



Project: DP Wolff	Consultant: Emiliano Quiroga
Location:	Date: 12/2/24 1:27 PM
SELECTION SUMMARY	

Tag	Model	Location	Qty
CH-1	ACDS120ANBS		1

Chiller - ACDS120ANBS

Description		
Tag - CHILLER ACDS-1 <ul style="list-style-type: none">▪ Manufacturer DBUSA▪ Base Price (R-454b Unit, Voltage: 208-230V/3/60)▪ MII:Main incoming isolator▪ CWPC - Chilled water pump control▪ LUV:Protective grille condenser Wire fin guard top▪ LN2:Compressor(s) acoustic jacket▪ DBD:DB Director▪ DSIV:Compressor Discharge Isolation Valve▪ LAL:Low ambient lockout▪ UVR:Over/under/phase (standard)▪ BMS:BMS communication - BACnet MSTP▪ Dual point power		

Shipped loose items

Description		
RIS:Rubber in shear isolator WFS4:Field inst.(NEMA 4 : min fluid and ambient -40F/-40C)(for indoor and outdoor use)		



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PERFORMANCE SUMMARY	Tag: CH-1
	Location:



Scroll Compressor Air Cooled Package Chiller

Model #	ACDS120ANBS
Quantity	1 Rating version
Manufacturer	ACDG14 DBUSA

Physical Specifications

Compressor Qty	4	Shipping weight (lb)	6,799
Length (in)	189.00	Operating weight (lb)	6,873
Width (in)	89.00	Refrigerant	R-454b
Height (in)	99.00	Approx. refrigerant charge (lb)	304

Conditions of service

Percent of full load	100%	Compressor power (kW)	111.7
Capacity (Tons)	114.9	Total Fan Power (kW)	19.20
Unit power (kW)	130.9	Cooling Efficiency (EER, Btu /W.hr)	10.53
		IPLV.IP (EER, Btu /W.hr)	15.31

Evaporator

Fluid	Water	Leaving fluid temp. (°F)	44.00
Fluid flow rate (USgpm)	274.8	Fouling factor (h·ft ² ·°F/Btu)	0.000100
Entering fluid temp. (°F)	54.00	Pressure drop (psi/ft.H ₂ O)	7.96/18.4
		Fluid freezing point (°F)	32.00

Condenser

Design ambient (°F)	95.0	Altitude (ft)	0.000
		Fan Motor Power (kW) (Qty)	2.400 (8)

Electrical characteristics

Unit power supply	208-230V/3ph/60Hz	S1 Rated load amps (A)	214.0
Control power	115V/1ph/60Hz	S2 Rated load amps (A)	211.0
		S1 Min. circuit ampacity (A)	236.0
		S2 Min. circuit ampacity (A)	234.0
		S1 Max. fuse/HACR CB size (A)	300.0
		S2 Max. fuse/HACR CB size (A)	300.0

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.
- 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%	114.9	130.9	111.7	19.20	54.00	44.00	10.53	95.0
75%	86.15	78.11	58.91	19.20	51.50	44.00	13.23	80.0
50%	57.43	41.90	26.57	15.33	49.00	44.00	16.45	65.0
25%	28.72	18.46	10.92	7.540	46.50	44.00	18.67	55.0

Sound Data

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000	Total dB(A)
Sound Pressure Level (free field) at 32.80 ft	35	45	52	59	62	61	61	55	67

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



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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

Refrigeration Specialties

- Thermal expansion valve(Standard for ACDS010-090)
- Liquid line solenoid valve (Standard with thermal expansion valve)
- Sight glass
- Two compressors per refrigerant circuit
- Refrigerant charge of R-454b
- Electronic expansion valve (optional for ACDS010-090, standard for ACDS100-180)

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
- Keyboard accessed LCD readouts, continuously updated
- Discharge and suction pressure for all circuits

Optional Equipment/Service Included
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Factory Mounted Options Included

- Compressor Acoustic Jacket (LN2). Compressor acoustic jackets have been developed to meet specific extra-low noise requirements. They are made from high performing sound proof material and offer excellent high and low frequency attenuation.
- Protective grille condenser (LUV). For the maximum protection of condenser fins.
- Chilled water pump control (CWPC) - provides a contact closure for pump starting prior to starting of the chiller.
- Display units: English - provides English units display on DB Director (standard).

