

STANDARD UNIT SPECIFICATIONS

WSAN-XEM MF 120.4(R410A-4T-400T-IOM11X-CREFP)

COMPRESSOR

- First circuit: Hermetic scroll compressors in tandem, equipped with a motor protection device for overheating, overcurrents and excessive temperatures of the supply gas. They are installed on anti-vibration mounts and equipped with oil charge. An oil heater, which starts automatically, keeps the oil from being diluted by the refrigerant when the compressor stops.
- Second circuit: Hermetic scroll compressor in tandem equipped with a motor protection device for overheating, overcurrents and excessive temperatures of the supply gas. They are installed on anti-vibration mounts and equipped with oil charge. An oil heater, which starts automatically, keeps the oil from being diluted by the refrigerant when the compressor stops.

STRUCTURE

Structure made entirely in Zinc–Magnesium plate that guarantees excellent mechanical characteristics and high corrosion strength over time.

PANELLING

External pre-painted zinc-magnesium panelling that ensures superior resistance to corrosion for outdoor installation and eliminates the need for periodical painting. The panels can be easily removed to fully access internal components and are lined with sound-proof material on the inside to contain the unit's sound levels

INTERNAL EXCHANGER

direct expansion exchanger with brazed stainless steel (AISI 316) plates with a large exchange surface and complete with anti-condensation external thermal insulation. the exchanger comes complete with:

- differential pressure switch, water side
- antifreeze heater to protect the water side exchanger, preventing the formation of frost if the water temperature falls below a set value.

EXTERNAL EXCHANGER

Direct expansion finned exchanger, made from copper pipes arranged in staggered rows and mechanically expanded for better adherence to the collar of the fins. The fins are made of aluminium with hydrophilic treatment and with a special corrugated surface, set a suitable distance apart to ensure maximum heat exchange efficiency.

FAN

helical fans with die-cast aluminium blades, directly coupled to a three-phase electric motor with external rotor, with built-in thermal overload protection, IP 54 index of protection. Located inside an aerodynamically shaped nozzles to increase efficiency and minimise noise levels; fitted with safety grills.

REFRIGERANT CIRCUIT

Double refrigeration circuit complete, for each circuit, with:

- replaceable anti-acid solid cartridge dehydrator filter
- High pressure safety pressure switch
- high pressure transducer
- low pressure transducer
- liquid receiver
- liquid separator
- refrigerant temperature probe
- double electronic thermostatic expansion valve
- inversion valve of the 4-way cycle
- non-return valve
- high pressure safety valve
- low pressure safety valve

ELECTRICAL PANEL

the control section includes:

- main door lock isolator switch
- isolating transformer for auxiliary circuit power supply
- on-off scroll compressor protection magnetothermic
- fan protection fuses and heat protection
- on-off scroll compressor control contactor

the control section includes:

- interface terminal with graphic display
- display of the set values, the error codes and the parameter index
- ON/OFF and alarm reset buttons
- buttons for selecting cooling/heating operation
- proportional-integral water temperature control
- daily, weekly programmer of temperature set-point and unit on/off
- Set point compensation with outdoor temperature
- set-point compensation with 0-10 V signal
- Unit switching on management by local or remote (serial)
- antifreeze protection water side
- compressor overload protection and timer
- prealarm function for water antifreeze and high refrigerant gas pressure
- self-diagnosis system with immediate display of the fault code
- automatic rotation control for compressor starts
- compressor operating hour display
- Input for remote ON/OFF control
- relay for remote cumulative fault signal
- inlet for demand limit (power input limitation according to a 0÷10V external signal)
- Digital input for double set-point enabling
- potential-free contacts for compressor status
- phase monitor

ECOSHARE function for the automatic management of a group of units

0÷10V signal output for auxiliary heater

enabling of DHW preparation in relation to remote consent

SELECTED UNIT SPECIFICATIONS

WSAN-XEM MF 120.4(R410A-4T-400T-IOM11X-CREFP)REFRIGERANT R-410A

Units charged with refrigerant R-410A. Binary mixture HFC, of pink color, composed of two refrigerants: the R32 (50%) and R135 (50%). Compared to other refrigerants, it requires smaller components allowing a lower refrigerant charge and more compact units, having high energy efficiency. It does not contain chlorine which does not damage the environment, non-toxic and non-flammable and it can be easily handled.

CONFIGURATION FOR 4-PIPE SYSTEM

4T configuration for air conditioning systems with 4 pipes, capable of supplying hot and chilled water simultaneously regardless of the season. The configuration allows for: ?

