



EQUIPMENT DATA SHEET (INCL. PREDICTED PERFORMANCE CURVE)

CLIENT	:	Air Products Manufacturing LLC
PROJECT NAME/NO.	:	WEP Renewables
CLIENT PO NO	:	4505608736
HMD DOCUMENT NO	:	HMD-4505605365-C04-01
CLIENT DOCUMENT NO	:	EN207119-SNDYN-9V3-00069
HMD PUMP NO	:	839921 A/B
EQUIPMENT TAG NO	:	18-P-363 A/B

6	29/03/2023	ISSUE FOR REVIEW	AFS	AFS	NW
5	01/03/2023	ISSUE FOR REVIEW	GC	AFS	NW
4	13/01/2023	ISSUE FOR REVIEW	GC	AFS	NW
3	09/12/2022	ISSUE FOR REVIEW	KW	AFS	NW
2	23/09/2022	ISSUE FOR REVIEW	KW	AFS	NW
1	01/04/2022	ISSUE FOR REVIEW	JLW	AFS	NW
0	18/02/2022	ISSUE FOR REVIEW	AFS	AFS	NW
REV	DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY

NOTE:

 RESOLUTION SHEET				
Comment Number	Document Name: Equipment Data Sheet		Revision from which comment first appeared	Comment Status: Open\Closed - (Date Closed:)
	CLIENT COMMENT	HMD RESPONSE	Current Rev:	
1	Shouldn't revision and date be updated as well? Apply to all sheets.	Noted and updated.	5	Closed (29/03/2023)
2	On the comment response, vendor clarified that 28.82gpm is both the preferred max operating and max allowable due to flat curve. Shouldn't this be updated to 28.82gpm or less? Pump curve does not go to 31.08gpm.	Noted and updated.	5	Closed (29/03/2023)
3	There's a test curve for this pump in squad check, should this curve be replaced with actual test curve?	The predicted curve is correct on this document. For the true, after test pump curve, please refer to the Performance & Mechanical Run Tests Reports (Doc. Ref. No. EN207119-SNDYN-9V3-00082)	5	Closed (29/03/2023)



WORLD ENERGY PARAMOUNT
World Energy Renewables Project
Paramount, California

MECHANICAL EQUIPMENT DATASHEET
Document Number: A8KM-18-096-540076-A
Rev. 6, 29/03/2023
HMD-4505605365-C04-01



WORLD ENERGY RENEWABLES PROJECT

MECHANICAL EQUIPMENT DATA SHEET FOR 18-P-363A/B

STRIPPER OVERHEAD SOUR WATER PUMPS

Document No. HMD-4505605365-C04-01

Fluor Project No: A8KM

6	29-Mar-2023	Issue for Review	8	AFS	AFS	AFS	
5	1-Mar-2023	Issue for Review	8	GC	AFS	AFS	
4	13-Jan-2023	Issue for Review	8	GC	AFS	AFS	
3	9-Dec-2022	Issue for Review	8	KW	AFS	AFS	
2	23-Sep-2022	Issue for Review	8	KW	AFS	NW	
1	1-Apr-2022	Issue for Review	8	JLW	AFS	NW	
0	18-Feb-2022	Issue for Review	8	AFS	AFS	NW	
REV	DATE	DESCRIPTION	PAGES	ORIG	CHK'D	APPV'D	CLIENT

