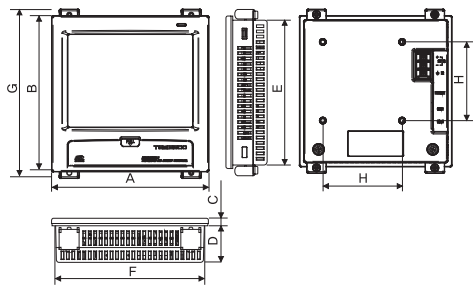
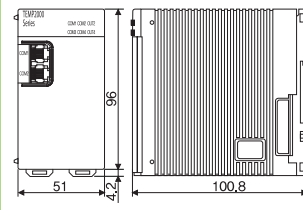


## External dimension and Panel cutting size

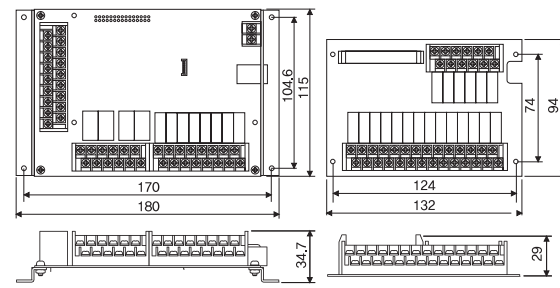
### Display Part



### Control Part



### I/O Board

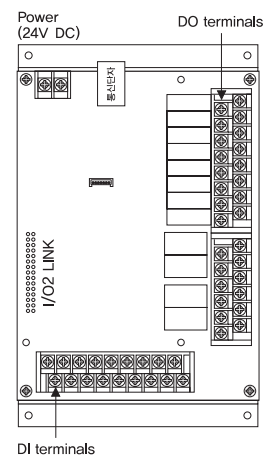
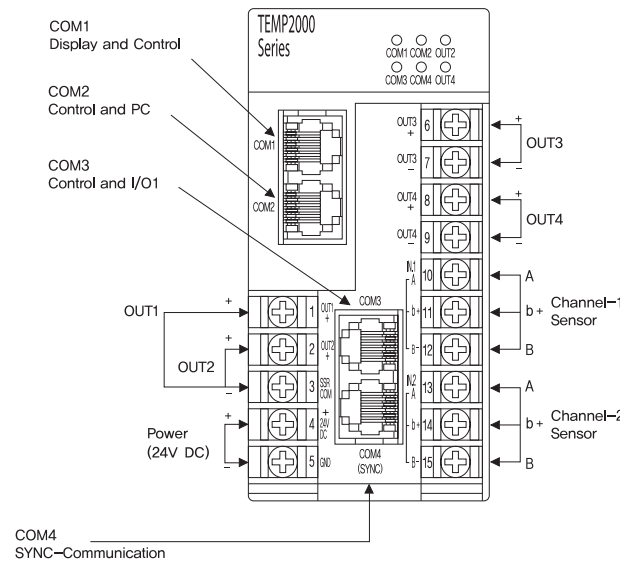
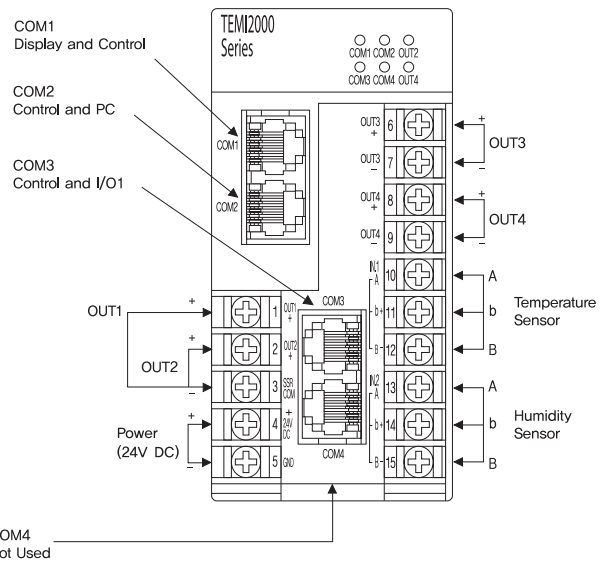


