JAGDAMBA ENTERPRISE

A Representation of Engineering and Technology

TEMPERATURE CONTROL UNITS

INTRODUCTION

Industrial heating and cooling systems are customised as per process requirements and offer great range of temperatures (between -100 DegC to +250 DegC).

Being dynamic in nature, such units provide higher efficiency and real time temperature record. It is a closed liquid circulation system which helps acheiving the process or jacket temperature at a low power consumption

We provide special heating & cooling systems in which a single machine can operate two different equipments (i.e. reactors) at two different temperatures at a same time. Such machines are termed as **one machine for two reactors.**

Applications : Research labs, pilot plants, big and small industrial productions units and pharmaceutical industries

Attachments / Accessories : High pressure SS insulated flexible hose pipes with adapter flanges and fittings for suitable end connections. Heat transfer fluid catering to relevant temp ranges selected by the client

WORKING PRINCIPLE

- Set temperature on the HMI of the machine
- The machine will take a feedback from the reactor's temperature sensor (PT100) based on which it will activate heater or refrigeration system and try to achieve the set temp in minimum amount of time
- Once the temp achieved it will maintain that temp with an accuracy of +/- 1 DegC
- It is a complete hydraulically sealed system

TCU LAB MODELS

Model		TCU-320	TCU-420W	TCU-430W
Medium Temperature Range		-30°C~ +180°C	-38°C~ +180°C	-40°C~ +200°C
Control Mode		Feedback PID + Our special dynamic control calculation, PLC controller		
Temp control		Switchable : Process temperature control mode and jacket temperature control mode		
Temp Difference		Set or control the temperature difference between jacket oil and material process		
Program Editor		5 Programs, each program can edit 40 steps		
Communication Protocol		MODBUS RTU Protocol, RS 485 Interface		
Material Temp Feedback		PT100 or 4-20 mA or communication given (Default PT100)		
Temp feedback		The temp of 3 points : the inlet and outlet of equipment, reactor material temp (external temp sensor)		
Medium temp accuracy		+/- 0.5 DegC		
Material Temp Accuracy		+/- 1 DegC		
Heating Power		2 kW	2 kW	3 kW
Cooling Capacity (kW)	180 DegC	1.5 kW	1.8 kW	3 kW
	0 DegC	1.5 kW	1.8 kW	3 kW
	-5 DegC	0.9 kW	1.2 kW	2 kW
	-20 DegC	0.6 kW	1 kW	1.5 kW
	-35 DegC	-	0.3 kW	0.5 kW
Circulation Pump (max)		10 L/min	10 L/min	20 L/min
		0.8 Bar	0.8 Bar	2 Bar
Compressor		Scope / Highly / Tecumseh		
Expansion Valve		Danfoss / Emerson thermal expansion valve		
Evaporator		DANFOSS / KAORI Plate Heat Exchanger		
Operating Controller		7-inch colour touch screen shows setting temperature and measuring temp, temp curve record, data export excel-format		
Security Protection		Self-diagnosis function ; freezer overload protection ; high pressure switch ; overload relay ; thermal protection device, etc. Security protection function		
Closed Circulation System		The whole system is full closed circulation, there is no oil mist at high temp and no water vapour at low temp, pressure do not rise up when system is running. The system will supply oil automatically at low temp		
Refrigerant		R-404A / R-507C		
Connection Size		G1/2	G1/2	G1/2
Water cooled type (@ 20 DegC)		-	450 L/H ; 1.5 ~ 4 bar ; G3/8	550 L/H ; 1.5 ~ 4 bar ; G3/8
Case material		SUS 304		
Dimension (mm)		350*650*800	350*650*800	450*650*1200
Positive Ex-proof size (mm)		-	700*750*1215	700*750*1215
Power max 50 Hz		AC220V 2.9 kW (max)	AC220V 3.3 kW (max)	AC380V 4.5 kW (max)
Weight（kg）		55 kg	60 kg	85 kg

TCU - 1 SERIES MODELS

Model		TCU-125W / TCU-125	TCU-135W / TCU-135	TCU-155W / TCU-155	TCU-175W / TCU-175	TCU-1A10W / TCU-1A10	TCU-1A15W / TCU-1A15
Medium Temperature Range		**-10°C~ +200°C**					
Control Mode		Feedback PID + Our special dynamic control calculation, PLC controller					
Temp control		Process temperature control mode and jacket temperature control mode					
Temp Difference		Set or control the temperature difference between jacket oil and material process					
Program Editor		5 Programs, each program can edit 40 steps					
Communication Protocol		MODBUS RTU Protocol, RS 485 Interface					
Material Temp Feedback		PT100 or 4-20 mA or communication given (Default PT100)					
Temp feedback		The temp of 3 points : the inlet and outlet of equipment, reactor material temp (external temp sensor)					
Medium temp accuracy		+/- 0.5 DegC					
Material Temp Accuracy		+/- 1 DegC					
Heating Power (kW)		2.5	3.5	5.5	7.5	10	15
Cooling Capacity (kW)	**200 DegC**	2.5	3.5	5.5	7.5	10	15
	20 DegC	2.5	3.5	5.5	7.5	10	15
	-5 DegC	1.5	2.1	3.3	4.2	6	9
Circulation Pump (max)		20 L/min	35 L/min	35 L/min	50 L/min	50 L/min	75 L/min
		2 Bar	2 Bar	2 Bar	2 Bar	2 Bar	2.5 Bar
Compressor		Highly / Panasonic		Emerson copeland / Danfoss scroll compressor			
Expansion Valve		Danfoss / Emerson thermal expansion valve					
Evaporator		DANFOSS / KAORI Plate Heat Exchanger					
Operating Controller		7-inch colour touch screen shows setting temperature and measuring temp, temp curve record, data export excel-format					
Security Protection		Self-diagnosis function ; freezer overload protection ; high pressure switch ; overload relay ; thermal protection device, etc. Security protection function					
Closed Circulation System		The whole system is full closed circulation, there is no oil mist at high temp and no water vapour at low temp, pressure do not rise up when system is running. The system will supply oil automatically at low temp					
Refrigerant		R-404A / R507C ; Optional : R448A					
Connection Size		G1/2	G3/4	G3/4	G1	G1	G1
Water-cooled type (@ 20 DegC)		600 L/H ; 1.5 - 4 bar ; G3/8	800 L/H ; 1.5 - 4 bar ; G1/2	1000 L/H ; 1.5 - 4 bar ; G3/4	1200 L/H ; 1.5 - 4 bar ; G3/4	1600 L/H ; 1.5 - 4 bar ; G3/4	2000 L/H ; 1.5 - 4 bar ; G3/4
Dimension (Air type) mm		450*650*1200	500*850*1300	500*850*1300	550*1000*1750	550*1000*1750	700*1000*1750
Dimension (Water type) mm		450*650*1200	500*850*1300	500*850*1300	550*1000*1750	700*1000*1750	700*1000*1750
Power max 380V 50 Hz		AC 220V 3.6 kW	5.6 kW	7.5 kW	10 kW	13 kW	20 kW
Weight（kg）		115	165	185	235	280	300
Optional		Liquid low level protection					

