Carrier

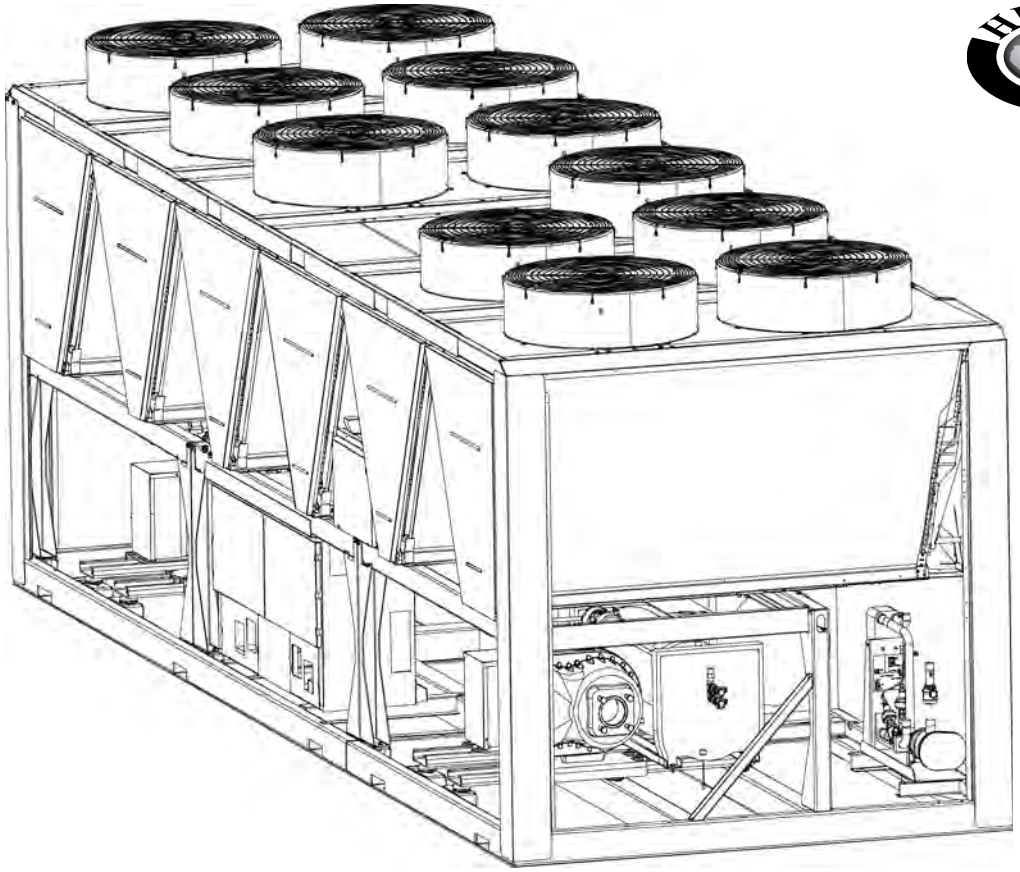
30XA
Air-Cooled Liquid Chillers

Nominal cooling capacity: 270-1670 kW

50 Hz

AQUAFORCE™

HFC-134a



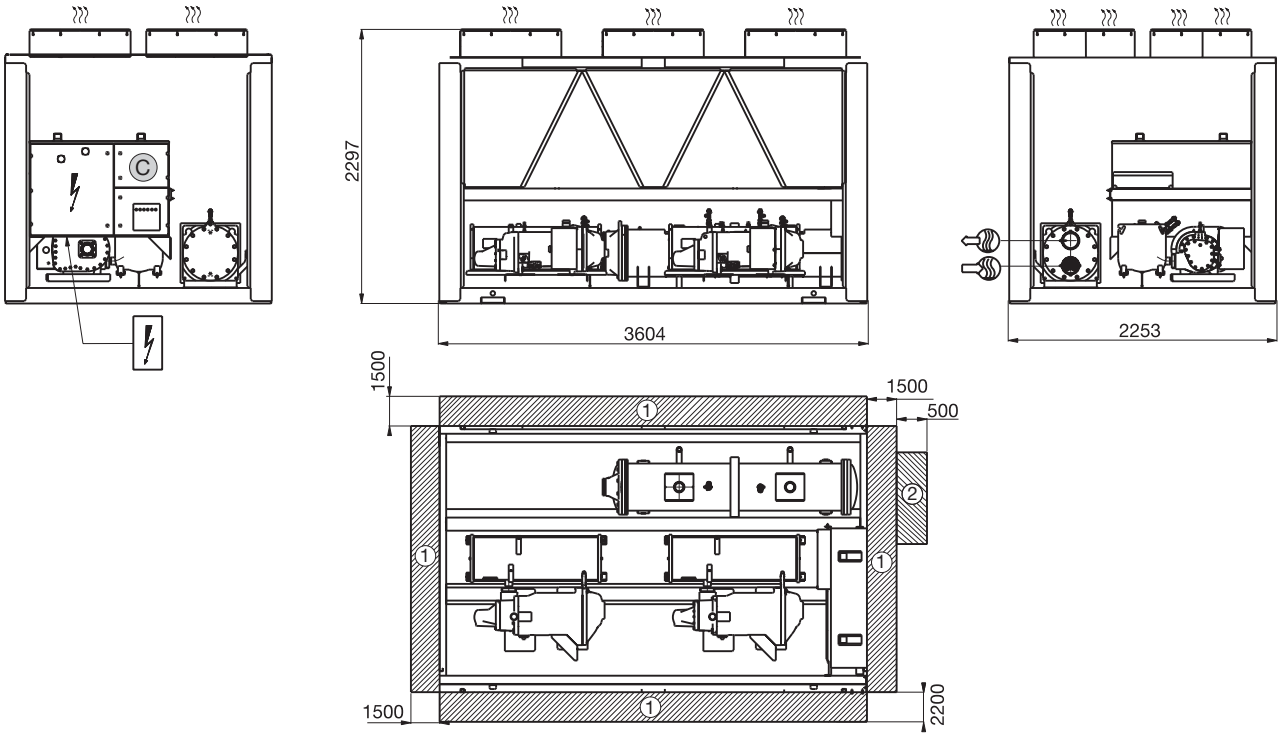
Installation, operation and maintenance instructions

