IP65

SAMWON
Promising the Best

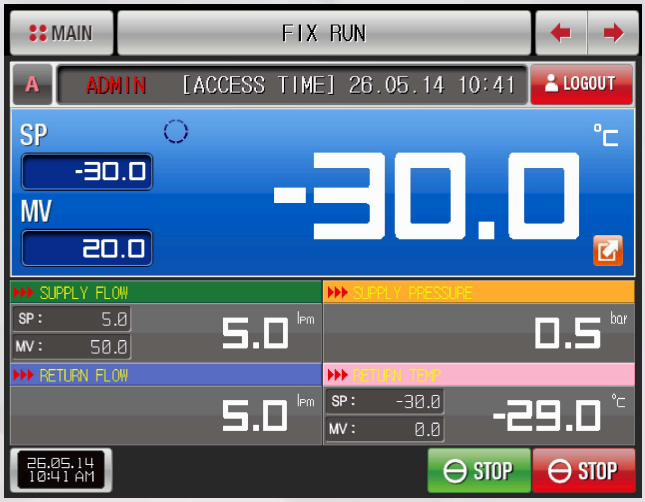
EST (Energy Saving Technology) CHILLER CONTROLLER

TEMP2000MB SERIES

- Refrigeration inverter control
- Hot gas capacity control
- Flow supply and return temperature control
- Electronic expansion valve drive output
- Cooling Superheat Control
- Refrigeration system monitoring alarm

Energy Saving Refrigeration System Screen

Main Screen



Special Screen

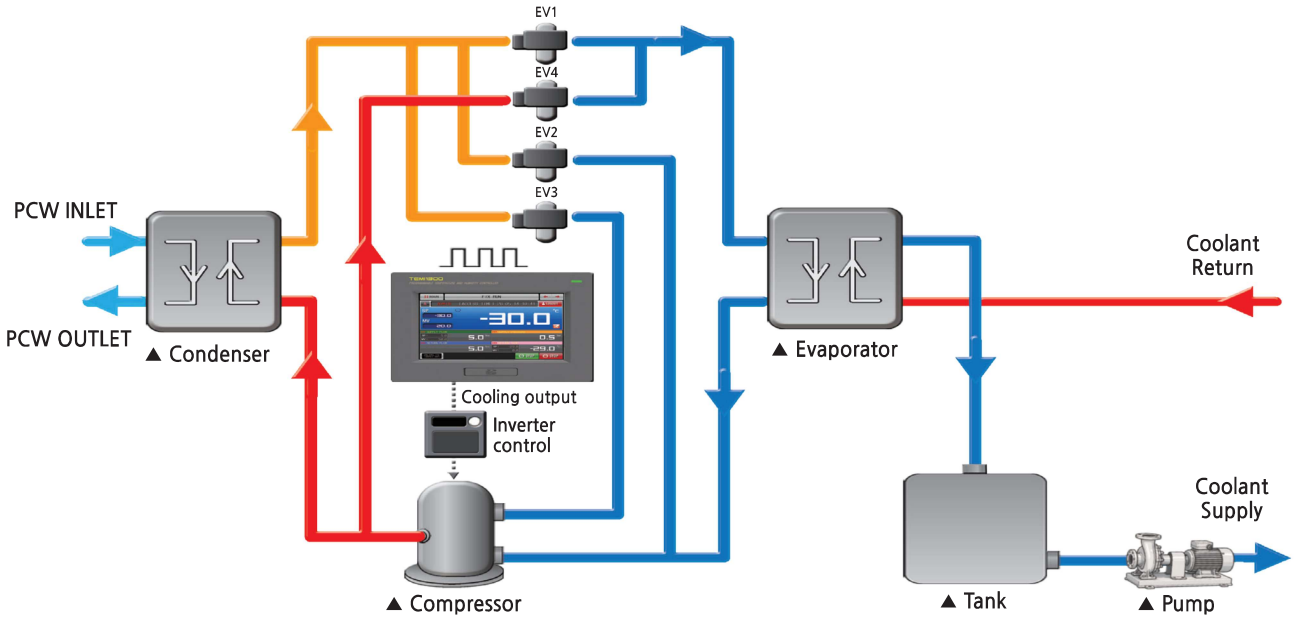
CHANNEL	DESCRIPTION	
S.P TEMP	Coolant supply temperature	
	MV	MV for Coolant supply temperature control
LO PRESS	Compressor low pressure	
	EV1	EEV for S.H + Low pressure control
EVA OUT	Eva outlet temperature	
	EV4	EEV for Eva hot gas control
COMP IN	Compressor inlet temperature	
	EV2	EEV for Compressor inlet temperature control
COMP OUT	Compressor outlet temperature	
	EV3	EEV for Compressor outlet temperature control
HI PRESS	Compressor high pressure	
COND OUT	Condenser outlet temperature	
H.EX TEMP	Eva-type heat exchanger coolant temperature	
TANK T	Coolant tank temperature	

