# Variable Refrigerant Flow
# IVCF Series

**86-154 MBH (8-16 HP)**

R410a
Environment Friendly

**50/60 Hz**

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## COOLEX HI EFFECIENCY INVERTER PRODUCTS

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## About RIC

Refrigeration Industries & Storage and Oil Services Company, occupies a leading position as one of the largest industrial companies in Kuwait which established in 1973, it plays a proactive role in providing various services and diverse activities such as manufacturing, storage, and oil services to meet the needs of customers both inside and outside Kuwait.

Since its inception, RIC has been committed to excellence and advancing its progress, leading to the establishment of the brand (Coolex) in 1986, a true milestone in the Kuwaiti market as the first in the region in the sector of manufacturing air conditioning systems and cooling solutions.

Furthermore, the company has consistently empowered its workforce, enhanced safety and competitiveness, and utilized innovative technologies to launch new products that meet the needs of various sectors, contributing to expansion and supporting growth and prosperity.

To ensure the highest performance in the future, RIC harnesses its continuous research to enhance efficiency and quality, while continuing its efforts to manufacture products capable of adapting to climate, environmental, and energy challenges.

### Facts throughout the years

1973 Warehouses were established by Amiri Decree.

1979 RIC Constructed the Medical Cold Stores Complex, the world's largest at that time.

1980 RIC Air Conditioning manufacturing plant set up in Sulaibya.

1981 Production of Package & Mini-Split A/Cs started under York-Gulf.

1984 RIC was listed in Kuwait Stock Exchange.

1986 COOLEX brand Production Launched.

1991 RIC rebuilt the manufacturing plant destroyed during the war.

1997 Achieved ISO Certification ISO 9001:1994.

2002 ETL Designed testing lab became fully operational.

2004 Privatization of RIC.

2010 COOLEX becomes the first A/C Unit to Pass MEW's new regulations.

2010 RIC Factory Renovation and Expansion into neighboring countries.

2012 Achieved UL & AHRI Certification for Coolex Units.

2014 Achieved SASO Certification for Concealed Ducted Split Series.

2014 Achieved EUROVENT Certification for Air Handling Units AHU.

2014 Achieved UL Certification for Air Cooled Chillers.

2015 Achieved ISO 17025 Certification for Psychrometric Laboratory.

2016 Achieved Energy Efficiency Certification for Concealed Ducted Split Series & Rooftop Package units (Kingdom of Bahrain).

2016 Acquisition of Gulf Paramount for Electrical Services Company.

2021 Acquisition of Kuwait Pipes Industries & Oil Services factory, resulting in a change of the company's name from Refrigeration Industries & Storage Co. to Refrigeration Industries & Storage and Oil Services Co.

## نبذة عن الشركة

تتبوأ شركة صناعات التبريد والتخزين والخدمات النفطية مكانة رائدة باعتبارها واحدة من أكبر الشركات الصناعية في دولة الكويت، والتي تأسست عام 1973 لتؤدي دوراً غير استباقي في تقديم خدمات متعددة وأنشطة متنوعة كالتصنيع والتخزين والخدمات النفطية لتلبية مختلف احتياجات العملاء داخل الكويت وخارجها.

ومنذ انطلاقة الشركة وهي تعمل على إبراز التميز ومواصلة مسيرة التقدم مما مكنها من تأسيس العلامة التجارية (كولكس) عام 1986 والتي جاء ميلادها إنجازاً حقيقياً في السوق الكويتي باعتبارها الأولى في المنطقة في قطاع تصنيع أنظمة التكييف وحلول التبريد في الكويت.

وعلى صعيدٍ متصل، دأبت الشركة على تمكين قوتها العاملة وتعزيز السلامة والقدرة التنافسية والاستفادة من التقنيات المبتكرة لإطلاق منتجات جديدة تلبي مختلف القطاعات وتسهم في تحقيق التوسع والذي من شأنه يدعم النمو والازدهار.

ولضمان أعلى أداء في المستقبل، تسخر الشركة بحوثها المستمرة لتعزيز الكفاءة والجودة كما تواصل جهودها لتصنيع منتجات قادرة على التكيف مع تحديات المناخ والبيئة والطاقة.

### حقائق وتواريخ

1973 تم إنشاء المستودعات بناء على مرسوم أميري.

1979 عهدت وزارة الصحة الكويتية لشركة صناعات التبريد بإنشاء مجمع مستودعات مخازن التبريد الطبية، وقد كان هذا المجمع حينها هو الأضخم من نوعه على مستوى العالم، وقد وصلت تكلفته إلى 12,000,000 دينار كويتي.

1980 تم إنشاء مصنع مكيفات الهواء التابع لشركة صناعات التبريد في الصليبية.

1981 بدء إنتاج أجهزة التكييف المدمجة والمنفصلة الصغيرة تحت علامة York-Gulf.

1984 تم قيد شركة صناعات التبريد في سوق الكويت للأوراق المالية.

1986 بدء إنتاج مكيفات علامة كولكس.

1991 قامت شركة صناعات التبريد بإعادة بناء مصنعها الذي دمرته الحرب.

1997 الحصول على شهادة الآيزو 1994:9001

2002 بدء تشغيل مختبر فحص وحدات التكييف (ETL)

2004 خصخصة شركة صناعات التبريد.

2010 كانت وحدات كولكس أول وحدات تكييف هواء تجتاز اللوائح التي أقرتها (وزارة الكهرباء والماء).

2010 تم تجديد مصنع شركة صناعات التبريد وبدء التوسع والتصدير إلى الدول المجاورة.

2012 الحصول على شهادة UL و AHRI لأجهزة التكييف كولكس.

2014 الحصول على شهادة SASO لأجهزة التكييف المنفصلة.

2014 الحصول على شهادة EUROVENT لأجهزة مناولة الهواء.

2014 الحصول على شهادة UL لمبردات الهواء الشيلر.

2015 الحصول على شهادة الأيزو ISO 17025 لمختبر السيكرومترية.

2016 الحصول على شهادة كفاء الطاقة لأجهزة التكييف المنفصلة و الوحدات المدمجة (مملكة البحرين).

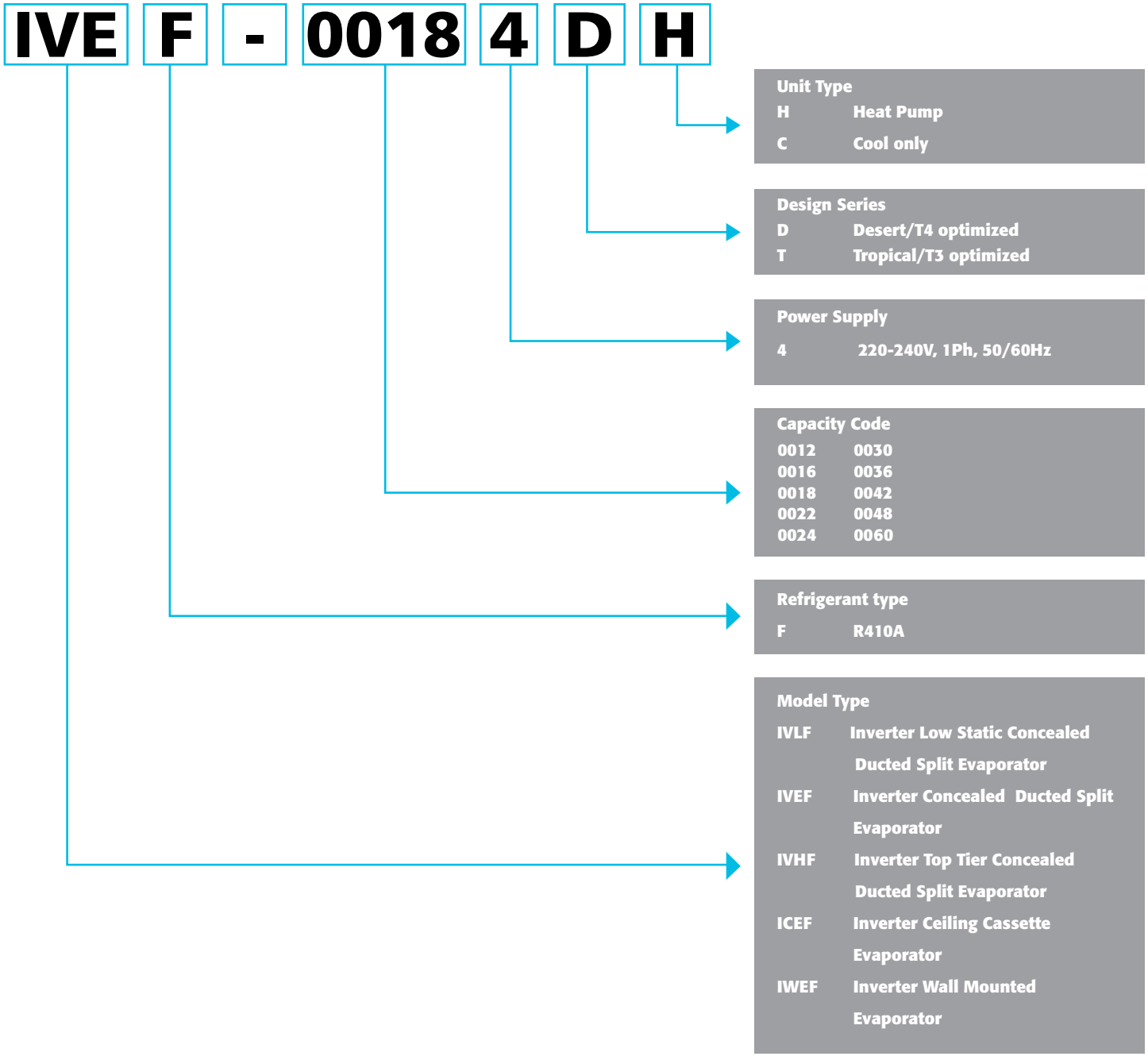
2016 الاستحواذ على شركة بارامونت الخليج للخدمات الكهربائية.

2021 الاستحواذ على مصنع الشركة الكويتية لصناعة الأنابيب والخدمات النفطية مما أدى على إثره تغيير اسم الشركة من شركة صناعات التبريد والتخزين إلى شركة صناعات التبريد والتخزين والخدمات النفطية.

## INTRODUCTION

COOLEX High Efficiency and latest VRF generations product was designed and manufactured to offer the solutions for hospitals, offices,villa shops and other applications under high ambient conditions, compressors are all inverter type match to DC brushless fan motors.

