

CLASSIC AND MATIC PRODUCT OVERVIEW

Temperature control units



FOR EVERY APPLICATION

THE RIGHT SOLUTION.

Powerful temperature control solutions for maximum process reliability.
Efficiency and quality – designed and manufactured in Switzerland.

INDUSTRIES THAT TRUST US



Plastics & injection moulding



Die casting



Extrusion



Pharma & Chemicals



Rubber & silicones



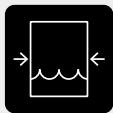
Food



Wood processing



Lamination, printing & textiles



PRESSURISED WATER

Temperature control units

Heat transfer medium water
up to 160 °C

YOUR HIGHLIGHTS

- **High process temperatures** – for demanding applications
- **Process reliable** – flow monitoring & pressure relief
- **Fast mould changes** – automatic mould draining

INJECTION MOULDING – DIE CASTING – FOOD –
CHEMICALS & PHARMA

CLASSIC

MATIC

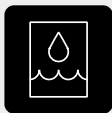


Up to 160 °C
Water



6–48 kW
Heating capacity

Pages 14–17



UNIVERSAL

Temperature control units

Heat transfer medium water/oil
up to 90 °C/150 °C

YOUR HIGHLIGHTS

- **Water & Oil** – two heat transfer media, one flexible solution
- **Compact & Powerful** – high output in a small footprint
- **Versatile use** – for different processes

INJECTION MOULDING – EXTRUSION – PHARMA & CHEMICALS

CLASSIC

MATIC



90 °C
Water

150 °C
Oil



3–18 kW
Heating capacity

Pages 8–11



OIL

Temperature control units

Heat transfer medium oil
up to 360 °C

YOUR HIGHLIGHTS

- **High process temperatures** – for demanding applications
- **High flow rates** – even temperature distribution
- **Strong cooling capacity** – rapid cooling at high temperatures

EXTRUSION – DIE CASTING – COMPOSITES – RUBBER

CLASSIC

MATIC

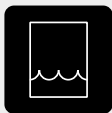


Up to 360 °C
Oil



8–144 kW
Heating capacity

Pages 18–21



WATER

Temperature control units

Heat transfer medium water
up to 90 °C

YOUR HIGHLIGHTS

- **High cooling capacity** – fast cooling for short cycle times
- **Powerful pump** – fast and even heat transfer
- **Service-friendly** – clear design for easy maintenance

FOOD – EXTRUSION – LAMINATION

CLASSIC

MATIC



Up to 90 °C
Water



3–144 kW
Heating capacity

Pages 10–13



CHILLERS

From +10 °C to +40 °C

YOUR HIGHLIGHTS

- **Air-cooled systems** – with and without tank
- **Water-cooled systems** – with and without tank
- **Refrigerant** – R1234yf (GWP <1)

PLASTICS PROCESSING – MACHINERY – INDUSTRY

CLASSIC



+10 °C to +40 °C



5–216 kW
Cooling capacity

Chiller
brochure

CLASSIC product line

TESTED.
ROBUST.
SIMPLY RELIABLE.

The CLASSIC units represent what a temperature control or cooling solution must deliver at its core: reliable temperature control, long-lasting operation, and ease of service.

Proven technology, robust construction, and high service friendliness make the CLASSIC line the ideal stand-alone solution for applications focusing on reliable regulation of the circulating medium.



Your advantages at a glance



Proven Technology
Long-term tested technology for reliable operation and long lifetime.



Robust Construction
Designed for daily use in demanding production environments.



Service-friendly
Easy access and thoughtful design facilitate maintenance and service.



Digital connectivity
CLASSIC units can also be integrated into digital production environments.



CLASSIC – the reliable solution, when temperature control simply has to work.

