

Performance Ratings

Product Type: YLAA - Air-Cooled Chiller

Unit Tags: CH-1

Project Name: **KIG YLAA070SJ17VS**

Unit Tag: **CH-1**

Qty.: **1**

Model: **YLAA0070SJ17XF**

Full Load - Design

PIN

YLAA0070SJ	17XFBCTXA	SXBLXCXX44	SE1XXXXXX	YAXGTXX3XX	XVGNXXXXXX			
...5...10	...5...20	...5...30	...5...40	...5...50	...5...60	...5...70	...5...80	...5...90

Unit	
Model No.	YLAA0070SJ17XFB
Number of Compressors	6
Compressor Type	Scroll - Hermetic
Number of Compressor Circuits	2
Refrigerant	R454B
Performance Data	
Cooling Capacity [tons.R]	69.98
Total Power Input [kW]	79.18
EER [Btu/W.h]	10.61
IPLV.IP [Btu/W.h]	17.99
A-Weighted Sound Power [dB(A)]	94.0
Electrical Data	
Nominal Voltage / Voltage Limits	200-208/3/60 / 180-220
Compressor RLA (each circuit) [A]	48.5 / 48.5 / 48.5 / 48.5 / 48.5 / 48.5
High LRA Current (each circuit) [A]	257.0 / 257.0 / 257.0 / 257.0 / 257.0 / 257.0
Fan QTY (each circuit)	2 / 2
Fan FLA (each circuit) [A]	7.6 / 7.6
Min. Circuit Ampacity [A]	343.0
Recommended Fuse / CB Rating [A]	350.0
Max. Inverse Time CB Rating [A]	350.0
Max. Dual Element Fuse Size [A]	350.0
Unit Short Circuit Withstand [kA]	65 kA
Wires Per Phase	2 + 1
Wire Range (Lug Size)	#3/0 AWG - 250 kcmil + 250 - 500 kcmil
Compressor kW	72.46



Performance Impacting Options

Starter Type	Across the line starter
Power Factor Correction Capacitor	No Power Capacitor required
Remote Evaporator	Standard Cooler required
Sound Kit	No Acoustic Blanket required
Fan	Low Sound Fans with VSD

Weight & Dimensional Data

Shipping Weight [lbs]	4418
Operating Weight [lbs]	4464
Refrigerant Charge [lbs]	63
Length [in]	116.1
Width [in]	88.3
Height [in]	94.2



Performance Report

Performance Specification

Page 3 of 13

Project Name: KIG YLAA070SJ17VS

Unit Tag: CH-1

Qty.: 1

Model: YLAA0070SJ17XF

Heat Exchanger Performance

Evaporator		Condenser (Air Cooled)	
Heat Exchanger Type	Plate Heat Exchanger	Ambient Air Temperature* [°F]	95.0
Entering Fluid Temperature* [°F]	54.00	Altitude* [ft]	0.00
Leaving Fluid Temperature* [°F]	44.00	Condensing Temperature [°F]	122.14 / 122.14
Flow Rate [USGPM]	167.0	Number of Fans	2 / 2
Fouling Factor* [h ft ² F/Btu]	0.000100	Total Air Flow [cfm]	60000
Fluid Type*	Water	Total Fan Power [kW]	6.720
Fluid Volume [USGAL]	5.4		
Evaporating Temperature [°F]	38.70		
Evaporator Pressure Drop [ft H ₂ O]	10.8		
Strainer Pressure Drop [ft H ₂ O]	2.81		
Extension Kit Pressure Drop [ft H ₂ O]	1.68		
Total Pressure Drop [ft H ₂ O]	15.3		
Fluid Connection Diameter [in]	3		
Minimum Flow Rate [USGPM]	60.00		
Maximum Flow Rate [USGPM]	325.0		

* Designates user specified input

Certified in accordance with the AHRI Air-Cooled Water-Chilling Packages Using Vapor Compression Cycle Certification Program, which is based on AHRI Standard 550/590 (I-P) and AHRI Standard 551/591 (SI). Certified units may be found in the AHRI Directory at www.ahridirectory.org.



Part Load Performance (Based on Standard AHRI Unloading)

Percent Load	Ambient [°F]	Capacity [tons.R]	Power Input [kW]	Unit Efficiency [Btu/W.h]
100.0	95.0	69.98	79.18	10.61
92.2	80.0	64.50	55.10	14.05
74.7	80.0	52.30	42.21	14.87
60.7	65.0	42.48	26.73	19.07
40.2	65.0	28.15	16.59	20.36
42.5	55.0	29.73	15.40	23.17
20.5	55.0	14.33	7.469	23.03

Project Name: KIG YLAA070SJ17VS

Version: SN23.08

Generated: 2023/08/31 at 11:51

Unit Name: Unit 1

Version: CHL.2023-08.002

Page 3 of 13

Project Name: KIG YLAA070SJ17VS

Unit Tag: CH-1

Qty.: 1

Model: YLAA0070SJ17XF

Sound Power Levels (In Accordance with AHRI 370)

Percent Load	Ambient [°F]	Octave Band Center Frequency [Hz]								LWA
		63	125	250	500	1000	2000	4000	8000	
100.0	95.0	96.0	95.0	91.0	92.0	88.0	86.0	82.0	77.0	94.0
92.2	80.0	94.0	93.0	89.0	90.0	87.0	85.0	80.0	76.0	92.0
74.7	80.0	92.0	91.0	87.0	88.0	85.0	83.0	78.0	73.0	90.0
60.7	65.0	90.0	89.0	85.0	86.0	83.0	81.0	77.0	71.0	88.0
40.2	65.0	84.0	83.0	79.0	81.0	79.0	79.0	73.0	66.0	85.0
42.5	55.0	84.0	83.0	79.0	81.0	79.0	79.0	73.0	66.0	85.0
20.5	55.0	81.0	80.0	76.0	78.0	76.0	75.0	70.0	63.0	82.0

Note: Unit is equipped with Low Sound Fans with VSD.

