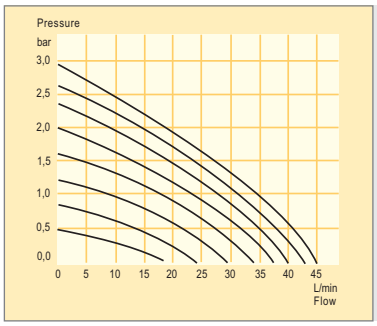
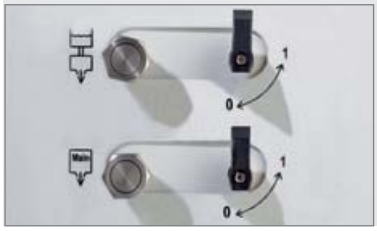
Extremely broad temperature range and rapid temperature changes: **LAUDA Integral XT**

Application examples

- Temperature control of stirrer tanks
- Temperature control of reactors in chemistry, pharmacy or bio-technology
- 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

	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 filler nozzle 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

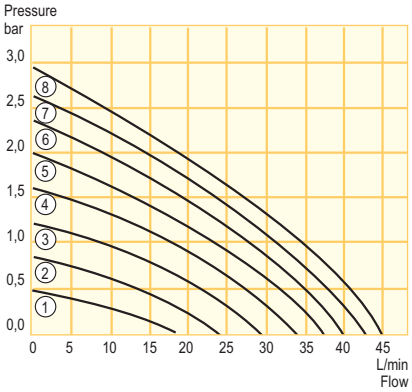
LAUDA Integral XT

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

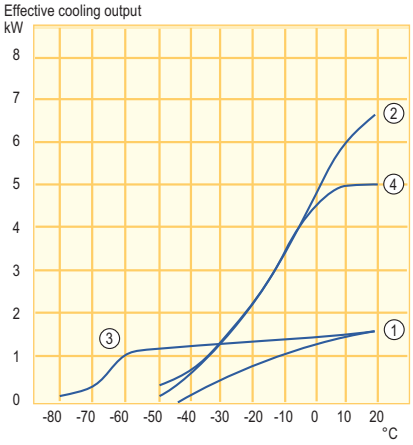
The LAUDA Integral XT process thermostats are ideally designed for the requirements of rapid and precise temperature control of an external application in process plant and pilot plant environments. The air-cooled process thermostats offer high performance in a small footprint while still providing functionality across a wide temperature range. Using the LAUDA Kryo 55 heat transfer liquid, temperatures from -50 up to 220 °C can be achieved without changing the heat transfer liquid. The special high-temperature version enables process temperatures 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

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



Cooling output Heat transfer liquid: Ethanol



Temperature range
-80...300 °C

All Integral XT include
Command remote control with RS 232/485 interface

All technical data from page 96
Other power supply variants on page 102

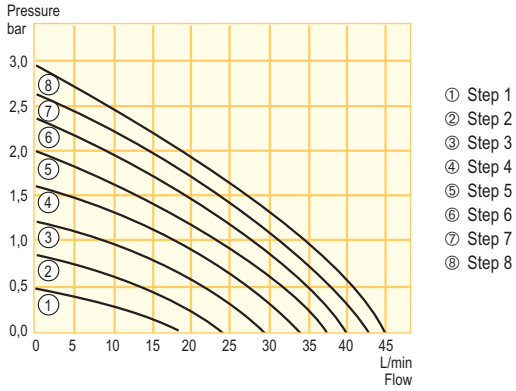
Technical features		XT 150	XT 280	XT 550	XT 750	XT 750 H
Working temperature range*	°C	-45...220	-80...200	-50...200	-50...220	-50...300
Temperature stability at -10 °C	±K	0.05	0.1	0.05	0.05	0.05
Heater power	kW	3.5	4.0	5.3	5.3	5.3
Cooling output at 20 °C	kW	1.5	1.5	5.0	6.7	6.7
Pump pressure max.	bar	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 (230 V; 50 Hz)	LWP 534	LWP 524	LWP 520	LWP 522

