2DES_Z 50 Hz
SUBMERSIBLE EFFLUENT PUMP
DUAL SEAL WITH SEAL SENSOR PROBE
APPLICATIONS
Specifically designed for the following uses:
• Farms • Trailer courts • Effluent systems
• Motels • Schools
• Hospitals • Industry

SPECIFICATIONS
Pump:
• Solids handling capabilities: ¼" maximum
• Discharge size: 2" NPT
• Capacities: up to 120 GPM
• Total heads: up to 85 feet TDH
• Temperature: 104°F (40°C) continuous, 140°F (60°C) intermittent.

MOTORS
• Fully submerged in high-grade turbine oil for lubrication and efficient heat transfer.
• Class F insulation
  Single phase:
  • Built-in overload with automatic reset.
  • All single phase models feature capacitor start motors for maximum starting torque.
  • ½ HP - 16/3 SJTOW with 115 V or 230 V
  • ½ HP - 16/3 SJTOW with 230 V
  • ½ HP - 14/3 SJTOW with 115 V
  Three phase:
  • Overload protection must be provided in starter unit.
  • ½ - 1½ HP - 14/4 STOW with bare leads.
• 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 and Control 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. 20 foot standard with optional lengths available.
• O-ring: Assures positive sealing against contaminants and oil leakage.
MODELS AND MOTOR INFORMATION

<table>
<thead>
<tr>
<th>Order Number</th>
<th>HP</th>
<th>Phase</th>
<th>Volts</th>
<th>RPM</th>
<th>Impeller Dia. (in.)</th>
<th>Impeller Code</th>
<th>Maximum Amps</th>
<th>Weight (lbs.)</th>
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</thead>
<tbody>
<tr>
<td>2DES3A6T5D1A</td>
<td>1/2</td>
<td>3</td>
<td>380</td>
<td></td>
<td>3.56</td>
<td>D</td>
<td>1.7</td>
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<td>2DES3C6T5C1A</td>
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<td>3</td>
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<td>4.06</td>
<td>C</td>
<td>2.1</td>
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<td>2.8</td>
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<td>2DES3F6T5G1A</td>
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<td>G</td>
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<td>80</td>
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<td>2DES3F6T5J1A</td>
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<td>3</td>
<td>380</td>
<td></td>
<td>5.12</td>
<td>J</td>
<td>3.8</td>
<td>83</td>
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</table>

APPLICATION DATA

- Maximum Solid Size: ¾”
- Minimum Casing Thickness: 5/16”
- Casing Corrosion Allowance: 1/8”
- Maximum Working Pressure: 55 PSI
- Maximum Submergence: 50 feet
- Minimum Submergence: 6” below top of motor for intermittent operation
- Maximum Environmental Temperature: 40ºC (104ºF) continuous operation; 60ºC (140ºF) intermittent operation

CONSTRUCTION DETAILS

- Power Cable – Type: 14/4, type STOW: all three phase
- Sensor Cable – Type: 16/2, type SJTOW: seal sensor only; 16/4, type SJTOW: optional seal/heat sensor
- Motor Cover: Gray Cast Iron – ASTM A48 Class 30
- Bearing Housing: Gray Cast Iron – ASTM A48 Class 30
- Seal Housing: Gray Cast Iron – ASTM A48 Class 30
- Motor Shaft: AISI 400 Series Stainless Steel
- Motor Design: NEMA 48 Frame, oil filled with Class F Insulation
- Motor Overload Protection: Three Phase: require ambient compensated Class 10, quick trip overload in the control panel.
- Motor Seal Fail (Moisture) Detection: Seal fail sensor in an oil-filled seal chamber. Connect to an optional relay in control panel.
- Optional Motor Thermal Protection: Normally closed on-winding thermostats open at 275º F (135 ºC) and close at 112º F (78 ºC). Requires terminal connection in the control panel.
- External Hardware: 300 Series Stainless Steel
- Impeller Type: Semi-open with pump out vanes on back shroud
- Oil Capacity – Seal Chamber: 10 ounces
- Oil Capacity – Motor Chamber: 4.0 quarts

STANDARD PARTS

- Ball Bearing – Upper: Single row ball – SKF™ 6203-2Z
- Ball Bearing – Lower: Single row ball – SKF™ 6203-2Z
- Mechanical Seals – Standard: Carbon/Ceramic Upper – Silicon Carbide;
  Silicon Carbide Lower; Type 16
- Mechanical Seals – Optional Lower: Silicon Carbide/Tungsten Carbide; Type 16
- O-Ring – Stuffing Box: BUNA-N, AS 568A-163
- O-Ring – Motor Cover: BUNA-N, AS 568A-166

DIMENSIONS

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

- MATERIALS OF CONSTRUCTION

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Part Name</th>
<th>Material Code</th>
<th>Standard</th>
<th>Optional</th>
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<td>Impeller</td>
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<td>1179</td>
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<td>Castings</td>
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<tr>
<td>3</td>
<td>Shaft-threaded</td>
<td>400 Series SS</td>
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<tr>
<td>4</td>
<td>Fasteners</td>
<td>300 Series SS</td>
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<td></td>
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<tr>
<td>5</td>
<td>Ball bearings</td>
<td>Steel</td>
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<td>6</td>
<td>Power cable</td>
<td>STOW, 20 feet</td>
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<tr>
<td>7</td>
<td>Seal sensor cable</td>
<td>BUNA-N</td>
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<tr>
<td>8</td>
<td>OPT Heavy duty</td>
<td>Silicon Carbide</td>
<td>BUNA-N</td>
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<tr>
<td>9</td>
<td>STD Mild abrasives</td>
<td>Silicon Carbide</td>
<td>BUNA-N</td>
<td>300 Series SS</td>
</tr>
</tbody>
</table>

Material Code Engineering Standard

- 1003 Cast iron – ASTM A48 Class 30
- 1179 Silicon bronze – ASTM B584 C87600
**NOMENCLATURE DESCRIPTION**

1st, 2nd and 3rd Character - Discharge Size and Type
2DES = 2" discharge, ¾" solids handling, dual seal with seal fail probe in pump

4th Character - Mechanical Seals
5 = silicon carbide/silicon carbide/BUNA - lower seal and carbon/ceramic/BUNA - upper seal (standard)
3 = silicon carbide/tungsten carbide/BUNA - lower seal and carbon/ceramic/BUNA - upper seal (optional)

5th Character - Cycle/RPM
5 = 50 Hz/2900 RPM

6th Character - Horsepower
B = ½ HP E = 1 HP
C = ½ HP F = 1½ HP

7th Character - Phase/Voltage/Enclosure
6 = three phase, 380 V

8th Character - Impeller Diameter
A = 4.56" G = 5.5"
C = 4.06" J = 5.12", 1.5 HP 50 Hz
D = 3.56"

9th Character - Cord Length (Power and Sensor)
A = 20' (standard) F = 50'
D = 30' J = 100'

10th Character - Options
B = Bronze impeller
E = Epoxy paint
F = Both epoxy paint and bronze impeller

Last Character - Option
H = Pilot duty thermal sensors (3 phase only!!)