

**FORMAX**<sup>®</sup>

HERE BEGINS YOUR ULTIMATE VALUE

**FMC** Series  
FW Water Temperature  
Controller

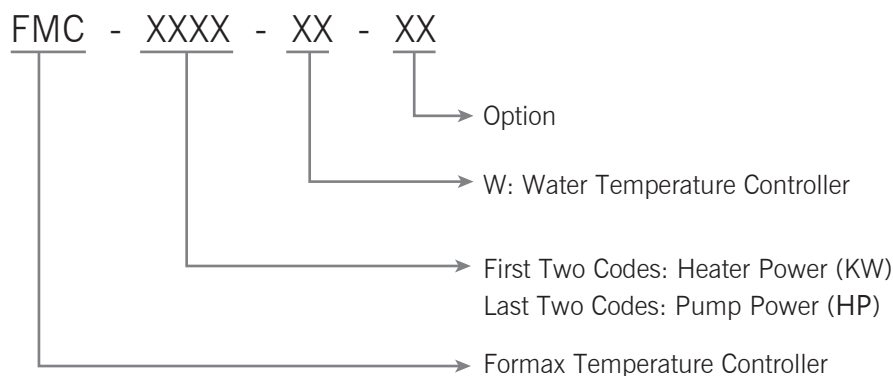
FMC-0910W



Please read the brochure carefully before operation.

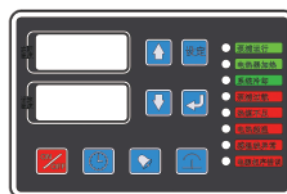
# FMC-W FW Water Temperature Controller

## ■ Coding Principle

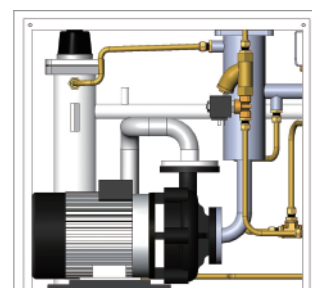


## ■ Features

- PID temperature controller with digital display and actual temperature.
- Reservation timer for 0~9999 mins. The temperature unit (°C/°F) is changeable also.
- Adopts high efficiency water cycle pump, which can meet the demands of temperature control for precise molds and mold loop with minor diameter to achieve precise temperature control and high efficiency heat exchange. Internal piping is made of stainless steel, high pressure explosion-proof.
- The control box and mechanical are designed in isolation, so the life of circuit is extended also.
- Safety devices include power reverse phase protection, pump overload protection, overheat protection and media shortage alarm that can automatically detect abnormal situation and alarm via buzzer.
- Automatic refilled water and exhaust function.
- Equipped RS485 to realize central monitoring online.
- Rapid heating and cooling and stable temperature.



Control Panel



Internal Structure

## ■ Application

FW series water temperature controllers have standard model (120°C) which is used to heat up the mold and maintain temperature, also this model can be used in other similar applications. High temperature water from the mold is returned to the cooling tank and cooled by

direct cooling. It is then pressurized by the high-pressure pump, sent to the heating tank and finally to the mold with a constant temperature. The newly applied PID temperature control can maintain accuracy and stability.