## NOMENCLATURE VRF INDOOR UNIT



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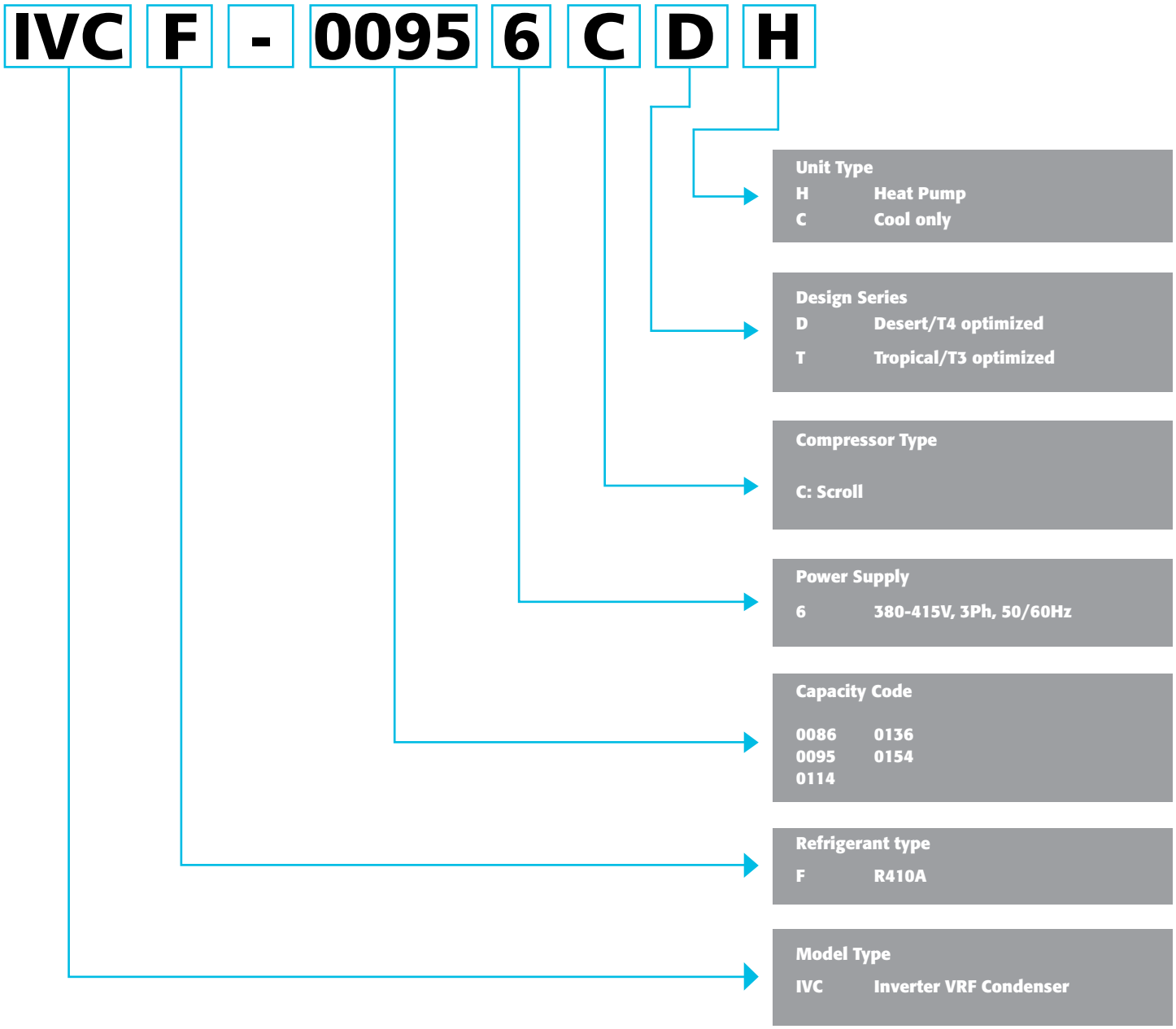


COOLEX

## OUTSTANDING FEATURES

## Tropical Series

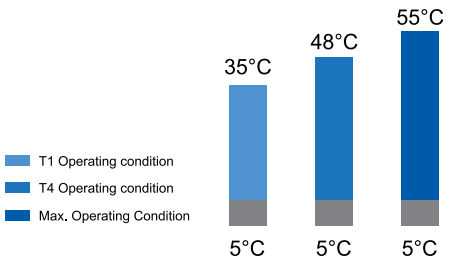
# Outdoor Unit

### Environment Friendly-R410A

R410a

### Up To 55°C Running

Enjoy excellent performance even under ambient temperature up to 55°C , suitable for T4 operating condition.




**Multiple Protection**

With multiple protection: High pressure protection, low pressure protection, compressor protection such as; temperature, phase protection , phase loss and overheating protection. Anti freezing , sensor failure alarm. The compressor could run in reasonable operation range.

**Double Anti-Corrosion Technology**

Galvanized metal with world-class powder spraying technology can improve the anti-corrosion ability of the housing of outdoor units three times, especially in salty , moist sorroundings.

**Wide Operation Range**

The unit can operate perfectly up to 55°C (hot summer) making you feel comfortable.

**Fire-proof Electrical Box**

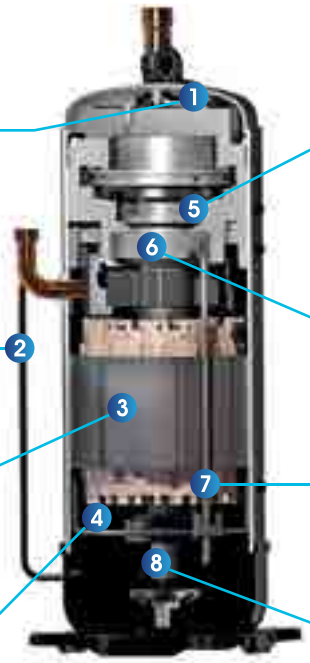
Electrical control box adopts new design which can meet the higher fire safety to prevent the internal fire due to electric spark accident

**Self-Diagnostic Function**

During abnormal operation or failure, the unit microcomputer will monitor and switch off automatically if necessary to protect the system main components. Error or protection code will be display at indoor wired controller.

## OUTSTANDING FEATURES

### DC Inverter Compressor




**Pressure relief valve structure**

Improving the partial load efficiency, adapt to the transformer ratio working condition, improving the compressor performance.

**Dynamic oil balance structure**

Oil balance tube implementation parallel compressor and oil quantity dynamic equilibrium, ensuring the reliability of several paralleled compressors.

**High efficiency motor configuration**

Using high quality material concentrated stator, cooperate with neodymium magnet rotor, having outstanding efficiency.

**High pressure cavity structure**

Large exhaust buffer volume,reducing the air flow noise and vibration of the runtime.

**The intermediate pressure servo mechanism**

According to the operation pressure among dynamic adjusting middle pressure, has realized the axial flexible, optimization of dynamic vortex disk meshing, improve product performance.

**High reliability of the bearing**

Adopt cylinder bearing and self-aligning ball bearing group, improving the reliability of the compressor.

**Internal oil circulation structure**

Lubricating oil to achieve internal circulation, reducing heat loss, decreasing the rate of spilling oil, improve the efficiency and reliability.

**Positive displacement gear oil pump**

Positive displacement gear oil pump to ensure the high and low frequency can satisfy the oil supply, improving the reliability of the compressor.

### High Efficiency Fan Assembly

Fan motor adjust the speed in stepless controlled by the mircocomputer according to the system operation requirement and running load to enhnace the efficiency by reducing the energy consumptions and maintain the system best performance.

### Silence Operation

Outdoor unit quiet mode, by using optimize fan assembly  the product is equipped with low noise fan functions. Provide more quiet operation during night time thru outdoor PCB sensors technology.

## OUTSTANDING FEATURES

**High EER**

Coolex Split inverter tropical series airconditioner have excellent in cooling performance and energy efficiency ratio by using full DC control with DC inverter compressor, DC indoor motor, DC outdoor motor and DC electronic expansion valve make low noise and high efficiency.

**Fast Cooling**

Startup at high frequency increases coling capacity and reduces time to reach set temperature, thus you can enjoy cooling in seconds.

**Blue Coated Aluminum fin**

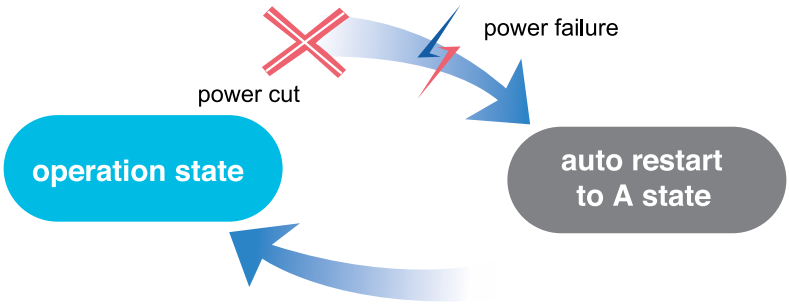
The louvered coated aluminum foil has improved by more than 10% . The refrigerant inlet and outlet are separated to ensure the subcooling to enhance the cooling capacity.

**180° Sine Wave Control**

With considerable advantages DC inverter 180° sine wave driving technology has much wider range of frequency and voltage, higher energy efficiency, much smooth and lower noise.

**Auto Restart Function**

The AC can automatically memorize the operation setting when power is cut off accidentally. It can return to previous setting when power resumes.Recover the last operation state when power is re-stored, no need to restart the unit manually.




**Hydrophilic Blue Coated Fins**

Is multi purpose benefits includes, preventing bacteria breeding, enhanced functionality by improving heat transfer efficiency, unit airflow by reducing air pressure drop while not affecting the heat transfer rates and saving energy.

## OUTSTANDING FEATURES

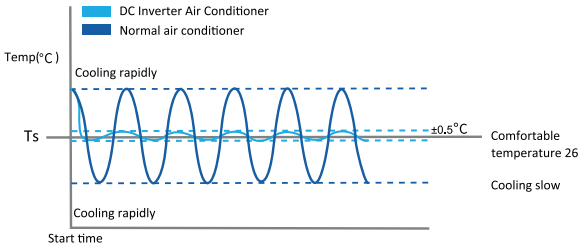
## Tropical Series

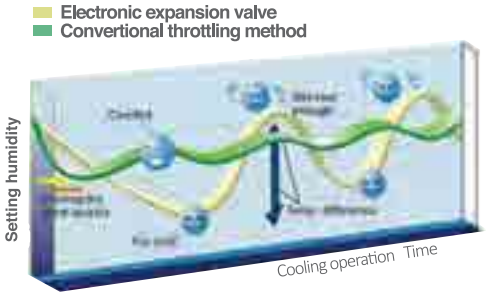
# INDOOR UNIT

### Precise Temperature Control

COOLEX composite temperature control technology, through the indoor/outdoor operation condition detection, adjust outdoor power output, optimize the indoor air distribution, achieve the high precision adjustment of 0.5°C .

The EEV uses PI calculation principle to calculate the percentage of indoor capacity demand according to indoor temperatures, perform real-time control to compressor operating frequency through EEV precise level adjustment of refrigerant flow.




### Indoor Unit Quiet Operation

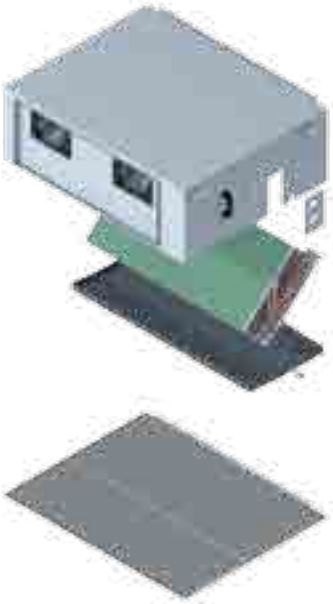
The indoor unit has three fan speed mode selection that you can select your optimum low noise requirement to provides a quiet operation by night and day.

