



STATE OF DELAWARE

**DEPARTMENT OF NATURAL RESOURCES AND
ENVIRONMENTAL CONTROL**

DIVISION OF WATER

RICHARDSON & ROBBINS BUILDING
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

Phone
(302) 739-9947

Residential Services
Section

December 22, 2025

Mr. Brandon Ranalli
Project Environmental Scientist
Scaled Engineering Inc.
20246 Coastal Highway
Rehoboth Beach, Delaware 19971

RE: DNREC Lift Station Packages

Dear Mr. Ranalli

The Division of Water has received your request for product approval for the following Lift Station Design Packages:

- 36" Diameter Pre-Engineered Lift Station Vault Manufactured by Gillespie Precast LLC with a
- Goulds WE3885 1/3 HP WEO311M Pump

DNREC is pleased to inform you that, after a review and approval by third-party vendor Davis, Bowen & Friedel Inc., this submittal meets the expectations of the State of Delaware and is suitable for use in lift station applications for on-site wastewater treatment and disposal systems.

Sincerely,

James Powell

James Powell
Program Manager I, Residential Services Section
Division of Water

*Ring W. Lardner, P.E.
W. Zachary Crouch, P.E.
Michael E. Wheedleton, AIA, LEED GA
Jason P. Loar, P.E.
Jamie L. Sechler, P.E.*

December 22, 2025

State of Delaware
Department of Natural Resources & Environmental Control
Division of Water
89 Kings Highway
Dover, DE 19901

Attn: Mr. Matthew T. Grabowski
Environmental Administrator

RE: Engineering & Technical Support
Product Approval Review
Applicant: Scaled Engineering, Inc.
DBF #1945F001.B01

Dear Mr. Grabowski:

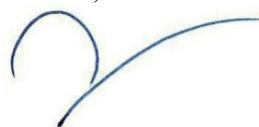
Davis, Bowen & Friedel, Inc., received submittals of pre-engineered lift stations from Scaled Engineering, Inc. for review. The following items were included in this review:

- 36" Diameter Pre-Engineered Lift Station Vault Manufactured by Gillespie Precast LLC with a Goulds WE3885 1/3 HP WEO311M Pump
- 3'x3' Pump Chamber Pre-Engineered Lift Station Vault Manufactured by Towers Concrete with a Goulds WE3885 1/3 HP WEO311M Pump