LLOYD'S REGISTER QUALITY ASSURANCE · ISO9001 · UKAS QUALITY MANAGEMENT 001

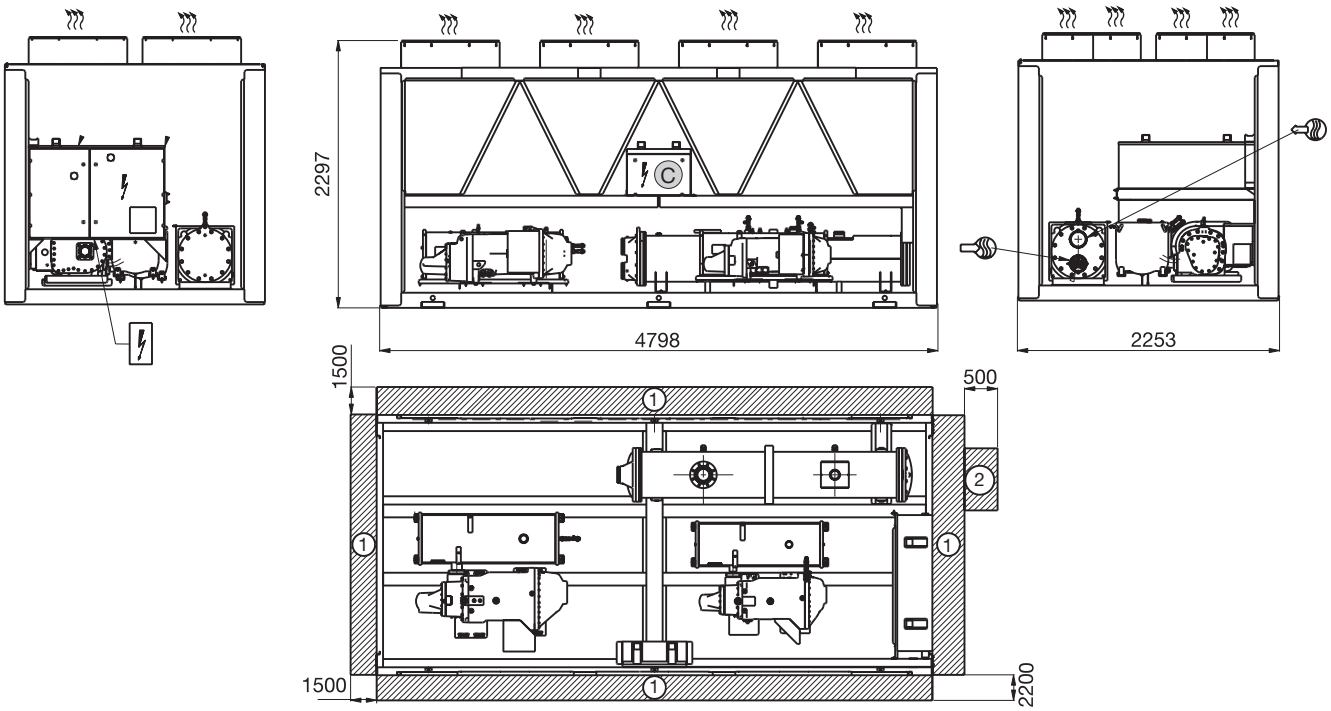
Quality Management System Approval

3 - DIMENSIONS, CLEARANCES

3.1 - 30XA 252-352 (standard) and 252-302 (option 254/255)



3.2 - 30XA 402-452 (standard) and 352-452 (option 254/255)



Legend:
All dimensions are given in mm.

1 Required clearances for maintenance and air flow

2 Recommended space for evaporator tube removal

Water inlet

Water outlet

Air outlet - do not obstruct

Power supply connection

C Control circuit connection

NOTE: Drawings are not contractually binding. Before designing an installation, consult the certified dimensional drawings supplied with the unit or available on request.

For the positioning of the fixing points, weight distribution and centre of gravity coordinates please refer to the dimensional drawings.