## OUTSTANDING FEATURES

### Ceiling Concealed

- Compact design
- Low sound power level
- For ducted and ducts free application
- 3 speed DC motor
- Easy maintenance
- Easy installation
- Washable filter

Bottom access for easy maintenance



Bottom coil and drain pan removal

Bottom fan deck removal

## OUTSTANDING FEATURES

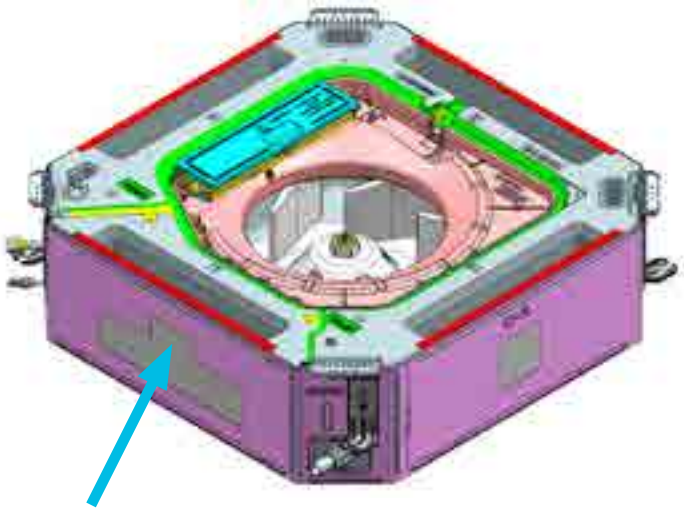
### Ceiling Cassette

**Easy maintenance:**

The simple design concept has provided the ease of maintenance and servicing. Access to the internal part of the unit can be from the Front Panel.

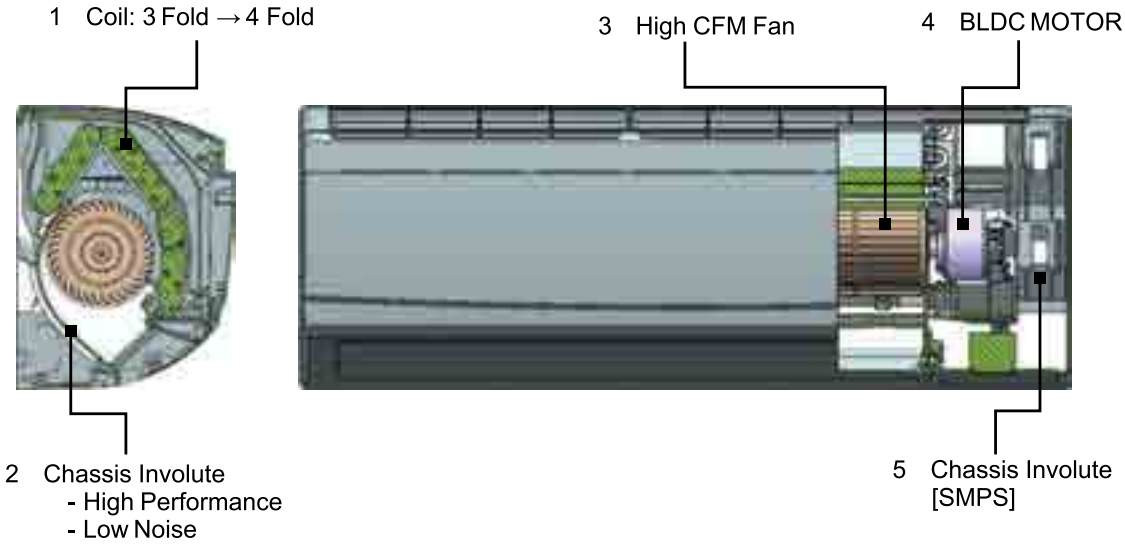
**High Performance Centrifugal Fan:**

Light Weight, Aero-Dynamical Design made of San+20% Glass field, Highly efficient fans, with higher airflow rate, draws more cooling across the Evaporating unit leading to greater cooling capacity.



Room To Room Ducting Provision (Marked As "1" And "3" On Eps Drain)

### Wall Mounted




- Modern and attractive designs
- High-Performance Fan and Heat Exchanger
- Low Noise Operation
- Operation Mode: Cool/Auto/Fan/Heating

## CONTROL SYSTEM

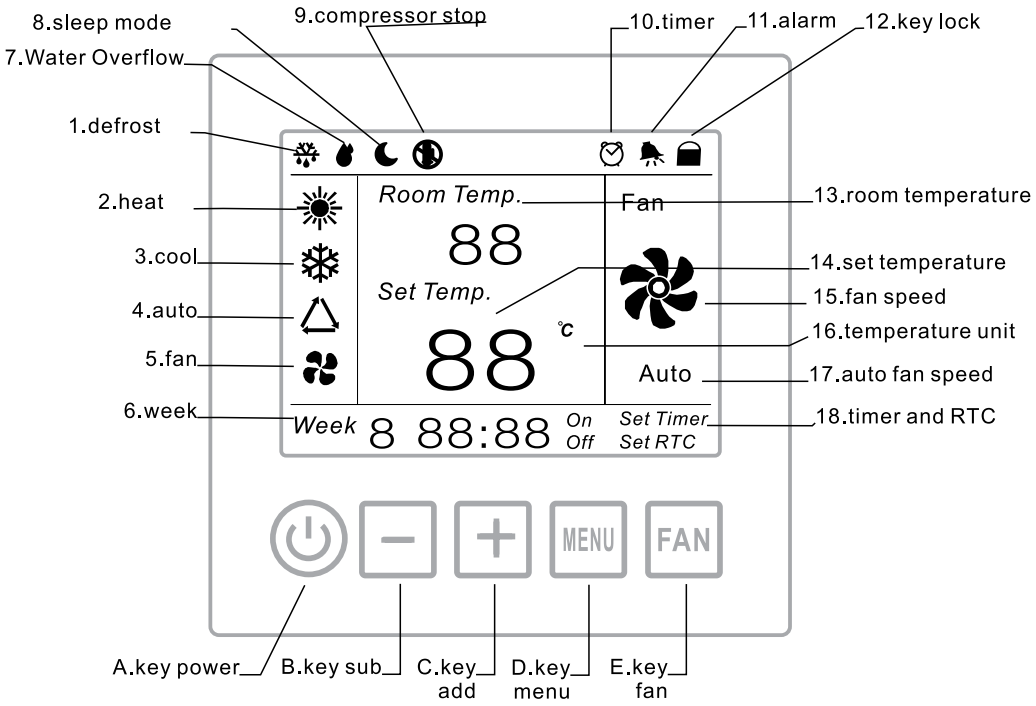
**User friendly thermostat design**

Due to compact design, it can easily hide the controller for hotels, hospitals , schools and offices. Fitted with a background light as standard  and easy to use in the dark night.

**Error reporting**

In case for system malfunction, error codes are displayed in the temperature setting area of controller's display screen.

LED Display




## COOLEX MICROCOMPUTER INVERTER TECHNOLOGY

The new Split Inverter Generation Units are provided with technologically advanced system logic based controller, incorporating the following benefits and features:

Protection and Failure Control:

- Over and under voltage protection
- Over current protection
- Power surge protection
- Indoor/Outdoor temperature protection limit
- Compressor overload protection
- Compressor overheating protection
- High and Low pressure switch protection
- Reverse phase protection (for 3 phase system)
- Anti freeze protection
- Time delay protection for compressor
- Anti short cycle timer
- Outdoor condenser sensor failure
- Outdoor ambient temp. sensor failure
- Indoor evaporator sensor failure

## GENERAL DATA

### IVCF TROPICAL TYPE FULL DC INVERTER VRF SYSTEM 380V - 415V, 50/60Hz, 3Ph

| COOLING CAPACITY BTU/HR (KW) | | | 86,000 (25.2) | 95,000 (27.8) | 114,000 (33.4) | 136,000 (39.9) | 158,000 (46.3) |
|---|---|---|---|---|---|---|---|
| HEATING CAPACITY BTU/HR (KW) | | | 86,000 (25.2) | 95,000 (27.8) | 114,000 (33.4) | 136,000 (39.9) | 158,000 (46.3) |
| Model Name | | | IVCF-00866CDH | IVCF-00956CDH | IVCF-01146CDH | IVCF-01366CDH | IVCF-01546CDH |
| Capacity Connection Ratio | | % | 50 ~ 130 | | | | |
| Compressor | Quantity | | 1DC | | | 2DC | |
| | Type | | Hermetic Scroll | | | | |
| Condenser Coil | Type | | Blue Coated Aluminum Fins and IGT Copper Tubes | | | | |
| | No. of Rows | | 3 | | | | |
| Fan Motor | Type | | DC Motor | | | | |
| | Quantity | | 1 | | | 2 | |
| Outdoor Fan | Type | | Axial Fan | | | | |
| | Quantity | | 1 | | | 2 | |
| Weight | Net | Kg. | 280 | | 282 | 502 | 504 |
| Pipe Diameter | Liquid | mm | Φ 12.7 | | | Φ 15.8 | |
| | Gas | mm | Φ 22.2 | | | Φ 28.6 | |
| Pipe Length | Max. Actual Pipe Length | m | 240 | | | | |
| | From 1st indoor distributor to farthest IU | m | 90 | | | | |
| Vertical Length | Between OU & IU (OU below IU) | m | 110 | | | | |
| | Between IU 's | m | 30 | | | | |

### Operating Temperature Range

| Cooling | Outdoor side | °C (°F) | 5 - 55 (41 - 131) |
|---|---|---|---|
| | Indoor side | °C (°F) | 16 ~ 32 (60.8 ~ 89.6) |
| Heating | Outdoor side | °C (°F) | 5 - 24 (41 - 75) |
| | Indoor side | °C (°F) | 16~32 (60.8 ~ 89.6) |

## UNIT ELECTRICAL DATA

| Outdoor Units | | IVCF-00866DH | IVCF-00956DH | IVCF-01146DH | IVCF-01366DH | IVCF-01546DH |
|---|---|---|---|---|---|---|
| Unit Power Supply | Volt | 380-415 | | | | |
| | Phase | 3 | | | | |
| | Hz | 50/60 | | | | |
| Compressor | V - Ph - Hz | 400 /3/50-60 | | | | |
| | Amps | 18.5 | 18.5 | 21.5 | 18.5(2ea) | 18.5(2ea) |
| Condenser Fan Motor | V - Ph - Hz | 220-240 | | | | |
| | WATTS | 700 | 700 | 700 | 700(2ea) | 700(2ea) |
| | FLA | 4.15 | 4.15 | 4.15 | 4.15(2ea) | 4.15(2ea) |
| Minimum Circuit, Ampere | | 27.3 | 27.3 | 31 | 50 | 50 |
| Max. Fuse Size, Ampere | | 45 | 45 | 50 | 60 | 60 |

| Indoor Units | | IVEF-00184DH | IVEF-00244DH | IVEF-00304DH | IVEF-00364DH | IVEF-00424DH | IVEF-00484DH | IVEF-00604DH |
|---|---|---|---|---|---|---|---|---|
| Unit Power Supply | Volt | 220-240 | | | | | | |
| | Phase | 1 | | | | | | |
| | Hz | 50/60 | | | | | | |
| Condenser Fan Motor | V - Ph - Hz | 220-240/1/50-60 | | | | | | |
| | WATTS | 260 | 260 | 260 | 260 | 380 | 560 | 560 |
| | FLA | 2.5 | 2.5 | 2.5 | 2.5 | 3.3 | 4.7 | 4.7 |
| Max. Fuse Size, Ampere | | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Connection Wire | Signal Wire Size($mm^2$) | 0.5(2Core shielded cable) | | | | | | |
| | Thermostat Wire Size($mm^2$) | 0.5(4Core shielded cable) | | | | | | |

