

TPE3

**THE MOST INTELLIGENT,
EFFICIENT INLINE
PUMPING SOLUTION**



INTELLIGENT PUMPING, SIMPLIFIED.

The TPE3 from Grundfos is the smartest inline 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

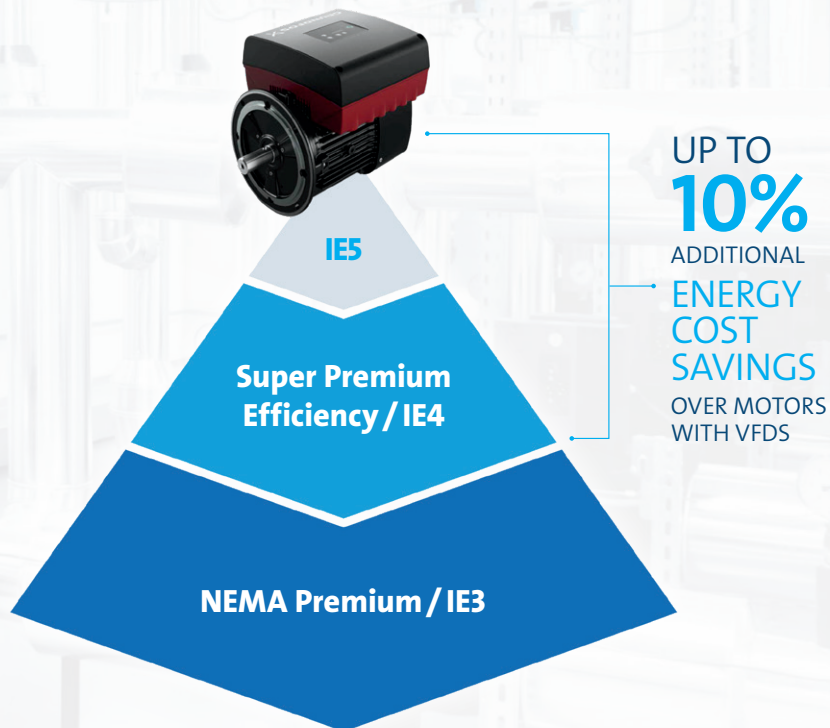
The TPE3 is built to last, with Grundfos durability and communication features that provide the system feedback you need to address changes in real time. Mechanical enhancements make servicing the TPE3 fast and easy.

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) and Natural Resources of Canada (NRC) requirements for clean water pumps.



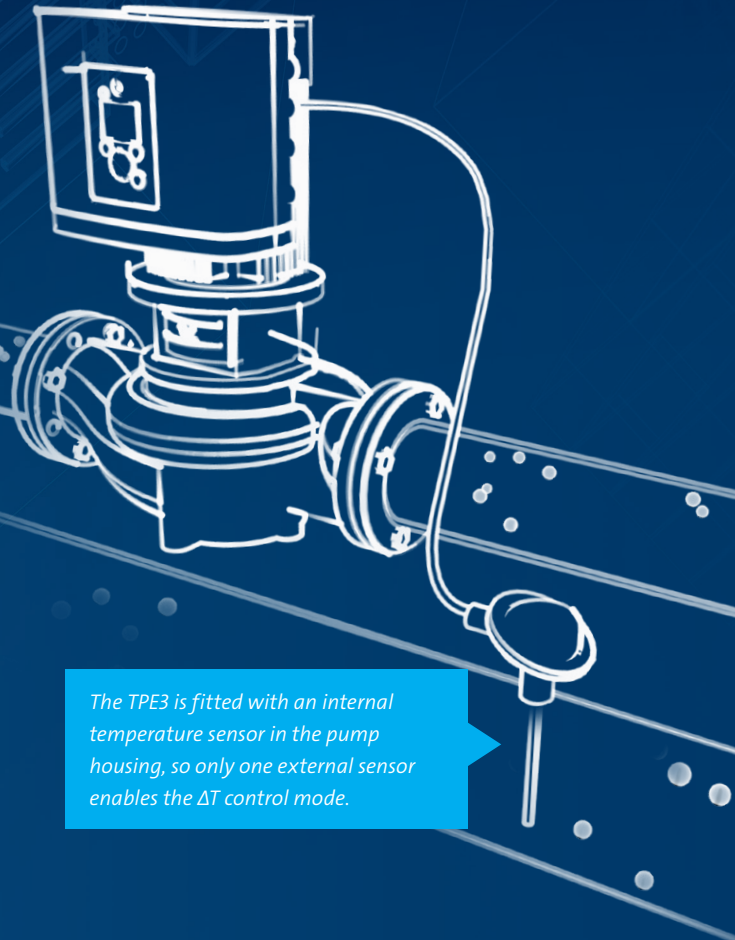
THE PM MLE MOTOR DELIVERS MORE

The TPE3's new PM MLE motor is designed by Grundfos to exceed efficiency expectations up to 10% over the NEMA Premium® standard, operating at the IE5 — the world's highest possible energy efficiency rating.

