

# MAYEKAWA

## MYCOM

NEW STANDARD HIGH C.O.P. CHILLER

## Mayekawa Chiller e<sup>5</sup> Unit



## Special Features Mayekawa Chiller e<sup>5</sup> Unit

Mayekawa developed a new generation of chiller units. The new chiller unit is equipped with reciprocating compressors of the 'M' and 'K'-SERIES known for their superior COP.

For sure the customer gets a high merit !



COMPRESSOR

MOTOR



COMPRESSOR  
K-SERIES



EVAPORATOR



CONDENSER



HP FLOAT VALVE

## What are the advantages of the New e<sup>5</sup> Concept?

- **e nvironment Friendly.**

- ~Designed for **natural refrigerant NH3**
- ~**hermetic motors** for 'K'-SERIES compressors

- **e nergy Saving.**

- ~Designed for **optimal C.O.P.**

- **e asy Installation**

- **Operation comfort/safety.**

- ~low NH3 charge
- ~low noise level
- ~**hermetic motors** for 'K'-SERIES compressors

- **For renewing & extending existing Plants.**

- ~**Small foot-print (easy transportable & installation)~**
- ~**minimized installation time~**
- ~**plug & key ready**

- Available for different installation-variants.
- ~Combined with cooling tower, Dry brine cooler~

- **e asy Service**

- **Wide Line-Up**

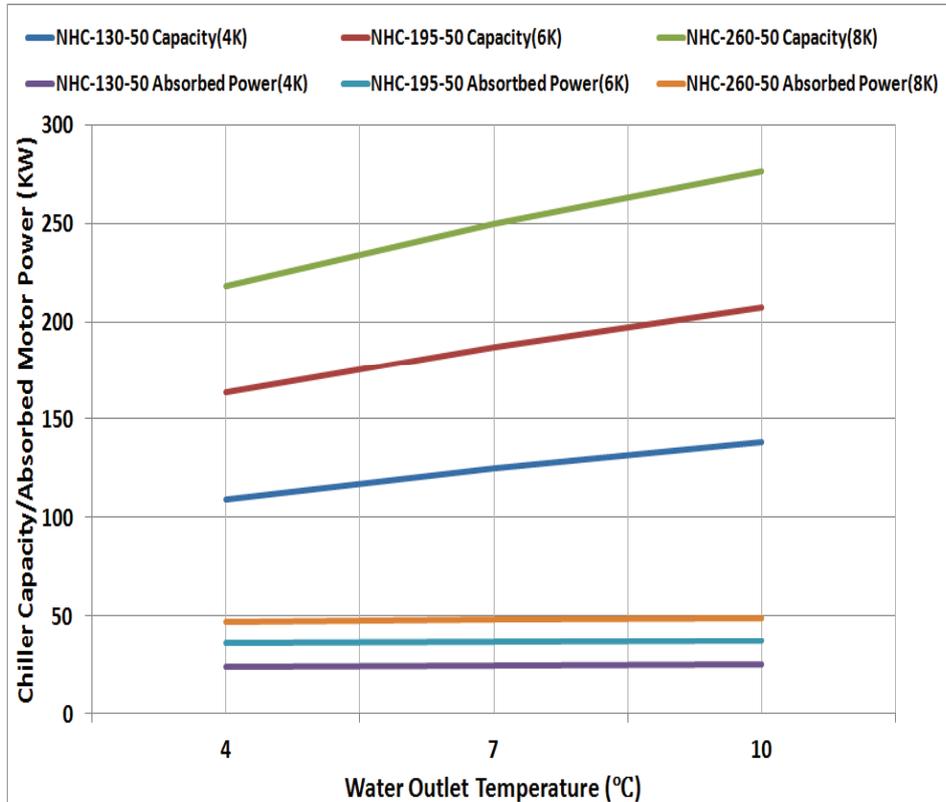
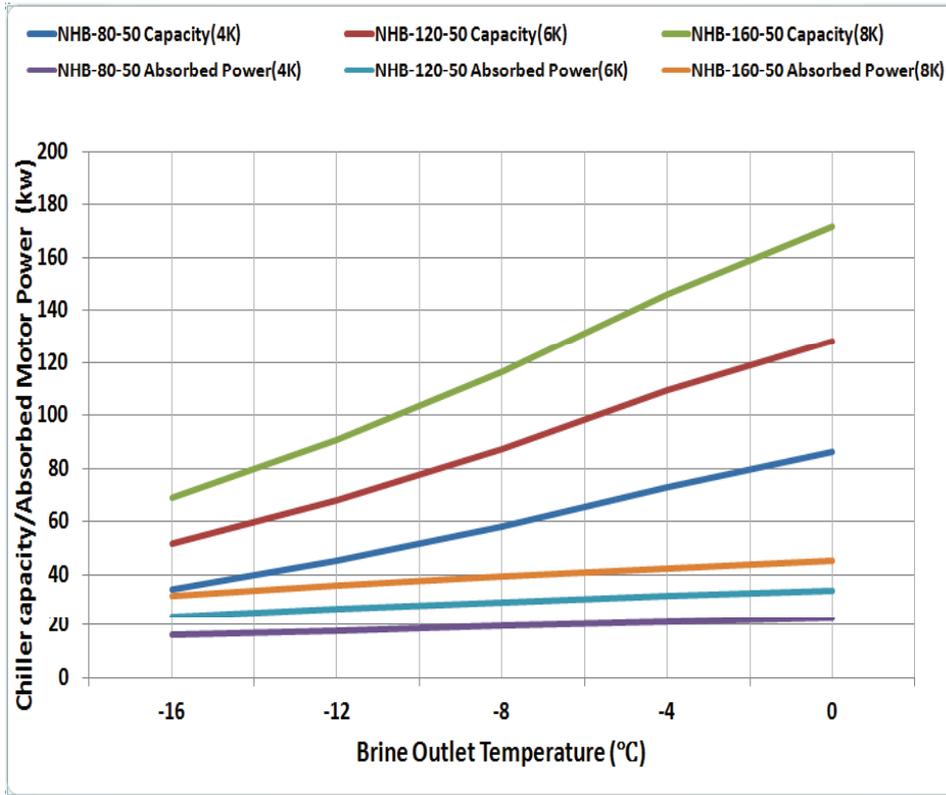
corresponding with capacity range from 35kW to 1440kW depending on the conditions