## LEGEND:

*FLA - Full Load Amps*

## UNIT RATING SUMMARY

| 95 °F OUTDOOR AMBIENT TEMPERATURE | | | | | | | |
|---|---|---|---|---|---|---|---|
| Model | Type | Qty Nos. | Cooling Capacity (Btu/Hr) | Airflow (Cfm) | Total Power (Kw) | Kw/Ton | EER |
| IVCF-00866CDH | Outdoor | 1 | 87,070 | 3,094 | 6.52 | 0.90 | 13.35 |
| IVEF-00164DH | Indoor | 5 | | | | | |
| IVCF-00956CDH | Outdoor | 1 | 96,540 | 3,602 | 7.08 | 0.88 | 13.65 |
| IVEF-00164DH | Indoor | 6 | | | | | |
| IVCF-01146CDH | Outdoor | 1 | 115,334 | 4,238 | 8.59 | 0.89 | 13.43 |
| IVEF-00164DH | Indoor | 7 | | | | | |
| IVCF-01366CDH | Outdoor | 1 | 132,080 | 5,821 | 11.17 | 1.02 | 11.82 |
| IVHF-00164DH | Indoor | 4 | | | | | |
| IVHF-00184DH | Indoor | 4 | | | | | |
| IVCF-01546CDH | Outdoor | 1 | 152,550 | 6,964 | 13.54 | 1.07 | 11.26 |
| IVHF-00164DH | Indoor | 10 | | | | | |

| 115 °F OUTDOOR AMBIENT TEMPERATURE | | | | | | | |
|---|---|---|---|---|---|---|---|
| Model | Type | Qty Nos. | Cooling Capacity (Btu/Hr) | Airflow (Cfm) | Total Power (Kw) | Kw/Ton | EER |
| IVCF-00866CDH | Outdoor | 1 | 69,300 | 3,000 | 6.36 | 1.10 | 10.09 |
| IVEF-00164DH | Indoor | 5 | | | | | |
| IVCF-00956CDH | Outdoor | 1 | 79,580 | 3,600 | 7.11 | 1.07 | 11.2 |
| IVEF-00164DH | Indoor | 6 | | | | | |
| IVCF-01146CDH | Outdoor | 1 | 95,500 | 4,200 | 8.60 | 1.06 | 11.1 |
| IVEF-00164DH | Indoor | 7 | | | | | |
| IVCF-01366CDH | Outdoor | 1 | 108,420 | 5,950 | 11.52 | 1.22 | 9.81 |
| IVHF-00164DH | Indoor | 4 | | | | | |
| IVHF-00184DH | Indoor | 4 | | | | | |
| IVCF-01546CDH | Outdoor | 1 | 123,400 | 7,200 | 12.27 | 1.19 | 10.05 |
| IVHF-00164DH | Indoor | 10 | | | | | |

*Note:*

*1.T1: Indoor side (80.6°F) 27°C DB, (66.2°F) 19°C WB ; Outdoor : (95°F) 35°C DB*
*2.T3: Indoor side (84.2°F) 29°C DB, (66.2°F) 19°C WB ; Outdoor : (115°F) 46°C DB*
*3.T4: Indoor side (80 F) 26.7C DB, (67F) 19.4C DB; Outdoor: (118.4F) 48C DB*
*4. Capacity in KW = (Btu/Hr/12000)*3.517. Cooling capacities are gross rating.*
*5. Combination Ratio : 100 %*

## UNIT RATING SUMMARY

| 118 °F OUTDOOR AMBIENT TEMPERATURE | | | | | | | |
|---|---|---|---|---|---|---|---|
| Model | Type | Qty Nos. | Cooling Capacity (Btu/Hr) | Airflow (Cfm) | Total Power (Kw) | Kw/Ton | EER |
| IVCF-00866CDH | Outdoor | 1 | 65,376 | 3,242 | 6.53 | 1.20 | 10.02 |
| IVEF-00164DH | Indoor | 5 | | | | | |
| IVCF-00956CDH | Outdoor | 1 | 75,070 | 3,708 | 7.23 | 1.16 | 10.38 |
| IVEF-00164DH | Indoor | 6 | | | | | |
| IVCF-01146CDH | Outdoor | 1 | 90,094 | 4,365 | 8.71 | 1.16 | 10.34 |
| IVEF-00164DH | Indoor | 7 | | | | | |
| IVCF-01366CDH | Outdoor | 1 | 105,885 | 5,885 | 11.43 | 1.30 | 9.26 |
| IVHF-00164DH | Indoor | 4 | | | | | |
| IVHF-00184DH | Indoor | 4 | | | | | |
| IVCF-01546CDH | Outdoor | 1 | 118,201 | 7,176 | 12.46 | 1.27 | 9.48 |
| IVHF-00164DH | Indoor | 10 | | | | | |

*Note:*

*1.T1: Indoor side (80.6°F) 27°C DB, (66.2°F) 19°C WB ; Outdoor : (95°F) 35°C DB*
*2.T3: Indoor side (84.2°F) 29°C DB, (66.2°F) 19°C WB ; Outdoor : (115°F) 46°C DB*
*3.T4: Indoor side (80 F) 26.7C DB, (67F) 19.4C DB; Outdoor: (118.4F) 48C DB*
*4. Capacity in KW = (Btu/Hr/12000)*3.517. Cooling capacities are gross rating.*
*5. Combination Ratio : 100 %*

# CEILING CONCEALED SPECIFICATIONS

## LOW STATIC

| Model Name | Power Type | Rated Capacity | | | | Fan Motor (DC) | Airflow | Expansion Device | Evaporator Coil | | Body Weight | Connecting Pipe (Diameter) | | | Std. Controller |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Cooling | | Heating | | | | | | | Net | Gas | Liquid | Drain | |
| | | kW | BTU/Hr | kW | BTU/Hr | Watts | CFM | Type | Type | Rows | Kg | mm (inch) | mm (inch) | mm (inch) | |
| IVLF-00184DH | 220-240V, 50/60Hz, 1Ph | 5.0 | 17,000 | 5.4 | 18,400 | 90 | 550 | Electronic Expansion Valve | Blue Coated Aluminum Fins and IGT Copper Tubes | 3 | 20 | 15.88 (5/8) | 9.52 (3/8) | DN20 (R3/4) | Wired Controller |
| IVLF-00244DH | | 6.7 | 23,000 | 7.3 | 24,800 | 90 | 750 | | | 3 | 20 | | | | |
| IVLF-00304DH | | 8.5 | 29,000 | 9.2 | 31,300 | 50/90 | 950 | | | 3 | 33 | | | | |
| IVLF-00364DH | | 10.3 | 35,000 | 11.1 | 37,800 | 50/90 | 1,100 | | | 3 | 33 | | | | |

## MEDIUM STATIC

| Model Name | Power Type | Rated Capacity | | | | Fan Motor (DC) | Airflow | Expansion Device | Evaporator Coil | | Body Weight | Connecting Pipe (Diameter) | | | Std. Controller |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Cooling | | Heating | | | | | | | Net | Gas | Liquid | Drain | |
| | | kW | BTU/Hr | kW | BTU/Hr | Watts | CFM | Type | Type | Rows | Kg | mm (inch) | mm (inch) | mm (inch) | |
| IVEF-00164DH | 220-240V, 50/60Hz, 1Ph | 4.8 | 16,500 | 5.2 | 17,800 | 245 | 600 | Electronic Expansion Valve | Blue Coated Aluminum Fins and IGT Copper Tubes | 3 | 40 | 15.88 (5/8) | 9.52 (3/8) | DN20 (R3/4) | Wired Controller |
| IVEF-00184DH | | 5.3 | 18,000 | 5.7 | 19,400 | 245 | 600 | | | 2 | 60 | | | | |
| IVEF-00244DH | | 7.0 | 24,000 | 7.6 | 25,900 | 245 | 800 | | | 3 | 63 | | | | |
| IVEF-00304DH | | 8.8 | 30,000 | 9.5 | 32,400 | 245 | 1,000 | | | 3 | 63 | | | | |
| IVEF-00364DH | | 10.6 | 36,000 | 11.4 | 38,900 | 245 | 1,200 | | | 3 | 71 | | | | |
| IVEF-00424DH | | 12.3 | 42,000 | 13.4 | 45,400 | 375 | 1,400 | | | 3 | 71 | 19.05 (3/4) | | | |
| IVEF-00484DH | | 14.1 | 48,000 | 15.2 | 51,800 | 552 | 1,600 | | | 4 | 78 | | | | |
| IVEF-00604DH | | 17.6 | 60,000 | 19.1 | 64,800 | 552 | 2,000 | | | 3 | 91 | | | | |

*Notes:*

1. *Cooling Capacity : Indoor side (80.6°F) 27°C DB, (66.2°F) 19°C WB ; Outdoor : (95°F) 35°C DB, (75.2°F) 24°C WB*
2. *Heating Capacity: Indoor side (68°F) 20°C DB ; Outdoor : (44.6°F) 7°C DB, (42.8°F) 6°C WB*
3. *Piping Length : 7.5 meters with 0m level difference.*
4. *Above designs and specification are subject to change without prior notice.*

## CEILING CONCEALED SPECIFICATIONS

### TOP TIER MEDIUM STATIC

| Model Name | Power Type | Rated Capacity | | | | Fan Motor (DC) | Airflow | Expansion Device | Evaporator Coil | | Body Weight | Connecting Pipe (Diameter) | | | Std. Controller |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Cooling | | Heating | | | | | | | Net | Gas | Liquid | Drain | |
| | | kW | BTU/Hr | kW | BTU/Hr | Watts | CFM | Type | Type | Rows | Kg | mm (inch) | mm (inch) | mm (inch) | |
| IVHF-00164DH | 220-240V, 50/60Hz, 1Ph | 4.9 | 16,600 | 5.3 | 17,900 | 245 | 700 | Electronic Expansion Valve | Blue Coated Aluminum Fins and IGT Copper Tubes | 3 | 40 | 15.88 (5/8) | 9.52 (3/8) | DN20 (R3/4) | Wired Controller |
| IVHF-00184DH | | 5.6 | 19,000 | 6.0 | 20,500 | 245 | 750 | | | 3 | 63 | | | | |
| IVHF-00244DH | | 7.6 | 26,000 | 8.3 | 28,100 | 245 | 1,000 | | | 3 | 63 | | | | |
| IVHF-00304DH | | 9.4 | 32,000 | 10.2 | 34,600 | 245 | 1,200 | | | 3 | 63 | | | | |
| IVHF-00364DH | | 11.1 | 38,000 | 12.1 | 41,000 | 245 | 1,400 | | | 3 | 71 | | | | |
| IVHF-00424DH | | 12.9 | 44,000 | 13.9 | 47,500 | 375 | 1,600 | | | 3 | 71 | 19.05 (3/4) | | | |
| IVHF-00484DH | | 14.7 | 50,000 | 15.9 | 54,000 | 552 | 1,800 | | | 4 | 78 | | | | |
| IVHF-00604DH | | 18.2 | 62,000 | 19.7 | 66,900 | 552 | 2,200 | | | 4 | 95 | | | | |

*Notes:*

1. *Cooling Capacity : Indoor side (80.6°F) 27°C DB, (66.2°F) 19°C WB ; Outdoor : (95°F) 35°C DB, (75.2°F) 24°C WB*
2. *Heating Capacity: Indoor side (68°F) 20°C DB ; Outdoor : (44.6°F) 7°C DB, (42.8°F) 6°C WB*
3. *Piping Length : 7.5 meters with 0m level difference.*
4. *Above designs and specification are subject to change without prior notice.*