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)

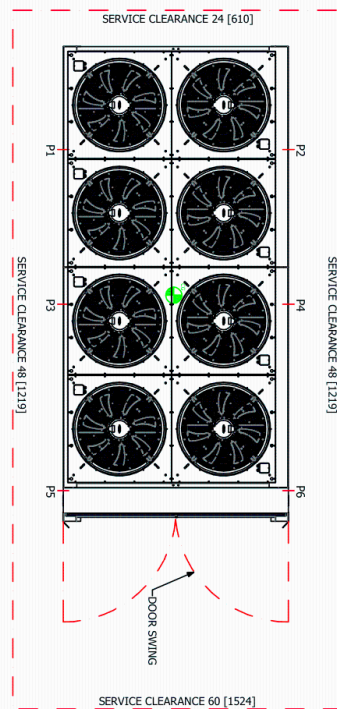
- ☐ HAL GUARD (COMPLETE UNIT)

- OPTION 3: WATER CONNECTOR TYPE

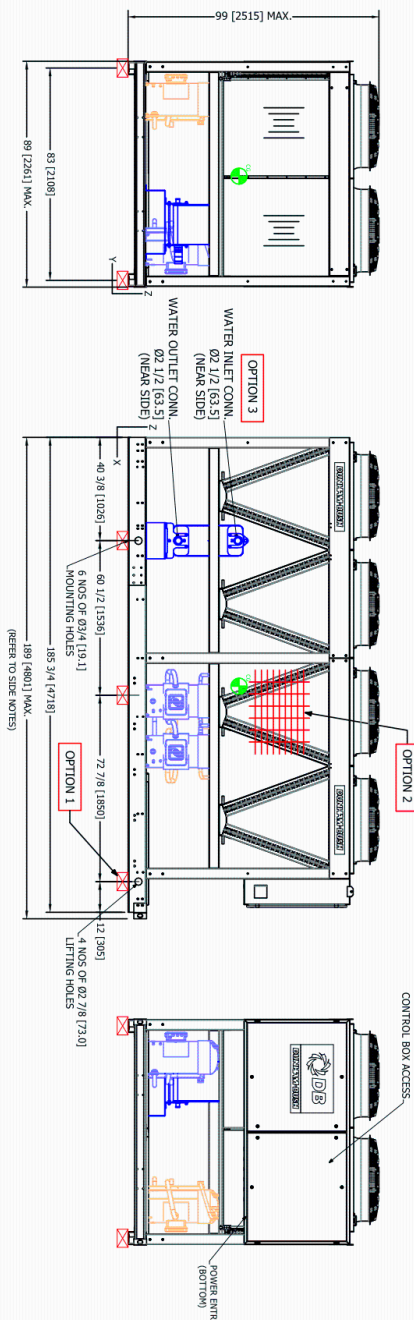
- ☒ STANDARD (VICTAULTIC)
- ☐ FLANGE
- ☐ MNPT

DIMENSION CHANGES C/W STANDARD OPTION
> IF BOTH MAIN INCOMING ISOLATOR & SOFTSTARTER ARE SELECTED, UNIT MAXIMUM LENGTH TO BE INCREASED BY 4 [101.6]
> LOW AMBIENT KIT (LA1 / LA2 ONLY):
ADDITIONAL CONTROL BOX MIGHT BE ADDED, AND THE UNIT COMPONENT LAYOUT MIGHT BE CHANGED. (UNIT MAX. LENGTH INCREASE IS FOR SHIPPING AND MOVING REFERENCE, BASE SKID MIGHT NOT CHANGE)

CHILLED WATER CONNECTION INLET/OUTLET



POINT	P1	P2	P3	P4	P5	P6
POINT LOAD LBS [KG]	1124 [510]	966 [438]	1513 [687]	1511 [685]	818 [371]	818 [371]



CERTIFIED DRAWING

OPTION 2: PROTECTIVE PANELS

- ☐ NIL

SHIP. WEIGHT LBS [KG]	OPERAT. WEIGHT LBS [KG]	CENTRE OF GRAVITY (X,Y,Z) INCHES
120	6677 [3029]	6751 [3062]

CG: CENTRE OF GRAVITY

SHIP. WEIGHT LBS [KG]	OPERAT. WEIGHT LBS [KG]	CENTRE OF GRAVITY (X,Y,Z) INCHES
120	6799 [3084]	6873 [3117]

CG: CENTRE OF GRAVITY

SHIP. WEIGHT LBS [KG]	OPERAT. WEIGHT LBS [KG]	CENTRE OF GRAVITY (X,Y,Z) INCHES
120	7303 [3313]	7377 [3346]