- **e asy Control**

- ~**most simple expansion** not requiring any additional control
- ~mechanical capacity control
- ~**variable speed drive**
- ~PLC control

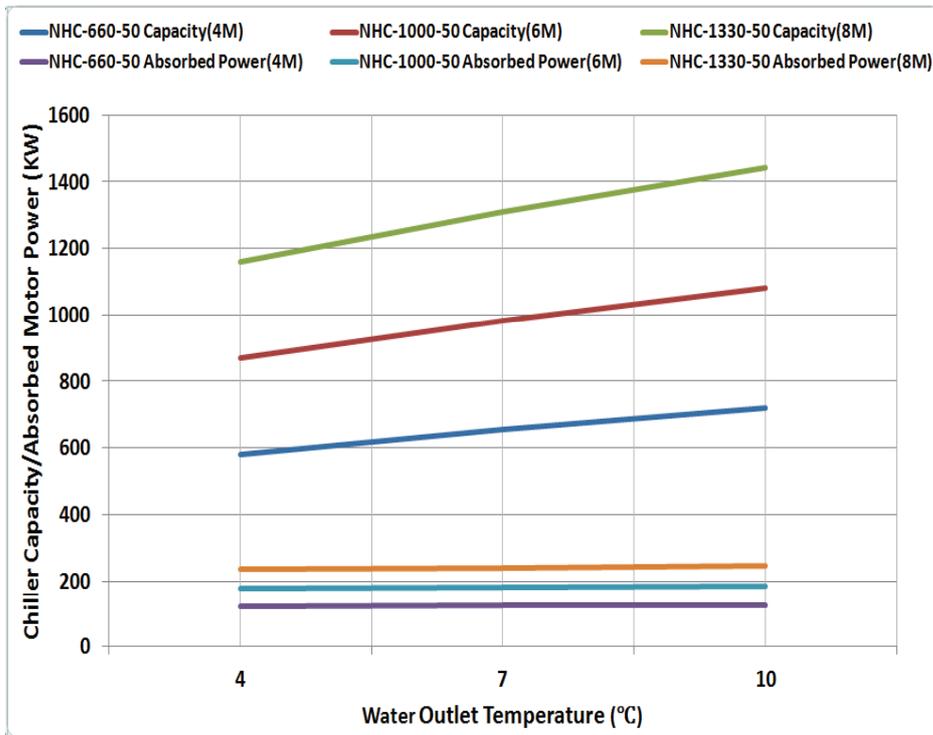
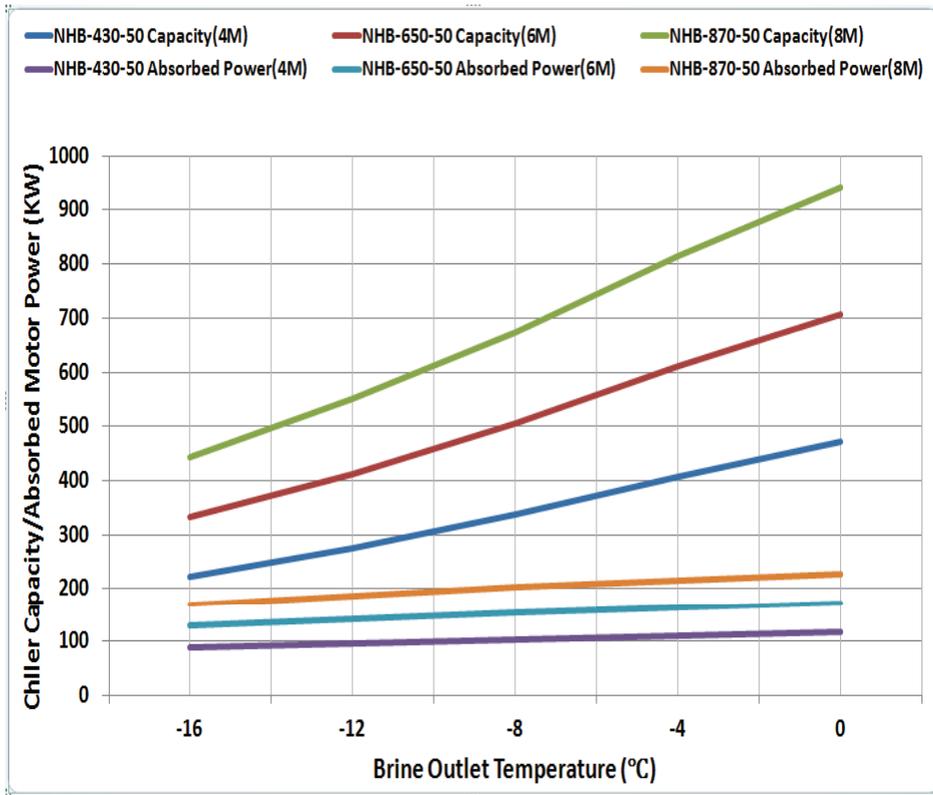
# Overview K- types Brine/Water

DATA BASED ON : CONDENSER water in 32°C / water out 37 °C



# Overview M- types Brine/Water

DATA BASED ON : CONDENSER water in 32°C / water out 37 °C



## Brine cooler and chiller package Specification K - Type

Model	NHB-80-50	NHC-130-50	NHB-120-50	NHC-195-50	NHB-160-50	NHC-260-50
Cooling capacity	80	129	120	194	160	259
Brine/water outlet temperature	-3°C	7°C	-3°C	7°C	-3°C	7°C
Cooling water inlet temperature	32°C					
Absorbed power	20.9	23.3	31.3	34.9	41.7	46.5