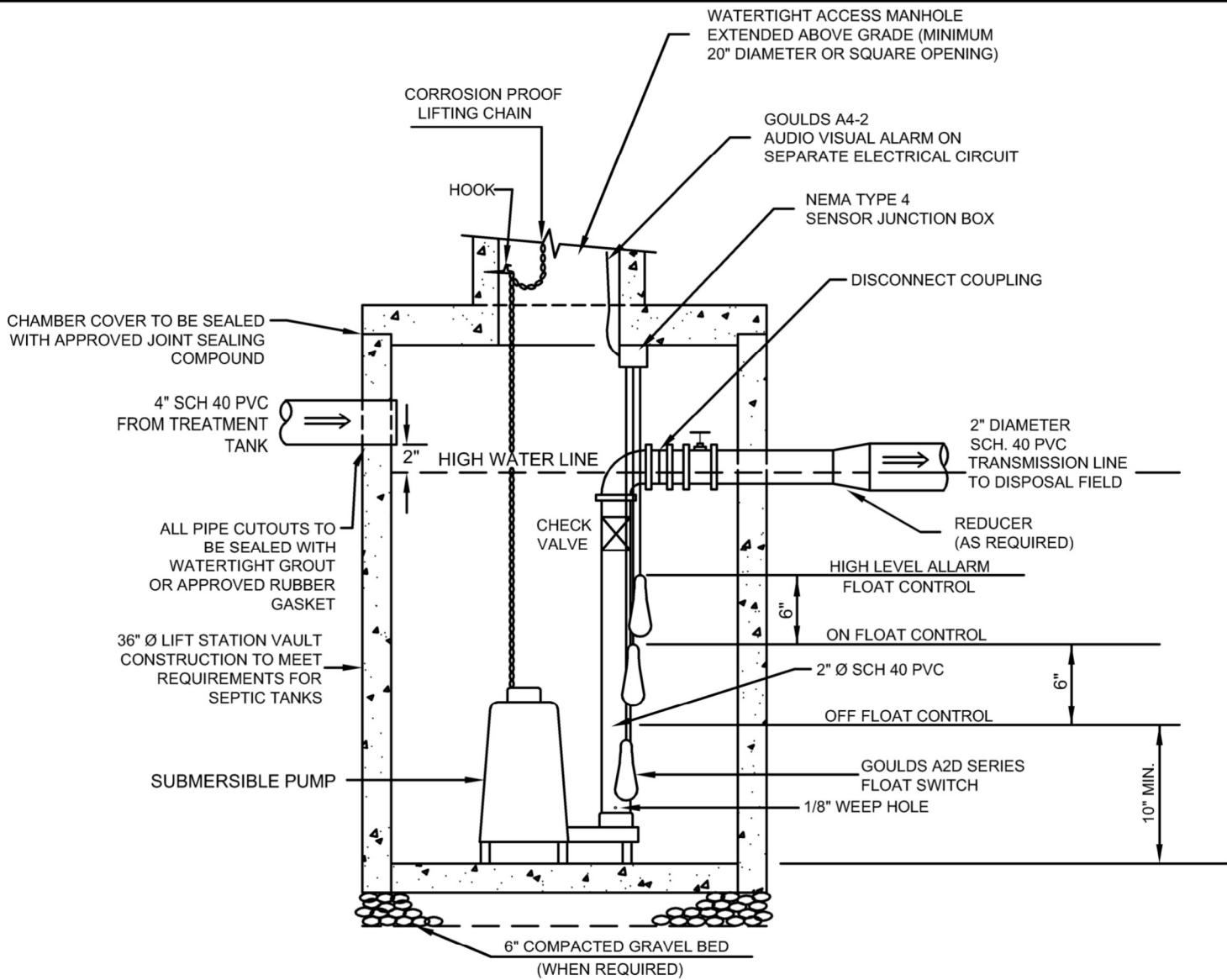
We find that the submittals meet the expectations of the State and are suitable for use in lift station applications for onsite wastewater treatment and disposal systems.

Should you have any questions, comments, or would like to discuss this further please give me a call at your convenience.

Sincerely,
DAVIS, BOWEN & FRIEDEL, INC.



Sharon K. Cruz, P.E., AICP
Associate



NOTES:

- MAXIMUM DEPTH FROM GRADE TO INVERT OF LIFT STATION TO BE 52"
- EXCAVATION LIMITS SHALL EXTEND AT LEAST 2 FEET BEYOND TANK PERIMETER
- ALL PIPE TO BE PVC SCHEDULE 40 OR SDR 26
- CHAMBER TO BE SIZED ACCORDING TO REQUIREMENTS OF DOSING VOLUME AND STORAGE. SEE EXHIBIT
- ALL DOSING CHAMBER COMPONENTS SHALL BE FIELD TESTED TO INSURE ACCURACY, WATERTIGHTNESS AND PROPER OPERATION OF ALL PUMPS AND ALARM CONTROLS
- ALL ELECTRICAL CONNECTIONS SHALL BE WATERPROOF, CORROSION RESISTANT AND EXPLOSION PROOF

USING GATE VALVE,
ADJUST FLOW FOR 20
GPM (1 GAL/3 SEC.)

36" Ø GILLESPIE PRE-ENGINEERED LIFT
STATION VAULT
(N.T.S.)



NOTES:
1. SEE GENERAL NOTES TO CONTRACTOR
(COPY ATTACHED)



Project #: DNREC LIFT STATION

System Type: Gravity w/ Lift Station

Calc'd by: BMR

Date: 10-20-2025

CALCULATIONS

Transmission Length 400 (Includes 5ft in Tank)

Orifice Head: 0 ft

Static Head: 7.00 ft

Check Head:

Pump: Goulds WE3885 1/3 HP-WE031M

Allowable TDH: 24 ft

Flow Used: 20 gpm

Allowable friction head: 17.00 ft

Friction Head:

Trans. line diameter: 2 in

Head loss/100 ft: 0.86 ft/100 ft

Length of trans. line: 400 ft

Multiplier for fittings: 12

Trans. line head loss: 4.13 ft

Total friction head: 4.13 ft

% allow. frict. head: 24.28

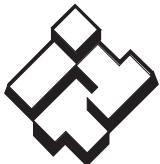
TDH: 11.3 ft



System Calculations

Page 1 of 1





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B3885

Wastewater

Goulds Pumps

WE Series Model 3885

Submersible Effluent Pump

EXTENDED WARRANTY AVAILABLE FOR
RESIDENTIAL APPLICATIONS.



