TPE3
THE MOST INTELLIGENT, EFFICIENT IN-LINE PUMPING SOLUTION
The TPE3 from Grundfos is the smartest in-line pump, combining best-in-class pump intelligence and efficiency in a groundbreaking pump that’s easier than ever to use.

**SIMPLE INSTALLATION**
A true plug-and-pump solution for both new and existing buildings, the TPE3 comes packed with features that give you system intelligence while eliminating multiple accessories and complicated installations. A flow-limiting function means there’s no need for a pump balancing valve, and the integrated temperature and pressure sensors eliminate the need for additional sensors in most cases.

**SIMPLE OPERATION**
Smart control modes allow the TPE3 to begin learning about your system’s pressure, temperature and flow characteristics the moment it’s installed, using system conditions, preloaded data and your input to gradually optimize performance. As it learns, the TPE3 also continuously collects and logs performance data, giving you the complete visibility you need to make informed decisions about your system.

**SIMPLE MAINTENANCE**
The TPE3 is built to last, with Grundfos durability and communication features that provide the system feedback you need to address changes in real time. Mechanical enhancements make servicing the TPE3 fast and easy.

**SIMPLE DECISION**
When it comes to commercial heating and cooling, the intelligent TPE3 simplifies every stage of the process, making your decision an easy one. The TPE3 is the best choice for intelligent and efficient pumping, simplified.

**EFFORTLESS EFFICIENCY**
Achieving efficient operations is as easy as installing the TPE3. With a permanent magnet motor (PM MLE) and integrated differential pressure sensor and adaptive controls, the TPE3 can save you up to 85% in energy consumption compared to a typical circulator. In addition, all TPE3 models exceed the Department of Energy (DOE) Pump Energy Index (PEI) requirements for clean water pumps.
SMARTER CONTROLS
MAKE IT EASY TO ACHIEVE RESULTS

\(\Delta T\)

The TPE3 comes with an internal temperature sensor, so connecting just one additional temperature sensor in differential temperature mode lets the pump take charge of the system performance based on the \(\Delta T\). Your differential temperature will never be too low or too high, and there's no need for multiple temperature sensors.

PROPORTIONAL PRESSURE

This control mode uses a built-in pressure sensor to adapt pump head (pressure) to changes in flow brought about by varying building demand, decreasing overall energy consumption.

FLOW ADAPT

FLOW ADAPT monitors flow and ensures that the flow rate never exceeds the FLOWADAPT value. This saves the cost of a separate pump balancing valve, as well as higher maintenance costs associated with unnecessary system complexity.

\(\Delta T\) is fitted with an internal temperature sensor in the pump housing, so only one external sensor enables the \(\Delta T\) control mode.

THE POWER OF DATA-DRIVEN COMMUNICATION WITHOUT THE HASSLE

MORE INPUTS PROVIDE MORE OUTPUT

With a number of configurable relays and analog inputs, the complete TPE3 I/O package allows for accurate system monitoring and optimal pump regulation. The TPE3 I/O package includes:

- 3 analog inputs for differential pressure sensor, constant / differential temperature control, heat energy metering or external setpoint
- 2 relay outputs configurable as alarm, ready, operation, pump running or warning
- 2 digital inputs and 2 digital input / outputs for external start / stop, max / min curve, alarm reset or multi-pump function with wireless communication between TPE3 pumps in parallel or as twin pumps
- 1 analog output
- 2 PT100 / 1000 inputs
- Real-time clock

WIRELESS MULTI-PUMP CONTROL WITH CASCADE OPTION

The TPE3 comes with built-in wireless technology that enables it to connect with up to four single TPE3 pumps. Cascade mode can be used to control the pumps jointly, distributing demand over multiple pumps for wider range and greater efficiency. Pumps can also be controlled in alternating mode or duty / stand-by.