### Compressor

Type	N4K	N6K	N8K
Speed	900~1500rpm		
Capacity control	100,50%	100, 66, 33%	100,75,50,25%
Design pressure	Maximum discharge pressure 23barG : Maximum suction pressure 7barG		

### Drive motor

Power	30kW	45kW	60kW (55kW)
Voltage/Frequency	3-400V 50Hz		
Degree of protection	Semi-Hermetic (or IP55)		
Efficiency	(IE2)		
Starter	VSD		

### Evaporator

Type	Shell and Plate
Design pressure	Refrigerant side 16barG / Brine or water side 16barG
Connections size IN/OUT	DN100

### Condenser

Type	Shell and Plate
Design pressure	Refrigerant side 25barG / Brine or water side 16barG
Connections size In/OUT	DN100

### Oil cooler

Type	Shell and Tube
Connections size IN/OUT	DN20

### Control panel

Controller	-With touch panel (Display Suction pressure, Discharge pressure, Oil Pressure, Suction temperature, Discharge temperature, Brine (Chilled water) outlet temperature, motor current values, capacity of the compressor, Total running time.) -Automatic capacity control depending on the brine(water) outlet temperature. -Automatic startup and stop depending on the brine(water) outlet temperature.
Safety device	High pressure, Low pressure, Oil pressure, Brine(chilled water) outlet temperature low, Over load,
Digital Input	Emergency stop, Remote operation command, Cooling water pump operation confirmation, Brine/chilled water pump operation confirmation  Emergency Stop Input Emergency Stop Input
Digital Output	Unit operation confirmation, Batch alarm,

### Safety valves

For Compressor (Inlet/Outlet)	DN15/25	DN15/25	DN15/25
For Condenser (Inlet/Outlet)	DN15/25		
For Evaporator (Inlet/Outlet)	DN15/25		

### Others

Oil heater	Oil heater with thermostat, Capacity 200W x 1						
Fixed condition	Indoor setting, Neighboring temperature 0~40°C						
Refrigerant	Type	R717 (NH3)					
	Charge	20kg	20kg	25kg	25kg	30kg	30kg
Oil	Type	RHT-68					
	Charge	9L	9L	9L	10L	10L	10L
Unit colour	RAL 7035						

### Optional equipment

Soundproof enclosure	Can be delivered
Vibration isolations	Can be delivered
Communication	Profibus, Modbus

## Brine cooler and chiller package Specification M - Type

Model	NHB-430-50	NHC-660-50	NHB-650-50	NHC-1000-50	NHB-870-50	NHC-1330-50
Cooling capacity	434	667	650	1000	870	1330
Brine/water outlet temperature	-3°C	7°C	-3°C	7°C	-3°C	7°C
Cooling water inlet temperature	32°C					
Absorbed power	112	123	165	182	219	241

### Compressor

Type	N4M	N6M	N8M
Speed	800~1500rpm		
Capacity control	100,50%	100, 66, 33%	100,75,50,25%
Design pressure	Maximum discharge pressure 26barG : Maximum suction pressure 8barG		

### Drive motor

Power	132kW	150kW	200kW	220kW	250kW	280kW
Voltage/Frequency	3-400V 50Hz					
Degree of protection	IP55					
Efficiency	IE2					
Starter	VSD					

### Evaporator

Type	Shell and Plate					
Design pressure	Refrigerant side 16barG / Brine or water side 16barG					
Connections size IN/OUT	DN100			DN150		

### Condenser

Type	Shell and Plate					
Design pressure	Refrigerant side 25barG / Brine or water side 16barG					
Connections size IN/OUT	DN150		DN200		DN250	