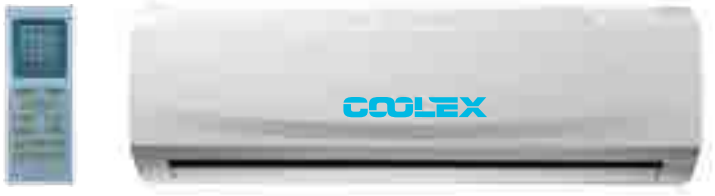
## CEILING CASSETTE SPECIFICATIONS

| Model Name | Power Type | Rated Capacity | | | | Motor Input | Airflow | Expansion Device | Evaporator Coil | | Body Weight /+ (Panel) | | Connecting Pipe (Diameter) | | | Std. Controller |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Cooling | | Heating | | | | | | | Net | Gross | Gas | Liquid | Drain | |
| | | kW | BTU/ Hr | kW | BTU/ Hr | Watts | CFM | Type | Type | Rows | Kg | Kg | mm (inch) | mm (inch) | mm (inch) | |
| ICEF-00184DH | 220-240V, 50/60Hz, 1Ph | 5.3 | 18,000 | 5.7 | 19,400 | 60.0 | 720 | Electronic Expansion Valve | Blue Coated Aluminum Fins and IGT Copper Tubes | 2 | 5.5 | 8.0 | 12.70 (1/2) | 6.35 (1/4) | DN20 (R3/4) | Remote Controller |
| ICEF-00244DH | | 6.4 | 24,000 | 7.6 | 25,900 | 60.0 | 750 | | | 2 | | | 15.88 (5/8) | | | |
| ICEF-00364DH | | 10.6 | 36,000 | 11.4 | 38,900 | 95.0 | 1,280 | | | 3 | | | | 9.52 (3/8) | | |
| ICEF-00484DH | | 14.1 | 48,000 | 15.2 | 51,800 | 95.0 | 1,280 | | | 3 | | | | | | |

*Notes:*

1. *Cooling Capacity : Indoor side (80.6°F) 27°C DB, (66.2°F) 19°C WB ; Outdoor : (95°F) 35°C DB, (75.2°F) 24°C WB*
2. *Heating Capacity: Indoor side (68°F) 20°C DB ; Outdoor : (44.6°F) 7°C DB, (42.8°F) 6°C WB*
3. *Piping Length : 7.5 meters with 0m level difference.*
4. *Above designs and specification are subject to change without prior notice.*

## WALL MOUNTED SPECIFICATIONS



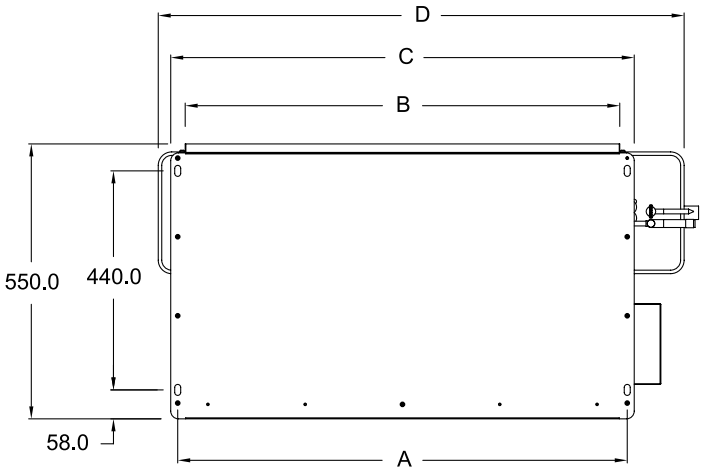

| Model Name | Power Type | Rated Capacity | | | | Motor Input | Airflow | Expansion Device | Evaporator Coil | | Body Weight | Connecting Pipe (Diameter) | | | Std. Controller |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Cooling | | Heating | | | | | | | Net | Gas | Liquid | Drain | |
| | | kW | BTU/ Hr | kW | BTU/ Hr | Watts | CFM | Type | Type | Rows | Kg | mm (inch) | mm (inch) | mm (inch) | |
| IWEF-00124DH | 220-240V, 50/60Hz, 1Ph | 3.5 | 12,000 | 3.8 | 12,900 | 30.0 | 470 | Electronic Expansion Valve | Blue Coated Aluminum Fins and IGT Copper Tubes | 2 | 9.3 | 12.70 (1/2) | 6.35 (1/4) | DN20 (R3/4) | Remote Controller |
| IWEF-00184DH | | 5.3 | 18,000 | 5.7 | 19,400 | 30.0 | 650 | | | | 11.0 | | | | |
| IWEF-00244DH | | 7.0 | 24,000 | 7.6 | 25,900 | 57.0 | 800 | | | 3 | 13.8 | 15.88 (5/8) | | | |
| IWEF-00304DH | | 8.8 | 30,000 | 9.5 | 32,400 | 57.0 | 800 | | | | 14.2 | | | | |

*Notes:*

1. *Cooling Capacity : Indoor side (80.6°F) 27°C DB, (66.2°F) 19°C WB ; Outdoor : (95°F) 35°C DB, (75.2°F) 24°C WB*
2. *Heating Capacity: Indoor side (68°F) 20°C DB ; Outdoor : (44.6°F) 7°C DB, (42.8°F) 6°C WB*
3. *Piping Length : 7.5 meters with 0m level difference.*
4. *Above designs and specification are subject to change without prior notice.*

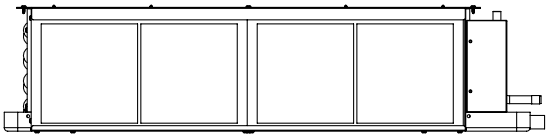
## UNIT DIMENSIONS (INDOOR UNIT)

### CEILING CONCEALED

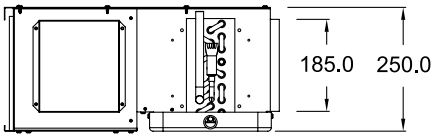



TOP VIEW

| MODEL | DIMENSIONS | | | |
|---|---|---|---|---|
| | A | B | C | D |
| IVLF-0018 | 900 | 870 | 930 | 1,055 |
| IVLF-0024 | 900 | 870 | 930 | 1,055 |
| IVLF-0030 | 1,350 | 1,320 | 1,377 | 1,505 |
| IVLF-0036 | 1,350 | 1,320 | 1,377 | 1,505 |
| ALL DIMENSIONS ARE IN MM | | | | |



FRONT VIEW

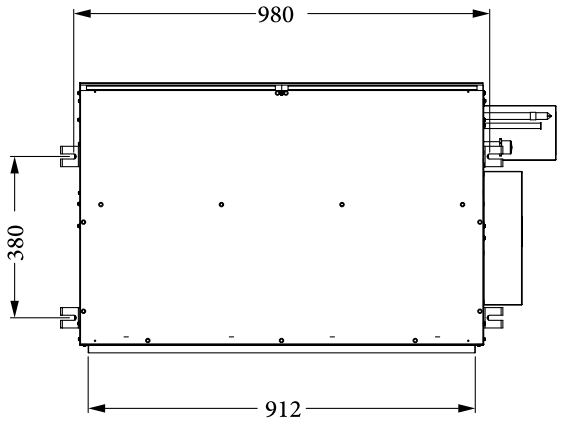


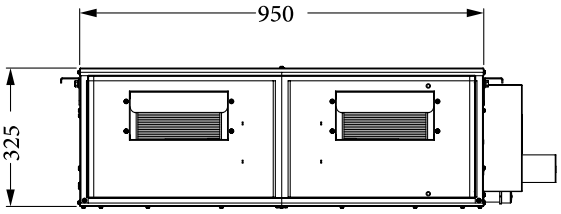

SIDE VIEW

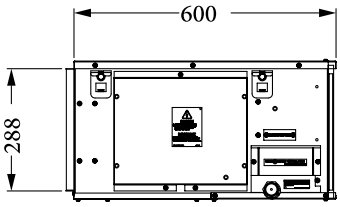
## UNIT DIMENSIONS (INDOOR UNIT)

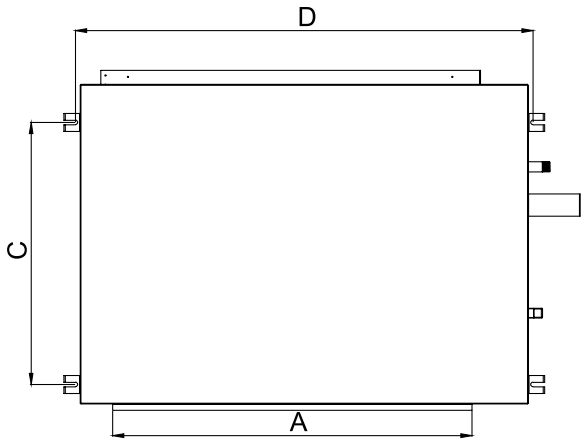
### CEILING CONCEALED

### IVEF-00164DH

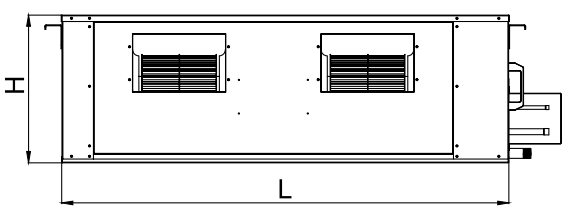


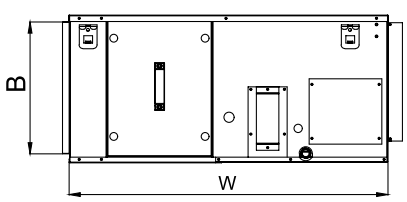



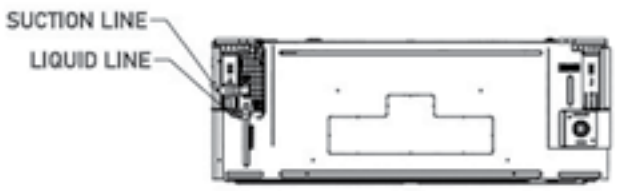

| MODEL | DIMENSIONS | | | | | |
|---|---|---|---|---|---|---|
| | L | W | H | DUCT DIMENSIONS AxB | C | D |
| IVHF-0016DH | 1,100 | 790 | 351 | 864x309 | 614 | 1,128 |
| IVEF/IVHF-0018DH | 1,100 | 790 | 351 | 864x309 | 614 | 1,128 |
| IVEF/IVHF-0024DH | 1,100 | 790 | 351 | 864x309 | 614 | 1,128 |
| IVEF/IVHF-0030DH | 1,100 | 790 | 351 | 864x309 | 614 | 1,128 |
| IVEF/IVHF-0036DH | 1,200 | 855 | 396 | 964x354 | 703 | 1,228 |
| IVEF/IVHF-0042DH | 1,200 | 855 | 396 | 964x354 | 703 | 1,228 |
| IVEF/IVHF-0048DH | 1,200 | 855 | 396 | 964x354 | 703 | 1,228 |
| IVEF/IVHF-0060DH | 1,325 | 890 | 435 | 1,164x393 | 704 | 1,428 |
| ALL DIMENSIONS ARE IN MM | | | | | | |