4 - PHYSICAL AND ELECTRICAL DATA FOR 30XA UNITS

4.1 - Physical data 30XA - Standard units and option 119***

30XA		252	302	352	402	452	502	602	702	752	802	852	902	1002	1102	1202	1302	1352	1402	1502	1702
Nominal cooling capacity*																					
Standard unit	kW	268	293	320	382	437	492	605	653	706	764	802	869	952	1116	1216	1297	1382	1426	1478	1605
Option 119	kW	274	300	326	393	451	508	616	677	726	792	838	899	1000	1147	1247	1354	1442	1468	1523	1675
Nominal power input*																					
Standard unit‡	kW	87	98	106	122	142	168	198	208	235	259	265	297	321	363	405	445	504	473	488	528
Option 119‡	kW	88	96	105	120	141	154	192	203	234	249	256	286	310	348	388	425	463	450	465	513
Operating weight**	kg	3840	3880	3920	4780	4850	5330	6260	6410	6710	7010	7560	7860	8440	10440	10880	11260	11620	8380/ 4250	8530/ 4250	7560/ 7560
Refrigerant		R-134a																			
Circuit A	kg	36	37	37	53	55	62	62	62	70	74	77	74	80	69	85	78	87	100	92	77
Circuit B	kg	38	38	39	37	39	39	62	66	62	65	68	77	84	66	66	68	80	85	95	68
Circuit C	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	100	100	100	96	100	100	77
Circuit D	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	66
Compressors		06T semi-hermetic screw compressors, 50 r/s																			
Circuit A		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Circuit B		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Circuit C		-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1
Circuit D		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Minimum capacity	%	15	15	15	15	15	15	15	15	15	15	15	15	15	10	10	10	10	10	10	8
Control		PRO-DIALOG, electronic expansion valve (EXV)																			
Condensers		All aluminium micro-channel heat exchanger																			
Condenser fans		Axial Flying Bird 4 fans with rotating shroud																			
Standard unit																					
Quantity		6	6	6	8	8	9	11	12	12	12	14	14	16	19	20	20	20	24	24	28
Total air flow	l/s	20500	20500	20500	27333	27333	30750	37583	41000	41000	41000	47833	47833	54667	64917	68333	68333	68333	82000	82000	95667
Fan speed	r/s	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7
Option 119																					
Quantity		6	6	6	8	8	9	11	12	12	12	14	14	16	19	20	20	20	24	24	28
Total air flow at high speed	l/s	27083	27083	27083	36111	36111	40625	49653	54167	54167	54167	63194	63194	72222	85764	90278	90278	90278	108333	108333	126389
Fan speed	r/s	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7
Evaporator		Flooded multi-pipe type																			
Water content	l	58	61	61	66	70	77	79	94	98	119	119	130	140	168	182	203	224	230	240	240
Maximum pressure****	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

* Nominal conditions: evaporator entering/leaving water temperature = 12°C/7°C. Outdoor air temperature = 35°C, evaporator fouling factor = 0.000018 m² K/W.

** Weights are guidelines only. Weight and diameters of connection modules 1 and 2 for sizes 1402 to 1702. The refrigerant charge is also given on the unit nameplate.

*** Options: 119 = high energy efficiency; 254 = traditional coils.

**** Max. water-side operating pressure without hydronic module

‡ Data is not contractually binding and for information only. The values are rounded.

Note:
Unit sizes 30XA 1402 to 1702 are supplied in two field-assembled modules.

4.2 - Physical data 30XA - Units with option 254 and 255***

30XA		252	302	352	402	452	502	602	702	752	802	852	902	1002	1102	1202	1302	1352	1402	1502	1702
Nominal cooling capacity*																					
Option 254	kW	271	295	322	387	438	493	600	659	708	766	809	870	967	1119	1218	1299	1399	1433	1484	1619
Option 255	kW	268	293	319	383	434	488	594	652	701	758	801	861	957	1108	1205	1286	1385	1419	1469	1603
Nominal power input*																					
Option 254‡	kW	88	99	104	124	145	160	198	212	236	258	270	303	327	370	413	453	513	479	497	539
Option 255‡	kW	90	101	106	127	148	163	202	217	241	263	277	310	335	378	422	464	527	489	509	552
Operating weight**	kg	4160	4190	4710	5190	5260	5830	6870	7030	7820	8140	8260	9010	9260	11470	11890	12250	12640	9180/ 4650	9340/ 4650	8270/ 8270
Refrigerant		R-134a																			
Circuit A	kg	60	64	70	85	85	102	102	100	129	112	130	129	140	102	112	112	112	140	140	130
Circuit B	kg	64	64	56	56	56	56	88	95	88	95	95	103	129	92	92	92	98	103	129	95
Circuit C	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	135	135	135	122	135	135	130
Circuit D	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	95
Compressors		06T semi-hermetic screw compressors, 50 r/s																			
Circuit A		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Circuit B		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Circuit C		-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1
Circuit D		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Minimum capacity	%	15	15	15	15	15	15	15	15	15	15	15	15	15	10	10	10	10	10	10	8
Control		PRO-DIALOG, electronic expansion valve (EXV)																			
Condensers		All aluminium micro-channel heat exchanger																			
Condenser fans		Axial Flying Bird 4 fans with rotating shroud																			
Quantity		6	6	7	8	8	9	11	12	13	13	14	15	16	19	20	20	20	24	24	28
Total air flow	l/s	20500	20500	20500	27333	27333	30750	37583	41000	41000	41000	47833	47833	54667	64917	68333	68333	68333	82000	82000	95667
Fan speed	r/s	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7
Evaporator		Flooded multi-pipe type																			
Water content	l	58	61	61	66	70	77	79	94	98	119	119	130	140	168	182	203	224	230	240	240
Maximum pressure****	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

* Nominal conditions: evaporator entering/leaving water temperature = 12°C/7°C. Outdoor air temperature = 35°C, evaporator fouling factor = 0.000018 m^2 K/W

** Weights are guidelines only. Weight and diameters of connection modules 1 and 2 for sizes 1402 to 1702. The refrigerant charge is also given on the unit nameplate.

*** Option 254 = Units with copper/aluminium coils
Option 255 = Units with copper/aluminium coils without slots

**** Max. water-side operating pressure without hydronic module

‡ Data is not contractually binding and for information only. The values are rounded.

Notes:
Unit sizes 30XA 1402 to 1702 are supplied in two field-assembled modules.

Option 119 (high energy efficiency) can be used together with options 254 and 255. Contact your Carrier representative to obtain the performances.