MP-888 controller

Structure

- Compact controller with predefined machine settings (according to appliance type)
- PID control with 2-point cooling switchable to PID cooling

Operation and display

- Simple operation via key combinations
- Clear display of operating mode, setpoint actual temperature and flow rate
- Physical units selectable

Functions and security

- Visual error messages
- Limit value monitoring for excessive temperature deviation between setpoint and actual value
- Flow monitoring

Interfaces

- Analogue: input 0-10 V, (0)4-20 mA output 0-10 V

Technical data

- Control voltage: 230 V
- Languages: numerical parameters



MP-988 controller

Structure

- Compact controller with predefined machine settings (according to appliance type)
- PID control with 2-point cooling switchable to PID cooling

Operation and display

- Simple operation via key combinations
- Clear display of operating mode, setpoint actual temperature and flow rate
- Display of up to three measuring points
- Physical units selectable

Functions and security

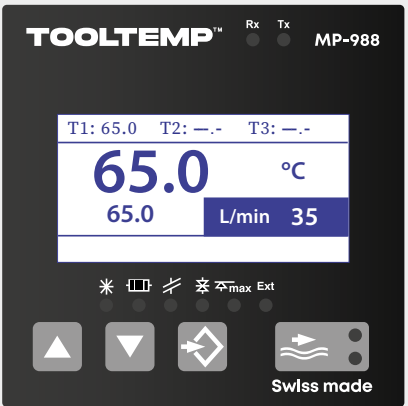
- Visual error messages
- Limit value monitoring in the event of excessive temperature deviation between setpoint and actual value
- Flow monitoring
- Optional control: tank temperature, return temperature or mould temperature
- Ramp control: 25 temperature points, 8 curves

Interfaces

- Analogue: 0-10 V, (0)4-20 mA
- RS-485, RS-232, Current Loop, CAN
- Optionally: Profibus or Profinet

Technical data

- Control voltage: 230 V
- Languages: numerical parameters



MATIC product line

SMART TEMPERATURE CONTROL. CONNECTED PRODUCTION. ENERGY SAVING.

MATIC is the next generation of temperature control technology. Developed for automated production environments, the product line combines precise temperature control, intelligent pump technology and extensive connectivity.

At the centre is the IRIS controller developed by Tool-Temp. It prepares MATIC for modern production systems – from classic digital and analogue signals to serial interfaces, fieldbuses and industrial networks.



More efficiency. More control. Less downtime.



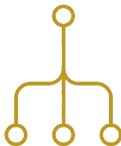
Intelligent temperature control
Forecast control algorithms reduce unnecessary heating and cooling and ensure stable process control.



Efficient pump drive
Modern inverter technology adapts pump power as needed. Eco-mode automatically saves energy.



100% heating power – available anytime
Heaters immersed directly in the heat transfer medium transfer energy without detours – for maximum heating power exactly when needed.



Maximum connectivity
IRIS offers suitable interfaces for almost any production environment – from classic signals up to modern industrial Ethernet protocols.



MATIC reduces what is not needed: energy consumption, unnecessary process fluctuations and unplanned downtime.



MATIC – intelligent temperature control for connected production.

IRIS control system

Modular design

- Interfaces and options are flexibly expandable
- The controller automatically recognises new components
- One-click software updates via USB stick

Simple operation

- 7-inch touchscreen with interactive user guidance
- Tilttable display for ergonomic working
- Predefined actions for all common processes such as mould emptying, end of shift, emergency cooling
- Languages: EN, DE, FR, IT, ES, NL, CS, PT, HU, PL, SV, HBS, JA, TR, ZH, RO (others through future software updates)

Continuous process monitoring

- User concept with three user levels and password protection
- Error messages with recommended actions
- Limit value monitoring
- Automatic adjustment of the pump rotation direction
- Automatic fill level monitoring – Dry run protection
- Monitoring of the process variables: Temperature, pressure, flow rate

Customised functions

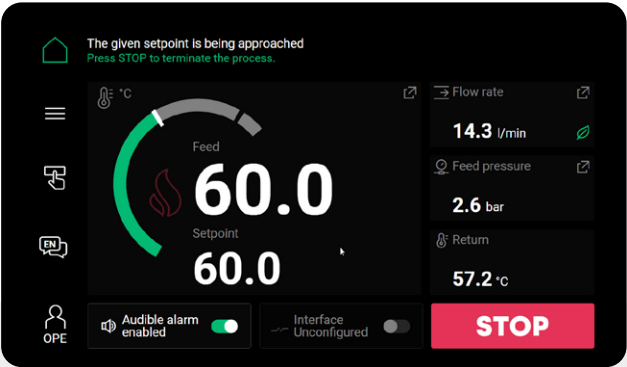
- Programmable time-resolved recipes
- Physical units and date format selectable
- Flexible timer functionality

