TEMPRO MOLD TEMPERATURE CONTROLLERS

Superior Temperature Control

world of innovation

TEMPRO plus D
Touch-Screen Series for Perfect Quality

Latest design technology and operation ...

In pressurized operation, a gauge ensures that the internal pressure is always 1 bar min. over the steam pressure curve.

Because of the smaller heat exchanger there is less circulating water. As a result, the preheating time and the cool down period have been reduced.

Optimum visibility and operation of the TEMPRO plus D

- **Touch-screen**
  The actual value and set point are displayed simultaneously.
- **Visual temperature control**
  The mold symbol color indicates if the temperature is in the tolerance band (green: within tolerance; red: too hot; blue: too cold).
- **Additional information on the display**
  The operator can choose an additional value to be displayed on the screen (pressure, flow).
- **Easy operation with the TEMPRO plus D**
  Menus to adjust values and to choose operating modes can be selected with color touch-screen.
- **Quick selection**
  Operating modes that are used frequently can be selected using the touch fields at the bottom of the screen.

Standard equipment for the TEMPRO plus D series

- Microprocessor controller with ± 0.2 °C accuracy.
- Automatic filling and constant pressure monitoring.
- Pressure gauges (system and pump pressures).
- Automatic pump rotation detection.
- Maximum temperature monitoring.
- Heater control with solid state relay.
- Pumps safe to run dry.
- Backflow sensor.
- Sensor break monitoring.
- Line evacuating for mold changing
- External sensor socket for PT 100 sensors.
- Air purging (unlimited mold purge for **140/160/180** units).
- Timer (time switch).
- Potential-free dry contact for alarm output plus audible alarm.
- Operating hours counter/service interval indicator.
- **Options**
  – Flow control and measurement.
  – Communications interfaces.
  – Mold sensor FeCo (Type J) socket.

TEMPRO plus D90

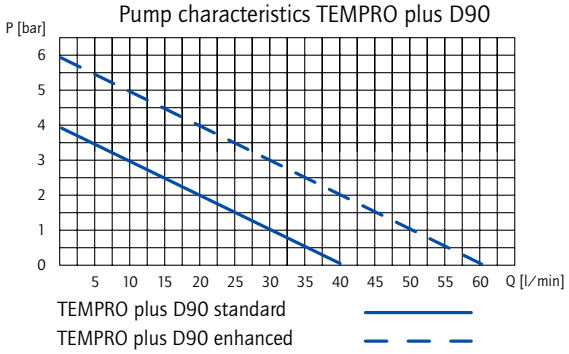
Circulating water single and dual zone units

TEMPRO plus D90 for temperatures up to 90 °C.
Open system with powerful, submersible pumps without pump seals.

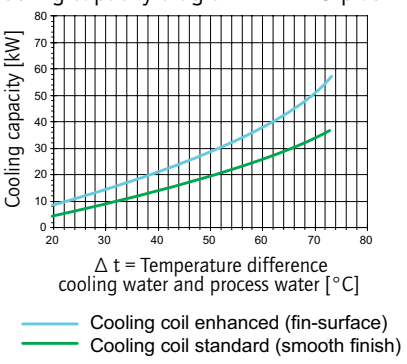
Equipment	
TEMPRO plus D	**90**
Self-optimizing temperature control via microprocessor	•
Maximum temperature monitoring	•
Sensor break monitoring	•
Automatic filling with leakage and pressure monitoring	•
Automatic pump rotation direction detection	•
Dry contact for alarm output plus audible alarm	•
Connectors for external sensors PT 100	•
Connector for external mold sensor FeCo Type J	○
Leakstop function	•
Mold purging via pump (max. 3 l)	•
Enhanced pump	○
Pressure measuring (system, pump, and flow pressure)	•
Flow measuring vortex	○
Serial interface (RS 232, RS 485, 20 mA, CAN, SPI)	○
WITTMANN 4.0 interface	○
Operating hour counter/clock timer/service monitoring	•