4.3 - Sound levels

30XA		252	302	352	402	452	502	602	702	752	802	852	902	1002	1102	1202	1302	1352	1402	1502	1702
Standard unit																					
Sound power level*	dB(A)	89	89	89	92	93	93	94	93	95	95	94	96	95	96	96	96	97	97	97	97
Sound pressure level at 10 m**	dB(A)	57	57	57	60	61	61	62	61	63	63	62	63	63	63	63	63	64	64	64	64
Standard unit + option 257																					
Sound power level*	dB(A)	86	86	86	89	90	90	91	90	92	92	91	93	92	93	93	93	94	94	94	94
Sound pressure level at 10 m**	dB(A)	54	54	54	57	58	58	59	57	60	59	58	60	59	60	60	60	61	61	61	61
High energy efficiency version (option 119)																					
Sound power level*	dB(A)	94	94	94	95	95	95	96	96	98	98	98	99	98	99	100	99	100	101	100	101
Sound pressure level at 10 m**	dB(A)	62	62	62	62	62	62	63	64	65	66	65	66	65	66	67	66	67	68	67	67
Unit with options 119 + 257																					
Sound power level*	dB(A)	92	92	92	94	94	94	95	95	96	96	96	97	97	98	98	98	98	99	99	99
Sound pressure level at 10 m**	dB(A)	60	60	60	62	62	62	62	62	63	63	63	64	64	65	65	65	62	66	66	65

* 10^{-12} W - In accordance with ISO 9614-1 and certified by Eurovent

** Average sound pressure level, unit in a free field on a reflective surface

4.4 - Short-circuit stability current for all units

30XA		252	302	352	402	452	502	602	702	752	802	852	902	1002	1102	1202	1302	1352	1402	1502	1702
Short-circuit stability current (TN system)*																					
Circuits A + B**	kA	38	38	38	38	38	38	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Circuits C + D**	kA	-	-	-	-	-	-	-	-	-	-	-	-	-	50	50	50	50	50	50	50
Units with option 81	A	-	-	-	-	-	-	-	-	-	-	-	-	-	50	50	50	50	50	50	-

* Type of system earthing
** rms value

4.5 - Electrical data 30XA - Standard unit (including option 81)

30XA		252	302	352	402	452	502	602	702	752	802	852	902	1002	1102	1202	1302	1352	1402	1502	1702
Power circuit																					
Nominal power supply	V-ph-Hz	400-3-50																			
Voltage range	V	360-440																			
Control circuit		24 V via internal transformer																			
Maximum start-up current*																					
Circuit A+B	A	269	269	287	402	505	505	574	606	773	803	805	893	941	574	773	803	891	893	941	805
Circuit C+D††	A	-	-	-	-	-	-	-	-	-	-	-	-	-	587	587	587	587	587	587	805
Option 81	A	-	-	-	-	-	-	-	-	-	-	-	-	-	991	1079	1155	1242	1248	1294	-
Nominal start-up current**																					
Circuit A+B	A	245	245	263	378	481	481	539	562	738	759	761	845	869	539	738	759	843	845	869	761
Circuit C+D††	A	-	-	-	-	-	-	-	-	-	-	-	-	-	587	587	587	587	587	587	761
Option 81	A	-	-	-	-	-	-	-	-	-	-	-	-	-	909	993	1036	1156	1125	1143	-
Cosine Phi maximum***		0.88	0.88	0.87	0.88	0.88	0.88	0.88	0.88	0.86	0.86	0.87	0.85	0.86	0.88	0.86	0.87	0.85	0.85	0.86	0.87
Cosine Phi nominal****		0.85	0.85	0.84	0.84	0.86	0.86	0.87	0.87	0.84	0.85	0.85	0.83	0.84	0.85	0.84	0.85	0.83	0.83	0.84	0.85
Maximum power input†																					
Circuit A+B	kW	121	131	141	165	185	204	247	267	293	312	343	359	420	247	293	342	388	390	420	343
Circuit C+D††	kW	-	-	-	-	-	-	-	-	-	-	-	-	-	210	210	210	209	210	210	343
Option 81	A	-	-	-	-	-	-	-	-	-	-	-	-	-	457	503	552	597	600	630	-
Nominal unit current draw******																					
Circuit A+B	A	151	167	184	210	240	266	322	349	406	431	452	516	556	322	406	449	569	538	556	452
Circuit C+D††	A	-	-	-	-	-	-	-	-	-	-	-	-	-	278	278	278	292	278	278	452
Option 81	A	-	-	-	-	-	-	-	-	-	-	-	-	-	600	684	727	861	816	834	-
Maximum unit current draw (Un)†																					
Circuit A+B	A	198	215	233	270	303	335	404	436	492	522	572	611	707	404	492	568	655	661	707	572
Circuit C+D††	A	-	-	-	-	-	-	-	-	-	-	-	-	-	354	354	354	352	354	354	572
Option 81	A	-	-	-	-	-	-	-	-	-	-	-	-	-	758	845	922	1007	1015	1061	-
Maximum unit current draw (Un -10%)***																					
Circuit A+B	A	208	232	251	290	326	360	435	469	529	561	615	657	760	435	529	611	705	711	760	615
Circuit C+D††	A	-	-	-	-	-	-	-	-	-	-	-	-	-	380	380	380	378	380	380	615
Option 81	A	-	-	-	-	-	-	-	-	-	-	-	-	-	815	909	991	1083	1091	1141	-

* Instantaneous start-up current (operating current of the smallest compressor + fan current + locked rotor current in star connection of the largest compressor). Values obtained at operation with maximum unit power input.
** Instantaneous start-up current (operating current of the smallest compressor + fan current + locked rotor current in star connection of the largest compressor). Values obtained at standard Eurovent unit operating conditions: air 35°C, water 12/7°C
*** Values obtained at operation with maximum unit power input.
**** Values obtained at standard Eurovent unit operating conditions: air 35°C, water 12/7°C
† Values obtained at operation with maximum unit power input. Values given on the unit name plate
†† Circuit D - only for size 1702

Note:
Motor and fan electrical data if the unit operates at Eurovent conditions (motor ambient temperature 50°C): 1.9 A
Start-up current: 8.4 A
Power input: 760 W

