# **TECHNICAL BROCHURE**

B3SDX R2



# **FEATURES**

**Impeller:** Cast iron, ASTM A48, Class 30, two vane semi-open, non-clog design with pump out vanes for mechanical seal protection. Computer balanced for smooth operation. Silicon bronze impeller is an option.

**Casing:** Heavy duty gray cast iron, ASTM A48, Class 30. Volute type casing with 3", 125#, flanged, horizontal discharge conforming to ANSI standards. Compatible with A10-30 cast iron or A10-30B cast iron and brass (non-sparking) slide rail assembly.

**Seals:** Tandem mechanical seal system in an oil filled seal chamber. Each seal operates independently to ensure fail safe performance. Standard seals are carbon rotary and ceramic stationary. Outer seals are designed for easy replacement. Optional seals are available.

Seal Sensor Probes: Pump has a standard dual probe moisture detection system located in an oil filled seal chamber. The sensor leads <u>must be connected</u> to a "seal fail circuit" in the control panel.

**3SDX** EXPLOSION PROOF SUBMERSIBLE SEWAGE PUMP CLASS 1, DIVISION 1, GROUPS C AND D HAZARDOUS LOCATIONS





# Goulds Water Technology

# Wastewater

#### APPLICATIONS

Designed for a variety of hazardous commercial and industrial applications such as:

- Sewage systems
- Flood and pollution control
- Dewatering and effluent
- Hospitals
- Trailer courts
- Hotels and motels

#### SPECIFICATIONS

#### Pump:

- Maximum solid size: 2.5"
- Discharge size: 3" ANSI 125# Flange
- Maximum capacity: 550 GPM
- Maximum total head: 67'

#### **MOTOR SPECIFICATIONS**

- Maximum ambient temperature: 40° C (104° F)
- Rated for continuous duty with motor fully submerged
- Service Factor: 1.15
- HP range: Three phase: 1.5 to 7.5 HP
- 60 Hz Voltages available: Three phase: 200, 230, 460 and 575
- Insulation: Class F
- Single row ball bearings

# MOTOR FEATURES

- Explosion Proof Motor: For use in hazardous locations. Rated Class 1, Division 1, Groups C & D.
- Standards: All motors conform to the latest requirements of NEMA, IEEE, ANSI and NEC standards.
- Air filled motor
- Class F insulation
- Thermal Protection System: The motor is equipped with two automatic reset on-winding thermostats to protect it from high temperatures.
- Operating Design: Motors are designed for continuous submerged operation. The maximum allowable run time in air is 15 minutes.
- Bearings: Single row greased for life sealed bearings. Rated for minimum L10 life of 17,500 hours. The bearings are designed to carry the radial and thrust loads.
- Cable Entry: Power and control cables are epoxy encapsulated to prevent wicking even if the cable jacket is punctured. Buna-N grommets provide an additional cable seal.
- Shaft: The shaft is 416 stainless steel.
- Power and Control Cables: Standard length is 25', optional 50' is available. The power leads are sized from 14/4 to 10/4 depending on HP and voltage, rated as SOW and SOOW. The control cable is 18/5 SOW cable.

#### **AGENCY LISTINGS**



Tested by CSA to UL Std's 778, 1207 and 674 Tested by CSA to CSA 22.2 Std's 108-M89 and 145-M1986. These ratings cover use in Hazardous (Classified) Locations Class I, Division 1, Groups C & D; Class II, Groups E, F & G. File #LR38549

#### **CONTROL PANEL REQUIREMENTS**

To maintain warranty coverage and agency listings, Control Panels must have:

- Moisture Detection System to warn of a seal failure.
- Thermal Protection System winding thermostats open the pilot circuit of the magnetic motor controller before dangerous temperatures are reached.
- Overload (Over Current) Protection - Class 10, quick-trip type overload protection must be provided in control panel.
- Intrinsically Safe Relays use "intrinsically safe relays" in a Class 1, Division 1, environment to power the float switches. They eliminate the danger of a spark if a switch cord becomes damaged. Intrinsically Safe Relays are available as an option from most panel suppliers. Other level control systems are available and may be applicable for this service, consult with your control manufacturer.

#### **Typical Control Option:**

 Guaranteed Pump Submergence Float - Many engineers specify a redundant OFF float or a Guaranteed Pump Submergence Circuit. This provides a second OFF float as protection from "OFF" float failure or hang up which protects the pump(s) from running dry.