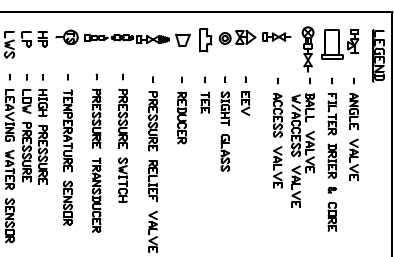
CG: CENTRE OF GRAVITY

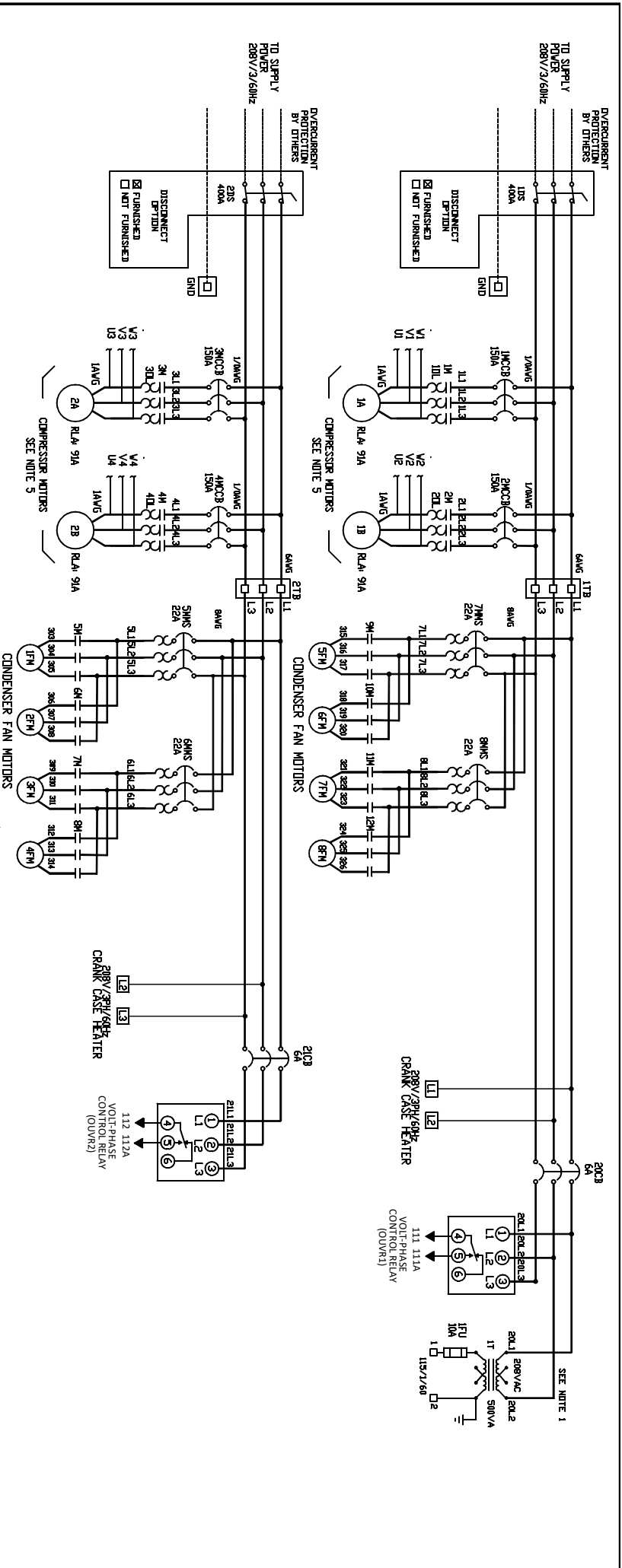
This is computer generated drawing.
No signature required



REV	DESCRIPTION	DATE	DRN
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QTY.	MODEL	PROJECT	TITLE
	AODS12060H-R454B	STANDARD	AIRCOOLEDCHILLER
DRAWING NO	932399G-3331	SCALE: N.T.S.	SHEET 1 OF 1

DB-SPENGD02-REV001-1001

[illegible]