4.9 - Compressor electrical data

Compressor	I Nom* Std/Option 119	I Max** (Un)	MHA	LRYA (Un)	LRDA (Un)	Cosine Phi (max.)**	Cosine Phi (nom.)*
06TSA155	69/64	86	96	170	530	0.90	0.87
06TSA186	87/80	108	120	170	530	0.89	0.86
06TTA266	128/117	158	176	303	945	0.90	0.86
06TTA301	142/130	173	193	388	1210	0.90	0.89
06TTA356	163/150	198	220	388	1210	0.90	0.89
06TUA483	245/230	280	311	587	1828	0.86	0.84
06TUA554	267/246	329	366	587	1828	0.87	0.85

* Average value for the range (unit at Eurovent conditions)
** Value at maximum capacity and nominal voltage (400 V)

Legend
MHA - Maximum compressor operating current, limited by the unit (current given for maximum capacity at 360 V)
LRYA - Locked rotor current for star connection (connection during compressor start-up)
LRDA - Locked rotor current for delta connection

4.10 - Compressor usage per circuit (A, B, C, D)

	30XA																			
Compressor	**252**	**302**	**352**	**402**	**452**	**502**	**602**	**702**	**752**	**802**	**852**	**902**	**1002**	**1102**	**1202**	**1302**	**1352**	**1402**	**1502**	**1702**
06TSA155	AB	B	-	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06TSA186	-	A	AB	-	B	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06TTA266	-	-	-	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
06TTA301	-	-	-	-	A	-	B	-	B	-	-	-	-	B	B	-	-	-	-	-
06TTA356	-	-	-	-	-	A	A	AB	-	B	B	-	-	A	-	B	-	-	-	BD
06TUA483	-	-	-	-	-	-	-	-	A	A	-	AB	-	-	A	-	B	B	-	-
06TUA554	-	-	-	-	-	-	-	-	-	-	A	-	AB	C	C	AC	AC	AC	ABC	AC

4.11 - Electrical data, optional hydronic module

30XA		252	302	352	402	452	502
Single and dual low-pressure pump							
Motor power	kW	2.2	2.2	3	4	4	5.5
Power input	kW	2.8	2.8	3.9	5.1	5.1	7.2
Maximum current draw	A	4.7	4.7	6.4	8.2	8.2	11.7
Single and dual high-pressure pump							
Motor power	kW	4	5.5	5.5	7.5	11	11
Power input	kW	5.1	7.2	7.2	9.2	13.2	13.2
Maximum current draw	A	8.2	11.7	11.7	15	21.2	21.2

Notes:
1. To obtain the maximum power input for a unit with hydronic module add the maximum unit power input to the pump power input.
2. To obtain the maximum unit operating current draw for a unit with hydronic module add the maximum unit current draw to the pump current draw.

5.4 - Recommended wire sections

Wire sizing is the responsibility of the installer, and depends on the characteristics and regulations applicable to each installation site. The following is only to be used as a guide-line, and does not make in any way liable. After wire sizing has been completed, using the certified dimensional drawing, the installer must ensure easy connection and define any modifications necessary on site.

The connections provided as standard for the field-supplied power entry cables to the general disconnect/isolator switch are designed for the number and type of wires, listed in the table below.

The calculations are based on the maximum machine current (see electrical data tables).

For the design the following standardised installation methods are used, in accordance with IEC 60364, table 52C:

- For 30XA units installed outside the building:
  No.17: suspended aerial lines
  No. 61: buried conduit with a derating coefficient of 20.

The calculation is based on PVC or XLPE insulated cables with copper core. The maximum temperature is 46°C for 30XA units.

The given wire length limits the voltage drop to < 5%.

IMPORTANT: Before connection of the main power cables (L1 - L2 - L3) on the terminal block, it is imperative to check the correct order of the 3 phases before proceeding to the connection on then terminal block or the main disconnect/isolator switch.

5.5 - Power cable entry

The power cables can enter the 30XA control box from below or from the unit side.

For 30XA unit sizes 602 to 1702 the control box that includes the power supply cable connection terminal is located in the lower part of the unit. In this case the control box is raised by 120 mm compared to the lowest point of the chassis. The cable entry point depends on the unit configuration:

1. Unit raised from the ground (e.g. installation on support rails): It is recommended to enter the power cables from below the control box. A removable aluminium plate below the control box allows introduction of the cables.
2. Unit placed on the ground: For power cable entry from below the control box ensure that the cable bend radius is compatible with the connection space available in the control box. If not, an aluminium plate on the control box face allows introduction of the cables.

For units with three circuits with option 81 (single power connection point) the connection must be made from below the unit.

IMPORTANT: Check the cable bend radius for cable entry into a control box, located in the lower part of the unit.

Refer to the certified dimensional drawing for the unit.

5.6 - Field control wiring

Refer to the 30XA Pro-Dialog Controls IOM and the certified wiring diagram supplied with the unit for the field control wiring of the following features:

- Evaporator pump interlock (mandatory)
- Remote on/off switch
- Demand limit external switch
- Remote dual set point
- Alarm, alert and operation report
- Evaporator pump control
- Heat reclaim condenser pump control (option)
- Hot water valve control (option)
- Set point reset via outside air temperature sensor reset
- Various interlocks on the Energy Management Module (EMM) board (accessory or option)