TCU - 2 SERIES MODELS

Model		TCU-225W / TCU-225	TCU-235W / TCU-235	TCU-255W / TCU-255	TCU-275W / TCU-275	TCU-2A10W / TCU-2A10	TCU-2A15W / TCU-2A15	TCU-2A25W / TCU-2A25	TCU-2A38W	TCU-2A60W	TCU-2A95W	TCU-2A130W	TCU-2A200W
Medium Temperature Range		-25°C~ +250°C											
Control Mode		Feedback PID + Our special dynamic control calculation, PLC controller											
Temp control		Process temperature control mode and jacket temperature control mode											
Temp Difference		Set or control the temperature difference between jacket oil and material process											
Program Editor		5 Programs, each program can edit 40 steps											
Communication Protocol		MODBUS RTU Protocol, RS 485 Interface											
Material Temp Feedback		PT100 or 4-20 mA or communication given (Default PT100)											
Temp feedback		The temp of 3 points : the inlet and outlet of equipment, reactor material temp (external temp sensor)											
Medium temp accuracy		+/- 0.5 DegC								+/- 1 DegC			
Material Temp Accuracy		+/- 1 DegC										+/- 1.5 DegC	
Heating Power (kW)		2.5	3.5	5.5	7.5	10	15	25	38	60	95	130	200
Cooling Capacity (kW)	200 DegC	2.5	3.5	5.5	7.5	10	15	25	38	60	95	130	200
	100 DegC	2.5	3.5	5.5	7.5	10	15	25	38	60	95	130	200
	50 DegC	2.5	3.5	5.5	7.5	10	15	25	38	60	95	130	200
	20 DegC	2.5	3.5	5.5	7.5	10	15	25	38	60	95	130	200
	-5 DegC	2	3	4.5	6.6	8	12	19	30	46	70	80	125
	-20 DegC	1	1.8	2.8	3.8	4.6	7	12	16	22	32	43	65
Circulation Pump (max)		20 L/min	35 L/min	35 L/min	50 L/min	60 L/min	110 L/min	150 L/min	150 L/min	250 L/min	400 L/min	400 L/min	600 L/min
		2 Bar	2 Bar	2 Bar	2 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar
Compressor		Highly	Emerson copeland / Danfoss scroll compressor								Emerson Copeland / Carlyle		
Expansion Valve		Danfoss / Emerson thermal expansion valve											
Evaporator		DANFOSS / KAORI Plate Heat Exchanger											
Operating Controller		7-inch colour touch screen shows setting temperature and measuring temp, temp curve record, data export excel-format											
Security Protection		Self-diagnosis function ; freezer overload protection ; high pressure switch ; overload relay ; thermal protection device, etc. Security protection function											
Closed Circulation System		The whole system is full closed circulation, there is no oil mist at high temp and no water vapour at low temp, pressure do not rise up when system is running. The system will supply oil automatically at low temp											
Refrigerant		R-404A ; Optional : R448A / R125											
Connection Size		G1/2	G3/4	G3/4	G1	G1	G1	DN32	DN40	DN50	DN65	DN65	DN65
Water-cooled type (@ 20 DegC)		600 L/H ; 1.5 - 4 bar ; G3/8	800 L/H ; 1.5 - 4 bar ; G1/2	1000 L/H ; 1.5 - 4 bar ; G1/2	1200 L/H ; 1.5 - 4 bar ; G3/4	1600 L/H ; 1.5 - 4 bar ; G3/4	2200 L/H ; 1.5 - 4 bar ; G3/4	6 m3/h ; 1.5 - 4 bar ; DN32	10 m3/h ; 1.5 - 4 bar ; DN40	14 m3/h ; 1.5 - 4 bar ; DN50	20 m3/h ; 1.5 - 4 bar ; DN65	28 m3/h ; 1.5 - 4 bar ; DN65	36 m3/h ; 1.5 - 4 bar ; DN80
Dimension (Air type) mm		500*850*1300	550*680*1450	550*680*1450	550*1000*1750	700*1000*1750	800*1200*1850	1000*1500*1850	-	-	-	-	-
Dimension (Water type) mm		450*650*1200	500*850*1300	500*850*1300	550*1000*1750	700*1000*1750	700*1000*1750	800*1200*1850	800*1200*1850	2050*1450*2050	2050*1450*2050	2750*1600*225	2750*1600*225
Power max 380V 50 Hz		AC 220V 4 kW	6 kW	8 kW	11 kW	14 kW	21 kW	34 kW	52 kW	79 kW	123 kW	165 kW	260 kW
Weight（kg）		115	165	185	230	280	300	550	750	1000	1250	1580	2150
Optional		Liquid low level protection											

TCU- 2 SERIES 'V' MODELS

Model		TCU-225WV / TCU-225V	TCU-235WV / TCU-235V	TCU-255WV / TCU-255V	TCU-275WV / TCU-275V	TCU-2A10WV / TCU-2A10V	TCU-2A15WV / TCU-2A15V	TCU-2A25WV / TCU-2A25V	TCU-2A38WV	TCU-2A60WV	TCU-2A95WV	TCU-2A130WV	TCU-2A200WV
Medium Temperature Range		-25°C~ +300°C											
Control Mode		Feedback PID + Our special dynamic control calculation, PLC controller											
Temp control		Process temperature control mode and jacket temperature control mode											
Temp Difference		Set or control the temperature difference between jacket oil and material process											
Program Editor		5 Programs, each program can edit 40 steps											
Communication Protocol		MODBUS RTU Protocol, RS 485 Interface											
Material Temp Feedback		PT100 or 4-20 mA or communication given (Default PT100)											
Temp feedback		The temp of 3 points : the inlet and outlet of equipment, reactor material temp (external temp sensor)											
Medium temp accuracy		+/- 0.5 DegC								+/- 1 DegC			
Material Temp Accuracy		+/- 1 DegC										+/- 1.5 DegC	
Heating Power (kW)		2.5	3.5	5.5	7.5	10	15	25	38	60	95	130	200
Cooling Capacity (kW)	300 DegC	2.5	3.5	5.5	7.5	10	15	25	38	60	95	130	200
	20 DegC	2.5	3.5	5.5	7.5	10	15	25	38	60	95	130	200
	-5 DegC	2	3	4.5	6.6	8	12	19	30	46	70	80	125
	-20 DegC	1	1.8	2.8	3.8	4.6	7	12	16	22	32	43	65
Circulation Pump (max)		20 L/min	35 L/min	35 L/min	50 L/min	60 L/min	110 L/min	150 L/min	150 L/min	250 L/min	400 L/min	400 L/min	600 L/min
		2 Bar	2 Bar	2 Bar	2 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar
Compressor		Emerson copeland / Danfoss scroll compressor											
Expansion Valve		Danfoss / Emerson thermal expansion valve											
Evaporator		DANFOSS / KAORI Plate Heat Exchanger											
Operating Controller		7-inch colour touch screen shows setting temperature and measuring temp, temp curve record, data export excel-format											
Security Protection		Self-diagnosis function ; freezer overload protection ; high pressure switch ; overload relay ; thermal protection device, etc. Security protection function											
Closed Circulation System		The whole system is full closed circulation, there is no oil mist at high temp and no water vapour at low temp, pressure do not rise up when system is running. The system will supply oil automatically at low temp											
Refrigerant		R-404A / R507C											
Connection Size		G1/2	G3/4	G3/4	G1	G1	G1	DN32	DN40	DN50	DN65	DN65	DN65
Water-cooled type (@ 20 DegC)		600 L/H ; 1.5 - 4 bar ; G3/8	800 L/H ; 1.5 - 4 bar ; G1/2	1000 L/H ; 1.5 - 4 bar ; G1/2	1200 L/H ; 1.5 - 4 bar ; G3/4	1600 L/H ; 1.5 - 4 bar ; G3/4	2200 L/H ; 1.5 - 4 bar ; G3/4	6 m3/h ; 1.5 - 4 bar ; DN32	10 m3/h ; 1.5 - 4 bar ; DN40	14 m3/h ; 1.5 - 4 bar ; DN50	20 m3/h ; 1.5 - 4 bar ; DN65	28 m3/h ; 1.5 - 4 bar ; DN65	36 m3/h ; 1.5 - 4 bar ; DN80
Dimension (Air type) mm		450*850*1300	450*850*1300	550*1000*1750	550*1000*1750	700*1000*1750	800*1200*1850	1000*1500*1850	-	-	-	-	-
Dimension (Water type) mm		450*850*1300	450*850*1300	450*850*1300	450*850*1300	550*1000*1750	550*1000*1750	800*1200*1850	1000*1500*185	1500*1000*1850	2050*1450*2050	2450*1450*205	2750*1600*225
Power max 380V 50 Hz		AC 220V 4 kW	6 kW	6 kW	11 kW	14 kW	21 kW	34 kW	52 kW	79 kW	123 kW	165 kW	260 kW
Weight (kg)		130	180	195	260	320	390	620	820	1100	1350	1680	2250
Optional		Liquid low level protection											