Energy efficient

- Tailored pump performance thanks to a frequency converter fully integrated into the control logic
- Three pump control modes (Auto/Eco, flow rate setpoint, direct power setpoint)
- System-optimised control with energy-saving switching logic

Intelligent interfaces

- OPC UA: Euromap 82.1 standard
- IO1: RS-232/485, CL 20 mA, CAN
- IO2: Profibus, Profinet, EtherNet/IP
- IO3: Analogue (0-10 V, 0/4-20 mA), digital (0/24V inputs, 0/230V relay outputs), external temperature sensor



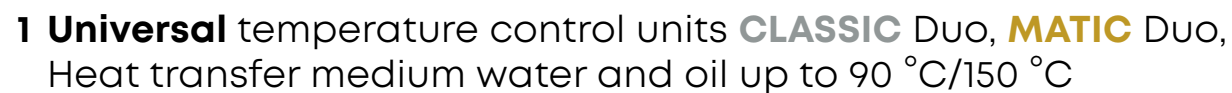
Technical data

Human-Machine Interface (HMI)

Touch screen	7-inch display with state-of-the-art PCAP touch technology
Display	IPS panel with specially increased luminosity (1000 cd/m²), resolution 1024x600
Protective glass	Frosted to prevent reflections, optical bonding with display to maintain full luminosity
Impact resistance class	IK06 (IEC 62262) – impact energy of 1J
Protection class	IP54 (EN 60529) – against dust and splash water on all sides
Audible alarm	Volume max. 110 dB at 3.2 kHz
Connection	Proprietary multifunction cable

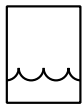
Controller modules

Protection class	IP20 (EN 60529) – Protection against accidental contact
Power supply and control voltage	24 V DC
Connection	Ribbon cable for proprietary data bus, power supply and reset line
Type tests	Carried out in accordance with EN 61010-1, EN IEC 61010-2-201 and EN IEC 61010-2-010



■ standard, □ optional, - not possible
I/O Module 1, Manufacturer protocols (RS-232, RS-485, CAN, Current-Loop)
I/O Module 2, Profinet, EtherNet/IP, Profibus
I/O Module 3, 3 x Digital output (changeover switch), 2 x Digital input (on/off), 2 x Analogue output, 2 x Analogue input,
1 x ext. Temperature sensor
¹ included in I/O module 1, ² included in I/O module 2, ³ included in I/O module 3





