INTARCON

ammolite

ammonia refrigeration

NH_3 refrigeration system

Smart installation

100 % natural solution

Reliability and safety

www.intarcon.com

ammolite | NH_3 chillers

- Plug & Play.
- Low ammonia charge.
- No machine room.
- No water consumption.

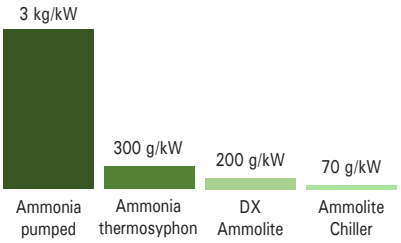
Industrial refrigeration chiller with low ammonia charge technology developed by INTARCON, for positive and negative temperature air-condensed applications. Compact construction built in galvanised steel body and chassis with polyester paint, for outdoor installation.

Features

- 400V 3 50Hz power supply. Available in 60Hz. Other voltages on request.
- Semihermetic screw compressors with variable speed permanent magnet motor. Suction filter, oil filter, discharge check valve. Suction and discharge valves integrated in the compressor.
- Miscible oil.
- High efficiency vertical oil separator.
- Tropicalised condenser with aluminium microchannel coils, with Polyester Powder Coating treatment.
- Oil cooler with stainless steel tube coils and aluminium fins.
- Variable speed EC motor fans for condensing pressure and oil temperature control.
- Evaporator with stainless steel welded plates with stainless steel welding.
- Electronic expansion valve, and electronic liquid injection valve for compressor cooling in extreme conditions.
- Stainless steel refrigeration circuit per compressor with decanter. Filter service valves, sight glasses, pressure switches and high and low pressure transducers.
- Stainless steel hydraulic circuit with fill/drain valve, air vent, flow switch, inlet and outlet thermometers and pressure gauges.
- Closed economiser with plate heat exchanger for liquid subcooling and medium pressure injection (only in negative temperature models).
- Electrical control panel. Frequency variator per compressor. Differential protection. Individual magneto-thermal and thermal protection for compressor and fans.
- Electronic control with digital control panel, cooling capacity control, condensation control, VI variation, start/stop sequence, compressor, fan and pump safety and stop sequence, compressor/s, fans and pumps safeties. Web interface and external communication.

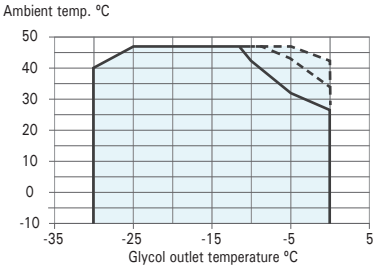
Low ammonia charge

Ammonia is a natural refrigerant with zero greenhouse effect. Thanks to the critical charge design and low charge components, we have achieved the lowest specific refrigerant charge of only 70 g per kW refrigerant.



Tropicalised condenser up to 47 °C

The integrated microchannel condenser offers a high exchange capacity, which, together with efficient oil cooling in air coils and liquid injection protection, allows the system to operate at ambient temperatures of up to 47 °C.



Heat recovery in oil

Optionally, partial heat recovery can be integrated, by means of oil heat recovery, and full heat recovery, by means of a parallel condenser.

Virtual tour

A virtual tour of the ammolite MWW-MPM-7 is available on our website.

Semihermetic screw compressors

SRM compressors are characterised by their small size, low noise level and low vibration.

The screw is designed with high compression pressure and variable VI. It is driven by an integrated permanent magnet motor on high precision roller bearings, with a service life of sixty thousand hours.

400V 3 50Hz | Positive temperature | Semihermetic screw compressors | R-717

Refrigerant	Compressor	Series / Model	Compressor HP	Compressor Model	Cooling capacity (kW) [1] I / O propylene glycol -2 / -8 °C	Compressor input power (kW)	Total input power (kW)	Ecodesign SEPR [3]	Max. current (A)	Condenser + Oil cooler Fans Ø (mm)	Condenser + Oil cooler Air flow (m³/h)	Glycol flow (m³/h)	Pressure drop (kPa)	Hydraulic connection	Weight (kg)	SPL dB(A) [4]
R-717	1x Semih.	**MWW-MPM-3 1201**	120	SRS14MM	249	96	105	4.4	296	6x Ø 800	114 000	38.2	35	DN100	3 765	60.4
		MWW-MPM-4 1701	170	SRS16SM	317	113	125	4.6	321	8x Ø 800	160 000	48.6	40	DN125	5 020	64.6
		MWW-MPM-4 1801	180	SRS16LM	369	131	143	4.7	321	8x Ø 800	182 000	56.6	45	DN125	5 020	64.6
	2x Semih.	**MWW-MPM-5 2402**	240	2x SRS14MM	499	193	211	4.3	584	10x Ø 800	228 000	76.5	35	DN150	6 275	63.2
		MWW-MPM-7 3402	340	2x SRS16SM	634	225	251	4.6	635	14x Ø 800	320 000	97.2	40	DN150	8 785	67.6
		MWW-MPM-7 3602	360	2x SRS16LM	738	261	287	4.7	635	14x Ø 800	320 000	113	45	DN150	8 785	67.6