TCU - 5 SERIES MODELS

Model		TCU-535W / TCU-535	TCU-555W / TCU-555	TCU-575W / TCU-575	TCU-5A10W / TCU-5A10	TCU-5A15W / TCU-5A15	TCU-4A25W / TCU-4A25	TCU-4A38W	TCU-4A60W	TCU-4A95W	TCU-4A130W	TCU-4A200W
Medium Temperature Range		-45°C~ +250°C										
Control Mode		Feedback PID + Our special dynamic control calculation, PLC controller										
Temp control		Process temperature control mode and jacket temperature control mode										
Temp Difference		Set or control the temperature difference between jacket oil and material process										
Program Editor		5 Programs, each program can edit 40 steps										
Communication Protocol		MODBUS RTU Protocol, RS 485 Interface										
Material Temp Feedback		PT100 or 4-20 mA or communication given (Default PT100)										
Temp feedback		The temp of 3 points : the inlet and outlet of equipment, reactor material temp (external temp sensor)										
Medium temp accuracy		+/- 0.5 DegC							+/- 1 DegC			
Material Temp Accuracy		+/- 1 DegC									+/- 1.5 DegC	
Heating Power (kW)		3.5	5.5	7.5	10	15	25	38	60	95	130	200
Cooling Capacity (kW)	250 DegC	3.5	5.5	7.5	10	15	25	38	60	95	130	200
	20 DegC	3.5	5.5	7.5	10	15	25	38	60	95	130	200
	0 DegC	3	5	7	10	15	25	38	60	95	130	200
	-20 DegC	1.5	2.9	4.2	6	11	16	26	34	50	70	120
	-40 DegC	0.45	0.9	1.5	2	3.8	4.7	9	12	18	24	43
Circulation Pump (max)		35 L/min	35 L/min	50 L/min	60 L/min	110 L/min	150 L/min	200 L/min	250 L/min	400 L/min	400 L/min	600 L/min
		2 Bar	2 Bar	2 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar
Compressor		Emerson copeland / Danfoss scroll compressor										
Expansion Valve		Danfoss / Emerson thermal expansion valve										
Evaporator		DANFOSS / KAORI Plate Heat Exchanger										
Operating Controller		7-inch colour touch screen shows setting temperature and measuring temp, temp curve record, data export excel-format										
Security Protection		Self-diagnosis function ; freezer overload protection ; high pressure switch ; overload relay ; thermal protection device, etc. Security protection function										
Closed Circulation System		The whole system is full closed circulation, there is no oil mist at high temp and no water vapour at low temp, pressure do not rise up when system is running. The system will supply oil automatically at low temp										
Refrigerant		R-404A / R507C										
Connection Size		G3/4	G3/4	G3/4	G1	G1	DN32	DN50	DN50	DN65	DN65	DN65
Water-cooled type (@ 20 DegC)		800 L/H ; 1.5 - 4 bar ; G1/2	1500 L/H ; 1.5 - 4 bar ; G3/4	1800 L/H ; 1.5 - 4 bar ; G3/4	2600 L/H ; 1.5 - 4 bar ; G1	3200 L/H ; 1.5 - 4 bar ; G1	7 m3/h ; 1.5 - 4 bar ; DN40	12 m3/h ; 1.5 - 4 bar ; DN50	17 m3/h ; 1.5 - 4 bar ; DN65	24 m3/h ; 1.5 - 4 bar ; DN65	32 m3/h ; 1.5 - 4 bar ; DN80	42 m3/h ; 1.5 - 4 bar ; DN100
Dimension (Air type) mm		550*1000*1750	550*1000*1750	550*1000*1750	700*1000*1750	800*1200*1850	800*1200*1850	-	-	-	-	-
Dimension (Water type) mm		550*1000*1750	550*1000*1750	550*1000*1750	700*1000*1750	700*1000*1750	800*1200*1850	800*1200*1850	1500*1000*185	2050*1450*2050	2450*1450*2050	3000*1600*225
Power max 380V 50 Hz		6.5 kW	9 kW	11.5 kW	16 kW	23 kW	36 kW	55 kW	89 kW	135 kW	180 kW	280 kW
Weight (kg)		180	195	260	320	390	620	820	1100	1350	1680	2250
Optional		Liquid low level protection										