### Oil cooler

Type	Shell and Tube					
Connections size IN/OUT	DN25					

### Control panel

Controller	-With touch panel (Display Suction pressure, Discharge pressure, Oil Pressure, Suction temperature, Discharge temperature, Brine (Chilled water) outlet temperature, motor current values, capacity of the compressor, Total running time.) -Automatic capacity control depending on the brine(water) outlet temperature. -Automatic startup and stop depending on the brine(water) outlet temperature.
Safety device	High pressure,Low pressure,Oil pressure,Brine(chilled water)outlet temperature low ,Over load,
Digital Input	Emergency stop , Remote operation command , Cooling water pump operation confirmation , Brine/chilled water pump operation confirmation  Emergency Stop Input Emergency Stop Input
Digital Output	Unit operation confirmation , Batch alarm ,

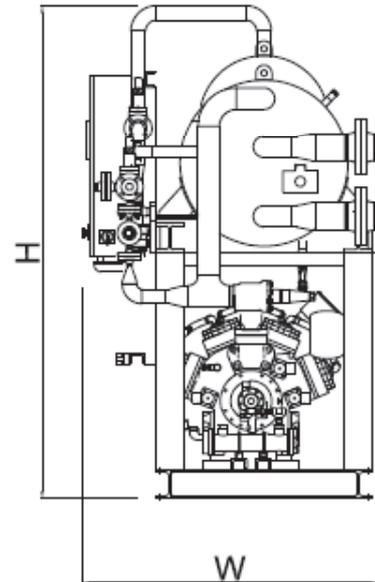
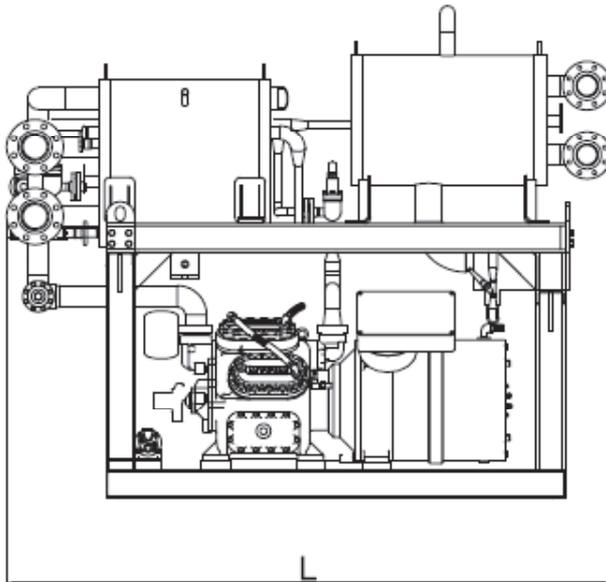
### Safety valves

For Compressor (Inlet/Outlet)	DN20/32	DN25/40	DN25/40
For Condenser (Inlet/Outlet)	DN15/25		
For Evaporator (Inlet/Outlet)	DN15/25		

