DAIKIN

# Heating
# Technical Data

# ERRQ-AY1

# TABLE OF CONTENTS

## ERRQ-AY1

# 1 Features

- Outdoor unit extracts heat from the outdoor air, even at -20°C
- Three phase outdoor unit with bottom plate heater



Guaranteed operation down to -20°C


Inverter

# 2 Specifications

| CONNECTABLE INDOOR UNITS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **2-1 Capacity and Power input** | | | | | **EKHBRD011ADY17/ ERRQ011AY1** | **EKHBRD014ADY17/ ERRQ014AY1** | **EKHBRD016ADY17/ ERRQ016AY1** |
| Space heating | Average climate water outlet 55°C | General | Annual energy consumption | kWh | 7,320 | 9,010 | 10,300 |
| | | | ηs (Seasonal space heating efficiency) | % | 115 | 116 | 117 |
| | | | Prated at -10°C | kW | 10.5 | 13.0 | 15.0 |
| | | | SCOP | | 2.96 | 2.98 | 3.01 |
| | | | Seasonal space heating eff. class | | A+ | | |
| | | A Condition (-7°CDB/-8°CWB) | Cdh (Degradation heating) | | 1.00 | | |
| | | | COPd | | 2.25 | 2.15 | 2.11 |
| | | | Pdh | kW | 9.36 | 11.4 | 12.1 |
| | | | PERd | % | 90.0 | 86.0 | 84.4 |
| | | B Condition (2°CDB/1°CWB) | Cdh (Degradation heating) | | 0.970 | 1.00 | |
| | | | COPd | | 3.06 | 3.02 | 3.01 |
| | | | Pdh | kW | 6.22 | 7.61 | 8.54 |
| | | | PERd | % | 122 | 121 | 120 |
| | | C Condition (7°CDB/6°CWB) | Cdh (Degradation heating) | | 0.950 | 1.00 | |
| | | | COPd | | 3.90 | 3.97 | 4.26 |
| | | | Pdh | kW | 4.54 | 4.53 | 5.39 |
| | | | PERd | % | 156 | 159 | 170 |
| | | D Condition (12°CDB/ 11°CWB) | Cdh (Degradation heating) | | 0.940 | | |
| | | | COPd | | 4.67 | | |
| | | | Pdh | kW | 4.68 | | |
| | | | PERd | % | 187 | | |
| | | Tol (temperature operating limit) | COPd | | 2.02 | | 2.01 |
| | | | Pdh | kW | 10.5 | 11.6 | 11.9 |
| | | | PERd | % | 80.8 | | 80.4 |
| | | | TOL | °C | -10.0 | | |
| | | | WTOL | °C | 55.0 | | |
| | | Rated heat output supplementary capacity | Psup (at Tdesign -10°C) | kW | 0.00 | 1.40 | 3.10 |
| | | Tbiv (bivalent temperature) | COPd | | 2.02 | 2.15 | 2.16 |
| | | | Pdh | kW | 10.5 | 11.4 | 12.6 |
| | | | Tbiv | °C | -10.0 | -7.00 | -6.00 |
| | Cold climate water outlet 55°C | General | Annual energy consumption | kWh | 10,200 | 12,700 | 13,600 |
| | | | ηs (Seasonal space heating efficiency) | % | 95.0 | 94.0 | 93.0 |
| | | | Prated at -22°C | kW | 10.5 | 12.9 | 13.7 |

# 2 Specifications



| CONNECTABLE INDOOR UNITS | | | | | | | |
|---|---|---|---|---|---|---|---|
| Space heating | Warm climate water outlet 55°C | General | Annual energy consumption | kWh | 4,520 | 5,490 | 6,200 |
| | | | ηs (Seasonal space heating efficiency) | % | 110 | 114 | |
| | | | Prated at 2°C | kW | 9.50 | 12.1 | 13.4 |
| | | B Condition (2°CDB/1°CWB) | Cdh (Degradation heating) | | 1.00 | | |
| | | | COPd | | 2.67 | 2.56 | 2.42 |
| | | | Pdh | kW | 9.54 | 12.1 | 13.4 |
| | | | PERd | % | 107 | 102 | 96.8 |
| | | C Condition (7°CDB/6°CWB) | Cdh (Degradation heating) | | 0.968 | 1.00 | |
| | | | COPd | | 4.13 | 4.03 | 3.86 |
| | | | Pdh | kW | 7.71 | 7.55 | 8.44 |
| | | | PERd | % | 165 | 161 | 154 |
| | | D Condition (12°CDB/ 11°CWB) | Cdh (Degradation heating) | | 0.964 | | |
| | | | COPd | | 2.89 | | |
| | | | Pdh | kW | 4.80 | | |
| | | | PERd | % | 116 | | |
| | | Tbiv (bivalent temperature) | COPd | | 2.67 | 2.49 | 2.42 |
| | | | Pdh | kW | 9.54 | 12.0 | 13.4 |
| | | | PERd | % | 107 | 99.6 | 96.8 |
| | | | Tbiv | °C | 2.00 | | |
| | Average climate water outlet 35°C | General | SCOP | | 2.70 | 2.81 | 2.88 |
| | | | Annual energy consumption | kWh | 7,740 | 9,590 | 10,800 |
| | | | ηs (Seasonal space heating efficiency) | % | 105 | 110 | 112 |
| | | | Prated at -10°C | kW | 11.0 | 14.0 | 16.0 |
| | | | Seasonal space heating eff. class | | C | B | |
| | | A Condition (-7°CDB/-8°CWB) | COPd | | 2.17 | 2.46 | 2.45 |
| | | | Pdh | kW | 9.47 | 11.5 | 12.4 |
| | | | PERd | % | 86.8 | 98.4 | 98.0 |
| | | B Condition (2°CDB/1°CWB) | Cdh (Degradation heating) | | 1.00 | | |
| | | | COPd | | 2.83 | 2.82 | 2.94 |
| | | | Pdh | kW | 6.60 | 7.54 | 8.62 |
| | | | PERd | % | 113 | | 118 |
| | | C Condition (7°CDB/6°CWB) | Cdh (Degradation heating) | | 1.00 | | |
| | | | COPd | | 3.84 | | |
| | | | Pdh | kW | 8.03 | | |
| | | | PERd | % | 154 | | |
| | | D Condition (12°CDB/ 11°CWB) | Cdh (Degradation heating) | | 1.00 | | |
| | | | COPd | | 4.29 | | |
| | | | Pdh | kW | 8.05 | | |
| | | | PERd | % | 172 | | |
| | | Tol (temperature operating limit) | COPd | | 2.07 | 2.39 | 2.38 |
| | | | Pdh | kW | 9.58 | 11.4 | 12.0 |
| | | | PERd | % | 82.8 | 95.6 | 95.2 |
| | | | TOL | °C | -10.0 | | |
| | | | WTOL | °C | 35.0 | | |
| | | Tbiv (bivalent temperature) | COPd | | 2.17 | 2.54 | 2.52 |
| | | | Pdh | kW | 9.47 | 11.5 | 12.6 |
| | | | PERd | % | 86.8 | 102 | 101 |
| | | | Tbiv | °C | -7.00 | -5.00 | |
| | | Rated heat output supplementary capacity | Psup (at Tdesign -10°C) | kW | 1.42 | 2.59 | 3.99 |

