Notice du Groupe Froid Industriel KANSA – Traduction Française

1. Présentation générale

Les groupes froids industriels KANSA, preuve de notre technologie de pointe, intègrent un concept complet de sécurité. Ils utilisent des technologies avancées pour offrir aux utilisateurs une solution optimale. Ces groupes sont largement utilisés dans les industries de la mécanique, de l'électronique, des plastiques, du textile, de l'alimentaire, de la médecine, de la chimie et des énergies renouvelables. L'objectif est de garantir une production industrielle moderne sûre, stable et efficace.

2. Caractéristiques

1. Garantie de fiabilité : Compresseur de marque internationale avec une technologie avancée assurant une efficacité optimale.

2. Installation facile : Structure légère, facile à déplacer, connexions électriques et hydrauliques simples.

3. Économie d'énergie efficace : Compresseur scroll plus performant que les conceptions à piston traditionnelles, ventilateur et condenseur améliorés.

4. Haute précision : Thermostat numérique avec contrôle précis de la température de l'eau.

5. Sécurité d'utilisation : Technologies électroniques avancées pour l'auto-diagnostic, réduction des durées d'alarme par système de protection efficace.

6. Entretien facile : Conception européenne, démontage rapide, maintenance simple et efficace.

3. Composants du groupe froid

• Compresseur : Il joue le rôle du cœur du système. Il aspire le gaz réfrigérant depuis l'évaporateur, le comprime en gaz haute température et haute pression, puis l'envoie au condenseur. Ce dernier condense le gaz en liquide, qui est ensuite détendu via une vanne d'expansion avant de retourner à l'évaporateur pour recommencer le cycle. Les types utilisés sont à rotor et scroll.

• Condenseur à air : Permet de refroidir le gaz réfrigérant provenant du compresseur. Il est fabriqué en interne, avec tubes en cuivre à filetage interne et ailettes en aluminium hydrophiles.

• Évaporateur : Sert à produire de l'eau froide. Le liquide frigorigène basse température absorbe la chaleur de l'eau, permettant la production continue d'eau froide. Il s'agit d'un évaporateur à calandre fabriqué en interne.

• Réservoir : Stocke l'eau froide et stabilise la température. Fabriqué en acier inoxydable 304, il est de forme cylindrique pour un bon mélange de l'eau et un nettoyage facile.

• Pompe à eau : Permet de faire circuler l'eau froide sous pression. Également en acier inoxydable 304.

• Vanne d'expansion : Régule le débit de réfrigérant, effectue la détente et maintient le niveau de surchauffe pour éviter les coups de liquide.

• Filtre déshydrateur : Retire l'humidité et les impuretés solides du circuit frigorifique. Il est composé de tamis moléculaire et de laine de verre.

• Contrôleur de pression : Interrompt le compresseur si la pression est anormalement haute ou basse.

• Composants de commande électroniques : Comprennent le contrôleur principal, disjoncteurs, contacteurs, relais thermiques, protecteurs de phase. Tous les composants doivent être protégés contre l'humidité et la poussière.

4. Principe de réfrigération

Le groupe froid de la série IC est composé principalement d'un compresseur hermétique, d'un condenseur, d'une vanne électromagnétique, d'un filtre déshydrateur, d'un évaporateur, d'un séparateur gaz-liquide et de dispositifs de protection.

Lors du fonctionnement, le compresseur aspire le réfrigérant basse pression et basse température de l'évaporateur. Après compression, il devient un gaz à haute température et haute pression, qui entre dans le condenseur. Ce gaz cède sa chaleur à l'air ou à l'eau, se condense et devient liquide. Le liquide passe ensuite par une vanne d'expansion qui le détend, le faisant devenir un liquide basse pression et basse température. Ce liquide pénètre dans l'évaporateur, absorbe la chaleur de l'eau, la refroidissant, et devient à nouveau un gaz basse pression. Le cycle recommence.

5. Installation

• Vérification à la réception : Le groupe est emballé dans du bois avec un film plastique interne. Il est prémonté avec le réfrigérant et l'huile frigorifique. Vérifiez les dommages éventuels au déballage et informez le transporteur ou le fabricant si nécessaire.

• Transport : Les unités de moins de 15 HP sont munies de roulettes ; les plus grandes nécessitent un palan ou chariot élévateur. L'unité doit rester horizontale durant la manipulation.

• Choix de l'emplacement : Installer sur sol, plateforme ou mur pouvant supporter le poids. Prévoir un espace suffisant pour l'entretien, loin de sources de chaleur ou de gaz corrosifs/inflammables. L'appareil doit être près d'une alimentation électrique et d'un point d'eau.

• Fixation : Sur base en béton avec boulons d'expansion ou sur support métallique avec tampons anti-vibratiles. Le support doit être stable et horizontal. L'angle d'inclinaison ne doit pas dépasser 30°.

• Conduits d'air : Si la température ambiante dépasse 40°C, un conduit d'air et un ventilateur doivent être installés pour évacuer la chaleur.

• Connexions hydrauliques : Respecter le schéma de tuyauterie du manuel. Installer des filtres à eau, vannes d'arrêt, thermomètres, manomètres, et vannes de vidange. Prévoir une purge automatique en haut du circuit pour éviter les bulles d'air.

6. Contrôle de l'unité

L'unité est contrôlée par un panneau numérique comprenant : un affichage principal, des boutons de commande, des menus fonctionnels et une logique de régulation.

• Lorsque la température de sortie (PV) dépasse la température de consigne (SV) augmentée de la plage définie (ADD), le compresseur démarre. Il s'arrête quand la température redescend sous SV - ADD.

• Le menu permet de régler la température, le contraste de l'écran, le mode de fonctionnement (local/distant), la langue (anglais/chinois) et d'activer un minuteur de rétroéclairage.

7. Codes d'erreurs et alarmes

Le système dispose de plusieurs codes d'erreurs qui permettent d'identifier rapidement un dysfonctionnement. Voici quelques exemples :

• Pression du compresseur trop haute : vérifier le condenseur, le ventilateur, le pressostat haute pression.

• Pression du compresseur trop basse : vérifier le fluide, le filtre à eau, le pressostat basse pression.

• Température trop basse/haute : ajuster la température ou vérifier la sonde.

• Défaut de phase : vérifier l'alimentation et les connexions électriques.

• Niveau d'eau trop bas : vérifier le réservoir et le flotteur.

• Nettoyage nécessaire : signal de maintenance pour condenseur ou filtre encrassé.

8. Entretien

Pour assurer une performance optimale, un entretien régulier est recommandé. Voici les principales vérifications à effectuer :

• Pressions d'aspiration et de refoulement : à contrôler avec manomètres.

• Tension d'alimentation : ne pas dépasser ±10 % de la valeur nominale.

• Bruits et vibrations : identifier toute anomalie.

• Nettoyage du condenseur : tous les 3 mois ou en cas de pression haute anormale.

• Vidange de l'eau en cas d'arrêt prolongé pour éviter le gel ou la corrosion.

• Remplacement de l'huile lubrifiante si elle est contaminée ou dégradée.

9. Garantie et service après-vente

• Réparations : Elles doivent être effectuées par le vendeur agréé. Une réparation incorrecte peut provoquer des fuites d'huile, un choc électrique ou un incendie. En cas de déplacement ou de réinstallation, contacter le fournisseur pour éviter tout risque.

• Informations nécessaires pour une intervention : numéro de modèle, carte de garantie, numéro de série, date d'installation, description du problème, coordonnées du client.

• Réparations hors garantie : Des services payants peuvent être fournis. Contactez le vendeur.

• Maintenance : Après plusieurs saisons, des poussières peuvent s'accumuler sur le condenseur, réduisant les performances. Il est conseillé de conclure un contrat d'entretien périodique avec le fournisseur.

• Période de garantie : Un an à partir de la date d'achat. La carte de garantie doit être présentée pour toute intervention gratuite durant cette période. En l'absence de celle-ci, des frais peuvent s'appliquer même en période de garantie.

Chiller

OWNER'S MANUAL

Please read this owner's Manual carefully before operating the unit.

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Overview

KANSA industrial chillers , a testament to our leading technology to create a comprehensive security concept, including much advanced technologies to provide users excellent solution, widely used in machinery, electronics, plastics, textiles, food, medicine and chemical and renewable energy industries and fields, in order to create a modern industrial production of safe, stable and efficient.

Features

1. Reliable Guarantee

   International famous brand compressor, advanced technology achieve optimum efficiency.

2. Easy Installation

   Light structure, easy to move, simple electrical and water connections.

3. Effective Energy-saving

   Scroll compressor more efficient than traditional piston designs, enhanced fan and condenser.

4. High Precision

   Precision digital computer thermostat, precise control the water temperature.

5. Safe Operation

   A variety of advanced electronic technology to protect to protect the Self-diagnosis, fault alarm duration will be reduced to a minimum hysteresis.

6. Easy Maintenance

   European Design, easy disassembly, quickly and efficient maintenance.

Model named

I C A – 15

1 2 3

1、Code（Industrial chiller）:Industrial chiller

2、Serial code: A : air cooled W:water cooled

3、Compressor input power: 15 HP

Components of the chiller

compressor

The role of the compressor is just like the role of the heart in the human body.

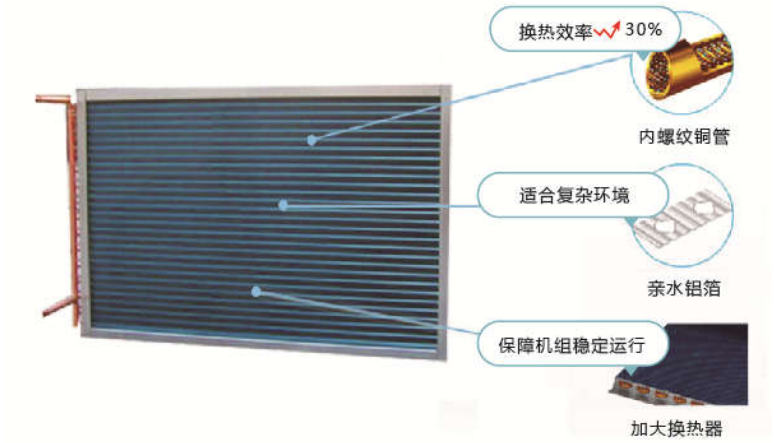
The compressor draws the refrigerant vapor from the evaporator and compresses it into high-temperature and high-pressure gas, which is discharged to the condenser. In the condenser, heat is discharged and condensed at a certain condensing temperature, and then throttled by the thermal expansion valve, and then flows to the evaporator, thus completing the whole refrigeration process. The compressor types of our company's chiller are rotor type and scroll type.

Air cooled condenser

It is used to realize the cooling of air-cooled chiller, which is self-made by our company.

The refrigerant gas discharged from the compressor is cooled into liquid, and the heat is transmitted to the air.

The mechanism of Air cooled condenser is of internal thread copper tube string aluminum fin structure, and the aluminum foil is hydrophilic aluminum foil.



Evaporator

Evaporator is used to make chilled water, low temperature refrigerant liquid in the evaporator with water for heat exchange, evaporation heat absorption, continuous cold water production, our company uses evaporator type for shell and tube which made by ourselves.

Tank

The water tank is used to store chilled water in the chiller. In addition, it has the functions of stabilizing temperature, emptying and cleaning system. The water tank is made of stainless steel 304.

1.Cylindrical design, cold water mixedwell, temperature uniform.

2.Arc transition and automatic welding at the joint, no dead corner left, easy to clean.

3. independent from the evaporator, convenient for maintenance

Water pump

The pump is used to deliver cold water and pressurize it to complete normal water circulation. Our pumps are made of 304 stainless steel.

Expansion valve

Expansion valve is a component that controls the flow rate of the refrigeration system.

The expansion valve has three functions in the refrigeration system

1. Throttling and depressurization: when the refrigerant liquid with high pressure and normal temperature passes through the expansion valve, it becomes low-pressure and low-temperature refrigerant liquid. These low-pressure and low-temperature refrigerant liquid flows into heat exchanger and evaporates rapidly to realize heat exchange.

2. Control flow: the expansion valve senses the temperature and pressure of the gas entering the compressor through the temperature sensing package and pressure balance pipe, controls the opening of the expansion valve, and regulates the refrigerant flow through the expansion valve, so that the refrigerant flow matches the heat load of the heat exchanger.

3. Control of superheat: the superheat of expansion valve has been adjusted before delivery, so as to keep full use of heat transfer area of heat exchanger and prevent liquid hammer of compressor.

Drying filter

The drying filter is an element to remove impurities, dirt and moisture in the unit. It is installed before the condenser and after the expansion valve.

The principle of drying filter is the mixing of molecular sieve and glass wool layer, which removes water and wax, and glass wool filters solid impurities.

Pressure controller

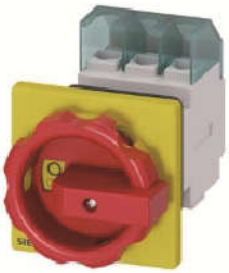
High and low pressure controller is to control the operating range of the compressor and ensure the safety of the compressor.

When the working pressure of the compressor is too high or too low, it will act to stop the compressor. When the pressure returns to the normal range, the compressor will resume to start.



Electronic control accessories

The main electrical accessories used in chiller are: controller, air switch, AC contactor, thermal relay, phase sequence protector.




The computer board adopted by the unit is the control center of the unit, which is the basis for ensuring the intelligent operation of the unit. The controller adopted by our company is self-developed.

The air switch, AC contactor and thermal relay are mainly used to control and protect compressor, water pump and fan.

Attention!

When the electrical components of the unit are used, attention should be paid to the correct and firm wiring and stable power supply voltage. The electrical parts in the control box should be waterproof, moisture-proof and dust-proof, especially in the rainy weather in summer, make sure that the electrical accessories do not get damp or run with water!

Be careful!