400V 3 50Hz | Negative temperature | Semihermetic screw compressors | R-717

Refrigerant	Compressor	Series / Model	Compressor HP	Compressor Model	Cooling capacity (kW) [2] I / O ethylene glycol -19 / -25 °C	Compressor input power (kW)	Total input power (kW)	Ecodesign SEPR [3]	Max. current (A)	Condenser + Oil cooler Fans Ø (mm)	Condenser + Oil cooler Air flow (m³/h)	Glycol flow (m³/h)	Pressure drop (kPa)	Hydraulic connection	Weight (kg)	SPL dB(A) [4]
R-717	1x Semih.	**BWW-MPM-3 1201**	120	SRS14MM	131	94	103	1.9	306	6x Ø 800	114 000	22.6	25	DN100	3 765	60.4
		BWW-MPM-3 1701	170	SRS16SM	160	114	123	2.1	324	6x Ø 800	114 000	27.6	30	DN125	3 765	64.5
		BWW-MPM-4 1801	180	SRS16LM	193	132	144	2.1	333	8x Ø 800	182 000	33.3	35	DN125	5 020	64.6
	2x Semih.	**BWW-MPM-5 2402**	240	2x SRS14MM	262	189	207	2.0	597	10x Ø 800	228 000	45.2	25	DN150	6 275	63.2
		BWW-MPM-5 3402	340	2x SRS16SM	320	229	247	2.1	632	10x Ø 800	228 000	55.2	30	DN150	6 275	67.4
		BWW-MPM-7 3602	360	2x SRS16LM	387	263	289	2.1	650	14x Ø 800	320 000	66.8	35	DN150	8 785	67.6

Options

- Multi-tube stainless steel tube evaporator.
- Stainless steel tube condenser and aluminium fins.
- Variable glycol flow rate.
- Condensation heat recovery.
- Total heat recovery (80 %).
- Hydraulic unit with back-up pump.

[1] Nominal performance positive temperature: 35 °C ambient temperature with glycol inlet/outlet at -2/-8 °C, with a propylene glycol concentration of 35 %.

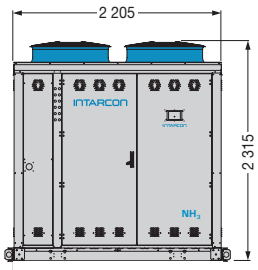
[2] Nominal performance positive temperature: 35 °C ambient temperature with glycol inlet/outlet at -19/-25 °C, with a ethylene glycol concentration of 50 %.

[3] Seasonal performance factor (SEPR) according to Commission Regulation (EU) 2015/1095.

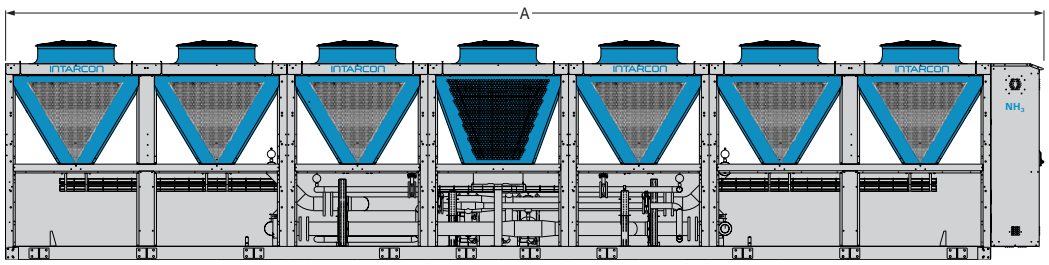
[4] Free field sound pressure level with compressors operating at full load (180 Hz, 3600 r.p.m.), directivity 1, measured at 10 metres from the source (non-binding value calculated from sound power)

Note: Lower cooling capacity models on request.

Dimensions



Dimensions in mm



Dimensions (mm)	A
3 series	4 977
4 series	6 454
5 series	7 960
7 series	10 883

ammolite DX | NH_3 direct expansion

- Plug & Play.
- Low ammonia charge.
- No machine room.
- No water consumption.

