



TempMaster™ series M4

OUR MOST ADVANCED TEMPERATURE CONTROLLER PLATFORM



FEATURING NEW
HR-CONNECT
TECHNOLOGY



NEW COMPACT DISPLAY HEAD UNIT

- Machine mountable to eliminate the controller footprint.
- Option to mount on a lightweight compact trolley for enhanced mobility and flexibility.
- 12" full-color touch screen.
- Electrically adjustable screen to optimize viewing angle.



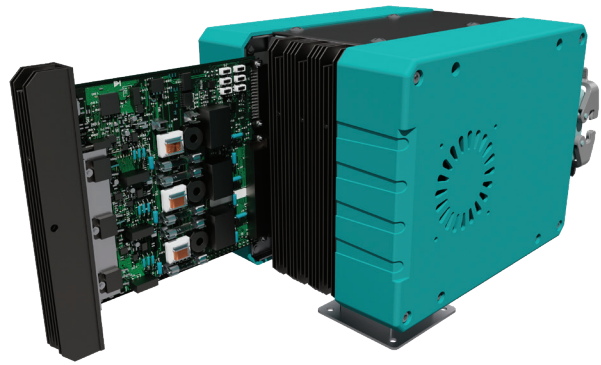
NEW MOLD-MOUNTED ELECTRICAL BOX WITH INTEGRATED CONTROL CARDS

- M4 Mold Control Boxes replace conventional E-Boxes and stay with the mold.
- Capacity to control up to 72 temperature zones (@15A).
- Wiring the hot runner system remains unchanged.
- Compatible with new and existing hot runner systems.
- A retrofit adapter is available to make conversions quick and easy.



NEW 3Z-15A MODULAR CONTROL CARD

- High-capacity design.
- Reduces card requirements by up to 30% (vs. competitors).
- Inserted into the mold control e-box (cards stay with the mold).
- Eliminates conventional controller cabinet footprint.
- Integrated status light lets users instantly check the status of each card.
- On-board thermocouple fuses.
- High reliability (5-Year Warranty).



HR-CONNECT TECHNOLOGY

ELIMINATE CONVENTIONAL MOLD CABLES

Save Costs • Reduce Weight • Eliminate Clutter

HR-CONNECT Technology, available exclusively on TempMaster M4 controllers, is a revolutionary new innovation that completely eliminates the need for conventional thermocouple **AND** power cables. Eliminating these cables helps to reduce cost, weight and clutter from the molding cell.

HR-CONNECT Technology utilizes the new M4 eBOX design that attaches to the mold. A single, thin and lightweight cable connects into the M4 display head unit from the eBOX. It's as simple as that. Wiring the Hot Runner system remains unchanged. This technology is compatible with new and any older (retrofit) Hot Runner Systems.



Only a single HR-Connect cable is required to power and control the mold.

INTUITIVE TOUCH SCREEN CONTROLS

Our modern interfaces are designed to be highly intuitive. Information and functions is quickly accessible. Many users are often comfortable enough to start molding right away without training.

- Temperature Actual.
- Temperature Range.
- Temperature Min./Max.
- Temperature Deviation.
- Deviation Alarms.
- Power % Output.
- Current (A).
- Volts.
- Watts & Kw per hour.
- Resistance (ohms), and more.