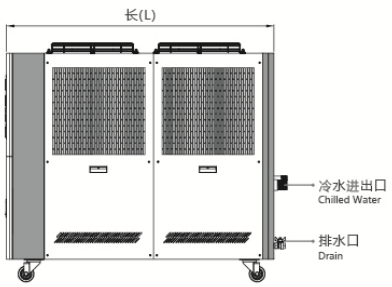
In cold season, if the unit is not used for a long time, it is recommended to drain the water in the water tank and pipeline. It is suggested that the water temperature should be set above 7 ℃. If the water temperature is too low, the pipeline and heat exchanger will be damaged, resulting in unnecessary loss. Please do not cut off the power supply of the unit

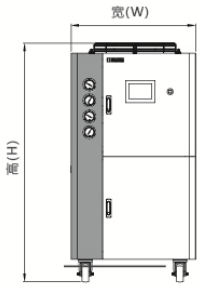
Specifications:--Air cooled chiller

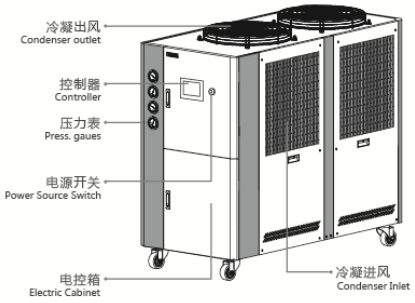
项目 Items \ 型 号 Model			ICA-0.6	ICA-1	ICA-2	ICA-3	ICA-5	ICA-6	ICA-8	ICA-10
制冷量 Cooling capacity		kW	1.6	2.7	5.2	9.1	15.0	18.0	23.0	29.5
		10^3 kcal/h	1.4	2.3	4.5	7.8	12.9	15.5	19.8	25.4
电 源 Power source		V/ph/Hz	220/1/50			380/3/50				
总功率 Gross power		kW	0.8	1.3	2.2	3.1	4.8	5.3	7.9	9.8
额定电流 Rated current		A	3.8	6.6	10.0	7.0	9.3	10.2	15.0	18.0
压缩机 Compressor	类 型 Type		转子式 Rotor type				涡旋式 Scroll type			
	功 率 Power	kW	0.5	0.8	1.7	2.5	4.2	4.7	6.6	8.5
水 泵 Pump	功 率 Power	kW	0.25	0.37	0.37	0.37	0.37	0.55	0.55	0.75
	扬 程 Head	m	17	28	25	25	23	26	25	27
水流量 Chilled water flow		m^3/h	0.28	0.46	0.89	1.6	2.6	3.1	4.0	5.1
		L/min	4.6	7.7	14.8	26.7	43.3	51.7	66.0	85.0
水箱容积 Water tank volume		L	12	20	35	60	70	70	100	155
接管尺寸 Water pipe size		DN	15		20	25				40
噪 音 Noise lever		dB(A)	56	58	58	60	61	62	64	65
机组重量 Unit weight		kg	50	90	120	160	200	240	280	320
外形尺寸 Dimensions	长 Length	mm	420	500	600	850	1220	1220	1505	1710
	宽 Width	mm	420	500	600	720	720	720	720	795
	高 High	mm	800	850	1160	1325	1325	1325	1325	1490

项目 Items \ 型 号 Model			ICA-12	ICA-15	ICA-20	ICA-25	ICA-30	ICA-40	ICA-50	ICA-60
制冷量 Cooling capacity		kW	35	44	58.5	69.0	86.0	116.0	140.0	168.0
		10^3 kcal/h	30.1	37.8	50.3	59.3	74.1	100.0	120.0	145.0
电 源 Power source		V/ph/Hz	380/3/50							
总功率 Gross power		kW	10.5	13.7	20.0	22.0	29.0	34.7	44.0	53.0
额定电流 Rated current		A	21.0	28.0	38.0	41.0	58.0	66.0	80.0	110.0
压缩机 Compressor	类 型 Type		涡旋式 Scroll type							
	功 率 Power	kW	9.2	11.5	16.2	18.2	24.8	30.6	36.5	43.5
水 泵 Pump	功 率 Power	kW	1.0	1.0	1.5	1.5	1.5	1.85	3.0	3.0
	扬 程 Head	m	27	24	23	22	20	21	25	21
水流量 Chilled water flow		m^3/h	6.0	7.6	10.0	11.8	14.8	20.0	24.0	28.9
		L/min	100	127	167	197	247	333	400	480
水箱容积 Water tank volume		L	155	230	230	230	230	300	300	300
接管尺寸 Water pipe size		DN	40		50				65	
噪 音 Noise lever		dB(A)	65	66	67	68	68	69	69	69
机组重量 Unit weight		kg	350	400	600	750	900	1100	1300	1500
外形尺寸 Dimensions	长 Length	mm	1710	1785	2080	2080	2080	2200	3000	3400
	宽 Width	mm	795	915	1050	1050	1050	1200	1200	1200
	高 High	mm	1490	1630	1680	1680	1680	1880	1880	1880

以上制冷量基于环境温度35℃、出水温度7℃。The above cooling capacity is based on the ambient temperature 35℃, the outlet 7℃.





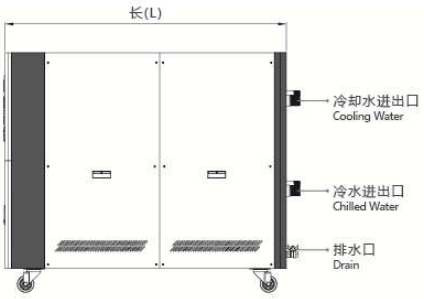


water cooled chiller

项目 Items \ 型 号 Model			ICW-3	ICW-5	ICW-6	ICW-8	ICW-10	ICW-12	ICW-15
制冷量 Cooling capacity		kW	9.9	16.5	19.6	26.5	33.0	38.5	48.5
		10^3 kcal/h	8.5	14.2	16.8	22.8	28.4	33.1	41.7
电 源 Power source		V/ph/Hz	380/3/50						
总功率 Gross power		kW	2.7	4.1	4.6	6.4	7.9	9.2	10.3
额定电流 Rated current		A	5.9	7.9	8.5	14.5	15.5	16.5	23.0
压缩机功率 Comp. power		kW	2.3	3.5	4.2	5.6	7.0	8.4	9.5
水 泵 Pump	功 率 Power	kW	0.37	0.37	0.55	0.55	0.75	0.75	1.0
	扬 程 Head	m	25	23	20.5	25	22	23	21
冷 却 水 Cooling water	流量 Flow rate	m^3/h	2.1	3.6	4.2	5.7	7.1	8.3	10.4
	接管尺寸 Pipe	DN	25				40		
冷 冻 水 Chilled water	流量 Flow rate	m^3/h	1.7	2.8	3.4	4.6	5.7	6.6	8.3
	接管尺寸 Pipe	DN	25				40		
水箱容积 Water tank volume		L	60	70	70	100	135	135	135
噪 音 Noise lever		dB(A)	55	55	56	57	57	58	60
机组重量 Unit weight		kg	120	150	170	200	250	280	320
外形尺寸 Dimensions	长 Length	mm	850	850	850	1220	1220	1220	1220
	宽 Width	mm	720	720	720	720	720	720	720
	高 High	mm	1265	1265	1265	1265	1265	1265	1265

项目 Items \ 型 号 Model			ICW-20	ICW-25	ICW-30	ICW-40	ICW-50	ICW-60	ICW-70
制冷量 Cooling capacity		kW	66.0	78.0	96.0	128.0	152.0	182.0	210.0
		10^3 kcal/h	56.8	67.1	82.6	110.0	130.7	156.5	180.6
电 源 Power source		V/ph/Hz	380/3/50						
总功率 Gross power		kW	15.2	17.0	22.5	27.4	33.4	41.5	52.9
额定电流 Rated current		A	30.0	33.0	43.0	55.0	60.0	79.0	92.0
压缩机功率 Comp. power		kW	13.1	14.8	20.2	25.2	29.6	37.0	48.5
水 泵 Pump	功 率 Power	kW	1.5	1.5	1.5	1.85	3.0	3.0	4.0
	扬 程 Head	m	23	22	20	21	20	20	20.5
冷 却 水 Cooling water	流量 Flow rate	m^3/h	14.2	16.8	20.6	27.5	32.7	39.1	45.2
	接管尺寸 Pipe	DN	50			65			80
冷 冻 水 Chilled water	流量 Flow rate	m^3/h	11.4	13.4	16.5	22.0	26.1	31.3	36.1
	接管尺寸 Pipe	DN	50				65		80
水箱容积 Water tank volume		L	230	230	230	300	300	300	400
噪 音 Noise lever		dB(A)	62	63	64	65	66	67	68
机组重量 Unit weight		kg	500	680	820	1030	1200	1330	1550
外形尺寸 Dimensions	长 Length	mm	2080	2080	2080	2200	3000	3000	3400
	宽 Width	mm	1050	1050	1050	1200	1200	1200	1200
	高 High	mm	1570	1570	1570	1570	1570	1570	1570

以上制冷量基于冷却进水30℃、出水温度35℃，冷冻出水7℃。
（The above cooling capacity is based on the cooling inlet 30℃, the outlet 35℃,the refrigerated outlet 7℃）.



Split industrial chiller

项目 Items \ 型 号 Model			ICA-3S	ICA-5S	ICA-6S	ICA-8S	ICA-10S	ICA-12S
制冷量 Cooling capacity		kW	9.1	15.0	18.0	23.0	29.5	35.0
		10^3 kcal/h	7.8	12.9	15.5	19.8	25.4	30.1
电 源 Power source		V/ph/Hz	380/3/50					
总功率 Gross power		kW	3.1	4.8	5.3	7.9	9.8	10.5
额定电流 Rated current		A	7.0	9.3	10.2	15.0	18.0	21.0
压缩机 Compressor	类 型 Type		涡旋式 Scroll type					
	功 率 Power	kW	2.5	4.2	4.7	6.6	8.5	9.2
水 泵 Pump	功 率 Power	kW	0.37	0.37	0.55	0.55	0.75	0.75
	扬 程 Head	m	25	23	20.5	25	22	20
水流量 Chilled water flow		m^3/h	1.6	2.6	3.1	4.0	5.1	6.0
		L/min	26.7	43.3	51.7	66.7	85.0	100.0
水箱容积 Water tank volume		L	60	70	70	100	135	135
接管尺寸 Water pipe size		DN	25				40	
噪 音 Noise lever		dB(A)	60	61	62	64	65	65
机组重量 Unit weight		kg	190	250	290	330	380	400
外形尺寸 内外/In.out Dimensions	长 Length	mm	850/950	850/950	1220/950	1220/1200	1220/1700	1220/1700
	宽 Width	mm	720/390	720/390	720/390	720/380	720/550	720/550
	高 High	mm	1265/750	1265/1070	1265/1070	1265/1350	1265/750	1265/750

项目 Items \ 型 号 Model			ICA-15S	ICA-20S	ICA-25S	ICA-30S	ICA-40S	ICA-50S
制冷量 Cooling capacity		kW	44.0	58.5	69.0	86.0	116.0	140.0
		10^3 kcal/h	37.8	50.3	59.3	74.1	100.0	120.0
电 源 Power source		V/ph/Hz	380/3/50					
总功率 Gross power		kW	13.7	20.0	22.0	29.0	34.7	44.0
额定电流 Rated current		A	28.0	38.0	45.5	58.0	66.0	80.0
压缩机 Compressor	类 型 Type		涡旋式 Scroll type					
	功 率 Power	kW	11.5	16.2	18.2	24.8	30.6	36.5
水 泵 Pump	功 率 Power	kW	1.0	1.5	1.5	1.5	1.85	3.0
	扬 程 Head	m	25	23	20.5	25	22	20
水流量 Chilled water flow		m^3/h	7.6	10.0	11.8	14.8	20.0	24.0
		L/min	127.0	167.0	197.0	247.0	333.0	400.0
水箱容积 Water tank volume		L	155	230	230	230	300	300
接管尺寸 Water pipe size		DN	40	50				65
噪 音 Noise lever		dB(A)	66	67	68	68	69	69
机组重量 Unit weight		kg	460	680	820	1020	1250	1450
外形尺寸 内外/In.out Dimensions	长 Length	mm	1220/1900	2080/1610	2080/1610	2080/1610	2200/905	3080/1610
	宽 Width	mm	720/500	1050/905	1050/905	1050/905	1200/905	1200/905
	高 High	mm	1265/950	1570/1565	1570/1565	1570/1565	1570/1565	1570/1565

以上制冷量基于环境温度35℃、出水温度7℃。The above cooling capacity is based on the ambient temperature 35℃, the outlet 7℃.

Water cooled scroll compressor chiller

项目 Items \ 型 号 Model			ICW-20H	ICW-25H	ICW-30H	ICW-40H	ICW-50H
制冷量 Cooling capacity		kW	66.0	80.0	98.0	128.0	160.0
		10^3 kcal/h	56.8	68.8	84.3	110.0	137.6
电 源 Power source		V/ph/Hz	380/3/50				
压缩机 Compressor	数 量 Type	net	2	2	3	3	4
	功 率 Input power	kW	13.4	16.3	20.3	26.6	32.6
	电 流 Current	A	25.6	30.8	36.5	47.2	61.6
冷凝器 Condenser	型 式 Type		壳管式/Shell and tube type				
	水流量 Flow rate	m^3/h	14.2	18.0	21.1	27.5	34.4
	接管尺寸 Pipe size	DN	50			65	
蒸发器 Evaporator	型 式 Type		壳管式/Shell and tube type				
	水流量 Flow rate	m^3/h	11.4	13.8	16.9	22.1	27.5
	接管尺寸	DN	50			65	
噪 音 Noise lever		dB(A)	64	65	66	67	67
机组重量 Unit weight		kg	360	400	465	530	760
外形尺寸 Dimensions	长 Length	mm	1800	1900	2000	2200	2400
	宽 Width	mm	800	800	800	800	800
	高 High	mm	1400	1400	1400	1400	1500

项目 Items \ 型 号 Model			ICW-60H	ICW-75H	ICW-100H	ICW-125H	ICW-150H
制冷量 Cooling capacity		kW	196	240	320	400	480
		10^3 kcal/h	168.6	206.4	275.2	344.0	412.8
电 源 Power source		V/ph/Hz	380/3/50				
压缩机 Compressor	数 量 Type	net	3	3	4	5	6
	功 率 Input power	kW	40.6	48.9	65.2	81.5	97.8
	电 流 Current	A	73.0	92.4	123.0	146.0	185.0
冷凝器 Condenser	型 式 Type		壳管式/Shell and tube type				
	水流量 Flow rate	m^3/h	42.0	51.6	68.8	86.0	103.2
	接管尺寸 Pipe size	DN	65	100		125	150
蒸发器 Evaporator	型 式 Type		壳管式/Shell and tube type				
	水流量 Flow rate	m^3/h	33.7	41.3	55.0	68.8	82.6
	接管尺寸	DN	65	100		125	150
噪 音 Noise lever		dB(A)	67	67	68	69	70
机组重量 Unit weight		kg	870	980	1460	1580	1890
外形尺寸 Dimensions	长 Length	mm	2500	2600	3000	3000	3200
	宽 Width	mm	800	800	900	950	950
	高 High	mm	1500	1500	1500	1500	1500

以上制冷量基于冷却进水30℃、出水温度35℃，冷冻出水7℃。
The above cooling capacity is based on the cooling inlet 30℃, the outlet 35℃,the refrigerated outlet 7℃.