* Working temperature range is equal to ACC range

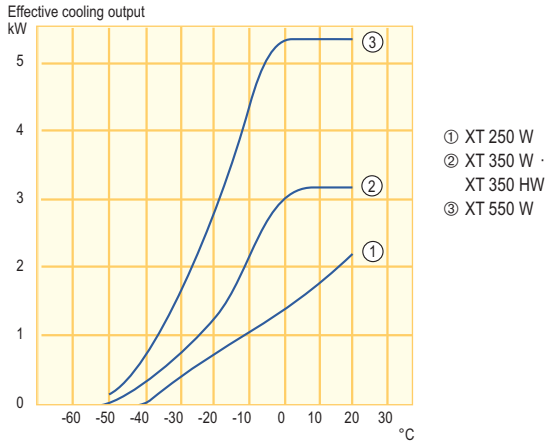
Integral XT
Water-cooled process thermostats down to -50 °C

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 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.

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



Cooling output Heat transfer liquid: Ethanol



Temperature range
-50...300 °C

All Integral XT include
Command remote control with RS 232/485 interface

Integral XT 350 HW

All technical data from page 96
Other power supply variants on page 102

Technical features		XT 250 W	XT 350 W	XT 350 HW	XT 550 W
Working temperature range*	°C	-45...220	-50...220	-50...300	-50...200
Temperature stability at -10 °C	±K	0.05	0.1	0.1	0.1
Heater power	kW	3.5	3.5	3.5	5.3
Cooling output at 20 °C	kW	2.1	3.1	3.1	5.4
Pump pressure max.	bar	2.9	2.9	2.9	2.9
Pump flow max.	L/min	45	45	45	45
Filling volume min.	L	2.6	5.0	5.3	5.0
Filling volume of expansion vessel	L	5.5	6.7	6.7	6.7
Cat. No. 230 V; 50 Hz		LWP 113	LWP 117	LWP 119	LWP 525 (400 V; 3/PE; 50 Hz)

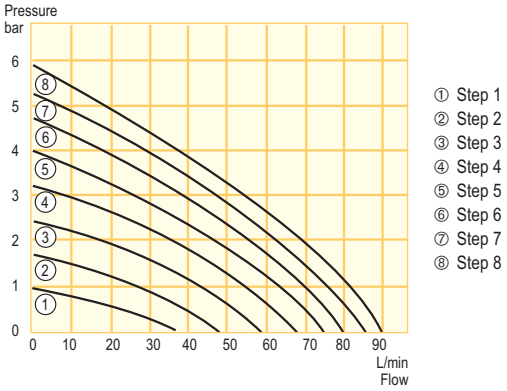
* Working temperature range is equal to ACC range

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

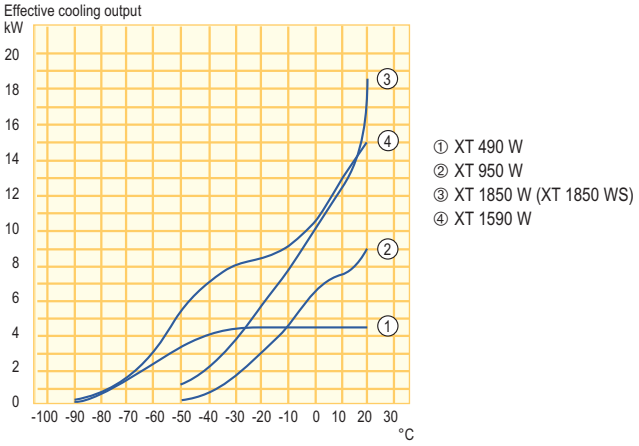
The new LAUDA Integral XT 1590 W and XT 490 W process thermostats stand out for their high cooling capacities at very low temperatures. Thanks to the two-stage cascade system, the thermostats are particularly suited for applications in the ultra-low range down to -90 °C. The water-cooled devices achieve cooling capacities of up to 18.5 kW and maximum heating capacities of 10.4 kW. The Integral XT 1850 W is also available with a heating capacity of 16.0 kW, as model XT 1850 WS.