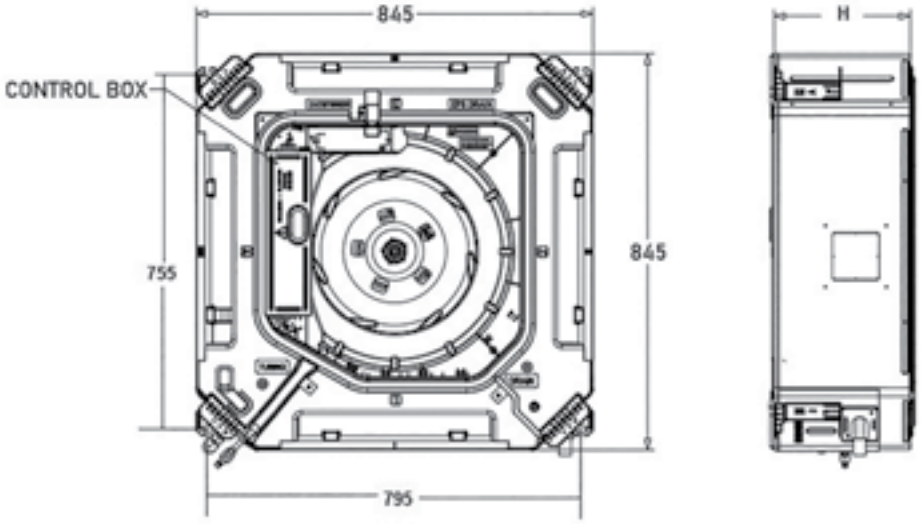



# UNIT DIMENSIONS (INDOOR UNIT)

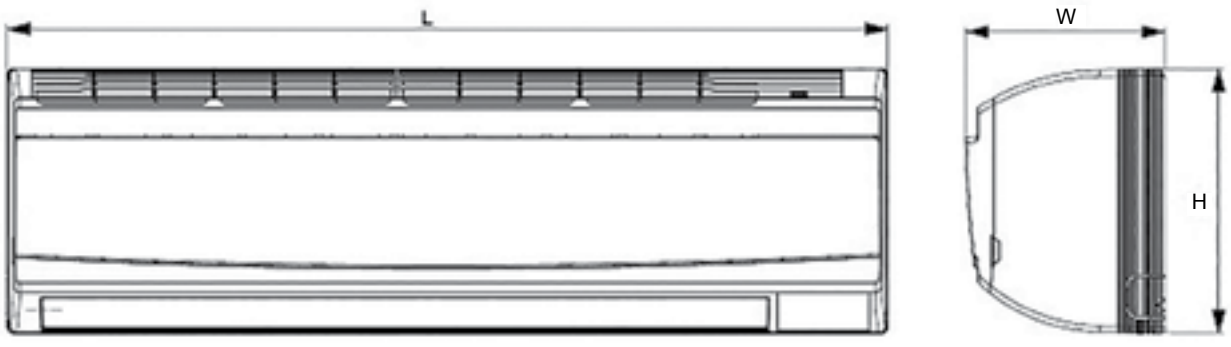
## CEILING CASSETTE




| MODEL | H |
|---|---|
| ICEF-00184DH | 245 |
| ICEF-00224DH | 245 |
| ICEF-00364DH | 290 |
| ICEF-00484DH | 290 |
| ALL DIMENSIONS ARE IN MM | |

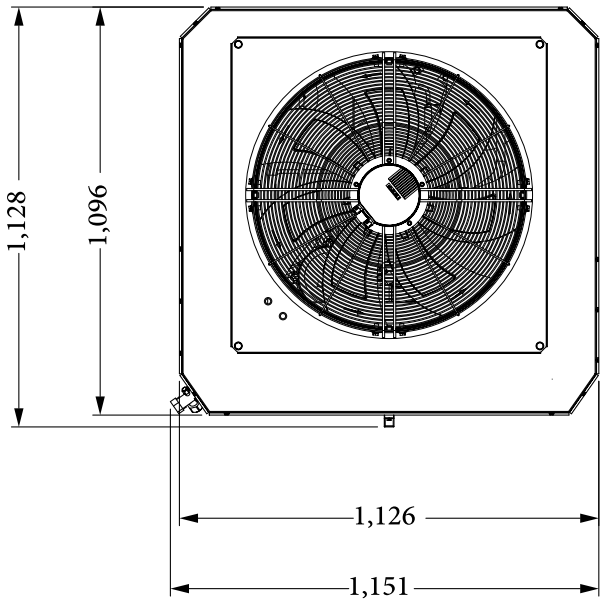



## WALL MOUNTED

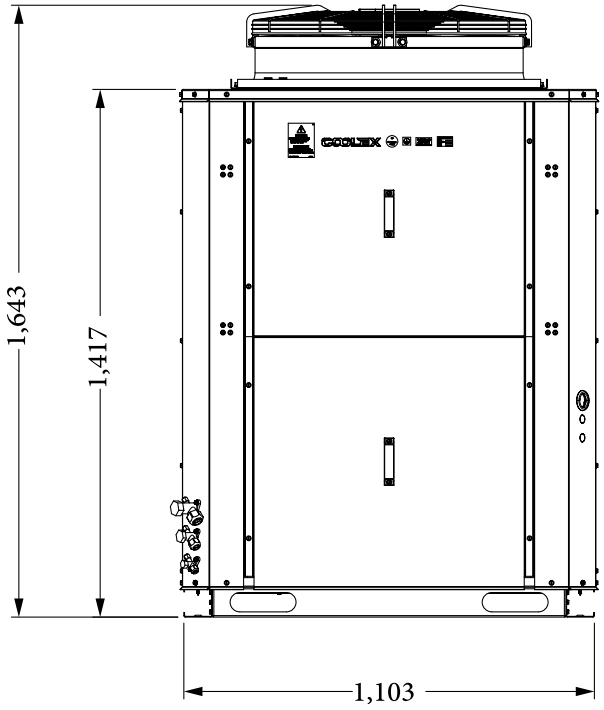


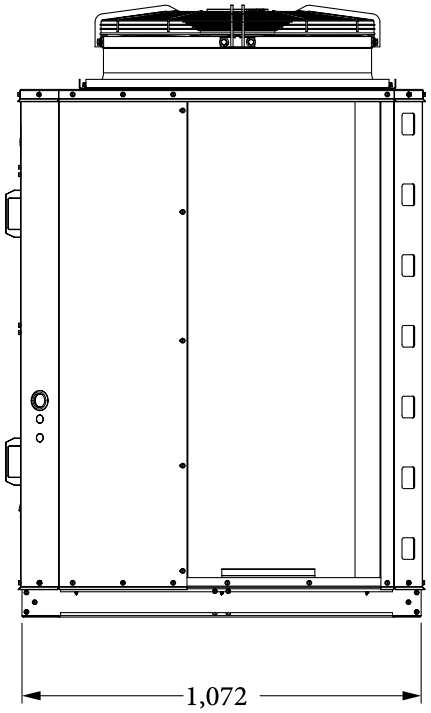

| MODEL | L | H | W |
|---|---|---|---|
| IWEF-00124DH | 800 | 295 | 230 |
| IWEF-00184DH | 1000 | 295 | 230 |
| IWEF-00244DH | 1100 | 330 | 250 |
| IWEF-00304DH | 1100 | 330 | 250 |
| ALL DIMENSIONS ARE IN MM | | | |