Air cooled scroll compressor chiller

项目 Items \ 型 号 Model			ICS-20A	ICS-25A	ICS-40A	ICS-50A
制冷量 Cooling capacity		kW	58.5	69.0	116	140
		10^3 kcal/h	50.3	59.3	100.0	120.0
电　源 Power source		V/ph/Hz	380/3/50			
总功率 Gross power		kW	17.8	19.7	35.6	39.4
额定电流 Rated current		A	39.2	43.6	78.5	86.8
压 缩 机 Compressor	类 型 Type		涡旋式/Scroll type			
	功 率 Power	kW	16.2	18.2	32.4	36.4
蒸发器 Evaporator	型式 Type		高效壳管式/Shell and tube type			
	水侧承压 Water Max.press.		16 bar			
水流量 Chilled water flow		m^3/h	10.0	11.8	20.0	24.0
		L/min	167	197	333	400
接管尺寸 Water pipe size		DN	50	50		65
噪　音 Noise lever		dB(A)	69	70	72	72
机组重量 Unit weight		kg	600	750	1100	1300
外形尺寸 Dimensions	长 Length	mm	1850	1850	2265	2265
	宽 Width	mm	1130	1130	1905	1905
	高 High	mm	1810	1810	1930	1930

项目 Items \ 型 号 Model			ICS-75A	ICS-100A	ICS-125A	ICS-150A
制冷量 Cooling capacity		kW	210.0	280.0	350.0	420.0
		10^3 kcal/h	180.6	240.8	301.0	361.2
电　源 Power source		V/ph/Hz	380/3/50			
总功率 Gross power		kW	59.1	78.8	98.5	118.2
额定电流 Rated current		A	130.0	173.4	216.7	260.0
压 缩 机 Compressor	类 型 Type		涡旋式/Scroll type			
	功 率 Power	kW	54.6	72.8	93.0	109.2
蒸发器 Evaporator	型式 Type		高效壳管式/Shell and tube type			
	水侧承压 Water Max.press.		16 bar			
水流量 Chilled water flow		m^3/h	36.1	48.2	60.2	72.3
		L/min	600	803	1003	1204
接管尺寸 Water pipe size		DN	80	100	125	150
噪　音 Noise lever		dB(A)	73	74	75	76
机组重量 Unit weight		kg	1850	2450	2950	3450
外形尺寸 Dimensions	长 Length	mm	3395	4525	5655	6785
	宽 Width	mm	3380	4520	1905	1905
	高 High	mm	1810	1810	1930	1930

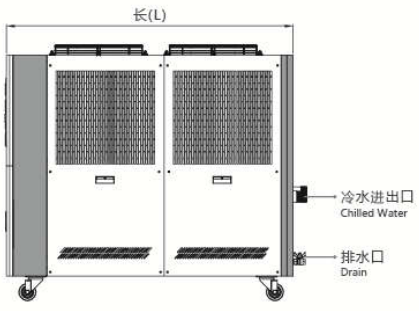
以上制冷量基于环境温度35℃、出水温度7℃。
The above cooling capacity is based on the ambient temperature 35℃, the outlet 7℃.

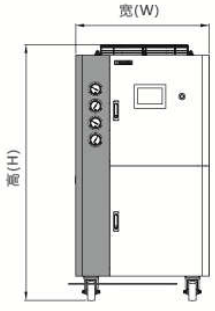
Air cooled chiller(-5℃)

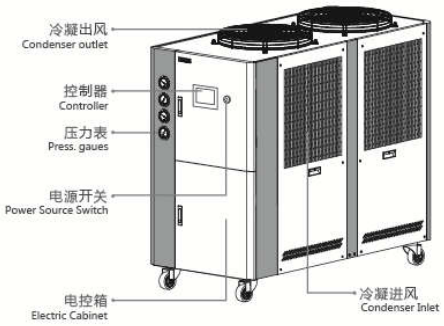
项目 Items \ 型 号 Model			ICA-2M	ICA-3M	ICA-5M	ICA-8M	ICA-10M	ICA-12M
制冷量 Cooling capacity		kW	3.0	4.5	7.0	11.0	15.0	18.0
		10^3 kcal/h	2.6	3.9	6.0	9.5	12.9	15.5
电 源 Power source		V/ph/Hz	220/1/50	380/3/50				
总功率 Gross power		kW	2.5	3.3	4.8	7.8	9.6	10.6
额定电流 Rated current		A						
压缩机 Compressor	类 型 Type		转子式 Rotor type		涡旋式 Scroll type			
	功 率 Power	kW	1.9	2.5	3.9	6.2	8.0	9.0
水 泵 Pump	功 率 Power	kW	0.25	0.37	0.37	0.55	0.75	0.75
	扬 程 Head	m	20	22	21	25	22	20
水流量 Chilled water flow		m^3/h	0.52	0.78	1.2	1.9	2.6	3.1
		L/min	8.7	13.0	20.0	31.7	43.3	51.7
水箱容积 Water tank volume		L	40	60	70	100	155	155
接管尺寸 Water pipe size		DN	20	25			40	
噪 音 Noise lever		dB(A)	58	60	61	64	65	66
机组重量 Unit weight		kg	120	160	200	240	280	320
外形尺寸 Dimensions	长 Length	mm	600	850	1220	1505	1710	1710
	宽 Width	mm	600	720	720	720	795	795
	高 High	mm	1160	1325	1325	1325	1490	1490

项目 Items \ 型 号 Model			ICA-15M	ICA-20M	ICA-25M	ICA-30M	ICA-40M	ICA-50M
制冷量 Cooling capacity		kW	23.0	30.0	36.0	46.0	60.0	72.0
		10^3 kcal/h	19.8	25.8	30.1	39.6	51.6	61.9
电 源 Power source		V/ph/Hz	380/3/50					
总功率 Gross power		kW	14.8	19.8	21.8	27.5	37.5	42.0
额定电流 Rated current		A	33.0	45.0	49.0	62.0	85.0	95.0
压缩机 Compressor	类 型 Type		涡旋式 Scroll type					
	功 率 Power	kW	11.5	16.0	18.0	23.0	32.0	36.0
水 泵 Pump	功 率 Power	kW	1.0	1.5	1.5	1.5	1.85	3.0
	扬 程 Head	m	20	22	21	25	22	20
水流量 Chilled water flow		m^3/h	4.0	5.2	6.2	7.9	10.3	12.5
		L/min	66.7	86.7	103.3	131.7	171.7	208.3
水箱容积 Water tank volume		L	230	230	230	230	300	300
接管尺寸 Water pipe size		DN	40	50				65
噪 音 Noise lever		dB(A)	66	68	68	69	69	69
机组重量 Unit weight		kg	400	600	750	900	1100	1300
外形尺寸 Dimensions	长 Length	mm	1785	2080	2080	2080	2200	3000
	宽 Width	mm	915	1050	1050	1050	1200	1200
	高 High	mm	1630	1980	1980	1980	1880	1880

以上制冷量基于环境温度35℃、出水温度-5℃。The above cooling capacity is based on the ambient temperature 35℃, the outlet -5℃.





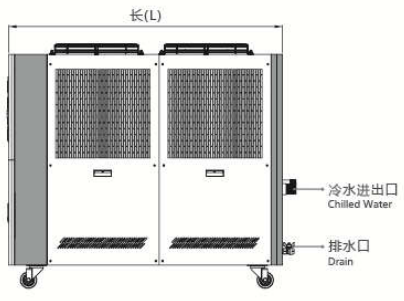


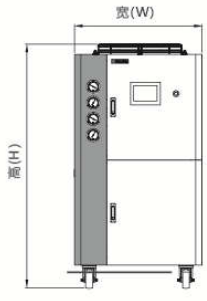
Air cooled chiller(-15℃)

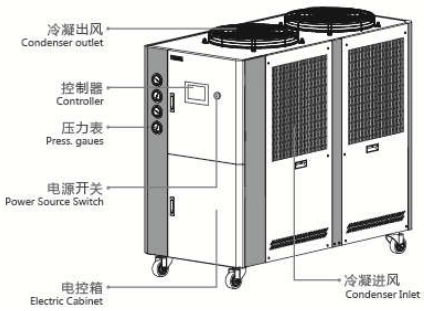
项目 Items \ 型 号 Model			ICA-2L	ICA-3L	ICA-5L	ICA-8L	ICA-10L	ICA-12L
制冷量 Cooling capacity		kW	1.9	3.1	5.2	7.4	10.6	13.5
		10^3 kcal/h	1.6	2.7	4.5	6.5	9.1	11.6
电 源 Power source		V/ph/Hz	220/1/50	380/3/50				
总功率 Gross power		kW	2.9	3.7	5.8	9.0	10.9	12.7
额定电流 Rated current		A	6.5	8.4	12.8	20.5	24.0	28.0
压 缩 机 Compressor	类 型 Type		涡旋式 Scroll type					
	功 率 Power	kW	2.3	2.8	4.8	7.2	9.1	11.0
水 泵 Pump	功 率 Power	kW	0.37	0.75	0.75	1.3	1.3	1.3
	扬 程 Head	m	42	44	41	45	42	40
水流量 Chilled water flow		m^3/h	0.33	0.53	0.89	1.3	1.8	2.3
		L/min	5.5	8.8	14.8	21.7	30.0	38.3
水箱容积 Water tank volume		L	40	60	70	100	155	155
接管尺寸 Water pipe size		DN	20	25			40	
噪 音 Noise lever		dB(A)	58	60	61	64	65	66
机组重量 Unit weight		kg	120	160	200	240	280	320
外形尺寸 Dimensions	长 Length	mm	600	850	1220	1505	1710	1710
	宽 Width	mm	600	720	720	720	795	795
	高 High	mm	1160	1325	1325	1325	1490	1490

项目 Items \ 型 号 Model			ICA-15L	ICA-20L	ICA-25L	ICA-30L	ICA-40L	ICA-50L
制冷量 Cooling capacity		kW	15.8	21.2	27.0	31.8	42.5	54.0
		10^3 kcal/h	13.6	18.2	23.2	27.3	36.5	46.5
电 源 Power source		V/ph/Hz	380/3/50					
总功率 Gross power		kW	16.9	21.9	27.3	32.6	42.8	51.7
额定电流 Rated current		A	38.0	50.0	60.0	72.0	95.0	115.0
压 缩 机 Compressor	类 型 Type		涡旋式 Scroll type					
	功 率 Power	kW	11.5	16.0	18.0	23.0	32.0	36.0
水 泵 Pump	功 率 Power	kW	2.2	2.2	3.0	3.0	3.0	3.0
	扬 程 Head	m	40	42	41	45	42	40
水流量 Chilled water flow		m^3/h	2.7	3.6	4.6	5.5	7.3	9.3
		L/min	45.0	60.0	77.0	92.0	122.0	155.0
水箱容积 Water tank volume		L	230	230	230	230	300	300
接管尺寸 Water pipe size		DN	40	50				65
噪 音 Noise lever		dB(A)	66	68	68	69	69	69
机组重量 Unit weight		kg	400	600	750	900	1100	1300
外形尺寸 Dimensions	长 Length	mm	1785	2080	2080	2080	2200	3000
	宽 Width	mm	915	1050	1050	1050	1200	1200
	高 High	mm	1630	1980	1980	1980	1880	1880

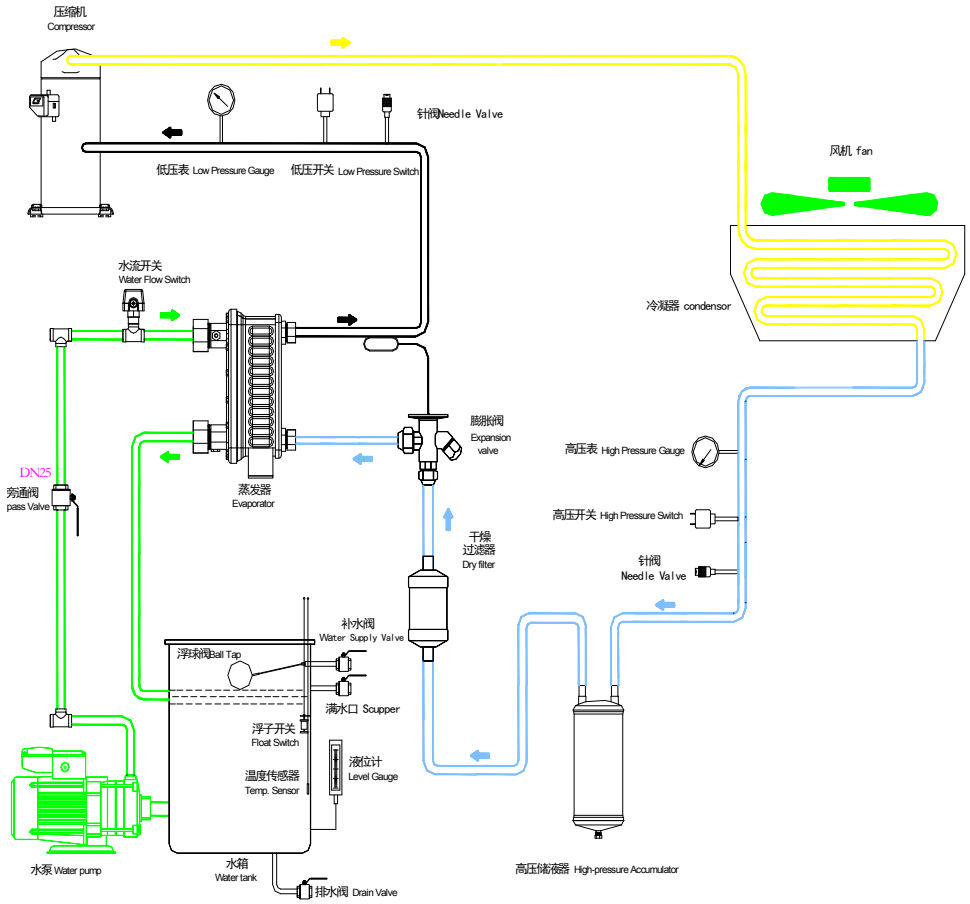
以上制冷量基于环境温度35℃、出水温度-15℃。The above cooling capacity is based on the ambient temperature 35℃, the outlet -15℃.