- LEGEND:**
- | | | | |
|-------|----------------------------|------------|-----------------------------|
| CB | CIRCUIT BREAKER | HPS | HIGH PSI SWITCH |
| CIR | CIRCUIT | HTR | HEATER |
| COMP | COMPRESSOR | ID | INPUT OUTPUT BOARD |
| COND | CONDENSER | J | JUMPER |
| CONTR | CONTROL POINT | M | CONTACTOR |
| CR | CAPACITOR | MCB | MINI CIRCUIT BREAKER |
| CTR | CURRENT RELAY | MCS | MOLDED CASE CIRCUIT BREAKER |
| CTP | CURRENT TRANSFORMER | MCS-BMS | BACKSET COMMUNICATIONS CARD |
| CWP | CHILLED WATER PUMP | MCS-MAGNUM | MINIMUM |
| DIS | DISCONNECT SWITCH | MHS | MANUAL MOTOR STARTER |
| EXV | ELECTRONIC EXPANSION VALVE | MP | MOTOR PROTECTOR |
| FM | FAN MOTOR | MTR | MOTOR |
| F3 | FUSE | DL | DIFFERENTIAL |
| GF | GROUND FAULT | DLV | DIFFERENTIAL VALVE |
| GFI | GROUND FAULT INTERRUPT | PM | PRESSURE TRANSDUCER |
| GND | GROUND | PT | PRESSURE TRANSDUCER |
| HA | HIGH AMBIENT | SCR | SNUBBER |
| HGBP | HOT GAS BYPASS | SV | SILENCING VALVE |

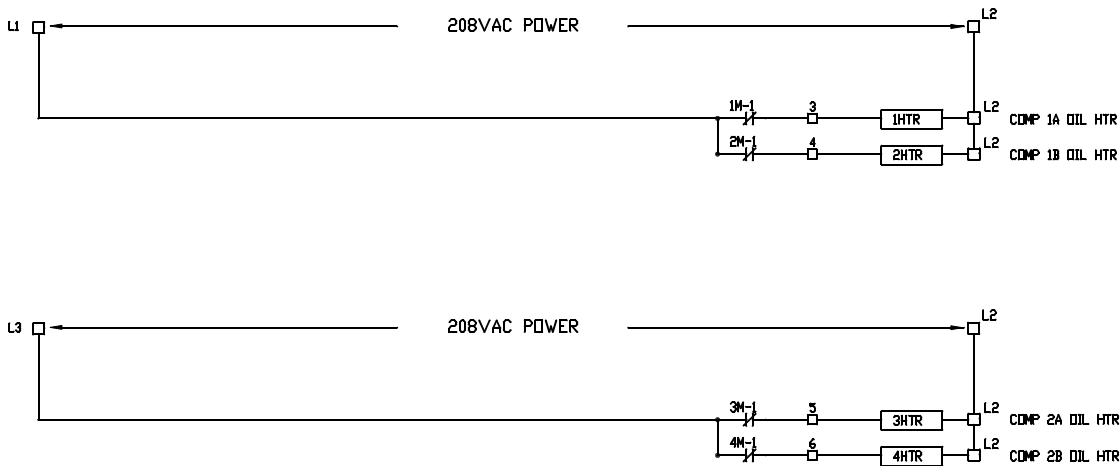