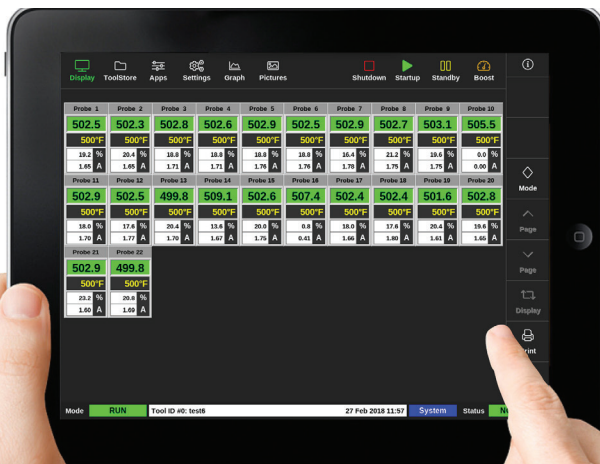
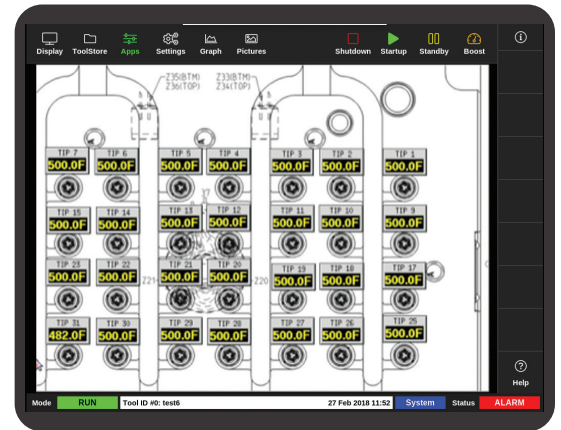
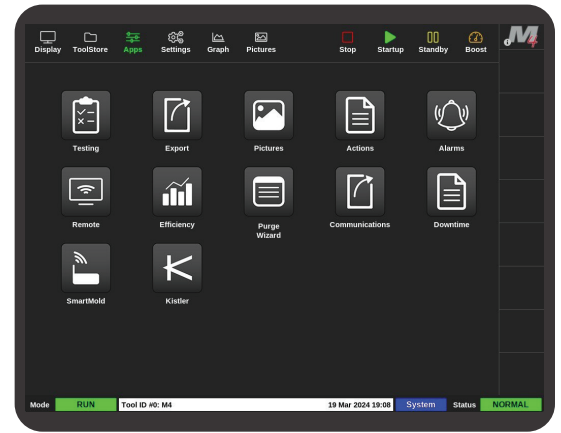
Easy View

Quickly and easily identify zones with the intuitive “Easy View” zone naming software. Simply upload a mold image or GA drawing and drag, drop and customize zone labels.

Attach zone labels and adjust temperature setting directly the GA drawings or mold images. Greatly simplifies complicated molds and work environments. Improves operator experience and convenience.

Power Output & Efficiency

Improve accuracy of your operational costs by tracking energy consumption, along with cycle time, operational cavities and more.



Wireless Network Control

- Utilize VNC on a tablet to monitor controls.
- Multi Cell Operation.
- Multiple IP Operation.
- Download/Upload Tool Setup.
- Excellent solution for clean room applications.

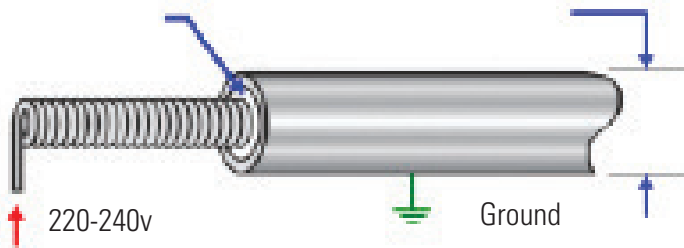
PROTECTION & DIAGNOSTICS

Soft Start

Heaters can be severely damaged from arcing in damp conditions. Soft start eliminates this risk by using low voltage Phase Angle Firing to dry out heaters on start-up. Significantly extends the life of your equipment.

Insulation material, typically magnesium oxide, is hygroscopic (absorbs moisture). When insulation is damp, high voltage arcing across to ground can occur.

Steel tube, swaged down to as little as 2mm diameter.



Plastic Leak Detection (Nozzle)

Plastic leakage can result in costly repairs and extended downtime to fix. This protection feature continuously monitors for unusual power consumption increases and automatically stops the process before damage is done.

Plastic Leak Detection (Manifold)

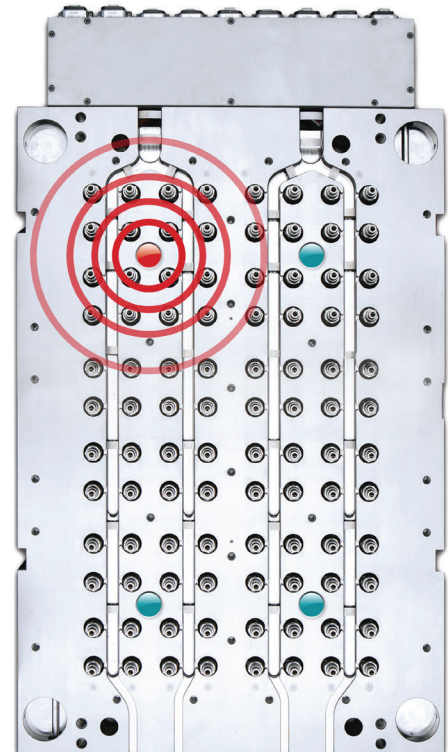
Manifold plastic leakage detection provides a second layer of protection for your investment. The M4 has the ability to monitor up to 8 zones for manifold plastic leakage to detect issues before they become costly service repairs.

