



Project: Factory Loading	Consultant:
Location:	Date:
<b>PERFORMANCE SUMMARY</b>	Tag: Sept ACDS060 230V
	Location:



**Scroll Compressor Air Cooled Package Chiller**

Model #		ACDS060ANGS
Quantity	2	Rating version
Manufacturer		ACDG14 DBUSA

**Physical Specifications**

Compressor Qty	4	Shipping weight (lb)	3,957
Length (in)	116.00	Operating weight (lb)	3,996
Width (in)	89.00	Refrigerant	R-410a
Height (in)	88.00	Approx. refrigerant charge (lb)	152

**Conditions of service**

Percent of full load	100%	Compressor power (kW)	69.19
Capacity (Tons)	67.26	Total Fan Power (kW)	9.600
Unit power (kW)	78.79	Cooling Efficiency (EER, Btu /W.hr)	10.24
		IPLV.IP (EER, Btu /W.hr)	15.50

**Evaporator**

Fluid	Water	Leaving fluid temp. (°F)	44.00
Fluid flow rate (USgpm)	160.9	Fouling factor (h-ft <sup>2</sup> -°F/Btu)	0.000100
Entering fluid temp. (°F)	54.00	Pressure drop (psi/ft.H2O)	8.14/18.8
		Fluid freezing point (°F)	32.00

**Condenser**

Design ambient (°F)	95.0	Altitude (ft)	0.000
		Fan Motor Power (kW) (Qty)	2.400 (4)

**Electrical characteristics**

Unit power supply	208-230V/3ph/60Hz	Unit min. circuit ampacity (A)	284.0
Control power	115V/1ph/60Hz	Unit max inrush	680.0
Unit max. fuse/HACR CB size (A)	350.0	Comp. rated load amps (A)	47.0(2) / 71.0(2)
Unit rated load amps	266.0	Comp. locked rotor amps (A)	320.0(2) / 485.0(2)

**Notes**

- Certified in accordance with the AHRI Air Cooled Water-Chilling Packages Using the 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](http://www.ahridirectory.org).
- Meets ASHRAE 90.1-2019 Path A chiller minimum efficiency guidelines
- Please consult factory for lead time.
- Refrigerant charge may vary. Unit nameplate will show final factory charge.
- The electrical data is being projected base on 95F ambient temperature, Please consult factory for all other ambient temperature

**IPLV.IP Points at Standard AHRI Rating Conditions**

% Full load	Tons	Unit kW	Comp. kW	Fan kW	Evap. EFT	Evap. LFT	EER	Ambient(°F)
100%	67.26	78.79	69.19	9.600	54.00	44.00	10.24	95.0
75%	50.44	46.09	37.42	8.670	51.50	44.00	13.13	80.0
50%	33.63	24.05	19.52	4.530	49.00	44.00	16.78	65.0
25%	16.81	10.41	8.230	2.180	46.50	44.00	19.38	55.0

**Part load points**

% Full load	Tons	Unit kW	Comp. kW	Fan kW	Evap. EFT	Evap. LFT	EER	Ambient(°F)
100%	67.26	78.79	69.19	9.600	54.00	44.00	10.24	95.0
77%	51.48	47.10	37.50	9.600	51.70	44.00	13.12	80.0
49%	32.97	29.45	24.65	4.800	48.90	44.00	13.43	80.0
53%	35.74	25.60	20.80	4.800	49.30	44.00	16.75	65.0
27%	17.85	12.62	10.22	2.400	46.70	44.00	16.97	65.0
28%	18.80	11.48	9.080	2.400	46.80	44.00	19.65	55.0



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**Sound Data**

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000	Total dB(A)
Sound Pressure Level (free field) at 32.80 ft	32	42	49	57	60	59	58	52	65

\*Sound Pressure Level (free field) ± 2 dB(A) Tolerance

**Standard Equipment**

**Unit Construction**

- Unit shall be constructed of heavy gauge G90 galvanized steel
- All sheet metal parts are painted with oven baked epoxy / polyester powder paint, sustaining 1000 hour salt spray test in accordance with ASTM B-117
- Control panel IP54

**Hermetic Scroll Compressors**

- Strap on belt type crankcase heater or sump heater
- Compressor staging on all units
- One (1) year warranty. (Factory provides standard warranty of 12 months from start up or 18 months from shipment date whichever occurs first. Limited to parts replacement only and excludes freight, taxes/duties, labours, consumable items, etc. Machine must be well maintained by DB authorized service representative.)