FEATURES

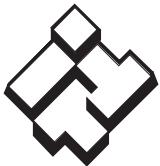
- **Impeller:** Cast iron, semi-open, non-clog with pump-out vanes for mechanical seal protection. Balanced for smooth operation. Silicon bronze impeller available as an option.
- **Casing:** Cast iron volute type for maximum efficiency. 2" NPT discharge.
- **Mechanical Seal:** Silicon Carbide vs. Silicon Carbide sealing faces. Stainless steel metal parts, BUNA-N elastomers.
- **Shaft:** Corrosion-resistant, stainless steel. Threaded design. Locknut on all models to guard against component damage on accidental reverse rotation.
- **Fasteners:** 300 series stainless steel.
- Capable of running dry without damage to components.
- Designed for continuous operation when fully submerged.

 GOULDS PUMPS

Goulds Pumps is a brand of ITT Corporation.

www.goulds.com

Engineered for life



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GOULDS PUMPS

Wastewater

APPLICATIONS

Specifically designed for the following uses:

- Homes, Farms, Trailer Courts, Motels, Schools, Hospitals, Industry, Effluent Systems

SPECIFICATIONS

Pump

- Solids handling capabilities: $\frac{3}{4}$ " maximum.
- Discharge size: 2" NPT.
- Capacities: up to 140 GPM.
- Total heads: up to 128 feet TDH.
- Temperature:
104°F (40°C) continuous, 140°F (60°C) intermittent.
- See order numbers on reverse side for specific HP, voltage, phase and RPM's available.

MOTORS

- Fully submerged in high-grade turbine oil for lubrication and efficient heat transfer.
- Class B insulation on $\frac{1}{3}$ – $1\frac{1}{2}$ HP models.
- Class F insulation on 2 HP models.

Single phase (60 Hz):

- Capacitor start motors for maximum starting torque.
- Built-in overload with automatic reset.
- SJTOW or STOW severe duty oil and water resistant power cords.

- $\frac{1}{3}$ – 1 HP models have NEMA three prong grounding plugs.

Three phase (60 Hz):

- Class 10 overload protection must be provided in separately ordered starter unit.
- STOW power cords all have bare lead cord ends

- **Designed for Continuous Operation:** Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.

- **Bearings:** Upper and lower heavy duty ball bearing construction.

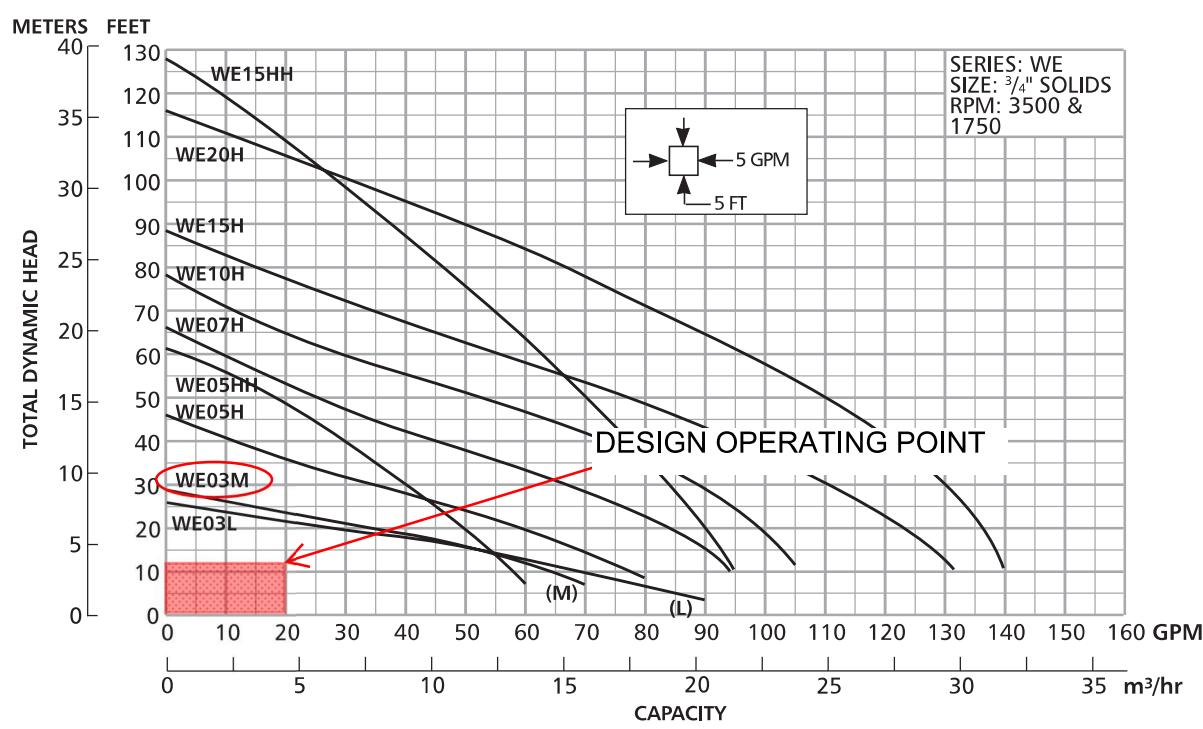
- **Power Cable:** Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. Standard cord is 20'. Optional lengths are available.