### Others

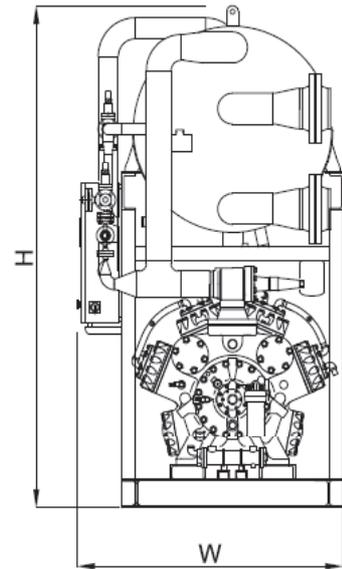
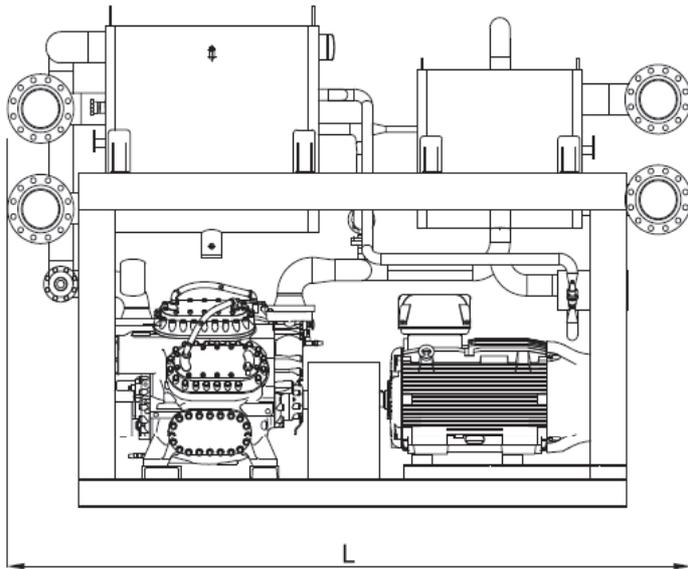
Oil heater	Oil heater with thermostat , Capacity 200W x 1						
Fixed condition	Indoor setting , Neighboring temperature 0~40°C						
Refrigerant	Type	R717 (NH3)					
	Charge	75kg	75kg	110kg	110kg	140kg	145kg
Oil	Type	RHT-68					
	Charge	40L		45L		50L	