**Air Cooled Condenser**

- None
- Subcooling circuit(s)
- Direct drive fans with internal motor protection
- Standard operation to 45°F ambient using fan cycling

**Evaporator**

- Braze Plate Heat Exchanger(Optional Shell & Tube Heat Exchanger)
- Single and True Dual Evaporator
- Plate material AISI 316
- Fully insulated

**Code Compliance**

- Units conform to NEC, NEMA, ANSI/ASHRAE 15
- Units conform and certified to ANSI/UL Std. 1995 & CAN/CSA Std. C22.2 No.236 (ETL Listed)

**Controls**

- DB Director microcomputer controller on all models
- Two line 16 character alpha numeric display control functions
- Compressor loading/staging based on leaving fluid temperature
- Evaporator fluid freeze protection
- High and low pressure protection
- Staggered starting of compressors
- Anti-recycle timing in controller
- Fan cycling
- Accepts remote start & stop signal
- 0 to 5 VDC chilled water reset signal (standard)
- Keyboard accessed LCD readouts, continuously updated
- Discharge and suction pressure for all circuits

**Optional Equipment/Service Included**

**Factory Mounted Options Included**

- Hot Gas By-Pass
- Protective grille condenser (LUV). For the maximum protection of condenser fins.

**Accessories (Shipped Loose)**

- Rubber-in-shear isolators (RIS) - designed for ease of installation, these rubber, one piece, molded isolators have skid resistant baseplates. Applicable for most installations.



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- NOTES:
1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS).
  2. ALLOW 60 (1524) CLEARANCE FOR CONTROL PANEL.
  3. EXTERNAL WATER PIPING MUST BE SUPPORTED TO MINIMIZE EXTERNAL WEIGHT ONTO EVAPORATOR OR UNIT.
  4. IF VIBRATION ISOLATORS ARE INSTALLED, FLEXIBLE CONNECTIONS SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE EVAPORATOR WATER CONNECTIONS TO ISOLATE THE VIBRATION IN THE WATER PIPING.
  5. PLEASE CONSULT FACTORY FOR CERTIFIED DRAWING IF OTHER OPTION IS SELECTED.

OPTION ITEMS (TICK WHERE APPLICABLE)

OPTION 1: VIBRATION ISOLATORS

NIL

RUBBER ISOLATOR

SPRING ISOLATOR

OPTION 2: PROTECTIVE PANELS

NIL

WIRE MESH (CONDENSER COIL SECTION ONLY)

HALI GUARD (COMPLETE UNIT)