Measurement of sound pressure used to obtain the sound power data presented is based on AHRI-370.

Air-cooled chillers are rated in terms of sound power not sound pressure. Johnson Controls provides estimates of sound pressure, but this is not the rating metric.

For an air-cooled chiller, sound pressure calculated from sound power varies depending on how the chiller is assumed to behave, i.e. the radiation model. In other words, determining sound pressure from sound power requires making assumptions that result in different answers at a given distance from the chiller. The environment also influences sound pressure in the field installation. Sound pressure estimation radiation models pertaining to air-cooled chillers include the 'traditional' hemispherical model, parallelepiped model and equivalent hemispherical model.

Regarding sound power, Johnson Controls references tolerance limits based on ASHRAE guidelines. These are +/- 6dB in the 63Hz octave band, +/- 4dB in all other octave bands and +/- 3dB for the overall dBA.

Tolerance limits are based on uncertainties associated with:

1. Measurement Test Procedure
2. Repeatability
3. Production / Manufacturing Variability

Standard deviation associated with air-cooled chiller sound data is a measure of spread i.e. it indicates the range of probability of sound levels. Note that for operating conditions other than AHRI's Standard Rating Condition, higher levels of uncertainty can be expected.

Lead times for factory performance testing depend on test laboratory availability. Please confirm with Johnson Controls Customer Service.

Performance at AHRI Conditions

Evaporator		Condenser	
EFT [°F]	54.00	Ambient Temp. [°F]	95.0
LFT [°F]	44.00	Altitude [ft]	0.00
Flow Rate [USGPM]	167.0	Performance	
Pressure Drop [ft H2O]	10.8	EER [Btu/W.h]	10.61
Fluid Type	Water	IPLV.IP [Btu/W.h]	17.99
Fouling Factor [h ft ² F/Btu]	0.000100	Net Cooling Capacity [tons.R]	69.98
Fluid Volume [USGAL]	5.4		

Note: Unit rated at design condition capacity.

Project Name: KIG YLAA070SJ17VS

Unit Tag: CH-1

Qty.: 1

Model: YLAA0070SJ17XF

Part Load Performance (Based on AHRI 550/590 - 2018 (IP))

Percent Load	Ambient [°F]	Capacity [tons.R]	Power Input [kW]	Unit Efficiency [Btu/W.h]
100.0	95.0	69.98	79.18	10.61
92.2	80.0	64.50	55.10	14.05
74.7	80.0	52.30	42.21	14.87
60.7	65.0	42.48	26.73	19.07
40.2	65.0	28.15	16.59	20.36
42.5	55.0	29.73	15.40	23.17
20.5	55.0	14.33	7.469	23.03

Notes:

Country of Origin: Mexico

Min flow rate is for chillers using water. For glycol chillers please contact the application engineering team.

Compliant with ASHRAE 90.1 - 2010, 2013, 2016, 2019.

Compliant with IECC - 2012, 2015, 2018.

Compliant with the requirements of the LEED Energy and Atmosphere Enhanced Refrigerant Management Credit (EAc4).

The product image shown is for illustrative purposes only and is not representative of selected options.

Project Name: **KIG YLAA070SJ17VS**

Unit Tag: **CH-1**

Qty.: **1**

Model: **YLAA0070SJ17XF**

Line #	Equipment Description	Qty.
01A	Base Unit/Access. (2901)	
	Base Unit - YLAA0070SJ	1
	R454B Refrigerant (Fully Charged)	1
	Voltage Code - 200-208/3/60	1
	Across the line starter	1
	SP Circuit Breaker w/ Lockable Handle, 65kA SCWR	1
	Control Transformer Required	1
	Both Low/High Ambient Kit	1
	Connected Services Ready - SC-Equip Board	1
	English	1
	North American Safety Code (cUL/cETL)	1
	Service Isolation Valves	1
	Electronic Expansion Valves	1
	Hot Gas Bypass required - 1 circuit	1
	Extension Kit	1
	Dispersion Switch	1
	ASME Pressure Vessel Codes	1
	Post-Coated Microchannel Coils (Environment Guard Basic)	1
	No Heat Recovery	1
	Wire/Louvered End Panels (factory)	1
	No Acoustic Blanket required	1
	Low Sound Fans with VSD	1
	GPS Tracking Device	1
	Neoprene Isolators	1
	No Pump required	1

Unit And Wiring Drawings

Product Type: YLAA - Air-Cooled Chiller

Unit Tags: CH-1

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
----	----	----	----	----	----	----	---	---	---	---	---	---	---	---	---