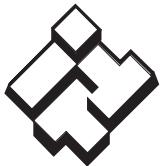
- **O-ring:** Assures positive sealing against contaminants and oil leakage.

AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association File #LR38549
Goulds Pumps is ISO 9001 Registered.



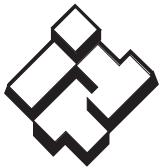


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GOULDS PUMPS
Wastewater

MODELS

Order Number	HP	Phase	Volts	RPM	Impeller Diameter (in.)	Maximum Amps	Locked Rotor Amps	KVA Code	Full Load Efficiency %	Resistance		Power Cable Size	Weight (lbs.)
										Start	Line-Line		
WE0311L	0.33	1	115	1750	5.38	10.7	30.0	M	54	11.9	1.7	16/3	56
WE0318L			208			6.8	19.5	K	51	9.1	4.2		
WE0312L			230			4.9	14.1	L	53	14.5	8.0		
WE0311M			115			10.7	30.0	M	54	11.9	1.7		
WE0318M			208			6.8	19.5	K	51	9.1	4.2		
WE0312M			230			4.9	14.1	L	53	14.5	8.0		
WE0511H			115			14.5	46.0	M	54	7.5	1.0	14/3	60
WE0518H	0.5	3	208	3450	3.56	8.1	31.0	K	68	9.7	2.4	16/3	60
WE0512H			230			7.3	34.5	M	53	9.6	4.0		
WE0538H			200			4.9	22.6	R	68	NA	3.8		
WE0532H			230			3.3	18.8	R	70	NA	5.8		
WE0534H			460			1.7	9.4	R	70	NA	23.2		
WE0537H			575			1.4	7.5	R	62	NA	35.3		
WE0511HH			115			14.5	46.0	M	54	7.5	1.0	14/3	60
WE0518HH	0.75	1	208	3450	3.88	8.1	31.0	K	68	9.7	2.4	16/3	60
WE0512HH			230			7.3	34.5	M	53	9.6	4.0		
WE0538HH			200			4.9	22.6	R	68	NA	3.8		
WE0532HH			230			3.6	18.8	R	70	NA	5.8		
WE0534HH			460			1.8	9.4	R	70	NA	23.2		
WE0537HH			575			1.5	7.5	R	62	NA	35.3		
WE0718H			208			11.0	31.0	K	68	9.7	2.4	14/3	70
WE0712H	0.75	3	230	3450	4.06	10.0	27.5	J	65	12.2	2.7		
WE0738H			200			6.2	20.6	L	64	NA	5.7		
WE0732H			230			5.4	15.7	K	68	NA	8.6		
WE0734H			460			2.7	7.9	K	68	NA	34.2		
WE0737H			575			2.2	9.9	L	78	NA	26.5		
WE1018H	1	1	208	3450	4.44	14.0	59.0	K	68	9.3	1.1	14/3	70
WE1012H			230			12.5	36.2	J	69	10.3	2.1		
WE1038H			200			8.1	37.6	M	77	NA	2.7		
WE1032H			230			7.0	24.1	L	79	NA	4.1		
WE1034H			460			3.5	12.1	L	79	NA	16.2		
WE1037H			575			2.8	9.9	L	78	NA	26.5		
WE1518H	1.5	1	208	3450	4.56	17.5	59.0	K	68	9.3	1.1	14/3	80
WE1512H			230			15.7	50.0	H	68	11.3	1.6		
WE1538H			200			10.6	40.6	K	79	NA	1.9		
WE1532H			230			9.2	31.7	K	78	NA	2.9		
WE1534H			460			4.6	15.9	K	78	NA	11.4		
WE1537H			575			3.7	13.1	K	75	NA	16.9		
WE1518HH			208			17.5	59.0	K	68	9.3	1.1		
WE1512HH	1.5	3	230	3450	5.50	15.7	50.0	H	68	11.3	1.6	14/3	80
WE1538HH			200			10.6	40.6	K	79	NA	1.9		
WE1532HH			230			9.2	31.7	K	78	NA	2.9		
WE1534HH			460			4.6	15.9	K	78	NA	11.4		
WE1537HH			575			3.7	13.1	K	75	NA	16.9		
WE2012H	2	1	230	3450	5.38	18.0	49.6	F	78	3.2	1.2	14/3	83
WE2038H			200			12.0	42.4	K	78	NA	1.7		
WE2032H			230			11.6	42.4	K	78	NA	1.7		
WE2034H			460			5.8	21.2	K	78	NA	6.6		
WE2037H			575			4.7	16.3	L	78	NA	10.5		