# 2 Specifications

| CONNECTABLE INDOOR UNITS | | | | | | | |
|---|---|---|---|---|---|---|---|
| Space heating | Cold climate water outlet 35°C | General | Annual energy consumption | kWh | 10,400 | 11,900 | 13,500 |
| | | | ηs (Seasonal space heating efficiency) | % | 93.0 | 96.0 | 97.0 |
| | | | Prated at -22°C | kW | 10.6 | 12.4 | 14.2 |
| | | | Qhe Annual energy consumption (GCV) | Gj | 37.3 | 42.9 | 48.7 |
| | Warm climate water outlet 35°C | General | Annual energy consumption | kWh | 3,900 | 4,710 | 5,410 |
| | | | ηs (Seasonal space heating efficiency) | % | 120 | 130 | 132 |
| | | | Prated at 2°C | kW | 11.0 | 13.9 | 15.9 |
| Space heating general | Air to water unit | Rated airflow (outdoor) | | $m^3/h$ | 6,360 | | |
| | Other | Capacity control | | | Inverter | | |
| | | Cdh (Degradation heating) | | | 1.00 | | |
| | | Pck (Crankcase heater mode) | | kW | 0.055 | | |
| | | Poff (Off mode) | | kW | 0.055 | | |
| | | Psb (Standby mode) | | kW | 0.055 | | |
| | | Pto (Thermostat off) | | kW | 0.059 | | |
| | Integrated supplementary heater | NOx emission | | mg/kWh | 0.00 | | |
| Domestic hot water heating | Average climate | ηwh (water heating efficiency) | | % | - | | |
| | Cold climate | ηwh (water heating efficiency) | | % | - | | |
| | Warm climate | ηwh (water heating efficiency) | | % | - | | |
| Heating capacity | Nom. | | | kW | 11.3 (1) / 11.0 (2) / 11.2 (3) | 14.5 (1) / 14.0 (2) / 14.4 (3) | 16.0 (1) / 16.0 (2) / 16.0 (3) |
| Power input | Heating | Nom. | | kW | 3.80 (1) / 4.40 (2) / 2.67 (3) | 5.02 (1) / 5.65 (2) / 3.87 (3) | 5.86 (1) / 6.65 (2) / 4.31 (3) |
| COP | | | | | 2.97 (1) / 2.50 (2) / 4.20 (3) | 2.89 (1) / 2.48 (2) / 3.72 (3) | 2.73 (1) / 2.41 (2) / 3.72 (3) |
| General | Supplier/ Manufacturer details | Name and address | | | Daikin Europe N.V. - Zandvoordestraat 300, 8400 Oostende, Belgium | | |
| | | Name or trademark | | | Daikin Europe N.V. | | |
| | Product description | Air-to-water heat pump | | | Yes | | |
| | | Brine-to-water heat pump | | | No | | |
| | | Heat pump combination heater | | | No | | |
| | | Low-temperature heat pump | | | No | | |
| | | Supplementary heater integrated | | | No | | |
| | | Water-to-water heat pump | | | No | | |
| | LW(A) Sound power level (according to EN14825) | Indoor | | dB(A) | 59.0 | 60.0 | |
| LW(A) Sound power level (according to EN14825) | Outdoor | | | dB(A) | 68.0 | 69.0 | 71.0 |
| Sound condition Ecodesign and energy label | | | | | Sound power in heating mode, measured according to the EN12102 under conditions of the EN14825 | | |

**Notes**

(1) EW 55°C; LW 65°C; Dt 10°C; ambient conditions: 7°CDB/6°CWB

(2) EW 70°C; LW 80°C; Dt 10°C; ambient conditions: 7°CDB/6°CWB

(3) EW 30°C; LW 35°C; Dt 5°C; ambient conditions: 7°CDB/6°CWB

# 2 Specifications



| 2-2 Technical Specifications | | | | ERRQ011AY1 | ERRQ014AY1 | ERRQ016AY1 |
|---|---|---|---|---|---|---|
| Dimensions | Unit | HeightxWidthxDepth | mm | 1,345x900x320 | | |
| Weight | Unit | | kg | 120 | | |
| Compressor | Quantity | | | 1 | | |
| | Type | | | Hermetically sealed scroll compressor | | |
| Operation range | Heating | Min.~Max. | °CWB | -20~20 | | |
| | Domestic hot water | Min.~Max. | °CDB | -20~35 | | |
| Refrigerant | Type | | | R-410A | | |
| | GWP | | | 2,087.5 | | |
| | Charge | | $TCO_2eq$ | 9.4 | | |
| | | | kg | 4.5 | | |
| | Control | | | Expansion valve (electronic type) | | |
| Sound power level | Heating | Nom. | dBA | 68 | 69 | 71 |
| Sound pressure level | Heating | Nom. | dBA | 52 | 53 | 55 |

Standard Accessories : Installation manual; Quantity : 1;

| 2-3 Electrical Specifications | | | ERRQ011AY1 | ERRQ014AY1 | ERRQ016AY1 |
|---|---|---|---|---|---|
| Power supply | Name/Phase/Frequency/Voltage | Hz/V | Y1/3~/50/380-415 | | |
| Current | Recommended fuses | A | 16 | | |