CHANNEL	DESCRIPTION	
S.P PRES	Coolant supply temperature	
R.T TEMP	Coolant return temperature (when using return temp mode)	
	MV	MV for Coolant return temperature control
S.P FLOW	Coolant supply flow	
	MV	MV for Coolant supply flow control
R.T FLOW	Coolant return flow	
PCW FLOW	PCW flow	
PCW PRES	PCW pressure	
PCW TEMP	PCW temperature	
COOL	Compressor inverter control	
S.H	Superheat control	
T1	Low pressure saturation temperature	
S.SH	Compressor suction line superheat calculation	

* Monitors the status of the chiller system, refrigeration system, and PCW to generate warnings and alarms.

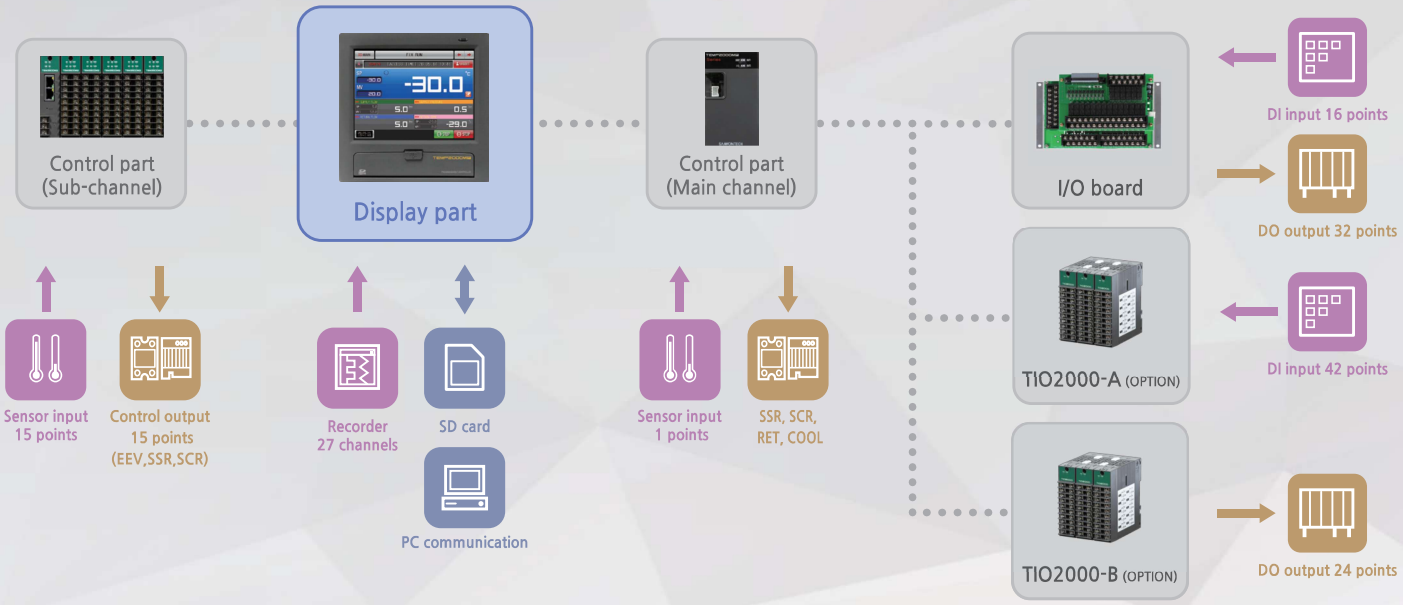
Energy saving (Up to 30% savings compared to using the same capacity freezer)

· To control the inverter and adjust the electronic expansion valve with heating and cooling output, control the optimum amount of refrigerant in each section to adjust the waste heat and control the refrigerator to achieve energy saving. [Patent No. 10-1545206]



System Configuration

· Configuration separated in display part, control part and I/O board · Configuration of diverse system and easy workability
· Available for panel mount and VESA mount installation



ACCESS CONTROL

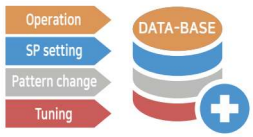
· System operation based on authenticated users
· System user registration and management
· Restrict system access according to each user's authority
(ADMIN : 1, MANAGER : 10, USER : 100)

USER'S AUTHORITY

ADMIN	MANAGER	USER
system operation operation control related setting electronic signature user management trend and history management	system operation operation control related setting electronic signature	system operation