Refrigeration principle



The principle of IC series water chiller is shown in the figure below. It is mainly composed of totally enclosed compressor, condenser, solenoid valve, drying filter, evaporator, gas-liquid separator and protection device.

During refrigeration, the compressor sucks the low-pressure and low-temperature refrigerant in the evaporation exchanger into the cylinder. After being compressed by the compressor, it becomes high-temperature and high-pressure gas, and enters the heat exchanger. The high-temperature and high-pressure refrigerant gas exchanges heat with the cooling medium, transferring heat to air (or water), and the refrigerant gas condenses into high-pressure liquid. After throttling and depressurizing by the expansion valve, the high-pressure liquid becomes low-temperature and low-pressure liquid and enters the evaporator. In the evaporator, the low-pressure liquid refrigerant vaporizes to absorb the heat of the surrounding medium (refrigerant water), so that the refrigerant water can be cooled down and become the required low-temperature water. It is pumped to the equipment requiring water chiller, and the vaporized low-pressure low-temperature refrigerant gas in the evaporator is sucked and compressed by the compressor. The cycle is repeated.

Installation

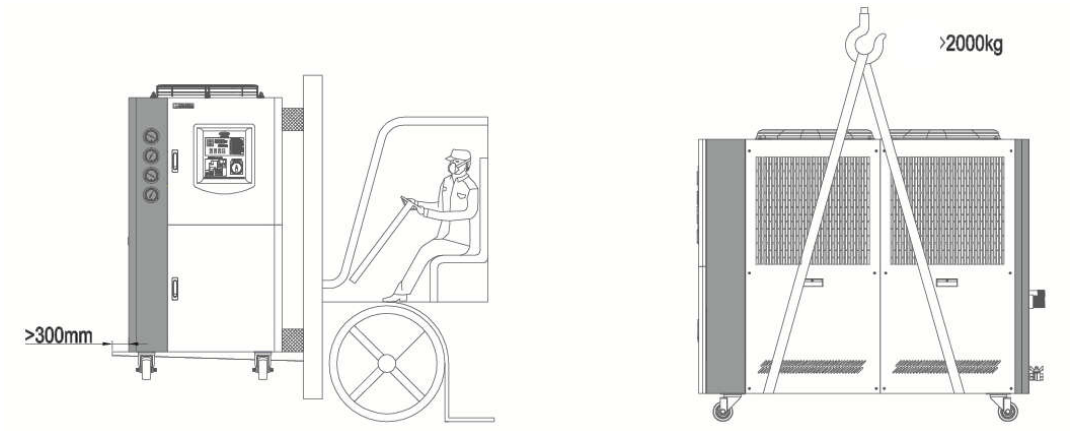
1. Chiller checked

All units are packed in wood with plastic cover inside. The units are inspected before leaving the factory, and the refrigerant and refrigeration oil are pre installed. The type and filling amount of refrigerant have been marked on the name plate of the unit, which are the standard dosage of the unit during normal operation.

When receiving the goods, the user shall check the goods to confirm whether the goods are damaged during the transportation. If there is any damage, the delivery person shall be informed immediately, and the claim shall be made in accordance with the relevant provisions. If there is any problem other than the surface damage, please inform the company immediately.

2. Chiller carry

The company's units with less than 15 HP are equipped with steering wheels, which can be pushed to the required position. Cranes or forklifts should be used when handling units with more than 15 units. During handling, the units should be kept in a horizontal state to avoid damage to the units caused by imbalance



3.System installation

1) Selection of unit installation site

The unit can be installed on the ground, special platform or any other place convenient for installation and bearing the operating weight of the unit.

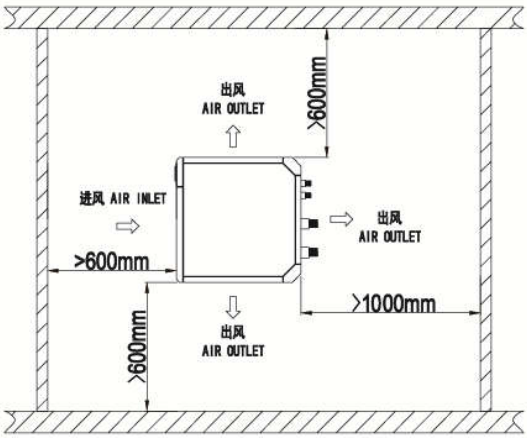
Proper space should be reserved to facilitate installation, maintenance and maintenance.

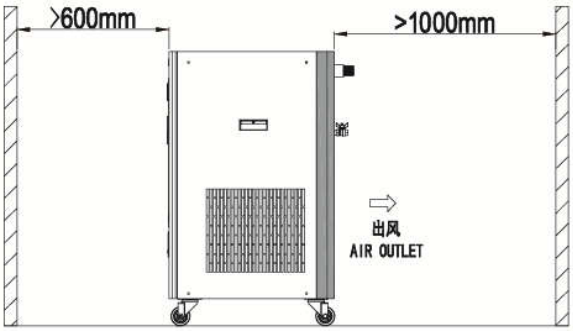
2) Unit installation space

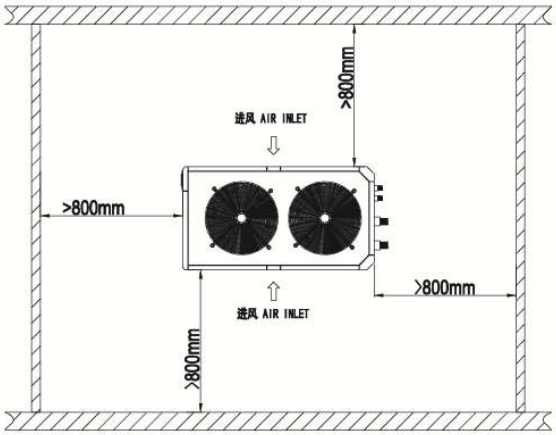
The unit shall be installed near the power supply and water source for wiring and water supply. There should be no strong heat source and exhaust port of other equipment around the unit, no corrosive and combustible gas.

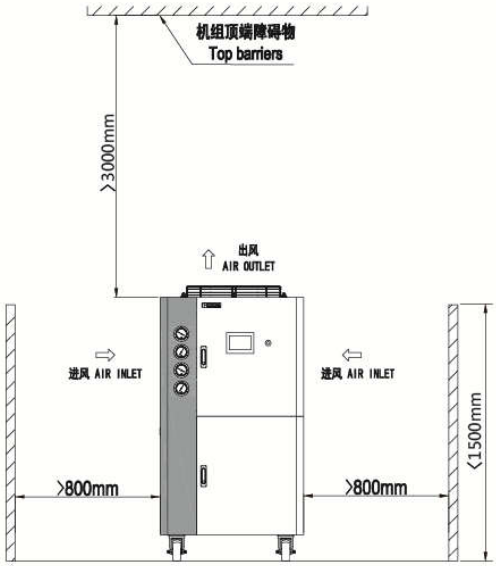
3) Installation method

The unit can be directly fixed on the cement base with expansion bolts, and the drainage floor drain can be reserved; the bracket can also be made of angle steel, with shockproof rubber pad, and placed on the ground or roof plane; it can also be installed on the wall, that is, the angle steel bracket is fixed on the wall, and the support capacity of the bracket after fixing should be greater than 4 times of the unit weight; the surface of the base should be horizontal. When handling the unit, pay attention to the inclination angle less than 30 °



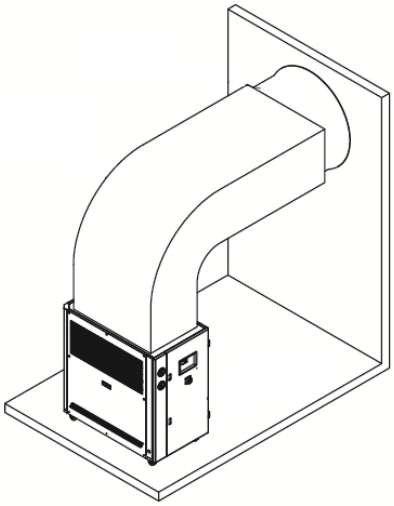






4).Installation of air duct

If the installation space of the chiller is narrow and the heat generated cannot be absorbed, when the ambient temperature of the chiller exceeds 40 degrees, the chiller will fail and be damaged. The air duct and guide fan can be installed to discharge the heat of the fan to the outdoor. The air volume of air duct is selected according to 1200m3 / HP.

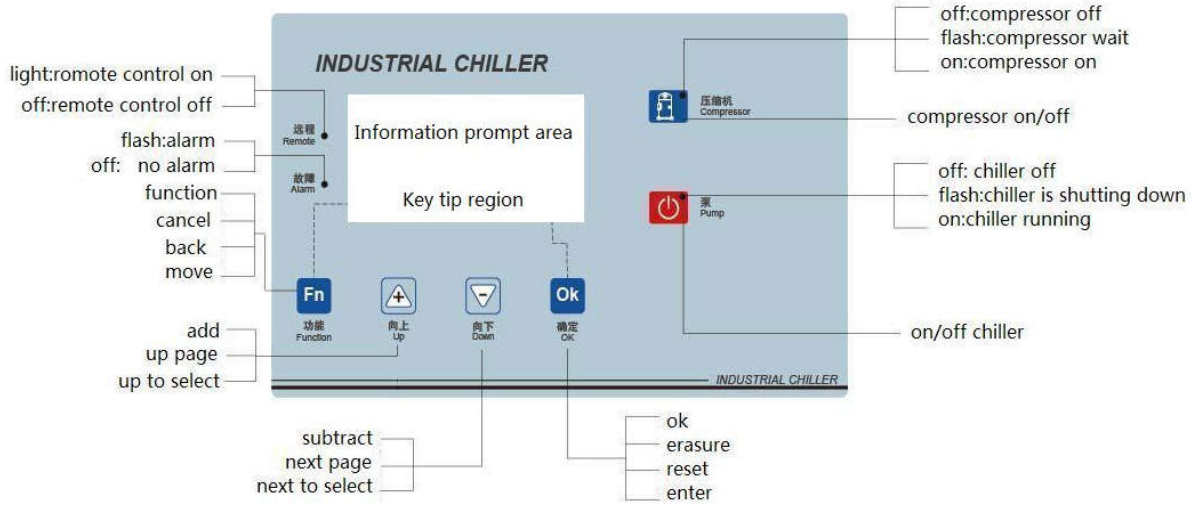


5. Pipeline system connection

The inlet and outlet main pipes with proper diameter shall be connected with the inlet and outlet pipes of the unit respectively, and the water flow direction shall be confirmed. Attention should be paid to the following points during pipeline construction:

1) The water system shall be piped according to the piping method shown in the manual and constructed correctly according to the construction standards.
2) The diameter of main pipe is selected according to the piping size, water flow and cooling capacity of the unit.
3) In the design and construction of piping, the air should be avoided to be trapped in the system pipe, and the automatic exhaust valve should be set at the top of the water supply and return pipe, so as to remove the air in the system.
4) A water filter must be installed at the water inlet of the unit to prevent the dirt in the water stop system from blocking the plate heat exchanger. Pay attention to the flow direction during installation, and install stop valves at both ends of the water filter to facilitate the removal and cleaning of the filter.
5) Thermometers and pressure gauges shall be installed at the inlet and outlet pipes of the unit, so as to check the operation status of the unit.
6) A drain valve should be installed at the lowest part of the water inlet and outlet pipe of the unit, so that the water in the unit can be discharged from the two water outlets at the same time when the unit is out of service for a long time, so as to prevent the water from freezing in the plate changer and water pump in winter, which may damage the unit.

unit control 1　1. computer panel



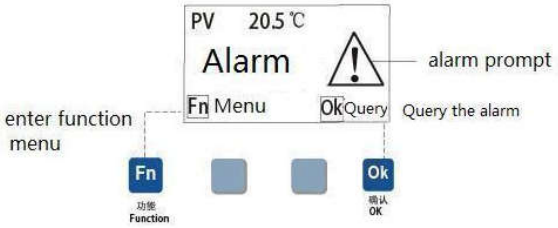
2、common interface

2.1 main interface

When the countdownt is over,enter main interface

2.2 alarm interface

alarming interface



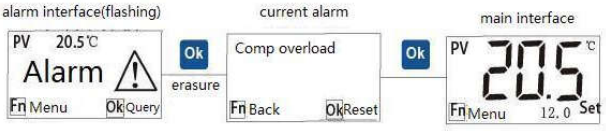
3、common operation

3.1 modify setting temp.

on the main interface,modity the setting temp.

