KB Bus Air-Conditioner

KB AutoTech has a proven track record of successfully commercializing innovative technology and prepared to support customer invaluable projects

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KB AutoTech has been a market leader in thermal management for almost 40 years. We design, engineer, test, and manufacture Passenger Thermal management and Power Train Cooling products for a wide range of applications. With various design programs, Bench mark process, Climatic Wind Tunnel and test equipments, we are serving Automotive & Commercial vehicle, Off-highway machine and specialty vehicle market.

Design, virtual simulation, prototype construction and test verification

- Extensive testing capabilities from the microstructure of materials to finished products in customer applications
  - Chemical / Metallurgical / Thermal
- Enhanced predictive modeling capability and capacity
  - Computer aided design
  - Computational fluid dynamics
- Intellectual property alignment with product roadmaps
- Customized heat transfer solutions that deliver differentiated technology
  - Application of unique heat transfer surfaces to solve unique customer needs
  - New product line development for new and existing heat transfer markets
  - Research and development of differentiating product and process technology
KB AutoTech Products

### HVAC
- HVAC (Air-Con Module)
- Heater core
- Evaporator
- APTC Heater
- Bus A/Con
- Train A/Con
- Bus A/C Comp
- Military A/Con
- SCHM
- Air-Con Control Head

### Cooling
- Cooling Module
- Engine Radiator
- Charge-Air Cooler (Intercooler)
- Condenser
- T/M or Engine Oil Cooler
- Combo Cooler (Condenser & OC)
**Bus Air Conditioner Products**

<table>
<thead>
<tr>
<th>Model Name (KBA-)</th>
<th>CS13RI</th>
<th>OP14RO</th>
<th>OP17/18RO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling Capacity</td>
<td>13,000 Kcal/hr</td>
<td>14,000 Kcal/hr</td>
<td>17,000~18,000 Kcal/hr</td>
</tr>
<tr>
<td></td>
<td>52,000 Btu</td>
<td>64,000 Btu</td>
<td>68,000~72,000 Btu</td>
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<tr>
<td>Passenger seat</td>
<td>25</td>
<td>25~30</td>
<td>30~35</td>
</tr>
<tr>
<td>Bus Length</td>
<td>6~7 m</td>
<td>7~8 m</td>
<td>8~9 m</td>
</tr>
<tr>
<td>Power consumption</td>
<td>15 Kw</td>
<td>18.6 Kw</td>
<td>25.5 Kw</td>
</tr>
<tr>
<td>Condenser Motor</td>
<td>2 FAN</td>
<td>3 FAN</td>
<td>4 FAN</td>
</tr>
<tr>
<td>(Current voltage DC24V)</td>
<td>10A</td>
<td>10 A</td>
<td>20 A</td>
</tr>
<tr>
<td>Evaporator Motor</td>
<td>6 BL</td>
<td>8 BL</td>
<td>8 BL</td>
</tr>
<tr>
<td>(Current voltage DC24V)</td>
<td>21 A</td>
<td>32 A</td>
<td>32 A</td>
</tr>
<tr>
<td>Total Current</td>
<td>31 A</td>
<td>42 A</td>
<td>52 A</td>
</tr>
<tr>
<td>Compressor</td>
<td>10PA17C</td>
<td>SP20</td>
<td>SP20/TM31 (DKS-32)</td>
</tr>
<tr>
<td></td>
<td>170cc × 2</td>
<td>210cc</td>
<td>210/320cc</td>
</tr>
<tr>
<td>Weight (net)</td>
<td>60 kg</td>
<td>100kg</td>
<td>130kg</td>
</tr>
<tr>
<td>Type</td>
<td>Roof-in</td>
<td>Roof-on</td>
<td></td>
</tr>
<tr>
<td>Application</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>CR22/24RO</td>
<td>CR22/24/26/28RS</td>
<td>SP24/28/32RO(H)</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------</td>
<td>-----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Calorific Value</td>
<td>22,000~24,000 Kcal/hr</td>
<td>22,000~28,000 Kcal/hr</td>
<td>24,000~32,000 Kcal/hr</td>
</tr>
<tr>
<td></td>
<td>88,000~92,000 Btu</td>
<td>88,000~112,000 Btu</td>
<td>92,000~128,000 Btu</td>
</tr>
<tr>
<td>Fan Speed</td>
<td>35~40</td>
<td>40~50</td>
<td>35~55</td>
</tr>
<tr>
<td></td>
<td>9~10 m</td>
<td>10~11 m</td>
<td>9~12.5 m</td>
</tr>
<tr>
<td></td>
<td>27.9 Kw</td>
<td>30 Kw</td>
<td>27.9 Kw</td>
</tr>
<tr>
<td>kW</td>
<td>4/5 FAN</td>
<td>4/6 FAN</td>
<td>6 FAN</td>
</tr>
<tr>
<td></td>
<td>20/25 A</td>
<td>20/30 A</td>
<td>30 A</td>
</tr>
<tr>
<td></td>
<td>8 BL</td>
<td>12 BL</td>
<td>8/12/16 BL</td>
</tr>
<tr>
<td></td>
<td>40 A</td>
<td>60 A</td>
<td>64 A</td>
</tr>
<tr>
<td></td>
<td>60/65 A</td>
<td>85 A</td>
<td>94 A</td>
</tr>
<tr>
<td></td>
<td>KBC51</td>
<td>KBC58</td>
<td>KBC51</td>
</tr>
<tr>
<td></td>
<td>510cc</td>
<td>575cc</td>
<td>510cc</td>
</tr>
<tr>
<td></td>
<td>195 kg</td>
<td>550 kg</td>
<td>195 kg</td>
</tr>
<tr>
<td></td>
<td>Roof-on with a Engine</td>
<td>Roof-on</td>
<td>Large Bus</td>
</tr>
<tr>
<td>MODEL</td>
<td>CS13RI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooling capacity</td>
<td>13,000 kcal/h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Airflow (Free blowing)</td>
<td>2,500 m³/h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumption current</td>
<td>DC24V × 31A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compressor</td>
<td>SP-20 (210cc/rev)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit size</td>
<td>Roof-in</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Bus Air Conditioners