TCU- 5 SERIES 'V' MODELS

Model		TCU-555WV	TCU-575WV	TCU-5A10WV	TCU-5A15WV	TCU-5A25WV
Medium Temperature Range		**-45°C~ +300°C** (The system add pressure 3 bar)				
Control Mode		Feedback PID + Our special dynamic control calculation, PLC controller				
Temp control		Process temperature control mode and jacket temperature control mode				
Temp Difference		Set or control the temperature difference between jacket oil and material process				
Program Editor		5 Programs, each program can edit 40 steps				
Communication Protocol		MODBUS RTU Protocol, RS 485 Interface				
Material Temp Feedback		PT100 or 4-20 mA or communication given (Default PT100)				
Temp feedback		The temp of 3 points : the inlet and outlet of equipment, reactor material temp (external temp sensor)				
Medium temp accuracy		+/- 0.5 DegC				
Material Temp Accuracy		+/- 1 DegC				
Heating Power (kW)		5.5	7.5	10	15	25
Cooling Capacity (kW)	**250 DegC**	5.5	7.5	10	15	25
	100 DegC	5.5	7.5	10	15	25
	20 DegC	5.5	7.5	10	15	25
	0 DegC	5	7	10	15	25
	-20 DegC	2.9	4.2	6	11	16
	-40 DegC	0.9	1.5	2	3.8	4.7
Circulation Pump (max)		35 L/min	50 L/min	60 L/min	110 L/min	150 L/min
		2 Bar	2 Bar	2.5 Bar	2.5 Bar	2.5 Bar
Compressor		Emerson copeland / Danfoss scroll compressor				
Expansion Valve		Danfoss / Emerson thermal expansion valve				
Evaporator		DANFOSS / KAORI Plate Heat Exchanger				
Operating Controller		7-inch colour touch screen shows setting temperature and measuring temp, temp curve record, data export excel-format				
Security Protection		Self-diagnosis function ; freezer overload protection ; high pressure switch ; overload relay ; thermal protection device, etc. Security protection function				
Closed Circulation System		The whole system is full closed circulation, there is no oil mist at high temp and no water vapour at low temp, pressure do not rise up when system is running. The system will supply oil automatically at low temp				
Refrigerant		R-404A / R507C ; Optional : R448A				
Connection Size		G3/4	G3/4	G1	G1	DN32
Water-cooled type (@ 20 DegC)		1500 L/H ; 1.5 - 4 bar ; G3/4	1800 L/H ; 1.5 - 4 bar ; G3/4	2600 L/H ; 1.5 - 4 bar ; G1	3200 L/H ; 1.5 - 4 bar ; G1	7 m3/h ; 1.5 - 4 bar ; DN40
Dimension (mm)		450*850*1300	450*850*1300	550*1000*1750	550*1000*1750	800*1200*1850
Power max 380V 50 Hz		9.5 kW	12 kW	17 kW	24 kW	38 kW
Weight（kg）		245	285	320	360	420
Optional		Liquid low level protection				

TCU - 6 SERIES MODELS

Model		TCU-625W / TCU-625	TCU-635W / TCU-635	TCU-655W / TCU-655	TCU-675W / TCU-675	TCU-6A10W / TCU-6A10	TCU-6A15W	TCU-6A25W	TCU-6A38W	TCU-6A60W
Medium Temperature Range		-60°C~ +250°C								
Control Mode		Feedback PID + Our special dynamic control calculation, PLC controller								
Temp control		Process temperature control mode and jacket temperature control mode								
Temp Difference		Set or control the temperature difference between jacket oil and material process								
Program Editor		5 Programs, each program can edit 40 steps								
Communication Protocol		MODBUS RTU Protocol, RS 485 Interface								
Material Temp Feedback		PT100 or 4-20 mA or communication given (Default PT100)								
Temp feedback		The temp of 3 points : the inlet and outlet of equipment, reactor material temp (external temp sensor)								
Medium temp accuracy		+/- 0.5 DegC								+/- 1 DegC
Material Temp Accuracy		+/- 1 DegC								
Heating Power (kW)		2.5	3.5	5.5	7.5	10	15	25	38	60
Cooling Capacity (kW)	250 DegC	2.5	3.5	5.5	7.5	10	15	25	38	60
	100 DegC	2.5	3.5	5.5	7.5	10	15	25	38	60
	20 DegC	2.5	3.5	5.5	7.5	10	15	25	38	60
	-40 DegC	0.95	1.45	2.3	3.1	4.8	7.8	18	23	31
	-55 DegC	0.25	0.5	0.75	0.9	1.5	2.8	6	8	11
Circulation Pump (max)		20 L/min	35 L/min	35 L/min	50 L/min	60 L/min	110 L/min	150 L/min	200 L/min	250 L/min
		2 Bar	2 Bar	2 Bar	2 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar
Compressor		Emerson copeland / Danfoss scroll compressor								
Expansion Valve		Danfoss / Emerson thermal expansion valve								
Evaporator		DANFOSS / KAORI Plate Heat Exchanger								
Operating Controller		7-inch colour touch screen shows setting temperature and measuring temp, temp curve record, data export excel-format								
Security Protection		Self-diagnosis function ; freezer overload protection ; high pressure switch ; overload relay ; thermal protection device, etc. Security protection function								
Closed Circulation System		The whole system is full closed circulation, there is no oil mist at high temp and no water vapour at low temp, pressure do not rise up when system is running. The system will supply oil automatically at low temp								
Refrigerant		R-404A / R507C								
Connection Size		G3/4	G3/4	G3/4	G1	G1	DN32	DN50	DN50	DN65
Water-cooled type (@ 20 DegC)		800 L/H ; 1.5 - 4 bar ; G1/2	1500 L/H ; 1.5 - 4 bar ; G3/4	1800 L/H ; 1.5 - 4 bar ; G3/4	2600 L/H ; 1.5 - 4 bar ; G1	3200 L/H ; 1.5 - 4 bar ; G1	7 m3/h ; 1.5 - 4 bar ; DN40	12 m3/h ; 1.5 - 4 bar ; DN50	17 m3/h ; 1.5 - 4 bar ; DN65	24 m3/h ; 1.5 - 4 bar ; DN65
Dimension (Air type) mm		550*1000*1750	550*1000*1750	550*1000*1750	700*1000*1750	800*1200*1850	800*1200*1850	-	-	-
Dimension (Water type) mm		550*1000*1750	550*1000*1750	550*1000*1750	700*1000*1750	700*1000*1750	800*1200*1850	800*1200*1850	1500*1000*185	2050*1450*2050
Power max 380V 50 Hz		6.5 kW	9 kW	11.5 kW	16 kW	23 kW	36 kW	55 kW	89 kW	135 kW
Weight（kg）		180	195	260	320	390	620	820	1100	1350
Optional		Liquid low level protection								

