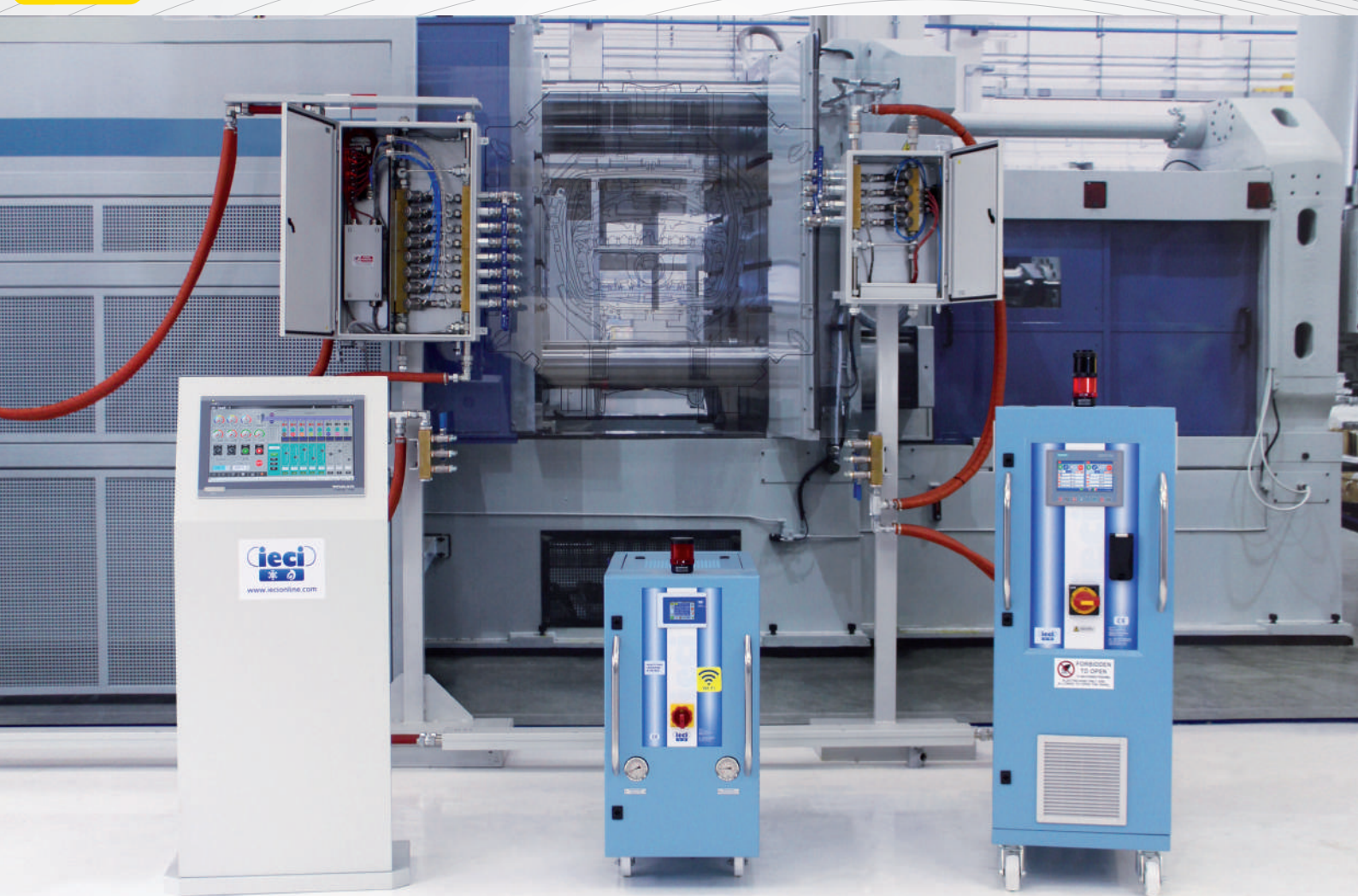


DIE TEMPERATURE CONTROLLERS *TEMPERATURE CONTROLLERS MANAGEMENT & ENHANCEMENT*

NEW

PIONEER III - IV



Peculiar characteristics of this innovative system are:

