		-	-	-	LWP 525	LWP 521 (LWP 554)

* Working temperature range is equal to ACC range

LAUDA Integral XT

Integral XT Water-cooled process thermostats down to -90 °C

The LAUDA Integral XT 1590 WS and XT 490 W process thermostats stand out for their high cooling outputs at very low temperatures. Thanks to the two-stage cascade system, the thermostats are particularly suited for applications in the ultra-low range down to -90 °C. The water-cooled devices achieve cooling outputs of up to 18.5 kW and maximum heating capacities of 10.6 kW. The XT 1850 WS provides an increased heater power.

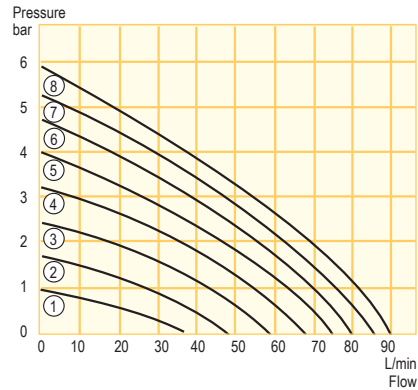


Integral XT 1590 W

All types

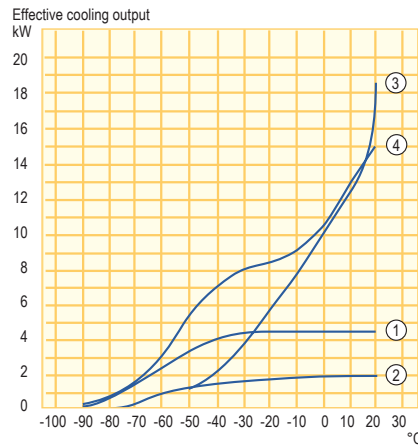


Pump characteristics for XT 1850 W, XT 1850 WS Heat transfer liquid: Water



- 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 Heat transfer liquid: Ethanol



- ① XT 490 W
- ② XT 280 W
- ③ XT 1850 W (XT 1850 WS)
- ④ XT 1590 WS

Temperature range
-90...220 °C

All Integral XT include

Command remote control with RS 232/485 interface



All technical data on page 98 and following
Other power supply variants on page 105



Technical features		XT 280 W	XT 1850 W (XT 1850 WS)	XT 490 W	XT 1590 WS
Working temperature range*	°C	-80...220	-50...220	-90...220	-90...220
Temperature stability at -10 °C	±K	0.1	0.3	0.1	0.3
Heater power	kW	4.0	10.6 (16.0)	5.3	8.0
Cooling output at 20 °C	kW	2.0	18.5	4.4	15.0
Pump pressure max.	bar	2.9**	5.8	2.9**	2.9**
Pump flow max.	L/min	45	90	45	45
Filling volume min.	L	5.0	9.0	9.5	10.5
Filling volume of expansion vessel	L	6.7	17.4	17.4	17.4
Cat. No. 400 V; 3/PE; 50 Hz		LWP 535	LWP 532 (LWP 533)	LWP 539	LWP 551

* Working temperature range is equal to ACC range

** Pump characteristics p. 61

Integral XT High-temperature thermostats up to 320 °C

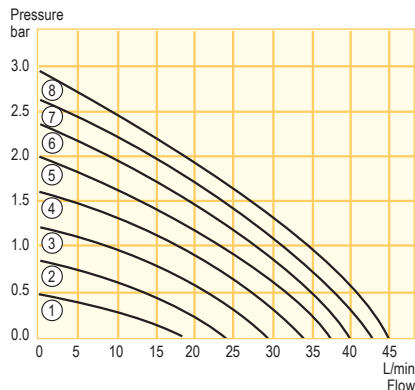
The LAUDA Integral XT high-temperature thermostats allow for a maximum working temperature of 320 °C. The process thermostats are operated using the Command remote control, which is already utilized in the other XT models. The powerful pump can be regulated at eight different levels, supplying a maximum pressure of 2.9 bar and a flow rate of up to 45 L/min. The model XT 4 H provides a heating power of 3.2 kW. The XT 8 H is equipped with an 8.0 kW heating system.