• Standard equipment
○ Optional equipment

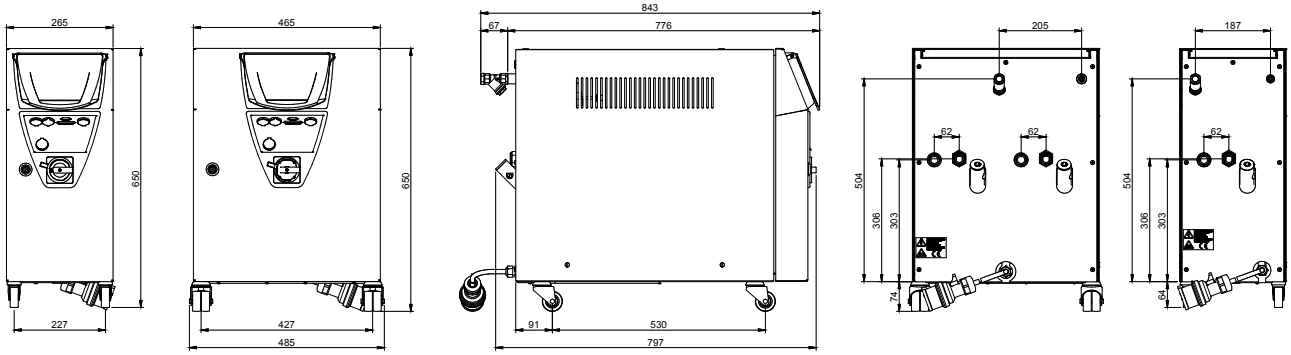
Pump characteristics TEMPRO plus D90



Cooling capacity diagram TEMPRO plus D90



Technical Data	
TEMPRO plus D90	
Heating capacity	9 kW (option: 12 kW)
Pump capacity (50 Hz) standard	0.5 kW, max. 3.8 bar max. 40 l/min
Pump capacity (50 Hz) enhanced	1 kW, max. 5.8 bar max. 60 l/min
Cooling water connection	G 1/4" + G 3/8"
Mold connection	G 3/4"
Power supply	standard 3 x 380 – 415 V/50 Hz



TEMPRO plus D140/160/180 – PRESSURE EQUIPMENT

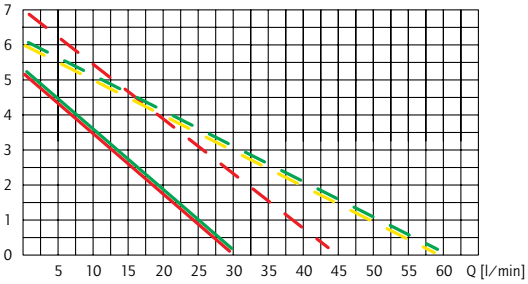
Circulating water single and dual zone units

Pressurized system with powerful pumps and with magnetically coupled pumps for graduated temperature ranges.

Equipment			
TEMPRO plus D	**140**	**160**	**180**
Self-optimizing temperature control via microprocessor	•	•	•
Maximum temperature monitoring	•	•	•
Sensor break monitoring	•	•	•
Automatic filling with leakage and pressure monitoring	•	•	•
Automatic pump rotation direction detection	•	•	•
Dry contact for alarm output plus audible alarm	•	•	•
Connectors for external sensors PT 100	•	•	•
Connector for external mold sensor FeCo Type J	o	o	o
Leakstop function	o	o	–
Dirt pan	•	•	•
Mold purging via pump (unlimited)	•	•	•
Enhanced pump, magnetically coupled	o	o	o
Pressure measuring (system, pump, and flow pressure)	•	•	•
Flow measuring ultrasonic	o	o	o
Boost pump [1 = two pumps]	•	•	•[1]
Serial interface (RS 232, RS 485, 20 mA, CAN, SPI)	o	o	o
WITTMANN 4.0 interface	o	o	o
Operating hour counter/clock timer/service monitoring	•	•	•
Variotherm tempering (on request)	–	–	o

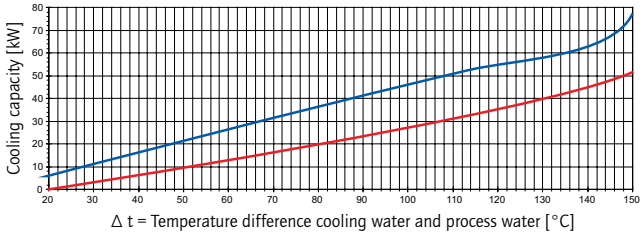
Technical Data		
TEMPRO plus D	**140**	**160/180**
Heating capacity	9 kW (option: 12/16 kW)	
Pump capacity (50 Hz) standard	magnetically coupled 0.5 kW, max. 4.5 bar max. 40 l/min	magnetically coupled 0.5 kW, max. 5 bar 30 l/min
Pump capacity (50 Hz) enhanced	magnetically coupled, 1 kW, max. 6 bar max. 60 l/min	
Speed-controlled pump	1 kW, max. 9 bar max. 50 l/min	
Cooling water connection	G 3/8"	
Mold connection	G 3/4"	
Power supply	standard 3 x 380 – 415 V/50 Hz	