2 Water temperature control units

CLASSIC Water, MATIC Water, Heat transfer medium water up to 90 °C

Product	Max. temperature °C	Max. filling amount l	Heating capacity kW	Pump capacity l/min.	Pump pressure bar	Cooling system Tubular heat exchanger	Plate heat exchanger	Direct cooling	At flow temperature °C	Suction capacity vacuum mWC	Controller	Temperature sensor		Flow control	Leakstopper device	Mould drain	Temperature control at the process	Time-limited water refill	Automatic refill	Level control	Visual fault indications	Acoustic warning	Pressure regulation		0-10 V input/output	4-20 mA input	4-20 mA output	RS-232, RS-485, Current-Loop, CAN	Profibus interface	Profinet interface	EtherNet/IP	OPC-UA interface	Web interface (LAN cable, WiFi)	
CLASSIC Water TT-170 L	90	5	3	19	2.9	a)	30	-	-	90	-	MP-888	FEKO Type J		-	-	-	-	-	■	■	■	■	-		■	■	-	-	-	-	-	-	
CLASSIC Water TT-1548 E	90	20	12	60	4	b)	5	-	-	70	8				■	■	■	■	-	-	■	■	■	-		■	■	■	■ ⁴	■ ⁴	■ ⁴	-	-	-
CLASSIC Water TT-1368 W	90	100	72	250	4.5	a)	-	400	-	70	-				■	-	-	□	-	■	■	■	■	□		■	■	□	□ ⁴	□ ⁴	□ ⁴	-	-	-
CLASSIC Water TT-1368 W	90	100	96	250	4.5	a)	-	400	-	70	-				■	-	-	□	-	■	■	■	■	□		■	■	□	□ ⁴	□ ⁴	□ ⁴	-	-	-
CLASSIC Water TT-1368 V	90	100	72	580	4.1	a)	-	400	-	80	-				■	-	-	□	-	■	■	■	■	■		■	■	□	□ ⁴	□ ⁴	□ ⁴	-	-	-
CLASSIC Water TT-1368 V	90	100	96	580	4.1	a)	-	400	-	80	-				■	-	-	□	-	■	■	■	■	■		■	■	□	□ ⁴	□ ⁴	□ ⁴	-	-	-
CLASSIC Water TT-1368 V	90	100	144	580	4.1	a)	-	400	-	80	-				■	-	-	□	-	■	■	■	■	■		■	■	□	□ ⁴	□ ⁴	□ ⁴	-	-	-
MATIC Water 90 18 K	90	40	18	120	3.8	a)	120	275	-	90	8	IRIS	Pt100		■	■	-	□ ³	■	■	■	■	■	■		□ ³	□ ³	□ ³	□ ¹	□ ²	□ ²	□ ²	■	■
MATIC Water 90 27 K	90	40	27	120	3.8	a)	120	275	-	90	8				■	■	-	□ ³	■	■	■	■	■	■		□ ³	□ ³	□ ³	□ ¹	□ ²	□ ²	□ ²	■	■
MATIC Water 90 36 K	90	40	36	120	3.8	a)	120	275	-	90	8				■	■	-	□ ³	■	■	■	■	■	■		□ ³	□ ³	□ ³	□ ¹	□ ²	□ ²	□ ²	■	■
MATIC Water 90 45 K	90	40	45	120	3.8	a)	120	275	-	90	8				■	■	-	□ ³	■	■	■	■	■	■		□ ³	□ ³	□ ³	□ ¹	□ ²	□ ²	□ ²	■	■
MATIC Water 90 48 W d	90	75	48	285	4.6	c)	-	-	285	80	-				■	■	-	□ ³	■	■	■	■	■	■		□ ³	□ ³	□ ³	□ ¹	□ ²	□ ²	□ ²	■	■
MATIC Water 90 48 W n	90	70	48	250	4.5	a)	-	400	-	70	-				■	■	-	□ ³	■	■	■	■	■	■		□ ³	□ ³	□ ³	□ ¹	□ ²	□ ²	□ ²	■	■

a) indirect, b) air cooled, c) direct, ■ standard, □ optional, - not possible
I/O Module 1, Manufacturer protocols (RS-232, RS-485, CAN, Current-Loop)
I/O Module 2, Profinet, EtherNet/IP, Profibus
I/O Module 3, 3 x Digital output (changeover switch), 2 x Digital input (on/off), 2 x Analogue output, 2 x Analogue input,
1 x ext. Temperature sensor
¹ included in I/O module 1, ² included in I/O module 2, ³ included in I/O module 3, ⁴ included in MP-988



MATIC Water 90 18 K



MATIC Water 90 45 K

POWERFUL. SAFE. PRESSURE-STABLE.

Maximum temperature and process reliability for demanding applications.

1



Intuitive HMI

Easy to operate. Precise control.

In-house developed control system, specifically designed for temperature control processes – intuitive, clearly structured and flexible.

MATIC Integrated, network-enabled IRIS control system and ergonomically tiltable display.

CLASSIC Proven PID controller – reduced to the essentials.

2



Optimised airflow

Efficiently cooled. Permanently protected.

The pump supports air circulation within the unit and ensures efficient cooling of the power electronics.

MATIC Protection rating up to IP54 possible.

MATIC & CLASSIC Reduced thermal load – for a long service life of the electronics.

3



Full process reliability

Safe start-up. Safe monitoring. Safe shutdown.

MATIC & CLASSIC

Flow monitoring: Detects deviations at an early stage and supports stable process control.

Automatic pressure relief: Controlled pressure reduction for safe mould changes.

4



Robust pump technology

Generously dimensioned. Resistant to contamination.

In-house developed pump with generous clearances – particularly tolerant of dirt and deposits. For reliable operation even under demanding water conditions.

MATIC Equipped as standard with a wear-free magnetic coupling and frequency inverter.



Long service life

High-quality components and robust construction.



Easy maintenance

Thoughtful design for quick access and service.