TCU- 6 SERIES 'V' MODELS

Model		TCU-655WV	TCU-675WV	TCU-6A10WV	TCU-6A15WV	TCU-6A25WV
Medium Temperature Range		**-60°C~ +300°C** (System add pressure 3 bar)				
Control Mode		Feedback PID + Our special dynamic control calculation, PLC controller				
Temp control		Process temperature control mode and jacket temperature control mode				
Temp Difference		Set or control the temperature difference between jacket oil and material process				
Program Editor		5 Programs, each program can edit 40 steps				
Communication Protocol		MODBUS RTU Protocol, RS 485 Interface				
Material Temp Feedback		PT100 or 4-20 mA or communication given (Default PT100)				
Temp feedback		The temp of 3 points : the inlet and outlet of equipment, reactor material temp (external temp sensor)				
Medium temp accuracy		+/- 0.5 DegC				
Material Temp Accuracy		+/- 1 DegC				
Heating Power (kW)		5.5	7.5	10	15	25
Cooling Capacity (kW)	300 DegC	5.5	7.5	10	15	25
	100 DegC	5.5	7.5	10	15	25
	20 DegC	5.5	7.5	10	15	25
	-55 DegC	0.75	0.9	1.5	2.8	6
Circulation Pump (max)		35 L/min	50 L/min	60 L/min	110 L/min	150 L/min
		2 Bar	2 Bar	2.5 Bar	2.5 Bar	2.5 Bar
Compressor		Emerson copeland / Danfoss scroll compressor				
Expansion Valve		Danfoss / Emerson thermal expansion valve				
Evaporator		DANFOSS / KAORI Plate Heat Exchanger				
Operating Controller		7-inch colour touch screen shows setting temperature and measuring temp, temp curve record, data export excel-format				
Security Protection		Self-diagnosis function ; freezer overload protection ; high pressure switch ; overload relay ; thermal protection device, etc. Security protection function				
Closed Circulation System		The whole system is full closed circulation, there is no oil mist at high temp and no water vapour at low temp, pressure do not rise up when system is running. The system will supply oil automatically at low temp				
Refrigerant		R-404A / R507C				
Connection Size		G3/4	G1	G1	G1	DN32 PN10
Water-cooled type (@ 20 DegC)		1800 L/H ; 1.5 - 4 bar ; G3/4	2100 L/H ; 1.5 - 4 bar ; G3/4	3000 L/H ; 1.5 - 4 bar ; G1	4000 L/H ; 1.5 - 4 bar ; G1 1/8	8.5 m3/h ; 1.5 - 4 bar ; DN40
Dimension (mm)		550*1000*1750	550*1000*1750	700*1000*1750	800*1200*1850	1000*1500*1850
Power max 380V 50 Hz		10 kW	14 kW	18 kW	26 kW	40 kW
Weight（kg）		265	305	340	380	980
Optional		Liquid low level protection				

TCU - 7 SERIES MODELS

Model		TCU-725W	TCU-735W / TCU-735	TCU-755W / TCU-755	TCU-775W / TCU-775	TCU-7A10W	TCU-7A15W
Medium Temperature Range		**-70°C~ +250°C**					
Control Mode		Feedback PID + Our special dynamic control calculation, PLC controller					
Temp control		Process temperature control mode and jacket temperature control mode					
Temp Difference		Set or control the temperature difference between jacket oil and material process					
Program Editor		5 Programs, each program can edit 40 steps					
Communication Protocol		MODBUS RTU Protocol, RS 485 Interface					
Material Temp Feedback		PT100 or 4-20 mA or communication given (Default PT100)					
Temp feedback		The temp of 3 points : the inlet and outlet of equipment, reactor material temp (external temp sensor)					
Medium temp accuracy		+/- 0.5 DegC					
Material Temp Accuracy		+/- 1 DegC					
Heating Power (kW)		2.5	3.5	5.5	7.5	10	15
Cooling Capacity (kW)	**250 DegC**	2.5	3.5	5.5	7.5	10	15
	100 DegC	2.5	3.5	5.5	7.5	10	15
	20 DegC	2.5	3.5	5.5	7.5	10	15
	-60 DegC	0.4	0.55	0.75	0.9	1.2	2.8
Circulation Pump (max)		20 L/min	35 L/min	35 L/min	50 L/min	60 L/min	110 L/min
		2 Bar	2 Bar	2 Bar	2 Bar	2.5 Bar	2.5 Bar
Compressor		Tecumseh / Emerson Scroll flexible compressor					
Expansion Valve		Danfoss / Emerson thermal expansion valve					
Evaporator		DANFOSS / KAORI Plate Heat Exchanger					
Operating Controller		7-inch colour touch screen shows setting temperature and measuring temp, temp curve record, data export excel-format					
Security Protection		Self-diagnosis function ; freezer overload protection ; high pressure switch ; overload relay ; thermal protection device, etc. Security protection function					
Closed Circulation System		The whole system is full closed circulation, there is no oil mist at high temp and no water vapour at low temp, pressure do not rise up when system is running. The system will supply oil automatically at low temp					
Refrigerant		R-404A / R23, Optional : R125/R23 mixture					
Connection Size		G1/2	G3/4	G3/4	G1	G1	G1
Water-cooled type (@ 20 DegC)		900 L/H ; 1.5 - 4 bar ; G1/2	1200 L/H ; 1.5 - 4 bar ; G3/4	1800 L/H ; 1.5 - 4 bar ; G3/4	2300 L/H ; 1.5 - 4 bar ; G3/4	3200 L/H ; 1.5 - 4 bar ; G1	4500 L/H ; 1.5 - 4 bar ; G1 1/8
Dimension (water type) mm		500*850*1350	550*1000*1750	550*1000*1750	700*1000*1750	700*1000*1750	800*1200*1850
Dimension (air type) mm		-	700*1000*1750	700*1000*1750	700*1000*1750	-	-
Power max 380V 50 Hz		220V 5.2 kW	8 kW	11 kW	15 kW	20 kW	28 kW
Weight（kg）		190	275	320	370	370	420

TCU - 8 SERIES MODELS

Model		TCU-825W	TCU-835W	TCU-855W	TCU-875W	TCU-8A10W	TCU-8A15W	TCU-8A25W	TCU-8A38W	TCU-8A60W	TCU-8A80W
Medium Temperature Range		-80°C~ +250°C									
Control Mode		Feedback PID + Our special dynamic control calculation, PLC controller									
Temp control		Process temperature control mode and jacket temperature control mode									
Temp Difference		Set or control the temperature difference between jacket oil and material process									
Program Editor		5 Programs, each program can edit 40 steps									
Communication Protocol		MODBUS RTU Protocol, RS 485 Interface									
Material Temp Feedback		PT100 or 4-20 mA or communication given (Default PT100)									
Temp feedback		The temp of 3 points : the inlet and outlet of equipment, reactor material temp (external temp sensor)									
Medium temp accuracy		+/- 0.5 DegC								+/- 1 DegC	
Material Temp Accuracy		+/- 1 DegC									
Heating Power (kW)		3	3.5	5.5	7.5	10	15	25	38	60	80
Cooling Capacity (kW)	250 DegC	2.5	3.5	5.5	7.5	10	15	25	38	60	80
	20 DegC	2.5	3.5	5.5	7.5	10	15	25	38	60	80
	-60 DegC	1	1.4	1.6	3	3.5	5.8	10	16	23	32
	-75 DegC	0.3	0.42	0.7	1.3	1.5	2.4	5	8	11	16
Circulation Pump (max)		20 L/min	35 L/min	35 L/min	50 L/min	60 L/min	110 L/min	150 L/min	250 L/min	400 L/min	400 L/min
		2 Bar	2 Bar	2 Bar	2 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar
Compressor		Emerson copeland / Danfoss scroll compressor									
Expansion Valve		Danfoss / Emerson thermal expansion valve									
Evaporator		DANFOSS / KAORI Plate Heat Exchanger									
Operating Controller		7-inch colour touch screen shows setting temperature and measuring temp, temp curve record, data export excel-format									
Security Protection		Self-diagnosis function ; freezer overload protection ; high pressure switch ; overload relay ; thermal protection device, etc. Security protection function									
Closed Circulation System		The whole system is full closed circulation, there is no oil mist at high temp and no water vapour at low temp, pressure do not rise up when system is running. The system will supply oil automatically at low temp									
Refrigerant		R-404A / R508B, Optional : R125/R23/R14 mixture									
Connection Size		G1/2	G3/4	G3/4	G1	G1	G1	DN32	DN40	DN65	DN65
Water-cooled type (@ 20 DegC)		900 L/H ; 1.5 - 4 bar ; G1/2	1200 L/H ; 1.5 - 4 bar ; G3/4	1800 L/H ; 1.5 - 4 bar ; G3/4	2300 L/H ; 1.5 - 4 bar ; G1	3200 L/H ; 1.5 - 4 bar ; G1	4500 L/H ; 1.5 - 4 bar ; G1 1/8	8 m3/h ; 1.5 - 4 bar ; DN40	12 m3/h ; 1.5 - 4 bar ; DN50	20 m3/h ; 1.5 - 4 bar ; DN65	30 m3/h ; 1.5 - 4 bar ; DN80
Dimension (mm)		550*1000*1750	550*1000*1750	550*1000*1750	700*1000*1750	700*1000*1750	1500*1000*1850	1500*1000*185	2050*1450*205	2450*1450*2250	3000*1600*2250
Power max 380V 50 Hz		7.5 kW	10 kW	13 kW	19 kW	25 kW	37 kW	50 kW	71 kW	110 kW	150 kW
Weight（kg）		240	285	345	500	600	950	1300	1550	2200	2850
Optional		Liquid low level protection									

