

Subtype MA(M/B) 4-6 v10

Certificate Holder	Salvador Escoda S.A.
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City	Barcelona
Country	ES
Certification Body	BRE Global Limited
Subtype title	MA(M/B) 4-6 v10
Registration number	041-K012-01
Heat Pump Type	Outdoor Air/Water
Refrigerant	R32
Mass of Refrigerant	1.5 kg
Certification Date	21.05.2021
Testing basis	Heat Pump Keymark Scheme Rules Rev 09

Model MAB-4-V10M + HR-4-6-V10M

Model name	MAB-4-V10M + HR-4-6-V10M
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
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 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 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	38 dB(A)	38 dB(A)
Sound power level outdoor	56 dB(A)	56 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	191 %	130 %
Prated	5.52 kW	4.40 kW
SCOP	4.85	3.31
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	4.88 kW	3.89 kW
COP Tj = -7°C	3.19	2.17
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	3.06 kW	2.38 kW
COP Tj = +2°C	4.78	3.30
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	1.93 kW	2.95 kW
COP Tj = +7°C	6.13	4.41
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	1.48 kW	1.32 kW
COP Tj = 12°C	8.05	5.66
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	4.88 kW	3.89 kW

COP Tj = Tbiv	3.19	2.17
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.42 kW	3.42 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.86	1.91
WTOL	65 °C	65 °C
Poff	14 W	14 W
PTO	24 W	24 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.11 kW	0.98 kW
Annual energy consumption Qhe	2351 kWh	2744 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	38 dB(A)	38 dB(A)
Sound power level outdoor	56 dB(A)	56 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	159 %	102 %
Prated	4.57 kW	3.37 kW
SCOP	4.06	2.63
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	2.76 kW	2.14 kW
COP Tj = -7°C	3.49	2.32
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	1.77 kW	1.28 kW
COP Tj = +2°C	4.95	2.99
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	1.17 kW	1.01 kW
COP Tj = +7°C	5.53	3.86
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	1.43 kW	1.36 kW
COP Tj = 12°C	7.67	6.28
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	3.72 kW	2.75 kW
COP Tj = Tbiv	2.57	1.74
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.80 kW	1.64 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.97	1.02
WTOL	65 °C	65 °C
Poff	14 W	14 W

PTO	24 W	24 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.76 kW	1.73 kW
Annual energy consumption Q _{he}	2770 kWh	3159 kWh
P _{dh} T _j = -15°C (if TOL	3.72	2.75
COP T _j = -15°C (if TOL	2.57	1.74
C _{dh} T _j = -15 °C	0.90	0.90

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	38 dB(A)	38 dB(A)
Sound power level outdoor	56 dB(A)	56 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	254 %	162 %
Prated	5.54 kW	5.02 kW
SCOP	6.52	4.14
T _{biv}	7 °C	7 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2°C	5.35 kW	4.84 kW
COP T _j = +2°C	3.94	2.51
C _{dh} T _j = +2 °C	0.90	0.90
P _{dh} T _j = +7°C	3.56 kW	3.23 kW
COP T _j = +7°C	5.92	3.68
C _{dh} T _j = +7 °C	0.90	0.90
P _{dh} T _j = 12°C	1.64 kW	1.47 kW
COP T _j = 12°C	7.91	5.15
C _{dh} T _j = +12 °C	0.90	0.90
P _{dh} T _j = T _{biv}	3.56 kW	3.23 kW
COP T _j = T _{biv}	5.92	3.68
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	5.35 kW	4.84 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	3.94	2.51
WTOL	65 °C	65 °C
P _{off}	14 W	14 W
PTO	24 W	24 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.19 kW	0.18 kW
Annual energy consumption Q _{he}	1152 kWh	1621 kWh

Model MAB-6-V10M + HR-4-6-V10M

Model name	MAB-6-V10M + HR-4-6-V10M
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
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 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 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	38 dB(A)	38 dB(A)
Sound power level outdoor	58 dB(A)	58 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	195 %	138 %
Prated	6.82 kW	5.70 kW
SCOP	4.95	3.52
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	6.03 kW	5.05 kW
COP Tj = -7°C	3.09	2.17
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	3.88 kW	3.12 kW
COP Tj = +2°C	4.85	3.51
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	2.40 kW	2.09 kW
COP Tj = +7°C	6.63	4.54
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	1.39 kW	1.28 kW
COP Tj = 12°C	7.83	5.59
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	6.03 kW	5.05 kW