(Unit : mm)

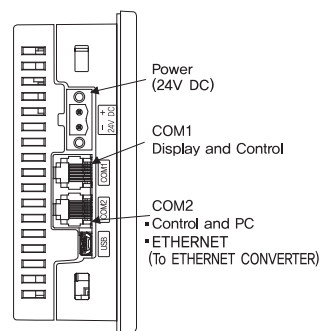
MODEL	A	B	C	D	E	F	G	H
2300 Series	112	105	6.2	33.5	98	105	117	75
2500 Series	144	144	6.2	33.5	137.5	137.5	156	75
2700 Series	203	180	6.8	38.2	173	196	192	75

※ Panel Cutting size : E, F (Tolerance : 0 / +1.0)

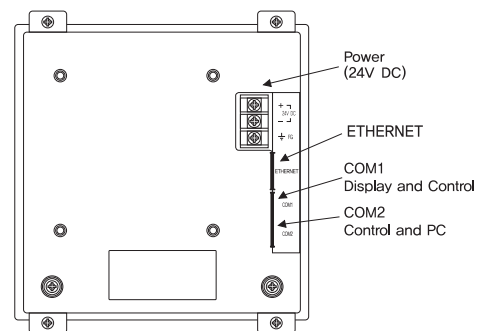
## Terminal Assignment



### 2300



### 2500/2700



Temperature & Humidity Programmable controller

# TEMI2000 SERIES

Dual/Single loops Programmable controller

# TEMP2000 SERIES



SD Memory Card

Digital Recorder Function

High Resolution Screen

Heating · Cooling Control Support

Separated Type Hardware

Customized UI



General Specifications					
Group	Item	TEMI2300	TEMI2500	TEMI2700	
Display	Type	3.7" TFT-LCD	5.7" TFT-LCD	7.5" TFT-LCD	
	Screen Resolution	640(W) x 480(H)			
	Language	KOR / ENG / JPN, KOR / ENG / CHN			
	Font	3 kinds of PV font(HEAD/NORM/ART)			
	Logo Screen	Available to customize initial Logo screen by user			
	User Screen	16 customized user interface for screen saver			
Analog Input	Mount Method	Panel mount, VESA mount(MIS-D 75)			
	Number of point	2 Points(Temperature : 1point, Humidity : 1point)			
	Type	Temperature	PT1 100Ω		-90.00 ~ 200.00°C
			PT2 100Ω		-100.0 ~ 300.0°C
		Humidity	DC Voltage		-1.000 ~ 2.000V
			PT 100Ω		-10.0 ~ 110.0°C
	DC Voltage			1.000 ~ 5.000V	
		Sampling Time	250ms		
	Accuracy	Temperature	±0.1% + 1digit of Full Scale		
		Humidity	±1% + 1digit of Full Scale		
Bias	Each 4 points Piece Bias for temperature and humidity				
	Type	Voltage(SSR) 2 points ON : 24V DC(Pulse width: min, 5ms)			
	Current(SCR) 2 points	4~20mA DC(Load resistor :Max, 600Ω)			
Analog Output	Object	Control output MV(0 ~ 100%) of temperature and humidity			
	Retransmission output	Selectable among PV, SP, MV of temperature and humidity			
Digital Input	Contact type	16 points base (Relay contact capacity : max, 12V DC, 10mA), Select A or B point contact			
	Functions	RUN/STOP/HOLD/STEP, Selectable RUN patterns, Set DI Detect Delay time, Select DI error monitor(text or picture)			
Digital Output	Number of point	12 points base(Additional 20 points by option)			
	Contact type	4 points base C-contact Relay	Normal Open (Max, 30VDC/1A, 250VDC/1A)		
			Normal Close (Max, 30VDC/1A, 250VDC/1A)		
		8 points base A-contact Relay	Normal Open (Max, 30VDC/1A, 250VDC/1A)		
	Signal type	Additional 20 points A-contact Relay(Option)			
		Inner Signal(10points) ON/OFF Signal(TEMP 10points, HUMI 5points)	Logical Signal(3points)	Error Signal(1point)	User Signal(1points)
Time Signal(4points) Fix · Programmable END Signal(2points)		DI Signal(16points)	Sensor open Signal(2points)	REF Signal(2points)	
Program	Number of program	120 Patterns / 1200 Segments			
	Segment Time	Max, 999hours 59minutes 59seconds in one segment			
	Auxiliary functions	UP/DOWN Slope rate, WAIT, Operating Start Code, Pattern Name, Power Stop mode, PTEnd mode			
PID Control	PID groups	9 PID groups(6 PID groups for temperature · humidity, 3 PID groups for temperature only)			
	PID type	Zone PID			
	Auxiliary functions	Changeable Tuning point, PID tuning Gain, Selectable humidity control code			
Data Back-Up	Object	SD card, MMC card(FAT32)			
	Logging function	Back-up and restore data of Program Pattern / Parameter Settings, and SP / PV / MV value, Ethernet support			
Communication	Interface	Flexible to change between RS485 / RS232C by DIP switch, Max, 31 nodes, Max 115,200 bps			
	Protocol	PCLink, PC Link(Checksum), MODBUS RTU, MODBUS ASCII			
Power Supply	Power	24VDC 22VA Max.			
	Lithium battery	For setup data retention(CR2032)			

