### **FUTURE INTEGRATED**LAUDA presents the brand new generation of its successful Integral process thermostats

Lauda-Königshofen, June 27, 2019 – LAUDA, the world market leader for constant temperature equipment and systems for precise temperature control, is steadily expanding its comprehensive portfolio. With the fully redeveloped, future-proof LAUDA Integral product line, the company presents a further milestone in the field of professional temperature control. The powerful Integral process thermostats have been a permanent feature of the LAUDA portfolio since 2000, and have become established as a reliable solution in all manner of applications and industries. Major areas of application include the temperature control of reactors in the chemical and pharmaceutical industry, temperature tests at test stations in the automotive industry, or space simulations in mechanical and electrical engineering. The company is now driving the further development of the process thermostats and bringing the models in the T and XT series into the digital age. As a result, the new generation of Integral process thermostats have a variety of new features, including a brand new, intuitive control concept using mobile devices, increased pump output and a modular, expandable interface concept.

**LAUDA Integral T and XT: 20 years of success**

LAUDA's new Integral T process thermostats ensure efficient control of external temperature control processes in the temperature range from -30 to 150°C. The devices have an adjustable heating and cooling capacity and small internal volume that enables rapid temperature changes. Thanks to the open hydraulic system, the device aerates quickly and without loss of function. This makes it ideal for temperature control processes with frequent changes in consumer or test object. Classic application areas include controlling reactions or climate simulations. A reliable, powerful submersible pump and an internal bypass to limit the pressure are part of the standard equipment of the Integral T.

The extremely dynamic, high-performance LAUDA Integral XT process thermostats, on the other hand, operate with a cold oil blanket according to the flow principle and make it possible to use just one temperature control medium across the expanded temperature range from -90 to 320°C. Thanks to an electronically controlled, magnetically coupled, eight-level LAUDA Vario pump, the flow rate can be optimally thermally set for the requirements of pressure-sensitive consumers, as well as applications with high hydraulic resistance. An internal bypass, another new standard feature of the XT models, also increases flexibility. It increases the flow rate inside the device when only low flow rates are possible externally, to optimize the temperature control process.

For the new Integral XT models, LAUDA offers an optional through-flow control unit, which is particularly indispensable in creating reproducible test processes. An excellent example of such use is in test processes in the field of electric mobility. In order to achieve a high level of quality in production, validated test processes in this field use a defined flow rate that must be complied with. The optimized hydraulics and speed control of the new Integral devices also improve the conveying capacity of the thermostats considerably. Operated with future-proof refrigerants – the process thermostats conform to the European F-gas regulation – the new Integral devices provide the usual rapid temperature control along with high operating safety. The proven Smart Cool System of LAUDA Integral XT devices is now also featured on the new Integral I models. Here, electronic injection valves control the cooling output of the devices for greater energy-efficiency.

**Integral process thermostats – Ready for the digital future**

With the new Integral devices, LAUDA is driving forward the networking of temperature control technology. As the first series device in the history of LAUDA, the process thermostats have an integrated web server. This allows the devices to be integrated in existing company networks and therefore monitored and controlled via PC, or with mobile devices like a tablet or smartphone, if desired. The devices can be installed and operated in separate locations, if required. This enables location-independent monitoring and control. The thermostats can also be easily controlled via a modern OLED display directly on the device.

**New** **interface concept provides flexibility**

The new Integral process thermostats enable maximum networking of user processes, thanks to their modular and future-proof interface concept. The devices feature interfaces such as Ethernet, USB and Pt 100 as standard. Further interfaces and communication protocols can easily be added via additional modules. This allows Integral thermostats to be flexibly integrated in different communication scenarios. In addition, all the three-phase devices in the LAUDA Integral series are equipped for operation with a mains frequency of 50 or 60 Hz (bifrequent) – a great benefit for users who want to use their devices flexibly in different locations worldwide.