- producing hot water at the hot user heat exchanger during production of chilled water at the cold user-side heat exchanger; - production only of hot water at the hot user heat exchanger with cooling capacity dispersal on the external heat source; - production only of chilled water at the cold user heat exchanger with heat dispersal on the external heat source. The control logic guarantees the unit's operation in intermediate load conditions.

HYDRONIC ASSEMBLY WITH 1 ON/OFF PUMP

Pumping unit supplied on the unit consisting of n.1 electric pump. Centrifugal electric pump with impeller made with AISI 304 steel and AISI 304 stainless steel body or grey cast iron (depending on models). Mechanical seal using ceramic, carbon and EPDM elastomer components. Three-phase electric motor with IP55 protection and class F insulation. Complete with thermoformed insulated casing, Victaulic type quick connections with insulated casing, safety valve (6 bar), pressure gauges, system load safety pressure switch, probes of entering and leaving water temperature, stainless steel antifreeze immersion heaters located at the return and supply point.

DIFFUSER FOR HIGH EFFICIENCY AXIAL FAN

Axitop diffusers installed on fans of the external section, with kinetic energy recovery for improving efficiency (3% reduction in energy absorption) and minimising the noise level (by up to -3 dB); it creates an ideal air distribution by aerodynamically slowing down the air flow and converting most of its kinetic energy into static pressure. The device is factory-installed.

DEVICE FOR FAN CONSUMPTION REDUCTION OF THE EXTERNAL SECTION AT VARIABLE SPEED (PHASE-CUTTING)

Automatic device for reducing of the outdoor section consumption with variable speed fans.?

The speed of the fan motors is continuously adjusted according to the condensing pressure to ensure the right working of the unit at low outside temperatures.

PHASE MONITOR

The phase monitor controls the electrical parameters of the power line to the unit. It works on the command circuit and orders the unit to be switched off when one of the following cases is present: when the phase connections do not respect the correct sequence, or when there is over voltage or under voltage for a certain amount of time: limit values of over and under voltage and the time interval are fixed setting. When the line conditions are re-established, the unit is re-armed automatically. Device installed and wired built-in the unit.

LONWORKS SERIAL COMMUNICATION MODULE

Module allows the serial connection of the supervision system which uses the LonWorks communication protocol. It enables access to a list of operating variables, commands and alarms which comply with the Echelon® standard.. Device provided separately. The configuration and management activities for the LonWorks networks are the responsibility of the client. The total length of each serial line do not exceed 1000 meters and the line must be connected in bus typology (in/out).

HIGH AND LOW PRESSURE GAUGES

It includes two liquid pressure gauges for the analog measurement of refrigerant pressures on suction and discharge lines of the compressors with pressure sockets installed in the unit in an easily accessible location.

ELECTRONIC EXPANSION VALVES

Electronic expansion valve for quick and accurate regulation according to the actual load required for use, allowing a high efficiency unit and a longer compressor life. The device includes: control of overheating to prevent phenomena harmful for the compressor, like overtemperature and return of liquid, pressure transmitter and temperature sensor.

TOTAL ENERGY RECOVERY

Consisting of heat exchanger of a brazed plate heat exchanger made of 316 stainless steel, suitable for recovering all the unit heat capacity (equal to the sum of the cooling capacity and the electrical input capacity of the compressors), from the on-off type solenoid valve, from the supply and return probe temperature in the hot water circuit and two-step integrated control logic. Maximum operating pressure exchanger: 10 bar on the water side and 45 bar on the refrigerant side. A configuration which enables the production of hot water free-of-charge while operating in the cooling mode, thanks to the total recovery of condensation heat that would otherwise be disposed of into the external heat source. This solution increases the overall efficiency of the system in all cases where a high- level of hot water production is required. Hot water availability is always subordinate to the production of chilled water.

TRANSLATION NOT FOUND FOR CODE 104062 ON LANGUAGE EN

Translation not found for code 104062 on language en

ECONOMIC OFFER
WSAN-XEM MF 120.4(R410A-4T-400T-IOM11X-CREFP)

UNIT CONFIGURATION		Q.TY
	Unit: WSAN-XEM MF 120.4	1
R410A	Refrigerant R-410A	1
LIQW	Handled fluid made of only water	1
4T	Configuration for 4-pipe system	1
400T	Supply voltage 400/3/50 without neutral	1
IOM11X	English Installation and Operation Manual (Accessory separately supplied)	1
RRC	Cold user side with thermoregulation on the return	1
HYG1	Hydronic assembly with 1 ON/OFF pump	1
CCS	Standard condenser coil	1
HEDIF	Diffuser for high efficiency axial fan	1
CREFP	Device for fan consumption reduction of the external section at variable speed (phase-cutting)	1
PM	phase monitor	1
CMSLWX	LonWorks serial communication module (Accessory separately supplied)	1
MHP	high and low pressure gauges	1
RCTX	Remote control (Accessory separately supplied)	1
AVIBX	Anti-vibration mount support (Accessory separately supplied)	1