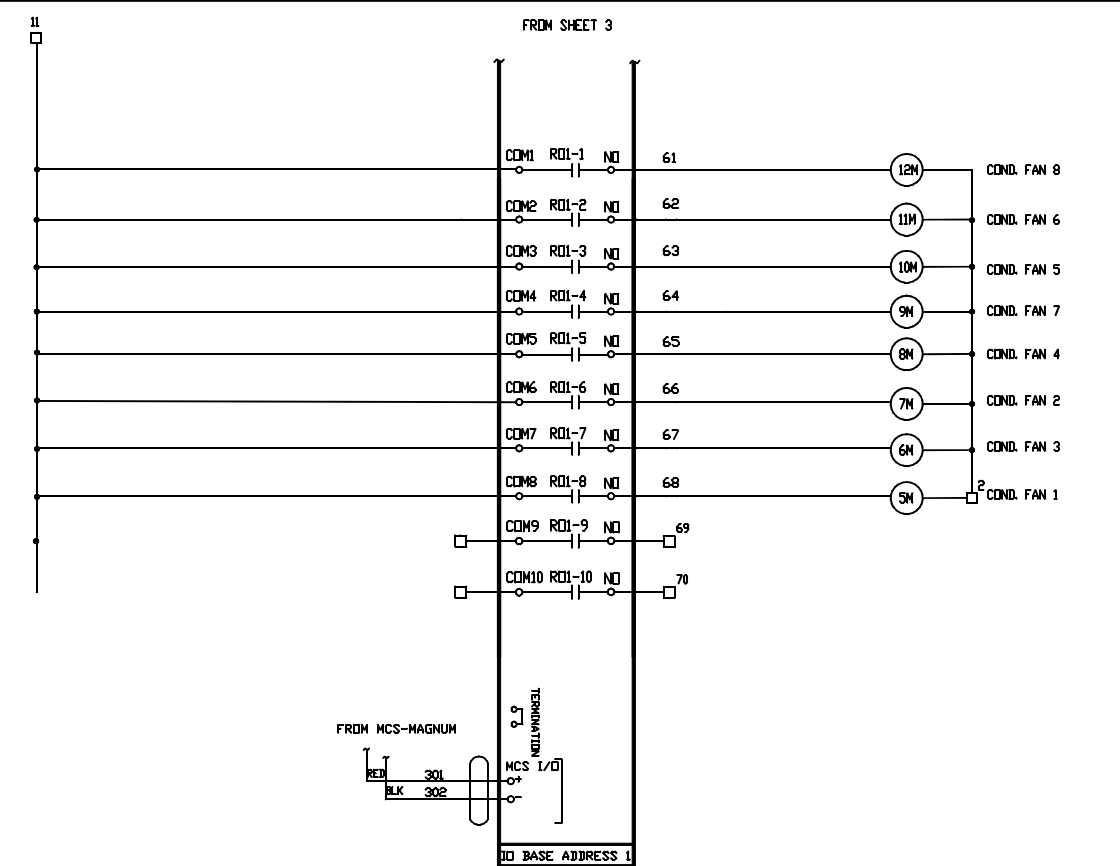
- NOTES:**
1. FUSES TO BE TIME DELAY TYPE.
 2. ALL FIELD WIRING TO COMPLY WITH LOCAL, STATE & NATIONAL CODES.
 3. DISCONNECT MEANS & BRANCH CIRCUIT PROTECTION SHALL BE CLASS 1.
 4. DISCONNECT MEANS & BRANCH CIRCUIT PROTECTION SHALL BE PROVIDED BY INSTALLER.
 5. IF POWER SUPPLY HAS BEEN INTERRUPTED FOR A PROLONGED PERIOD, BEFORE STARTING COMPRESSORS, USE OVERCURRENT PROTECTION, USE TERMINAL FOR NEUTRAL CONNECTION, 15A OVERCURRENT PROTECTION, USE TERMINAL FOR NEUTRAL CONNECTION, 7 TO RESET JUMP, OPEN 53 FOR 5 SECONDS, TO RESET JUMP OPEN 54 FOR 5 SECONDS, ETC.
 6. SHIELDED CABLE IS RECOMMENDED FOR FIELD INSTALLED CUSTOMER CONTROL WIRING.
 7. REMOVE JUMPER J11 WHEN WIRING GROUND FAULT OPTION.
 8. REMOVE JUMPER J11 WHEN WIRING GROUND FAULT OPTION.
 9. REMOVE JUMPER J11 WHEN WIRING GROUND FAULT OPTION.
 10. IF 0-5VDC TARGET RESET IS USED, SET SETPOINT 21 TO RESET INPUT, USE SHIELDED CABLE.
 11. REMOVE JUMPER J11 WHEN WIRING GROUND FAULT OPTION.