Unit colour	RAL 7035						

## Dimensions of K – CHILLER e<sup>5</sup>



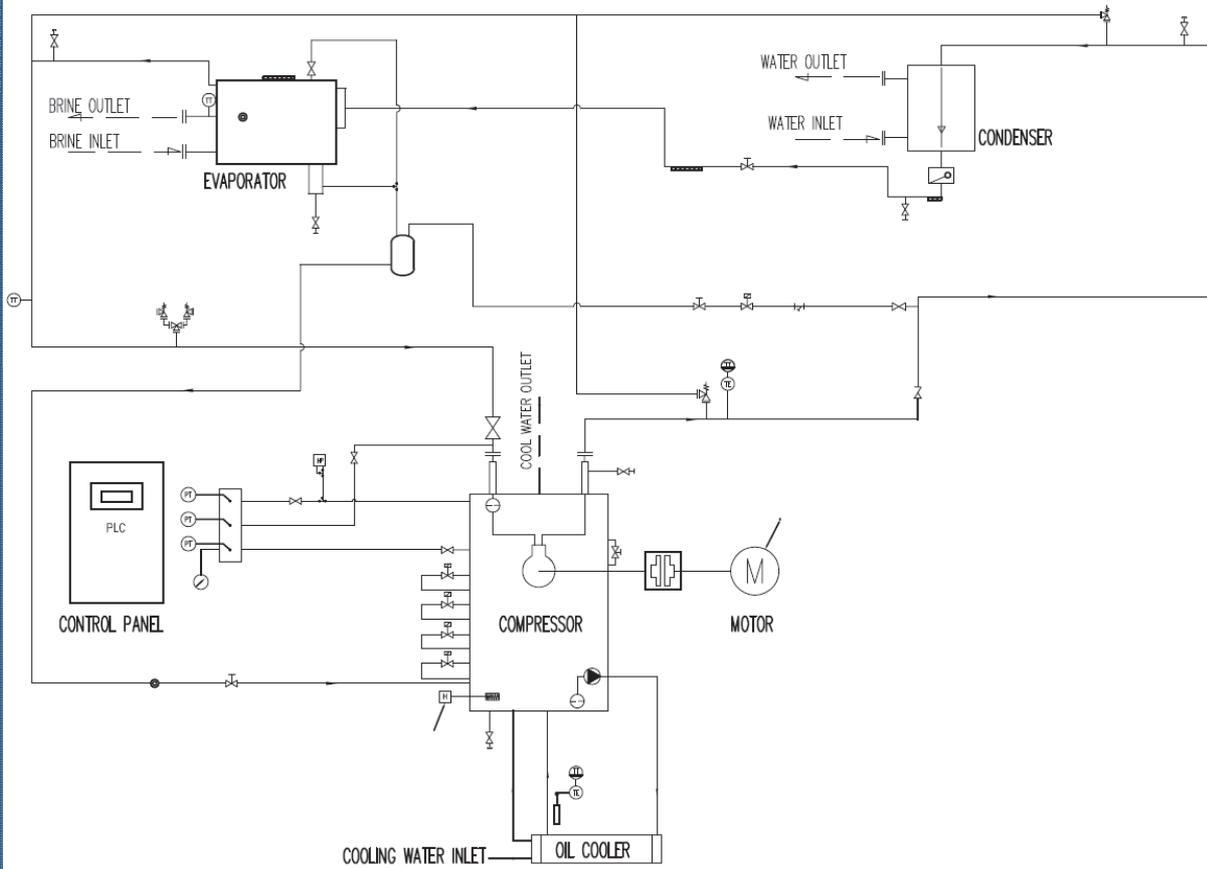
Model		NHB-80-50	NHC-130-50	NHB-120-50	NHC-195-50	NHB-160-50	NHC-260-50
Type		N4K		N6K		N8K	
Weight		3000	3050	3250	3350	3600	3700
Dimensions	L	2500mm		2500mm		2500mm	
	W	1220mm		1220mm		1220mm	
	H	2060mm		2060mm		2060mm	