TECHNICAL DATA
WSAN-XEM MF 120.4(R410A-4T-400T-IOM11X-CREFP)

SELECTED OPERATION CONDITIONS

COOLING		SELECTED
external exchanger air intake	°C	35.0
internal exchanger water outlet	°C	7.00
HEATING		SELECTED
External exchanger inlet temperature D.B. (°C)	°C	7.00
external exchanger inlet temperature W.B. (°C)	°C	6.00
internal exchanger water outlet	°C	45.0
GENERAL		SELECTED
Internal exchanger thermal head	°C	5.00
glycol % internal exchanger	%	0.000
SIMULTANEOUS COLD-HEATING SIDE		SELECTED
internal exchanger water outlet	°C	7.00
external exchanger water outlet	°C	45.0
SOUND PRESSURE LEVEL AT DISTANCE		SELECTED
Distance from unit	m	1.00

PERFORMANCE DATA

COOLING		
Cooling capacity	kW	324
Compressor power input	kW	114
EER compressor	Nr	2.84
Water flow-rate (User Side)	l/s	15.5
HEATING		
Heating capacity	kW	381
Compressor power input	kW	104
COP compressor	Nr	3.68
SIMULTANEOUS COLD-HEATING SIDE		
Cooling capacity	kW	328
Heating capacity	kW	431
Compressor power input	kW	102
Overall efficiency	Nr	7.42
NOISE LEVELS		
Sound Pressure Level at Distance	dB(A)	72.0

DIMENSIONS		
Shipping height	mm	2460
STANDARD UNIT WEIGHTS		
Shipping weight	kg	3700
Operating weight	kg	3774
POWER SUPPLY		
F.L.I. - Total	kW	160
F.L.A. - Total	A	266

The Product is compliant with the ErP (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output \leq 70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output \leq 400 kW at specified reference conditions)
The sound pressure data are calculated at the required distance and referring to standard conditions.

THE TECHNICAL DATA ARE APPROXIMATE AND MAY BE MODIFIED BY THE MANUFACTURER WITH NO REQUIREMENT FOR ADVANCE NOTICE

TECHNICAL DATA REFER TO THE TECHNICAL BULLETIN

GENERAL			
Cooling capacity (EN14511:2013)		kW	321
Total power input (EN14511:2013)		kW	126
EER (EN 14511:2013)			2.55
EER			2.62
Heating capacity (EN14511:2013)		kW	387
Total power input (EN14511:2013)		kW	116
COP (EN 14511:2013)			3.33
COP			3.38
Refrigeration circuits		Nr	2.00
WEIGHT AND DIMENSIONS			
Shipping length		mm	5250
Shipping depth		mm	2343
COMPRESSOR			
No. of compressors		Nr	4.00
Type of compressors			SCROLL
Std Capacity control steps		Nr	4.00
F.L.A. - Compressor 1		A	59.3
F.L.A. - Compressor 2		A	59.3
F.L.A. - Compressor 3		A	59.3
F.L.A. - Compressor 4		A	59.3
L.R.A. - Compressor 1		A	310
L.R.A. - Compressor 2		A	310
L.R.A. - Compressor 3		A	310
L.R.A. - Compressor 4		A	310
F.L.I. - Compressor 1		kW	36.1
F.L.I. - Compressor 2		kW	36.1
F.L.I. - Compressor 3		kW	36.1
F.L.I. - Compressor 4		kW	36.1
EXTERNAL EXCHANGER			
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External exchanger pressure drop		kPa	57.0

External exchanger pressure drop		kPa	57.0
Water content		l	53.0
Type of external exchanger			PHE
EXTERNAL SECTION FANS			
Type of fans			AX
Number of fans		Nr	6.00
Standard airflow		l/s	35000
Installed unit power		kW	1.90
F.L.A. - Single External Fan		A	4.10
L.R.A. - Single External Fan		A	14.0
F.L.I. - Single External Fan		kW	1.90
INTERNAL EXCHANGER			
Water content		l	46.0
WATER CIRCUIT			
Safety valve calibration		kPa	0.600
CONNECTIONS			
Water fittings			4"
ELECTRICAL DATA			
M.I.C. MAXIMUM INRUSH CURRENT			
M.I.C. - Value		A	512
M.I.C. with soft start accessory		A	375

SOUND LEVELS									
Sound power level (dB)								Sound pressure level	Sound power level
Octave band (Hz)									
63	125	250	500	1000	2000	4000	8000	dB(A)	dB(A)
93	90	90	88	88	85	71	62	72	92