ELECTRONIC RECORD

· Provide database of electronic document records for the history of system event occurence
· Generate operation history data for user's operation
· Record previous and subsequent values of operation data for parameter



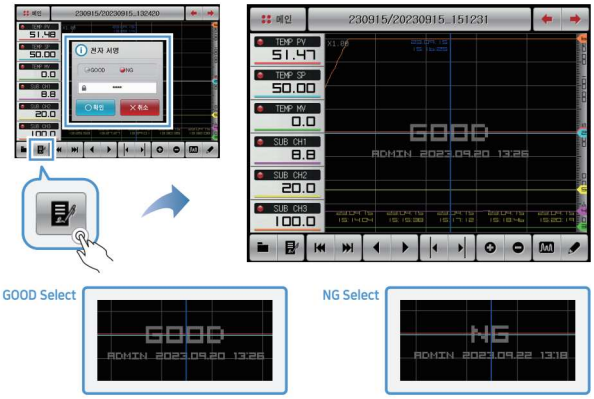
Embedded Data-Base

01 Robust to data tampering and corruption by providing high security
02 Easily and quickly perform a large amount of historical data search
03 Perform search filtering function by date and user more easily

FDA 21 CFR PART 11 COMPLIANCE

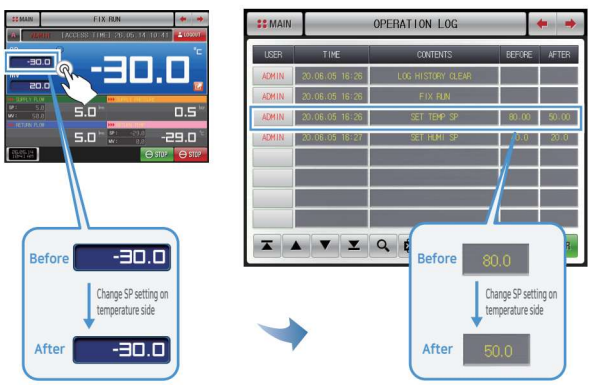
ELECTRONIC SIGNATURE

· electronic signature for each trend data recorded by authorized users



AUDIT TRAIL (Audit trail of system operation)