3.2

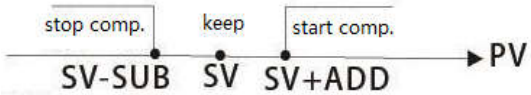
when alarm occurs,automatic pop-up alarm interface,query and reset operation as follows:



4、Function menu

Parameter name	factory values	Set the scope	Note
Lock T.set	No	Yes/No	lock set temp.
T.setopint	12.0c	-38.0~99.9c	temp. limits
Contrast	32	20~44	LCD contrast
Run type	Local	Local~Remo.	Remote on/off
Backlight on	0	0~255minutes	Always backlight
Language	English	Chinese~English	Select language

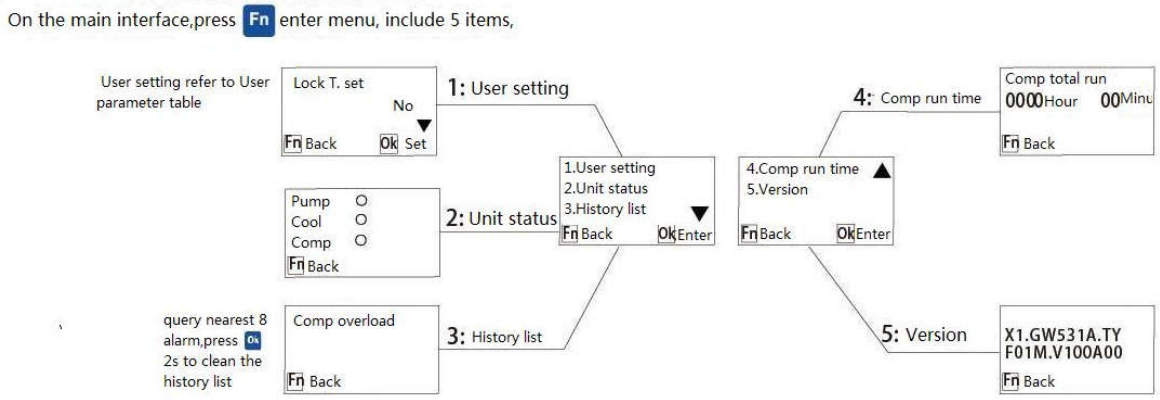
5. Control logic



control logic: When temp rising: PV>=SV+ADD, start the compressor, When temp cooling: PV<=SV-ADD, stop the compressor

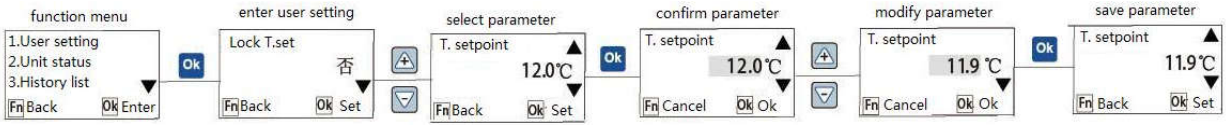
Note: PV: outlet temp. SV: setting temp. Add: up range of temperature SUB: down range temperature

6、Function menu



7、parameter setting

The parameter values of the modified operation, to the user to modify the set temperature as an example



8.The fault code table

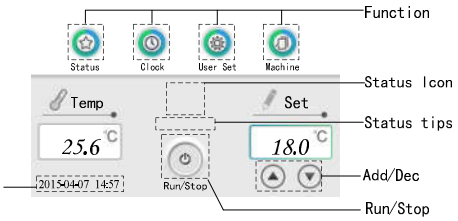
Name of failure	Test conditions	Fault handling	The solution
Comp.P high AL	Test when comp running	Stop the Comp.	If detect input and switch Setting are consistent
Comp.P low AL			
Comp overload			
Temp. low AL	Test when Running	S Stop the Comp., delay the pump	Raising the temp.
T. high warn		Only report to the police	Cool the Temp.
T. high alarm		Stop the Comp., delay the pump	Cool the Temp.
Anti-freeze. AL	Test when power on	Stop the Comp.、delay the pump	Detect input and switch settings
Probe break			detect the sensor contact
Probe short			
Cool overload	Test after Cooling pump start	Stop the Comp. and cooling pump	Check cooling overload input and switch settings
Water flow AL	More than set delay time	stop the pump	Check the water flow and switch settings
Pump overload	Cooling pump start after test	Stop the unit	Check whether frozen overload input and switch settings
A power failure	Test when power on	Stop the unit	check power supply or test switch Setting
Water lv. AL	Test when power on	add water or test switch Settings	
Need maintain	Start testing	Unit can’t start once stop, comp. run time is more than setting	

Phenomena	Reasons	Troubleshooting
The suction pressure is too high.	The exhaust pressure is too high.	Refer to “over-high exhaust pressure”.
	The refrigerant is infused excessively.	Discharge excessive refrigerant.
	The thermal insulation of the chilled water pipe is not good.	Check the thermal insulation of pipeline.
	The liquid tube or suction tube is blocked.	Check the refrigerant filter.
	The expansion valve is not well adjusted or of failure.	Adjust the degree of superheat correctly and check whether the temperature response bag is leaked.
	The system refrigerant is short.	Check the leakage of refrigerant.
	Excessive lubricant in the system is in circulation.	Check the volume of lubricant.
	The inlet temperature of chilled water is less than the standard temperature.	Readjust the set value of temperature.
	The chilled water through evaporation is inadequate.	Check the pressure loss of cold water pipe or whether the water pump works normally.
	The exhaust pressure is too low.	Adjust the water pipe valve.
The compressor stops due to high-pressure cut off.	The cooling water is short.	Check the water pipe valve.
	The condenser is blocked and the water enter valve closed.	Check the condenser copper tube and waterway valve.
	The set value of high-pressure protection is not correct.	Check the set value.
	The infused refrigerant is excessive.	Check the refrigerant infusion.
The compressor stops due to overload of motor.	Voltage is too high or low.	Check whether the voltage is consistent with the rated value of the unit. Correct the unbalance of phase if necessary.
	The overload component is of failure.	Check compressor current and compare total current in the data.
	Motor failure or wiring short cut.	Check the impedance between motor wiring seat and earth wire.

unit control 2 1. user interface & operate

1.1 Main interface

the main interface is as follows



Function button:

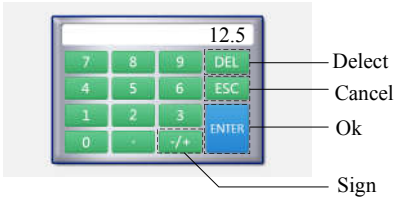
Press them to enter corresponding interface.

Status icon:

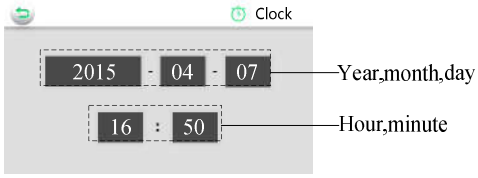
antifreeze, Comp. off, comp on, alarm

ON/OFF button: press it operate unit off: , on:

1.3 Number keyboard



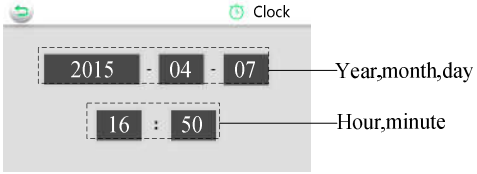
1.5 Clock set



press clock to change the time

1.7 User set

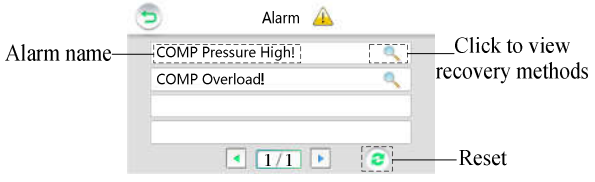
Press User set to enter follow interface:



Press parameter to change setting.

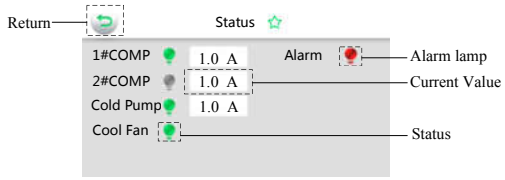
1.9 Alarm

flashing when alarm happen, press enter alarm Interface:



1.2 Status

Press Status enter status interface:



press to return

alarm lamp: red: alarm, grey: no alarm

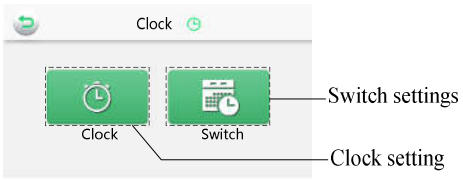
current value: motor ampere

status lamp: green:on grey: off

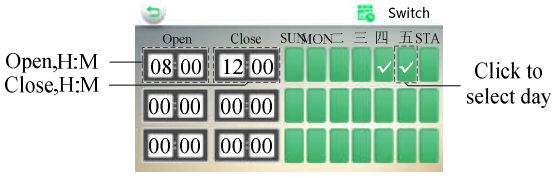
press cold pump lamp to force pump on, invalid when unit on display ambient temp, cooling temp on water cold model

1.4 Clock set

Press to enter clock setting interface:

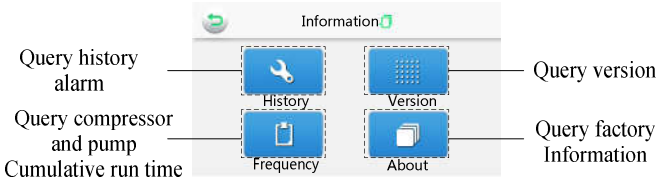


1.6 week timer



Press enter switch interface, enter time then select working day.

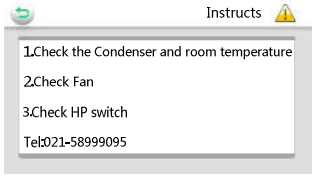
1.8 Chiller information



1.10 Alarm instructs

press enter instructs interface,

for example: Comp. pressure high:



Please check the unit follow the prompts.

2. User parameter list

The meanings of the parameters are shown in the following table:

NO.	parameter name	Defaults	Setting range	note
1	Lock Temp.	No	Yes～No	YES: Can modify set temp.in main interface after locked No:: Can not modify
2	Set Temp	20.0℃	-38.0～99.9℃	Set range between up limit and down limit
3	Control type	T.set	T set or T.Environ	
4	On/off type	local	Local,local+remote,remote	Local: only operate locally Local+remote: can operate both locally and remotely remote: only operate remotely
	Comp.select	Two comp	1#comp.、2#comp.、two comp.	1 Comp.unit :not displayed.
5	Screen save	0	0~600min	No backlight when set 0
6	language	English	Chinese～English	Select disply language

3 alarm sheet

Alarm name	Computer action	solutions
Comp.pressure high	Stop compressor, stop fan delay, cold pump running	1.check the condenser and room temp. 2.check fan 3.check HP switch
Comp. pressure low		1. check the medium. 2. Check the water filter 3. Check LP switch
Comp I too high	Stop compressor, stop fan delay, cold pump running	1. check the condenser dirty or not 2. .check fan work or not 3. check I set
Comp I too low		1.check the compressor work or not. 2.check the pump I detect wire 3.check the low pressure
TEMP Too Low	Stop compressor, stop fan delay, cold pump running	1. check the liquid temperature. 2. Check the alarm temperature set.
TEMP Too High		
T probe breaked		1.Check the probe
Fan I too low Fan I too high	Stop compressor & fan cold pump running	1.check the fan on or off 2. check the pump I detect wire 3 check the alarm current setting
Lack of flow	Stop unit	1.check the water pipeline 2.check the water filter 3.check the water flow switch
Cold I too low Cold I too high		1.check the pump's status 2.check the pump I detect wire
Phase error		1. check the power 2. check the phase wire
Liquid level low	Stop compressor, stop fan delay, cold pump running	1.check the water level 2.check the water level switch
clean the condenser	Prompt only	Clean the condenser
Clean the filter		Clean the water filter
Cold I too low		Check the cooling water temperature Keep it 15.0℃~30.0℃之间
Communication error		Check the communication of the screen

4 、Control logic:

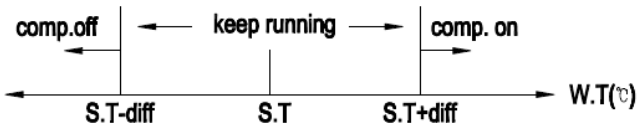
1)Single compressor

When temperature rising: W.T≥S.T+diff, start the compressor

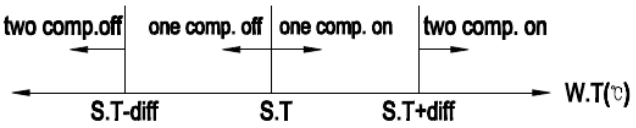
When temp dropping cooling: S.T≤S.T-diff, stop the compressor

Note: W.T: water temperature. S.T: set temperature

diff: difference of temperature comp.: compressor



2) Two compressors



When temperature rising: W.T≥S.T, start one compressor, .T≥S.T+diff, start two compressors,

When temp dropping: W.T≤S.T, stop one compressor W.T≤S.T-diff, stop two compressors