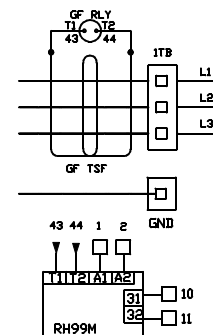
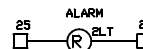
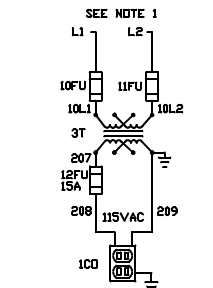
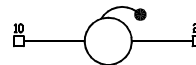
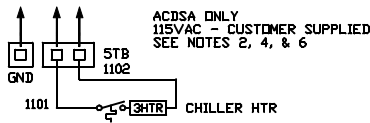
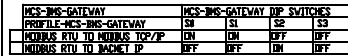
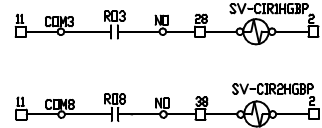
UNIT RATING		SYS 1		SYS 2	
RLA	214A	214A	211A		
MCA	236A	236A	234		
MFS	300A	300A	300A		

REV.	INITIAL RELEASE	DESCRIPTION	DATE	DRN. BY	PROJECT:		UNIT NO.	CH-1	CHECKED BY:	DATE:	APPROVED BY:	DATE:	SHEET 1 OF 5	TITLE:	SCHEMATIC WIRING DIAGRAM	F.D. NO. UXXXX	REVISION NO. 01	
					DP WULF													
01		INITIAL RELEASE	01/08/25	RAUL C.	PROJECT:		UNIT NO.	CH-1	CHECKED BY:	DATE:	APPROVED BY:	DATE:	SHEET 1 OF 5	TITLE:	SCHEMATIC WIRING DIAGRAM	F.D. NO. UXXXX	REVISION NO. 01	
		DESCRIPTION	DATE	DRN. BY	PROJECT:													
		DESCRIPTION	DATE	DRN. BY	PROJECT:		UNIT NO.	CH-1	CHECKED BY:	DATE:	APPROVED BY:	DATE:	SHEET 1 OF 5	TITLE:	SCHEMATIC WIRING DIAGRAM	F.D. NO. UXXXX	REVISION NO. 01	
		DESCRIPTION	DATE	DRN. BY	PROJECT:													



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			MODEL:	ACDS120ANBS	DRAWN BY: RAUL C.	DATE: 01/07/25	TITLE:		F.D. NO: UXXXX	
					DESIGNED BY:RAUL C.	DATE: 01/07/25	SCHEMATIC WIRING DIAGRAM			
			UNIT NO:	CH-1	CHECKED BY: G.I	DATE:	DRAWING NO: UXXXX-ACDS-01E		REVISION NO:	
					APPROVED BY:	DATE:	SHEET 4 OF 5		01	
01	INITIAL RELEASE	01/08/25	RAUL C.							
REV.	DESCRIPTION	DATE	DRA. BY							







DUNHAM-BUSH
INDUSTRIES SDN. BHD. (166302-K)

**PURCHASED
PART
SPECIFICATION**

PART NO.	2202050001
LAST NO.	2202070005
SHEET	1 OF 2
DATE	14.04.2014

RUBBER IN SHEAR-ISOLATOR

RUBBER IN SHEAR-ISOLATOR

MANUFACTURER : TOMAHAWK OR ENGINEERING APPROVED EQUIVALENT.
TYPE : DUD-DEFLECTION RUBBER MOUNTING.
MODEL : RM-2B & RM-4D.
MATERIAL : NEOPRENE BODY,
ELECTROPLATED LOCKING & WASHER.
SPRING FREE HEIGHT : 50 MM [2B], 70 MM [4D].
FURNISHED ITEMS : 1. LOCKING.
2. WASHER.

GENERAL SPECIFICATION:

1. DBI P/N MUST BE MARKED ON THE ISOLATOR OR CONTAINER.
2. PART MUST BE ADEQUATELY PACKAGED TO PREVENT FROM DIRT AND SHIPPING DAMAGE.

Released by document controller
through electronic transmission

02	TO ADD PART NUMBER COLUMN	14-1371	THAM	14.04.14	Wld-	15/4/2014
01	TO ADD ITEM NUMBER 2202050001	13-208	THAM	19.11.13	WELCHARD	19.11.13
00		-	KEN	18.03.02	N. MACKENZIE	21.03.02
REV.	DESCRIPTION	ECA NO.	REV. BY	DATE	APP'D BY	DATE



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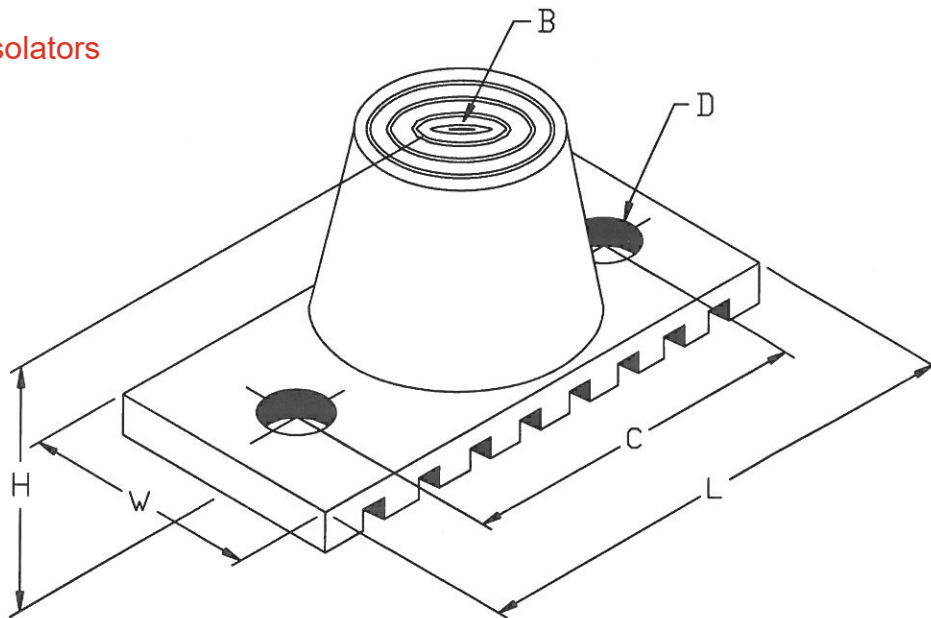
**PURCHASED
PART
SPECIFICATION**