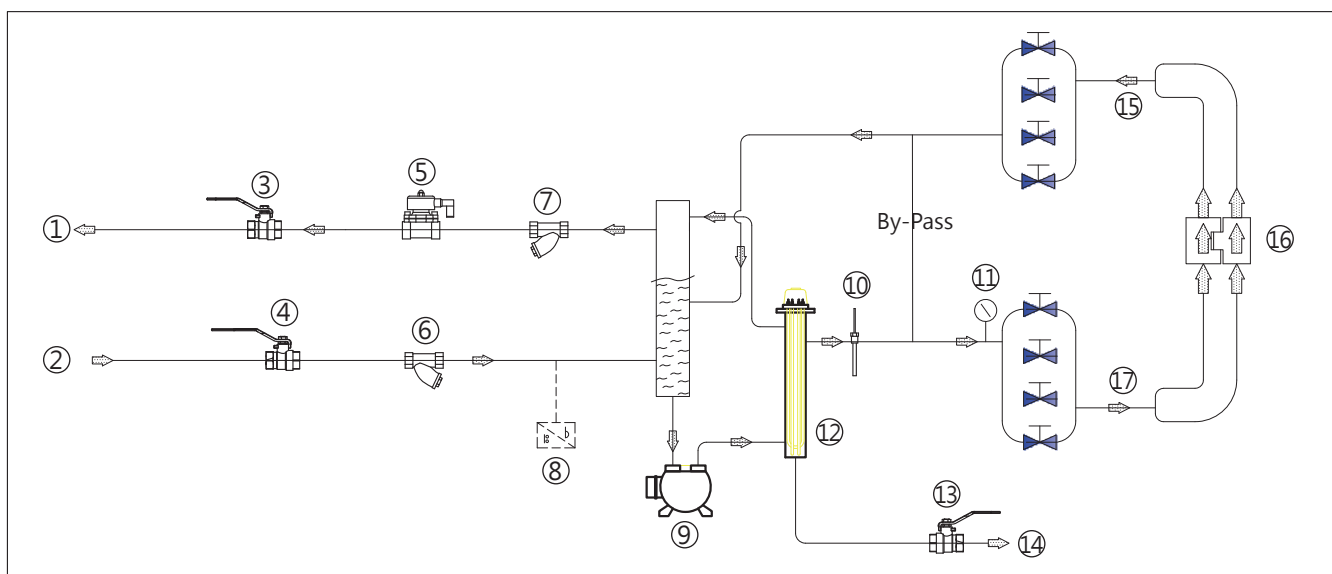
## ■ Options

- Electrical circuit built to comply with CE safety equipment as option.
- Automatic water drain function when changing the mold (Denotes "L").
- Water filters as option (Denotes "F").
- External PT100 (Denotes "PT100").

## Working Principle

High temperature water returns to the machine and then be pressure by pump to the heater. After being heated, water will be forced to mold and continue the circle. In the process, if the water temperature is too high, the system will activate the solenoid valve to let cooling water cool down the temperature directly until the temperature is down to the system requirement. If

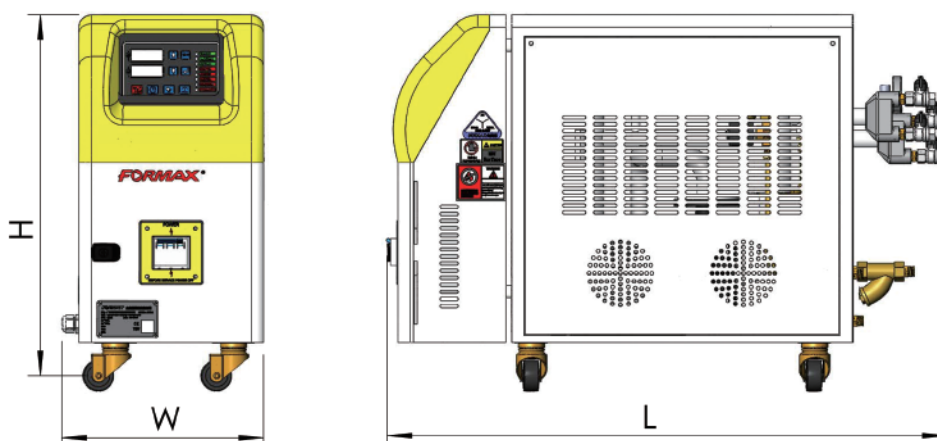
the temperature keeps increasing and reaches to the set point of ultra high temperature, system will sound high pressure alarm and stop operation. When cooling water pressure fails to reach the set value, pressure switch will send a signal of water storage to launch low pressure alarm and machine stops.



FW System Flow (Direct Cooling)

- |                        |                   |                  |                |
|------------------------|-------------------|------------------|----------------|
| ① Cooling water outlet | ⑥ Filter          | ⑪ Pressure gauge | ⑯ Mold         |
| ② Cooling water inlet  | ⑦ Filter          | ⑫ Heater         | ⑰ Hot media in |
| ③ Ball valve           | ⑧ Pressure switch | ⑬ Ball valve     |                |
| ④ Ball valve           | ⑨ Pump            | ⑭ Discharge port |                |
| ⑤ Solenoid valve       | ⑩ Thermocouple    | ⑮ Hot media out  |                |

## Outline Drawings



## ■ Specifications

Modle	FMC-	605W	910W	1210W	1820W	2430W	3650W
Temperature Range	°C	50 ~ 120°C					
Media		Water					
Heater	kW	6	9	12	9x2	12x2	12x3
Cooling Way		Direct cooling					
Cooling Capacity	Kcal/hr	7200	9000	9500	12000	18000	24000
Pump	Type	Gear pump		Vortex pump			
	Power(Kw)	0.37	0.75		1.5	2.2	3.75
	Max. pressure (Kg/cm <sup>2</sup> )	2.8	3.8	2.5	2.7	2.6	3.8
	Max. output (Ltr/min)	42	56	135	160	315	367
Total Power	kW	6.37	9.75	12.75	19.5	26.2	39.75
Min. Water Pressure	Kg/cm	2					
Cooling Water Pipe	Inch/set	1/2"PT					
★ Splitter and Connector	Inch/set	3/8"PT-2 inlet 2 outlet		3/8"PT-4 inlet 4 outlet	3/8"PT-6 inlet 6 outlet		3/8"PT-8 inlet 8 outlet
★ Teflon Hose	Inch/set	3/8"-2.5M*4		3/8"-2.5M*8	3/8"-2.5M*12		3/8"-2.5M*16
Dimension(LxWxH)	mm	740*300*610		790*300*700		860*350*740	
Weight	kG	45		50	60	75	85

- Note: 1) To ensure the stability of the heating temperature, the working pressure of cooling water neither lower 2bar nor exceed 5 bar  
 2) Pump testing standard : power of 50/60 Hz, purified water at 20°C(There is ±10% tolerance for either max. flowrate, or max. pressure)  
 3) Power supply : 3Ø , 400VAC , 50Hz  
 4) ★ Stands for options

Specifications are subject to change without prior notice.

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