## UNIT DIMENSIONS (OUTDOOR UNIT)

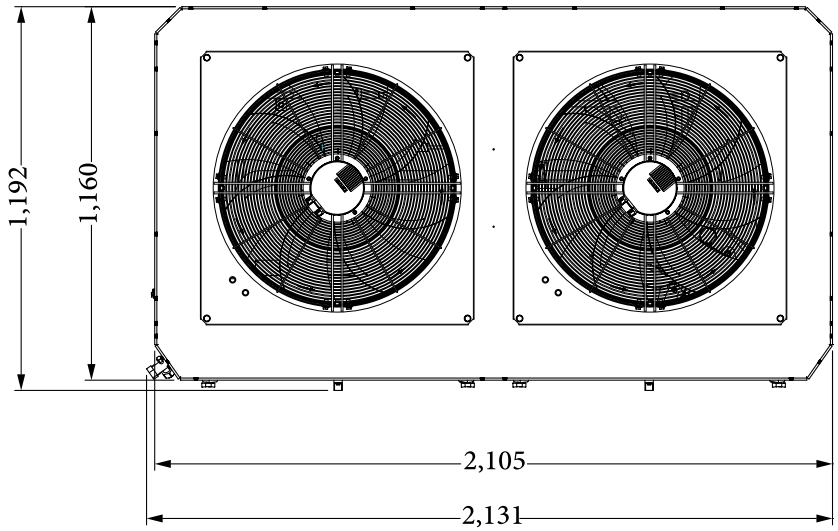



IVCF-00866CDH/
IVCF-00956CDH/
IVCF-01146CDH

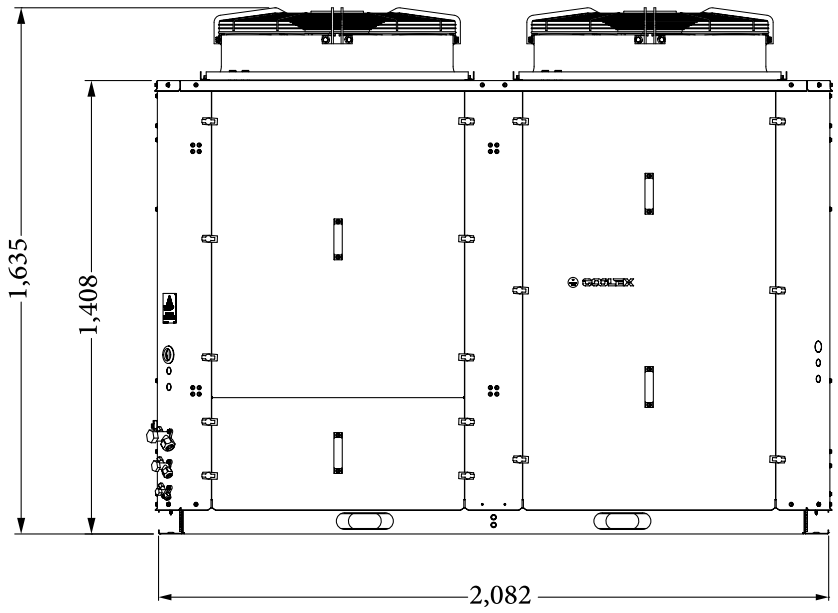


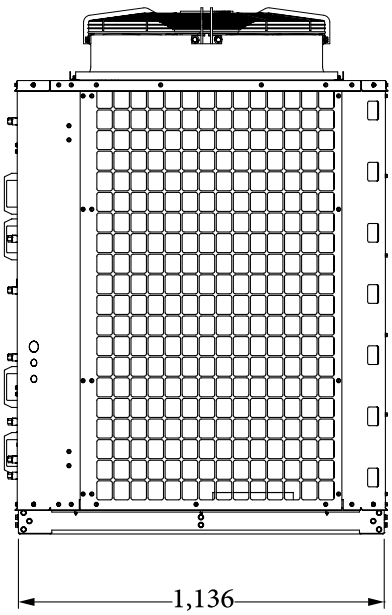



## UNIT DIMENSIONS (OUTDOOR UNIT)

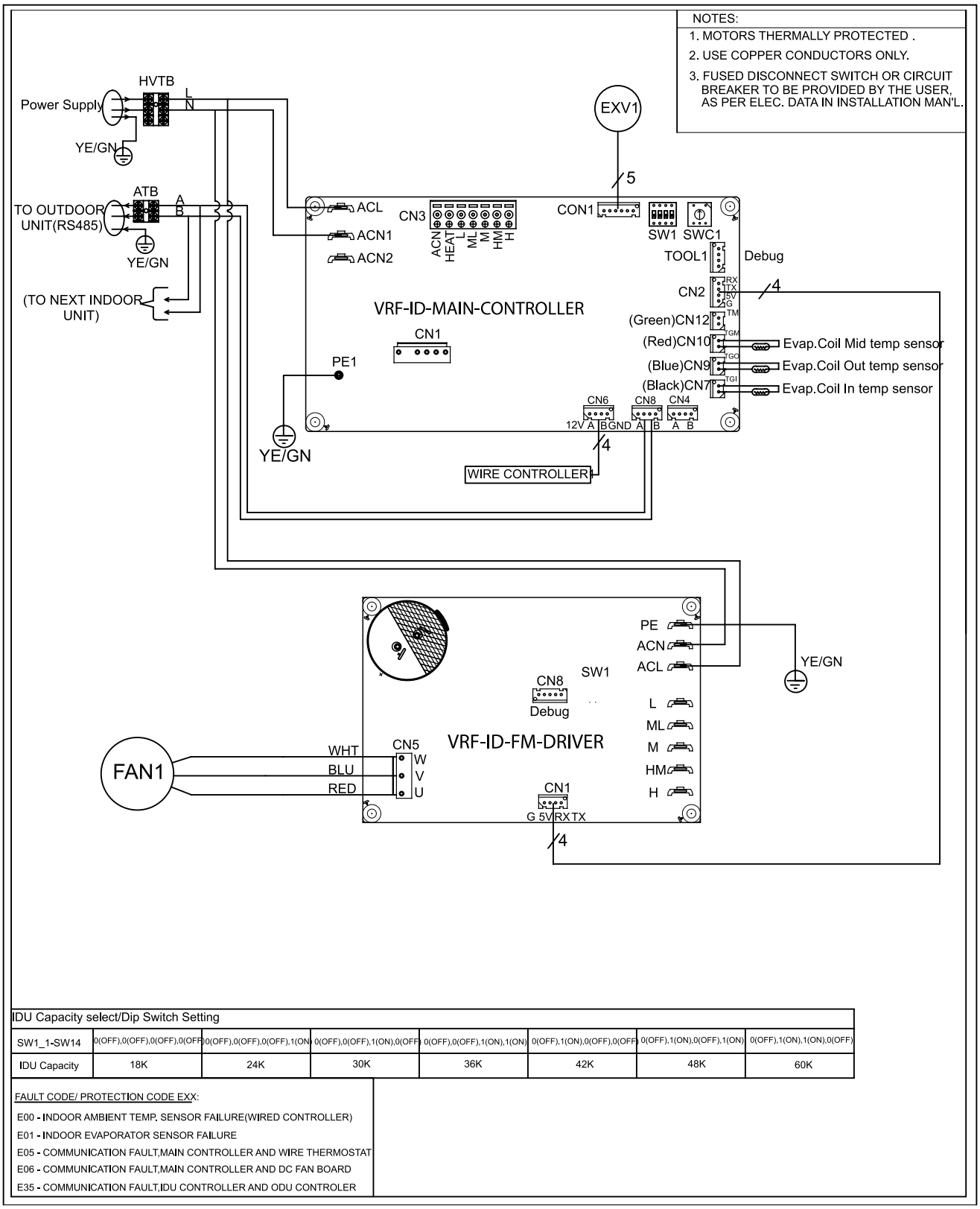



IVCF-01366CDH/
IVCF-01546CDH



## WIRING DIAGRAM (INDOOR UNIT)



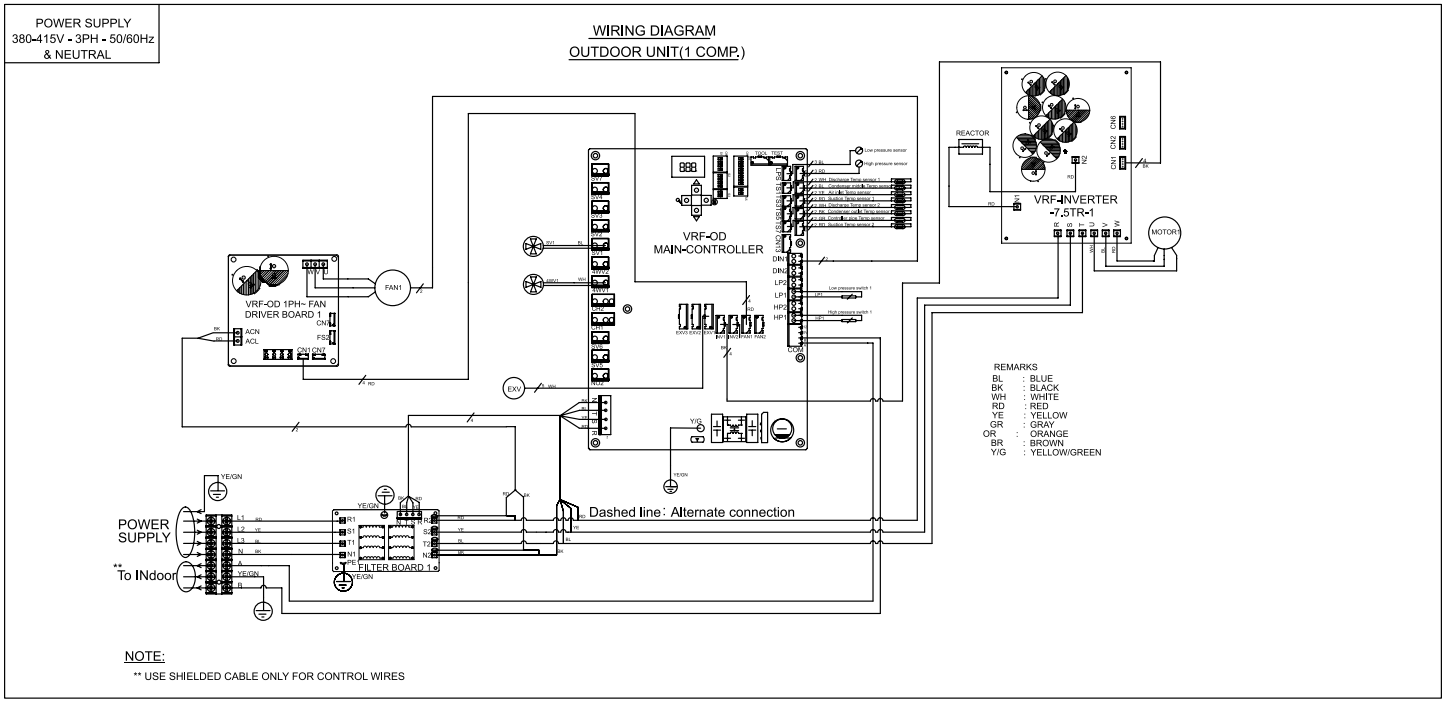

| IDU Capacity select/Dip Switch Setting | | | | | | | |
|---|---|---|---|---|---|---|---|
| SW1_1-SW14 | 0(OFF),0(OFF),0(OFF),0(OFF | 0(OFF),0(OFF),0(OFF),1(ON | 0(OFF),0(OFF),1(ON),0(OFF | 0(OFF),0(OFF),1(ON),1(ON) | 0(OFF),1(ON),0(OFF),0(OFF | 0(OFF),1(ON),0(OFF),1(ON) | 0(OFF),1(ON),1(ON),0(OFF) |
| IDU Capacity | 18K | 24K | 30K | 36K | 42K | 48K | 60K |

FAULT CODE/ PROTECTION CODE EX:

E00 - INDOOR AMBIENT TEMP. SENSOR FAILURE(WIRED CONTROLLER)
E01 - INDOOR EVAPORATOR SENSOR FAILURE
E05 - COMMUNICATION FAULT,MAIN CONTROLLER AND WIRE THERMOSTAT
E06 - COMMUNICATION FAULT,MAIN CONTROLLER AND DC FAN BOARD
E35 - COMMUNICATION FAULT,IDU CONTROLLER AND ODU CONTROLER

# WIRING DIAGRAM (OUTDOOR UNIT)

**IVCF-00866CDH/**
**IVCF-00956CDH/**
**IVCF-01146CDH**




| DISPLAY | FAULT DETAILS | DISPLAY | FAULT DETAILS |
|---|---|---|---|
| E02 | OUTDOOR CONDENSER SENSOR FAILURE | E37 | OUTDOOR SUCTION SENSOR FAILURE |
| E03 | OUTDOOR AMBIENT TEMP. SENSOR FAILURE | E38 | HIGH PRESSURE SENSOR FAILURE |
| E04 | COMPRESSOR EXHAUST SENSOR FAILURE | E39 | LOW PRESSURE SENSOR FAILURE |
| E06 | COMMUNICATION FAULT, MAIN CONTROLLER AND DC FAN BOARD | E40 | INDOOR MACHINE NUMBER NOT MATCH |
| E07 | PHASE FAULT | E41 | INDOOR CAPACITY NOT MATCH |
| E08 | COMMUNICATION FAULT, MAIN CONTROLLER AND DRIVER BOARD | E42 | REFRIGERANT COOLING PIPE SENSOR FAILURE |
| E09 | DC OVER VOLTAGE | E43 | OUTDOOR CONDENSER OULET SENSOR FAILURE |
| E10 | DC UNDER BUS VOLTAGE | P00 | COMPRESOR HIGH PRESSURE PROTECTION |
| E11 | COMPRESSOR SOFT CURRENT | P01 | COMPRESOR LOW PRESSURE PROTECTION |
| E12 | COMPRESSOR HARD CURRENT | P02 | INDOOR FAN MOTOR PROTECTION |
| E13 | COMPRESSOR PHASE LOSS | P03 | COMPRESSOR OVERLOAD PROTECTION |
| E14 | NO COMPRESSOR | P04 | DEHUMIDIFICATION ERROR / INDOOR ANTI FREEZE ERROR |
| E15 | AD NOISE/OFFSET ERROR | P05 | HEATING MODE CONDENSER OVERHEAT PROTECTION |
| E16 | SOFTWARE WATCHDOG RESET | P06 | OUTDOOR AMBIENT TEMP. OVER PROTECTION |
| E17 | COMPRESSOR STALL | P07 | MACHINE POWER SUPPLY OVER VOLTAGE PROTECTION |
| E18 | UNDEFINED INTERRUPT FAILURE | P08 | COMPRESSOR DISCHARGE TEMPERATURE PROTECTION |
| E19 | HARDWARE WATCHDOG | P09 | COMPRESSOR OVERCURRENT PROTECTION |
| E20 | DC VOLTAGE MUTATION | P10 | OUTDOOR COIL TEMPERATURE OVER PROTECTION |
| E21 | SPEED ESTIMATION ERROR OR CONTROL EXCEPTION | P11 | IPM PROTECTION |
| E22 | D-AXIS OR Q-AXIX CURRENT CONTROL ERROR | P12 | DC BUS OVER VOLTAGE (DETECTED BY MAIN BOARD) |
| E23 | INVERTER PWM OR PFC PWM, INITIALIZATION ERROR | P13 | DC BUS UNDER VOLTAGE (DETECTED BY MAIN BOARD) |
| E24 | AC PEAK OVER CURRENT | P14 | STYSTEM PRESSURE TOO HIGH |
| E25 | DC BUS OVER VOLTGAE | P15 | STYSTEM PRESSURE TOO LOW |
| E26 | AC OVER VOLTAGE | P16 | REFRIGERANT COOLING PIPE TEMPERATURE ABNORMAL |
| E27 | AC UNDER VOLTAGE | P17 | MACHINE POWER SUPPLY VOLTAGE ABNORMAL |
| E28 | AC ZERO CROSSING DETECTION FAULT | P18 | HIGH PRESSURE UNDER PROTECTION |
| E29 | OVER POWER FAILURE | P19 | COMPRESSION RATIO ABNORMA |
| E34 | Outdoor DC fan error | P20 | OUTFAN IPM TEMPERRATUR HIGH PROTECTION |
| E35 | COMMUNICATION FAULT, IDU CONTROLLER AND ODU CONTROLLER | P21 | HIGH PRESSURE OVER PROTECTION |