General Information:
- Slant Type Evaporator Coil: copper tube and aluminum plate fin
- PF Condenser coil
- Refrigerant System: R-134a
- Evaporator blower: Dual type Sirocco fan × 3EA / Condenser fan × 2EA
- Control: 4-stage blower speed control

Performance:
Multiple configurations exist. Contact KB AutoTech for specific application requirements.

Manufacturing Location:
- Asan, Korea

Application Data:
Specification
- Cooling Capacity (Rate): 13,000 Kcal/h (52,000 Btu/h)
- Compressor: SP-20(210cc/rev), 10PA17(170cc/rev) × 2 Comp.
- Air Flow: 2,500 m³/h (1471 CFM) max
- 4-step blower speed

Features, Added Benefits:
- High performance
- Compact design
- Low weight
- Interior mounted evaporator
- Under-body mounted condenser

Midi/Mini Bus - Fully integrated A/C
<table>
<thead>
<tr>
<th>MODEL</th>
<th>OP14RO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling capacity</td>
<td>14,000 kcal/h</td>
</tr>
<tr>
<td>Airflow (Free blowing)</td>
<td>2,500m³/h</td>
</tr>
<tr>
<td>Consumption current</td>
<td>DC24V × 42A</td>
</tr>
<tr>
<td>Compressor</td>
<td>SP-20 (210cc/rev)</td>
</tr>
<tr>
<td>Unit size</td>
<td>2,440L × 1,650W × 170H</td>
</tr>
</tbody>
</table>
Bus Air Conditioners

General Information:
- Condenser Coil: 7 & Evaporator Coil: 9: copper tube and aluminum plate fin
- Refrigerant System: R-134a
- Evaporator blower: Dual type Sirocco fan / Condenser fan: Axial propeller & ring fan
- Refrigerant hoses and copper pipes
- Control: 4-stage blower speed control

Manufacturing Location:
- Asan, Korea

Features, Added Benefits:
- High performance
- Compact design
- Low weight
- Interior mounted evaporator
- Roof mounted condenser

PERFORMANCE:
Multiple configurations exist. Contact KB AutoTech for specific application requirements.