Integral XT 8 H



Pump characteristics for all XT except for XT 1850 W
Heat transfer liquid: Water



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

Temperature range

80...320 °C

Included accessories

Command remote control with RS 232/485 interface

Applications Advantages Devices Accessories



All technical data on page 98 and following
Other power supply variants on page 103

NEW



660 mm

NEW



660 mm

Technical features		XT 4 H	XT 8 H
Working temperature range	°C	80...320	80...320
Temperature stability at 150 °C with oil	±K	0.05	0.05
Heater power max.	kW	3.2	8.0
Pump pressure max.	bar	2.9	2.9
Pump flow max.	L/min	45	45
Filling volume min.	L	2.6	2.6
Filling volume of expansion vessel	L	5.5	5.5
Pump connection thread	mm	M30 x 1.5 (DN 20)	M30 x 1.5 (DN 20)
Dimensions (WxDxH)	mm	335x550x660	335x550x660
Cat. No. 230 V; 50 Hz		LWP 147	LWP 549 (400 V; 3/PE; 50 Hz)

LAUDA Integral XT

Integral XT High-temperature thermostats with water counter-cooling up to 320 °C

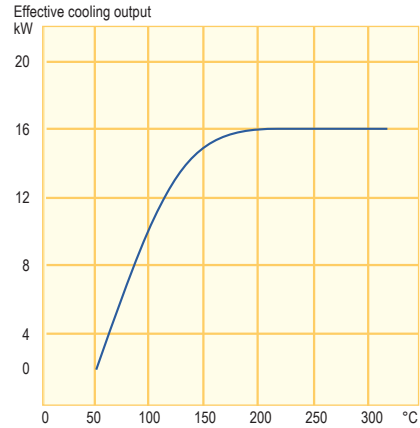
With the XT 4 HW and the XT 8 HW models, water-generated counter-cooling allows for quick cool-down across the entire temperature range from 30 up to 320 °C. Especially at higher temperatures, the water counter-cooling is very efficient and cost effective.



Integral XT 4 HW



Cooling output of the water counter-cooling Cooling liquid: water



XT 4 HW
XT 8 HW

Temperature range
30...320 °C

Included accessories
Command remote control with RS 232/485 interface



All technical data on page 98 and following
Other power supply variants on page 103

NEW



NEW



Technical features		XT 4 HW	XT 8 HW
Working temperature range	°C	30...320	30...320
Temperature stability at 150 °C with oil	±K	0.1	0.1
Heater power max.	kW	3.2	8.0
Cooling output (water counter-cooling) at 15 °C cooling water temperature			
	300 °C	kW	16
	200 °C	kW	16
	150 °C	kW	15
	100 °C	kW	9
	50 °C	kW	2
Pump pressure max.	bar	2.9	2.9
Pump flow max.	L/min	45	45
Filling volume min.	L	2.6	2.6
Filling volume of expansion vessel	L	5.5	5.5
Pump connection thread	mm	M30 x 1.5 (DN 20)	M30 x 1.5 (DN 20)
Dimensions (WxDxH)	mm	335x550x660	335x550x660
Connection water cooling		R3/4 A	R3/4 A
Cat. No. 230 V; 50 Hz		LWP 148	LWP 550 (400 V; 3/PE; 50 Hz)

Integral T accessories

Reinforced polymer tubing

Special polymer tubing for high pressures

Cat. No.	Description	Temperature range °C	Max. pressure in bar
RKJ 031	Polymer tubing 1/2", fiber-reinforced	-40...100	20
RKJ 032	Polymer tubing 3/4", fiber-reinforced	-40...100	20
RKJ 033	Polymer tubing 1", fiber-reinforced	-40...100	20
RKJ 103	Polymer tubing 1/2", with textile insert	-40...120	9
RKJ 104	Polymer tubing 3/4", with textile insert	-40...120	9
RKJ 105	Polymer tubing 1", with textile insert	-40...120	3

Insulated metal hoses

For T 1200...T 4600						
Cat. No.	Description	Length (cm)	Thread	d _i (mm)	d _e (mm)	Temperature range °C
LZM 075	MTK 100	100	G 3/4	20	47	-60...150
LZM 076	MTK 200	200	G 3/4	20	47	-60...150

For T 7000...T 10000						
Cat. No.	Description	Length (cm)	Thread	d _i (mm)	d _e (mm)	Temperature range °C
LZM 078	MTK 101	100	G 1 1/4-G 1	25	50	-60...150
LZM 079	MTK 201	200	G 1 1/4-G 1	25	50	-60...150

d_i = internal diameter, d_e = external diameter

Manifold connectors

For joining multiple external systems (suitable for water/glycol and silicone oil)