**Notes**

See separate drawing for operation range

Contains fluorinated greenhouse gases

# 3 Combination table

## 3 - 1 Combination Table

**ERRQ-AY1**
**ERRQ-AV1**
**ERSQ-AY1**
**ERSQ-AV1**

**I. Combination table for pair combinations**

| Heating only outdoor unit / Heating only indoor unit | ER(S/R)Q011AAV1 | ER(S/R)Q014AAV1 | ER(S/R)Q016AAV1 | ER(S/R)Q011AAY1 | ER(S/R)Q014AAY1 | ER(S/R)Q016AAY1 |
|---|---|---|---|---|---|---|
| EKHBRD011*V* | o | | | | | |
| EKHBRD014*V* | | o | | | | |
| EKHBRD016*V* | | | o | | | |
| EKHBRD011*Y* | | | | o | | |
| EKHBRD014*Y* | | | | | o | |
| EKHBRD016*Y* | | | | | | o |

Notes
ERRQ*- units include special equipment (insulation, heater sheet, ...) to ensure proper operation in areas with low ambient temperatures and high humidity conditions.
In such conditions, the ERSQ*- models may experience problems with severe ice buildup on the air-cooled coil.
If such conditions are expected, the ERRQ* must be installed instead.
For the combination with EMRQ*, refer to the combination table of EMRQ*.

**II. Kit availability**

**1. Kit availability for outdoor units**

| Reference | Description | ERSQ011… | ERSQ014… | ERSQ016… | ERRQ011… | ERRQ014… | ERRQ016… |
|---|---|---|---|---|---|---|---|
| EKDK04 (1) | Drain plug kit | o | o | o | - | - | - |
| EKBPHTH1(1) | Bottom plate heater (option) | o | o | o | - | - | - |
| EK016SNC | Snow cover | o | o | o | o | o | o |

Note :
For the combination with EMRQ*, refer to the combination table of EMRQ*.

**2. Kit availability for indoor units**

| Reference | Description | EKHBRD… | |
|---|---|---|---|
| | | V* | Y* |
| EKHTS200 (6) | Stainless domestic hot water tank 200l | o | o |
| EKHTS260 (6) | Stainless domestic hot water tank 260l | o | o |
| EKHTSU20 (6) | Stainless domestic hot water tank 200l (UK) | o | o |
| EKHTSU26 (6) | Stainless domestic hot water tank 260l (UK) | o | o |
| EKRP1HBA | Digital I/O PCB | o | o |
| EKBUHAA6V3 | Backup heater 1~ (2) | o | - |
| EKBUHAA6W1 | Backup heater 3~ (2) | - | o |
| EKRP1AHTA | Demand PCB (3) | o | o |
| EKRUAHT(A/B) | Remote user interface (4) | o | o |
| EKRTW | Room thermostat (2) | o | o |
| EKRTR | Room thermostat (2) | o | o |
| EKRTETS | Room thermostat (2) | o | o |
| EKRSVHTA (7) | Refrigerant stop valves | o | o |

**3. Kit availability for domestic hot water tanks**

| Reference | Description | EKHTS… | | | EKHTSU… | | |
|---|---|---|---|---|---|---|---|
| | | AA | AB(9) | AC | AB(9) | AA | AC |
| EKUHWHTB | Option kit for the UK EKHTSU* | - | - | - | o | o | o |
| EKFMAHTE(5) | Option kit for standalone tank | o | o | o | o | o | o |

**4. Combination table for AA/AB/AC/AD indoor unit with AA/AB/AC domestic hot water tank (installed on top)**

| Heating only indoor unit / Domestic hot water tank | EKHBRD...AA(V/Y)* | EKHBRD...(AB/AC/AD)(V/Y)* |
|---|---|---|
| EKHTS…AA | o | Requires EKMKHT2 |
| EKHTS…AB(9) | Requires EKMKHT1 | o |
| EKHTS…AC | Requires EKMKHT1 | o |

Remark Other combinations are not allowed.

(1) It is not allowed to combine a bottom plate heater with a drain plug/stop kit.
(2) Requires demand PCB EKRP1AHTA
(3) To be able to connect the room thermostat kit and the backup heater kit, its installation is required.
(4) The kit contains the same user interface as is standard delivered with the indoor unit. It can be mounted next to the indoor unit's standard user interface, or on another location. If you install two user interfaces, designate one as master and the other as slave.
(5) Only required if the tank is NOT mounted on top of the EKHBRD* unit.
(6) See table Combination table for indoor unit with domestic hot water tank
(7) For combination indoor units + outdoor unit(EKHBRD + EMRQ) Not mandatory