PART NO.	2202050001
LAST NO.	2202070005
SHEET	2 OF 2
DATE	14.04.2014

RUBBER IN SHEAR-ISOLATOR

PART NUMBER	MODEL	COLOR CODE	RATED LOAD [KG]	RATED DEF. [MM]	MAX. LOAD [KG]	MAX. DEF. [MM]	DIMENSION [MM]					
							C	L	H	W	B	D
2202050001	RM-2B	ORANGE	5 - 70	7.5	93	10	76	98	50	56	M10	Ø10
2202070004	RM-4D	RED	25-700	10.5	930	14	128	152	70	105	1/2UNF	Ø13
2202070005		GREY	40-1010		1340							

Qty= 6 isolators



02	TO ADD PART NUMBER COLUMN	14-1371	THAM	14.04.14	WELCHARD	15/4/2014
01	TO ADD ITEM NUMBER 2202050001	13-208	THAM	19.11.13	WELCHARD	19.11.13
00		-	KEN	18.03.02	N. MACKENZIE	21.03.02
REV.	DESCRIPTION	ECA NO.	REV. BY	DATE	APP'D BY	DATE

PURCHASED PART SPECIFICATION

PART NO.	3101120001
LAST NO.	3101120002
SHEET	1 OF 2
DATE	13.08.2015

SWITCH, FLOW

MANUFACTURER : JOHNSON CONTROLS, INC. OR ENGINEERING APPROVED EQUIVALENT.

TYPE NO. : F261

DB PART NO.	3101120001	3101120002
MFR PART NO.	F261KAH-V01C	F261MAH-V01C
ENCLOSURE	TYPE 3R	TYPE 4

MATERIAL : CASE AND COVER -MOLDED POLYCARBONATE
: PIPE CONNECTION -FORGED BRASS
: PADDLE SCREW -STAINLESS STEEL
: PADDLE -STAINLESS STEEL

MAX. LIQUID PRESSURE : 290 PSIG (20 BAR)

MIN. LIQUID TEMPERATURE : -20°F (-29°C)

MAX. LIQUID TEMPERATURE : 250°F (121°C)

AMBIENT CONDITION : -40 to 140°F (-40 to 60°C)

SWITCH : SPDT

PADDLE : STAINLESS STEEL 3-PIECE PADDLES (3 IN., 2 IN., 1 IN. SEGMENTS) AND STAINLESS STEEL 6 IN. PADDLE

PIPE CONNECTOR : 1 IN. 11-1/2 NPT THREAD

WIRING CONNECTIONS : 3 COLOR-CODED SCREW TERMINALS AND ONE GROUND TERMINAL

CONDUIT CONNECTOR : ONE 7/8 IN. (22MM) HOLE FOR 1/2 IN. TRADE SIZE (OR PG16) CONDUIT

APPROVALS : CE, cULus

UL FILE NO. : E6688

ELECTRICAL RATING

MOTOR RATINGS	120VAC	240VAC
HOUSEPOWER	1	1
FULL LOAD AMP	16	10
LOCKED ROTOR AMP	96	60
RESISTIVE AMP	16	10
PILOT DUTY VA	720	720

GENERAL SPECIFICATION

MARKING : DBI PART NUMBER MUST BE MARKED ON THE SHIPPING CONTAINER.

CONNECTION : ALL CONNECTOR S TO BE SEALED AGAINST DIRT AND MOISTURE.

PACKAGING : PART MUST BE ADEQUATELY PACAKGED TO PREVENT THEM FROM SHIPPING DAMAGE, DIRT AND MOISTURE.