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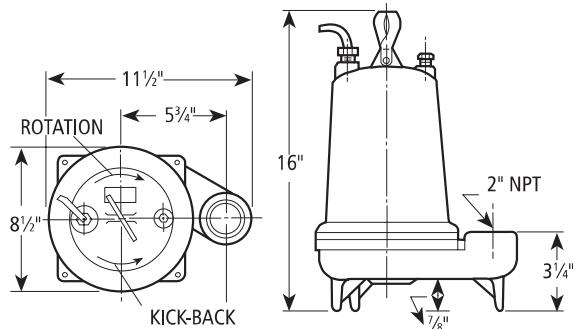
Wastewater

PERFORMANCE RATINGS (gallons per minute)

Order No.	WE03L	WE03M	WE05H	WE07H	WE10H	WE15H	WE05HH	WE15HH	WE20H
HP	1/3	1/3	1/2	3/4	1	1 1/2	1/2	1 1/2	2
RPM	1750	1750	3500	3500	3500	3500	3500	3500	3500
5	86	—	—	—	—	—	—	—	—
10	70	63	78	94	—	—	58	95	—
15	52	52	70	90	103	128	53	93	138
20	27	35	60	83	98	123	49	90	136
25	5	15	48	76	94	117	45	87	133
30	—	—	35	67	88	110	40	83	130
35	—	—	22	57	82	103	35	80	126
40	—	—	—	45	74	95	30	77	121
45	—	—	—	35	64	86	25	74	116
50	—	—	—	25	53	77	—	70	110
55	—	—	—	—	40	67	—	66	103
60	—	—	—	—	30	56	—	63	96
65	—	—	—	—	20	45	—	58	89
70	—	—	—	—	—	35	—	55	81
75	—	—	—	—	—	25	—	51	74
80	—	—	—	—	—	—	—	47	66
90	—	—	—	—	—	—	—	37	49
100	—	—	—	—	—	—	—	28	30

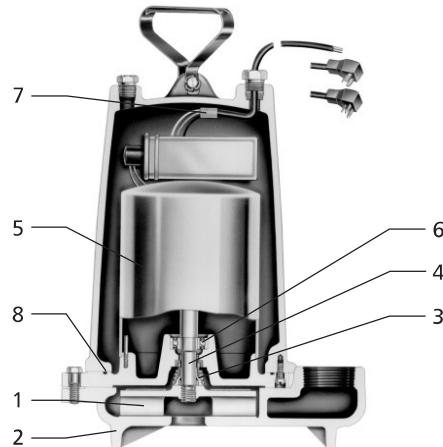
DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)



COMPONENTS

Item No.	Description
1	Impeller
2	Casing
3	Mechanical Seal
4	Motor Shaft
5	Motor
6	Ball Bearings
7	Power Cable
8	Casing O-Ring



 **GOULDS PUMPS**

Goulds Pumps and the ITT Engineered Blocks Symbol are registered trademarks and tradenames of ITT Corporation.