General Specifications							
Group	Item	Single Loop			Dual Loop		
		TEMP2300	TEMP2500	TEMP2700	TEMP2320	TEMP2520	TEMP2720
Display	Type	3.7" TFT-LCD	5.7" TFT-LCD	7.5" TFT-LCD	3.7" TFT-LCD	5.7" TFT-LCD	7.5" TFT-LCD
	Screen Resolution	640(W) x 480(H)					
	Language	KOR / ENG / JPN, KOR / ENG / CHN					
	Font	3 kinds of PV font(HEAD/NORM/ART)					
	Logo Screen	Available to customize initial Logo screen by user					
	User Screen	16 customized user interface for screen saver					
Analog Input	Mount Method	Panel mount, VESA mount(MIS-D 75)					
	Number of point	1 Point(Universal Input)			2 Points(Universal Input)		
	Type	TC	: K, J, E, T, R, B, S, L, N, U, W, Platinum II, C				
		RTD	: Pt100(JIS/IEC), JPt100(JIS)				
		DC Voltage	: 0.4~2V, 1~5V, 0~10V, -10~20mV, 1~100mV(4~20mA, 0~20mA : Load resistor 250Ω, 500Ω)				
	Sampling Time	250ms					
	Accuracy	±0.1% + 1digit of Full Scale					
	Bias	8 points of piece and full bias					
	Display Unit	PT/RTD sensor : °C, °F DCV sensor : °C, °F, BLANK, %, Pa, mmHg, mmHg, kgf					
	Analog Output	Type	Voltage(SSR) 1 point/channel ON : 24V DC(Pulse width : min, 5ms)			Current(SCR) 1 point/channel 4~20mA DC(Load resistor : Max, 600Ω)	
Object		Control output MV(0 ~ 100%) of Each channel			Retransmission output Selectable among PV, SP, MV of Each channel		
Digital Input	Contact type	16 points base (Relay contact capacity : max, 12V DC, 10mA), Select A or B point contact					
	Functions	RUN/STOP/HOLD/STEP, Selectable RUN patterns, Set DI Detect Delay time, Select DI error monitor(text or picture)					
Digital Output	Contact type	12 points base(Additional 20 points by option)		Normal Open (Max, 30VDC/1A, 250VDC/1A)		Normal Close (Max, 30VDC/1A, 250VDC/1A)	
		4 points base C-contact Relay					
		8 points base A-contact Relay					
	Signal type	Additional 20 points A-contact Relay(Option)					
		Inner Signal(8points/Channel) ON/OFF Signal(7points/Channel)	Logical Signal(3points)	Error Signal(1point/Channel)	User Signal(1points)		
		Time Signal(8points/Channel) Fix · Programmable END Signal(2points/Channel)	DI Signal(16points)	WAT Signal(1points/Channel)	REF Signal(2points/Channel)		
Program	Number of program	80 Patterns / 1200 Segments			80 Patterns / 1200 Segments(40/ch1, 40/ch2)		
	Segment Time	Max, 999hours 59minutes 59seconds in one segment					
	Auxiliary functions	UP/DOWN Slope rate, WAIT, Operating Start Code, Pattern Name, Power Stop mode, PTEnd mode					
PID Control	PID groups	6 PID groups(5 Zone PID + 1 Deviation PID of Each channel)					
	PID type	Zone PID, Deviation PID, Seg PID					
	Auxiliary functions	Changeable Tuning point, PID tuning Gain, Selectable Disease control code					
Data Back-Up	Object	SD card, MMC card(FAT32)					
	Logging function	Back-up and restore data of Program Pattern / Parameter Settings, and SP / PV / MV value					
Communication	Interface	Flexible to change between RS485 / RS232C by DIP switch, Max, 31 nodes, Max 115,200 bps, Ethernet support					
	Protocol	PCLink, PC Link(Checksum), MODBUS RTU, MODBUS ASCII, Sync-Master(CH1, CH2 Select)					
Power Supply	Power	24VDC 22VA Max.					
	Lithium battery	For setup data retention(CR2032)					