Application Data:
Specification
- Cooling Capacity (Rate):
  14,000 Kcal/h (56,000 Btu/h)
- Compressor:
  SP-20(210cc/rev)
- Air Flow:
  2,500 m³/h (1471 CFM)
- 4-step blower speed
<table>
<thead>
<tr>
<th>MODEL</th>
<th>KBA-OP17/18RO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling capacity</td>
<td>17,000~18,000 kcal/h</td>
</tr>
<tr>
<td>Airflow (Free blowing)</td>
<td>2,500m³/h</td>
</tr>
<tr>
<td>Consumption current</td>
<td>DC24V × 52A</td>
</tr>
<tr>
<td>Compressor</td>
<td>SP20/DKS-32 (210~320cc/rev)</td>
</tr>
<tr>
<td>Unit size</td>
<td>2,990L × 1,650W × 170H</td>
</tr>
</tbody>
</table>
Bus Air Conditioners

Performance:
Multiple configurations exist. Contact KB AutoTech for specific application requirements.

General Information:
- Slant Type Condenser Coil: 7 & Evaporator Coil: 9: Copper tube and aluminum plate fin
- Refrigerant System: R-134a
- Evaporator blower: Dual type Sirocco fan / Condenser fan: Axial propeller & ring fan
- Refrigerant hoses and copper pipes
- Automatic temperature control: 3-stage blower speed control

Manufacturing Location:
- Asan, Korea

Features, Added Benefits:
- High performance
- Compact design
- Can(cable area network)control
- Low profile model
- Easy maintenance
- Long lifetime
- Optimal size for every application

Application Data:
- Specification
  - Cooling Capacity (Maximum):
    1) KBA-OP17RO: 17,000 Kcal/h (68,000 Btu/h)
    2) KBA-OP18RO: 18,000 Kcal/h (72,000 Btu/h)
  - Air Flow:
    1) KBA-OP17/18RO: 2,500 m³/h (1883 CFM) (3rd step)
<table>
<thead>
<tr>
<th>MODEL</th>
<th>CR22/24RO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling capacity</td>
<td>22,000~24,000 kcal/h</td>
</tr>
<tr>
<td>Airflow (Free blowing)</td>
<td>3,200 m³/h</td>
</tr>
<tr>
<td>Consumption current</td>
<td>DC24V × 65A</td>
</tr>
<tr>
<td>Compressor</td>
<td>KBC58 (575cc/rev)</td>
</tr>
<tr>
<td>Unit size</td>
<td>34,000L × 1,300W × 195H</td>
</tr>
</tbody>
</table>
Bus Air Conditioners

Two-piece, Roof Mounted City Bus A/C

PERFORMANCE:
Multiple configurations exist. Contact KB AutoTech for specific application requirements.

General Information:
- Condenser Coil- Ø 9 & Evaporator Coil- Ø 9: copper tube and aluminum plate fin
- Refrigerant System: R-134a
- Evaporator blower: Single type Sirocco fan / Condenser fan: Ring fan
- Refrigerant hoses and copper pipes
- Automatic temperature control: 2(3)-stage blower speed control

Manufacturing Location:
- Asan, Korea

Features, Added Benefits:
- High performance
- Compact design
- Easy maintenance
- Long lifetime
- Optimal size for every application