P [bar] pump characteristics TEMPRO plus D140/160/180



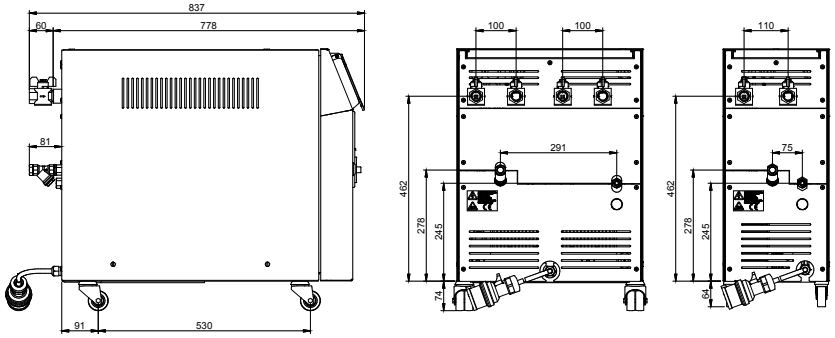
TEMPRO plus D140 standard
TEMPRO plus D140 enhanced
TEMPRO plus D160/180 standard
TEMPRO plus D160 enhanced
TEMPRO plus D160/180 enhanced

Cooling capacity diagram TEMPRO plus D140/160/180



Δ t = Temperature difference cooling water and process water [°C]

Cooling coil enhanced (fin-surface)
Cooling coil standard (smooth finish)



- • Standard equipment
- o Optional equipment
- – no supply for this model

TEMPRO plus D Micro
Compact dual zone temperature controller

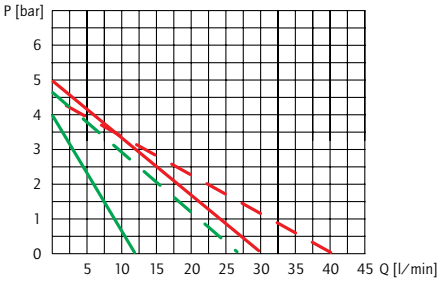
Pressurized water temperature controller

With powerful pumps, direct heating, indirect or direct cooling and supply temperatures of up to 160 °C as dual zone units.

Equipment			
TEMPRO plus D Micro	**100**	**140**	**160**
Touch-screen with set and actual temperature indication	•	•	•
Leakage, water level and pressure control	•	•	•
Self-optimizing temperature control via microprocessor (± 0.2 °C)	•	•	•
Heater control via solid state relay	•	•	•
External sensor socket for PT 100 thermocouple	•	•	•
Mold purging via pump	•	•	•
Isolated contact for alarm	•	•	•
Flow measurement (optional)	○	○	○
Connector FeCo (optional)	○	○	○
Dirt pan for mold circuit (optional)	○	○	○
Interfaces (optional, also for WITTMANN 4.0)	○	○	○

- • Standard equipment
- ○ Optional equipment

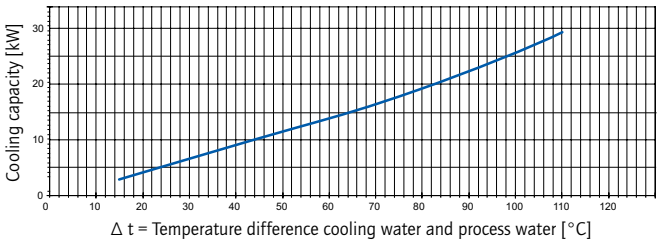
Pump characteristics TEMPRO plus D Micro



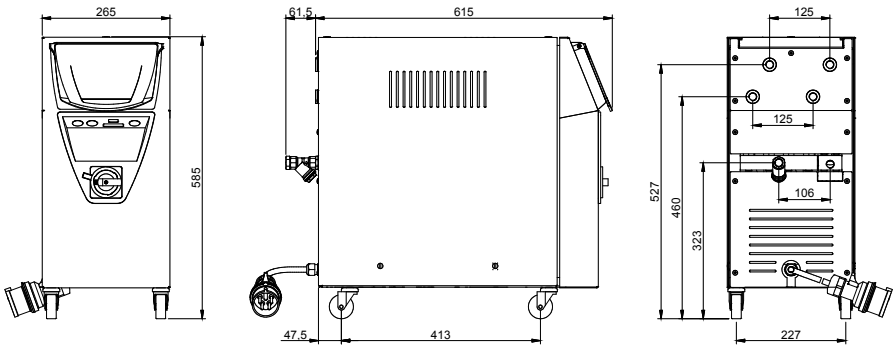
TEMPRO plus D100 Micro standard
TEMPRO plus D100 Micro enhanced
TEMPRO plus D140 Micro standard
TEMPRO plus D160 Micro standard

TEMPRO plus D Micro: 100 °C/140 °C/160 °C (Flow temp. max.)	
TEMPRO plus D Micro – dual zone units – specifications/zone	
Heating capacity (415 V)	1, 4,5 or 6 kW
Pump capacity (50 Hz)	0.25–0.5 kW
Pump pressure (50 Hz)	4.5–5 bar
Pump flow (50 Hz)	11–40 l/min
Internal water volume	1 l
Mold connection	3/8"
Cooling connection	3/8"
Weight	72–75 kg
Power supply	standard 3 x 380 – 415 V/50 Hz

Cooling capacity diagram TEMPRO plus D Micro



TEMPRO plus D100/D140/D160 Micro (smooth finish)