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FLUOR worldenergy		SEALESS CENTRIFUGAL PUMP API 685, 2nd EDITION DATA SHEET Note: This Data Sheet has been modified from that in Annex R of API 685, Second Edition.		Contract: A8KM Item No: 18-P-363A/B Revision: 6 Date: 29-Mar-23 Unit: RJFU Unit B Doc. No.: HMD-4505605365-C04-01 PO No.: 4505605365 Sheet 2 of 8		REV		
1	CLIENT: World Energy Paramount							
2	SERVICE: Stripper Overhead Sour Water Pumps		PLANT: World Energy Renewables Plant		SITE: Paramount, CA			
3	NO. REQ'D : 2 x 100% (Note 2.1)	PUMP SIZE : 3 x 2, Frame Size 1		TYPE: MAGNETIC DRIVEN	NO. STAGES : One (1)			
4	MANUFACTURER: Sundyne		MODEL: LMV801S DA6		SERIAL NO.: 839921 A/B		2	
5	APPLICABLE TO : ☒ PURCHASE							
6	INFORMATION BELOW TO BE COMPLETED: ☐ BY PURCHASER ☒ BY SUPPLIER ☐ BY EITHER							
7	☒ LIQUID CHARACTERISTICS			☐ OPERATING CONDITIONS - CONTINUED				
8	LIQUID TYPE OR NAME: Stripper Sour Water				NOTE: Max, Min, & Rated values refer only to the property listed	SERVICE : CONTINUOUS		
9		UNITS	MAXIMUM	NORMAL		RATED	*IF INTERMITTENT NO. OF STARTS / DAY	
10	VAPOR PRESSURE:	psi (a)				35.2	PUMPS OPERATE IN:	
11	SPECIFIC GRAVITY:					0.99	TEMPERATURE - VAPOR PRESS. CURVE	
12	SPECIFIC HEAT:	BTU/lbm °F					CORROSION DUE TO: (6.10.1.8)	Note 2.2
13	VISCOSITY:	cP			0.61	EROSION DUE TO: (6.10.1.8)		
14	☒ OPERATING CONDITIONS (6.1.2)							
15		UNITS	MAXIMUM	RATED	NORMAL	MINIMUM		
16	NPSHa Datum		C.L. IMPELLER - 3' Above Grade				H ₂ S CONCENTRATION (ppmw): (6.10.1.11)	600 (wet H ₂ S)
17	PUMPING TEMP.:	°F	160.0	110.0	110.0		CHLORIDE CONCENTRATION (ppmw):	11
18	FLOW:	gpm		24.8	22.6	11.3	PARTICULATE SIZE (DIA. IN MICRONS):	
19	DISCHARGE PRESS: (6.3.2)	psig		137.8			PARTICULATE SIZE DISTRIBUTION:	
20	SUCTION PRESSURE:	psig	109.3	25.2			PARTICULATE CONCENTRATION (ppm):	
21	DIFFERENTIAL PRESSURE:	psi		112.6			PARTICULAR HARDNESS:	
22	DIFFERENTIAL HEAD:	ft		261.5			THERMAL CONDUCTIVITY Btu/(h-ft-°F)	
23	NPSH _A :	ft		11.0	Excludes required margin		THERMAL EXPANSION: in/in/°F	
24	HYDRAULIC POWER:	HP		1.6			POLYMERIZATION CHARACTERISTICS: (6.1.3.3)	
25	SITE AND UTILITY DATA							
26	LOCATION:			COOLING WATER: IF APPLICABLE				
27	☒ OUTDOOR		☒ UNHEATED					
28	MOUNTED AT: GRADE		☐ TROPICALIZATION REQ'D					
29	ELECTRICAL AREA CLASSIFICATION:		☐ NON CLASSIFIED					
30	CLASS: I	GROUP: B,C,D	DIVISION: 2					
31	ZONE:	GROUP:	TEMP. CLASS T3C					
32	SITE DATA:							
33	ELEVATION (MSL): 69	ft	BAROMETER: 14.7	psia				
34	RANGE OF AMBIENT TEMPS: MIN / MAX		35	/	105	°F		
35	RELATIVE HUMIDITY: MIN / MAX		AVG	/	54	%		
36	UNUSUAL CONDITIONS:							
37	UTILITY CONDITIONS:							
38	ELECTRICITY:	DRIVERS	HEATING	CONTROL	Instruments			
39	VOLTAGE	460	120	120	24V			
40	PHASE	3	1	1				
41	HERTZ	60	60	60				
42								
43	NOTES							
44	2.1 2 x 100% pumps. One (1) operating & one (1) spare.							
45	2.2 Corrosive compositions dissolved in water:							
46	NH3 = 3200 ppmw							
47	CO2 = 0.6 wt%							
48	2.3 Pump centerline is assumed to be 3'-0" above grade and 27" above top of foundation. Pump Supplier shall adjust the NPSHa based on the actual pump							
49	centerline elevation above the pump foundation. A minimum NPSH margin shall be the greater of 2 feet or 15% of NPSHr. (UOP Standard Specification 5-11-13)							
50	2.4 Pump Control Method: Level control cascading to flow control.							
51	2.5 Motor shall be rated for Class 1, Div 2, Gr B,C,D and Temperature Code T3C.							
52	2.6 Pump supports shall meet design load requirements per Project Spec. A8KM-PP-000-40002-A, Structural Data for Mechanical Equipment, and							
53	A8KM-PP-000-20001-A, Plant Site Data Sheet.							
54	2.7 The head-capacity curve shall continuously rise to a minimum continuous stable flow (UOP Standard Specification 5-11-13).							
55	2.8 In case of process fluid leakage to atmospheric pressure, process fluid is not expected to flash. However the fluid contains dissolved H2S.							
56	2.9 The mechanical design temperature is 300°F.							
57								
58								
59								