2
YEARS

The average time in which the TPE3 pays back its initial cost, due to its extremely low energy consumption.

SMARTER CONTROLS MAKE IT EASY TO ACHIEVE RESULTS



ΔT

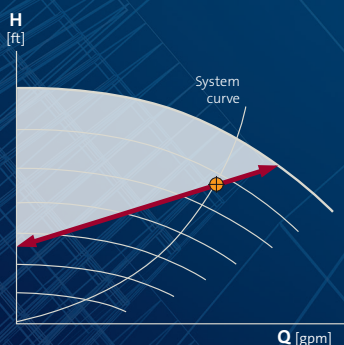
The TPE3 comes with an internal temperature sensor, so connecting just one additional temperature sensor in differential temperature mode lets the pump take charge of the system performance based on the ΔT . Your differential temperature will never be too low or too high, and there's no need for multiple temperature sensors.

The TPE3 is fitted with an internal temperature sensor in the pump housing, so only one external sensor enables the ΔT control mode.

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.

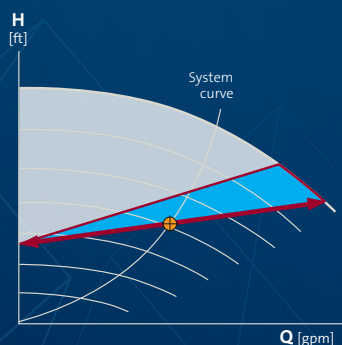
Proportional Pressure Mode



AUTOADAPT

AUTOADAPT automatically selects the proportional pressure when the setpoint is not known. Like proportional pressure mode, AUTOADAPT continuously adjusts the pump's performance to actual system demand, maintaining the most efficient settings at all times. With this factory setting, in 80% of the installations no manual adjustments are needed.

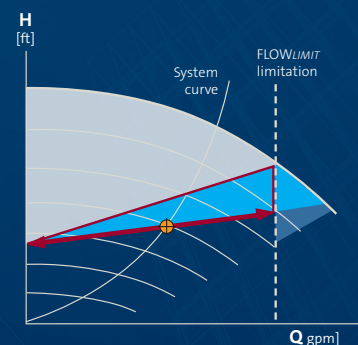
AUTOADAPT



FLOWADAPT

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

FLOWADAPT



Additional control modes: constant differential pressure/constant temperature/constant flow

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 fieldbus standards: LON, Profibus, Modbus, SMS/GSM/GPRS and BACnet.



GRUNDFOS GO

For hard-to-reach pumps, use the Grundfos GO app for handheld pump control on your smartphone. Save and share electronic reports easily, and get full access to online replacement and sizing.



HEAT ENERGY MONITOR

A built-in heat energy monitor can provide actionable data on heat energy distribution and consumption, providing data that will improve system performance and help avoid system imbalances and maintenance issues.

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



INSULATION SHELL (ACCESSORY)

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



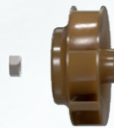
RENEWABLE NECK RING

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



RELIABLE SHAFT SEAL

Grundfos-designed and -manufactured silicon carbide shaft seal



ANTI-CORROSION SURFACE

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



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 IE5 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

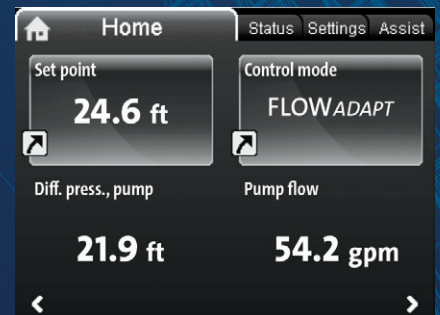
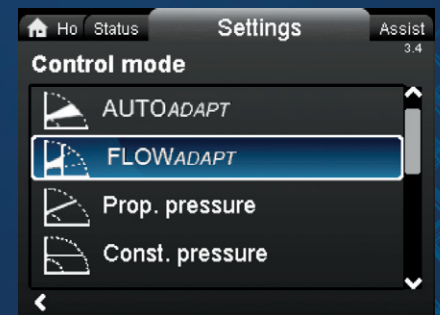
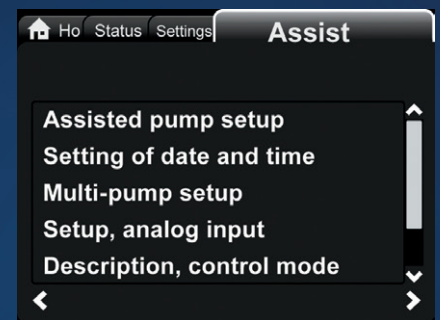
Two digital inputs, two output relays and two analog inputs for external sensor or setpoint

PUMP STATUS INDICATOR

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

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.