COP $T_j = T_{biv}$	3.09	2.17
$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	5.36 kW	4.52 kW
COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	2.76	1.91
WTOL	65 °C	65 °C
P _{off}	14 W	14 W
PTO	24 W	24 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.45 kW	1.18 kW
Annual energy consumption Q _{he}	2846 kWh	3345 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	38 dB(A)	38 dB(A)
Sound power level outdoor	58 dB(A)	58 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	165 %	111 %
Prated	5.63 kW	4.26 kW
SCOP	4.21	2.85
T_{biv}	-15 °C	-15 °C
TOL	-22 °C	-22 °C
$P_{dh} T_j = -7^{\circ}C$	3.42 kW	2.70 kW
COP $T_j = -7^{\circ}C$	3.59	2.46
$C_{dh} T_j = -7^{\circ}C$	0.90	0.90
$P_{dh} T_j = +2^{\circ}C$	2.06 kW	1.61 kW
COP $T_j = +2^{\circ}C$	5.21	3.36
$C_{dh} T_j = +2^{\circ}C$	0.90	0.90
$P_{dh} T_j = +7^{\circ}C$	1.47 kW	1.02 kW
COP $T_j = +7^{\circ}C$	6.24	3.94
$C_{dh} T_j = +7^{\circ}C$	0.90	0.90
$P_{dh} T_j = 12^{\circ}C$	1.44 kW	1.37 kW
COP $T_j = 12^{\circ}C$	7.66	6.35
$C_{dh} T_j = +12^{\circ}C$	0.90	0.90
$P_{dh} T_j = T_{biv}$	4.60 kW	3.48 kW
COP $T_j = T_{biv}$	2.53	1.86
$P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$	3.48 kW	2.10 kW
COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$	1.96	1.13
WTOL	65 °C	65 °C
P _{off}	20 W	20 W

PTO	24 W	24 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.15 kW	2.16 kW
Annual energy consumption Q _{he}	3301 kWh	3681 kWh
P _{dh} T _j = -15°C (if TOL	4.60	3.48
COP T _j = -15°C (if TOL	2.53	1.86
C _{dh} T _j = -15 °C	0.90	0.90

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	38 dB(A)	38 dB(A)
Sound power level outdoor	58 dB(A)	58 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	258 %	165 %
Prated	6.12 kW	5.15 kW
SCOP	6.63	4.19
T _{biv}	7 °C	7 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2°C	5.94 kW	5.03 kW
COP T _j = +2°C	3.91	2.48
C _{dh} T _j = +2 °C	0.90	0.90
P _{dh} T _j = +7°C	3.93 kW	3.31 kW
COP T _j = +7°C	5.89	3.67
C _{dh} T _j = +7 °C	0.90	0.90
P _{dh} T _j = 12°C	1.80 kW	1.60 kW
COP T _j = 12°C	8.20	5.29
C _{dh} T _j = +12 °C	0.90	0.90
P _{dh} T _j = T _{biv}	3.93 kW	3.31 kW
COP T _j = T _{biv}	5.89	3.67
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	5.94 kW	5.03 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	3.91	2.48
WTOL	65 °C	65 °C
P _{off}	14 W	14 W
PTO	24 W	24 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.18 kW	0.12 kW
Annual energy consumption Q _{he}	1251 kWh	1640 kWh

Model MAM-4-V10M

Model name	MAM-4-V10M
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
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 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 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	55 dB(A)	55 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	191 %	130 %
Prated	5.52 kW	4.40 kW
SCOP	4.85	3.31
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	4.88 kW	3.89 kW
COP Tj = -7°C	3.19	2.17
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	3.06 kW	2.38 kW
COP Tj = +2°C	4.78	3.30
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	1.93 kW	2.95 kW
COP Tj = +7°C	6.13	4.41
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	1.48 kW	1.32 kW
COP Tj = 12°C	8.05	5.66
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	4.88 kW	3.89 kW
COP Tj = Tbiv	3.19	2.17

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.42 kW	3.42 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.86	1.91
WTOL	65 °C	65 °C
Poff	14 W	14 W
PTO	24 W	24 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.11 kW	0.98 kW
Annual energy consumption Qhe	2351 kWh	2744 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level outdoor	55 dB(A)	55 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	159 %	102 %
Prated	4.57 kW	3.37 kW
SCOP	4.06	2.63
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	2.76 kW	2.14 kW
COP Tj = -7°C	3.49	2.32
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	1.77 kW	1.28 kW
COP Tj = +2°C	4.95	2.99
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	1.17 kW	1.01 kW
COP Tj = +7°C	5.53	3.86
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	1.43 kW	1.36 kW
COP Tj = 12°C	7.67	6.28
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	3.72 kW	2.75 kW
COP Tj = Tbiv	2.57	1.74
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	2.80 kW	1.64 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.97	1.02
WTOL	65 °C	65 °C
Poff	14 W	14 W
PTO	24 W	24 W
PSB	14 W	14 W

PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.76 kW	1.73 kW
Annual energy consumption Q _{he}	2770 kWh	3159 kWh
P _{dh} T _j = -15°C (if TOL	3.72	2.75
COP T _j = -15°C (if TOL	2.57	1.74
C _{dh} T _j = -15 °C	0.90	0.90

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	55 dB(A)	55 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	254 %	162 %
Prated	5.54 kW	5.02 kW
SCOP	6.52	4.14
T _{biv}	7 °C	7 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2°C	5.35 kW	4.84 kW
COP T _j = +2°C	3.94	2.51
C _{dh} T _j = +2 °C	0.90	0.90
P _{dh} T _j = +7°C	3.56 kW	3.23 kW
COP T _j = +7°C	5.92	3.68
C _{dh} T _j = +7 °C	0.90	0.90
P _{dh} T _j = 12°C	1.64 kW	1.47 kW
COP T _j = 12°C	7.91	5.15
C _{dh} T _j = +12 °C	0.90	0.90
P _{dh} T _j = T _{biv}	3.56 kW	3.23 kW
COP T _j = T _{biv}	5.92	3.68
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	5.35 kW	4.84 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	3.94	2.51
WTOL	65 °C	65 °C
P _{off}	14 W	14 W
PTO	24 W	24 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.19 kW	0.18 kW
Annual energy consumption Q _{he}	1152 kWh	1621 kWh

Model MAM-6-V10M

Model name	MAM-6-V10M
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
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 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 12102-1 | Average Climate

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

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	195 %	138 %
Prated	6.82 kW	5.70 kW
SCOP	4.95	3.52
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	6.03 kW	5.05 kW
COP Tj = -7°C	3.09	2.17
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	3.88 kW	3.12 kW
COP Tj = +2°C	4.85	3.51
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	2.40 kW	2.09 kW
COP Tj = +7°C	6.63	4.54
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	1.39 kW	1.28 kW
COP Tj = 12°C	7.83	5.59
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	6.03 kW	5.05 kW
COP Tj = Tbiv	3.09	2.17

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.36 kW	4.52 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.76	1.91
WTOL	65 °C	65 °C
Poff	14 W	14 W
PTO	24 W	24 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.45 kW	1.18 kW
Annual energy consumption Qhe	2846 kWh	3345 kWh

EN 12102-1 | Colder Climate

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

EN 14825 | Colder Climate

	Low temperature	Medium temperature
η_s	165 %	111 %
Prated	5.63 kW	4.26 kW
SCOP	4.21	2.85
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	3.42 kW	2.70 kW
COP Tj = -7°C	3.59	2.46
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	2.06 kW	1.61 kW
COP Tj = +2°C	5.21	3.36
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	1.47 kW	1.02 kW
COP Tj = +7°C	6.24	3.94
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	1.44 kW	1.37 kW
COP Tj = 12°C	7.66	6.35
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	4.60 kW	3.48 kW
COP Tj = Tbiv	2.53	1.86
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	3.48 kW	2.10 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.96	1.13
WTOL	65 °C	65 °C
Poff	20 W	20 W
PTO	24 W	24 W
PSB	14 W	14 W

PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	2.15 kW	2.16 kW
Annual energy consumption Q _{he}	3301 kWh	3681 kWh
P _{dh} T _j = -15°C (if TOL	4.60	3.48
COP T _j = -15°C (if TOL	2.53	1.86
C _{dh} T _j = -15 °C	0.90	0.90

EN 12102-1 | Warmer Climate

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

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	258 %	165 %
Prated	6.12 kW	5.15 kW
SCOP	6.63	4.19
T _{biv}	7 °C	7 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2°C	5.94 kW	5.03 kW
COP T _j = +2°C	3.91	2.48
C _{dh} T _j = +2 °C	0.90	0.90
P _{dh} T _j = +7°C	3.93 kW	3.31 kW
COP T _j = +7°C	5.89	3.67
C _{dh} T _j = +7 °C	0.90	0.90
P _{dh} T _j = 12°C	1.80 kW	1.60 kW
COP T _j = 12°C	8.20	5.29
C _{dh} T _j = +12 °C	0.90	0.90
P _{dh} T _j = T _{biv}	3.93 kW	3.31 kW
COP T _j = T _{biv}	5.89	3.67
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	5.94 kW	5.03 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	3.91	2.48
WTOL	65 °C	65 °C
P _{off}	14 W	14 W
PTO	24 W	24 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.18 kW	0.12 kW
Annual energy consumption Q _{he}	1251 kWh	1640 kWh