TCU - 9 SERIES MODELS

Model		TCU-925W	TCU-935W	TCU-955W	TCU-975W	TCU-9A10W	TCU-9A15W	TCU-9A25W	TCU-9A38W	TCU-9A60W	TCU-9A80W
Medium Temperature Range		-90°C~ +250°C									
Control Mode		Feedback PID + Our special dynamic control calculation, PLC controller									
Temp control		Process temperature control mode and jacket temperature control mode									
Temp Difference		Set or control the temperature difference between jacket oil and material process									
Program Editor		5 Programs, each program can edit 40 steps									
Communication Protocol		MODBUS RTU Protocol, RS 485 Interface									
Material Temp Feedback		PT100 or 4-20 mA or communication given (Default PT100)									
Temp feedback		The temp of 3 points : the inlet and outlet of equipment, reactor material temp (external temp sensor)									
Medium temp accuracy		+/- 0.5 DegC								+/- 1 DegC	
Material Temp Accuracy		+/- 1 DegC									
Heating Power (kW)		3	3.5	5.5	7.5	10	15	25	38	60	80
Cooling Capacity (kW)	250 DegC	2.5	3.5	5.5	7.5	10	15	25	38	60	80
	0 DegC	2.5	3.5	5.5	7.5	10	15	25	38	60	80
	-60 DegC	1	1.9	2.8	3.2	4.2	6	10	16	24	32
	-80 DegC	0.35	0.5	0.8	1.2	1.6	2.1	3.5	6	11	15
	-85 DegC	0.2	0.3	0.5	0.7	0.85	1.3	1.9	3.5	6	8
Circulation Pump (max)		20 L/min	35 L/min	35 L/min	50 L/min	60 L/min	110 L/min	150 L/min	250 L/min	400 L/min	400 L/min
		2 Bar	2 Bar	2 Bar	2 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar
Compressor		Emerson scroll flexible compressor / Carlyle									
Expansion Valve		Emerson thermal expansion valve / Emerson electronic expansion valve / Danfoss thermal expansion valve									
Evaporator		DANFOSS / KAORI Plate Heat Exchanger									
Operating Controller		7-inch colour touch screen shows setting temperature and measuring temp, temp curve record, data export excel-format									
Security Protection		Self-diagnosis function ; freezer overload protection ; high pressure switch ; overload relay ; thermal protection device, etc. Security protection function									
Closed Circulation System		The whole system is full closed circulation, there is no oil mist at high temp and no water vapour at low temp, pressure do not rise up when system is running. The system will supply oil automatically at low temp									
Refrigerant		R-404A / R508B, Optional : R125/R23/R14 mixture									
Connection Size		G3/4	G3/4	G3/4	G1	G1	G1	DN32	DN40	DN65	DN65
Water-cooled type (@ 20 DegC)		1100 L/H ; 1.5 - 4 bar ; G3/4	1900 L/H ; 1.5 - 4 bar ; G3/4	2400 L/H ; 1.5 - 4 bar ; G3/4	3200 L/H ; 1.5 - 4 bar ; G1	4000 L/H ; 1.5 - 4 bar ; G1 1/8	8 m3/h ; 1.5 - 4 bar ; DN40	12 m3/h ; 1.5 - 4 bar ; DN50	20 m3/h ; 1.5 - 4 bar ; DN65	30 m3/h ; 1.5 - 4 bar ; DN80	40 m3/h ; 1.5 - 4 bar ; DN100
Dimension (mm)		550*1000*1750	550*1000*1750	700*1000*1750	700*1000*1750	700*1000*1750	1000*1500*1850	2050*1450*205	2050*1450*205	2450*1450*2250	3000*1600*2250
Power max 380V 50 Hz		8 kW	11 kW	16 kW	21 kW	27 kW	38 kW	54 kW	79 kW	120 kW	170 kW
Weight (kg)		260	285	365	570	680	950	1400	1750	2400	3150
Optional		Liquid low level protection									