BUILT TO DELIVER BETTER PERFORMANCE

FEATURES

SYSTEM INTELLIGENCE	CONTROL MODES	OTHER
<ul style="list-style-type: none"> ✓ Heat energy monitor 	<ul style="list-style-type: none"> ✓ Proportional pressure 	<ul style="list-style-type: none"> ✓ Multi-pump
<ul style="list-style-type: none"> ✓ AUTOADAPT 	<ul style="list-style-type: none"> ✓ Constant flow 	<ul style="list-style-type: none"> ✓ Standstill heating
<ul style="list-style-type: none"> ✓ FLOWLIMIT and FLOWADAPT 	<ul style="list-style-type: none"> ✓ Constant pressure 	<ul style="list-style-type: none"> ✓ Setpoint influence: 9 possibilities
<ul style="list-style-type: none"> ✓ ΔT control with 2 sensors: <ul style="list-style-type: none"> • 1 internal + 1 external sensor, or • 2 external temperature sensors 	<ul style="list-style-type: none"> ✓ Constant differential pressure 	<ul style="list-style-type: none"> ✓ Limit exceed
<ul style="list-style-type: none"> ✓ ΔP control: <ul style="list-style-type: none"> • 1 internal DPI (differential pressure) sensor, or • 2 external pressure sensors 	<ul style="list-style-type: none"> ✓ Constant temperature 	<ul style="list-style-type: none"> ✓ Operating log

PRODUCT DETAILS

(Single and Dual Head Models)

Flow, Q:	max. 500 gpm (114 m ³ /h)
Head, H:	max. 80 ft (24 m)
Motor:	1/60/200–240V 3/60/200–240V 3/60/440–480V
Working Pressure:	max. 232 psi
Liquid Temperature:	-13 °F to 248 °F (-25 °C to 120 °C)
Ambient Temperature:	1/60/200–240V: -4 °F to 122 °F (-20 °C to 50 °C) 3/60/440–480V: -4 °F to 104 °F (-20 °C to 40 °C)
Approvals:	NSF372 (Stainless Steel ONLY)