Direct expansion ammonia refrigeration condensing unit with low charge technology developed by INTARCON for low temperature industrial applications. Compact air-condensed construction and built in galvanised steel body and chassis with polyester paint, for outdoor installation.

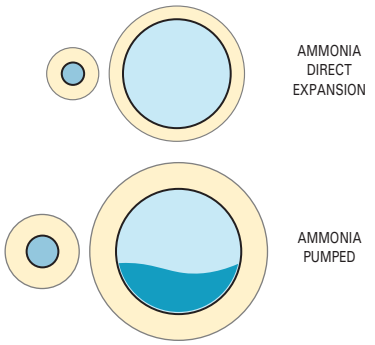
Features

- 400V 3 50Hz power supply. Available in 60Hz. Others voltages by request.
- Semihermetic screw compressors with variable speed permanent magnet motor. Suction filter, check valve, suction and discharge valves integrated in the compressor.
- Miscible oil with return through suction, no bleeding required.
- High efficiency vertical oil separator.
- Tropicalised condenser with aluminium microchannel coils, with Polyester Powder Coating treatment.
- Oil cooler with stainless steel tube coils and aluminium fins.
- Variable speed EC motor fans for condensing pressure and oil temperature control.
- Electronic liquid injection valve for compressor cooling in extreme conditions.
- Stainless steel cooling circuit with liquid vessel. Filter service valves, sight glasses, pressure switches and high and low pressure transducers.
- Closed economiser with plate heat exchanger for liquid subcooling and medium pressure injection.
- Electrical power and control panel. Frequency variator per compressor. Differential protection, magneto-thermal and individual thermal protection for compressor and fans.
- Electronic control with digital control board, cooling capacity control, condensation control, VI variation by solenoid, start and stop sequence, compressor, and fans safeties. Web interface and external communication.

Low-charge technology

Low ammonia charge technology is based on direct expansion of refrigerant as opposed to traditional pumped ammonia systems, with the following advantages:

- 90 % ammonia load reduction.
- Smaller section refrigeration lines.
- Higher energy efficiency.
- Lower pressure loss in refrigeration lines.
- Lower cooling losses.
- Direct condensation without water consumption.



Ammonia pipe comparison

Reduced maintenance

Low-load ammonia technology is low-maintenance every ten thousand operating hours, with no purging or oil replenishment required.

Hot glycol defrost (optional)

Heat recovery from the oil allows the accumulation of hot glycol, which is pumped to the evaporators during defrost cycles.

This system is the most energy efficient and reliable, as it does not subject the evaporator to sudden changes in pressure and temperature.

400V 3 50Hz | Negative temperature | Semihermetic screw compressor | R-717

Refrigerant	Compressor	Series / Model	Compressor HP	Compressor Model	Cooling capacity (kW) [1] Evaporating temperature -30 °C	Compressor input power (kW)	Total input power (kW)	Max. current (A)	Condenser + Oil cooler Fans Ø (mm)	Condenser + Oil cooler Air flow (m^3/h)	Cooling connection Liq-Gas	Weight (kg)	SPL dB(A) [2]
R-717	1x Semiher.	**BDW-MM-3 1201**	120	SRS14MM	106	75	84	288	6x Ø 800	114 000	DN15 - DN65	3 500	60,4
		BDW-MM-3 1701	170	SRS16SM	131	94	103	313	6x Ø 800	114 000	DN20 - DN80	4 300	64,5
		BDW-MM-4 1801	180	SRS16LM	157	105	118	321	8x Ø 800	182 000	DN20 - DN80	5 020	64,6
	2x Semiher.	**BDW-MM-4 2402**	240	2x SRS14MM	212	155	170	576	8x Ø 800	182 000	DN20 - DN100	5 400	63,0
		BDW-MM-5 3402	340	2x SRS16SM	262	186	205	619	10x Ø 800	228 000	DN20 - DN100	6 275	67,4
		BDW-MM-7 3602	360	2x SRS16LM	313	209	236	635	14x Ø 800	320 000	DN25 - DN100	8 785	67,6