NOTES:

1. PLACEMENT ON A LEVEL SURFACE FREE OF OBSTRUCTIONS (INCLUDING SNOW, FOR WINTER OPERATION) OR AIR RE-CIRCULATION ENSURES RATED PERFORMANCE, RELIABLE OPERATION AND EASE OF MAINTENANCE. SITE RESTRICTIONS MAY COMPROMISE MINIMUM CLEARANCES INDICATED BELOW, RESULTING IN UNPREDICTABLE AIR FLOW PATTERNS AND POSSIBLE DIMINISHED PERFORMANCE. JOHNSON CONTROLS UNIT CONTROLS WILL OPTIMIZE OPERATION WITHOUT NUISANCE HIGH PRESSURE SAFETY CUTOFF. HOWEVER, THE SYSTEM DESIGNER MUST CONSIDER POTENTIAL PERFORMANCE DEGRADATION.

1.1. RECOMMENDED MINIMUM CLEARANCES:

- I.1.1. SIDE TO WALL - 1828.8mm[6']
- I.1.2. REAR TO WALL - 1828.8mm[6']
- I.1.3. CONTROL PANEL TO WALL - 1219.2mm[4']
- I.1.4. TOP - NO OBSTRUCTIONS ALLOWED.
- I.1.5. DISTANCE BETWEEN ADJACENT UNITS - 3048mm[10']
- I.1.6. NO MORE THAN ONE ADJACENT WALL MAY BE HIGHER THAN UNIT.

2. WEIGHT AND CENTER OF GRAVITY - REFER TO AVM REPORT.

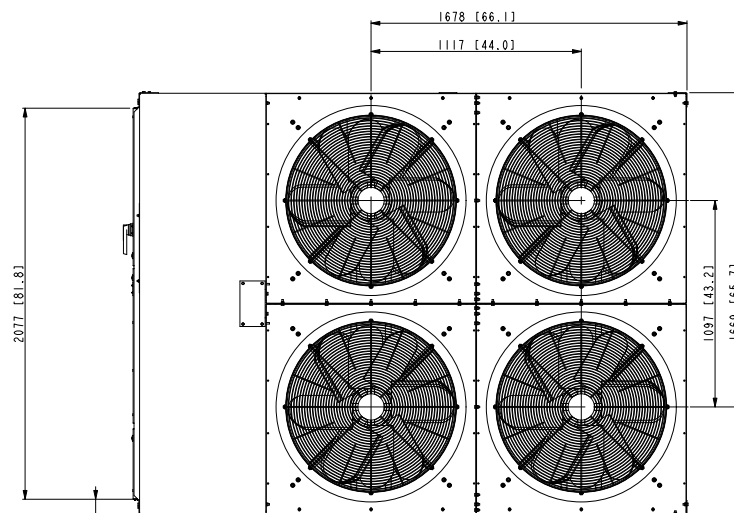
3. INSTALLING CONTRACTOR MUST INCLUDE VENT AND DRAIN ACCOMMODATIONS IN CHILLED WATER PIPING NEAR THE EVAPORATOR.