TEMPRO primus C90

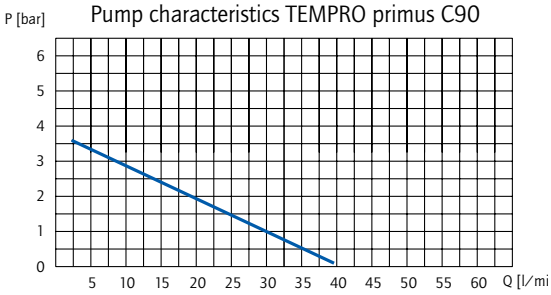
» **The economic solution**
The ideal temperature controller for any application requiring exact temperature control and high user-friendliness, however without additional functions such as direct cooling.

» **TEMPRO primus C90**
Single zone temperature controller up to 90 °C. Standard features include air purging for mold changes.

Equipment	
TEMPRO primus C90	
Self-optimizing temperature control via microprocessor	•
Maximum temperature monitoring	•
Sensor break monitoring	•
Automator filling with leakage monitoring and level control	•
Leakstop function possible through modification	•
Mold purging via pump	•
Manual filling	•
Operating hour counter/service monitoring	•
Horn	•

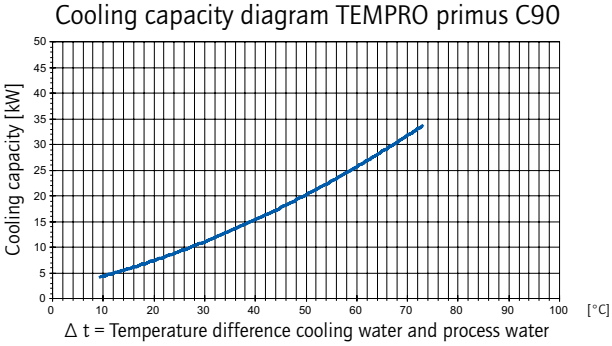
• Standard equipment
○ Optional equipment

Pump characteristics TEMPRO primus C90

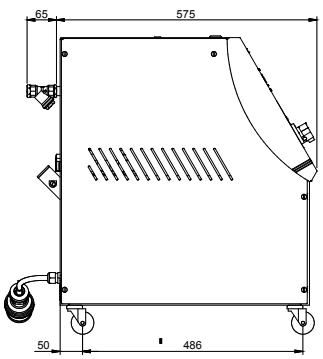


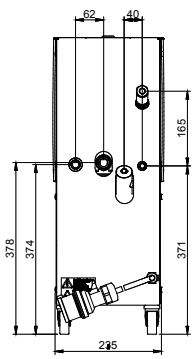
Technical Data	
TEMPRO primus C90	
Heating capacity	9 kW
Pump capacity (50 Hz) standard	0.5 kW, max. 3.5 bar, max. 40 l/min
Cooling water connection	G 1/4"
Mold connection	G 3/4" / G 1/2"
Power supply	standard 3 x 380 – 415 V/50 Hz

Cooling capacity diagram TEMPRO primus C90



Δ t = Temperature difference cooling water and process water





TEMPRO basic C90/basic C140

» **The economic solution**
The ideal device for any application requiring exact temperature control and high user-friendliness, however without additional functions such as direct cooling.

» **TEMPRO basic C90**
One circuit temperature controller for temperatures up to 90 °C equipped with a self-optimizing microprocessor controller (± 1 °C). Standard with leakstop function and pump switch for mold purging when changing the mold.

» **TEMPRO basic C140**
Single zone unit with pressurized system for temperatures up to 140 °C.
The economic temperature controller for precise temperature control up to 140 °C.

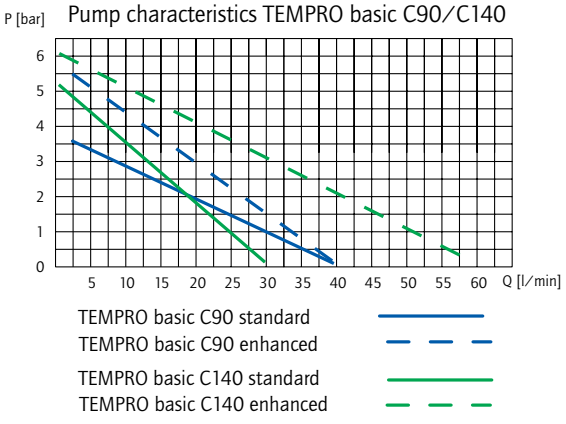
TEMPRO basic C90

Equipment		
TEMPRO	**basic C90**	**basic C140**
Self-optimizing temperature control via microprocessor	•	•
Maximum temperature monitoring	•	•
Sensor break monitoring	•	•
Automator filling with leakage monitoring and level control	•	•
Dry contact for alarm output	•	•
Connectors for external sensors PT 100	○	○
Leakstop function	•	•
Mold purging via pump	•	•
Reinforced pump	○	○
Manual filling	•	–
Pressure gauge/flow indication	○	○
Serial interface (RS 232, RS 485, 20 mA)	○	○
Analog interface (4–20 mA / 0–10 V)	○	○
Operating hour counter/Service monitoring	•	•
Horn	•	•