**3D097344B**

# 4 Capacity tables

## 4 - 1 Heating Capacity Tables

**ERRQ-AAY1**
**EKHBRD*(V1/Y1)**

4

### Capacity table

| Peak | Ta[°CDB] | LW [°C] 45 | | LW [°C] 55 | | LW [°C] 65 | | LW [°C] 75 | | LW [°C] 80 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | [°CDB] | HC | PI | HC | PI | HC | PI | HC | PI | HC | PI |
| EKHBRD 011 | -20 | 11,0 | 5,07 | 11,0 | 5,10 | 11,0 | 5,55 | 11,0 | 6,04 | 11,0 | 6,35 |
| | -15 | 11,0 | 4,82 | 11,0 | 4,91 | 11,0 | 5,39 | 11,0 | 5,98 | 11,0 | 6,32 |
| | -7 | 11,0 | 4,11 | 11,0 | 4,24 | 11,0 | 4,71 | 11,0 | 5,31 | 11,0 | 5,67 |
| | -2 | 11,0 | 3,66 | 11,0 | 3,80 | 11,0 | 4,24 | 11,0 | 4,81 | 11,0 | 5,15 |
| | 2 | 11,0 | 3,35 | 11,0 | 3,50 | 11,0 | 3,93 | 11,0 | 4,47 | 11,0 | 4,80 |
| | 7 | 11,0 | 3,03 | 11,0 | 3,18 | 11,0 | 3,57 | 11,0 | 4,12 | 11,0 | 4,40 |
| | 12 | 11,0 | 2,75 | 11,0 | 2,90 | 11,0 | 3,31 | 11,0 | 3,82 | 11,0 | 4,13 |
| | 15 | 11,0 | 2,61 | 11,0 | 2,77 | 11,0 | 3,17 | 11,0 | 3,67 | 11,0 | 3,96 |
| EKHBRD 014 | -20 | 12,2 | 5,59 | 12,1 | 5,57 | 12,0 | 5,86 | 12,1 | 6,56 | 12,0 | 6,81 |
| | -15 | 13,5 | 5,80 | 13,4 | 5,84 | 13,4 | 6,20 | 13,5 | 6,97 | 13,3 | 7,29 |
| | -7 | 14,0 | 5,41 | 14,0 | 5,53 | 14,0 | 5,98 | 14,0 | 6,76 | 14,0 | 7,20 |
| | -2 | 14,0 | 4,92 | 14,0 | 5,07 | 14,0 | 5,50 | 14,0 | 6,30 | 14,0 | 6,72 |
| | 2 | 14,0 | 4,50 | 14,0 | 4,66 | 14,0 | 5,09 | 14,0 | 5,87 | 14,0 | 6,27 |
| | 7 | 14,0 | 4,07 | 14,0 | 4,23 | 14,0 | 4,66 | 14,0 | 5,42 | 14,0 | 5,65 |
| | 12 | 14,0 | 3,72 | 14,0 | 3,91 | 14,0 | 4,34 | 14,0 | 5,09 | 14,0 | 5,47 |
| | 15 | 14,0 | 3,55 | 14,0 | 3,73 | 14,0 | 4,16 | 14,0 | 4,89 | 14,0 | 5,27 |
| EKHBRD 016 | -20 | 12,6 | 5,85 | 12,5 | 5,80 | 12,5 | 6,15 | 12,1 | 6,50 | 11,9 | 6,76 |
| | -15 | 14,1 | 6,14 | 14,1 | 6,14 | 14,0 | 6,52 | 13,5 | 6,92 | 13,3 | 7,24 |
| | -7 | 15,9 | 6,24 | 15,9 | 6,34 | 15,8 | 6,78 | 15,6 | 7,50 | 15,3 | 7,81 |
| | -2 | 16,0 | 5,82 | 16,0 | 5,97 | 16,0 | 6,48 | 16,0 | 7,33 | 15,9 | 7,69 |
| | 2 | 16,0 | 5,39 | 16,0 | 5,55 | 16,0 | 6,08 | 16,0 | 6,92 | 16,0 | 7,33 |
| | 7 | 16,0 | 4,83 | 16,0 | 5,01 | 16,0 | 5,57 | 16,0 | 6,35 | 16,0 | 6,65 |
| | 12 | 16,0 | 4,48 | 16,0 | 4,66 | 16,0 | 5,17 | 16,0 | 5,98 | 16,0 | 6,40 |
| | 15 | 16,0 | 4,29 | 16,0 | 4,47 | 16,0 | 4,99 | 16,0 | 5,78 | 16,0 | 6,20 |
| | | EW = 40°C | | EW = 45°C | | EW = 55°C | | EW = 65°C | | EW = 70°C | |
| | | ΔT = 5°C | | ΔT = 10°C | | ΔT = 10°C | | ΔT = 10°C | | ΔT = 10°C | |

**Symbols:**
*HC* Heating capacity [kW]
*PI* Power input [kW]
*LW* Leaving water temperature
*EW* Entering water temperature

**Conditions:**
- $\triangle T$ (Leaving water temperature - Entering water temperature)
- *Piping length:* R410A Refrigerant piping length = 5m
- No pump power input is included
- if Ta < 3°C and unit has bottom plate heater, 95 W has to be added to PI value
- Ta < 0°C: RH=75%
- Ta > 0°C: RH=85%

| flowrate [l/min] | *011* | *014* | *016* |
|---|---|---|---|
| $\triangle T$ = 15°C | 10,5 | 13,4 | 15,3 |
| $\triangle T$ = 10°C | 15,8 | 20,1 | 22,9 |
| $\triangle T$ = 5°C | 31,5 | 40,1 | 45,9 |

**Remark:**
**Capacity table is only valid for EKHBRD*AC* + ER(R/S)Q*.**
**For EKHBRD*AC* + EMRQ* see capacity table EMRQ*!.**