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PERFORMANCE						
PROPOSAL CURVE NO.: N/A		RPM 3520		ROTOR CHAMBER TEMP RISE OPERATING:		2
As Tested Curve No.:				AT RATED CONDITIONS		°F
IMPELLER DIA.: RATED: 7.18		MAX: 7.625		AT MAXIMUM PUMP FLOW		°F
MIN: 6.967		in		ROTOR CHAMBER TEMP RISE ON SHUTDOWN:		°F
HYDRAULIC EFFICIENCY AT RATED POINT: 15.27		%				2
HYSTRERESIS & MECHANICAL LOSSES: 3.22		HP				2
RATED POWER: 10.62		HP		EFFICIENCY: 15.27		%
RATED CURVE BEP FLOW (at rated impeller dia.)		26		gpm		
MIN. FLOW THERMAL :		gpm		STABLE : 10.6		gpm
PREFERRED OPERATING REGION: (6.1.11)		18.13		to 28.82		gpm
ALLOWABLE OPERATING REGION:		10.6		to 28.82		gpm
MAX. HEAD @ RATED IMPELLER:		272.75		ft		
MAX. POWER @ RATED IMPELLER:		10.99		HP		
PERCENT RISE TO SHUTOFF:		4.3		%		
ORIFICE USED TO STEEPEN CURVE OR GIVE CONT. RISE		NO				
NPSH3 at RATED FLOW :		6.97		ft		
CL PUMP TO U/S BASEPLATE:		0.61		ft		
NPSH MARGIN at RATED FLOW :		4.03		ft		
SPECIFIC SPEED: (6.1.16)		gpm,rpm,ft				
SUCTION SPECIFIC SPEED LIMIT:		11000				
SUCTION SPECIFIC SPEED:		gpm,rpm,ft		6206		
CONSTRUCTION						
API PUMP TYPE: OH4		[Based on API 610 Definitions]		CASING MOUNTING: FOOT		1
NOZZLE CONNECTIONS: (6.4.5)				CASING TYPE: (6.3.10) DIFFUSER		1
				ROTATION: (VIEWED FROM COUPLING END)		
				CASE PRESSURE RATING: (Note 3.3)		
				MAWP: (6.2.2) 1116		psig @ 300 °F
				HYDROTEST: 1958		psig @ 100 °F
				TYPE BOLTING USED ON PUMP (6.1.31.1):		ANSI/ASME B1.1
				AUXILIARY CIRCULATION PIPING PLAN		
				PIPING FORM:		
				PIPING MATERIAL:		
				PIPING ASSEMBLY:		
				IF FLANGED:		
				COOLING WATER REQUIREMENTS:		NOT APPLICABLE
				COOLING WATER PIPING PLAN		
				PIPING FORM:		
				PIPING MATERIAL:		
				PIPING ASSEMBLY:		
				IF FLANGED:		
				FOR: JACKET		gpm
				HEAT EXCHANGER		gpm
				TOTAL COOLING WATER		gpm
				HEATING REQUIREMENTS:		NOT APPLICABLE
				HEATING MEDIUM		gpm
				HEATING PIPING		MATERIAL:
				ROTOR:		
				IMPELLER TYPE		SEMI-OPEN
				RENEWABLE IMPELLER WEAR RINGS REQUIRED		YES
				RENEWABLE CASE WEAR RINGS REQUIRED		YES
				COMPONENT BALANCE TO ISO 1940 G1.0		YES
NOTES						
3.1 Flanges for spiral wound gaskets shall have flange surface finish of 125 µin Ra to 250 µin Ra maximum. Finishes shall be judged by visual comparison with surface roughness standards conforming to ASME B46.1						
3.2 Reduced hardness materials are required in accordance with API 685, 2nd Edition, Section 6.10.1.11						
3.3 Nameplate for MAWP at mechanical design temperature. Minimum MAWP of 1025 psig is required to rate casing for very rare upset condition per HAZOP requirements. Pump will not be operating during upset condition.						