# **Goulds Water Technology**

Pump Order No.	HP	lmp. Dia.	Phase	Volts	RPM	1.15 SF Amps	Impeller Code	Full Load Amps	Locked Rotor Amps	Power Cord	Power Cable Diameter (in.)	18/5 Control Cable Dia. (in.)	Wt. (Ibs.)	
3SDX12F2KC				200		5.9	К	5.3	42.0		0.58	0.495		
3SDX12F3KC	11/2	E 04#	3	230	230	5.1	К	4.6	36.6	14/4				
3SDX12F4KC	1 /2	5.81"		460		2.6	К	2.3	18.3	14/4				
3SDX12F5KC				575		2.0	К	1.8	14.6					
3SDX12G2JC				200		7.6	J	6.8	50.6		0.58		250	
3SDX12G3JC	2	6.12"	3	230		6.6	J	5.9	44.0	- 14/4				
3SDX12G4JC		0.12	2 3	460		3.3	J	2.9	22.0					
3SDX12G5JC				575		2.6	J	2.8	17.6					
3SDX12H2HC		6.75"		200		11.3	Н	10.1	71.5		0.58			
3SDX12H3HC	3		' 3	230	1750	9.8	Н	8.8	62.1					
3SDX12H4HC		0.75		460	1750	4.9	Н	4.4	31.1					
3SDX12H5HC				575		3.9	Н	3.5	24.9					
3SDX12J2GC	5 7.	7 4 2 "		200		18.3	G	17.0	92.1					
3SDX12J3GC			7.62"	2	2" 3	230		15.9	G	13.9	80.1	12/4	0.66	
3SDX12J4GC				1.02		5		460		8.0	G	7.0	40.0	
3SDX12J5GC				575		6.4	G	5.6	32.0	14/4	0.58			
3SDX12K2FC	- 7½	⁄2 8.31"	1" 3	200		26.7	F	23.3	144.0		0.73			
3SDX12K3FC				230		23.1	F	20.2	125.0	10/4				
3SDX12K4FC				460		11.6	F	10.1	62.5					
3SDX12K5FC					575		9.2	F	8.1	50.0	14/4	0.58		

#### PUMP ORDER NUMBERS AND GENERAL INFORMATION

#### NOMENCLATURE DESCRIPTION

#### 1st - 4th Characters - Discharge Size and Type

3SDX = 3" discharge, 2½" solids handling, dual seal, Explosion Proof Sewage Pump

## 5th Character - Lower (outer) Mechanical Seal

The upper seal is carbon/rotary, ceramic/stationary, with Buna elastomers and 304SS metal parts - it is non-modifiable. The 5<sup>th</sup> character identifies which lower (outer) seal is to be ordered:

- 1 = Standard Lower Seal Carbon/rotary, ceramic/stationary, Buna elastomers, 304SS metal parts
- 3 = Optional Lower Seal Silicon carbide/rotary, silicon carbide/stationary, Viton, 304SS
- 5 = Optional Lower Seal Silicon carbide/rotary, tungsten carbide/stationary, Viton, 304SS

#### 6th Character - Cycle/RPM

2 = 60 Hz/1750 RPM 6 = 50 Hz/1450 RPM

#### 7th Character - Horsepower

F = 1½ HP	H = 3 HP	K = 7½ HP
G = 2 HP	J = 5 HP	

## 8th Character - Phase/Voltage/Hertz

2 = three phase, 200 V, 60 3 = three phase, 230 V, 60 4 = three phase, 460 V, 60 5 = three phase, 575 V, 60 6 = three phase, 380 V, 50

## 9th Character - Impeller Diameter

 $K = 5.81" - 1\frac{1}{2} HP \text{ at } 1.15 \text{ service factor}$  J = 6.12" - 2 HP at 1.15 service factor H = 6.75" - 3 HP at 1.15 service factor G = 7.62" - 5 HP at 1.15 service factor  $F = 8.31" - 7\frac{1}{2} HP \text{ at } 1.15 \text{ service factor}$ T = Special trim

#### 10th Character - Cord Length (Power and Sensor)

C = 25' standard length F = 50' optional length

#### 11th/12th Characters - Options

B = Bronze impeller E = Epoxy paint BE = Both Example: Catalog Order Number 3SDX12F2KC = (3SDX) a 3" discharge, 2.5" solids pump with (1) standard seals, (2) 60 Hz/1750 rpm, (F) 1.5 hp, (2) 200 volt/three phase, (K) 5.81" impeller diameter, (C) standard 25' cord.

