Reversible Air-To-Water Scroll Heat Pumps

Model CXAO

Cooling capacity 403 - 1027 kW

Heating capacity 499 - 1264 kW

Ingersoll Rand

CXAO Heat Pumps, a Sustainable Solution for Heating and Cooling

Unit description

- Scroll compressors
- ECO-PROFILE axial fans
- Electronic expansion valves
- Water side shell and tube or plate heat exchanger with differential pressure switch and antifreeze protection electric heater
- Air side heat exchanger high efficiency finned coils with seamless copper tubes expanded into corrugated aluminium
- Intelligent microprocessor-based controller
- Casing and panels in galvanised and painted steel

ACOUSTIC AND HEAT RECOVERY VERSIONS
(H): Desuperheater for partial heat recovery
(L): Low noise: Sound attenuating compressor jackets and two speed fan motors
(S): Super low noise: Sound attenuating compressor jackets, oversized coils and variable fan speed

Options

- Single and dual water pump packages, with or without water tank
- On/off condensing control
- Condensing control with variable fan speed modulation
- Power factor correction to cos phi 0.91
- Automatic circuit breakers for load (without pump)
- Control panel electric heater with thermostat
- Phase failure protection relay
- Water pumps automatic changeover
- Condensing coil protection grilles
- Packaged anti-intrusion grille
- Serial card with BACnet protocol TCP/IP or MS/TP
- Serial card RS485 for Modbus
- Gas gauges
- EC motor brushless fans
- Softstarter
- Pre-painted condensing coils
- Epoxy coated condensing coil fins
- Copper/copper condensing coils
- Tinned copper/copper condensing coils
- High static pressure fans 100 Pa

Accessories

- Remote control display
- Serial card for LonTalk
- Flow switch
- Automatic water filling
- Water strainer
- Kit flanges
- Victaulic kit
- Water gauges
- Rubber or spring anti vibration mounts

Advantages

- Eco-friendly and efficient R410A refrigerant and heat exchangers withincreased surface area
- Compact design for easy installation in new and existing buildings
- Sophisticated and user friendly microprocessor-based controller
- Several optional serial cards for BMS connection

General technical data

Model	CXAO	120	130	140	150	165	175	180	190	195
Cooling (1)										
Cooling capacity	kW	403	437	474	504	552	604	638	659	684
Compressors power input	kW	162	178	187	200	227	202	220	225	235
Total EER (incl. fans)		2,31	2,30	2,35	2,35	2,28	2,72	2,65	2,68	2,67
Heating (2)										
Heating capacity	kW	499	529	586	622	694	751	783	815	835
Compressors power input	kW	154	170	176	189	211	206	213	221	230
Total COP (incl. fans)		3,00	2,91	3,07	3,05	3,07	3,31	3,34	3,37	3,33
Number of refrigerant circuits		2	2	2	2	2	3	3	3	3
Number of compressors		5	6	5	6	6	8	7	7	7
Type of compressors		Scroll								
Exchanger type		Plate					Shell & tube			
Sound pressure level (3)	dB(A)	61	60	60	62	63	62	63	63	64
Sound power level	dB(A)	93	92	92	94	95	94	96	96	96
Sound pressure level (L) (3)	dB(A)	58	57	57	59	60	60	61	61	62
Sound power level (L)	dB(A)	90	89	89	91	92	92	94	94	94
Sound pressure level (S) (3)	dB(A)	56	55	55	56	58	56	58	58	59
Sound power level (S)	dB(A)	88	87	87	89	91	89	91	91	91
Maximum power input	kW	250	283	272	305	324	366	311	375	381
Maximum full load current	A	441	498	480	537	570	645	549	661	672
Full load starting current	A	764	739	803	860	893	968	872	984	995
Electrical power supply	V/Ph/Hz	400/3+n/50								

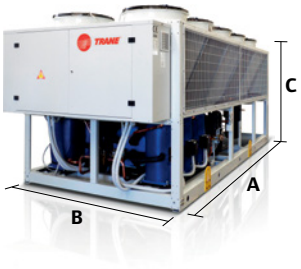
Model	CXAO	205	215	220	225	250	270	290
Cooling (1)								
Cooling capacity	kW	718	758	779	795	873	945	1027
Compressors power input	kW	251	266	272	280	310	324	345
Total EER (incl. fans)		2,64	2,64	2,66	2,64	2,63	2,71	2,76
Heating (2)								
Heating capacity	kW	873	915	946	993	1060	1130	1264
Compressors power input	kW	243	255	263	275	294	313	340
Total COP (incl. fans)		3,30	3,31	3,33	3,35	3,36	3,35	3,44
Number of refrigerant circuits		3	3	3	3	3	4	4
Number of compressors		8	8	8	9	9	10	11
Type of compressors		Scroll						
Exchanger type		Shell & tube					Plate	
Sound pressure level (3)	dB(A)	63	64	64	64	64	64	65
Sound power level	dB(A)	96	96	97	96	97	97	97
Sound pressure level (L) (3)	dB(A)	61	62	62	62	62	62	63
Sound power level (L)	dB(A)	94	94	95	94	95	95	95
Sound pressure level (S) (3)	dB(A)	58	59	59	58	59	59	59
Sound power level (S)	dB(A)	91	91	92	91	92	92	92
Maximum power input	kW	420	426	432	465	484	526	574
Maximum full load current	A	740	751	762	819	852	926	1011
Full load starting current	A	1063	1074	1085	1142	1175	1249	1334
Electrical power supply	V/Ph/Hz	400/3+n/50						