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CONSTRUCTION (CONT'D)											
MATERIAL (6.10.1.1)						MAGNETIC DRIVEN PUMP SPECIFIC (9.1)					
APPENDIX H CLASS: A-8: 316 SS / 316 SS						DRIVER TYPE MOTORGEAR NO					
MINIMUM DESIGN METAL TEMP (6.10.4.1) psig @ 32 °F						CLOSE COUPLED DESIGN APPROVED (9.1.1.2): YES					
IMPACT TEST SPECIFICATION						DESIGN FOR REMOVAL OF DRIVE END WITHOUT DISTURBING THE					
REDUCED HARDNESS MATERIALS REQ'D (6.10.1.11) YES						PRESSURE CASING OR DRIVER (9.1.1.4): NO					
APPLICABLE HARDNESS STANDARD (6.10.1.11) MR0103						DESIGN CONTAINMENT SHELL FOR VACUUM (6.2.4):					
COPPER IN CONTACT W/ PROCESS FLUIDS NOT ALLOWED						CONTAINMENT SHELL VACUUM DESIGN: psig					
CASING & COVER: 316 SS (ASTM A351 CF8M)						MAGNETIC COUPLING TYPE: SYNCHRONOUS					
IMPELLER: 316 SS (ASTM A351 CF8M)						MAGNETS:					
SHAFT: 22% Chr Dup SS (ASTM A276 UNS S31803)						MAGNETIC MATERIAL					
WEAR RINGS: N/A						MOUNTING METHOD					
CONTAINMENT SHELL/STATOR LINER: Alloy 718 / 316L Flange						TEMP. LIMIT °F					
INNER MAG SHEATH/ROTOR LINER: 316L SS - Resin Potted						HERMETIC. SEALED					
BEARING SLEEVE: Silicon Carbide						NO. OF MAGNETS					
BEARING BRUSHING: Silicon Carbide						PROTECTION OF OUTER MAG RING (9.1.3.5):					
STATOR HOUSING/FRAME: N/A						STARTING REQUIREMENT: ACROSS-THE-LINE					
INSPECTION CLASS LEVEL 2						TORQUE RATING (DECOUPLING) 50.15 ft-lb					
PRESSURE VESSEL DESIGN CODE REFERENCES						MAX TORQUE REQ'D ON STARTING (9.1.3.7a) 32.7 ft-lb					
THESE REFERENCES MUST BE LISTED BY THE MANUFACTURER:						PUMP TORQUE AT RATED (+5%), (9.1.3.7b) 11.1 ft-lb					
SOURCE OF MATERIAL PROPERTIES ASTM						DESIGN FOR FULL CURVE TORQUE REQUIREMENTS (9.1.3.7c) YES					
CASTING FACTORS USED IN DESIGN (TABLE 3)						TORQUE REQ'D FOR FULL CURVE (120% BEP), (9.1.3.7c) 16.49 ft-lb					
WELDING AND REPAIRS						REQUIRED/ACTUAL SERVICE FACTOR (9.1.3.8) / 4.52					
ALTERNATE WELDING CODES AND STANDARDS						SUBMIT MAG-COUPLING TORQUE VS TEMP. CURVE YES					
WELDER QUALIFICATION						SUBMIT SPEED VS TORQUE CURVE (9.1.3.10) YES					
WELD PROCEDURE QUALIFICATION						BEARINGS AND LUBRICATION (9.1.4)					
MP OR LP EXAM OF PLATE EDGE						DRIVE MAGNET BEARING (TYPE / NUMBER):					
POST WELD HEAT TREAT						RADIAL N/A / N/A					
POST WELD HEAT TREAT OF CASING						THRUST N/A / N/A					
ALTERNATE STD/ACCEPT CRITERIA APPLIES						LUBRICATION METHOD:					
INSPECTIONMETHODCASTINGSFABRICATIONS						OIL VISC. ISO GRADE VG					
RADIOGRAPH						CONSTANT LEVEL OILER (9.1.4.2.1)					
ULTRASONIC						PREFERENCE					
MAG PARTICLE						HOUSING VENT					
LIQ PENETRATE						SUMP COLLECTOR REQUIRED (9.1.4.2.2)					
VISUAL						BEARING HOUSING END SEALS					
MOTOR REQUIREMENTS APPLICABLE TO ALL (7.1.2), See Sheet 8						SHAFT COUPLING & GUARD: (9.1.5.2)					
MANUFACTURER: Baldor						COUPLING MANUFACTURER:					
FRAME OR MODEL: 256TC						MODEL SPACER LENGTH in					
ORIENTATION: VERTICAL						RATING (POWER / 100 RPM) SERVICE FACTOR					
NAMEPLATE POWER HP 15						COUPLING BALANCED TO ISO 1940-1G6.3 (9.1.5.2.3)					
SERVICE FACTOR 1.15						COUPLING TO ISO 14691 (9.1.5.2.9)					
NOMINAL RPM 3520						COUPLING GUARD STANDARD (9.1.5.2.11)					
RATED LOAD RPM						IGNITION HAZARD ASSESSMENT REQUIRED (9.1.5.2.11.5)					
VARIABLE SPEED REQUIRED NO						SPARK RESISTANT MATERIAL (9.1.5.2.11.6)					
SOURCE OF VARIABLE SPEED						BASEPLATE (9.1.5.3)					
VOLTAGE 460						API BASEPLATE NUMBER (9.1.5.3.3):					
PHASE 3						BASEPLATE CONSTRUCTION (9.1.5.3.1.1):					
HERTZ 60.00						BASEPLATE DRAINAGE (7.3.1) DRAIN PAN					
MINIMUM STARTING VOLTAGE 80%						MOUNTING:					
INSULATION CLASS F						NON-GROUT CONSTRUCTION (9.1.5.3.13)					
FULL LOAD AMPS 17						OPEN DECK DESIGN (9.1.5.3.14):					
LOCKED MOTOR AMPS 114						PROVIDE STAINLESS SPACER PLATE UNDER ALL EQUIP. FEET (9.1.5.3.6):					
START CONDITION OPEN VALVE (FULLY-LOADED)						OTHER					
						SEPARATE MOTOR DRIVER, See Sheet 8					
						APPLICABLE SPEC: ENCLOSURE:					
						INCLUDE: SPACE HEATER VIB. SENSOR					
						LUBRICATION:					
						DRIVER MOTOR BEARING (TYPE / NUMBER):					
						RADIAL /					
						THRUST /					

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						Item No: 18-P-363A/B		
						Revision: 6 Date: 29-Mar-23		
						Unit: RJFU Unit B		
						Doc. No.: HMD-4505605365-C04-01		
						Inquiry No.: 4505605365		
Sheet 5 of 8								