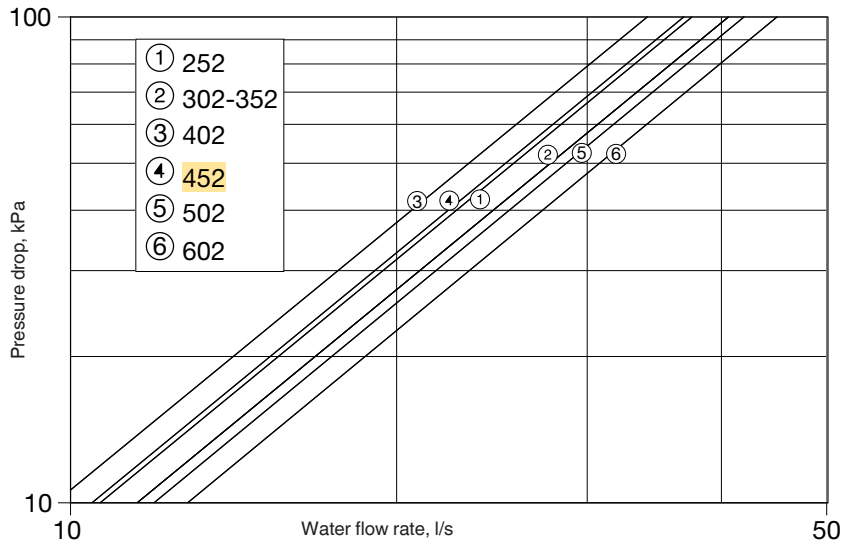
Selection table of minimum and maximum wire sections for connection to 30XA units

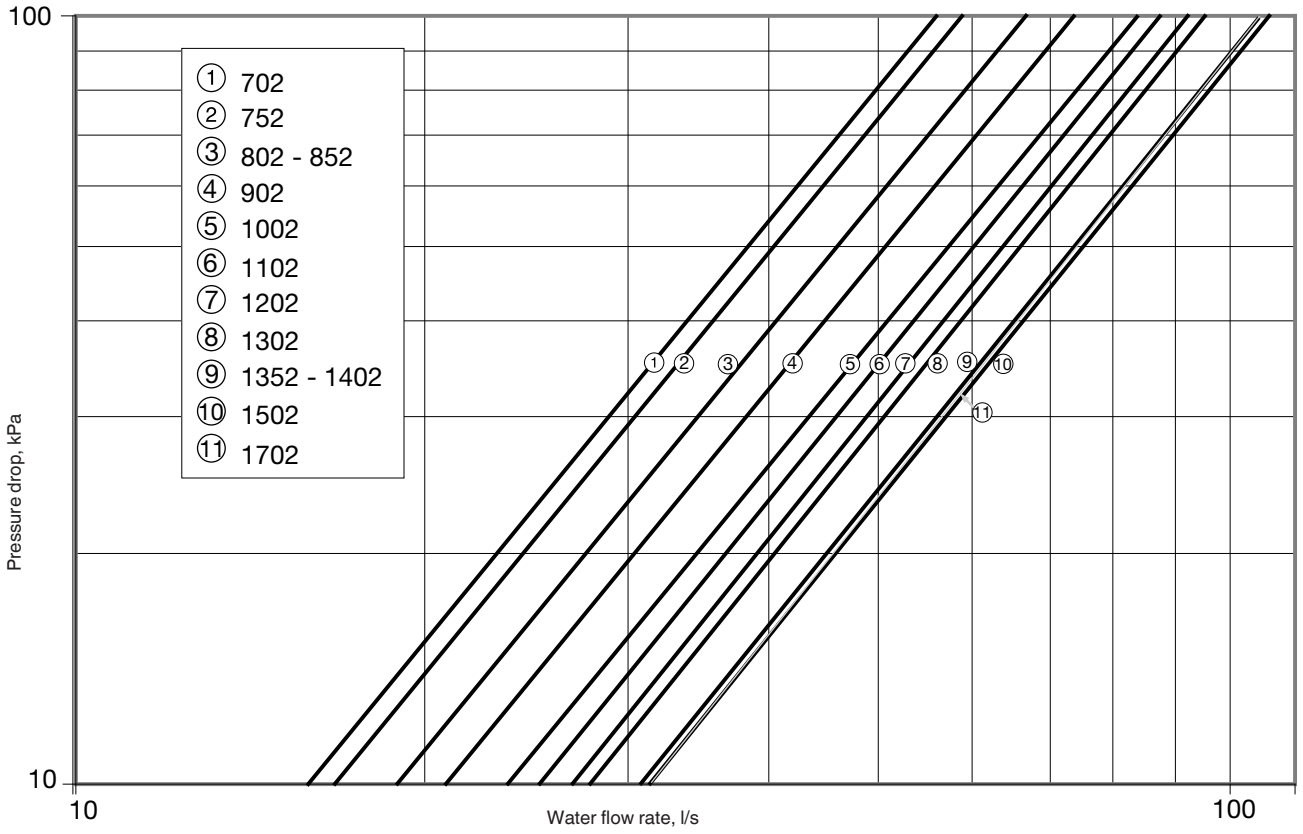
	Maximum wire section	Minimum calculated section			Maximum calculated section		
30XA	**Section (mm²)**	**Section (mm²)***	**Max. length (m)**	**Wire type**	**Section (mm²)***	**Max. length (m)**	**Wire type**
252	2 x 240	1 x 95	190	XLPE Cu	2 x 95	410	PVC Cu
302	2 x 240	1 x 95	190	XLPE Cu	2 x 120	435	PVC Cu
352	2 x 240	1 x 120	197	XLPE Cu	2 x 150	455	PVC Cu
402	2 x 240	1 x 150	200	XLPE Cu	2 x 185	470	PVC Cu
452	2 x 240	1 x 185	205	XLPE Cu	2 x 120	435	XLPE Cu
502	2 x 240	1 x 240	205	XLPE Cu	2 x 150	455	XLPE Cu
602	4 x 240	2 x 95	190	XLPE Cu	2 x 240	480	XLPE Cu
702	4 x 240	2 x 120	198	XLPE Cu	2 x 240	480	XLPE Cu
752	4 x 240	2 x 120	198	XLPE Cu	3 x 240	600	XLPE Cu
802	4 x 240	2 x 150	200	XLPE Cu	3 x 240	600	XLPE Cu
852	4 x 240	2 x 150	200	XLPE Cu	4 x 240	685	XLPE Cu
902	6 x 240	2 x 185	205	XLPE Cu	4 x 240	685	XLPE Cu
1002	6 x 240	2 x 240	205	XLPE Cu	5 x 240	750	XLPE Cu
Circuits A and B/C							
1102	4 x 240/2 x 240	2 x 95/1 x 240	190/280	XLPE Cu	4 x 240/2 x 240	685/480	PVC Cu/XLPE Cu
1202	4 x 240/2 x 240	2 x 150/1 x 240	280/280	XLPE Cu	4 x 240/2 x 240	685/480	XLPE Cu/XLPE Cu
1302	4 x 240/2 x 240	2 x 150/1 x 240	280/280	XLPE Cu	4 x 240/2 x 240	685/480	XLPE Cu/XLPE Cu
1352	6 x 240/2 x 240	2 x 185/1 x 240	280/280	XLPE Cu	5 x 240/2 x 240	750/480	XLPE Cu/XLPE Cu
1402	6 x 240/2 x 240	3 x 150/1 x 240	280/280	XLPE Cu	5 x 240/2 x 240	750/480	XLPE Cu/XLPE Cu
1502	6 x 240/2 x 240	3 x 150/1 x 240	280/280	XLPE Cu	6 x 240/2 x 240	750/480	XLPE Cu/XLPE Cu
1702	4 x 240/4 x 240	2 x 150/2 x 150	200/200	XLPE Cu	4 x 240/4 x 240	685/685	XLPE Cu
Option 81							
1102-1502	8 x 240						