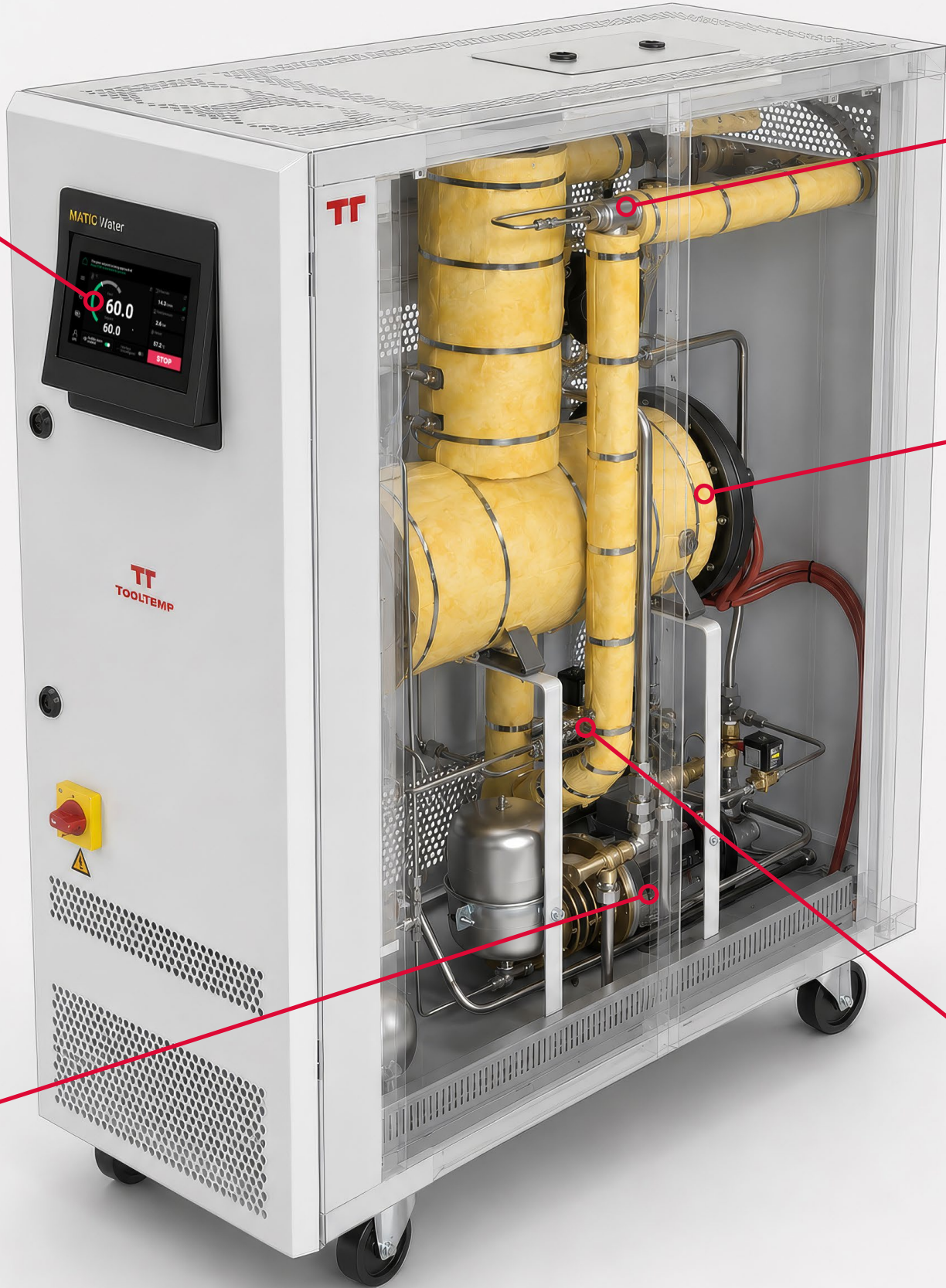
Process stability

Precise control and reliable monitoring for constant results.



Efficiency

More power at less energy consumption.



5



Fast mould blow-out

Mould completely empty. Quickly changed.

The water is actively blown out of the mould, completely emptying and drying it. This speeds up mould changes and reduces downtime.

MATIC Fully automatic pressure relief and blow-out with compressed air.

6



Powerful cooling

Direct. Indirect. Combined.

