

## Subtype ACHA-H series 12/14/16

Certificate Holder	Ningbo AUX Electric Co., Ltd
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Country	CN
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH
Subtype title	ACHA-H series 12/14/16
Registration number	011-1W0899
Heat Pump Type	Outdoor Air/Water
Refrigerant	R290
Mass of Refrigerant	1.35 kg
Certification Date	10.10.2024
Testing basis	European KEYMARK Scheme for Heat Pumps V.14 (2024-04)

## Model Indoor unit ACHA-H/4R2EA19 and outdoor unit AC-H16/4R2EA(HA)

Model name	Indoor unit ACHA-H/4R2EA19 and outdoor unit AC-H16/4R2EA(HA)
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	1x230V 50Hz
Off-peak product	n/a

## Outdoor Air/Water

## EN 16147 | Average Climate

Declared load profile	L
Efficiency $\eta_{DHW}$	115 %
COP	2.85
Heating up time	1:36 h:min
Standby power input	45.0 W
Reference hot water temperature	50.0 °C
Mixed water at 40°C	212 l

## EN 14511-4 | Heating

Shutting off the heat transfer medium flow passed

Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

## EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	15.20 kW	15.10 kW
El input	3.38 kW	5.13 kW
COP	4.50	2.94

## EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

## EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	188 %	150 %

Prated	15.00 kW	13.00 kW
SCOP	4.77	3.50
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	13.27 kW	11.50 kW
COP Tj = -7°C	2.95	2.40
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	8.08 kW	7.00 kW
COP Tj = +2°C	4.40	3.64
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	5.19 kW	4.50 kW
COP Tj = +7°C	6.81	5.04
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	4.30 kW	4.00 kW
COP Tj = 12°C	9.95	7.65
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	13.27 kW	11.50 kW
COP Tj = Tbiv	2.95	2.40
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	13.50 kW	12.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.60	2.07
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.50 kW	0.80 kW
Annual energy consumption Qhe	6492 kWh	7020 kWh

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	60 dB(A)	60 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
$\eta_s$	246 %	176 %
Prated	13.10 kW	13.80 kW
SCOP	6.23	4.48
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	12.97 kW	13.67 kW

COP Tj = +2°C	3.35	2.25
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	8.41 kW	8.87 kW
COP Tj = +7°C	5.31	3.80
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	4.29 kW	3.94 kW
COP Tj = 12°C	8.23	5.88
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	8.42 kW	8.87 kW
COP Tj = Tbiv	5.31	3.80
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.97 kW	13.67 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.35	2.25
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.13 kW	0.13 kW
Annual energy consumption Qhe	2811 kWh	4118 kWh

## Model Indoor unit ACHA-H/4R2EA19 and outdoor unit AC-H14/4R2EA(HA)

Model name	Indoor unit ACHA-H/4R2EA19 and outdoor unit AC-H14/4R2EA(HA)
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	1x230V 50Hz
Off-peak product	n/a

## Outdoor Air/Water

## EN 16147 | Average Climate

Declared load profile	L
Efficiency $\eta_{DHW}$	115 %
COP	2.85
Heating up time	1:36 h:min
Standby power input	45.0 W
Reference hot water temperature	50.0 °C
Mixed water at 40°C	212 l

## EN 14511-4 | Heating

Shutting off the heat transfer medium flow passed

Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

## EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	14.20 kW	13.90 kW
El input	3.02 kW	4.79 kW
COP	4.70	2.90

## EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

## EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	188 %	150 %

Prated	14.50 kW	13.00 kW
SCOP	4.77	3.83
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	12.83 kW	11.50 kW
COP Tj = -7°C	2.98	2.40
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	7.81 kW	7.00 kW
COP Tj = +2°C	4.39	3.64
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	5.02 kW	4.50 kW
COP Tj = +7°C	6.80	5.04
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	4.30 kW	4.06 kW
COP Tj = 12°C	9.95	7.65
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	12.83 kW	11.50 kW
COP Tj = Tbiv	2.98	2.40
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	13.10 kW	12.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.60	2.07
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.40 kW	0.80 kW
Annual energy consumption Qhe	6275 kWh	7018 kWh

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	259 %	178 %
Prated	12.10 kW	13.70 kW
SCOP	6.56	4.53
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	12.00 kW	13.60 kW

COP Tj = +2°C	3.44	2.18
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	7.78 kW	8.83 kW
COP Tj = +7°C	5.84	3.91
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	4.23 kW	4.08 kW
COP Tj = 12°C	8.43	5.90
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	7.78 kW	8.83 kW
COP Tj = Tbiv	5.84	3.91
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.00 kW	13.60 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.44	2.18
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.10 kW	0.10 kW
Annual energy consumption Qhe	2464 kWh	4037 kWh

## Model Indoor unit ACHA-H/4R2EA19 and outdoor unit AC-H12/4R2EA(HA)

Model name	Indoor unit ACHA-H/4R2EA19 and outdoor unit AC-H12/4R2EA(HA)
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	1x230V 50Hz
Off-peak product	n/a

## Outdoor Air/Water

## EN 16147 | Average Climate

Declared load profile	L
Efficiency $\eta_{DHW}$	115 %
COP	2.85
Heating up time	1:36 h:min
Standby power input	45.0 W
Reference hot water temperature	50.0 °C
Mixed water at 40°C	212 l

## EN 14511-4 | Heating

Shutting off the heat transfer medium flow passed

Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

## EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	12.00 kW	11.80 kW
El input	2.45 kW	4.03 kW
COP	4.90	2.93

## EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	58 dB(A)	58 dB(A)

## EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	188 %	150 %



Prated	13.20 kW	12.00 kW
SCOP	4.77	3.83
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	11.68 kW	10.62 kW
COP Tj = -7°C	2.99	2.40
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	7.11 kW	6.46 kW
COP Tj = +2°C	4.40	3.64
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	4.57 kW	4.15 kW
COP Tj = +7°C	6.77	5.04
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	4.30 kW	4.08 kW
COP Tj = 12°C	9.70	7.65
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	11.68 kW	10.62 kW
COP Tj = Tbiv	2.99	2.40
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.60 kW	11.80 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.60	2.07
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.60 kW	0.20 kW
Annual energy consumption Qhe	5712 kWh	6481 kWh

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	41 dB(A)	41 dB(A)
Sound power level outdoor	58 dB(A)	58 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	254 %	174 %
Prated	11.30 kW	12.50 kW
SCOP	6.43	4.42
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	11.10 kW	12.30 kW

COP Tj = +2°C	3.59	2.31
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	7.26 kW	8.04 kW
COP Tj = +7°C	5.82	3.82
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	4.61 kW	3.57 kW
COP Tj = 12°C	8.30	5.70
Cdh Tj = +12 °C	0.900	0.900
Pdh Tj = Tbiv	7.26 kW	8.04 kW
COP Tj = Tbiv	5.82	3.82
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.10 kW	12.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.59	2.31
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	75 °C	75 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.20 kW	0.20 kW
Annual energy consumption Qhe	2350 kWh	3775 kWh