- Simplicity. This system is conceived to work by very simple control operations.
- Robustness. Long lasting life and resistance to prolonged work time in demanding conditions.
- Limited encumbrance. Filling streams to the mould grouped by 4 from one sole source.
- High flexibility in positioning the TCUs on the cell perimeter, by an ease and quick installation.
- VERSION III Management and control by the supervisor.
- VERSION IV Management and control by the TCU software, with supervisor, if necessary.



PIONEER III - IV

Temperature controllers management & enhancement



Comparison between Constant flow TCUs and Pulse Flow TCUs:

CONSTANT FLOW	PULSE FLOW
Process parameter is Temperature (°C)	Process parameter is Time (s)
+ Stable, repeatable	- Variable with season (T of fluid)
+ Pressurized circuit, no evaporation	- Not pressurized, possible evaporation
+ Pre-heating	- If used with cold water, no pre-heating
+ Minimized thermal shocks	- Strong thermal shocks
- Slow, not reactive	+ Fast, reactive, synchronized with DCM
- Single channel	+ Multi-channel
- Energy consuming	+ Energy saving

The Channel Multiplier PIONEER combines the advantages of both technologies:

IECI PIONEER
Process parameter: Temperature (°C) for gross tuning, Time (s) for fine tuning
+ Stable, repeatable since T is controlled
+ Pressurized circuit, no evaporation
+ Pre-heating
+ Minimized thermal shocks
+ Fast, reactive, synchronized with DCM
+ Multi-channel
+ Energy saving

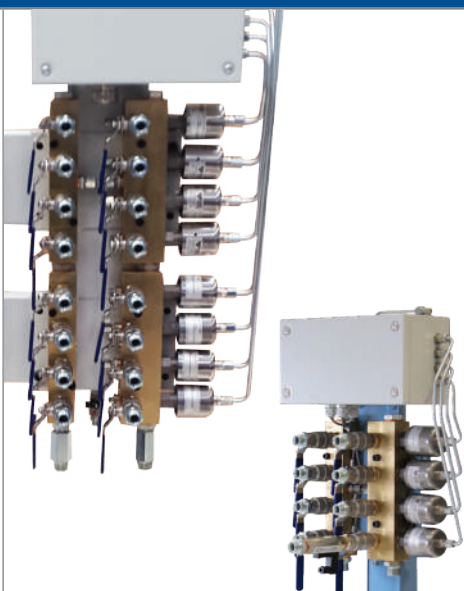
CHANNELS MULTIPLIER - MODULAR SYSTEM FOR 4 - 8 - 12 CHANNELS

Pioneer is an innovative system to control different channels independently. Combined with a pressurized water TCU, it allows to differentiate the thermoregulation on each channel. The system measures the return temperature of each channel and controls the flow by means of pneumatic valves. Flow metering is also possible for each channel. The version Pioneer controls the flow through ON/OFF pneumatic valves. The system works with pressurized water up to a temperature of 180°C (356°F).

Pioneer is a modular system with 4, 8 and 12 channels. Combination of more Pioneer systems extend the number of channels to a maximum of 96 channels, all of them controlled by the same main panel.

Technical features:

- Including 4-8-12 pneumatic valves for high temperature, threaded fittings;
- ON/OFF system;
- Chassis 2mm epossidic painted;
- Size: 4 way 40x17x55(h) cm, 8 way 40x17x100(h) cm
- Supervisor: 40x60x150(h) cm.



GENERAL CONTROL PANEL (SUPERVISOR)

This main control panel may manage 10 (ten) groups of 4-8-12 channels each, up to a max of 96 channels. The system is managed by IECI TD910 PLC + HMI, perfectly fitting each protocol of connection of any kind of DCM. On demand, the entire electronic configuration can be supplied with Siemens PLC + HMI. Thermoregulation software PIONEER.