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

B3885 June, 2009

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Engineered for life

A2D SERIES**SJE PumpMaster® Pump Switch****Features**

- Mechanically activated, heavy duty contacts, wide angle operation.
- Passed NSF standard 61 protocol by an approved Water Quality Association laboratory.
- Controls pumps up to 1/2 HP at 120 VAC and 1 HP at 230 VAC.
- Non-corrosive PVC housing for use in liquids up to 140° F (60° C).
- Not sensitive to rotation or turbulence.
- Pumping range: 7" to 36".
- 16 AWG, SJOW cord is available with or without piggyback plug.
- Available as pump up, pump down and SPDT models, see Nomenclature Chart.
- For potable water, water or sewage applications.
- UL Recognized for use in water and sewage.
- CSA Certified.
- See chart for amperage range and other data.

**A2HT SERIES****High Temperature Float Switch****Features**

- Temperature Rating: 221° F (105° C)
- Wide Angle Switch: contacts open @ 45° below horizontal and close at 45° above horizontal
- Float Material: PC/ABS (Polycarbonate ABS)
- Cord Material: Teflon coating
- Ratings: 13 Maximum Amps, 1/2 HP, 115/230 V
- Float Dimensions: 4.63" Long x 2.63" Diameter
- Nomenclature: see page 9
- Available lengths: 20', 30' and 50' *



NOTE: A2HTL High Temperature Rating: 185° F

* No other lengths available in this Series.

A2E SERIES**SJE PumpMaster Plus® Pump Switch****Features**

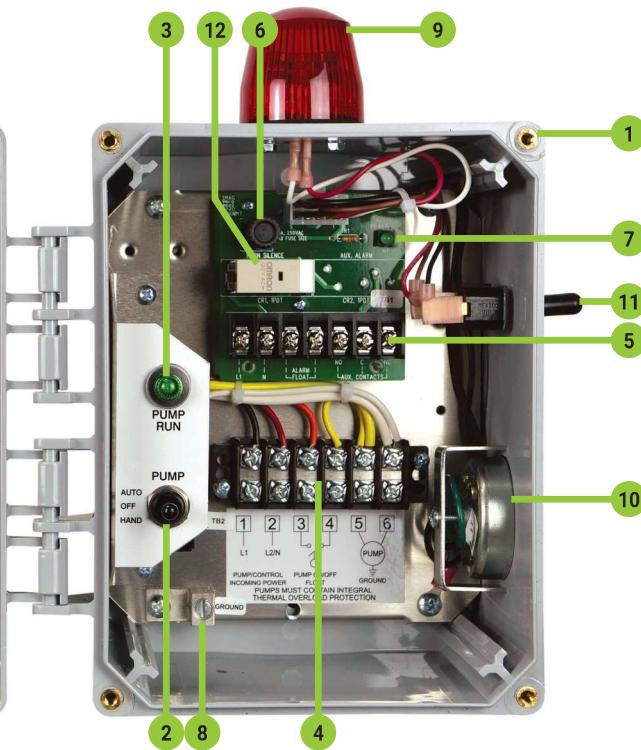
- Controls pumps up to 3/4 HP at 120 VAC and 2 HP at 230 VAC.
- 14 AWG, SJOW cord is available with or without piggyback plug.
- **All other features are the same as A2D PumpMaster Series above.**

MODEL 115 CONTROL PANEL

Single Phase, Simplex Pump Switch Control



Panel layout may vary with options.



The Model 115 control panel provides customers with a reliable means of controlling one 120, 208, or 240 VAC single phase pump in water and wastewater installations. A pump float switch turns the pump on and off. If an alarm condition occurs, an additional alarm switch activates the audio/visual alarm system. Common applications include pump chambers, sump pump basins, irrigation systems, and lift stations.