4. NUMBER OF COMPRESSORS MAY VARY FROM DRAWING.
4.1. REFER TO YORKWORKS REPORTS.

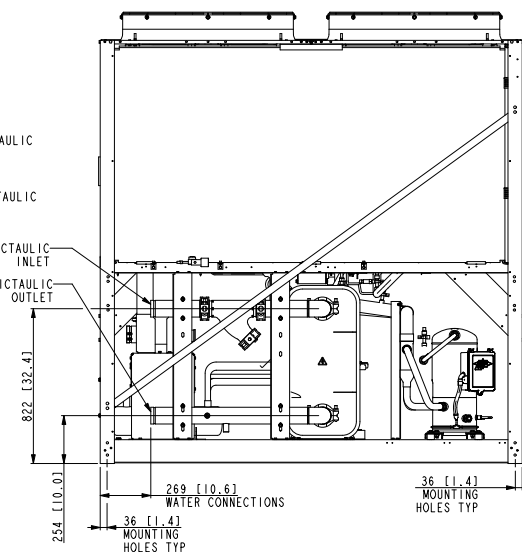
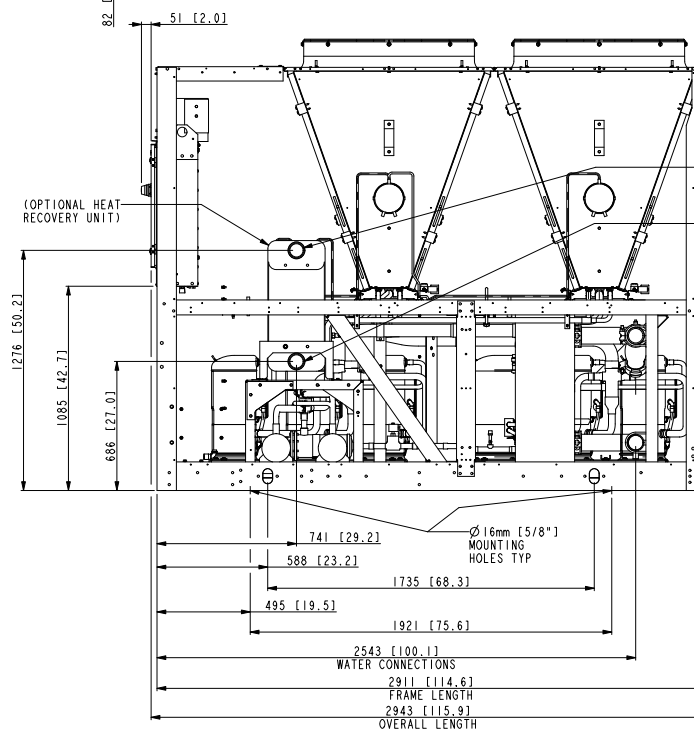
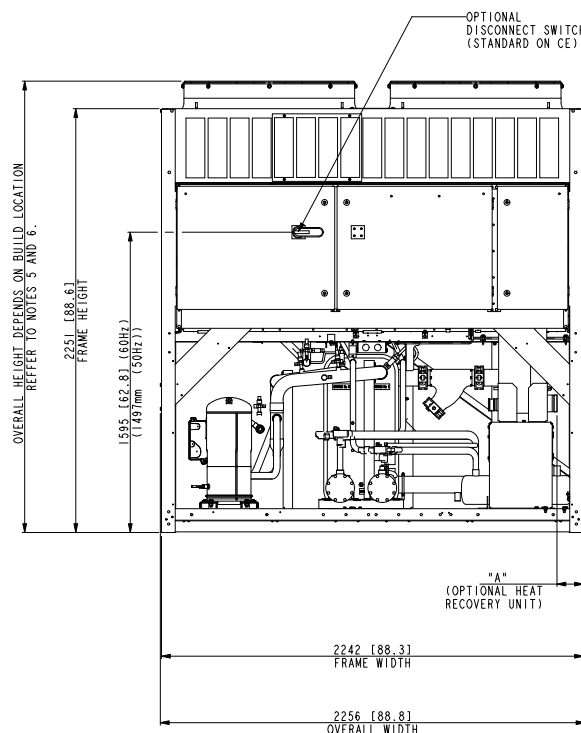
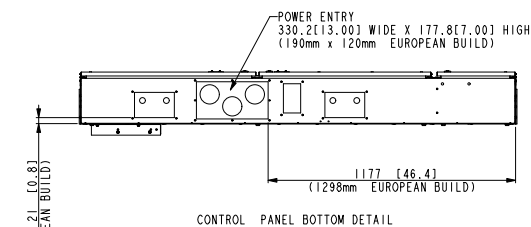
5. OVERALL HEIGHT OF UNIT IS 2394.6mm-[94.27"] ON MONTERREY, MEXICO AND SAN ANTONIO, TEXAS BUILDS AND EUROPEAN BUILDS (VSD FANS ONLY).

6. ON EUROPEAN BUILDS, OVERALL HEIGHT OF UNIT IS 2507.0mm-[98.70"] WITH STANDARD FANS AND IS 2541.0mm [100.04"] WITH LOW AMBIENT KIT AND WITH C FAN.

7. FOR MONTERREY, MEXICO, SAN ANTONIO, TEXAS AND EUROPEAN BUILDS ONLY.



MODEL NUMBER	DIMENSION "A"	MODEL NUMBER	DIMENSION "A"
YLA4 0070 SE, S.J	141 [5.6]	YLA4 0221 HJ	227 [8.9]
YLA4 0080 SE, S.J	141 [5.6]	YLA4 0262 HJ	227 [8.9]
YLA4 0089 SE, S.J	141 [5.6]	YLA4 0286 SJ	141 [5.6]
YLA4 0221 HE	227 [8.9]		
YLA4 0241 SE	227 [8.9]		
YLA4 0261 HE	227 [8.9]		
YLA4 0262 HE	227 [8.9]		
YLA4 0286 SE	141 [5.6]		
YLA4 0320 SE	141 [5.6]		



THIS DRAWING PERTAINS TO THE FOLLOWING MODELS:			
YLAA 0070 SE	YLAA 0241 SE	YLAA 0262 HE	YLAA 0070 SJ
YLAA 0080 SE	YLAA 0261 HE	YLAA 0221 HJ	YLAA 0080 SJ
YLAA 0089 SE	YLAA 0286 SE	YLAA 0262 HJ	YLAA 0089 SJ
YLAA 0221 HE	YLAA 0320 SE	YLAA 0286 SJ	

REVISION	REV.	DATE	EC. NO.	DR.	CHK.	ENG.
	K	05-MAY-2023	ECN23-0279	RWA	DBN	AR
	UPDATE TABLES TO INCLUDE YLAA 0070/0080/0089 "SJ" MODELS					

*ALL PROPRIETARY RIGHTS IN THE SUBJECT MATTER HEREIN ARE RESERVED AND NO PERMISSION IS GRANTED TO REPRODUCE THIS PRINT IN WHOLE OR IN ANY PART, OR DISCLOSE ANY OF THE INFORMATION UPON IT TO OTHERS WITHOUT WRITTEN RELEASE BY JOHNSON CONTROLS INCORPORATED.