Note: W.T: water temperature. S.T: set temperature

diff: difference of temperature comp.: compressor

4. 电气接线

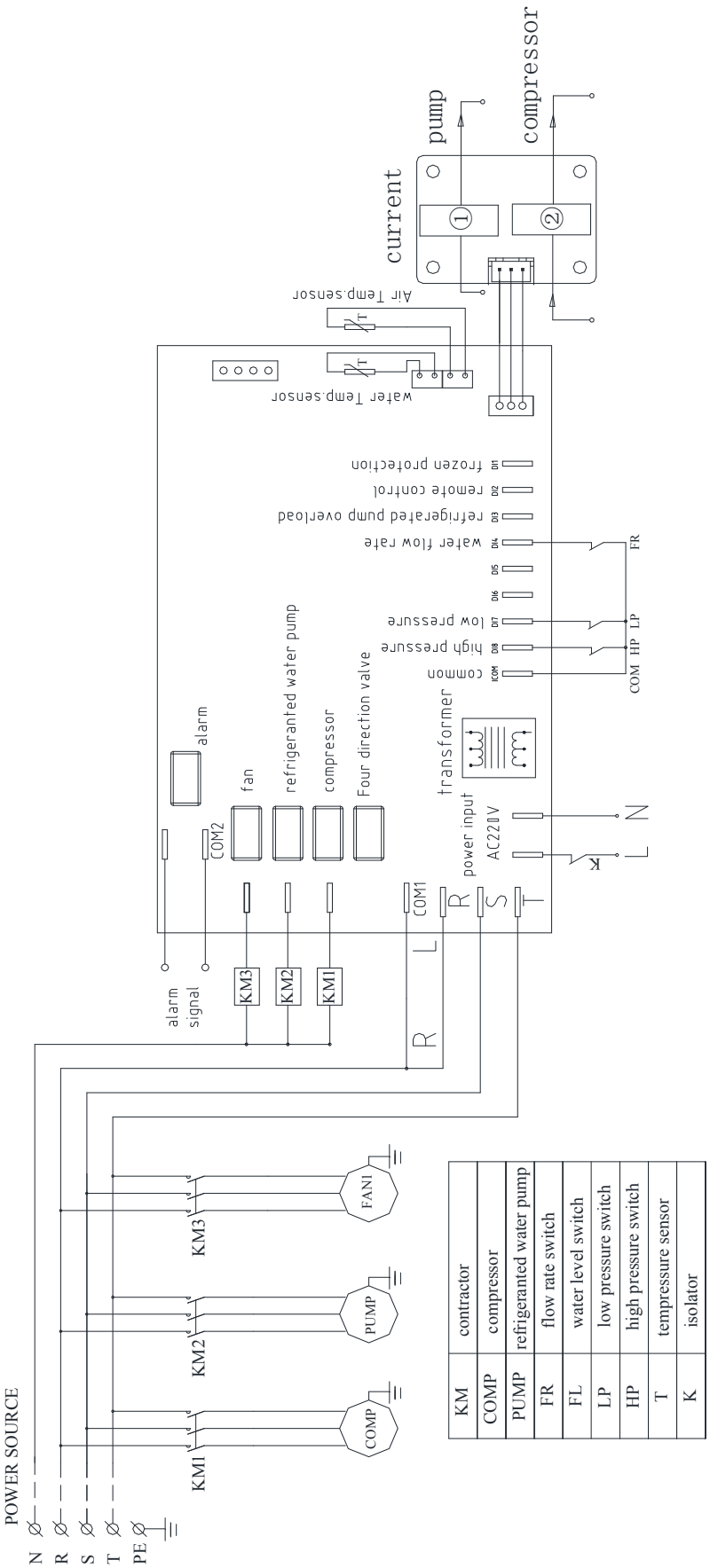
1） The operating voltage of the unit should be kept within ± 5%. Any voltage that is too high or too low will affect the unit adversely.

2） Within ± 5% of the voltage difference between phases, and the maximum and minimum phase current difference is not less than 3% of the rated value, avoid overheating the compressor. Power frequency should be maintained within ± 2% of rating.

3） Power to the wiring between units to be strictly in accordance with the electrical construction standards and good insulation, electrical parts terminals and the body should be 500V high impedance meter to determine the insulation, the insulation resistance is only 3MΩ above.

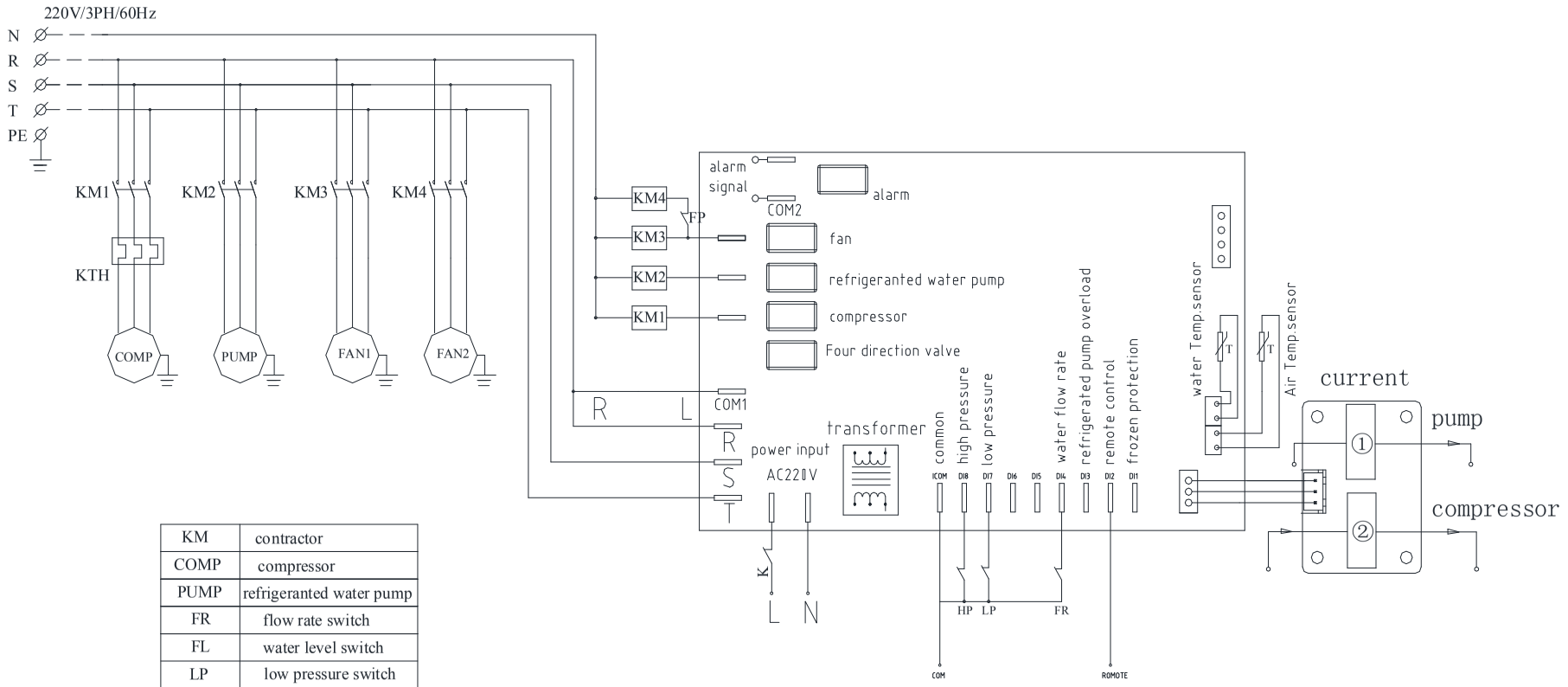
4) In order to protect personal safety and avoid the risk of electric shock due to body leakage, the unit shell should have a good and reliable grounding protection device to prevent electric shock accident

Electric diagram



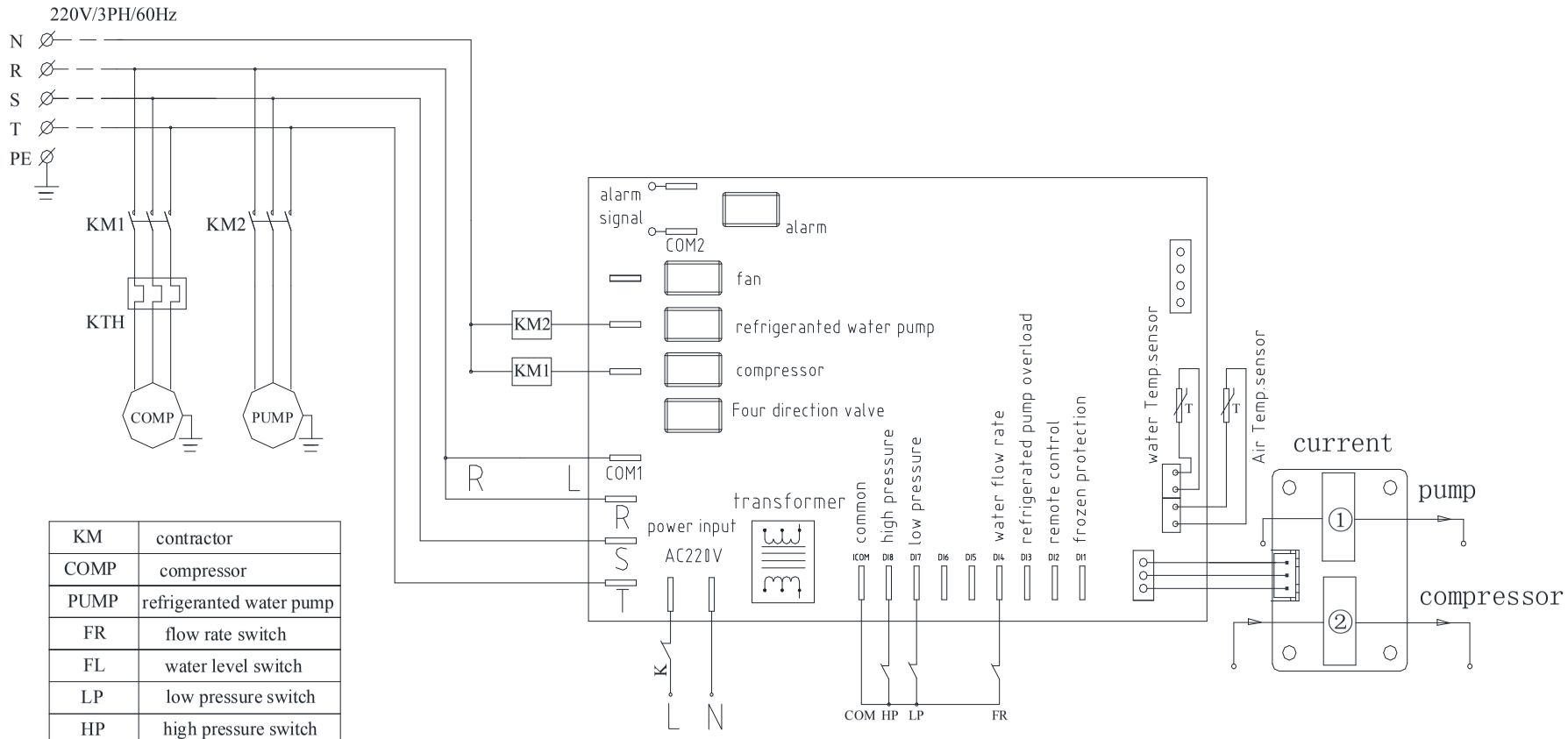
KM	contractor
COMP	compressor
PUMP	refrigeranted water pump
FR	flow rate switch
FL	water level switch
LP	low pressure switch
HP	high pressure switch
T	tempressure sensor
K	isolator

ICA-0.6,ICA-1,ICA-2



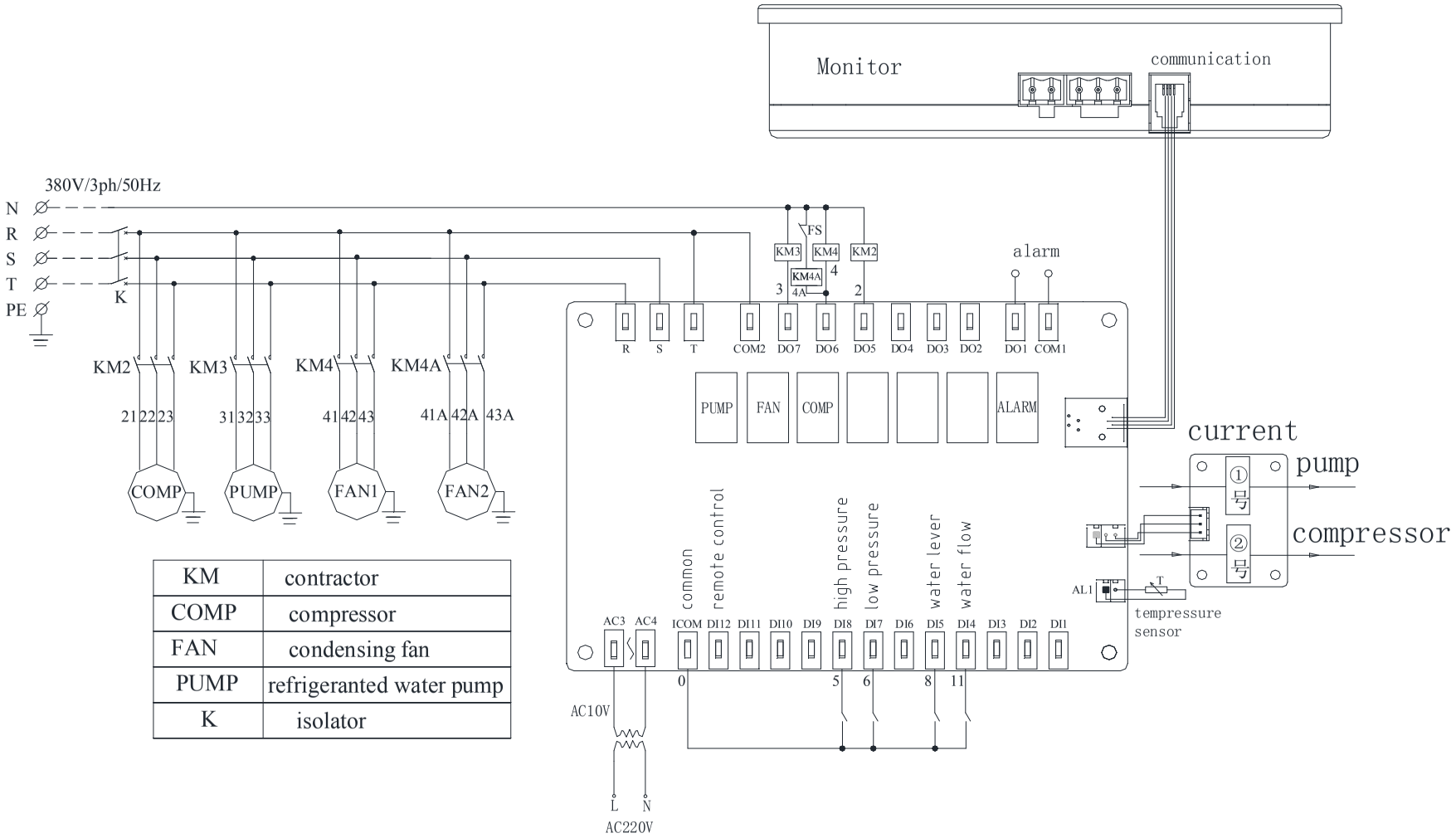
KM	contractor
COMP	compressor
PUMP	refrigeranted water pump
FR	flow rate switch
FL	water level switch
LP	low pressure switch
HP	high pressure switch
T	tempressure sensor
K	isolator

electric diagram(ICA-3,ICA-5,ICA-6,ICA-8)