OPTIONAL FEATURE

- 34" (86.36 cm) Panel Mounting Post (factory installed). Includes Simplex Installation Kit (Enclosure upsized to 10" x 8" x 6" (25.4 x 20.32 x 15.24 cm). Max. Enclosure size 14" x 12" x 6" (35.56 x 30.48 x 15.24 cm)

COMPONENTS

- Choice of NEMA 1 (steel for indoor use), or NEMA 4X (ultraviolet stabilized thermoplastic with removable mounting feet for outdoor or indoor use) enclosure; enclosure measures 8 x 6 x 4 inches (20.32 x 15.24 x 10.16 cm)
- HOA switch for manual pump control
- Green pump run indicator light
- Pump circuit terminal block
- Alarm circuit terminal block (mounted on circuit board)
- Alarm fuse (mounted on circuit board).
- Alarm power indicator (mounted on circuit board)
- Ground lug

Standard ALARM PACKAGE

- Red LED beacon provides 360° visual check of alarm condition - Note: NEMA 1 style utilizes a door mounted indicator in lieu of a beacon
- Alarm Horn provides audio warning of alarm condition (83 to 85 decibel rating) - Note: NEMA 1 style utilizes an internally mounted buzzer in lieu of a horn
- Exterior alarm test/normal/silence switch
- Horn silence relay (mounted on circuit board)

Note: Other options available.

Note: Schematic/Wiring Diagram and Pump Specification Label are located inside the panel.

Single Phase



115	CONTROL PANEL	ALARM PACKAGE	ENCLOSURE RATING	STARTING DEVICE	PUMP FULL LOAD AMPS	PUMP DISCONNECTS	FLOAT SWITCH APPLICATION	OPTIONS (LISTED BELOW)
CONTROL PANEL	<input checked="" type="checkbox"/>	115	Single Phase Simplex					
ALARM PACKAGE		0	Select Options or No Alarm Package					Model 115 Base Price _____
		1	Alarm Package (includes test/normal/silence switch, fuse, red light, horn & float)					Alarm Package _____
ENCLOSURE RATING		I	Indoor, NEMA 1 (metal)					Enclosure Rating _____
		W	Weatherproof, NEMA 4X (engineered thermoplastic)					Starting Device _____
STARTING DEVICE		2	SJE PumpMaster® Plus Pump Switch (0-15 FLA) - Mechanical					Pump Full Load Amps _____
		3	120V Double Float® Pump Switch (0-15 FLA) - Mercury					Pump Disconnects _____
		4	240V Double Float® Pump Switch (0-12 FLA) - Mercury					Float Switch Application _____
		6	No Pump Switch					Total Options _____
		7	120V Double Float® Master Pump Switch (0-15 FLA) - Mechanical					
		8	240V Double Float® Master Pump Switch (0-15 FLA) - Mechanical					
PUMP FULL LOAD AMPS		0	0 - 7 FLA					
		1	7 - 15 FLA					
PUMP DISCONNECTS		0	No Pump Disconnect					
		4	Circuit Breaker					
FLOAT SWITCH APPLICATION		H	Floats - Pump Down (select Option 17 below)					
		L	Floats - Pump Up (select Option 17 below)					
		X	No Floats					

PRICING WORKSHEET

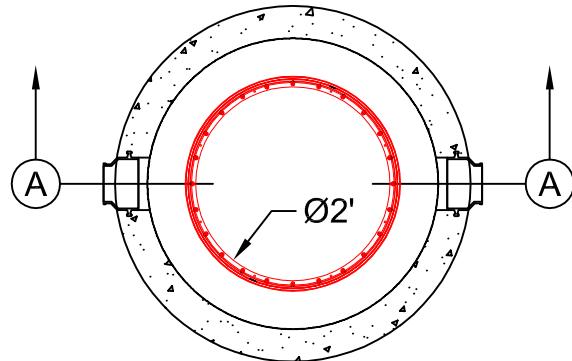
Model 115 Base Price _____
 Alarm Package _____
 Enclosure Rating _____
 Starting Device _____
 Pump Full Load Amps _____
 Pump Disconnects _____
 Float Switch Application _____
 Total Options _____
TOTAL LIST PRICE _____