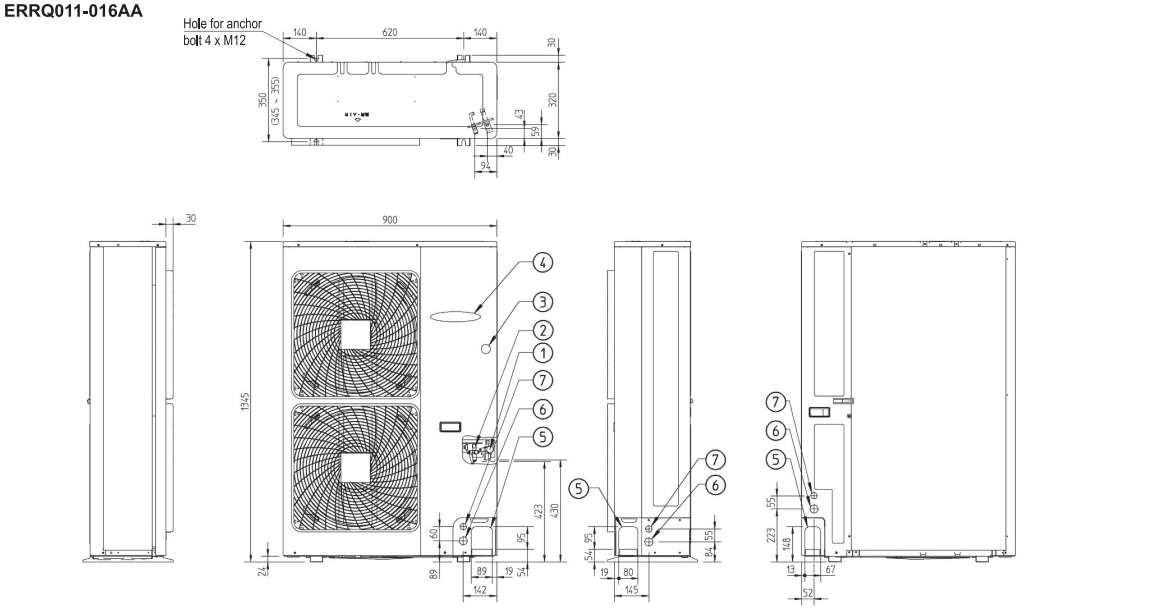
| Integrated | Ta[°CDB] | LW [°C] 45 | | LW [°C] 55 | | LW [°C] 65 | | LW [°C] 75 | | LW [°C] 80 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | [°CDB] | HC | PI | HC | PI | HC | PI | HC | PI | HC | PI |
| EKHBRD 011 | -20 | 9,18 | 4,31 | 9,23 | 4,34 | 9,30 | 4,72 | 9,39 | 5,18 | 9,43 | 5,49 |
| | -15 | 9,71 | 4,57 | 9,77 | 4,65 | 9,84 | 5,11 | 10,0 | 5,69 | 10,0 | 6,05 |
| | -7 | 9,54 | 4,06 | 9,60 | 4,19 | 9,69 | 4,65 | 9,86 | 5,27 | 9,91 | 5,65 |
| | -2 | 9,48 | 3,59 | 9,54 | 3,72 | 9,62 | 4,16 | 9,75 | 4,74 | 9,79 | 5,09 |
| | 2 | 9,47 | 3,31 | 9,53 | 3,45 | 9,62 | 3,88 | 9,76 | 4,42 | 9,80 | 4,75 |
| | 7 | 11,0 | 3,03 | 11,0 | 3,18 | 11,0 | 3,57 | 11,0 | 4,12 | 11,0 | 4,40 |
| | 12 | 11,0 | 2,75 | 11,0 | 2,90 | 11,0 | 3,31 | 11,0 | 3,82 | 11,0 | 4,13 |
| | 15 | 11,0 | 2,61 | 11,0 | 2,77 | 11,0 | 3,17 | 11,0 | 3,67 | 11,0 | 3,96 |
| EKHBRD 014 | -20 | 9,82 | 4,31 | 9,92 | 4,57 | 10,0 | 4,86 | 10,1 | 5,40 | 10,1 | 5,76 |
| | -15 | 10,9 | 4,80 | 10,9 | 4,90 | 11,0 | 5,23 | 11,1 | 5,86 | 11,2 | 6,24 |
| | -7 | 11,7 | 5,00 | 11,8 | 5,12 | 11,9 | 5,53 | 12,1 | 6,31 | 12,1 | 6,73 |
| | -2 | 11,8 | 4,73 | 11,8 | 4,87 | 12,0 | 5,31 | 12,2 | 6,12 | 12,2 | 6,54 |
| | 2 | 11,8 | 4,41 | 11,8 | 4,56 | 11,9 | 4,99 | 12,1 | 5,78 | 12,2 | 6,19 |
| | 7 | 14,0 | 4,07 | 14,0 | 4,23 | 14,0 | 4,66 | 14,0 | 5,42 | 14,0 | 5,65 |
| | 12 | 14,0 | 3,72 | 14,0 | 3,91 | 14,0 | 4,34 | 14,0 | 5,09 | 14,0 | 5,47 |
| | 15 | 14,0 | 3,55 | 14,0 | 3,73 | 14,0 | 4,16 | 14,0 | 4,89 | 14,0 | 5,27 |
| EKHBRD 016 | -20 | 10,2 | 4,83 | 10,3 | 4,83 | 10,4 | 5,14 | 10,1 | 5,50 | 10,0 | 5,71 |
| | -15 | 11,3 | 5,05 | 11,3 | 5,07 | 11,4 | 5,43 | 11,2 | 5,84 | 11,1 | 6,09 |
| | -7 | 12,5 | 5,34 | 12,6 | 5,43 | 12,7 | 5,88 | 12,6 | 6,46 | 12,6 | 6,76 |
| | -2 | 13,0 | 5,31 | 13,1 | 5,44 | 13,3 | 5,93 | 13,3 | 6,64 | 13,3 | 6,99 |
| | 2 | 13,2 | 5,06 | 13,3 | 5,29 | 13,5 | 5,80 | 13,6 | 6,59 | 13,6 | 6,99 |
| | 7 | 16,0 | 4,83 | 16,0 | 5,01 | 16,0 | 5,57 | 16,0 | 6,35 | 16,0 | 6,65 |
| | 12 | 16,0 | 4,48 | 16,0 | 4,66 | 16,0 | 5,17 | 16,0 | 5,98 | 16,0 | 6,40 |
| | 15 | 16,0 | 4,29 | 16,0 | 4,47 | 16,0 | 4,99 | 16,0 | 5,78 | 16,0 | 6,20 |
| | | EW = 40°C | | EW = 45°C | | EW = 55°C | | EW = 65°C | | EW = 70°C | |
| | | ΔT = 5°C | | ΔT = 10°C | | ΔT = 10°C | | ΔT = 10°C | | ΔT = 10°C | |

3TW58842-1D

# 5 Dimensional drawings

## 5 - 1 Dimensional Drawings

**ERRQ011-016AA**




| No. | Parts name |
|---|---|
| 1 | Gas pipe connection Ø15.9 flare |
| 2 | Liquid connection pipe Ø9.5 flare |
| 3 | Service port (in the unit) |
| 4 | Electronic connection and grounding terminal M5 (in switchbox) |
| 5 | Refrigerant piping intake |
| 6 | Power supply wiring intake (knock hole Ø34) |
| 7 | Control wiring intake (knock hole Ø27) |
| 8 | Drain outlet |