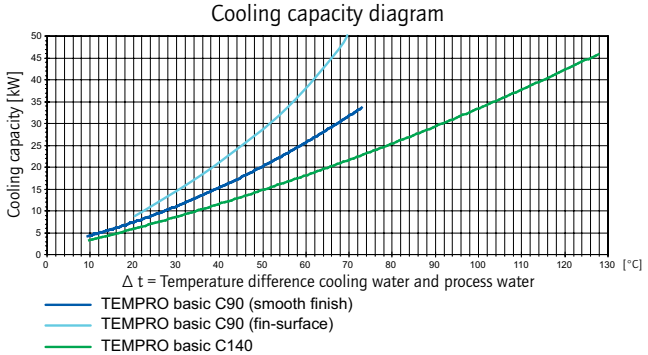
- • Standard equipment
- ○ Optional equipment
- – no supply for this model

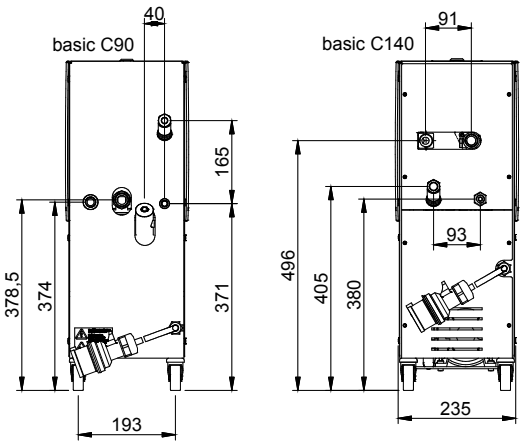
Technical Data		
TEMPRO	**basic C90**	**basic C140**
Heating capacity	9 kW (opt. 12 kW)	
Pump capacity (50 Hz) standard	0.5 kW, max. 3.5 bar max. 40 l/min	0.5 kW, max. 5 bar max. 30 l/min
Pump capacity (50 Hz) enhanced	0.75 kW, max. 5.5 bar max. 40 l/min	0.75 kW, max. 6 bar max. 60 l/min
Cooling water connection	G 1/4"	G 3/8"
Mold connection	G 3/4" / G 1/2"	G 3/4"
Power supply	standard 3 x 380 – 415 V/50 Hz	

Pump characteristics TEMPRO basic C90/C140



Cooling capacity diagram





TEMPRO primus C120/basic C120

» The **TEMPRO primus C120** is used for temperatures up to 120 °C. Due to direct injection of the cooling water, it is providing an exceptionally high cooling capacity.

» The **TEMPRO basic C120** was designed for the special requirements of specific applications. It is equipped with radial pumps for high flow volumes at different pressure ranges: an economic series with high user-friendliness and an extensive equipment range for every application.

TEMPRO primus C120

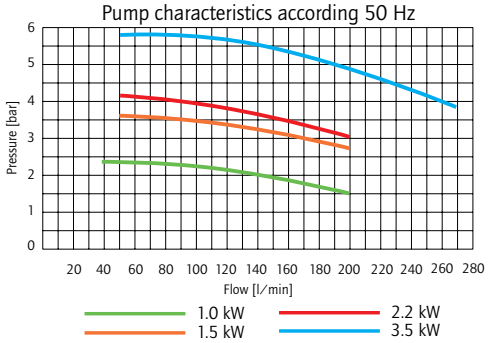
Equipment			
TEMPRO	primus C120	basic C120	
		M	L
Self-optimizing temperature control via microprocessor	•	•	•
Maximum temperature monitoring	•	•	•
Sensor break monitoring	•	•	•
Automator filling with pressure monitoring	•	•	•
Dry contact for alarm output + audible alarm	–	○	○
Connector for external sensor PT 100	–	○	○
Mold purging through pressurized air	–	○	○
Enhanced pump	–	○	○
Pressure gauges in pump advance and return flow	•	•	•
Serial interface (RS 232, RS 485, 20 mA)	–	○	○
Analog interface (4–20 mA / 0–10 V)	–	○	○
Operating hour counter/Service monitoring	•	•	•
Horn	•	•	•
Bypass including release valve for pump advance	•	•	•
Options: cooling valves	–	G½"	G½", G3/4", G1"
Flow measurement vortex	–	○	○
Connecting cable for data transfer	–	○	○