Integral XT 1590 W

Pump characteristics Heat transfer liquid: Water for XT 1850 W



Cooling output Heat transfer liquid: Ethanol



Temperature range
-90...220 °C

All Integral XT include
Command remote control with RS 232/485 interface

All technical data from page 96
Other power supply variants on page 102

Technical features		XT 950 W	XT 1850 W (XT 1850 WS)	XT 490 W	XT 1590 W
Working temperature range*	°C	-50...220	-50...220	-90...200	-90...200
Temperature stability at -10 °C	±K	0.1	0.3	0.1	0.3
Heater power	kW	5.3	10.6 (16.0)	5.3	8.0
Cooling output at 20 °C	kW	9.0	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 521	LWP 532 (LWP 533)	LWP 539	LWP 542

* Working temperature range is equal to ACC range ** Pump characteristics p. 63

Integral T accessories

Reinforced polymer tubings

Special polymer tubings for high pressures

Cat.-No.	Description	Temp.-Range °C	max. pressure in bar
RKJ 031	Polymer tube 1/2“, fiber-reinforced	-40...100	20
RKJ 032	Polymer tube 3/4“, fiber-reinforced	-40...100	20
RKJ 033	Polymer tube 1“, fiber-reinforced	-40...100	20
RKJ 103	Polymer tube 1/2“, with textile insert	-40...120	9
RKJ 104	Polymer tube 3/4“, with textile insert	-40...120	9
RKJ 105	Polymer tube 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)	Temp.-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

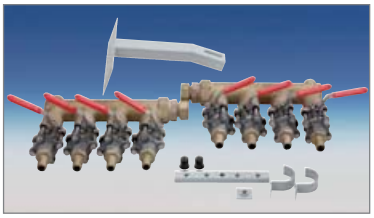
For T 7000...T 10000 Cat.-No.	Description	Length/ cm	Thread	d_i (mm)	d_e (mm)	Temp.-Range °C
LZM 078	MTK 101	100	G 1 1/4-G 1	25	50	-60...150
LZM 079	MTK 201	200	G 1 1/4-G 1	25	50	-60...150

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	Temp.-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



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 (see pump characteristics at the top of page 70)	LWZ 041-1	●	●	●	●	–	–	–	–	–	–
High-power pump 5.5 bar, 40 L/min 50-Hz version (see pump characteristics at the top of page 58)	LWZ 031-1	●	●	●	●	–	–	–	–	–	–
	LWZ 032-1	–	–	–	–	●	●	–	–	–	–

* W = water-cooled version

Integral XT accessories (excerpt)

Slot-in and interface modules

Cat. No.	Description	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

High-pressure pump

Cat. No.	Description	Description
LWZ 077-1	High-pressure pump	Suitable for XT 150 to XT 950 W (230 V; 50 Hz), resulting max. pump pressure 5.8 bar

Metal hoses M30 x 1.5 I

Cat. No.	Description	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
Field of application	with special insulation for cooling and heating thermostats, for all heat transfer liquids		

(I = inner thread)

LZM 081

Metal hose M38 x 1.5 I

Cat. No.	Description	Length/cm	Temp. Range °C
LZM 084	MX2C 100S	100	-50...300
LZM 085	MX2C 200S	200	-50...300
LZM 086	MX2C 300S	300	-50...300

(I = inner thread)

LZM 084

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

Integral XT accessories (excerpt)

Additional adapters and connectors

Cat. No.	Description	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 connectors	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)


HKA 152


UD 660


HKA 164


EOV 194


EOV 207


EOV 206


EOV 208


HKA 160


HKA 163


HKA 165


HKA 153

Nipples

Best.-Nr.	Description	Description
HKA 161	Nipple	$^1/_2$“ Nipples on spherical line for M 30 x 1.5
HKA 162	Nipple	$^3/_4$“ Nipples on spherical line for M 30 x 1.5
EOV 196	Screw cap	M30 x 1.5


HKA 161


HKA 162


EOV 196

Miscellaneous

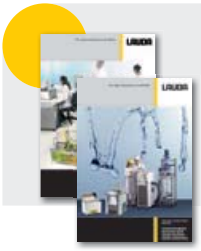
Cat. No.	Description	Description
LWZ 046	Bypass	M30 x 1.5 I/O Temperature range: -40...350 °C
LWZ 071	Bypass	M38 x 1.5 I/O Temperature range: -40...350 °C
LWZ 089	Bypass	M30 x 1.5 I/O Temperature range: -90...220 °C
LWZ 073	Ball valve	M30 x 1.5 I on M30 x 1.5 O Temperature range: -30 to 180 °C
LWZ 074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

(O = outer thread, I = inner thread)


LWZ 046


LWZ 073

Detailed LAUDA Integral XT accessories information can also be found at **www.lauda.de**



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**