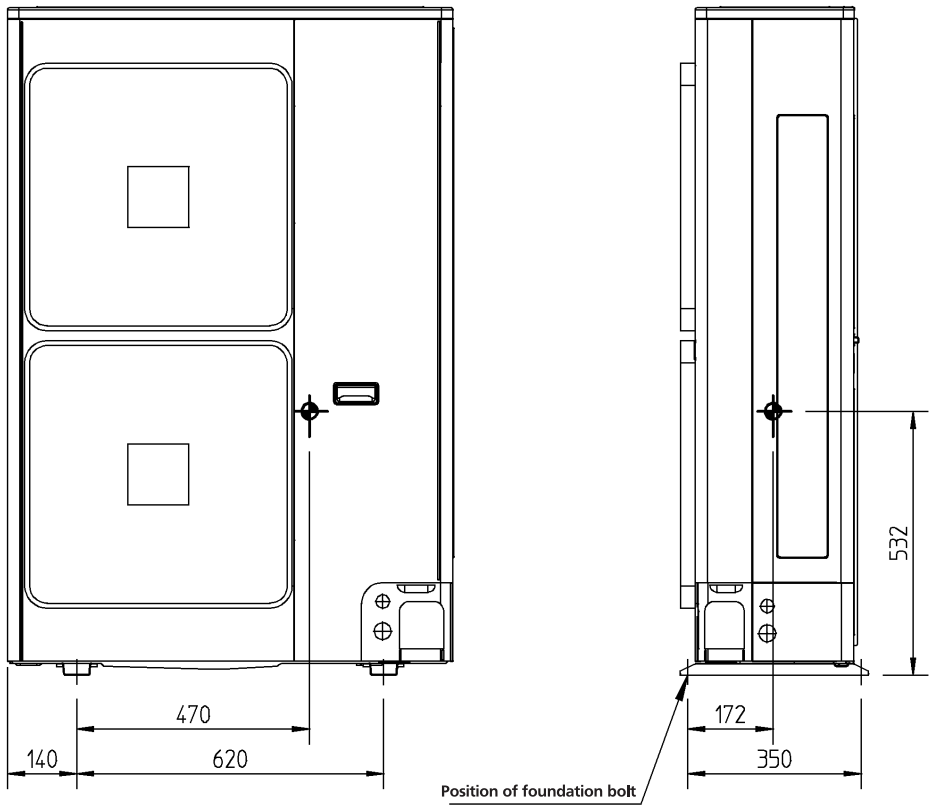
3TW58774-1

# 6 Centre of gravity

## 6 - 1 Centre of Gravity



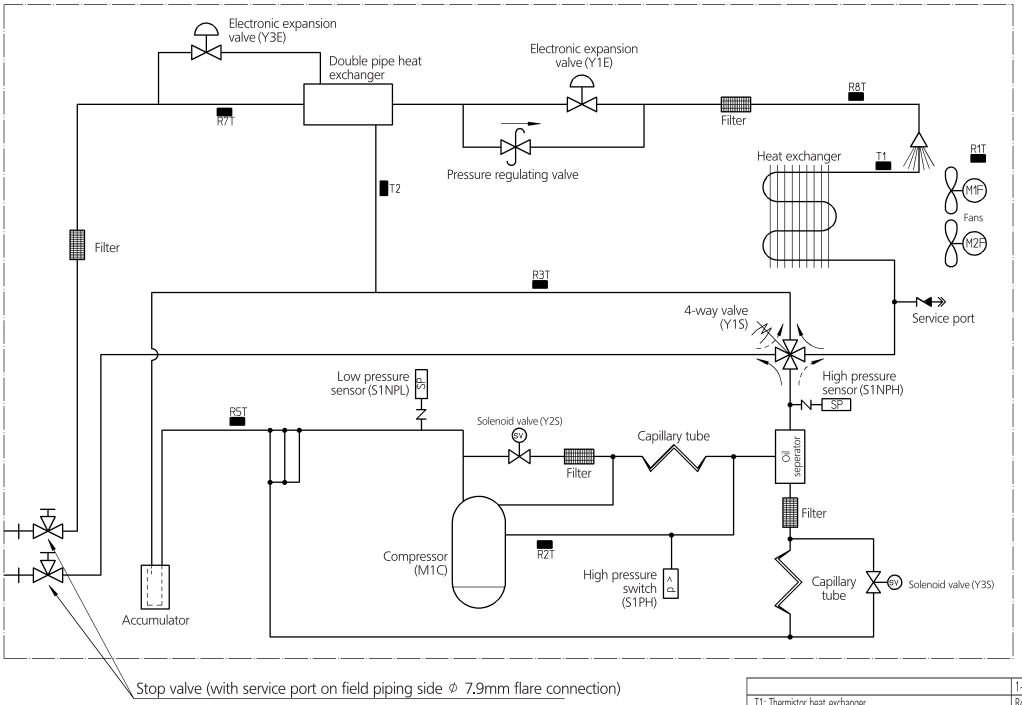
**ERRQ011-016AAY1**



# 7 Piping diagrams

## 7 - 1 Piping Diagrams

**ERRQ-AY1**




R1T: Ambient thermistor
R2T: Discharge thermistor
R3T: Suction thermistor (1)
R5T: Suction thermistor (2)
R7T: Liquid thermistor (1)
R8T: Liquid thermistor (2)

| | 1~ | 3~ |
|---|---|---|
| T1: Thermistor heat exchanger | R4T | R6T |
| T2: Thermistor subcool heat exchanger | R6T | R4T |