Application Data:
Specification
- Cooling Capacity (Rate):
  22,000 Kcal/h (72,000 Btu/h)
  ~ 24,000 Kcal/h (96,000 Btu/h)
- Air Flow:
  3,200 m³/h (1883 CFM) (3rd step)
<table>
<thead>
<tr>
<th>MODEL</th>
<th>CR22/24/26/28RS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling capacity</td>
<td>22,000~28,000 kcal/h</td>
</tr>
<tr>
<td>Airflow (Free blowing)</td>
<td>3,200~4,800 m³/h</td>
</tr>
<tr>
<td>Consumption current</td>
<td>DC24V × 85A</td>
</tr>
<tr>
<td>Compressor</td>
<td>KBC58 (575cc/rev)</td>
</tr>
<tr>
<td>Unit size</td>
<td>43,000L × 1,300W × 225H</td>
</tr>
</tbody>
</table>
**PERFORMANCE:**

Multiple configurations exist. Contact KB AutoTech for specific application requirements.

**General Information:**

- Condenser Coil: 9 & Evaporator Coil: 9: copper tube and aluminum plate fin
- Refrigerant System: R-134a
- Evaporator blower: Single type Sirocco fan / Condenser fan: Ring fan
- Power pack: Compressor driven by Hyundai D4BB engine.
- Control: 3-stage blower speed & engine rpm control

**Manufacturing Location:**

- Asan, Korea

**Features, Added Benefits:**

- High performance
- High power engine
- Easy maintenance

**Application Data:**

**Specification**

- **KBA-CR26RS**
- **Cooling Capacity (Rate):**
  - 22,000 Kcal/h (88,000 Btu/h)
  - ~ 28,000 Kcal/h (112,000 Btu/h)
- **Engine:** Hyundai D4BB (2607cc, 40HP)
- **Air Flow:** 4,800 m³/h (2825 CFM) (3rd step)

**Power Unit Dimensions**

- **Size:** 1,222(L) × 660(W) × 700(H)
- **Weight:** About 330Kg

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**Sub-engine Powered A/C**

**Bus Air Conditioners**
**MODEL SP24/28/32RO(H)**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Cooling capacity</td>
<td>24,000~32,000 kcal/h</td>
</tr>
<tr>
<td>Heating capacity (Option)</td>
<td>24,000~32,000 kcal/h</td>
</tr>
<tr>
<td>Airflow (Free blowing)</td>
<td>3,200~6,000 m³/h</td>
</tr>
<tr>
<td>Consumption current</td>
<td>DC24V × 94A</td>
</tr>
<tr>
<td>Compressor</td>
<td>KBC58 (575cc/rev), KBC66 (655cc/rev)</td>
</tr>
<tr>
<td>Unit size</td>
<td>46,000(L) × 1,850(W) × 174(H)</td>
</tr>
</tbody>
</table>
**Bus Air Conditioners**

**PERFORMANCE:**
Multiple configurations exist. Contact KB AutoTech for specific application requirements.

**General Information:**
- Slant Type Condenser Coil- ø 7 & Evaporator Coil- ø 9: copper tube and aluminum plate fin
- Refrigerant System: R-134a
- Evaporator blower: Dual type Sirocco fan / Condenser fan: Axial propeller & ring fan
- Refrigerant hoses and copper pipes
- Automatic temperature control: 3-stage blower speed control

**Manufacturing Location:**
- Asan, Korea

**Features, Added Benefits:**
- High performance
- Compact design
- Can(cable area network)control
- Low profile model
- Easy maintenance
- Long lifetime
- Optimal size for every application

**Application Data:**

**Specification**
- **Cooling Capacity (Maximum)**
  1) KBC-SP24RO: 24,000 Kcal/h (96,000 Btu/h)
  2) KBC-SP28RO: 28,000 Kcal/h (112,000 Btu/h)
  3) KBC-SP32RO: 32,000 Kcal/h (128,000 Btu/h)