EASY BMS INTEGRATION

Snap-in CIM modules that allow for integration with any BMS can be added with the following field-bus standards: LON, Profibus, Modbus, SMS / GSM / GPRS and BACnet.
TAKE A CLOSER LOOK

CLAMP RING
FOR EASY REPOSITIONING
Specially designed, innovative clamp ring allows for fast repositioning of pump housing and easier maintenance

IMPROVED HYDRAULICS
All TPE3 models exceed the DOE PEI requirements for clean water pumps

RELIABLE SHAFT SEAL
Grundfos-designed and -manufactured silicon carbide shaft seal

INTEGRAL SHAFT AND COUPLING
Coupling and shaft are friction-welded together to create a completely stable mechanical unit that drastically reduces vibration levels and prolongs the life of both shaft seal and bearings

INTEGRATED SENSORS
Built-in sensor measures differential pressure over the pump for increased efficiency

MOST EFFICIENT MOTOR
The Grundfos-designed and -manufactured permanent magnet (PM) MLE motor is built to exceed NEMA Premium efficiency standards at the IES level, according to IEC DTS 60034-30-2

EASY BMS INTEGRATION
Snap the Grundfos CIM card directly into the PM MLE control box, providing easy BMS integration utilizing single poll functionality that pings the device once for over 30 points of data and control

HIGH-QUALITY USER INTERFACE
TFT color display for easy and intuitive pump setup and monitoring

MORE DATA TO AND FROM THE PUMP
Two digital inputs, two output relays and two analog inputs for external sensor or setpoint

PUMP STATUS INDICATOR
The innovative Grundfos Eye provides visual indication of pump status: pump running, ready, warning or alarm

RENEWABLE NECK RING
All TPE3 pumps come with renewable neck rings that make pump upgrades easy and fast

ANTI-CORROSION SURFACE
Advanced cataphoresis surface treatment protects against corrosion, while the same treatment inside the pump keeps efficiency high

INSULATION SHELL
Hassle-free and reusable insulation with clip-on tailor-made shells around the pump

INSTALLATION,
COMMISSIONING,
MAINTENANCE.
SIMPLIFIED.

Plug in the TPE3, follow the simple instructions on the intuitive display screen and press start. The TPE3 will walk you through setpoints and control mode choices, and will offer a menu of setup assistance for every step of the process.
The TPE3 ensures superior efficiency across the entire Q / h area (shown below) because of its unique combination of motor efficiency, world-class hydraulics, and intelligent functionalities. The TPE3 adjusts to changing conditions to automatically optimize performance across the entire range.

Comparison of TPE3 and TPE2:

**TPE3**
- Heat Energy Monitor
- AUTO
- ADAPT
- FLOW LIMIT
- FLOW ADAPT
- ∆T control with 2 sensors (1 internal + 1 external sensor or 2 external pressure sensors)
- ∆P control (1 internal DPI [Differential Pressure] sensor or 2 external pressure sensors)
- Proportional pressure
- Constant flow
- Constant pressure
- Constant differential pressure
- Constant temperature
- Multi-pump
- Standstill heating
- Setpoint influence: 9 possibilities
- Limit exceed
- Operating log
- Display

**TPE2**
- Heat Energy Monitor
- AUTO
- FLOW LIMIT & FLOW ADAPT
- ∆T control (1 external + 1 external sensor)
- ∆P control (1 internal DPI sensor or 2 external pressure sensors)
- Proportional pressure
- Constant flow
- Constant pressure
- Constant differential pressure
- Constant temperature
- Multi-pump
- Standstill heating
- Setpoint influence: 9 possibilities
- Limit exceed
- Operating log
- Display

**AVAILABLE MATERIALS:**
- Cast iron — standard
- Stainless steel — single pumps only

**PRODUCT DETAILS**
- **Flow, Q:** max. 500 gpm (114 m³/h)
- **Head, H:** max. 80 ft (24 m)
- **Motor:**
  - 1-Phase: 200–240v
  - 3-Phase: 440–480v
- **Working Pressure:** max. 145 psi
- **Liquid Temperature:** -13 °F to 248 °F (-25 °C to 120 °C)
- **Ambient Temperature:** -4 °F to 122 °F
- **Approvals:** NSF372 (Stainless Steel Only)