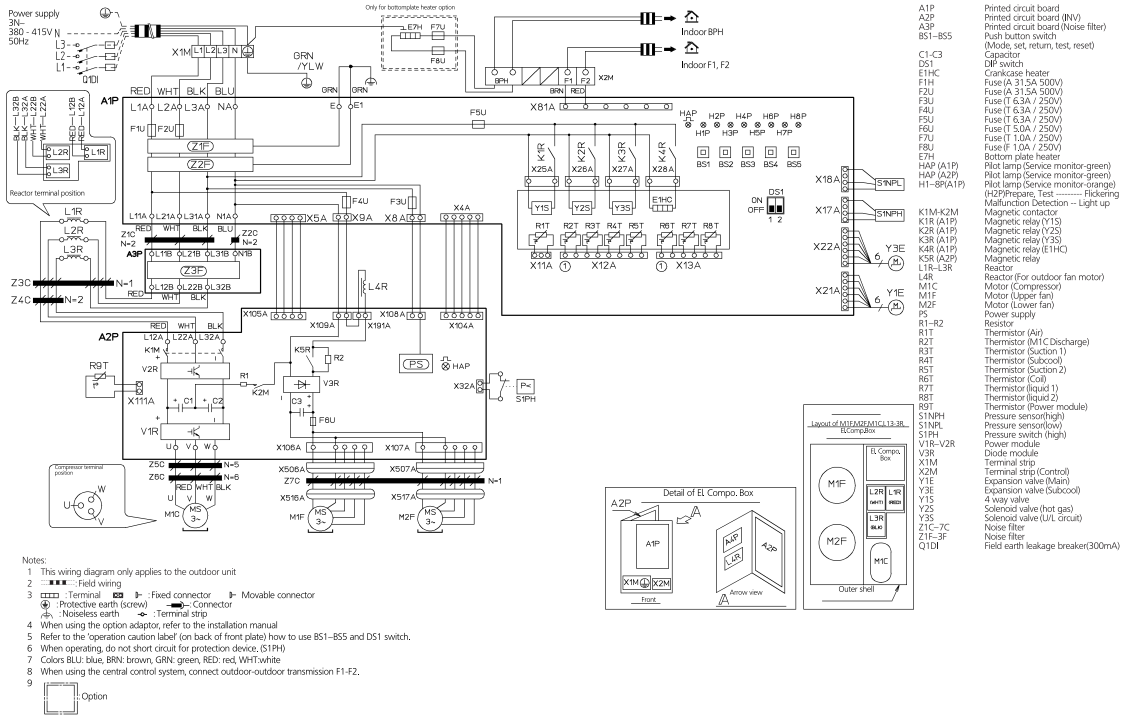
3TW58745-1A

# 8 Wiring diagrams

## 8 - 1 Wiring Diagrams - Three Phase

8

**ERRQ-AY1**



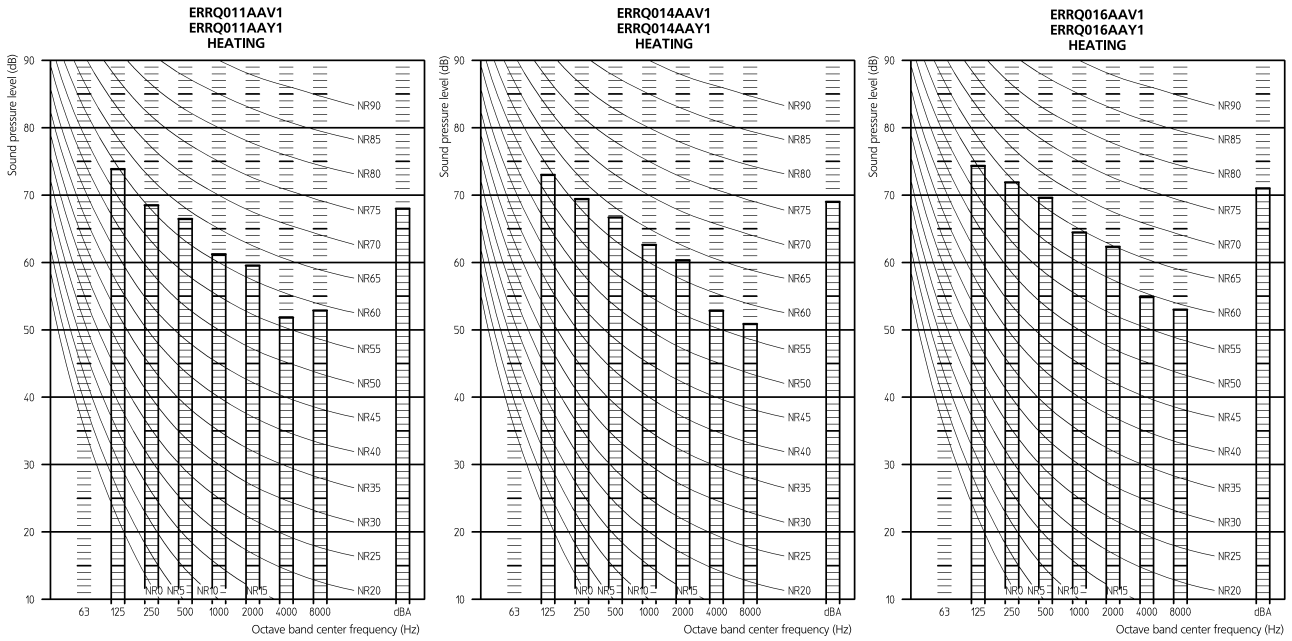

| | |
|---|---|
| A1P | Printed circuit board |
| A2P | Printed circuit board (INV) |
| A3P | Printed circuit board (Noise filter) |
| BS1–BS5 | Push button switch (Mode, set, return, test, reset) |
| C1–C3 | Capacitor |
| DS1 | DIP switch |
| E1HC | Crankcase heater |
| F1H | Fuse (A 31.5A 500V) |
| F2U | Fuse (A 31.5A 500V) |
| F3U | Fuse (T 6.3A / 250V) |
| F4U | Fuse (T 6.3A / 250V) |
| F5U | Fuse (T 6.3A / 250V) |
| F6U | Fuse (T 5.0A / 250V) |
| F7U | Fuse (T 1.0A / 250V) |
| F8U | Fuse (F 1.0A / 250V) |
| E7H | Bottom plate heater |
| HAP (A1P) | Pilot lamp (Service monitor-green) |
| HAP (A2P) | Pilot lamp (Service monitor-green) |
| H1–8P(A1P) | Pilot lamp (Service monitor-orange) (H2P)Prepare, Test ---------- Flickering Malfunction Detection -- Light up |
| K1M-K2M | Magnetic contactor |
| K1R (A1P) | Magnetic relay (Y1S) |
| K2R (A1P) | Magnetic relay (Y2S) |
| K3R (A1P) | Magnetic relay (Y3S) |
| K4R (A1P) | Magnetic relay (E1HC) |
| K5R (A2P) | Magnetic relay |
| L1R–L3R | Reactor |
| L4R | Reactor (For outdoor fan motor) |
| M1C | Motor (Compressor) |
| M1F | Motor (Upper fan) |
| M2F | Motor (Lower fan) |
| PS | Power supply |
| R1–R2 | Resistor |
| R1T | Thermistor (Air) |
| R2T | Thermistor (M1C Discharge) |
| R3T | Thermistor (Suction 1) |
| R4T | Thermistor (Subcool) |
| R5T | Thermistor (Suction 2) |
| R6T | Thermistor (Coil) |
| R7T | Thermistor (liquid 1) |
| R8T | Thermistor (liquid 2) |
| R9T | Thermistor (Power module) |
| S1NPH | Pressure sensor(high) |
| S1NPL | Pressure sensor(low) |
| S1PH | Pressure switch (high) |
| V1R–V2R | Power module |
| V3R | Diode module |
| X1M | Terminal strip |
| X2M | Terminal strip (Control) |
| Y1E | Expansion valve (Main) |
| Y3E | Expansion valve (Subcool) |
| Y1S | 4 way valve |
| Y2S | Solenoid valve (hot gas) |
| Y3S | Solenoid valve (U/L circuit) |
| Z1C–7C | Noise filter |
| Z1F–3F | Noise filter |
| Q1DI | Field earth leakage breaker(300mA) |

Notes:
1. This wiring diagram only applies to the outdoor unit
2. ⋯⋯: Field wiring
3. : Terminal, : Fixed connector, : Movable connector, : Protective earth (screw), : Connector, : Noiseless earth, : Terminal strip
4. When using the option adaptor, refer to the installation manual
5. Refer to the 'operation caution label' (on back of front plate) how to use BS1–BS5 and DS1 switch.
6. When operating, do not short circuit for protection device, (S1PH)
7. Colors BLU: blue, BRN: brown, GRN: green, RED: red, WHT:white
8. When using the central control system, connect outdoor-outdoor transmission F1-F2.
9. : Option