- **Air Flow:**
  1) KBC-SP24RO: 3,200 m³/h (1883 CFM) (3rd step)
  2) KBC-SP28RO: 4,800 m³/h (2825 CFM) (3rd step)
  3) KBC-SP32RO: 6,000 m³/h (3531 CFM) (3rd step)
<table>
<thead>
<tr>
<th>MODEL</th>
<th>OP28/32RO</th>
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</thead>
<tbody>
<tr>
<td>Cooling capacity</td>
<td>28,000~32,000 kcal/h</td>
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<tr>
<td>Airflow (Free blowing)</td>
<td>4,800~6,000 m³/h</td>
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<tr>
<td>Consumption current</td>
<td>DC24V × 94A</td>
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<tr>
<td>Compressor</td>
<td>KBC66 (655cc/rev)</td>
</tr>
<tr>
<td>Unit size</td>
<td>3,500(L) × 1,850(W) × 220(H)</td>
</tr>
</tbody>
</table>
### General Information:
- Refrigerant System: R-134a
- Evaporator blower: Dual type Sirocco fan / Condenser fan: Axial propeller & ring fan
- Refrigerant hoses and copper pipes
- Automatic temperature control: 4 stage blower speed control
- Optimal size for every application

### Manufacturing Location:
- Asan, Korea

### Features, Added Benefits:
- High performance
- Easy maintenance
- Long lifetime
- Optimal size for every application

### Application Data:
#### Specification
- **OEM 4FAN Model (OP28RO)**
- **Cooling Capacity (Maximum):** 28,000 Kcal/h (112,000 Btu/h)
- **Air Flow:** 4,800 ㎥/h
- **Condenser:** 4 motors
  - **Evaporator:** 6 motors
  - CAN Control application

- **6FAN Model (OP32RO)**
- **Cooling Capacity (Maximum):** 32,000 Kcal/h (128,000 Btu/h)
- **Air Flow:** 6,000 ㎥/h
- **Condenser:** 6 motors
  - **Evaporator:** 6 motors
  - CAN Control application
Components - Compressor

General Information:
- Model: KBC51, KBC55
  - 6 Cylinder, reciprocating type compressor
  - Refrigerant System: R-134a

Manufacturing Location:
- Asan, Korea

Features, Added Benefits:
- High performance
- Compact dimension
- Low weight
- Variable displacement

Application Data:
- **Dimension**
  - KBC51: 342(W) × 409(L) × 296(H) mm
  - KBC55: 342(W) × 409(L) × 296(H) mm

- **Displacement**
  - KBC51: 510 cc/rev
  - KBC55: 550 cc/rev

- **Max Speed**
  - 3500 RPM

- **Oil Type**
  - R134a: PS(IDEMITSU), SUNPAG56

- **Cylinder No. × Weight**
  - KBC51: 6-cyl. × 28kg
  - KBC55: 6-cyl. × 28kg

- **Oil Capacity**
  - 1.5 liter
Components - Compressor

General Information:
- **Model:** KBC58
  - 4 cylinder, reciprocating type compressor
  - Refrigerant System: R-134a
  - 2 step variable displacement control optional

Manufacturing Location:
- Asan, Korea

Features, Added Benefits:
- High performance
- Compact dimension
- Low weight

Application Data:
- **Dimension**
  - KBC58: 375(W) x 397(L) x 301(H)

- **Displacement**
  - KBC58: 575 cc/rev

- **Max Speed**
  - 3500 RPM

- **Oil Type**
  - R134a: PS(IDEMITSU), SUNPAGS6

- **Cylinder No. x Weight**
  - KBC58: 4-cyl. x 28.5kg

- **Oil Capacity**
  - 1.2 liter
Components - Compressor

General Information:
- Model: KBC57, KBC66
  - 6 cylinder, reciprocating type compressor
  - Refrigerant System: R-134a

Manufacturing Location:
- Asan, Korea

Features, Added Benefits:
- High performance
- Compact dimension
- Low weight
- Variable displacement