Model Code			
T E M I 2 (1) 0 0 - (2) (3) / (4) / (5)			
(1)	Model Code - 1	Display part LCD size	3 : 3.7 Inch
			5 : 5.7 Inch (IP65 Certification)
			7 : 7.5 Inch
(2)	Option Suffix Code - 1	Control method	0 : General control
			1 : Heating · Cooling control
(3)	Option Suffix Code - 2	I/O board	0 : I/O 1 Board
			1 : I/O 2 Board (additional 20 relays)
(4)	Option Suffix Code - 3	SD card	- : NONE
			SD : SD card
(5)	Option Suffix Code - 4	Ethernet option	- : NONE
			CE : Ethernet(TCP/IP)

Model Code			
T E M P 2 (1) (2) 0 - (3) (4) / (5) / (6)			
(1)	Model Code - 1	Display part LCD size	3 : 3.7 Inch
			5 : 5.7 Inch (IP65 Certification)
			7 : 7.5 Inch
(2)	Model Code - 2	Control channel	0 : Single loop (1 Channel Control)
			2 : Dual loop (2 Channel Control)
(3)	Option Suffix Code - 1	Control method	0 : General control
			1 : Heating · Cooling control
(4)	Option Suffix Code - 2	I/O board	0 : I/O 1 Board
			1 : I/O 2 Board (additional 20 relays)
(5)	Option Suffix Code - 3	SD card	- : NONE
			SD : SD card
(6)	Option Suffix Code - 4	Ethernet option	- : NONE
			CE : Ethernet(TCP/IP)

**Digital Recorder Function**



**SD Card adapter**

All data in internal memory including trend data and setup parameter value can be forwarded and saved in SD card. Each saved data as a file offers easy way to manage operation record and system parameters

**Real-Time Monitoring**

Monitors PV, SP and MV for each channel. Displays as trend graph in real time. Records data to built-in internal memory

**Displays data by trend graph**

Saved trend data in internal memory as file unit can be opened and displayed as trend graph

**Screen Customizing**



Displays customized screen by uploading user made BMP image

- ON Initial LOGO screen** User made and customized screen will appear when power on the controller
- ERR DI ERROR screen** User can upload self-designed BMP image showing their error part and message. That Customized error screen appears when occurring DI error
- ... USER screen** 16 BMP images for showing product and company information made by user can be set into controller. Those images will appear by rotating with no key input after passing assigned time like screen saver



**Specialized Display and Screen configuration**

- PV Various PV Fonts** Offers three kinds PV fonts of HEAD / NORM / ART
- Easy Menu** Simplified menu configuration makes setting parameters easy no matter how many parameters user wants
- Various LCD size** Select 3, 7, 5, 7" and 7, 5"
- 640 X 480 High Resolution Screen** 640 x 480, 256K pixels TFT-LCD shows distinguished clear screen seems real picture
- Multi-Language system** Support KOR/ENG/JPN/CHN language
- Easy Keypad** Easy setup parameter - variable Input Keypad, Alphab/Numeric