- • Standard-equipment
- ○ Optional equipment
- – no supply for this model

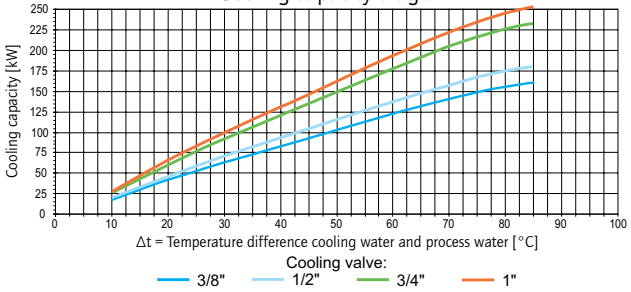
TEMPRO basic C120-L

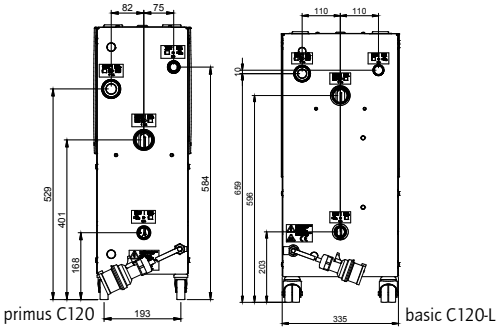
Technical Data				
TEMPRO	primus C120	basic C120-M	basic C120-L	
Heating capacity	9kW	9 kW (opt. 18 kW)	18 kW (opt. 24/36 kW)	
Pump capacity standard	0.5 kW, max. 2.0 bar max. 200 l/min	1.0 kW, max. 2.35 bar max. 200 l/min	1.5 kW, 3.65 bar 200 l/min	
Pump capacity enhanced (max. bar/max. l/min)	–	1.5 kW, 3.65 bar 200 l/min	2.2 kW, 4.2 bar, 200 l/min	3.5 kW, 5.9 bar, 280 l/min
Dimensions (w/h/d)	245 x 690 x 620		340 x 780 x 700	
Cooling water connect.	G 3/4"			
Mold connection	G 1 1/4"			
Standard cooling valve	G 3/8"			
Power supply	standard 3 x 380 – 415 V/50 Hz			

Pump characteristics according 50 Hz



Cooling capacity diagram





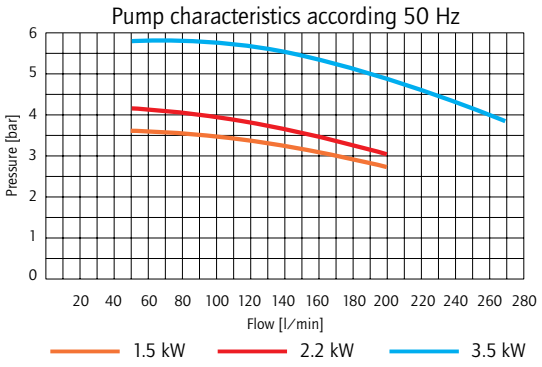
TEMPRO plus D120-L

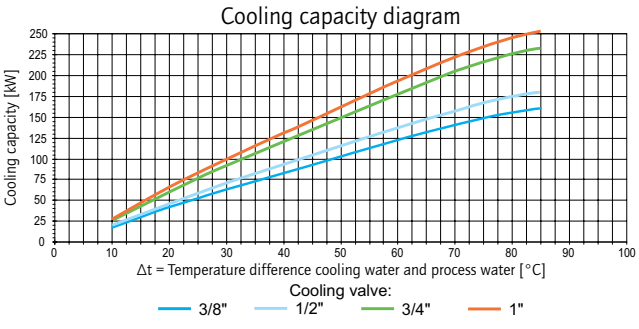
TEMPRO plus D120-L especially for large consumers, is equipped with radial pumps offfering high volume flow rates for different pressure ranges. A series with high ease of use, touch-display and many possibilities for every application.

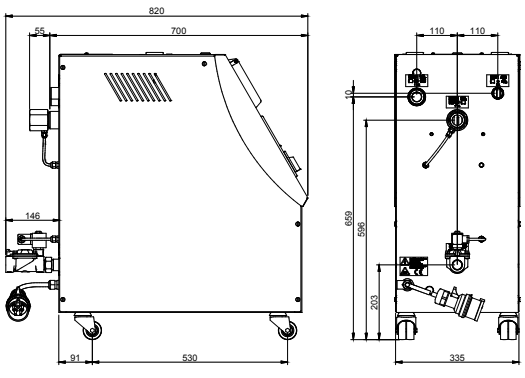
- • Standard-equipment
- ○ Optional equipment
- – no supply for this model