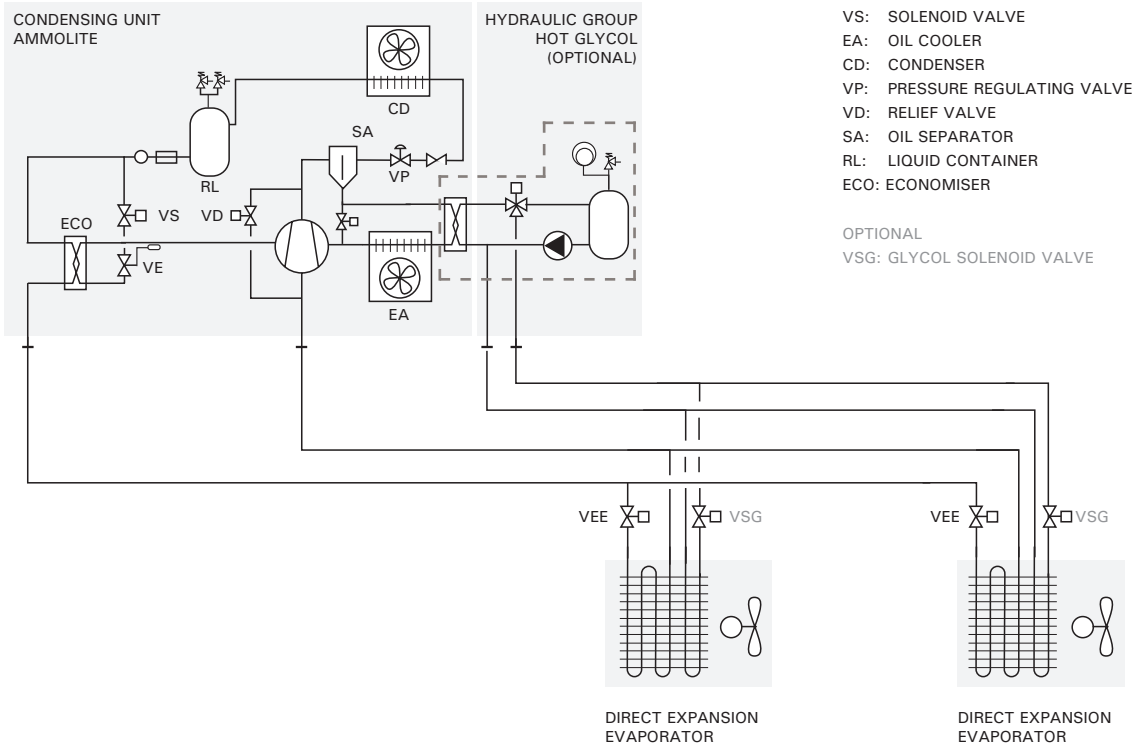
Options

- Heat recovery for production of hot defrost glycol.
- Variable glycol flow rate.
- Condensation heat recovery.
- Stainless steel tube condenser and aluminium fins.
- Hydraulic group for accumulation and pumping of hot glycol.

[1] Nominal performance for negative temperature: ambient temperature 35 °C with evaporating temperature at -30 °C.

[2] Free field sound pressure level with compressors operating at full load (180 Hz, 3600 r.p.m.), directivity 1, measured at 10 metres from the source (non-binding value calculated from sound power).

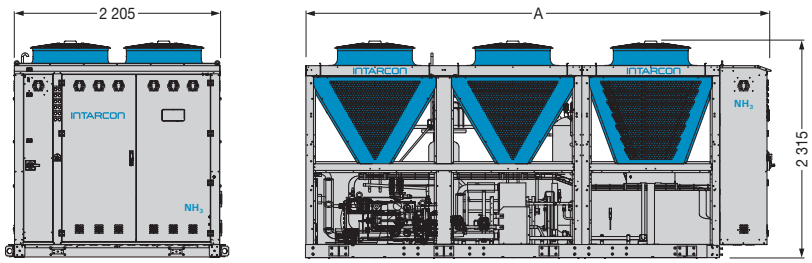
Refrigeration scheme



BCG: HOT GLYCOL CIRCULATING PUMP
VEE: ELECTRONIC EXPANSION VALVE
VS: SOLENOID VALVE
EA: OIL COOLER
CD: CONDENSER
VP: PRESSURE REGULATING VALVE
VD: RELIEF VALVE
SA: OIL SEPARATOR
RL: LIQUID CONTAINER
ECO: ECONOMISER

OPTIONAL
VSG: GLYCOL SOLENOID VALVE

Dimensions



Dimensiones (mm)	A
3 series	4 977
4 series	6 454
5 series	7 960
7 series	10 883

Dimensions in mm.

ammolite

KJ series – NH_3 direct expansion evaporators

- Low ammonia charge.
- Large surface area coils.
- Easy installation.

Industrial evaporators for large cold rooms with direct expansion of ammonia, built in galvanised sheet steel bodywork with polyester coating.