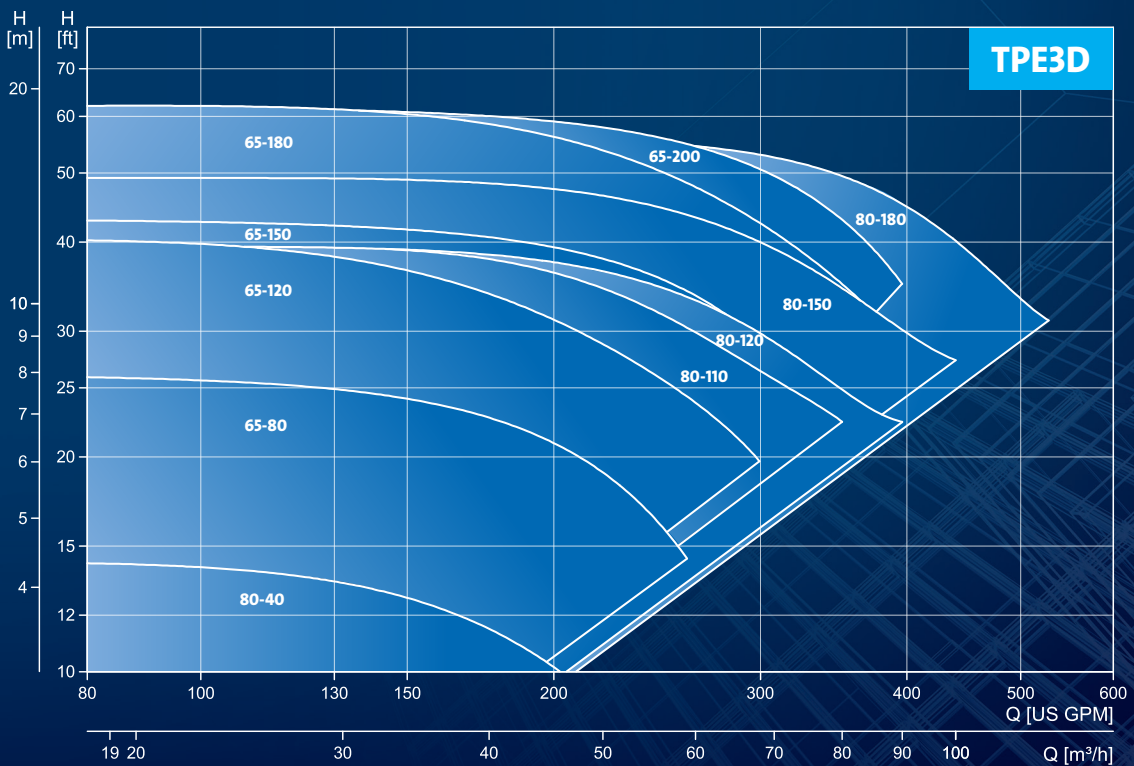
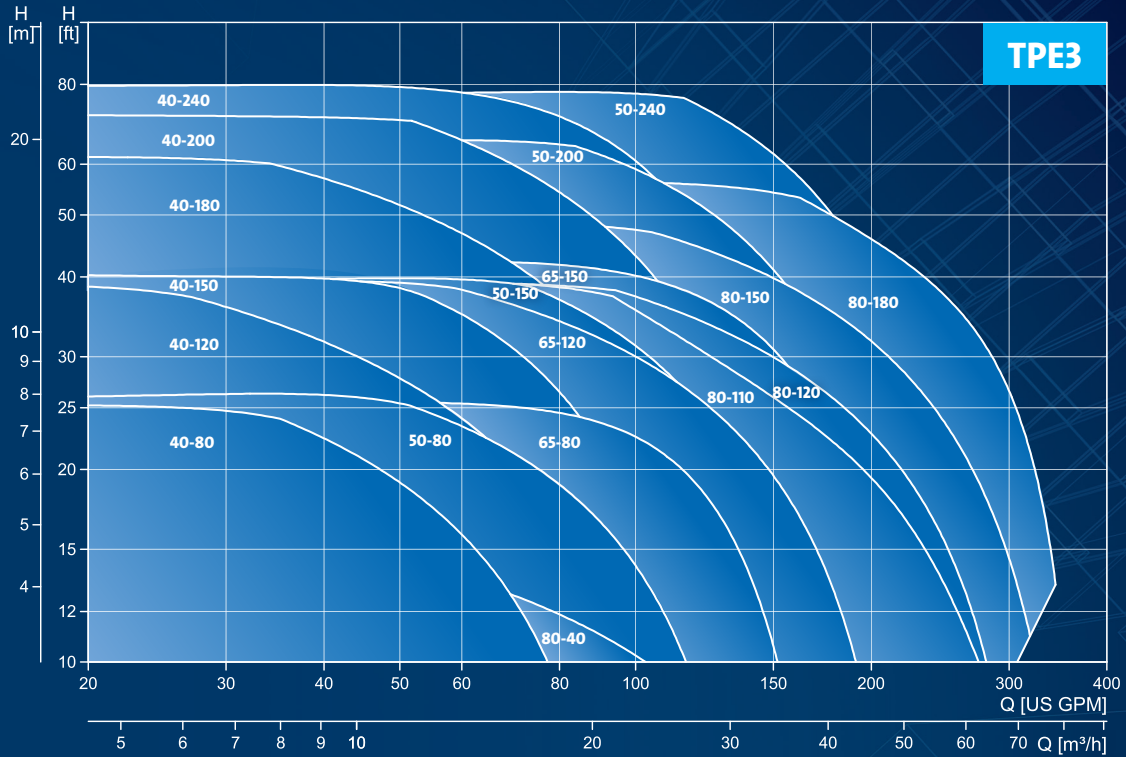
AVAILABLE MATERIALS

Cast Iron
(Standard for Single and Dual Pumps)

Stainless Steel
(Single Pumps ONLY)



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.



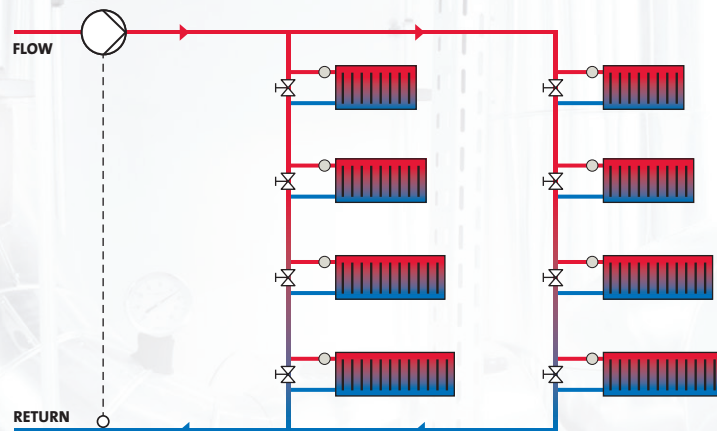
To learn more or contact a rep, visit grundfos.us/TPE3

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.