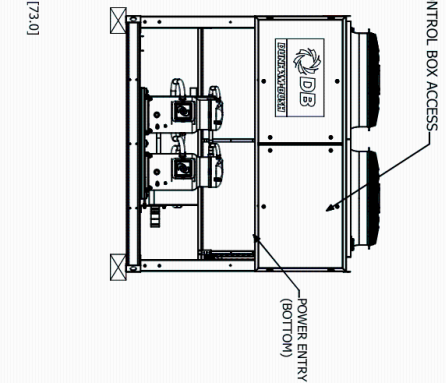
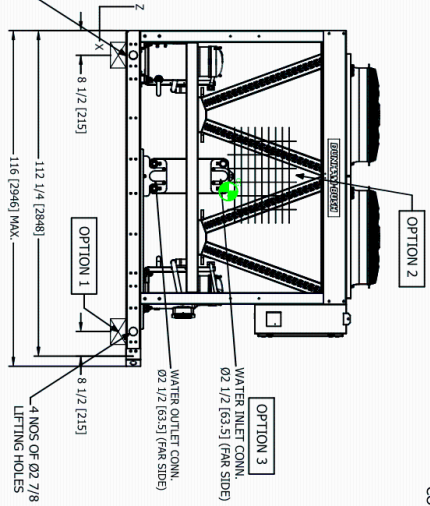
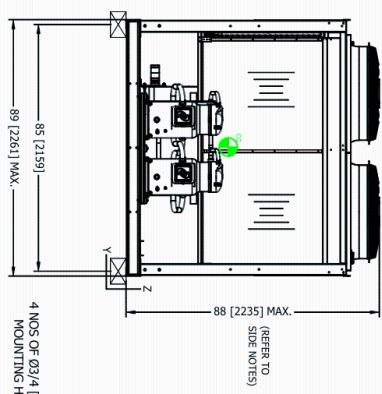
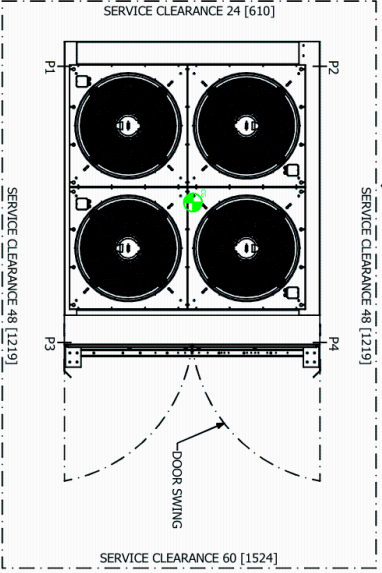
OPTION 3: WATER CONNECTOR TYPE

STANDARD (VICTAULT)

FLANGE

MNP/T

POINT	P1	P2	P3	P4
POINT LOAD LBS [KG]	979 [444]	1004 [455]	952 [432]	967 [439]
SPRING ISOLATOR	DHB-S1-666	DHB-S1-666	DHB-S1-572	DHB-S1-572
RUBBER ISOLATOR	RM-4D-R	RM-4D-R	RM-4D-R	RM-4D-R



DIMENSION CHANGES C/W STANDARD OPTION

> IF SOFTSTARTER IS SELECTED, CONTROL BOX HEIGHT MIGHT BE HIGHER THAN AS SHOWN, UNIT MAXIMUM HEIGHT MIGHT INCREASE BY UP TO 6 (152.4).

> LOW AMBIENT KIT (LAI / LA2 ONLY): ADDITIONAL CONTROL BOX MIGHT BE ADDED, AND THE UNIT COMPONENT LAYOUT MIGHT BE CHANGED. (UNIT MAX. LENGTH INCREASE IS FOR SHIPPING AND MOUNTING REFERENCE, BASE SKID MIGHT NOT CHANGE)

**CERTIFIED DRAWING**

OPTION 2: PROTECTIVE PANELS

NIL

SHIPP. WEIGHT LBS [KG]	OPERAT. WEIGHT LBS [KG]	CENTRE OF GRAVITY (X,Y,Z) INCHES	
060	3864 [1753]	3902 [1770]	55, 44, 36

CG - CENTRE OF GRAVITY

SHIPP. WEIGHT LBS [KG]	OPERAT. WEIGHT LBS [KG]	CENTRE OF GRAVITY (X,Y,Z) INCHES	
060	3957 [1795]	3996 [1813]	55, 44, 36

CG - CENTRE OF GRAVITY

SHIPP. WEIGHT LBS [KG]	OPERAT. WEIGHT LBS [KG]	CENTRE OF GRAVITY (X,Y,Z) INCHES	
060	4255 [1930]	4293 [1947]	55, 44, 36

CG - CENTRE OF GRAVITY

ALL DIMENSIONS ARE IN INCHES [MM]

This is computer generated drawing.

No signature required

REV	DESCRIPTION	DATE	BY	CHKD

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LOCATION:

QTY.