1	CANNED MOTOR PUMP SPECIFIC (9.2)				PREPARATION FOR SHIPMENT (8.4.1)																																			
	MOTOR WINDING INSULATION CLASS (9.2.2.8)				TYPE OF SHIPMENT (8.4.1): EXPORT																																			
	SOLID OR LIQUID HEAT TRANS. MEDIA ALLOWED IN STATOR?				EXPORT BOXING MFR STD REQUIRED																																			
	DESIGN MOTOR FOR FREQUENT STARTS (9.2.2.9)																																							
	STARTS PER				N2 PURGE DURING SHIPPING (9.2.8.4)																																			
	IMPACT ON LIFE:				OUTDOOR STORAGE MORE THAN 6 MONTHS YES																																			
	DESIGN MOTOR FOR (9.2.2.9):				PURGE DURING STORAGE (9.2.8.4) NO																																			
	UL, FM, ATEX OR EQUIVALENT REQUIRED (9.2.2.10)				DETAILS OF LIFTING DEVICES																																			
	CERTIFICATION OF IEEE 252 TEST REQUIRED (5.2.7.1)				SPARE PARTS (include cost & details w/ proposal)																																			
	DESIGN STATOR LINE FOR VACUUM (6.2.4)				START - UP YES																																			
	STATOR LINER VACUUM DESIGN: psig				NORMAL MAINTANANCE YES																																			
	DECONTAMINATION CONNECTION ON STATOR (9.2.2.11)				SPARE ASSEMBLY:																																			
SECONDARY CONTROL / CONTAINMENT				OTHER:																																				
NFPA RATING:				WEIGHTS lb Yes																																				
HEALTH: FLAMMABILITY: INSTABILITY:				<table border="1"> <thead> <tr> <th>ITEM NO.</th> <th>PUMP</th> <th>DRIVER</th> <th>GEAR</th> <th>BASE</th> <th>TOTAL</th> </tr> </thead> <tbody> <tr> <td>18-P-363A</td> <td>756</td> <td>283</td> <td>45</td> <td>712</td> <td>1796</td> </tr> <tr> <td>18-P-363B</td> <td>756</td> <td>283</td> <td>45</td> <td>712</td> <td>1796</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						ITEM NO.	PUMP	DRIVER	GEAR	BASE	TOTAL	18-P-363A	756	283	45	712	1796	18-P-363B	756	283	45	712	1796													
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18-P-363A	756	283	45	712	1796																																			
18-P-363B	756	283	45	712	1796																																			
USE ANNEX B HAZARD BASED PROCEDURE																																								
HAZARD STATEMENT				HAZARD GROUP																																				
RISK PHRASE																																								
REQUIRED MEASURE:				OTHER PURCHASER REQUIREMENTS																																				
SECONDARY CONTROL (3.67) Note 5.3				COORDINATION MEETING REQUIRED (10.1.3) NO																																				
MAX LEAKAGE ON PRIMARY FAILURE: gpm				CASTING REPAIR WELD PROCEDURE APPR REQ'D (6.10.2.5) Note 5.1																																				
FLOW RESTRICTION: DRY-RUN MECHANICAL SEAL				MAXIMUM DISCHARGE PRESSURE TO INCLUDE (6.2.3):																																				
DEVICE MANUFACTURER: Proprietary				MAX RELATIVE DENSITY YES																																				
MATERIAL: Proprietary				OPERATION TO TRIP SPEED						2																														
ELASTOMERS: Proprietary				MAX DIAM. IMPELLERS YES						2																														
MANUFACTURER CODE: Proprietary				CONNECTION DESIGN APPROVAL (6.10.3.4.4)						2																														
SECONDARY CONTAINMENT (3.65)				DEMONSTRATE CO-PLANAR MOUNTING PAD SURFACES						2																														
SECONDARY SEAL:				IN PUMP VENDOR SHOP (9.1.5.3.5) NONE																																				
DESIGN PRESSURE: psig				DYNAMIC BALANCE TO ISO 1940-1 gr. G1.0 (6.8.4.2) YES																																				
INSTRUMENTATION (7.4.2)				INSTALLATION LIST IN PROPOSAL (10.2.3.1) NO																																				
DETECT OPER. OUTSIDE ACCEPT. RANGE OR DECOUPLE (7.4.2.1)				INCLUDE PLOTTED VIBRATION SPECTRAS (6.8.3.2.1) YES						2																														
NOT REQUIRED METHOD:				CONNECTION BOLTING COATING PAINTED																																				
LOCATION:				SUBMIT EST. SPL BY OCTAVE BAND REQUIRED						2																														
IF LOCAL PROVIDED BY:				MATERIAL CERTIFICATION REQUIRED (6.10.1.7)																																				
USE FOR:				CASING YES																																				
MONITOR LEAKAGE INTO SECOND CASING: YES				IMPELLER YES																																				
METHOD: LEVEL				SHAFT YES																																				
SENSOR BY: SUPPLIER				OTHER: All Wetted pressure containing components and wear rings						2																														
TYPE: LOCAL INDICATOR				VENDOR SUBMIT TEST PROCEDURES (8.3.1.1) YES																																				
USE FOR: ALARM				ADDITIONAL DATA REQUIRING 20 YEARS RETENTION (8.2.1.1G)																																				
MONITOR VIBRATION: NOT REQUIRED				SURFACE PREPARATION AND PAINT																																				
METHOD:				MANUFACTURER'S STANDARD YES																																				
PROVISION REQUIRED:				MFR STD per A8KM-PP-000-500520-A																																				
SENSOR BY:				PUMP:																																				
IF FULL TIME, USE FOR:				PUMP SURFACE PREPARATION Refer to HMD-4505605365-P04-01						1																														
MONITOR TEMPERATURE OF: NOT REQUIRED				PRIMER MFR std in compliance or exceed ISO 12944-C4																																				
METHOD:				FINISH COAT Same as above																																				
SENSOR BY:				BASEPLATE:																																				
TYPE:				BASEPLATE SURFACE PREPARATION Per A8KM-PP-000-500520-A																																				
USE FOR:				PRIMER MFR std in compliance or exceed ISO 12944-C4																																				
				FINISH COAT No finish coat on underside. Epoxy grout compatible																																				
NOTES																																								
5.1 Minor defects of a surface nature in the pressure casting (amounting to less than 20% of the wall thickness and less than 10 in ² in total area) may be repaired without Buyer's approval																																								
5.2 Deleted.																																								
5.3 The secondary containment system is limited to a design pressure of 580 psig. Due to the upset condition requiring the casing MAWP to be at least 1025 psig, a bursting disc needs to be positioned between the coupling housing drain and an open valve.																																								