Features

- 400V 3N 50Hz power supply. Available in 60Hz. Others voltages by request.
- Coil of 5/8" stainless steel tubes and aluminium fins, in large exchange surface geometry, with 7 and 10 mm fin spacing.
- Coolant distributor and suction manifold, optimised for direct expansion of ammonia.
- Axial motor fans Ø 630 and Ø 800 mm long range.

Ammonia dry expansion

Evaporators designed to work with ammonia in direct expansion, with refrigerant distribution capillaries and suction manifold.

The special tube geometry of the industrial evaporators reduces frost formation and allows spacing of defrost cycles.

The counter-current circuit design facilitates gas reheating.

Thanks to the ammonia-miscible oil, oil return to the compressor occurs naturally during operation.

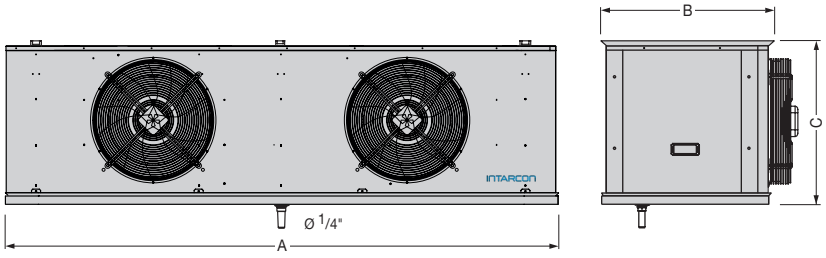
400V 3N 50Hz | Negative temperatura | Deep-freezing | R-717

Refrigerant	Application	Series / Model	Cooling capacity according to cold room temperature (W) SC2 0 °C 85 % RH DT1 = 8K	SC3 -18 °C 95 % RH DT1 = 7K	SC4 -25 °C 95 % RH DT1 = 6K	Coil Fin spacing (mm)	Area (m^2)	Vol. (litres)	Fans Air flow (m^3/h)	Nx Ø (mm)	Power (kW)	Max. current (A)	Range (m)	Electrical defrost kW	A	Cooling connection Liq-Gas	Weight (kg)
R-717	Negative	**BKJ-NM-1 263**	42.3	33.8	27.6	7	243	65	21 500	2x Ø 630	1.8	3.4	35	20	29	DN10 - DN40	325
		BKJ-NM-1 363	63.9	51.0	41.7	7	365	98	32 500	3x Ø 630	2.7	5	35	30	43	DN15 - DN50	475
		BKJ-NM-1 463	81.5	65.1	53.1	7	486	130	43 000	4x Ø 630	3.6	7	35	40	58	DN15 - DN50	625
		BKJ-NM-2 280	72.7	58.1	47.4	7	432	115	38 500	2x Ø 800	3.2	6	45	40	58	DN15 - DN50	575
		BKJ-NM-2 380	109.0	87.0	71.1	7	649	173	57 500	3x Ø 800	4.8	9	45	50	72	DN15 - DN65	825
		BKJ-NM-2 480	132.7	106.1	86.6	7	865	230	76 500	4x Ø 800	6.3	12	45	60	87	DN15 - DN65	1 075
	Deep-freezing	**UKJ-NM-1 263**	34.7	27.7	22.6	10	176	65	22 000	2x Ø 630	1.8	3.4	35	20	29	DN10 - DN40	325
		UKJ-NM-1 363	52.0	41.5	33.9	10	263	96	33 000	3x Ø 630	2.7	5	35	30	43	DN15 - DN50	475
		UKJ-NM-1 463	66.7	53.3	43.5	10	351	127	44 000	4x Ø 630	3.6	7	35	40	58	DN15 - DN50	625
		UKJ-NM-2 280	59.5	47.5	38.8	10	312	114	39 500	2x Ø 800	3.2	6	45	40	58	DN15 - DN50	575
		UKJ-NM-2 380	89.2	71.3	58.2	10	468	171	59 000	3x Ø 800	4.8	9	45	50	72	DN15 - DN65	825
		UKJ-NM-2 480	109.0	87.1	71.1	10	624	228	78 500	4x Ø 800	6.3	12	45	60	87	DN15 - DN65	1 075

Options

- Defrosting by imbricated heating elements.
- Hot glycol defrosting.
- Anti-corrosion coating of coil.

Dimensions



Dimensions (mm)	A	B	C
12 series	3 000	960	970
13 series	4 200	960	970
14 series	5 400	960	970
22 series	3 800	1 050	1 270
23 series	5 400	1 050	1 270
24 series	7 000	1 050	1 270