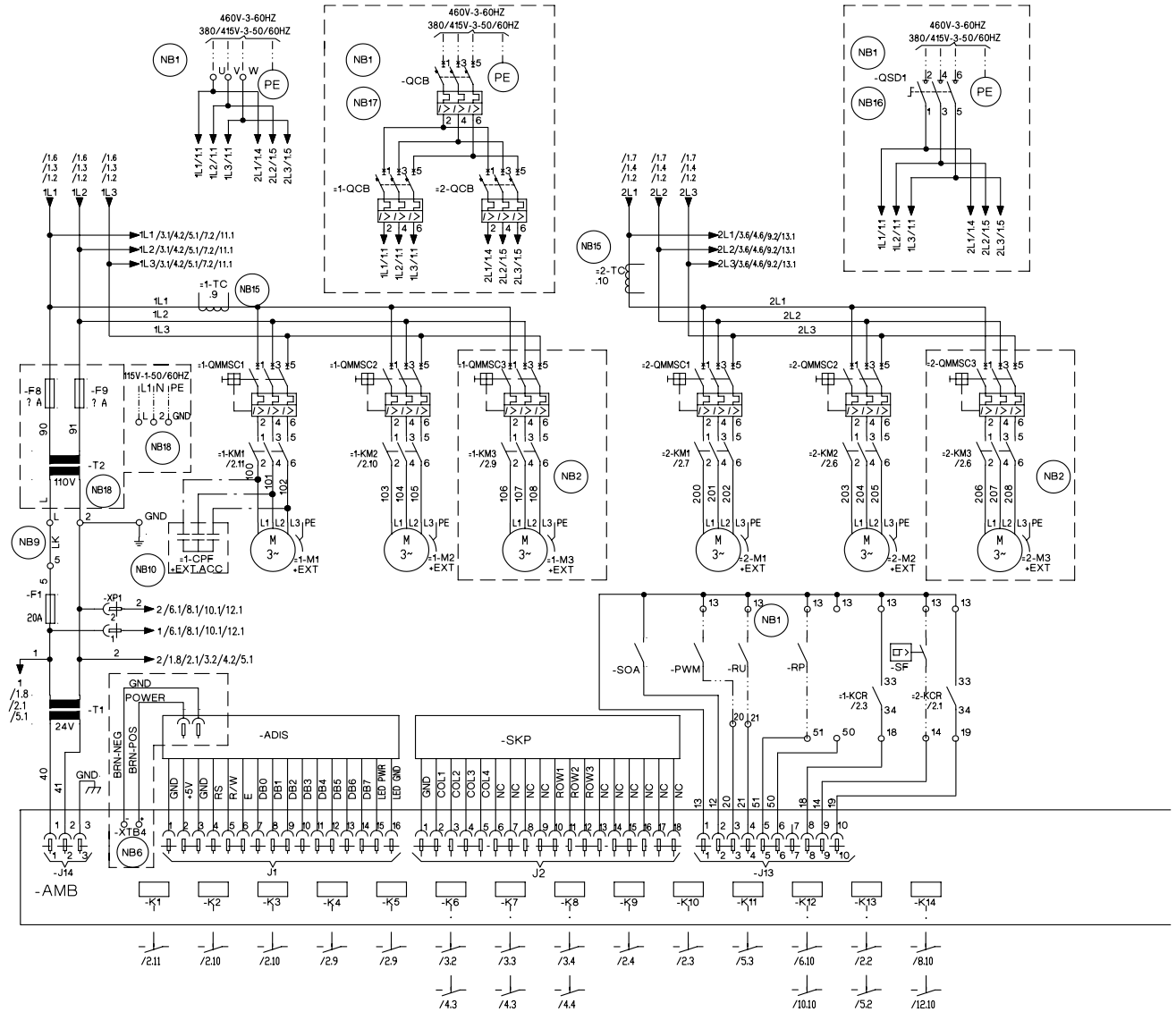
**Johnson
Controls**

JOHNSON CONTROLS - BUILDING EFFICIENCY
507 EAST MICHIGAN STREET, MILWAUKEE, WI. 53202 USA

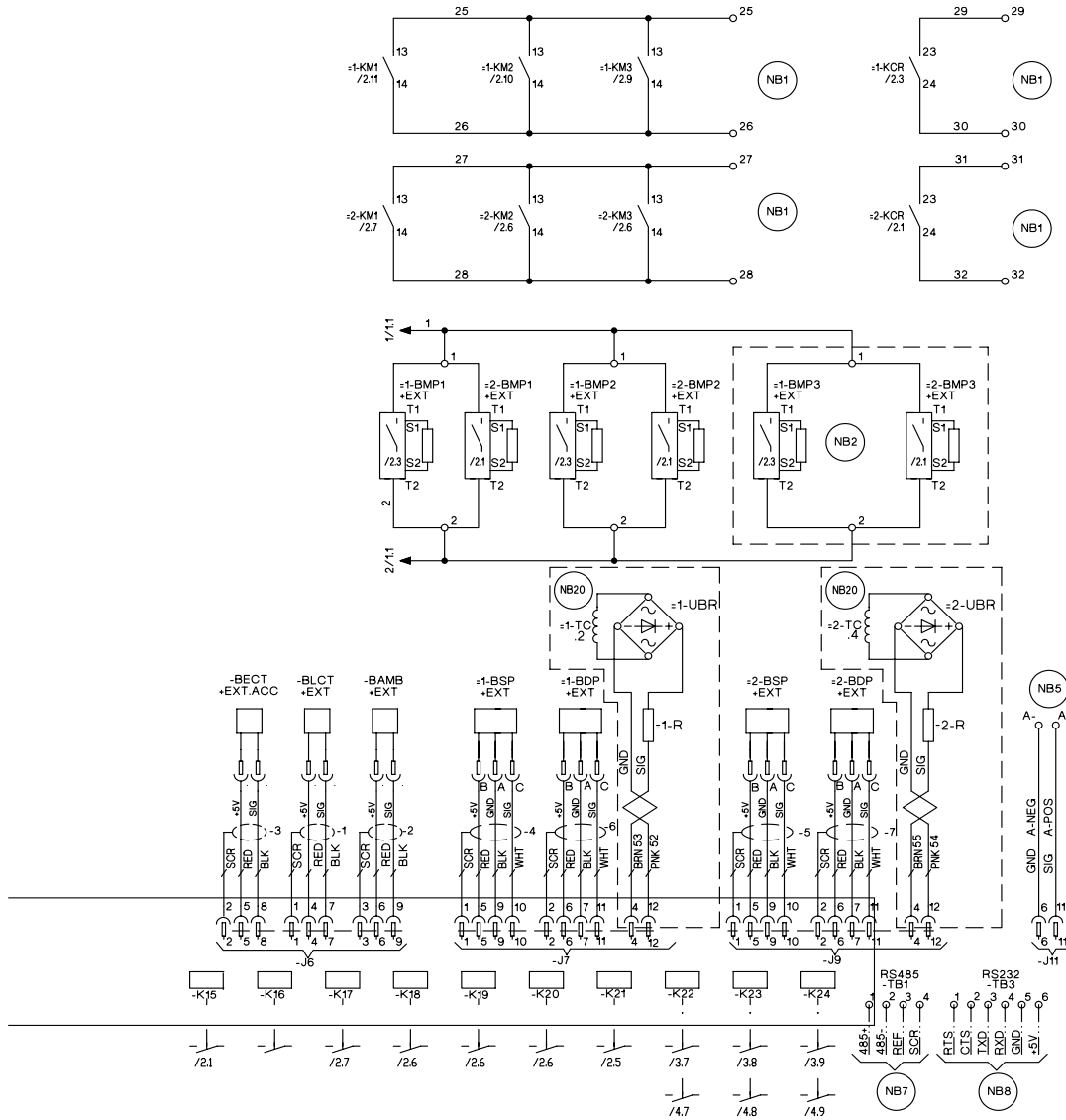
[illegible]

6	5	4	3	2	1	10	9	8	7	6	5	4	3	2	1
---	---	---	---	---	---	----	---	---	---	---	---	---	---	---	---

Wiring diagram



Wiring diagram (Cont'd)



LD18444

Wiring diagram (Cont'd)

Designation	DESCRIPTION
ACC	ACCESSORY
- ADIS	DISPLAY BOARD
- AMB	MICRO BOARD

- BAMB	AMBIENT
- BDP	DISCHARGE PRESSURE
- BECT	ENTERING CHILLED TEMP
- BLCT	LEAVING CHILLED TEMPERATURE
NOT FITTED ON REMOTE EVAP UNITS	

- BMP	MOTOR PROTECTOR COMP
- BSP	SUCTION PRESSURE

- CPF	CAPACITOR POWER FACTOR
-------	------------------------

- ECH	CRANKCASE HEATER
- EEH	EVAPORATOR HEATER
- EPH	PUMP HEATER
- EXT	EXTERNAL TO CONTROL PANEL