Note: This Data Sheet has been modified from that in Annex R of API 685, Second Edition.

Contract:		A8KM	
Item No:		18-P-363A/B	
Revision:		6	Date: 29-Mar-23
Unit:		RJFU Unit B	
Doc. No.:		HMD-4505605365-C04-01	
Inquiry No.:		4505605365	
Sheet	6	of	7
			REV

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SEALESS CENTRIFUGAL PUMP
API 685, 2nd EDITION
DATA SHEET

Note: This Data Sheet has been modified from that in
Annex R of API 685, Second Edition.

Contract:	A8KM		
Item No:	18-P-363A/B		
Revision:	6	Date:	29-Mar-23
Unit:	RJFU Unit B		
Doc. No.:	HMD-4505605365-C04-01		
Inquiry No.:	4505605365		
Sheet	7	of	8

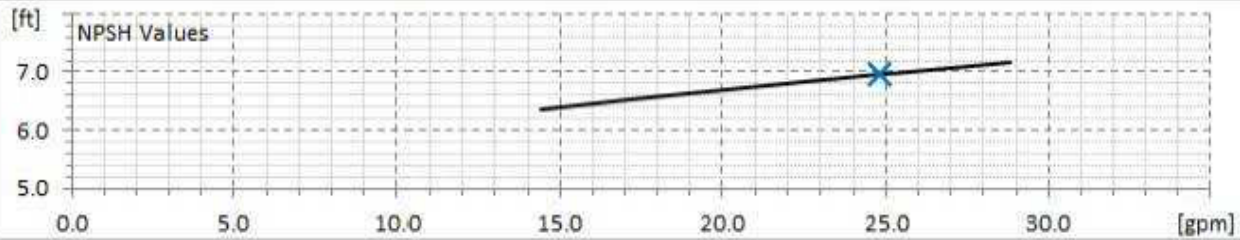
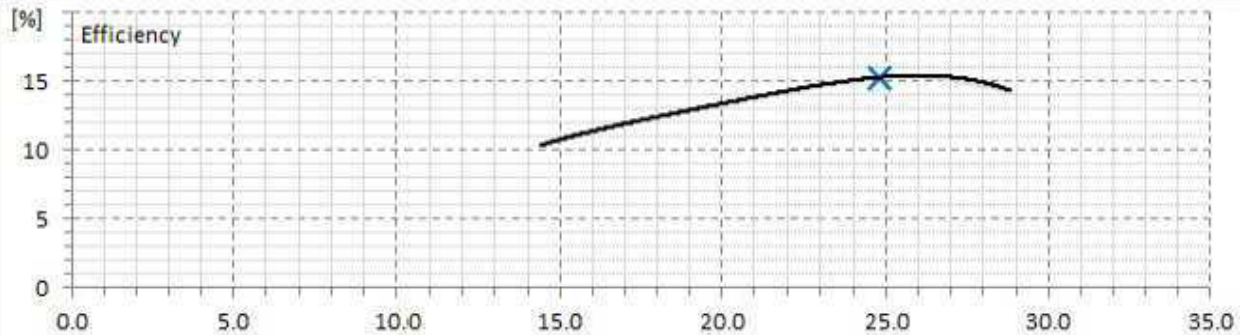
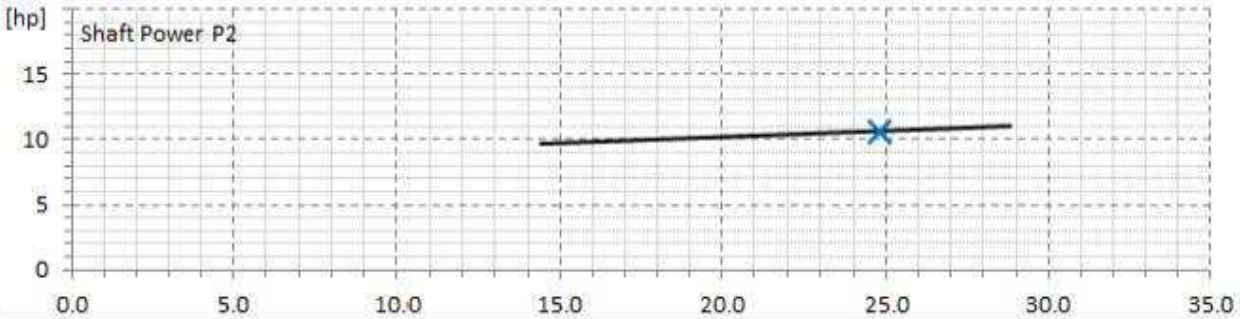
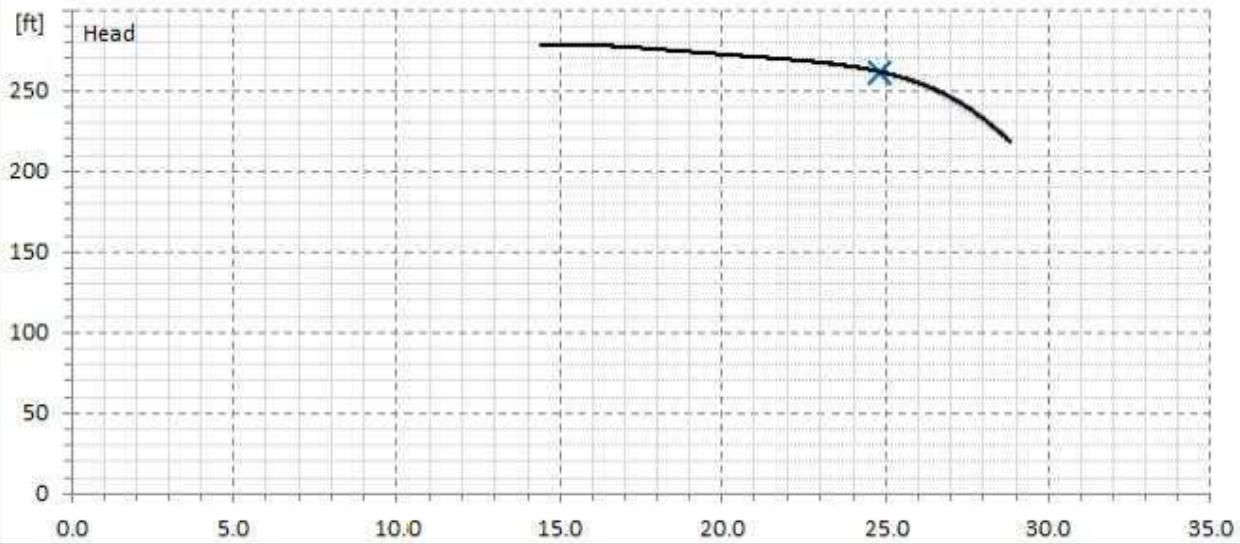
REV