OPTIONS	DESCRIPTION
1A	Red Beacon Only / No Audio (must select Option 1E if floats included)
1C	Horn Only / No Visual (must select Option 1E if floats included)
1E	Alarm Float
3A	Alarm Flasher
3B	Manual Alarm Reset
6A	Auxiliary Alarm Contact, Form C
8A	Elapsed Time Meter (120V)
8B	Elapsed Time Meter (240V)
10E	Lockable Latch - NEMA 4X
	Lockable Latch - NEMA 1
10P	Panel Mounting Post - Factory Installed, Includes Simplex Installation Kit (Enclosure Upsized to 10x8x6, Max 14x12x6)

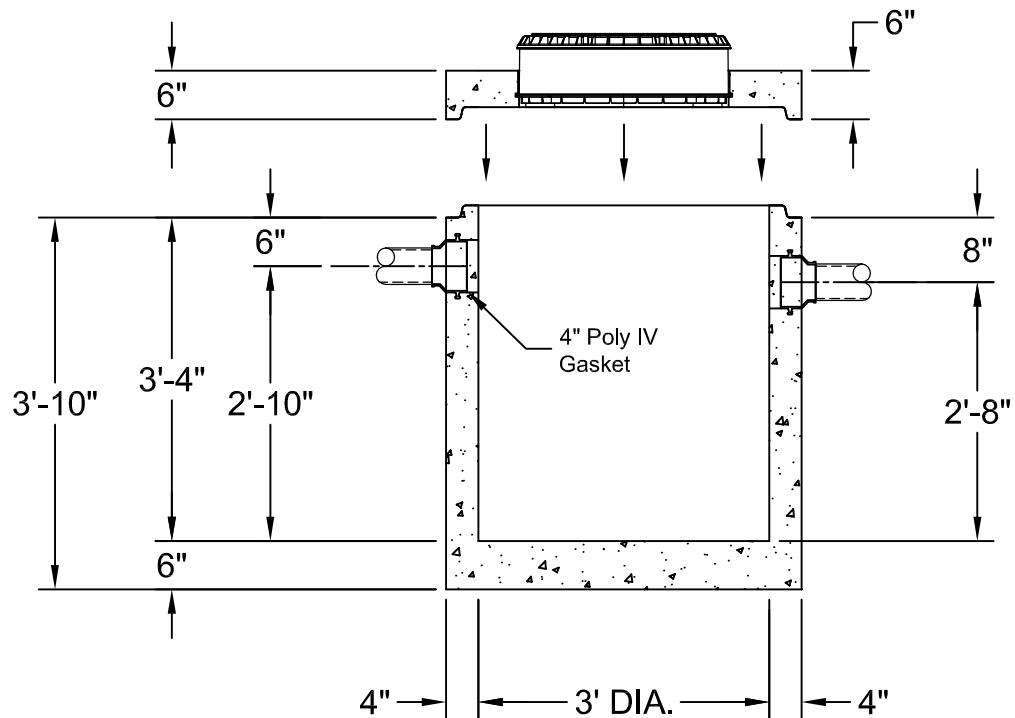
OPTIONS	DESCRIPTION
11C	Additional NEMA 1 Remote Alarm Panel (must also select Option 6A)
11D	Additional NEMA 4X Remote Alarm Panel (must also select Option 6A)
16A	10' Cord in Lieu of 20' Cord (per Float) - Does not apply to Double Float® or Double Float® Master Pump Switches
16B	15' Cord in Lieu of 20' Cord (per Float)
16C	30' Cord in Lieu of 20' Cord (per Float)
16D	40' Cord in Lieu of 20' Cord (per Float)
17A	SJE SignalMaster® / Pipe Clamp (Alarm Float Only) - Mechanical
17E	Sensor Float® Mini / Pipe Clamp (Alarm Float Only) - Mercury
17J	Sensor Float® / Pipe Clamp (Alarm Float Only) - Mercury
19U	HOA (Hand/Off/Automatic) Switch and Pump Run Light through Door Mounted
19X	Door Mounted Pump Run Indicator

GENERAL NOTES:

1. Manhole is manufactured I.A.W. ASTM C-478.
F'c= 5000 psi @ 28 days.
2. Dimensions to meet field requirements
and project elevations.
3. Reinforcing: ASTM A-185 area 0.12 In./vertical ft.
4. Pipe to manhole seal to be Poly Seal
5. Polylok Riser & Lid Ø24"



PLAN VIEW



SECTION VIEW A-A