- F	FUSE
- FHP	HIGH PRESSURE CUTOUT
- FSI	FAN SPEED INHIBIT TWO SPEED FAN OPTION ONLY

GND	GROUND
G/Y	GREEN / YELLOW

J	PLUG BOARD CONNECTOR
---	----------------------

- K	CIRCUIT BOARD RELAY
- KF	FAN CONTACTOR LINE
- KFH	FAN CONTACTOR HIGH SPEED (INCLUDING COIL SUPPRESSOR)
- KFL	FAN CONTACTOR LOW SPEED (INCLUDING COIL SUPPRESSOR)
- KFOL	FAN OVERLOAD
- KFS	RELAY FAN SPEED
- KM	COMPRESSOR CONTACTOR (INCLUDING COIL SUPPRESSOR)
- KCR	CONTROL RELAY
- KP	PUMP CONTACTOR PART (INCLUDING COIL SUPPRESSOR)

- M	COMPRESSOR MOTOR
- MF	MOTOR FAN
- MP	MOTOR PUMP

NU	NOT USED
----	----------

PE	PROTECTIVE EARTH
PWM	PULSE WIDTH MODULATION TEMP RESET or REMOTE UNLOAD 2nd STEP

Designation	DESCRIPTION
- QCB	CIRCUIT BREAKER
- QMMSC	MANUAL MOTOR STARTER COMP
- QMMSP	MANUAL MOTOR STARTER PUMP
- QSD	SWITCH DISCONNECT