Continuous Ground Fault Detection

The system monitors itself for power level loss to prevent compromising the molding process and to maintain consistent production quality. The system quickly notifies the operator if corrective action is to be taken.

Rapid Automatic Tool Diagnostics

Tool diagnostics can be completed in as little as 15 minutes allowing you to get back into production sooner. The system checks wiring and heater elements for damage. If an issue is found the system generates error codes.



INDUSTRY 4.0 ENABLED

Collect Real-Time Process Data

SmartMOLD, along with a variety of sensors, are now included (built-in) with every M4 controller. Molders can collect a variety of data points including cycle count, cycle time, environmental humidity, and of course, zone temperatures. Collecting cooling flow and cooling temperature is an optional capability.



Integrate Process Data with Your Existing Local ERP/MES Systems

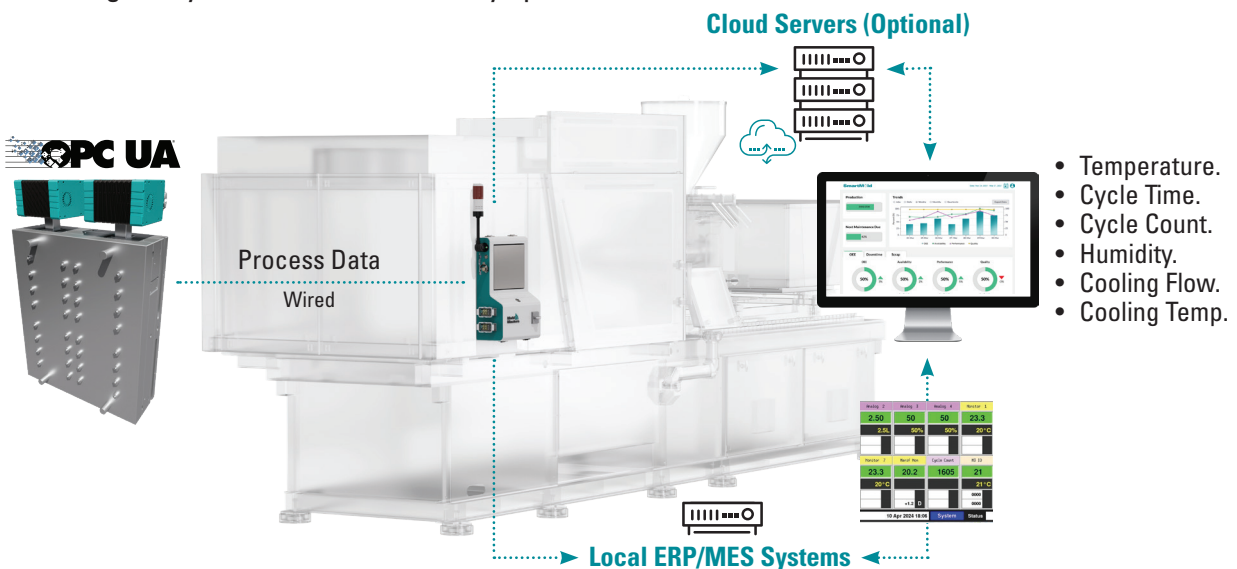
Molders now have the ability to easily collect valuable mold process data and feed it into their existing local ERP/MES systems.

Cloud Services (Optional)

Molders have the option to leverage SmartMOLD Cloud Services where complex data is presented in a simple and easy to understand format. The cloud offers unlimited storage and information can be viewed 24/7 through the desktop or mobile application. The cloud offers enhanced services such as maintenance scheduling/tracking, downtime tracking, scrap tracking, reporting, document storage, mold info, and more.

Text/Email Alerts

Both local and cloud communication options offer the ability to receive a variety of alerts through text and/or email. Ensuring that your investment is always protected.