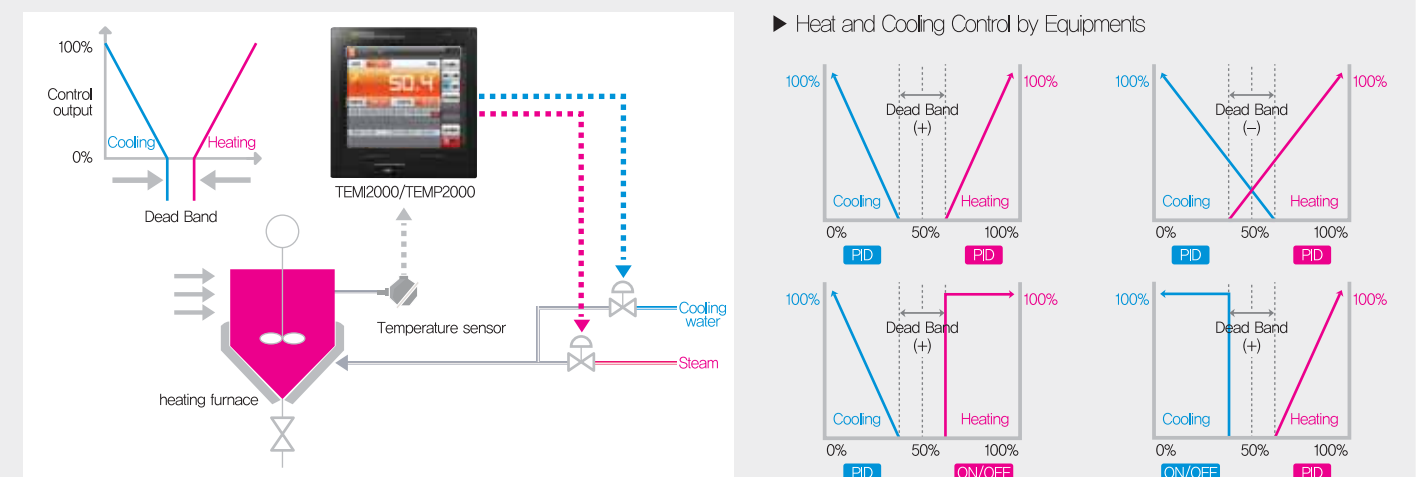
**Separated Hardware**



**VESA mount**



**Heating/Cooling Program control**



## Features & Functions



### Touch Screen Interface

Easy access to setup and operate with Touch Screen



### High Accuracy

Precision control with 18bit A/D Converter,  
Temp. :  $\pm 0.1^{\circ}\text{C} + 1$  digit of F,S  
Humi. :  $\pm 1\% + 1$  digit of F,S



### Extended Pattern Time

999h, 59min, 59sec, can be programmed in every single segment



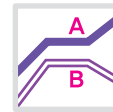
### Variable PID groups

Precision control with each optimized PID group for specified range



### Input Sensor Bias

Offset value depending on characteristics of system helps smooth PV line applying assigned offset by each flexibly predefined ranged



### Infinity Program Operation

1200 SEGs with TEMI: 120PTNs / TEMP: 80PTNs,  
Max, 999 times PTN/SEG repeat operation and link operation makes infinity program operation



### 16 Digital Inputs

16 digital input points with max 12V contact can be allocated to assigned action of RUN/STOP/HOLD/STEP and DI ERROR input



### Digital Recorder Function

Real-time monitoring displays as trend graph and easy data acquisitions of PV, SP and MV  
No additional Recorder required



### Free PC Software

Free PC multi-monitoring software for Communication and SD Viewer for data management of SD data



### 32 Digital Outputs

32 digital outputs (STD 12 + OPT 20) points can be assigned to about 80 types of various signal like LOGICAL, DI, MANUAL USER, IS, TS, ALM, RUN and so on



### SD memory card

Easy data management with Viewer software, parameter setting value and customized image Up/Down load with SD card



### Powerful Communication

Flexible communication interface between RS485 / RS232C by socket-pinhead directly and 115,200 bps communication speed ETHERNET support



## System Applications

### Temperature & Humidity Programmable Controller TEMI2000 series



### Specialized controller

As a specialized controller for temperature humidity test chamber, synchronized control system with all sensor combination PT-PT, PT-DCV, DCV-DCV and DCV-PT



### Humidity Display Mode

Selectable relative humidity display mode between Auto/Manual when setting "0" to Humidity SP



### Optimizing PID group

Precision control by 6 group of temp/humi and 3 group of temperature only



### Specialized Humidity Control

Flexible Humidity control mode on extreme condition such as high and low temp./Humi.