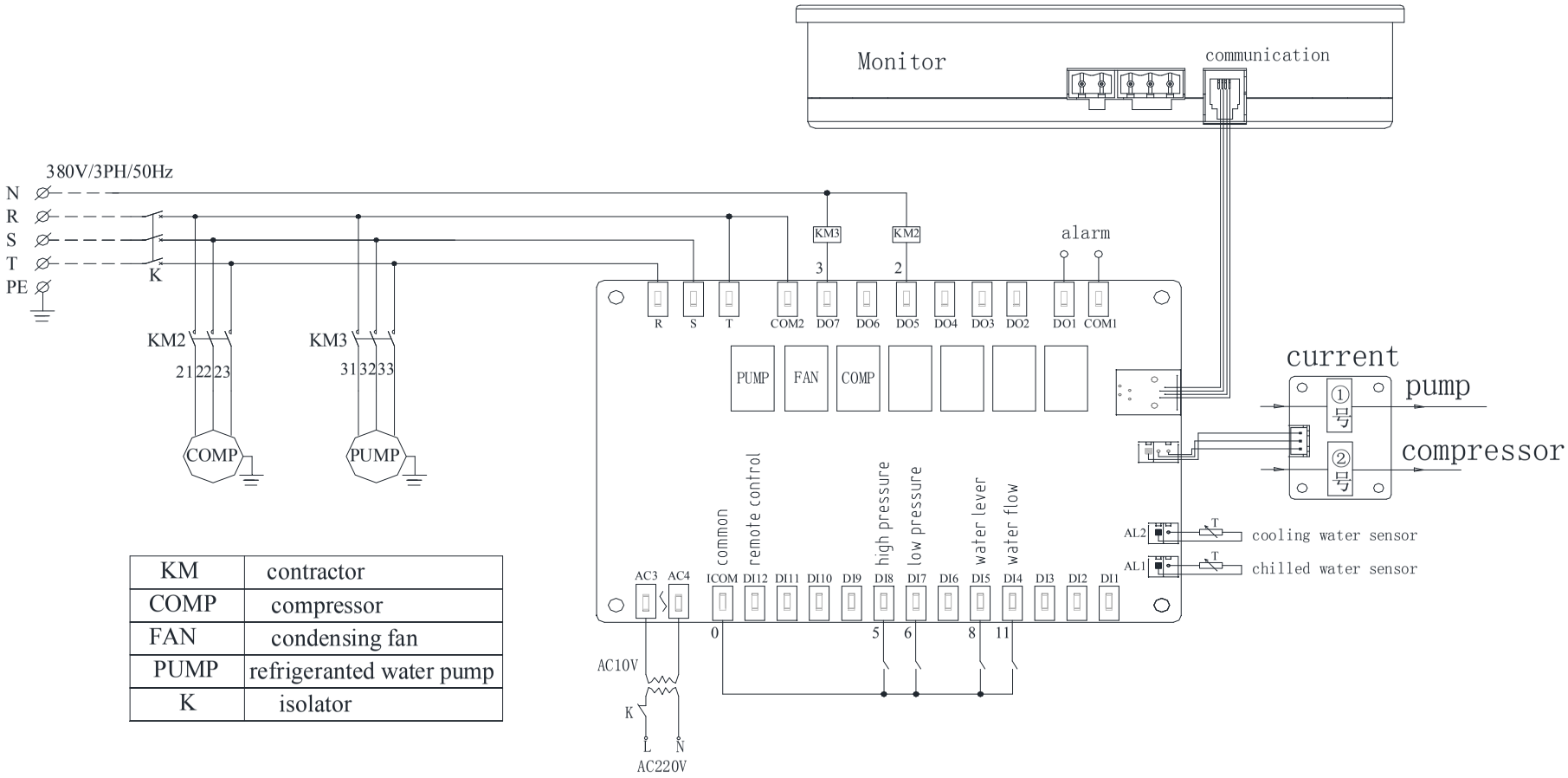
KM	contractor
COMP	compressor
PUMP	refrigeranted water pump
FR	flow rate switch
FL	water level switch
LP	low pressure switch
HP	high pressure switch
T	tempressure sensor
K	isolator

electric diagram(ICW-3,ICW-5,ICW-6,ICW-8,ICW-10,ICW-12)



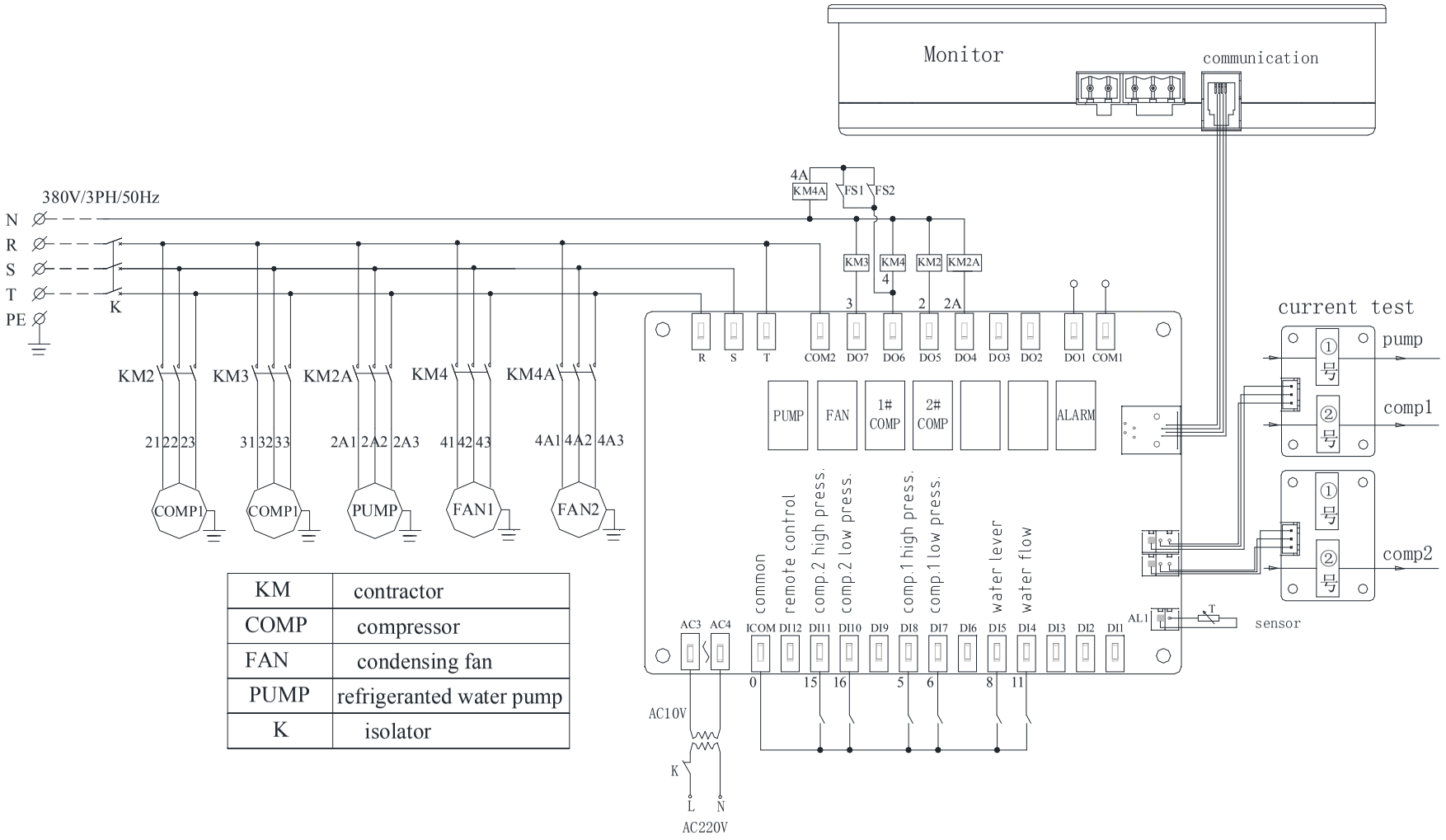
KM	contractor
COMP	compressor
FAN	condensing fan
PUMP	refrigeranted water pump
K	isolator

MODEL：ICA-10，ICA-12，ICA-15



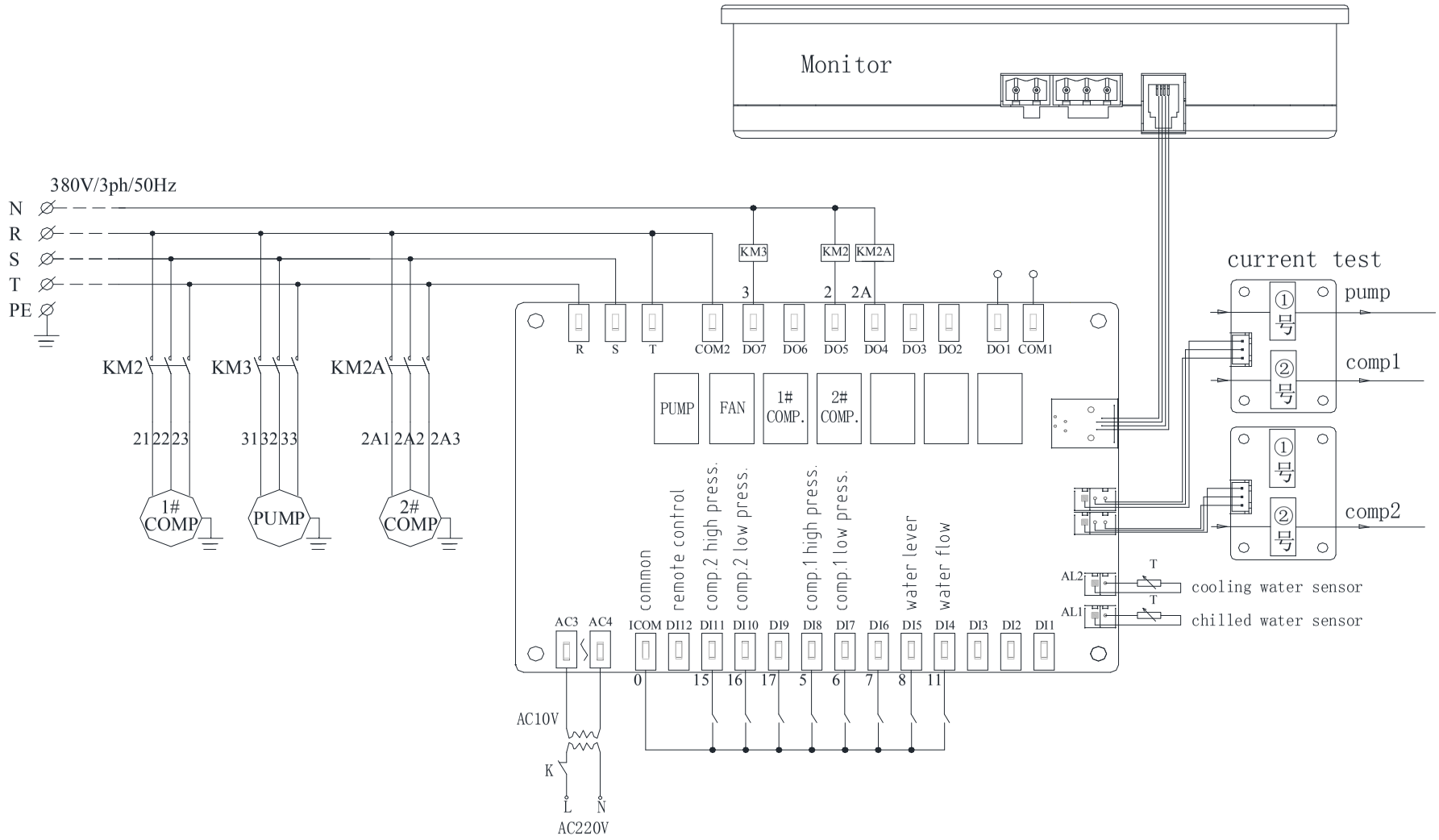
KM	contractor
COMP	compressor
FAN	condensing fan
PUMP	refrigeranted water pump
K	isolator