Application Data:
- Dimension
  - KBC57: 384(W) × 468(L) × 310(H)
  - KBC66: 384(W) × 468(L) × 310(H)
- Displacement
  - KBC57: 570 cc/rev
  - KBC66: 655 cc/rev
- Max Speed
  - 3500 RPM
- Cylinder No. × Weight
  - KBC57: 6-cyl. × 31kg
  - KBC66: 6-cyl. × 31kg
- Oil Capacity
  - 1.7 liter
- Oil Type
  - R134a: PS(IDEMITSU), SUNPAG56
Components - Compressor

General Information:
- Model: KBC57U, KBC66U
  - 6 cylinder Reciprocating type compressor
  - Refrigerant System: R-134a
  - 2 or 3 step variable displacement control compressor

Manufacturing Location:
- Asan, Korea

Features, Added Benefits:
- High performance
- Compact dimension
- Low weight
- Variable displacement

Application Data:
- Dimension
  - KBC57U: 384(W) × 468(L) × 310(H)
  - KBC66U: 384(W) × 468(L) × 310(H)
- Displacement
  - KBC57U: 570 cc/rev
  - KBC66U: 655 cc/rev
- Max Speed
  - 3500 RPM
- Oil Type
  - R134a: PS(IDEMITSU), SUNPAG56
- Cylinder No. × Weight
  - KBC57U: 6-cyl. × 32kg
  - KBC66U: 6-cyl. × 32kg
- Oil Capacity
  - 1.7 liter
- Unloading Valve Voltage
  - 12V, 24V
Control for Bus and Train A/C

General Information:
- Control Method: Communication control
- Indication Method: Brightness LCD Method (STN Class)
- Automatic Temperature Control: 4-stage blower speeds control
- Automatic Diagnostic Function and Digital Temperature Display

Manufacturing Location:
- Asan, Korea
- Shanghai, China
- Hefei, China

Features, Added Benefits:
- Easy maintenance
- Control function for driver’s convenience
- Strong endurance for electrical noise
- LCD display

Application Data:
Specification
- Room Temperature Detection (-10℃ ~ 99℃)
- Outside Temperature Detection (-20℃ ~ 99℃)
- Rated Voltage: DC27V
- Operation Voltage Range: DC20V ~ 32V
- Operation Temperature Range: -30℃ ~ 85℃
- Operation Humidity Range: 90% Rh
- Self Diagnosis & Notebook PC access
Train Air Conditioners

Manufacturing Location:
- Asan, Korea

Features, Added Benefits:
- High efficiency
- Compact dimension
- Easy to apply and service
- Proven high durability
- Low sound and vibration

Application Data:

<table>
<thead>
<tr>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage: 380VAC 3Ø 60Hz</td>
</tr>
<tr>
<td>Control Voltage: DC 100V</td>
</tr>
<tr>
<td>Cooling Capacity (Maximum): 20,000 ~ 24,000 kcal/h (80,000 ~ 96,000 Btu/h)</td>
</tr>
<tr>
<td>MICOM controller</td>
</tr>
<tr>
<td>Self diagnosis &amp; Notebook PC access</td>
</tr>
<tr>
<td>Refrigerant: R-407c</td>
</tr>
<tr>
<td>Compressor: horizontal scroll compressor</td>
</tr>
<tr>
<td>Weight: 500kg/unit</td>
</tr>
</tbody>
</table>

General Information:
- MICOM controller (Communication: RS-485 & RS-232)
- Digital temperature display & self diagnosis
- Evaporator blower: Dual type Sirocco fan / Condenser fan: Axial propeller fan
- Compressor: Hermetic horizontal Scroll type

PERFORMANCE:
Multiple configurations exist. Contact Kabul for specific application requirements.
Train Air Conditioners

Manufacturing Location:
- Asan, Korea

Features, Added Benefits:
- High efficiency
- Compact dimension
- Easy to apply and service
- Proven high durability
- Low sound and vibration

Application Data:

General Information:
- MICOM controller (Communication: RS-485 & RS-232)
- Digital temperature display & self diagnosis
- Evaporator blower: BLDC Dual type Sirocco fan / Condenser fan: BLDC Axial propeller fan
- Compressor: Hermetic horizontal Scroll type

PERFORMANCE:
Multiple configurations exist. Contact Kabul for specific application requirements.