### Single / Dual Programmable Controller TEMP2000 series



### Double Password

Preventing from unauthorized access for system and program, and classifying authorization degree of end-user



### Asynchronous/Synchronous Mode

Two independent loop controls that can be performed with different programs, and also be done simultaneously in one program



### Sync Communication

Available for communicating with upper system like PC, PLC simultaneously, while activating Sync-communication with lower system by synchronizing slave controllers with SP of TEMP2000



### User TAG

Naming each zone with 6 digits character with TAG feature in order to classify and display



### Displays START/END Time

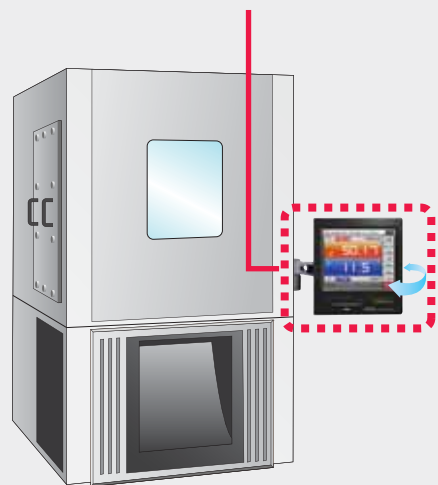
Displays operating time as well as START and Estimated Operation End time for End-User convenient



### Various UNIT displays

Available 12 kinds of various UNIT to display Under DCV sensor ( $^{\circ}\text{C}$ , %,  $^{\circ}\text{F}$ , blank, Pa, %RH, V, kPa, mV, mmHg, kg, f)

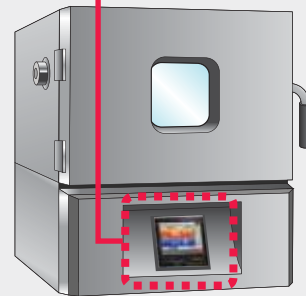
Available various installation of Display Part on outside of system with VESA mount



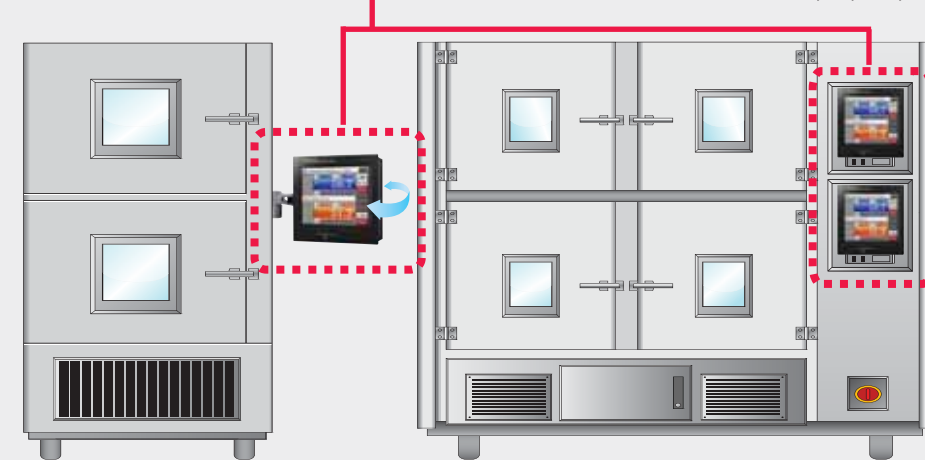
Application of panel mount on the front door to save external dimension and offer user convenient



Small 3.7" Display part of TEMI2300 is good for BENCH-TOP chamber configuration



2 / 4 zone chamber application with TEMP2000 dual loops control. Each zone can be controller individually by Asynchronous/Synchronous Mode



1 zone control and additional 1 zone monitoring without recorder