Equipment	
TEMPRO plus D120-L	
Self-optimizing temperature control via microprocessor	•
Maximum temperature monitoringv	•
Sensor break monitoring	•
Automator filling with pressure monitoring	•
Dry contact for alarm output	•
Connector for external sensor PT 100	•
Automated mold purging through pressurized air	○
Enhanced pump	○
5,7" TFT color touch display (full text display and protective cover)	•
Manometer in supply and return flow	•
Serial interface (RS 232, RS 485, 20 mA)	○
WITTMANN 4.0 interface	○
Analog Interface (4–20 mA / 0–10 V)	○
Operating hour counter/Service monitoring	•
Horn	•
Pump pressure measuring and control	•
Option: cooling valve	○
Thermomechanical safety limiter for shutting of the heating	•
Water supply filling valve for pressure decrease and water stop	•
Bypass including release valve for pump advance	•
Mold return flow savety valve (10 bar)	•
Flow measurement	○

Technical Data		
TEMPRO plus D120-L		
Heating capacity	18 kW	
Pump capacity (50 Hz) standard	1.5 kW 3.65 bar 200 l/min	
Pump capacity (50 Hz) enhanced, optional	2.2 kW 4.2 bar 200 l/min	3.5 kW 5.9 bar 280 l/min
Cooling water connection	G 3/4"	
Mold connection	G 1 1/4"	
Standard cooling valve	G 3/8"	
Power supply	standard 3 x 380 – 415 V/50 Hz	





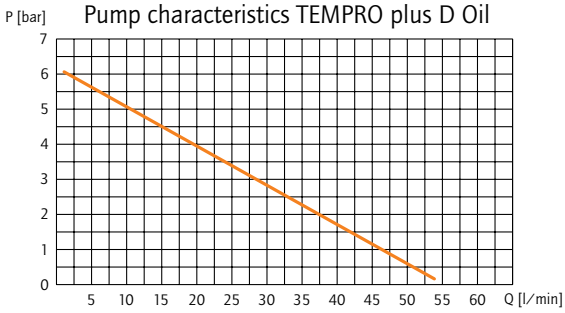


TEMPRO plus D OIL DEVICE

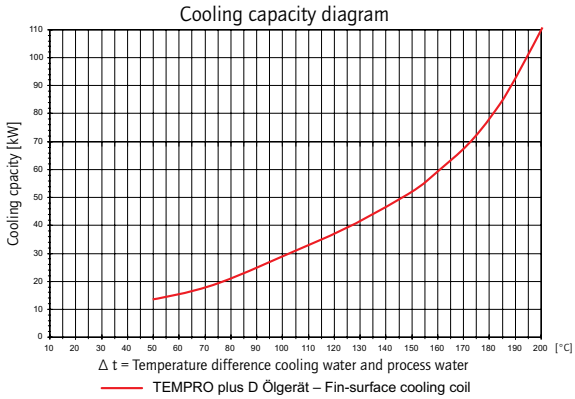
- » **With thermo-oil**
  Perfect quality up to 300 °C.
- » **Precision control**
  Microprocessor controlled until ± 0.5 °C accuracy.
- » **User-friendly touch-screen display**
- » **Line evacuating for mold purge**
- » **Double level control**
  Refill warning, automatic switch-off.
- » **Process pressure gauges standard**
- » **Magnetically coupled pump without seal**

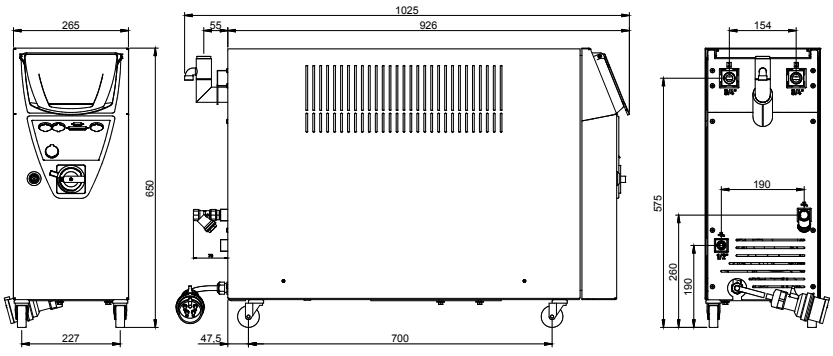
Equipment		
TEMPRO plus D Oil Device	**250**	**300**
Self-optimizing temperature control via microprocessor (± 0.5 °C)	•	•
Maximum temperature monitoring	•	•
Automatic heater control (max. heating power 16 kW)	•	•
Process pressure gauges standard	•	•
Level control max./min. (message for refilling/safety switch off)	•	•
Safety temperature limiter	•	•
Cooling coil (fin-surface) made from nickel plated copper	•	•
Automatic pump rotation direction detection	•	•
Serial interface (RS 232, RS 485, 20 mA)	○	○
WITTMANN 4.0 interface	○	○
Socket for external sensor PT 100	•	•
Socket for external mold sensor FeCo Type J	○	○
Magnetically coupled pump without seal	•	•
Automatic venting of system pressure	•	•
Mold purging via pump (max. 20 l)	•	•
Sensor break monitoring	•	•
Back flow sensor	•	•
Dry contact for alarm output plus audible alarm	•	•
Operating hour counter, indication of several intervals	•	•
Temperature-controlled colling water bypass	○	•