MODEL ACDS060 60HZ

PROJECT STANDARD

TITLE AIR COOLED CHILLER

DRAWING NO 93299G-092

SCALE : N. T. S. SHEET 1 OF 1

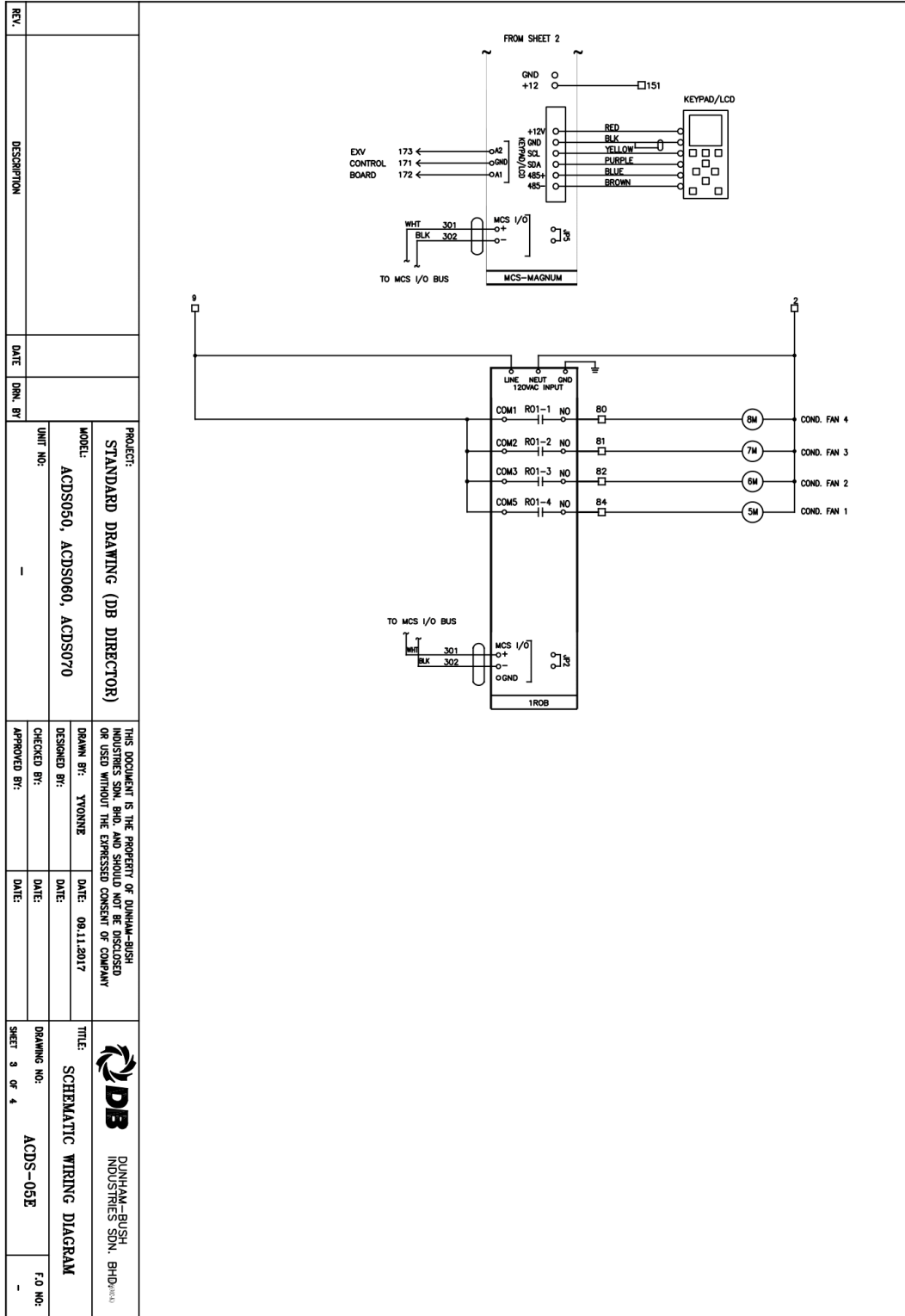
DBUS/ENG/CD/02 REV00 10/01







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TC/ENG/EU/05 REV.8 11/15



Project: Factory Loading	Consultant:
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	Location:



REV.  DESCRIPTION  DATE DWN. BY  UNIT NO.: MODEL: PROJECT: STANDARD DRAWING (DB DIRECTOR) ACDS050, ACDS060, ACDS070  THIS DOCUMENT IS THE PROPERTY OF DUNHAM-BUSH INDUSTRIES SON. BHD. AND SHOULD NOT BE DISCLOSED OR USED WITHOUT THE EXPRESSED CONSENT OF COMPANY  DRAWN BY: TYOUNG CHECKED BY: APPROVED BY:  DATE: 08.11.2017 DATE: DATE:  TITLE: SCHEMATIC WIRING DIAGRAM DRAWING NO.: ACDS-05E F.O. NO.: SHEET 4 OF 4	<p>CONTROL BOX</p> <p>RECOMMENDED FAN STAGING</p> <table border="1"> <thead> <tr> <th></th> <th>SYSTEM 1</th> <th>SYSTEM 2</th> </tr> </thead> <tbody> <tr> <td>BASE FANS</td> <td>4</td> <td>2</td> </tr> <tr> <td>STAGE 2</td> <td>3</td> <td>1</td> </tr> </tbody> </table> <p>* COIL HEADER</p>		SYSTEM 1	SYSTEM 2	BASE FANS	4	2	STAGE 2	3	1	<p>ALARM CONTACT</p>	<p>HOT GAS BYPASS OPTION</p> <p><input type="checkbox"/> 1 SYSTEM  <input type="checkbox"/> 2 SYSTEM  <input checked="" type="checkbox"/> NOT FURNISHED</p>
		SYSTEM 1	SYSTEM 2									
	BASE FANS	4	2									
	STAGE 2	3	1									
<p>LOW AMBIENT OPTION</p> <p><input type="checkbox"/> FURNISHED  <input checked="" type="checkbox"/> NOT FURNISHED</p>	<p>CHILLER LINK OPTION (N2/ LONWORKS/ BACNET MSTP)</p> <p><input checked="" type="checkbox"/> FURNISHED  <input type="checkbox"/> NOT FURNISHED</p>	<p>EVAPORATOR HEATER OPTION</p> <p><input type="checkbox"/> FURNISHED  <input checked="" type="checkbox"/> NOT FURNISHED</p> <p>ACDSA ONLY          115VAC - CUSTOMER SUPPLIED          SEE NOTES 2, 4, &amp; 6</p>	<p>ALARM BELL</p> <p><input type="checkbox"/> FURNISHED  <input checked="" type="checkbox"/> NOT FURNISHED</p>	<table border="1"> <thead> <tr> <th>VOLT</th> <th>10FU, 11FU</th> </tr> </thead> <tbody> <tr> <td>20B</td> <td>10A</td> </tr> <tr> <td>380/480/575</td> <td>5A</td> </tr> </tbody> </table> <p>CONVENIENCE OUTLET OPTION</p> <p><input type="checkbox"/> FURNISHED  <input checked="" type="checkbox"/> NOT FURNISHED</p> <p>SEE NOTE 1</p>	VOLT	10FU, 11FU	20B	10A	380/480/575	5A		
VOLT	10FU, 11FU											
20B	10A											
380/480/575	5A											
<p>DOOR LATCH SOLENOID OPTION</p> <p><input type="checkbox"/> FURNISHED  <input checked="" type="checkbox"/> NOT FURNISHED</p>	<p>PILOT LIGHT OPTION</p> <p><input type="checkbox"/> FURNISHED  <input checked="" type="checkbox"/> NOT FURNISHED</p>	<p>GROUND FAULT OPTION</p> <p><input type="checkbox"/> FURNISHED  <input checked="" type="checkbox"/> NOT FURNISHED</p>	<p>TON/ENG/ED/05 REV.A 11/15</p>									