R	RESISTOR
RED	RED
RP	RUN PERMISSIVE
RU	REMOTE UNLOAD 1st STEP

CR	SCREEN
- SF	FLOW SWITCH
- SKP	KEYPAD
- SOA	SWITCH OFF AUTO

- T	TRANSFORMER
- TC	TRANSFORMER CURRENT

- UBR	BRIDGE RECTIFIER
-------	------------------


WHT	WHITE
-----	-------


- XTBC	TERMINAL BLOCK CUSTOMER
- XTBF	TERMINAL BLOCK FACTORY


- YHGSV	HOT GAS SOLENOID VALVE (INCLUDING COIL SUPPRESSOR)
- YLLSV	LIQUID LINE SOLENOID VALVE (INCLUDING COIL SUPPRESSOR)
FIELD MOUNTED AND WIRED ON REMOTE EVAP UNITS	

- ZCPR	COMPRESSOR
--------	------------

	NOTE WELL (SEE NOTE)
---	----------------------

	WIRING AND ITEMS SHOWN THUS ARE STANDARD YORK ACCESSORIES
---	--

	WIRING AND ITEMS SHOWN THUS ARE NOT SUPPLIED BY JOHNSON CONTROLS
---	---

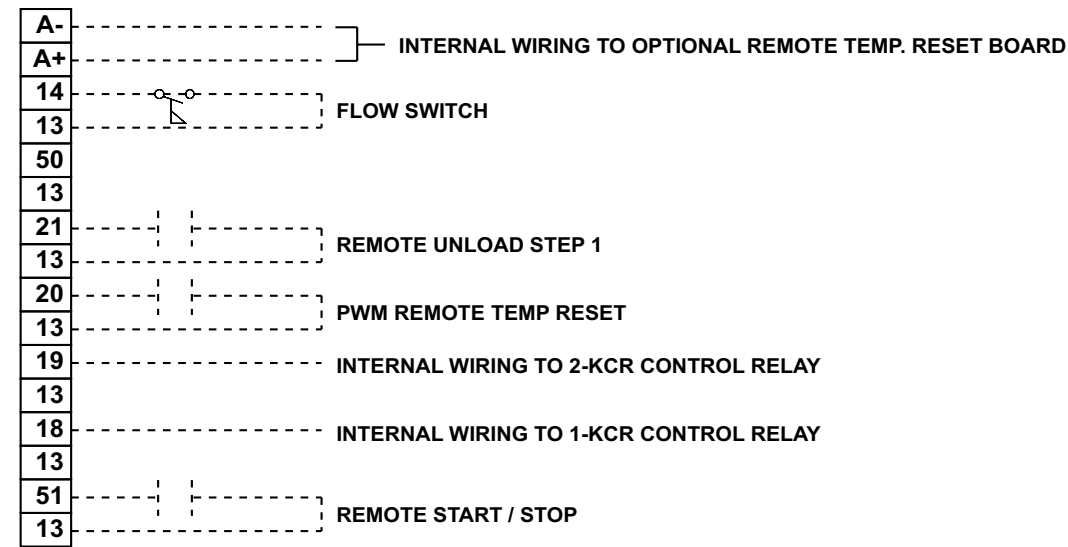
	ITEMS THUS ENCLOSED FORM A COMPONENTS OR SETS OF COMPONENTS
---	--

Wiring diagram (Cont'd)

- A. This drawing is based on IEC symbols.
 - B. Field wiring to be in accordance with the relevant electrical code as well as all other applicable codes and specifications.
 - C. All sources of supply shown on this diagram to be taken from one main isolator, not shown or supplied by the chiller manufacturer.
 - D. Green and yellow wire is used for earth, multicolored cable used for low voltage. Red wire used for AC control, blue wire for neutral, black wire for AC and DC power. Orange wire should be used for interlock control wiring supplied by external source.
 - E. Legend designation depicts component abbreviations. Number prefix located, if applicable, on schematic circuit, refers to system thereon, e.g.= 1-FHP2 refers to high pressure cutout no 2 on system no 1.
 - F. All wiring to control section voltage free contacts requires a supply provided by the customer maximum voltage 240 volts. The customer must take particular care when deriving the supplies for the voltage free terminals with regard to a common point of isolation. Thus, these circuits when used must be fed via the common point of isolation the voltage to these circuits is removed when the common point of isolation to the unit is opened. This common point of isolation is not supplied. The voltage free contacts are rated at 100 VA. All inductive devices {relays} switch by the voltage free contacts must have their coil suppressed using standard r/c suppressors.
 - G. Customer voltage free contacts connected to terminal 13 must be rated at 30 V 5 mA.
 - H. No controls {relays etc.} Should be mounted in any section of the control panel. Additionally, control wiring not connected to the control panel should not be run through the panel. If these precautions are not followed, electrical noise could cause malfunctions or damage to the unit and its controls.
1. Refer to installation commissioning operation and maintenance manual for customer connections and customer connection notes, non compliance to these instructions will invalidate unit warranty.
 2. Wiring and components for compressor 3 only fitted when unit has 3 compressors on the system. 1-BMP3 is replaced by a link across terminals 134 and 135. 2-BMP3 is replaced by a link across terminals 234 and 235.
 3. FHP2 is only fitted on 0089 and above. When not fitted 1-FHP2 is replaced by a link across terminals 132 and 139. 2-FHP2 is replaced by a link across terminals 232 and 239.
 4. Fitted on units with hot gas bypass option.
 5. EMS option is wired as shown.
 6. This wiring must be used for old display 031-0110-000.
 7. Network connection point.
 8. Printer port.
 9. Remote emergency stop can be wired between terminal 1 and 5 after removing link.
 10. Power factor correction accessory. Power factor correction fitted to each compressor contactor.
 11. Not fitted on compressors with internal motor protection. For system 1 terminals 132 and 133, 133 and 134 And 134 and 135 are linked. For system 2 terminals 232 and 233, 233 and 234 and 234 and 235 are linked.
 12. Only fitted on systems with 3 or 4 fans.
 13. Only fitted on systems with 4 fans.
 14. Only fitted on systems with 5 fans.
 15. Only fitted on systems with 6 fans.
 16. Input switch disconnect or circuit breaker option replaces input terminal block.
 17. Input switch disconnect and system circuit breaker option replaces input terminal block.
 18. 115 V control circuit requires a 115 V supply unless control circuit transformer -T2 and -F3 are fitted.
 19. For optional hydro kit. Heater -EPH is fitted and wired as shown. On single pump -KP1, -QMMSP1 and -MP1 are fitted and wired as shown. On two pump hydro kits -KP2, -QMMSP2 and -MP2 are also fitted and wired as shown.
 20. Current measurement option wired as shown.
 21. Only fitted on systems with single speed fans.
 22. Only fitted on systems with two speed fans.
 23. Optional compressor manual motors starters.
 24. See sheet 3 of connection diagram for power input options.