· Support tracking by user and period
· CSV(Excel) conversion for output data

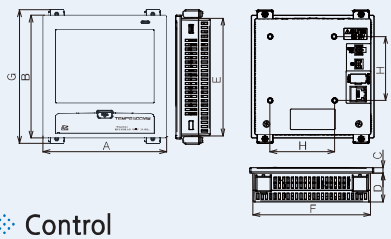


Product specification

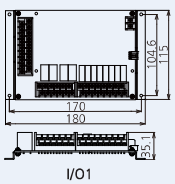
Classification	Item		TEMP2500MF	TEMP2700MF	TEMP2000MF	TIO2000-A	TIO2000-B
Screen	Display		5.7" TFT-LCD	7.5" TFT-LCD	-	-	-
	Resolution		640(W) x 480(H)		-	-	-
	Display language		Korean / English		-	-	-
	Initial screen		Support user-set Initial screen		-	-	-
	User screen		16 screens can be used as an electronic album		-	-	-
	Panel mount		Panel mount, VESA mount(MIS-D 75)		-	-	-
Control channel	Main Channel		1 Channel		15 Channel		
Analog input	Number of inputs		1points (Universal input)		15points (Universal input)	-	-
	Sensor type	TC	K, J, E, T, R, B, S, L, N, U, W, Platinel II , C		K, J, E, T, R, B, S, L, N, U, W, PL, C	-	-
		RTD	PT100 (IEC) , JPT100 (JIS) , 1/100 Display Available		PtA, PtB, PtC, JPtA, JPtB, JPtC	-	-
		DCV	0.4~2V, 1~5V, 0~10V, -10~20mV, 1~100mV (4~20mA, 0~20mA, External Resistor 250Ω, 500Ω Mounted) Scale : -1999 ~ 30000		0~10mV DC, -10~10mV DC, -10~20mV DC, 0~100mV DC, -50~100mV DC, 0~1V DC, -1~1V DC, 0~5V DC, 1~5V DC, -5~5V DC, 0.4~2V DC, 0~10V DC, -5~10V DC (4~20mA, 0~20mA, External Resistor 250Ω, 500Ω Mounted)	-	-
	Sampling time		250ms		250ms/Channel	-	-
	Input degree		±0.1% of full scale ±1 digit(A/D 18bits)			-	-
	Number of input correction		8-Point Segment Correction and Overall Correction		4-Point Segment Correction and Overall Correction for Each Channel	-	-
Analog output	Output specifications	SSR	4Points / ON Voltage: 24V DC (Load Resistance: Min. 600Ω / Pulse Width: Min. 5 ms)		11Points / ON Voltage: 15V DC (Load Resistance: Min. 600Ω / Pulse Width: Min. 5 ms)	-	-
		SCR	4Points / 4~20mA DC (Load Resistance: Max. 600Ω)		11Points / 4~20mA DC (Load Resistance: Max. 600Ω)	-	-
		EEV	-		4Points / Electronic Expansion Valve (Fujikoki, Saginomiya, Emerson, Sanhua)		
	Output type		Control Output / Transmission Output (PV, SP) / Auxiliary Output		Control output	-	-
	Output degree		±0.3% (D/A 14bits)			-	-
Digital input	Contact specification		Basic 16points(contact capacity: Max. 12V DC, 10mA), a contact or b contact action selection)			Max. 42points(14points/UNIT)	-
	Contact function		Operate and terminate/hold/step, select pattern to operate, di detection delay time setting, di error occurence screen selection (display error message or user setting photo)			-	-
Digital Output	Contact specification		Basic 12points (20points added when option is selected)			-	Max. 24points(8points/UNIT)
			C contact relay basic 4points		Normal open(Max. 30V DC/1A, 250V AC/1A)	-	-
					Normal open(Max. 30V DC/1A, 250V AC/1A)	-	-
			A contact relay basic 8points		Normal open(Max. 30V DC/1A, 250V AC/1A)	-	A contact point relay 8point
			Add A contact relay - 20points (IO2 option)			-	-
	Contact type		Inner signal (16points) / On/off signal (7points) / Calculation signal (32points) / Error signal (1points) / User signal (1points)			-	-
			Time signal (8points) / Stationary, program termination signal (2points) / DI signal (16 points) / Sensor disconnection signal (1points) / Freezer signal (2points)			-	-
			Alarm signal (8points) / Up-soak-down signal (3points) / Manual signal (12points) / Stationary timer signal (1points)			-	-
			Operation signal (1points) / Stand by signal (1points) / Seg alarm signal (4points)			-	-
Program	Number of patterns/ segments		500 patterns / 50,000 segments		-	-	-
	Segment setting time		Max. 999hours 59minutes 59seconds			-	-
	Function		Rising/falling change rate, Stand by motion, Operation start condition, Pattern name input, Return mode after power failure, Motion at the pattern termination			-	-
	Repeat		Entire repeat and section repeat			-	-
PID control	PID group		7 PID group(Zone PID 6group + deviation PID 1group or Seg PID 7group)		1group / Channel	-	-
	PID type		Zone PID, Deviation PID, Seg PID		Zone PID	-	-
	Other features		Reference point setting of auto tuning, PID time constact copy, Humidity control mode selection		Reference point setting of auto tuning	-	-
Data Back up	Storage media		Internal memory (4GB) , SD/SDHC card (FAT32 format) standard support		-	-	-
	Storage function		Program pattern / Parameter setting value backup and restore, Save indication/setting value		-	-	-
Communication	Communication specification		RS485/RS232C selectable by switch, Max. 31units can be connected, Communication speed: Max. 115,200bps		-	-	-
			Ethernet(TCP/IP), CAN Communication			-	-
	Protocol		PC-Link, PC-Link(Checksum), Modbus(ASCII, RTU, TCP)			-	-
Power	Rated voltage		Max.24V DC 22VA		Max. 24V DC 14VA	Max.24V DC 1.3VA/UNIT	Max.24V DC 2.5VA/UNIT
	Lithium battery		Setting data preservation(CR2032)			-	-

External dimensions and panel cutting size

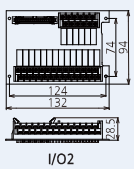
Display

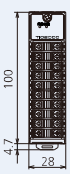


I/Oboard

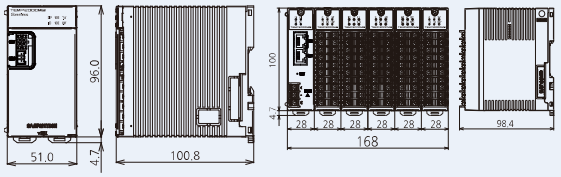


TIO2000





Control



(Unit : mm)

NO.	2500MF	2700MF
A	144	203
B	144	180
C	6.5	6.5
D	33.5	38.2
E	137.5	173
F	137.5	196
G	156	192
H	75	75

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

Model code

TEMP2 * 00MF - 0*/SD/15

- Display unit LCD size
  - 5 : 5.7 inch
  - 7 : 7.5 inch
- I/O board
  - 0 : I/O1 (Relay 12points)
  - 1 : I/O1,2 (Relay 32points)
- SD Card
  - SD : SD Card
- Sub Channel
  - 15 : 15 Channel

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