## Dimensions of M – CHILLER e<sup>5</sup>

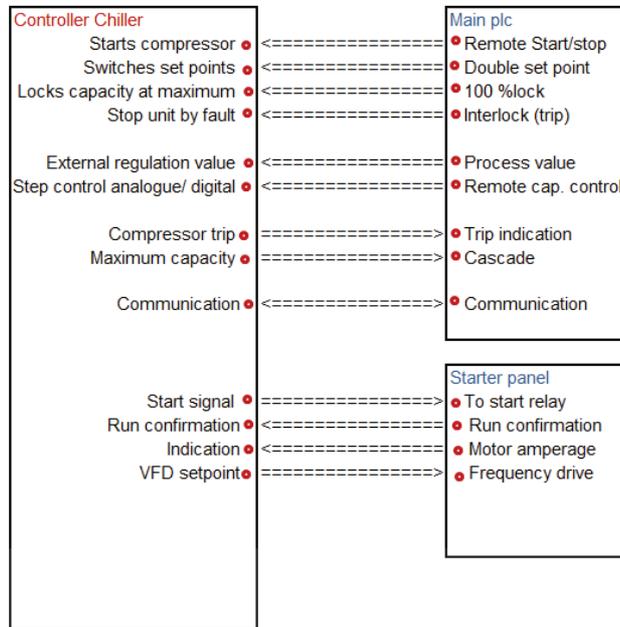


Model		NHB-430-50	NHC-660-50	NHB-650-50	NHC-1000-50	NHB-870-50	NHC-1330-50
Type		N4M		N6M		N8M	
Weight		6500	6700	8700	9300	10000	10500
Dimensions	L	3900mm		3900mm		3900mm	
	W	1500mm		1500mm		1500mm	
	H	2750mm		2750mm		2750mm	

# Flow Diagram CHILLER e<sup>5</sup>



# Controller CHILLER e<sup>5</sup>



Specifications			
Description	NUMERIC VALUE	Control voltage	100 – 120V / 220 -240V
Screen size	4", 6"	Frequency	50 / 60 Hz
Communication	RS485(optional), Ethernet(TCP/IP)	Operating condition	0 – 50 DegC / 0 – 95%RH
External memory	SD Card,	Dimension	(W)600 x (H)600 x (D)250
Analog Input		Digital I/O	
Qty.	5 (piston) 11 (chiller)	Qty.	10 inputs 12 outputs
Current (Signal)	DC 4 -20 mA	Digital input	Internal DC12V Max. 25mA
Voltage (Signal)	DC 1 - 5 V	Digital output	Rated load AC100 – 240V, 2A,
Analog Output			
Qty.	Optional		
Signal current	DC 4 – 20 mA ( R < 500 ohm)		