• Standard equipment
○ Optional equipment



Technical Data	
TEMPRO plus D Oil Device	
Heating capacity	max. 16 kW
Pump capacity (50 Hz)	1 kW, max. 6 bar, max. 55 l/min
Cooling water connection	G 1/2"
Mold connection	G 3/4"
Power supply	standard 3 x 380 – 415 V/50 Hz





TEMPRO plus D L90

Water units

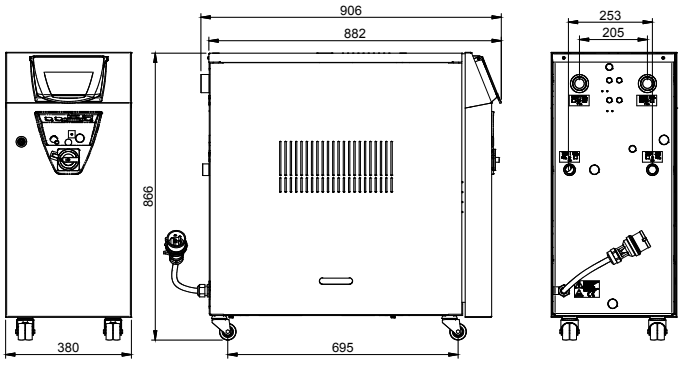
WITTMANN's **TEMPRO plus D L90** can heat up even big molds within a short time to the required set point. Besides the strong heater (36 kW) we have reinforced flow (up to 200 l/min) and cooling capacity.

Purge out of molds is supported by an additional pump which pumps the water to the return line or drain. Thus the purge volume is increased.

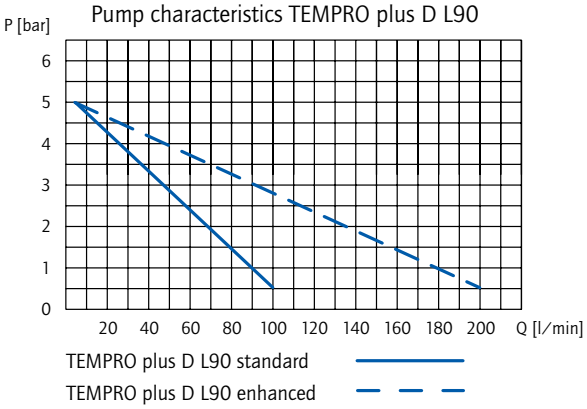
Equipment	
TEMPRO plus D L90	
Self-optimizing temperature control via microprocessor	•
Maximum temperature monitoring	•
Sensor break monitoring	•
Automatic filling with leakage monitoring and level control	•
Dry contact for alarm output plus audible alarm	•
Connector for external sensors PT 100	•
Connector for external mold sensor FeCo Type J	○
Leakstop function	•
Mold purging via pump (unlimited)	•
Pressure gauge/flow indication	○
Serial interface (RS 232, RS 485, 20 mA)	○
WITTMANN 4.0 interface	○
Operating hour counter/Service monitoring	•
Automatic pump rotation direction detection	•

- • Standard equipment
- ○ Optional equipment

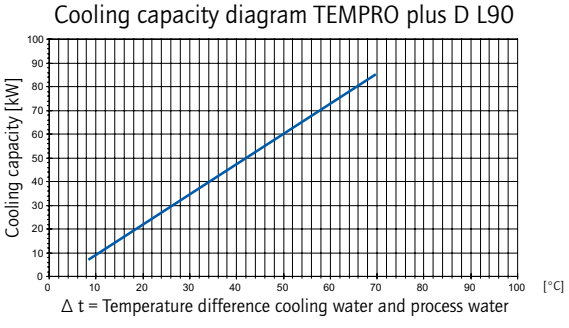
Technical Data		
TEMPRO plus D L90		
Heating capacity	18 kW (option: 36 kW)	
Pump standard T1001-50/60 Hz	2.2 kW, max. 5 bar, max. 100 l/min	
Pump enhanced T2001-50/60 Hz	2.8 kW, max. 5 bar max. 200 l/min	3.5 kW, max. 7.5 bar max. 200 l/min
Cooling water connection	G 3/4"	
Mold connection	G 1 1/4"	
Power supply	standard 3 x 380 – 415 V/50 Hz	



Pump characteristics TEMPRO plus D L90



Cooling capacity diagram TEMPRO plus D L90



WITTMANN Kunststoffgeräte GmbH
Lichtblaustrasse 10
1220 Vienna | Austria
Tel.: +43 1 250 39-0
info.at@wittmann-group.com

www.wittmann-group.com

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