#### **APPLICATION DATA**

Maximum Solid Size	21⁄2"				
Minimum Casing Thickness	<sup>5</sup> ⁄16"				
Casing Corrosion Allowance	1⁄8"				
Maximum Working Pressure	100 PSI				
Maximum Submergence	200 feet depth				
Maximum Environmental Temperature	40°C (104°F) ambient conditions				
Maximum Starts Per Hour	10 evenly distributed starts/stops per hour				

### **CONSTRUCTION DETAILS**

Power Cable - Type	10/4, 12/4, 14/4 SOW, SOOW				
Control / Sensor Cable / Type	18/5 SOW				
Cable Cap Assembly	Leads have a Buna grommet and are encapsulated in epoxy for a positive seal				
Power and Control Cable Lengths	25' standard, 50' optional				
Motor Enclosure	Cast Iron, ASTM A-48, Class 30 (minimum)				
Motor Shaft	416 Stainless Steel				
Motor Design	NEMA Design B - Air-filled				
Motor Insulation	Class "F", 155° C (310° F) insulation				
Motor Thermal Protection	Two (2) normally closed on-winding thermostats open at 153° C (307° F), automatic reset closes at 140° C (284° F)				
Motor Overload Protection	Require Class 10, quick-trip, ambient compensated overloads in the control panel				
Motor Moisture Protection	Dual moisture sensing probes in an oil-filled seal chamber between inner and outer seals - Connect to a relay in control panel				
Casing	Cast Iron, ASTM A-48, Class 30				
Impeller	Cast Iron, ASTM A-48, Class 30 or Optional Cast Bronze ASTM B584 C87600				
Impeller Type	Semi-open, non-clog with pump out vanes on back shroud, computer dynamically balanced				

#### **STANDARD PARTS**

Ball Bearings		Greased for life, single row, upper and lower ball bearings, L10 rating life of 17,500 hours			
Mechanical	Upper	Carbon - rotary / ceramic - stationary / Buna			
Seals - Standard	Lower	elastomers / 304SS metal parts			
Mechanical	Lower	Silicon carbide - rotary / silicon carbide - stationary / Viton / 304SS			
Seals - Optional	Lower	Silicon carbide - rotary / tungsten carbide - stationary / Viton / 304SS			
Standard O-Rings		BUNA-N (nitrile)			
External Hardware	9	Stainless steel			

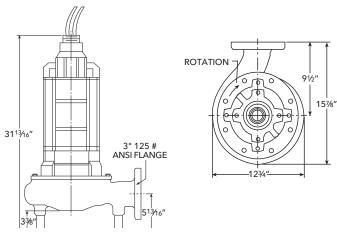


Xylem Inc. 2881 East Bayard Street Ext., Suite A Seneca Falls, NY 13148 Phone: (866) 325-4210 Fax: (888) 322-5877 www.gouldswatertechnology.com

Goulds is a registered trademark of Goulds Pumps, Inc. and is used under license. @ 2016 Xylem Inc. ~ B3SDX R2 ~~ May 2016 ~~

### DIMENSIONS

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



#### **MATERIALS OF CONSTRUCTION**

ltem	Part N				Material					
No.	Part N	ame			Stand	Optional				
1	Impell	er, non-clo	g		100	1179				
2	Casing	]			100					
3	Shaft-l	keyed			416 Ser					
4	Fasten	iers			300 Ser	ies SS				
5	Impell	er Bolt			Stee					
6	Motor	Enclosure			Cast Iron		Additional lengths			
7	Power	and Contro	ol Cables		25', SOW/SOOW					
	Outer Mech. Seal	Service	Rotary		Stationary	Elasto- mers	Metal Parts			
8	OPT	Heavy duty	Silicon Carbide	Т	Sil. Carb. Tung. Carb.	Viton	304 Series SS			
	STD	Mild abrasives	Carbon		Ceramic	BUNA-N	304 Series SS			
	Mater	rial Code	Engineering Standard							
	1	003	Cast iron – ASTM A48 Class 30							
	1	179	Silicon bronze – ASTM B584 C87600							