To learn more or contact a rep, visit [www.grundfos.us/TPE3](http://www.grundfos.us/TPE3)
INTELLIGENCE MAKES THE DIFFERENCE IN ANY APPLICATION

SINGLE-PIPE HEATING SYSTEMS
INCREASE SYSTEM EFFICIENCY AND AVOID PENALTIES

Single-pipe systems are typically designed as constant flow systems, resulting in increased return temperatures in low-load situations. A TPE3 pump that operates based on ΔT across the system solves this problem and ensures that differential temperature is continuously maintained.

Recommended pump: TPE3
- Increased system efficiency
- No additional temperature valves needed
- Fast and easy commissioning based on temperatures
- Temperatures can be read and documented with the Grundfos GO app
- Reduced pump operating costs

HEAT RECOVERY SYSTEMS
REDUCE WATER TEMPERATURES

Run-around heat recovery systems can help reduce energy costs, but they should only be active when there is a temperature difference between outdoor air and return air of more than 5 °F. Use of a TPE2 pump, in conjunction with two additional temperature sensors, allows the pump to adapt the circulating flow more efficiently based on the temperature difference.

Recommended pump: TPE2
- Maximum heat recovery is guaranteed
- No more constant flow pumps running 24/7
- No need for a pump throttling valve
- Temperatures can be read out and documented in Grundfos GO app
- Reduced pump operating costs

DOMESTIC HOT WATER RECIRCULATION
CONTROL HOT WATER TEMPERATURES

In DHW applications you need instant hot water when the tap is opened. Traditionally, a throttled constant speed pump runs 24/7 to ensure this — but it also wastes energy. Instead, use of a TPE3 in temperature control mode can maintain the desired water temperature based on the signal from its own internal temperature sensor — without a throttling valve — saving money in the process.

Recommended pump: TPE3
- Maintains constant water temperatures
- No need for a pump throttling valve
- Simplified design and specification
- Temperatures can be read and documented with Grundfos GO
- Reduced pump operating costs

BOILER SHUNT PUMPS
BOILER PROTECTION

All non-condensing boilers need a minimum return temperature in order to avoid condensation of the flue gas, but running a normal pump at full speed to maintain those conditions is inefficient. The TPE3, along with an added temperature sensor, ensures that the optimal temperature is maintained to protect the boiler and reduce operating costs.

Recommended pump: TPE3
- Increased system efficiency
- No risk of flue gas condensation
- Requires only one additional temperature sensor
- Reduced pump operating costs
- Fast and easy commissioning via Grundfos GO

FLOW
RETURN
80 °C 30 °C
60 °C

To learn more or contact a rep, visit www.grundfos.us/TPE3
Grundfos is a global leader in advanced pump solutions and a trendsetter in water technology. Grundfos supplies complete pumping systems and solutions for buildings, industry and every aspect of water use. An annual production of more than 16 million pump units makes Grundfos a leading pump manufacturer, with more than 18,000 employees worldwide. Key products include circulator and centrifugal pumps for industry, water supply, sewage and dosing, as well as standard and submersible motors and state-of-the-art electronics for monitoring and controlling pumps. In the US, more than 1,200 employees staff operations, sales and service facilities in Illinois, Kansas, Pennsylvania, California, Texas, Indiana and Alabama. Grundfos provides comprehensive market coverage in North America through a number of marquee product brands, with more than 765 years of service combined.

High on the company’s corporate agenda is an active commitment to improving the environment. Grundfos contributes to global sustainability by pioneering technologies that improve quality of life for people and care for the planet. For more information, visit www.grundfos.us, or follow us on Facebook and LinkedIn.