The unique combination of indirect and direct cooling enables flexible and powerful temperature reduction.

MATIC Configurable combination of shell-and-tube and direct cooling.

CLASSIC Manually selectable direct cooling.

7



Robust design

Robust in operation. Convenient in everyday use.

Durable stainless steel piping, clearly structured design, maintenance-free pressure regulation and intelligent automatic functions simplify operation and maintenance.

MATIC & CLASSIC

Automatic filling: Reduces operator effort and enables convenient, fast start-up.

Pressure regulation: The air volume enclosed in the expansion vessel regulates the pressure passively and mechanically, without electronics.

8



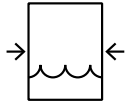
Precise temperature measurement

Precise measurement. Stable control.

Temperature sensors matched to the respective control requirements – for precise and reliable temperature control.

MATIC Supply and return lines with Pt100 precision sensors for maximum control accuracy.

CLASSIC Robust and proven FEKO sensor.



3 Pressurised water temperature control units

CLASSIC Water, MATIC Water, Heat transfer medium water up to 160 °C

Product	Max. temperature °C	Heating capacity kW	Pump capacity l/min.	Pump pressure bar	with booster pump	Cooling system	Tubular heat exchanger kW	Plate heat exchanger kW	Direct cooling kW	Suction capacity vacuum mWC	Controller	Temperature sensor			Flow control	Leakstopper device	Pressure relief	Mould drain	Temperature control at the process	Time-limited water refill	Automatic refill	Level control	Visual fault indications	Acoustic warning	Pressure regulation		0-10 V input/output	4-20 mA input	4-20 mA output	RS-232, RS-485, Current-Loop, CAN	Profibus interface	Profinet interface	EtherNet/IP	OPC-UA interface	Web interface (LAN cable, WiFi)
CLASSIC Water TT-1398 N	140	6	110	5	-	a)	20	-	-	-	MP-888	FEKO Type J			■	-	■	-	-	-	■	■	■	■	-		■	■	□	□ ⁴	□ ⁴	-	-	-	-
CLASSIC Water 140 12 N n	140	12	65	4.2	-	a)	48	-	-	8					■	-	■	-	-	-	■	■	■	■	-		■	■	□	□ ⁴	-	-	-	-	-
CLASSIC Water 140 12 N	140	12	43	3.8	-	a), c)	45	-	75 at 70 °C	8					■	■	■	■	■	-	■	■	■	■	-		■	■	□	□ ⁴	-	-	-	-	-
CLASSIC Water 140 24 N	140	24	110	5	-	a), c)	70	-	60 at 60 °C	8					■	■	■	■	■	-	■	■	■	■	-		■	■	□	□ ⁴	-	-	-	-	-
CLASSIC Water TT-1358 W	130	48	250	4.5	-	a)	180	400 at 70 °C	-	-					■	-	■	-	-	-	■	■	■	■	□		■	■	□	□ ⁴	□ ⁴	□ ⁴	-	-	-
CLASSIC Water TT-30/160															■	-	■	-	-	-	■	■	■	■	-		■	■	-	-	-	-	-	-	-
Cold water circuit	90	6	75	6.5	■	a)	-	200 at 90 °C	-																										
Hot water circuit	160	12	75	6.5	■	a)	80	-																											
CLASSIC Water TT-DW160 9	160	9	36	5	■	a)	-	40 at 150 °C	-	-					■	-	■	-	-	-	■	■	■	■	-		■	■	□	□ ⁴	□ ⁴	□ ⁴	-	-	-
CLASSIC Water TT-DW160 18	160	18	36	5	■	a)	-	40 at 150 °C	-	-					■	-	■	-	-	-	■	■	■	■	-		■	■	□	□ ⁴	□ ⁴	□ ⁴	-	-	-
MATIC Water 160 12 B	160	12	75	6.5	■	a), c)	65	-	60 at 50 °C	8	IRIS	Pt100			■	■	■	■	□ ³	■	■	■	■	■	■		□ ³	□ ³	□ ³	□ ¹	□ ²	□ ²	□ ²	■	■
MATIC Water 160 24 B	160	24	75	6.5	■	a), c)	85	-	60 at 60 °C	8					■	■	■	■	□ ³	■	■	■	■	■	■		□ ³	□ ³	□ ³	□ ¹	□ ²	□ ²	□ ²	■	■

a) indirect, b) air cooled, c) direct, ■ standard, □ optional, - not possible

I/O Module 1, Manufacturer protocols (RS-232, RS-485, CAN, Current-Loop)