TCU - 10 SERIES MODELS

Model		TCU-1035W	TCU-1055W	TCU-1075W	TCU-10A10W	TCU-10A15W	TCU-10A25W	TCU-10A38W	TCU-10A60W	TCU-10A80W
Medium Temperature Range		-100°C~ +100°C								
Control Mode		Feedback PID + Our special dynamic control calculation, PLC controller								
Temp control		Process temperature control mode and jacket temperature control mode								
Temp Difference		Set or control the temperature difference between jacket oil and material process								
Program Editor		5 Programs, each program can edit 40 steps								
Communication Protocol		MODBUS RTU Protocol, RS 485 Interface								
Material Temp Feedback		PT100 or 4-20 mA or communication given (Default PT100)								
Temp feedback		The temp of 3 points : the inlet and outlet of equipment, reactor material temp (external temp sensor)								
Medium temp accuracy		+/- 0.5 DegC							+/- 1 DegC	
Material Temp Accuracy		+/- 1 DegC								
Heating Power (kW)		3.5	5.5	7.5	10	15	25	38	60	80
Cooling Capacity (kW)	100 DegC	3.5	5.5	7.5	10	15	25	38	60	80
	0 DegC	3.5	5.5	7.5	10	15	25	38	60	80
	-80 DegC	1.9	2.8	3.2	4.1	5	8	13	22	30
	-90 DegC	0.7	1.2	1.2	2	3	4.8	7.5	12	16
	-95 DegC	0.45	0.7	0.7	1.2	1.8	2.9	4.5	7.2	9.5
Circulation Pump (max)		35 L/min	35 L/min	50 L/min	60 L/min	110 L/min	150 L/min	250 L/min	400 L/min	400 L/min
		2 Bar	2 Bar	2 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar	2.5 Bar
Compressor		Emerson scroll flexible compressor / Carlyle								
Expansion Valve		Emerson thermal expansion valve / Emerson electronic expansion valve / Danfoss thermal expansion valve								
Evaporator		DANFOSS / KAORI Plate Heat Exchanger								
Operating Controller		7-inch colour touch screen shows setting temperature and measuring temp, temp curve record, data export excel-format								
Security Protection		Self-diagnosis function ; freezer overload protection ; high pressure switch ; overload relay ; thermal protection device, etc. Security protection function								
Closed Circulation System		The whole system is full closed circulation, there is no oil mist at high temp and no water vapour at low temp, pressure do not rise up when system is running. The system will supply oil automatically at low temp								
Refrigerant		R-404A / R23 / R14, Optional : R125/R23/R14 mixture								
Connection Size		G3/4	G3/4	G1	G1	DN32	DN32	DN40	DN65	DN65
Water-cooled type (@ 20 DegC)		2400 L/H ; 1.5 - 4 bar ; G3/4	3400 L/H ; 1.5 - 4 bar ; G1	4000 L/H ; 1.5 - 4 bar ; G1	5000 L/H ; 1.5 - 4 bar ; G1 1/8	12 m3/h ; 1.5 - 4 bar ; DN50	20 m3/h ; 1.5 - 4 bar ; DN65	30 m3/h ; 1.5 - 4 bar ; DN65	40 m3/h ; 1.5 - 4 bar ; DN80	50 m3/h ; 1.5 - 4 bar ; DN100
Dimension (mm)		700*1000*1750	800*1200*1850	800*1200*1850	1500*1000*1850	1500*1000*1850	2050*1450*205	2450*1450*225	3000*1600*2250	4000*1600*2250
Power max 380V 50 Hz		12 kW	18 kW	24 kW	30 kW	40 kW	60 kW	85 kW	135 kW	200 kW
Weight（kg）		435	565	705	890	1250	1600	2100	2950	3350
Optional		Liquid low level protection								

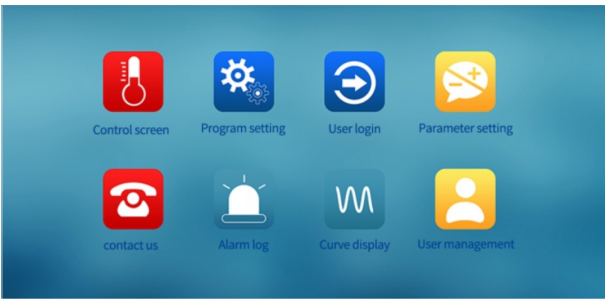
ONE MACHINE FOR 2 REACTORS - 2 SERIES 2T MODELS

Model		TCU-225W-2T N / TCU-225-2T N	TCU-235W-2T N / TCU-235-2T N	TCU-255W-2T N / TCU-255-2T N	TCU-275W-2T N / TCU-275-2T N	TCU-2A10W-2T N / TCU-2A10-2T N
Medium Temperature Range		**-25°C~ +200°C**				
Control Mode		Feedback PID + Our special dynamic control calculation, PLC controller				
Temp control		Process temperature control mode and jacket temperature control mode **TWO GROUPS**				
Temp Difference		Set or control the temperature difference between jacket oil and material process **TWO GROUPS**				
Communication Protocol		MODBUS RTU Protocol, RS 485 Interface				
Material Temp Feedback		PT100 or 4-20 mA or communication given (Default PT100)				
Temp feedback		The temp of 3 points : the inlet and outlet of equipment, reactor material temp (external temp sensor) **TWO GROUPS**				
Medium temp accuracy		+/- 0.5 DegC				
Material Temp Accuracy		+/- 1 DegC				
Heating Power (kW)		2.5 X 2	3.5 X 2	5.5 X 2	7.5 X 2	10 X 2
Cooling Capacity (kW)	**200 DegC**	2.5 X 2	3.5 X 2	5.5 X 2	7 X 2	10 X 2
	100 DegC	2.5 X 2	3.5 X 2	5.5 X 2	7 X 2	10 X 2
	20 DegC	2.5 X 2	3.5 X 2	5.5 X 2	7 X 2	10 X 2
	0 DegC	1.5 X 2	2.5 X 2	3.5 X 2	5 X 2	7.5 X 2
	-20 DegC	1 X 2	1.6 X 2	2.1 X 2	3 X 2	4 X 2
Circulation Pump (max)		20 L/min X 2	35 L/min X 2	35 L/min X 2	50 L/min X 2	50 L/min X 2
		1.5 Bar	2 Bar	2 Bar	2 Bar	2 Bar
Compressor		Highly / Mitsubishi	Emerson copeland / Danfoss scroll compressor			
Expansion Valve		Danfoss / Emerson thermal expansion valve				
Evaporator		DANFOSS / KAORI Plate Heat Exchanger				
Operating Controller		7-inch colour touch screen shows setting temperature and measuring temp, temp curve record, data export excel-format				
Security Protection		Self-diagnosis function ; freezer overload protection ; high pressure switch ; overload relay ; thermal protection device, etc. Security protection function				
Closed Circulation System		The whole system is full closed circulation, there is no oil mist at high temp and no water vapour at low temp, pressure do not rise up when system is running. The system will supply oil automatically at low temp				
Refrigerant		R-404A/R507C, Optional : R448A				
Connection Size		G3/4	G3/4	G3/4	G3/4	G1
Water-cooled type (@ 20 DegC)		1200 L/H ; 1.5 - 4 bar ; G3/4	1400 L/H ; 1.5 - 4 bar ; G3/4	1700 L/H ; 1.5 - 4 bar ; G3/4	2100 L/H ; 1.5 - 4 bar ; G1	2500 L/H ; 1.5 - 4 bar ; G1
Dimension (Air type) mm		550*1000*1750	700*1000*1750	700*1000*1750	800*1200*1850	1000*1500*1850
Dimension (Water type) mm		550*1000*1750	550*1000*1750	700*1000*1750	700*1000*1750	800*1200*1850
Power max 50 Hz AC 380V		220V 7.5 kW	11.5 kW	17 kW	23 kW	31 kW
Weight（kg）		240	285	345	385	480

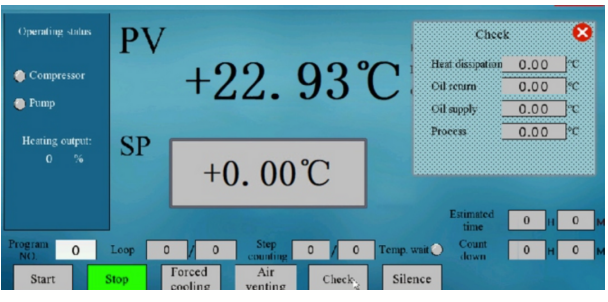
ONE MACHINE FOR 2 REACTORS - 4 SERIES 2T MODELS