Predicted Pump Curve:

LMV 801S-60hz, Sundyne HMD Kontro

Performance curve			
Impeller type	Barske Wheel		
Direction of rotation	Anti-Clockwise from Drive End		
Impeller construction	Semi-Open		
Impeller Eye Area		NSS (US unit)	
Frequency	60 Hz	Hz	Speed
			3500 rpm

Impeller type		Barske Wheel	
Impeller construction		Semi-Open	
Impeller Ø	Max.	inch	7.625
	Designed	inch	7.18
	Min.	inch	6.967
Flow	Nominal	US g.p.m.	24.8
	Max.	US g.p.m.	28.82
	Min.	US g.p.m.	10.6
Head	Nominal	ft	261.5
	at Max Flow-	ft	218.33
	at Min Flow-	ft	277.4
Head H(Q=0)		ft	272.75
NPSH 3%		ft	6.97
Shaft power		hp	10.62
Max. shaft power sel. Impeller		hp	10.99
Efficiency		%	15.27



 	LOW VOLTAGE MOTOR (IEEE 841) DATA SHEET U.S. CUSTOMARY UNITS		Contract: A8KM Item No: 18-P-363A/B Revision: 6 Date: 29-Mar-23 Unit: RJFU Unit B RFQ / P.O. No.: 4505605365		Rev
	APPLICABLE MOTOR SPECIFICATION A8KM-PP-000-50670-A & 7-12-6		Doc. No.: HMD-4505605365-C04-01		
	Doc. No.: HMD-4505605365-C04-01		Sheet 8 of 8		
1	APPLICABLE TO ☐ PROPOSAL ☒ PURCHASE ☐ AS BUILT				
2	CLIENT: World Energy Paramount		SERVICE: Stripper Overhead Sour Water Pumps		
3	PLANT: World Energy Paramount		MOTOR TAG NO. / NO. REQ'D: 18-P-363AM/BM / Two (2)		
4	SITE: Paramount, CA		DRIVEN EQUIPMENT TYPE / TAG NO.: Centrifugal Pump / 18-P-363A/B		
5	DESIGN DATA AND ACCESSORY EQUIPMENT				
6	NAMEPLATE 15 HP 1.15 S.F. 3520 RPM POWER (VOLTAGE/PHASE/HERTZ) 460 / 3 / 60				
7	ROTATION (WHEN FACING MOTOR OPPOSITE DRIVE END): CW CCW Fans shall be bi-directional				
8	INSULATION CLASS: ☐ B ☒ F ☐ H ☐ VPI TEMP. RISE CLASS B / °C over 40.6 °C AMBIENT				
9	AREA CLASSIFICATION: CLASS I , GROUP B/C/D DIV. 2 T-RATING T3C / °F				
10	☐ UNCLASSIFIED				
11	LOCATION: ☐ INDOOR ☒ OUTDOOR ☐ SHELTERED UNUSUAL CONDITIONS: ☐ DUST ☐ OTHER				
12	AMBIENT TEMPERATURE: MAX 105 °F / MIN. 35 °F ALTITUDE 69 ft				
13	ENCLOSURE: ☒ TOTALLY-ENCLOSED FAN-COOLED ☐ TOTALLY-ENCLOSED NONVENTILATED ☐ EXPLOSION PROOF				
14	MOUNTING METHOD: ☒ FOOT ☐ FLANGE, TYPE:				
15	MOUNTING ARRANGEMENT: ☒ HORIZONTAL ☐ VERTICAL SHAFT DOWN ☐ VERTICAL SHAFT UP				
16	BEARING TYPE: ☒ BALL ☐ ROLLER BEARING LUBRICATION: ☒ GREASE ☐ OIL ☐ PURE OIL MIST				
17	CONNECTION TO LOAD: ☒ DIRECT CONNECTED ☐ V-BELT ☐ THROUGH GEAR ☐ CLOSE COUPLED				
18	EQUIPMENT OPERATION: ☒ CONTINUOUS ☐ SPARED CONTINUOUS ☐ INTERMITTENT-CYCLES / DAY				
19	SOUND PRESSURE LEVEL REQUIREMENTS: 85 dBA @ 3 FEET				
20	STARTING: ☒ FULL VOLTAGE ☒ REDUCED VOLTAGE, 80 % OF VOLTAGE Starting Voltage Dip Allowance				