2TW58746-1C

# 9 Sound data

## 9 - 1 Sound Power Spectrum




**Notes:**

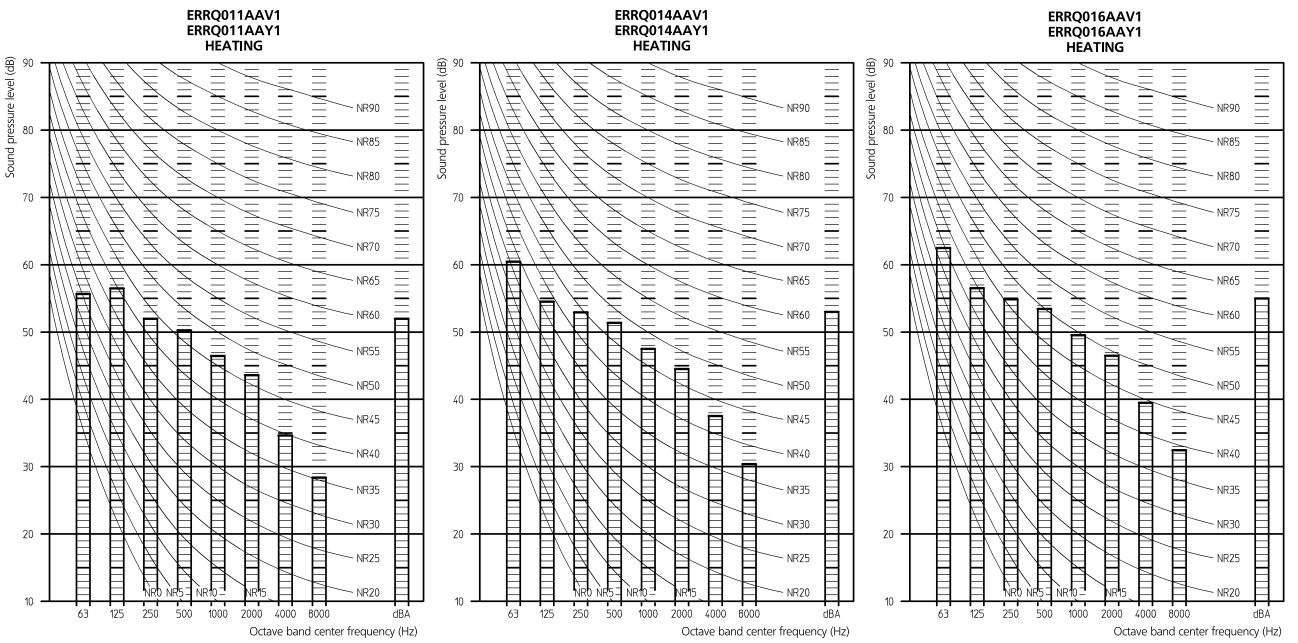
1 dBA = A-weighted sound power level (A-scale according to IEC)
2 Reference acoustic pressure 0dB = 20µPa
3 Measured according to ISO 3744

3TW58747-2

# 9 Sound data

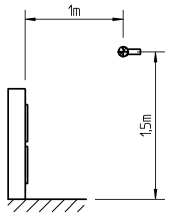
## 9 - 2 Sound Pressure Spectrum - Heating






**Notes:**

1. Data is valid at free field condition (measured in a semi-anachoic room)
2. dBA = A-weighted sound power level (A-scale according to IEC)
3. Reference acoustic pressure 0dB = 20μPa
4. If sound is measured under actual installation conditions, the measured value will be higher due to environmental noise and sound reflections.




Measuring location (discharge side)

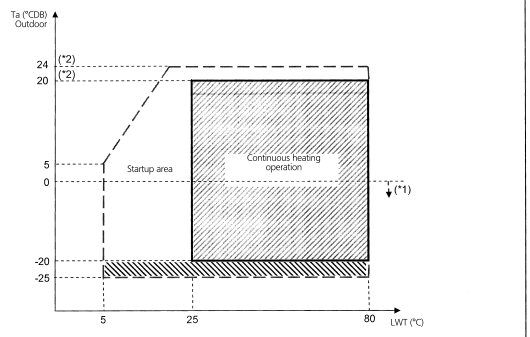
3TW58747-1

# 10 Operation range

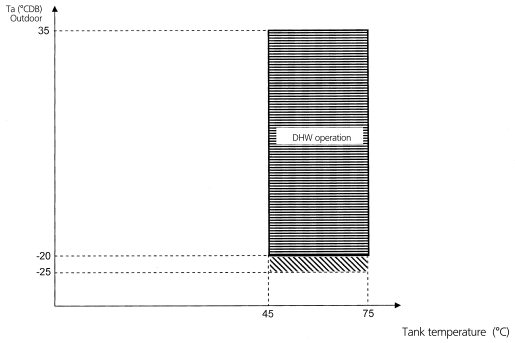
## 10 - 1 Operation Range

**EKHBRD-ACY1**

Space heating mode




Domestic hot water mode




Continuous heating operation

Startup area

operation possible, but no guarantee of capacity

(*1) ERRQ*(V1/Y1) units include special equipment (insulation, heater sheet, ...) to ensure good operation in areas where low ambient temperature can occur together with high humidity conditions.
In such conditions the ERSQ*(V1/Y1) models may experience problems with severe ice build up on the aircooled coil.
In case such conditions are expected the ERRQ*(V1/Y1) must be installed instead.
These models contain countermeasures to prevent freeze up.

(*2) Can be adjusted by field setting

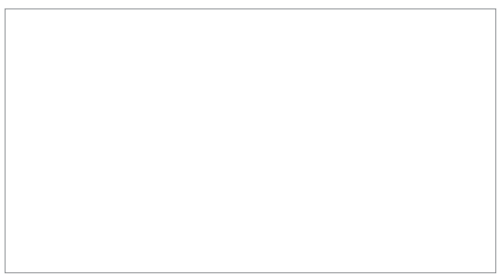
Domestic hot water operation

operation possible, but no guarantee of capacity

**Remark:**
**Operation range is only valid for EKHBRD*AC* + ER(R/S)Q*.**
**For EKHBRD*AC* + EMRQ* see operation range EMRQ*.**

3TW58843-1C

**Daikin Europe N.V. Naamloze Vennootschap - Zandvoordestraat 300, B-8400 Oostende - Belgium - www.daikin.eu - BE 0412 120 336 - RPR Oostende**




**EEDEN20 01/20**