Model		TCU-425W-2T N / TCU-425-2T N	TCU-435W-2T N / TCU-435-2T N	TCU-455W-2T N / TCU-455-2T N	TCU-475W-2T N / TCU-475-2T N	TCU-4A10W-2T N / TCU-4A10-2T N
Medium Temperature Range		**-40°C~ +200°C**				
Control Mode		Feedback PID + Our special dynamic control calculation, PLC controller				
Temp control		Process temperature control mode and jacket temperature control mode **TWO GROUPS**				
Temp Difference		Set or control the temperature difference between jacket oil and material process **TWO GROUPS**				
Communication Protocol		MODBUS RTU Protocol, RS 485 Interface				
Material Temp Feedback		PT100 or 4-20 mA or communication given (Default PT100)				
Temp feedback		The temp of 3 points : the inlet and outlet of equipment, reactor material temp (external temp sensor) **TWO GROUPS**				
Medium temp accuracy		+/- 0.5 DegC				
Material Temp Accuracy		+/- 1 DegC				
Heating Power (kW)		2.5 X 2	3.5 X 2	5.5 X 2	7.5 X 2	10 X 2
Cooling Capacity (kW)	**200 DegC**	2.5 X 2	3.5 X 2	5.5 X 2	7 X 2	10 X 2
	100 DegC	2.5 X 2	3.5 X 2	5.5 X 2	7 X 2	10 X 2
	20 DegC	2.5 X 2	3.5 X 2	5.5 X 2	7 X 2	10 X 2
	0 DegC	1.5 X 2	2.5 X 2	3.5 X 2	5 X 2	7.5 X 2
	-20 DegC	1 X 2	1.6 X 2	2.1 X 2	3 X 2	4 X 2
	-35 DegC	0.45 x 2	0.75 x 2	1 x 2	1.4 x 2	1.8 x 2
Circulation Pump (max)		20 L/min X 2	35 L/min X 2	35 L/min X 2	50 L/min X 2	60 L/min X 2
		1.5 Bar	2 Bar	2 Bar	2 Bar	2 Bar
Compressor		Highly / Mitsubishi	Emerson copeland / Danfoss scroll compressor			
Expansion Valve		Danfoss / Emerson thermal expansion valve				
Evaporator		DANFOSS / KAORI Plate Heat Exchanger				
Operating Controller		7-inch colour touch screen shows setting temperature and measuring temp, temp curve record, data export excel-format				
Security Protection		Self-diagnosis function ; freezer overload protection ; high pressure switch ; overload relay ; thermal protection device, etc. Security protection function				
Closed Circulation System		The whole system is full closed circulation, there is no oil mist at high temp and no water vapour at low temp, pressure do not rise up when system is running. The system will supply oil automatically at low temp				
Refrigerant		R-404A/R507C, Optional : R448A				
Connection Size		G3/4	G3/4	G3/4	G3/4	G1
Water-cooled type (@ 20 DegC)		1200 L/H ; 1.5 - 4 bar ; G3/4	1800 L/H ; 1.5 - 4 bar ; G3/4	2200 L/H ; 1.5 - 4 bar ; G3/4	2600 L/H ; 1.5 - 4 bar ; G1	3500 L/H ; 1.5 - 4 bar ; G1
Dimension (Air type) mm		550*1000*1750	700*1000*1750	700*1000*1750	800*1200*1850	1000*1500*1850
Dimension (Water type) mm		550*1000*1750	550*1000*1750	700*1000*1750	700*1000*1750	800*1200*1850
Power max 50 Hz AC 380V		220V 8 kW	12 kW	17.5 kW	24 kW	33 kW
Weight（kg）		240	285	345	385	480

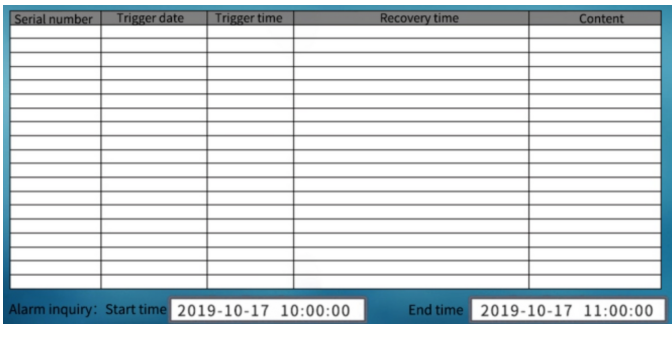
DIFFERENT DISPLAYS OF THE FUNCTIONS



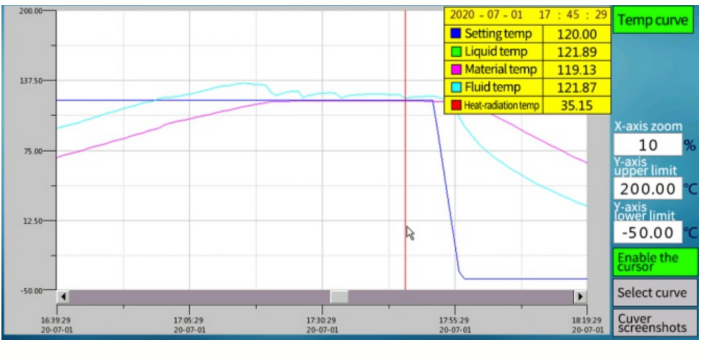
Description: Screen depicts the selection of different functions



Description: Screen depicts the set point value and other indications and control functions such as start / stop, compressor on/off etc



Description: Detailed information about alarm record



Description: Display of temperature curves and details

Description: Program setting feature

EX-PROOF MACHINES

POSITIVE PRESSURE EXPLOSION PROOF CABINET (EXPXdmb II BT4 / EXPXdmb II CT4)

The positive pressure cabinet is composed of positive pressure cavity and control cavity. Positive pressure cavity is used for installing various of instrument or electronics which with non ex-proof. The control cavity has ex-proof control box and pressure control system. The case material of positive pressure cabinet with 2-3 mm cold rolled steel sheet welding and air duct with galvanized steel pipe. There is a glass display in front of the door and display the information of instrument and indicator light

- Detailed technical datasheets of ex-proof machines can be provided on formal request

EX-PROOF MACHINES

ISOLATED EXPLOSION PROOF CABINET (EXdIIBT4)

1) Electrical cabinet
- Separate wiring chamber
- Heating power > 7.5 kW with independent heat dissipation aluminium fins ex-proof cabinet
- Electric cabinet adopts whole aluminium mold
- Equipped with ex-proof mouse, to operate 7-inch touch screen (Optional Siemens ex-proof touch screen - 7 inch and 12 inch)

2) Compressor
- Using isolated ex-proof
- Adopt terminal block packaging process (Intrinsically safe)

3) Circulating fan using isolated ex-proof and Aluminium fan

4) Circulating pump adopts isolated ex-proof motor

5) Heater adopts flameproof type (heating power per unit area < 3W)

6) Temp sensor adopts flameproof type

7) Pressure sensor adopts flameproof type

8) Various protection areas are installed in flameproof boxes

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JAGDAMBA ENTERPRISE

THANK YOU

Address: 504- Aurum Building, Near HP Petrol Pump,
Iskon Vasna Road, Vadodara- 390007, India
Phone: (M) +91-9924376558
Website: www.jagdamba-enterprise.in
Email: sales@jagdamba-enterprise.com