Electric Multiple Unit, Monorail light rail vehicle, Special trains

Specification
- Voltage: 380VAC 3Ø 60Hz DC 24V
- Control Voltage: DC 100V
- Cooling Capacity (Maximum): 12,000 kcal/h (48,000 Btu/h)
- MICOM controller
- Self diagnosis & Notebook PC access
- Refrigerant: R-407c
- Compressor: horizontal scroll compressor
- Weight: 500 kg/unit
Train Air Conditioners

Manufacturing Location:
- Asan, Korea

Features, Added Benefits:
- High efficiency
- Compact dimension
- Easy to apply and service
- Proven high durability
- Low sound and vibration

Application Data:

Speciation
- Voltage: 380VAC 3Ø 60Hz (50Hz)
- Control Voltage: DC 24V
- Cooling Capacity (Maximum): 15,000 ~ 24,000 kcal/h (60,000 ~ 96,000 Btu/h)
- Heating Capacity: 5~15Kw
- MICOM controller
- Self diagnosis & Notebook PC access
- Refrigerant: R-22 / R-134a / R-407c
- Compressor: Copeland or Bristol / USA
- Weight: 500 kg/unit

General Information:
- MICOM controller (Communication: RS-485 & RS-232)
- Digital temperature display & self diagnosis
- Evaporator blower: Dual type Sirocco fan / Condenser fan: Axial propeller fan
- Compressor: Hermetic reciprocating & Scroll type
- CO2 sensing & Ventilation

PERFORMANCE:
Multiple configurations exist. Contact Modine for specific application requirements.
**Military - Air Conditioner for Armored Vehicle**

**Manufacturing Location:**
- Asan, Korea

**Features, Added Benefits:**
- High performance
- Compact dimension
- Low weight

**Application Data:**

<table>
<thead>
<tr>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigerant: R22</td>
</tr>
<tr>
<td>Cooling Capacity: 4,600 Kcal/hr (18,400 Btu/h)</td>
</tr>
<tr>
<td>Heating Capacity: 6.4 KW</td>
</tr>
<tr>
<td>Flow Rate: 280L/sec</td>
</tr>
<tr>
<td>Electric Characteristics: 200V 3Ø 400 Hz</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condensing Unit: 910W × 710H × 410D</td>
</tr>
<tr>
<td>HVAC Unit-Equip: 450W × 350H × 500D</td>
</tr>
<tr>
<td>HVAC Unit-Crew: 450W × 400H × 450D</td>
</tr>
</tbody>
</table>

**Power take-off**
- Vehicle generator

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**General Information:**
- Air conditioner unit for Armored Vehicle (self-propelled surface to air missile system)
- Consists of two types of HVAC (one for equipment, one for crew)
- Military standards: -32°C ~ 50°C
- Off Highway application
- EMC (Electromagnetic Compatible)
Military - Vehicle HVAC

General Information:
- Air conditioner unit for Wheel type Armored Vehicle
- Split-system: 1 condensing unit, 1 HVAC unit
- Military standards: -32°C ~ 50°C
- Off Highway application

Manufacturing Location:
- Asan, Korea

Features, Added Benefits:
- High performance
- Compact dimension
- Low weight

Application Data:

Specification
- Refrigerant: R134a
- Cooling Capacity: 7,000 kcal/hr (28,000 Btu/h)
- Heating Capacity: 10,000 kcal/hr (40,000 Btu/h)
- Flow Rate (Open circuit): 700 m³/hr
- Electric Characteristics:
  nominal 28 VDC, 18~32 Volts DC

Dimension
- HVAC Unit: 1100W × 720H × 470D

Power take-off
- Vehicle generator

Conditioning System for hybrid NBC Protection