MODEL:ICW-10，ICW-12，ICW-15

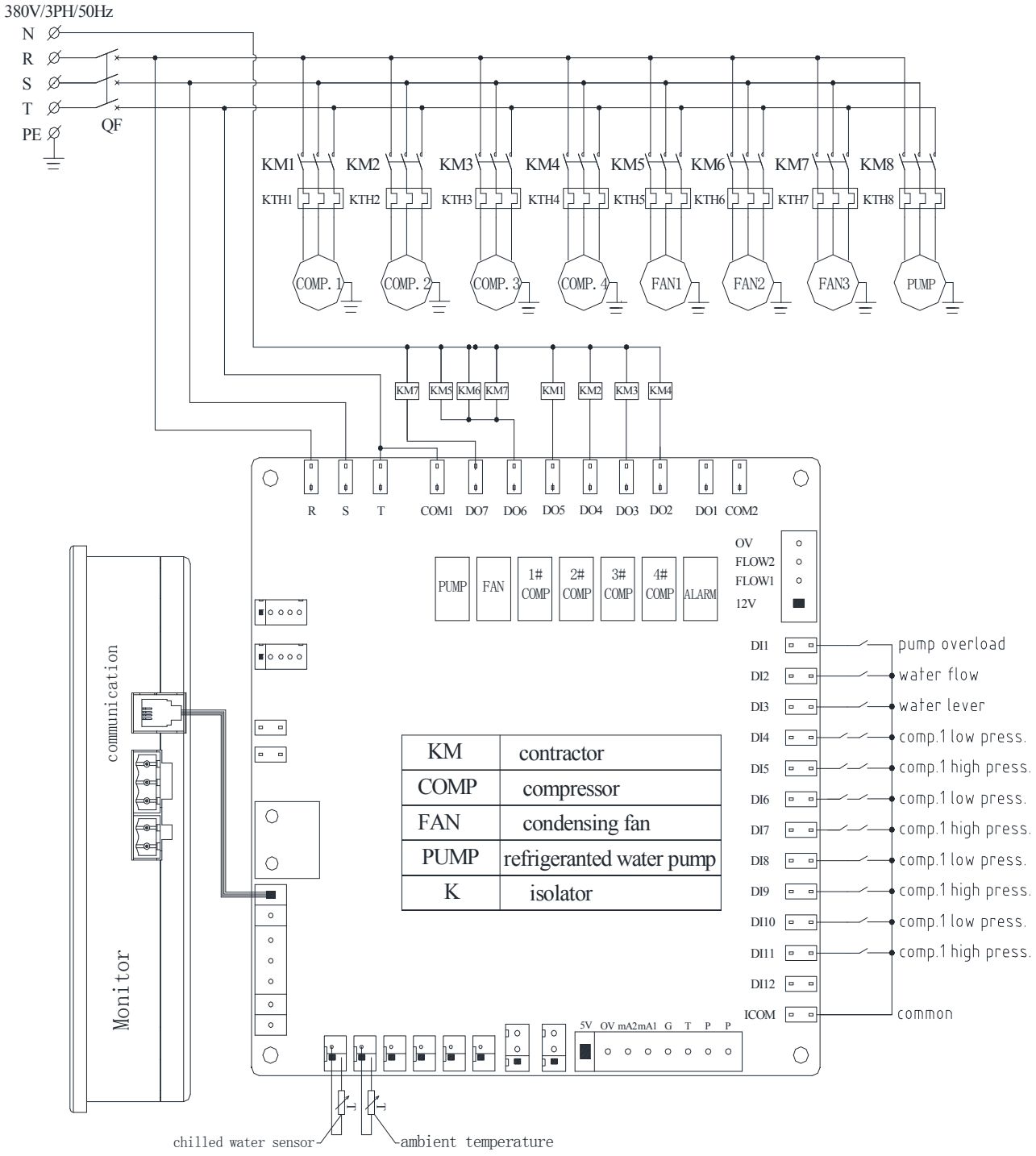


KM	contractor
COMP	compressor
FAN	condensing fan
PUMP	refrigeranted water pump
K	isolator

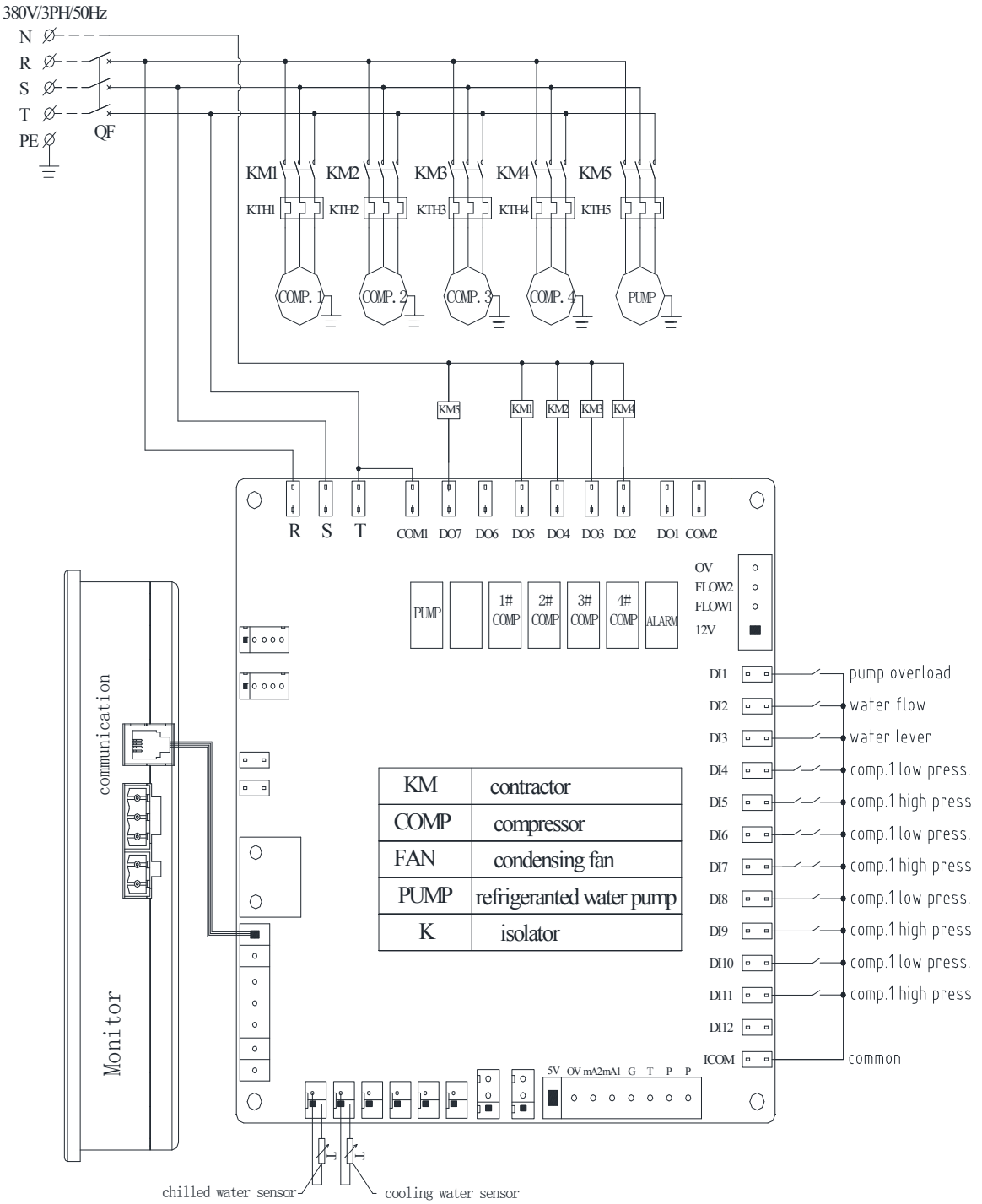
MODEL：ICA-20,ICA-25,ICA-30



MODEL：ICW-20/25/30



MODEL：ICA-40,ICA-50,ICA-60



MODEL：ICW-40,ICW-50,ICW-60

Troubleshooting

Phenomena	Reasons	Troubleshooting
The suction pressure is too high.	The exhaust pressure is too high.	Refer to “over-high exhaust pressure”.
	The refrigerant is infused excessively.	Discharge excessive refrigerant.
	The thermal insulation of the chilled water pipe is not good.	Check the thermal insulation of pipeline.
	The liquid tube or suction tube is blocked.	Check the refrigerant filter.
	The expansion valve is not well adjusted or of failure.	Adjust the degree of superheat correctly and check whether the temperature response bag is leaked.
	The system refrigerant is short.	Check the leakage of refrigerant.
	Excessive lubricant in the system is in circulation.	Check the volume of lubricant.
	The inlet temperature of chilled water is less than the standard temperature.	Readjust the set value of temperature.
	The chilled water through evaporation is inadequate.	Check the pressure loss of cold water pipe or whether the water pump works normally.
	The exhaust pressure is too low.	Adjust the water pipe valve.
The compressor stops due to high-pressure cut off.	The cooling water is short.	Check the water pipe valve.
	The condenser is blocked and the water enter valve closed.	Check the condenser copper tube and waterway valve.
	The set value of high-pressure protection is not correct.	Check the set value.
	The infused refrigerant is excessive.	Check the refrigerant infusion.
The compressor stops due to overload of motor.	Voltage is too high or low.	Check whether the voltage is consistent with the rated value of the unit. Correct the unbalance of phase if necessary.
	The overload component is of failure.	Check compressor current and compare total current in the data.
	Motor failure or wiring short cut.	Check the impedance between motor wiring seat and earth wire.
The compressor	The exhaust pressure is too high.	Check exhaust pressure, determine and remove the reason for overhigh exhaust.

stops due to cutoff of heat detector in the motor.	The voltage is too high or low.	Check whether the voltage is consistent with the rated value of the unit. Correct the unbalance of phase if necessary.
	The back temperature of chilled water is too high.	Check and remove the reasons for overhigh back temperature.
	The system refrigerant is not adequate.	Check the leakage of refrigerant.
	The infused refrigerant is not enough.	Add the refrigerant.
The compressor can't work.	The overload protective switch is cut off or the control circuit fuse burnt up.	Check the reasons and repair it. Restart the unit.
	The power breaks down.	Check the power supply.
	The phase is wrong.	Change the positions of the phases.
	The load-off solenoid valve is of fault.	Check the solenoid value coil and whether the oil way is blocked.
	The load-off structure is damaged.	Check the load-off components.
Exhaust pressure is high.	The cooling water is too high in temperature or the water flow of condenser is deficient.	Adjust water door-keeper or control waterway valve. Check the water tower and pipe filter.
	Excessive infusion of refrigerant soaks the copper tube of condenser.	Discharge the excessive refrigerant.
	The suction pressure is higher than the normal value.	"Refer to "overhigh suction pressure".
Exhaust pressure is low.	The water flowing through the condenser is excessive or the water temperature is too low.	Adjust the water valve or control gate valve. Check the operation of cooling tower.
	The suction pressure is less than the normal value.	"Refer to ""overlow suction pressure".
	The Refrigerant is deficient and the gas refrigerant enters the expansion valve.	Detect the leakage and supplement the refrigerant.

Maintenance of Unit

1 In order to keep the unit in the best optimum condition, regular maintenance shall be given to the following items. If necessary, adjust it and get done with the inspection records.

Inspection Time	Items	Methods	Central Control Targets	Aftermath
Daily	Exhaust pressure	Check high-pressure gage	2.2～2.8MPa	MPa
	The exhaust pressure difference among the operating compressors	Check high-pressure gage	<0.1Mpa	MPa
	Suction pressure	Check low-pressure gage	0.02～0.15Mpa	MPa
	The suction pressure difference among the operating compressors	Check low-pressure gage	<0.05Mpa	MPa
	Power supply	Check with voltmeter	Not exceed ±10% of rated voltage	V
	The outlet temperature of chilled water	Check the thermometer.	5～40ºC	ºC
	Vibration and noise	Feel and listening	No abnormal vibration and noises	
	Ambient Temperature	Check the thermometer	<43ºC	ºC

2 Guarantee the chilled water pump and cooling water pump are shut down after the hydrocooling unit.

3 The condenser shall be cleaned once every three months or in case of abnormality in high pressure.

♦ Incrustant and mildew shall be produced after the cooling tower works a long time so as to weaken the refrigeration capability of the unit as well as to disable the protective device in normal operation due to frequent actions.

♦ In the area with no guarantee of water quality, the condenser shall be washed often.

♦ For the detailed washing methods, please contact the local distributors.

4、 In case of long disuse, sometimes the water pump impeller shall be blocked by the sediments, so the radiator fan of the water pump shall be turned with hands prior to use of the machine.

5、 In case of alarm stoppage in operation of the unit, please let the related personnel informed promptly for inspection of the unit. If the failures can't be removed, please contact the manufacturer or local distributor directly.

6、 Shorting the water-flow switch in the operation of the unit is prohibited for fear of frost cracking of water pipe.

7、The machine room shall be equipped with related safety apparatus and maintenance and detecting tools such as pressure gage, thermometer and etc. The tools shall be emplaced at the fixed positions.

8、Please cut off the main power supply after the shutdown of the unit.

9、In case of long disuse to the unit, all accumulated water in the chilled water and cooling water systems shall be released completely for fear of rust. The end cap of the condenser water box shall be sealed.

10 、In case of long disuse to the unit, the maintenance shall be got done with.

11、 It is suggested to change the lubricant when the lubricant deteriorates and the foreign matters and moisture in the oil increase.

Service and warranty

1. After-sales service

Repairs should be carried out by the seller. Improper repairs may cause oil leakage, electric shock or fire.

When the unit must be moved and reinstalled, please contact the seller. Improper installation may cause oil leakage, electric shock or fire.

2. The following details should be provided when requesting repairs:

Unit model, warranty card, the factory number and installation date.

Detailed description of the fault.

Your name, address and telephone number.

3. Repair after the warranty period

Please contact the seller, we can provide chargeable services.

4. Maintenance and inspection

After several seasons of use, due to the accumulation of dust on the condenser, the performance of the unit will be reduced.

In addition to carrying out daily maintenance and repair yourself, it is recommended that you sign a maintenance inspection contract with us.

For details of this professional service, please contact the seller.

5. Inquiries

Please contact the seller for after-sales service.

--Warranty Card

This product comes with a warranty card.

Please check the contents of the warranty card .

--warranty period

One year from the date of product

, please see the warranty card for details.

When free repairs are required during the warranty period, the seller should be notified and the warranty card should be presented.

Otherwise, service charges may be charged even during the warranty