* Power supply wire section (see diagram in chapter 5 'Electrical connection').

Note: The current values used are given for a unit equipped with a hydronic kit operating at maximum current.

6.8 - Evaporator pressure drop curve





7.2 - Victaulic water connections

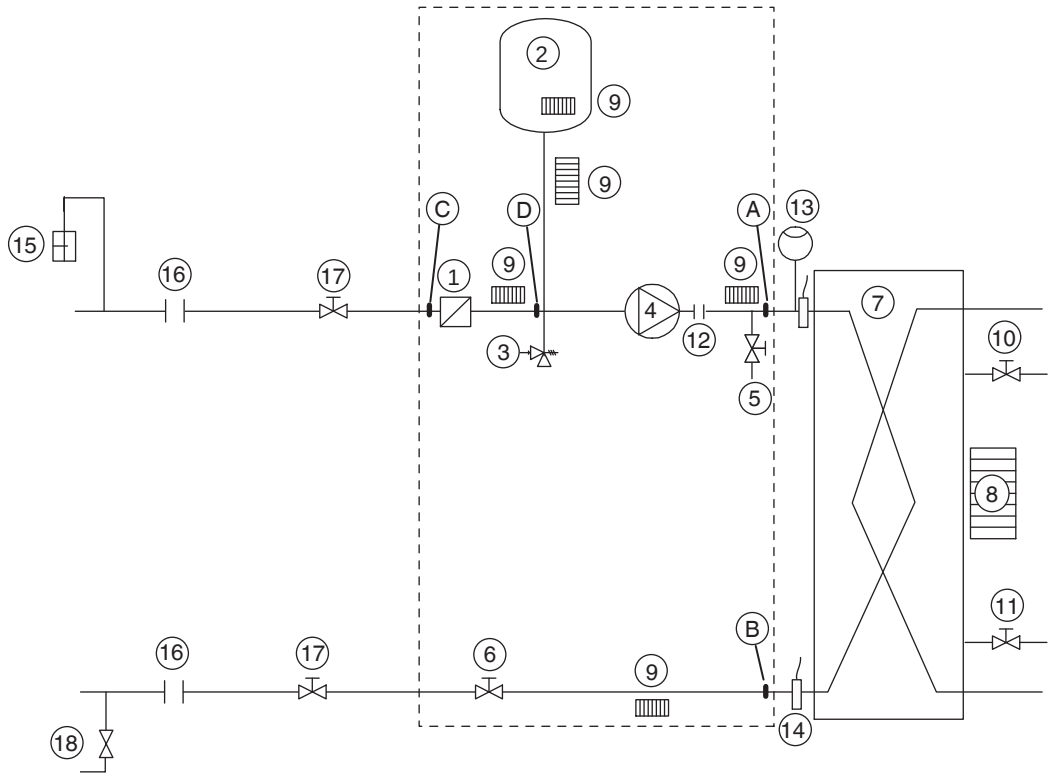
Inlet/outlet diameters without hydronic module

30XA		252-502	602	702-902	1002	1102	1202-1302	1352-1502	1702
Standard									
Diameter	in	5	5	6	8	6/6	6/6	8/6	6/6
Outside diameter	mm	141.3	141.3	168.3	219.1	168.3/168.3	168.3/168.3	219.3/168.3	168.3/168.3
Options 5, 6 and 100A									
Diameter	in	4	5	5	6	5/5	6/5	8/5	6/6
Outside diameter	mm	114.3	141.3	141.3	168.3	141.3/141.3	168.3/141.3	219.1/141.3	168.3/168.3
Option 100C									
Diameter	in	5	6	6	8	-	-	-	-
Outside diameter	mm	141.3	168.3	168.3	219.1	-	-	-	-

Inlet/outlet diameters with hydronic module (option)

30XA (option 116)		252	302	352	402	452	502
Diameter	in	4	4	4	5	5	5
Outside diameter	mm	114.3	114.3	114.3	139.7	139.7	139.7
Expansion tank volume	l	50	50	50	50	50	80
Max. operating pressure	kPa	400	400	400	400	400	400