**Modular design for simplified maintenance**

LAUDA Integral devices are available in three different casing sizes and with a cooling capacity of 1.5 to 18 kW. Whereas the operating unit for the smallest casing size is mounted on the top of the device for best ergonomic advantage, on the medium and large casings, it is located at eye level on the right hand side of the device. The electrical and hydraulic connections are located on the right hand side for all devices. This means they will be easy to operate and see. With the Command Touch, LAUDA offers an intuitive operating unit with a touch display and expanded range of functions as an accessory, which can be connected to the device via a cable.

**LAUDA Integral – A new generation**

The process thermostats from the Integral series have proven successful on the market for decades. The development of the next generation takes the proven strengths of the series and combines them with future-proof components. By doing so, LAUDA offers its customers a piece of constant temperature equipment that fulfills today's requirements for refrigeration technology and guarantees a seamless transition with maximum process reliability.

An important aspect in the development of the Integral series was the European F-gas regulation. This will gradually restrict the quantities of partially fluorinated hydrocarbons available on the market until 2030. Demand for future-proof constant temperature equipment that conforms to the F-gas regulation has risen considerably. “We have put a lot of thought and expertise into the development of the refrigeration technology,” explains Dr. Jürgen Dirscherl, Head of Research & Development at LAUDA, for “simply replacing the refrigerant would limit performance data” and jeopardize customer processes. The goal of the LAUDA experts was to develop a new generation of devices that can seamlessly replace older models of existing Integral devices. “This will ensure the reliability of our customers’ process,” says Dr. Dirscherl. The new Integral series retains many of the proven functions and technical solutions of the old one.

With the new generation of Integral devices, LAUDA has put forward a technically more advanced version of a tried-and-tested product line, explains the Head of Research & Development. The new LAUDA design may be the most obvious new feature of the new devices, but that’s not the only difference. “For example, the new design enables simplified maintenance, thanks to improved accessibility of the components without separating the hydraulic circuit from the application. Further powerful benefits of the new generation of Integral devices include the position of the connections, enhanced communication options with process control systems, the integrated web server, pumps with a higher output range and, above all, considerably higher flow rates,” says Dr. Dirscherl.

**Example applications for LAUDA Integral process thermostats**

LAUDA process thermostats reliably heat and cool in a wide range of applications in the most varied of industries. For example, the devices can be used for the temperature control of stirrer tanks as well as reactors in chemistry, pharmacy and biotechnology, and in temperature tests on test stations in the automotive industry, be it for climate simulations or performance and material tests. Integral process thermometers are also the ideal partner for material inspections. In microreactor technology, the devices are used for temperature control in scale-up processes. And in mechanical and electrical engineering, LAUDA Integral process thermostats are an elementary component of space simulations.

**About LAUDA**

We are LAUDA - the world leader in precise temperature control. Our constant temperature equipment and heating and cooling systems are at the heart of many applications. As a complete one-stop supplier, we guarantee the optimum temperature in research, production and quality control. We are your reliable partner, particularly in the fields of automotive, chemical/pharma, semiconductor and laboratory/medical technologies. We have been inspiring our customers for more than 60 years with our competent mentoring and innovative, environmentally-friendly concepts - new every day and all over the world.

Fig. 1: pic\_LAUDA\_Integral\_19-05-23\_rho

LAUDA Integral process thermostats reliably heat and cool from -90 to 320°C. Thanks to their highly dynamic, precise temperature control, high connectivity and high pump output, the devices can be used in many different applications.

Image 2: pic\_LAUDA\_Integral\_Displays\_19-05-23\_rho

The modular interface concept allows users to integrated Integral devices seamlessly into their processes. For the first time, an integrated web server enables the thermostats to be controlled via PC or mobile devices.

Image 3: pic\_LAUDA\_Integral\_Reaktortemperierung\_19-05-23\_rho

LAUDA Integral process thermostats are used in a wide range of applications, like the temperature control of glass reactors in chemistry, pharmacy or biotechnology.

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