CONTROL FEATURES	
APS (Adaptive Process System)	S
Low Mass High Watt Nozzle Control	S
Phase Angle, Burst Firing	S
In-field Calibration Mode	S
Thermocouple Slave (Manual)	S
Thermocouple Slave (Auto)	S
Auto Standby/Alarm Output	S
T/C Auto/Man Kick-Off	S
Wet Heater Bakeout	S
T/C Filtering	S
Delta/Wye Convertible Option	S
Circuit Breaker Sized to Load	S
Interface Autopilot Control	S
Set Point Limit	S
Set Power Limit	S
Auto Load % Output	S
Uniform Start-Up	S
Standby Timer	S
Even Heat (controlled heating)	S
Even Cool (controlled cooling)	S
Sequential Melt-Start	S
Mold ID	S
Daisy Chain Enclosures	S
PROTECTION FEATURES	
On-Board Load Fuses	S
On-Board T/C Fuses	S
Soft Start	S
Continuous Ground Fault Detection	S
Current Measurement	S
Overload Protection	S
Short Circuit Protection	S
Plastic Leak Detection (Auto)	S
Manifold Plastic Leak Detection	O
Automatic Tool Diagnostics	S
IO Card (Interlock with IMM)	S
MONITORING/REPORTING	
Instant Data Reporting	S
Data Report Archive	S
Print Screen in jpg,png,pdf format	S
Save to USB Drive	S
3-D Historical Graph	S
Easyview	S
Alarm History	S
Power Consumption Monitoring	S
Bar Graph Display (Temp/Power %)	S
Event Log	UNLTD
Spreadsheet View	S
Bar Graph Overview (All Zones)	S

OPERATIONAL FEATURES	
Auto/Manual Control	S
Zone "on", "off" and "locked off"	S
Menu "Auto Save"	S
Zone Naming	S
Tool Store	200
USB Port	S
Touch Screen Calibration	S
Programmable Groups	S
Sequence Start	S
Sequence Shutdown	S
Sequenced Power Up (Manual)	S
Tool Data Export/Archive	S
Multi-Level Password	UNLTD
Time and Date Change	S
Network Printing (Ethernet IP)	S
On-Line Help	S
Purge Wizard (Color Change)	S
HR Performance Tracking System	S
Boost (Automatic)	S
Boost (Manual)	S
Operator ID	S
LAN Network	S
WLAN Network	O
Wireless Control (WiM2)	O
ALARMS	
Audible Alarm	S
Alarm Beacon	S
Zone Alarm Configure	S
(+) High Temperature	S
(-) Low Temperature	S
T/C Open (remembered % output)	S
T/C Reversed	S
Open Fuse	S
Open Heater	S
Shorted Heater/Wet	S
Ground Fault Detection	S
Plastic Leak Detection	S
Email / Text Alerts	S
COMMUNICATION	
SPI	S
OPC-UA	S
Real VNC	S
MODBUS	S
INTEGRATION OPTIONS	
SmartMOLD (Built-in)	S
WFM (Water Flow Monitoring)	O

"S" = Standard | "O" = Optional | "-" = Not Available

SPECIFICATIONS

User Interface	Full Color LCD Touch Screen
Display Sizes	12" (305mm)
Control Algorithm	APS (Adaptive Process System)
Power Control	Phase Angle and Burst Firing Modes (Time Proportional, Zero-Crossing)
Temp. Display Resolution	0.1 (°C or °F)
Power Response Time	8.3 ms at 60 Hz
Temperature Scale	°C or °F (Software Selectable)
Thermocouple	J or K-Type (Software Selectable)
Operating Range	0 - 472°C (32 - 882°F)
Output Voltage (Max)	264 VAC
Supply Voltage	200/240V 3P Delta or 380/415V 3P Star with Neutral (480V, 3P with optional transformer)
Frequency	50 - 60 Hz Automatic Switching
Ambient Temperature Range	5 - 45°C (41 - 113°F)
Humidity Range	Up to 95% non-condensing
Ground Fault Detection	40mA per Zone
Alarm Output	Closing Contact Relay 5A, 230V (Max)
T/C Connector	HBE24 /DL/M (Detachable Version)
Power Connector	HBE24 /DL/F (Detachable Version)
Input Protection	63mA Nano Fuses on Both T/C Legs
Overload Protection	Semi-conductor fuses on both heater legs
Heater Fuses	15A @ 220V Super Fast Blow Type (FF)
Control Modes	Closed Loop (Auto), Open Loop (Manual), Standby, Boost, Slave.
Ports	Serial, USB and Ethernet
LED Indicators	Scan
Communications	SPI, Real VNC, Modbus, OPC-UA.
Languages	English, French, German, Portuguese, Spanish, Polish, Russian, Chinese, Japanese, Czech, Italian, Turkish, Danish, Hungarian.

Control E-Box	# of Cards (Max)	# of Zones* (Max)	Dimensions W x D x H mm (in.)	Unit Weight kg (lb)
XXS	4	12	76x104x80 (3x4x3)	7 (15)
XS	8	24	116x104x80 (5x4x3)	9 (20)
S	12	36	156x104x80 (6x4x3)	13 (29)

*Based on 3z-15A cards.