| DIP SWITCH | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NO. | Switch | Form | Function | Position | | | | | | | | Setting content |
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
| 1 | S1 | 4P | Capacity Setting | 1 | 0 | 0 | 0 | | | | | 86K |
| | | | | 0 | 1 | 0 | 0 | | | | | 95K |
| | | | | 0 | 0 | 1 | 0 | | | | | 114K |
| | | | | other | | | | | | | | |
| 2 | S2 | 4P | Number of inside units | 0 | 0 | 0 | 0 | | | | | 1 |
| | | | | 0 | 0 | 0 | 1 | | | | | 2 |
| | | | | 0 | 0 | 1 | 0 | | | | | 3 |
| | | | | 0 | 0 | 1 | 1 | | | | | 4 |
| | | | | 0 | 1 | 0 | 0 | | | | | 5 |
| | | | | 0 | 1 | 0 | 1 | | | | | 6 |
| | | | | 0 | 1 | 1 | 0 | | | | | 7 |
| | | | | 0 | 1 | 1 | 1 | | | | | 8 |
| | | | | 1 | 0 | 0 | 0 | | | | | 9 |
| | | | | 1 | 0 | 0 | 1 | | | | | 10 |
| | | | | 1 | 0 | 1 | 0 | | | | | 11 |
| | | | | 1 | 0 | 1 | 1 | | | | | 12 |
| | | | | 1 | 1 | 0 | 0 | | | | | 13 |
| | | | | 1 | 1 | 0 | 1 | | | | | 14 |
| | | | | 1 | 1 | 1 | 0 | | | | | 15 |
| | | | | 1 | 1 | 1 | 1 | | | | | 16 |
| 3 | S4 | 8P | Functional selection | ... | | | | | | | | ... |
| | | | | | | | 0 | | | | | 0:Phase sequence ON<br>1:Phase sequence OFF |

**⚠ CAUTION**

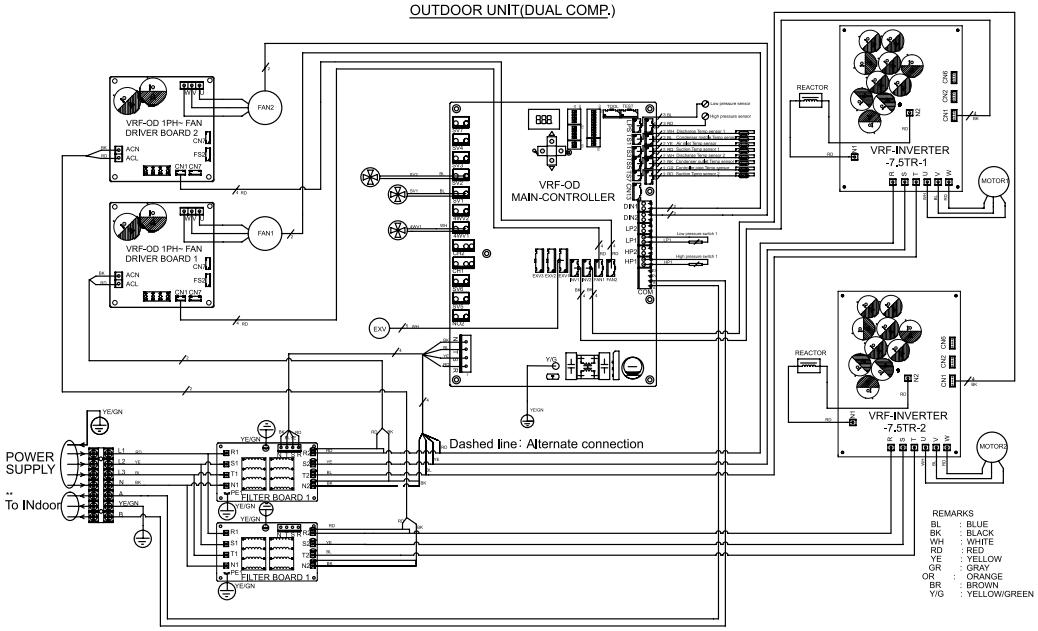
DUE TO HIGH VOLTAGE ,DO NOT TOUCH THE TERMINALS IN THE CONTROL BOARD DURING OPERATION AND 5 MINUTES AFTER SWITCHING OFF. NEXT,CONFIRM THE VOLTAGE RECTIFICATION CIRCUIT BETWEEN DIODE BRIDGE (+)AND(-)HAS DROPPED TO BELOW 42V,BEFORE ACCESSING TO THE TERMINALS IN THE CONTROL BOARD.

# WIRING DIAGRAM (OUTDOOR UNIT)

## IVCF-01366CDH/
## IVCF-01546CDH

POWER SUPPLY
380~415V - 3PH - 50/60Hz
& NEUTRAL

WIRING DIAGRAM
OUTDOOR UNIT(DUAL COMP.)




NOTE:

** USE SHIELDED CABLE ONLY FOR CONTROL WIRES

| DISPLAY | FAULT DETAILS | DISPLAY | FAULT DETAILS |
|---|---|---|---|
| E02 | OUTDOOR CONDENSER SENSOR FAILURE | E37 | OUTDOOR SUCTION SENSOR FAILURE |
| E03 | OUTDOOR AMBIENT TEMP. SENSOR FAILURE | E38 | HIGH PRESSURE SENSOR FAILURE |
| E04 | COMPRESSOR EXHAUST SENSOR FAILURE | E39 | LOW PRESSURE SENSOR FAILURE |
| E06 | COMMUNICATION FAULT, MAIN CONTROLLER AND DC FAN BOARD | E40 | INDOOR MACHINE NUMBER NOT MATCH |
| E07 | PHASE FAULT | E41 | INDOOR CAPACITY NOT MATCH |
| E08 | COMMUNICATION FAULT, MAIN CONTROLLER AND DRIVER BOARD | E42 | REFRIGERANT COOLING PIPE SENSOR FAILURE |
| E09 | DC OVER VOLTAGE | E43 | OUTDOOR CONDENSER OULET SENSOR FAILURE |
| E10 | DC UNDER BUS VOLTAGE | P00 | COMPRESOR HIGH PRESSURE PROTECTION |
| E11 | COMPRESSOR SOFT CURRENT | P01 | COMPRESOR LOW PRESSURE PROTECTION |
| E12 | COMPRESSOR HARD CURRENT | P02 | INDOOR FAN MOTOR PROTECTION |
| E13 | COMPRESSOR PHASE LOSS | P03 | COMPRESSOR OVERLOAD PROTECTION |
| E14 | NO COMPRESSOR | P04 | DEHUMIDIFICATION ERROR / INDOOR ANTI FREEZE ERROR |
| E15 | AD NOISE/OFFSET ERROR | P05 | HEATING MODE CONDENSER OVERHEAT PROTECTION |
| E16 | SOFTWARE WATCHDOG RESET | P06 | OUTDOOR AMBIENT TEMP. OVER PROTECTION |
| E17 | COMPRESSOR STALL | P07 | MACHINE POWER SUPPLY OVER VOLTAGE PROTECTION |
| E18 | UNDEFINED INTERRUPT FAILURE | P08 | COMPRESSOR DISCHARGE TEMPERATURE PROTECTION |
| E19 | HARDWARE WATCHDOG | P09 | COMPRESSOR OVERCURRENT PROTECTION |
| E20 | DC VOLTAGE MUTATION | P10 | OUTDOOR COIL TEMPERATURE OVER PROTECTION |
| E21 | SPEED ESTIMATION ERROR OR CONTROL EXCEPTION | P11 | IPM PROTECTION |
| E22 | D-AXIS OR Q-AXIX CURRENT CONTROL ERROR | P12 | DC BUS OVER VOLTAGE (DETECTED BY MAIN BOARD) |
| E23 | INVERTER PWM OR PFC PWM, INITIALIZATION ERROR | P13 | DC BUS UNDER VOLTAGE (DETECTED BY MAIN BOARD) |
| E24 | AC PEAK OVER CURRENT | P14 | STYSTEM PRESSURE TOO HIGH |
| E25 | DC BUS OVER VOLTGAE | P15 | STYSTEM PRESSURE TOO LOW |
| E26 | AC OVER VOLTAGE | P16 | REFRIGERANT COOLING PIPE TEMPERATURE ABNORMAL |
| E27 | AC UNDER VOLTAGE | P17 | MACHINE POWER SUPPLY VOLTAGE ABNORMAL |
| E28 | AC ZERO CROSSING DETECTION FAULT | P18 | HIGH PRESSURE UNDER PROTECTION |
| E29 | OVER POWER FAILURE | P19 | COMPRESSION RATIO ABNORMA |
| E34 | OUTDOOR DC FAN ERROR | P20 | OUTFAN IPM TEMPERRATUR HIGH PROTECTION |
| E35 | COMMUNICATION FAULT, IDU CONTROLLER AND ODU CONTROLLER | P21 | HIGH PRESSURE OVER PROTECTION |

| DIP SWITCH | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NO. | Switch | Form | Function | Position | | | | | | | Setting content |
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | S1 | 4P | Capacity Setting | | | | | | | | |
| | | | | 1 | 0 | 0 | 1 | | | | 136K |
| | | | | 0 | 1 | 0 | 1 | | | | 154K |
| | | | | other | | | | | | | |
| 2 | S2 | 4P | Number of inside units | 0 | 0 | 0 | 0 | | | | 1 |
| | | | | 0 | 0 | 0 | 1 | | | | 2 |
| | | | | 0 | 0 | 1 | 0 | | | | 3 |
| | | | | 0 | 0 | 1 | 1 | | | | 4 |
| | | | | 0 | 1 | 0 | 0 | | | | 5 |
| | | | | 0 | 1 | 0 | 1 | | | | 6 |
| | | | | 0 | 1 | 1 | 0 | | | | 7 |
| | | | | 0 | 1 | 1 | 1 | | | | 8 |
| | | | | 1 | 0 | 0 | 0 | | | | 9 |
| | | | | 1 | 0 | 0 | 1 | | | | 10 |
| | | | | 1 | 0 | 1 | 0 | | | | 11 |
| | | | | 1 | 0 | 1 | 1 | | | | 12 |
| | | | | 1 | 1 | 0 | 0 | | | | 13 |
| | | | | 1 | 1 | 0 | 1 | | | | 14 |
| | | | | 1 | 1 | 1 | 0 | | | | 15 |
| | | | | 1 | 1 | 1 | 1 | | | | 16 |
| 3 | S4 | 8P | Functional selection | ... | | | | | | | ... |
| | | | | | | 0 | | | | | 0:Phase sequence ON<br>1:Phase sequence OFF |

**⚠ CAUTION**

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شركة صناعات التبريد والتخزين والخدمات النفطية

Refrigeration Industries & Storage and Oil Services Co. KSC

Ref no.: CVRFF 25-5-02

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