21	☐ UNLOADED ☒ LOADED ☐ CAPACITORS FOR POWER FACTOR CORRECTION				
22	☒ SPACE HEATERS 120 V 1 PHASE °F MAX. TEMP				
23	☒ OVERSIZE TERMINAL BOX ☒ DRAIN PLUGS Terminal Box shall be the largest feasible for the motor frame.				
24	☒ SS NAMEPLATE ☐ AUXILIARY NAMEPLATE				
25	TEST ☒ ROUTINE ☐ COMPLETE ☐ VIBRATION ☐ REPORT ☐ FOOT FLATNESS				
26	REMARKS: 8.1) This data sheet applies to motors 1/2 hp through 500 hp with anti-friction bearings.				
27	8.2) Space heaters are required for 100 hp and above.				
28	8.3) IP55 degree of protection is required.				
29	8.4) Average relative humidity is 54%.				
30	INFORMATION BELOW TO BE COMPLETED BY VENDOR				
31	MOTOR MFR.		MODEL		SERIAL NO.
32	NAMEPLATE HP		FULL LOAD RPM		FRAME WEIGHT LB
33	MOTOR OUTLINE DRAWING NO.				
34	ROTOR CAGE MATERIAL OF CONSTRUCTION		MOTOR WINDING MATERIAL		
35	BEARING MANUFACTURER		SIZE		
36	VERTICAL MOTOR THRUST BEARING: TYPE		CAPACITY: UP LBS DOWN LBS		LOCATION
37					
38	LOAD	FULL	3/4	1/2	OTHER
39	AMPERES				
40	EFFICIENCY, %				
41	POWER FACTOR				
42	SPEED, RPM				
43	SOUND LEVEL: GUARANTEED dBA / EXPECTED dBA		LOCKED ROTOR AMPS* AMPS		
44	FAN MATERIAL (NON-SPARKING)		FULL LOAD TORQUE* FT-LB		
45			LOCKED ROTOR TORQUE* %		
46			PULL UP TORQUE* %		
47			BREAKDOWN TORQUE* %		
48			ACCEL. TIME W/ LOAD (0 TO FULL SPEED)* SEC.		
49			STALL TIMES AT ZERO RPM* - HOT / COLD / SEC.		
50			NUMBER OF CONSECUTIVE STARTS*		
51	* INDICATED AT RATED VOLTAGE				
52	INFORMATION BELOW TO BE PROVIDED BY VENDOR AFTER PURCHASE (REFER TO RFQ/PO DOCUMENTS)				
53	☒ SAFE TIME - CURRENT CURVE MAX. SURFACE TEMP. DURING NORMAL STARING OR OPERATION OF:				
54	☒ SPEED - TORQUE CURVE ☐ ROTOR °F ☐ STATOR °F ☐ ENCLOSURE °F				
55	☒ SAFE LOCKED ROTOR TIME HOT COLD				
56	NOTES:				
57	8.5 Motor nameplate shall indicate service factor, area classification and T-rating. T-rating relates to both external and internal components.				
	8.6 Provide accessory loads on submittal documents, e.g. Volts, HP, kVA, etc.				
	8.7 All motors shall be rated for Cl. I, Div. 2, Gr. B,C,D and a T3C temperature code for project uniformity.				
	8.8 An oversized electrical terminations box is required.				
	8.9 Grounding provisions are required for inside and outside the motor connection box.				
	8.10 Motors must comply with Honeywell UOP Motor Specification 7-12-6 and project specification A8KM-PP-000-50670-A.				

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