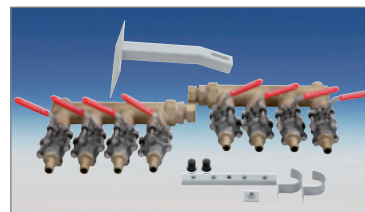
Cat. No.	Description	Connection	Male thread	Temperature range °C
LWZ 084	Four-port manifold	G 3/4"	4 x 3/4"	-30...150
LWZ 075	Four-port manifold	G 3/4"	4 x 1/2"	-30...150
LWZ 085	Four-port manifold	G 3/4"	4 x 10 mm	-30...150
LWZ 082	Four-port manifold	G 1 1/4"	4 x 3/4"	-30...150



RKJ 031



LZM 075



LWZ 075

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 W**	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, 50-Hz version	LWZ 041-1	●	●	●	●	-	-	-	-	-	-
High-power pump 5.5 bar**, 40 L/min 50-Hz version (see pump characteristics at the top of page 56)	LWZ 031-4 LWZ 032-4	●	●	●	●	-	-	-	-	-	-
Pump connections M38 x 1,5 O	LWZ 093	-	-	-	-	-	-	●	●	●	●

* W = water-cooled version ** Using such a pump changes the available cooling capacity

LAUDA Integral XT

Integral XT accessories (excerpt)

Slot-in and interface modules

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



LRZ 912 LRZ 913 LRZ 914 LRZ 915 LRZ 917

Command Ex i remote control

(explosion protection II 2G Ex ia IIC T4 Gb)

Cat. No.	Description
LRT 915	Command Ex i remote control including 10 m cable and barrier box
LRT 916	Command Ex i remote control including 25 m cable and barrier box



LRT 915

High-pressure pump

Cat. No.	Description
LWZ 077-1	High-pressure pump*, suitable for all XT with exception of XT 1850 W (S) (230 V; 50 Hz), resulting max. pump pressure 5.8 bar

* Using such a pump changes the available cooling capacity



LWZ 077-1

Metal hoses M30 x 1.5 l

Cat. No.	Description	Length (cm)	Temperature range °C
LZM 091	M30X 100S	100	-100...350
LZM 092	M30X 200S	200	-100...350
LZM 093	M30X 300S	300	-100...350
Field of application	With special insulation for cooling and heating thermostats, for all heat transfer liquids		

(l = inner thread)



LZM 091

Metal hoses M38 x 1.5 l

Cat. No.	Description	Length (cm)	Temperature range °C
LZM 094	M38X 100S	100	-100...350
LZM 095	M38X 200S	200	-100...350
LZM 096	M38X 300S	300	-100...350

(l = inner thread)



LZM 094

Integral XT accessories (excerpt)

Additional adapters and connectors

Cat. No.	Description
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 194	Screw-in stud, M30 x 1.5 O on G 3/4" A
EOV 207	Screw-in stud, M30 x 1.5 O on NPT 3/4" A
EOV 206	Screw-in stud, M30 x 1.5 O on G 1" O
EOV 208	Double connector, M30 x 1.5 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
HKA 165	Angle connector, M38 x 1.5 I on M38 x 1.5 A
HKA 153	Angle connector, M30 x 1.5 I on M30 x 1.5 A

(O = outer thread, I = inner thread)

Nipples

Cat. No.	Description
HKA 161	Nipple, 1/2" nipples on spherical line for M30 x 1.5
HKA 162	Nipple, 3/4" nipples on spherical line for M30 x 1.5
EOV 196	Screw cap, M30 x 1.5

Miscellaneous

Cat. No.	Description	Temperature range °C
LWZ 046	Bypass, M30 x 1.5 I/O	-40...350
LWZ 071	Bypass, M38 x 1.5 I/O	-40...350
LWZ 089	Bypass, M30 x 1.5 I/O	-90...220
LWZ 073	Ball valve, M30 x 1.5 I on M30 x 1.5 O	-30...180
LWZ 074	Ball valve, M38 x 1.5 I on M38 x 1.5 O	-30...180

(O = outer thread, I = inner thread)



HKA 152

UD 660

HKA 164



EOV 194

EOV 207

EOV 206



EOV 208

HKA 160

HKA 163



HKA 165

HKA 153



HKA 161

HKA 162

EOV 196



LWZ 046

LWZ 073



Order the detailed LAUDA accessories brochure and the heat transfer liquids brochure free of charge. These and additional product information can also be found at www.lauda.de