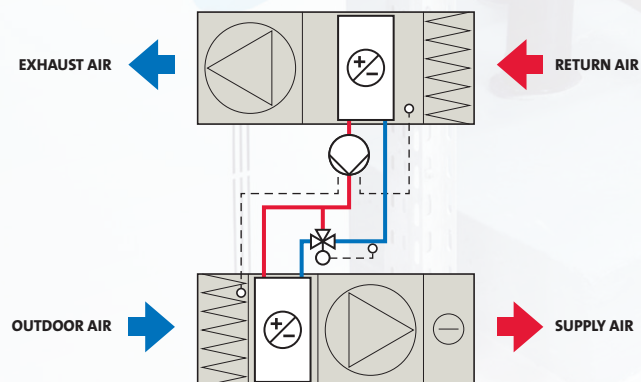
- Increased system efficiency
- No additional temperature valves needed
- Fast and easy commissioning based on temperatures
- Temperatures can be read and documented with the Grundfos GO app
- Reduced pump operating costs



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 the pump, in conjunction with two additional temperature sensors, allows the pump to adapt the circulating flow more efficiently, based on the temperature difference.

- 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
- Reduced pump operating costs

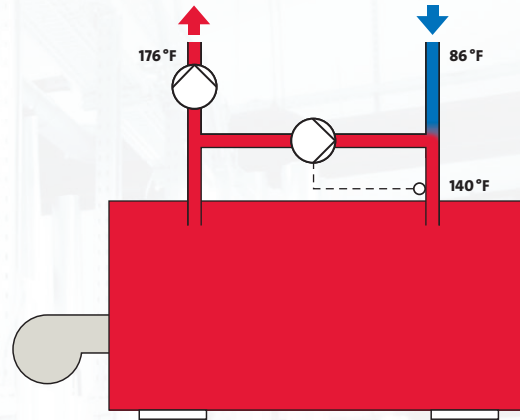


BOILER SHUNT PUMPS

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.

- 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

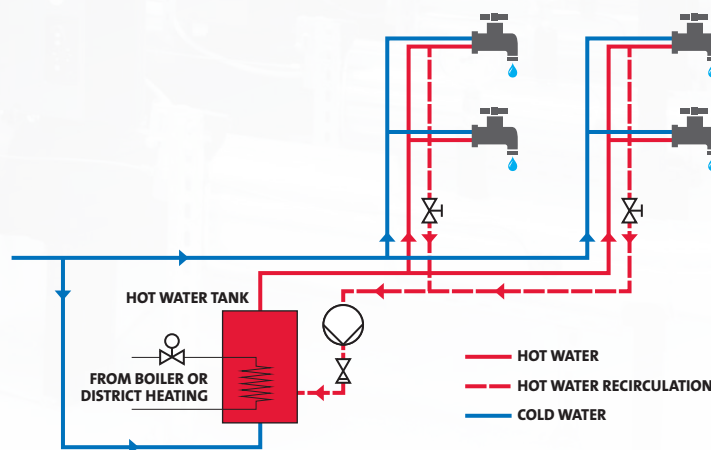


DOMESTIC HOT WATER RECIRCULATION

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.

- 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



WE ARE IN THE WATER BUSINESS WITH YOU

As a pioneer and global leader in water pump technology, Grundfos creates intelligent, sustainable solutions to help solve the world's water and climate challenges. Through our heritage, we have the experience and innovative capabilities to help our partners, customers and communities move water in an increasingly energy and water efficient manner. We see this as not only a great business opportunity, but as an obligation to ensure the world heads toward a more sustainable tomorrow. Our complete portfolio of pumps and solutions are designed for commercial, residential, groundwater, municipal and industrial applications with emphasis in trendsetting, energy efficient technologies such as permanent magnet motors and advanced pump controls and monitoring. Because water matters, and so does your business.

To learn more, visit grundfos.us or follow us on Facebook and LinkedIn.

Visit grundfos.us/pei to learn more about Department of Energy (DOE) pump energy index (PEI) requirements and PEI ratings on specific Grundfos models.