(1) Outdoor temperature 35°C - chilled water temperature 12/7°C
(2) Outdoor temperature 7°C 90% R.H. - hot water temperature 40/45°C
(3) Calculated according to ISO 3744 at 10 m distance from the unit

Sophisticated and user-friendly microprocessor-based controller, available with a choice of several optional serial cards for BMS connection.

Dimensions and weights

CXAO	120	130	140	150	165
Dimensions (mm)					
A Standard/Low noise	4535	4535	5505	5505	5505
A Super low noise	4535	5505	5505	6475	6475
B	2260	2260	2260	2260	2260
C	2400	2400	2400	2400	2400
Unit shipping weight (kg)					
Standard	3716	3916	4092	4158	4540
Low noise	3776	3988	4152	4230	4612
Super low noise	3932	4340	4308	4673	5055
Additional shipping weights for options (kg)					
Partial heat recovery	31	31	38	42	46
1	97	146	146	167	167
2	123	153	153	218	218
3	147	277	277	373	373
4	163	233	233	274	274
5	216	246	246	375	375
6	265	295	295	686	686
A	157	206	206	227	227
B	183	213	213	278	278
C	207	337	337	433	433
D	223	293	293	334	334
E	276	306	306	435	435
F	325	355	355	746	746



CXAO	175	180	190	195	205	215	220	225	250	270	290
Dimensions (mm)											
A Standard/Low noise	8005	8005	8005	8005	8005	8005	8005	8005	8005	8610	9580
A Super low noise	8005	8005	8005	8005	8975	8975	8975	9580	9580	10550	10550
B	2260	2260	2260	2260	2260	2260	2260	2260	2260	2260	2260
C	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400
Unit shipping weight (kg)											
Standard	6121	6418	6548	6671	6933	7019	7125	7309	7535	7308	7605
Low noise	6205	6502	6632	6755	7029	7115	7221	7417	7643	7428	7737
Super low noise	6361	6718	6848	6971	7382	7468	7780	8062	8953	8206	8318
Additional shipping weights for options (kg)											
Partial heat recovery	62	66	66	70	70	70	73	73	73	76	76
1	167	167	167	218	218	218	218	218	431	431	431
2	218	218	218	220	220	220	220	220	481	481	481
3	373	373	373	382	382	382	382	382	n.a.	n.a.	n.a.
4	274	274	274	375	375	375	375	375	803	803	803
5	375	375	375	380	380	380	380	380	902	902	902
6	686	686	686	704	704	704	704	704	n.a.	n.a.	n.a.

Hydraulic options
(1): Single pump - Low head pressure and expansion vessel (2): Single pump - Medium head pressure and expansion vessel (3): Single pump - High head pressure and expansion vessel (4): Dual pump - Low head pressure and expansion vessel (5): Dual pump - Medium head pressure and expansion vessel (6): Dual pump - High head pressure and expansion vessel (A): Single pump - Low head pressure, expansion vessel and water tank (B): Single pump - Medium head pressure, expansion vessel and water tank (C): Single pump - High head pressure, expansion vessel and water tank (D): Dual pump - Low head pressure, expansion vessel and water tank (E): Dual pump - Medium head pressure, expansion vessel and water tank (F): Dual pump - High head pressure, expansion vessel and water tank

Trane® is a brand of Ingersoll Rand®. Ingersoll Rand (NYSE:IR) advances the quality of life by creating comfortable, sustainable and efficient environments. Our people and our family of brands—including Ingersoll Rand®, Trane®, Thermo King® and Club Car® — work together to enhance the quality and comfort of air in homes and buildings; transport and protect food and perishables; and increase industrial productivity and efficiency. We are a global business committed to a world of sustainable progress and enduring results.

engineer.trane.com trane.com ingersollrand.com

We are committed to using environmentally conscious print practices that reduce waste.

© 2015 Trane – All rights reserved
CG-SLB027-GB September 2015