I/O Module 2, Profinet, EtherNet/IP, Profibus

I/O Module 3, 3 x Digital output (changeover switch), 2 x Digital input (on/off), 2 x Analogue output, 2 x Analogue input,

1 x ext. Temperature sensor

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CLASSIC Water 140 12 N



MATIC Water 160 24 B

HIGH TEMPERATURES. PRECISE. RELIABLE.

Oil

Temperature control units

Precise temperature control up to 360 °C for the highest requirements.

1

Intuitive HMI



Easy to operate. Precise control.

In-house developed control system, specifically designed for demanding oil temperature control processes – intuitive, clearly structured and flexible.

MATIC Integrated, network-enabled IRIS control system and ergonomically tiltable display.

CLASSIC Proven PID controller – reduced to the essentials.

2

High-performance pump



High flow rate. High temperature. Maximum performance.

Pump technology developed by Tool-Temp for high flow rates and efficient heat transfer – designed for continuous operation at 360 °C.

MATIC Optionally available with a magnetically coupled, leak-free pump.

3

Robust down to the last detail



Corrosion-resistant. Durable.

High-quality stainless steel piping, robust heating coils and tank constructions are designed for continuous operation under demanding thermal conditions.

MATIC & CLASSIC Corrosion-resistant stainless steel piping for a long service life and reliable operation.

4

Reliable flow measurement



Reliable measurement. Stable temperature control.

Flow measurement designed for high oil temperatures enables reliable monitoring of the volumetric flow rate across the entire temperature range.

MATIC & CLASSIC Continuous flow monitoring up to 360 °C for high process reliability.



Long service life

High-quality components and robust construction.



Easy maintenance

Thoughtful design for quick access and service.



Process stability

Precise control and reliable monitoring for constant results.



Efficiency

More power at less energy consumption.

5



Intelligent design reduces oil ageing

Fewer oil changes. Reduced servicing effort. Less downtime.

The expanded hot oil is routed into the expansion tank via a thermal siphon. This prevents the hot oil from coming into contact with oxygen. Oxidation does not occur and oil ageing is largely prevented.

MATIC & CLASSIC Reduced oil ageing, fewer oil changes.

6



Precise temperature measurement up to 360 °C

Precise measurement. Stable control.

Temperature sensors matched to the respective control requirements – for precise and stable temperature control.

MATIC Supply and return lines with Pt100 precision sensors for maximum control accuracy.

CLASSIC Robust and proven FEKO sensor.

7



Maintenance-friendly heat exchanger

Reduced scaling. Quick to service.

In the shell-and-tube heat exchanger, the cooling water flows around the outside of the oil-carrying tubes. Limescale deposits form more slowly and exclusively on the outside of the tube coils, where they can be easily removed mechanically.

MATIC Models with plate heat exchangers for particularly high cooling requirements.



4 Oil temperature control units

CLASSIC Oil, MATIC Oil, Heat transfer medium oil up to 360 °C

	Max. temperature	Max. filling amount	Expansion volume	Heating capacity	Pump capacity	Pump pressure	Axial face sealed	Magnetic drive	Cooling system	Tubular heat exchanger	Plate heat exchanger	At flow temperature	Suction capacity vacuum	Controller	Temperature sensor																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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^{a)} indirect, ^{b)} air cooled, ^{c)} direct, ■ standard, □ optional, - not possible
I/O Module 1, Manufacturer protocols (RS-232, RS-485, CAN, Current-Loop)
I/O Module 2, Profinet, EtherNet/IP, Profibus
I/O Module 3, 3 x Digital output (changeover switch), 2 x Digital input (on/off), 2 x Analogue output, 2 x Analogue input,
1 x ext. Temperature sensor
¹ included in I/O module 1, ² included in I/O module 2, ³ included in I/O module 3, ⁴ included in MP-988

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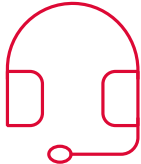


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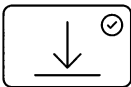
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