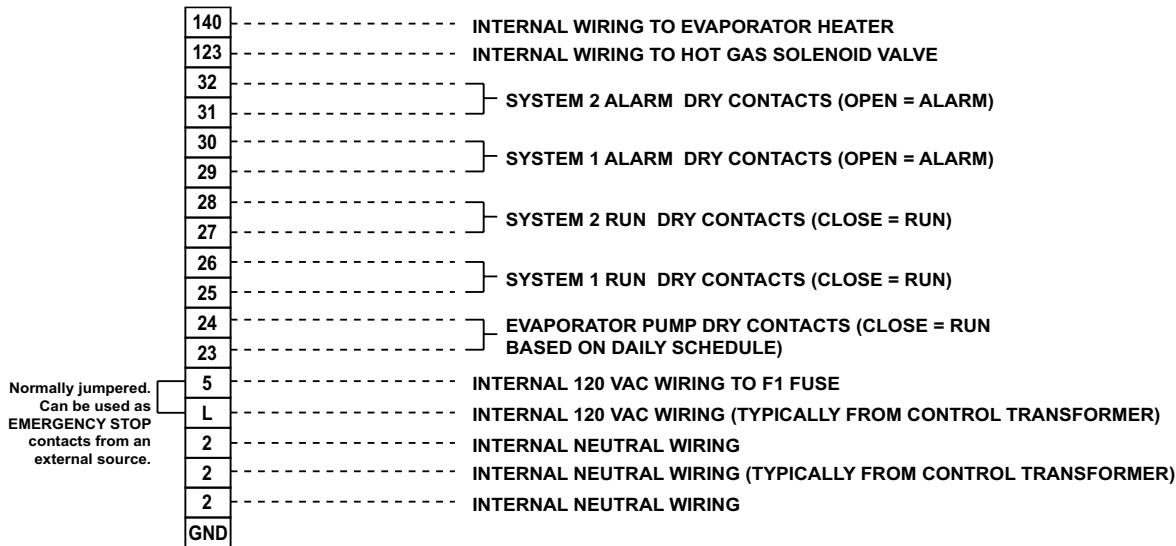
User control wiring

User control wiring inputs



XTBC1

User control wiring outputs



XTBC2



YLAA Air Cooled Scroll Chillers

Page 13 of 13

AVM Report

Project Name: KIG YLAA070SJ17VS

Unit Tag: CH-1

Qty.: 1

Model: YLAA0070SJ17XF

PIN							
YLAA0070SJ	17XFBBCTXA	SXBLXCXX44	SE1XXXHXXX	YAXGTXX3XX	XVGNXXXXXX		
....5...105...205...305...405...505...605...705...80

L1

L2

Ln-1

Ln

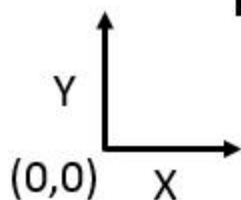
Control Panel End

R1

R2

Rn-1

Rn



LOCATION	X Distance (in)	Y Distance (in)	JCI PART NUMBER	SAP NUMBER	COLOUR	Operating Weights (lb)
R1	19.5	1.4	029-25335-002	434004	Red	1029
R2	95.1	1.4	029-25335-002	434004	Red	857
L1	19.5	86.9	029-25335-002	434004	Red	1319
L2	95.1	86.9	029-25335-002	434004	Red	1259

Total Weight (lb)		Centre of Gravity (in)	
Shipping Weight [lb]	4418	Xg [in]	55.3
Operating Weights (lb)	4464	Yg [in]	50.7