	CONTROLLED DOCUMENT					
	COPY NUMBER					
REV.	DESCRIPTION	ECA NO.	REV. BY	DATE	APP'D BY	DATE



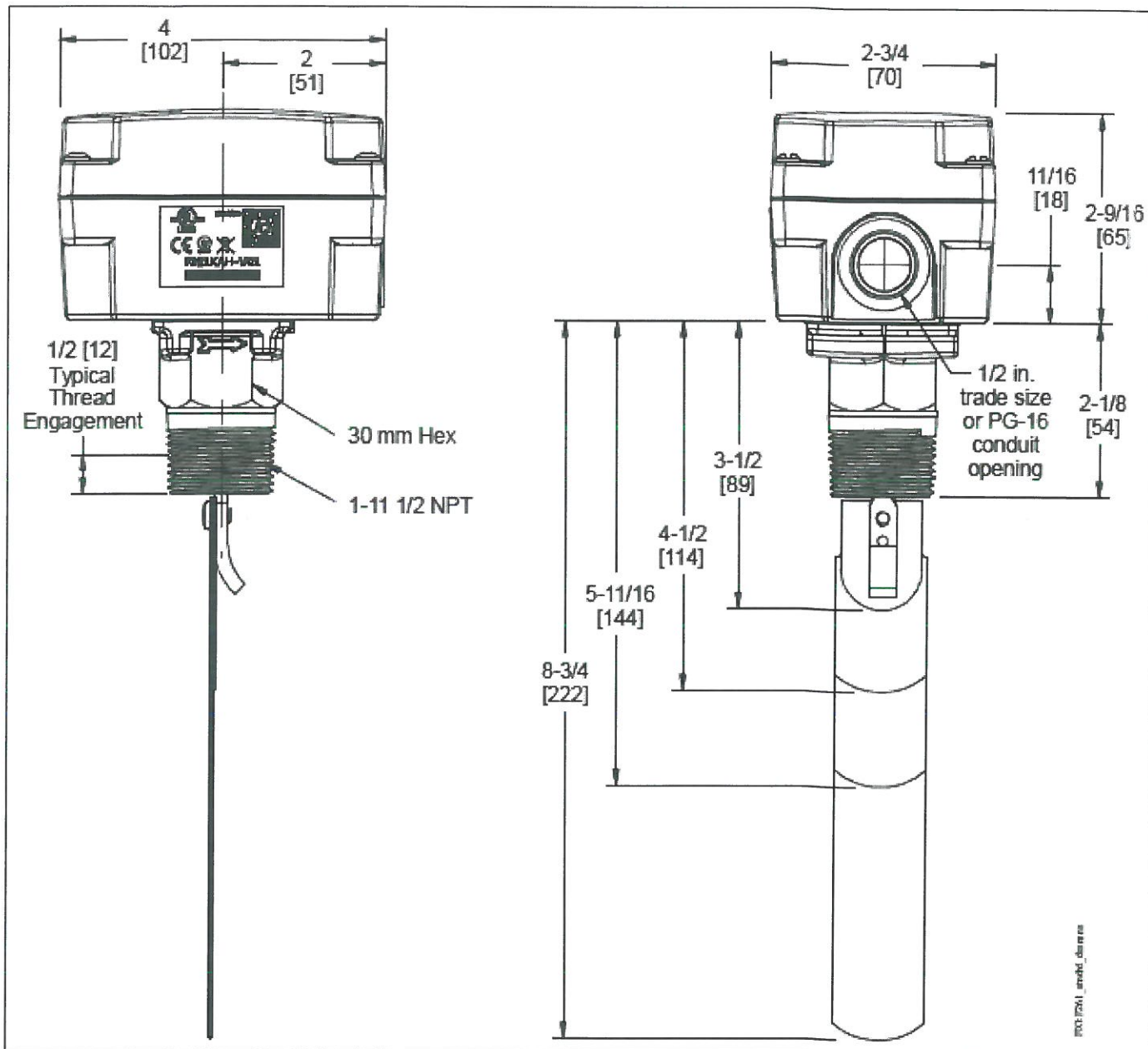
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INDUSTRIES SDN. BHD. (166302-K)

PURCHASED PART SPECIFICATION

PART NO.	3101120001
LAST NO.	3101120002
SHEET	2 OF 2
DATE	13.08.2015

SWITCH, FLOW

DIMENSIONS FOR F261 STANDARD FLOW SWITCH, INCH [MM]



REV.	DESCRIPTION	ECA NO.	REV. BY	DATE	APP'D BY	DATE
			RAHMAN	13.8.15		14/8/2015