Typical water circuit diagram



Legend

Components of the unit and hydronic module

A Pressure sensor (A-B = ΔP evaporator)
B Pressure sensor
C Pressure sensor (C-D = ΔP water filter)
D Pressure sensor
1 Victaulic screen filter
2 Expansion tank
3 Safety valve
4 Available pressure pump
5 Drain valve
6 Flow control valve
7 Evaporator
8 Evaporator defrost heater (option)
9 Hydronic module defrost heater (option)
10 Air vent (evaporator)
11 Water drain (evaporator)
12 Expansion compensator (flexible connections)
13 Flow switch
14 Water temperature sensor
15 Air vent

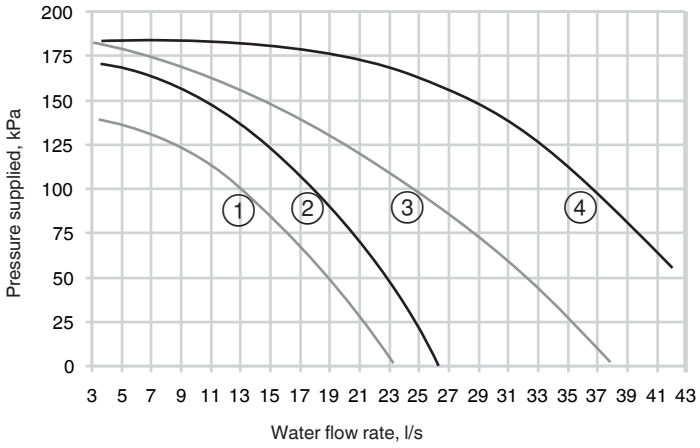
Installation components

16 Flexible connection
17 Check valve
18 Charge valve

--- Hydronic module (supplied as an option)

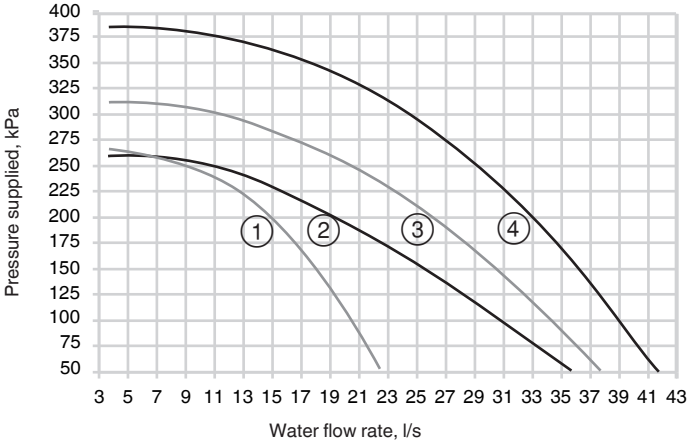
7.7 - Pump pressure/flow rate curves

Low-pressure pumps



Legend
1 30XA 252-302
2 30XA 352
3 30XA 402
4 30XA 452-502

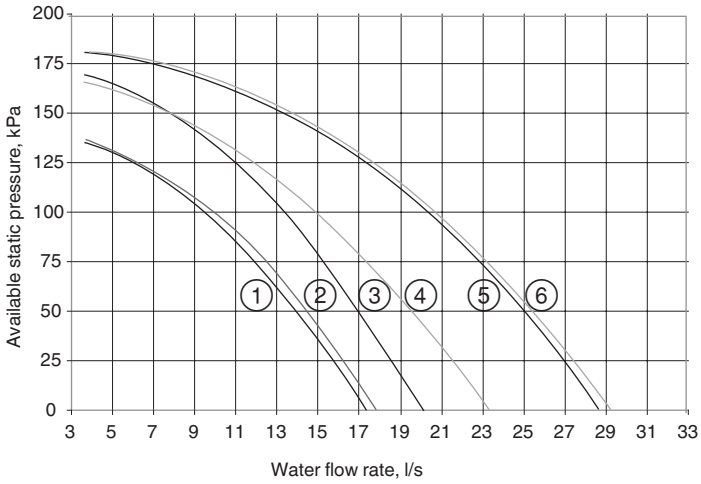
High-pressure pumps



Legend
1 30XA 252
2 30XA 302-352
3 30XA 402-452
4 30XA 502

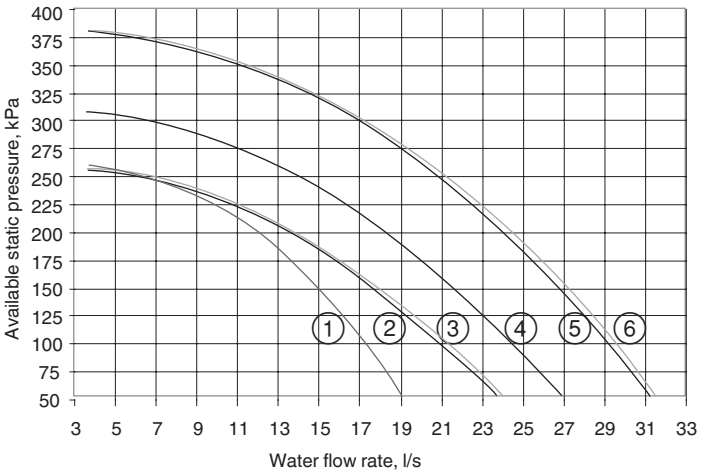
7.8 - Available static system pressure (optional hydronic module)

Low-pressure pumps



Legend
1 30XA 252
2 30XA 302
3 30XA 352
4 30XA 402
5 30XA 452
6 30XA 502

High-pressure pumps



Legend
1 30XA 252
2 30XA 352
3 30XA 302
4 30XA 402
5 30XA 452
6 30XA 502