

# Submersible Drainage Pump XJ 110

**SULZER**

## Specification

Electric submersible pump.  
 Maximum submergence: 20 m (65 ft). Protection class IP 68.  
 Max temperature of pumped medium at max power input and continuous duty 40 °C (104 °F).  
 Max medium density 1100 kg/m<sup>3</sup> (0.0397 lbs/inch<sup>3</sup>).  
 pH of the pumped medium 5-8.  
 Strainer hole: 7.5 x 22 mm (5/16" x 7/8"). Max number of starts 30/hr.

<b>XJ 110 ND</b>	Medium head, 3-phase
<b>XJ 110 ND AT*</b>	Medium head, 3-phase
<b>XJ 110 HD</b>	High head, 3-phase
<b>XJ 110 HD AT*</b>	High head, 3-phase

\*AquaTronic: Built-in electronic pump control.

## Electric Motor

3-phase squirrel-cage induction motor, 60 Hz.  
 Service factor 1.1. Class F insulation.  
 Dual voltage stator 230/460 V (single voltage contactor coil).\*\*\*  
 Motor rating P<sub>2</sub>: 13.5 kW (18 Hp). 2 pol. Speed: 3500 rpm.  
 η: 90 (50 %), 91 (75 %), 90.8 (100 % load).

\*\*\*For pumps with built in contactor.

Voltage, V	230	380	460	575
Nominal current, A	42.8	25.9	21.4	17.1

## Starting Method and Motor Protection

**XJ 110 AT:** Direct on line start (DOL 575 V) with built in AquaTronic unit, which automatically adjusts phase order by dual contactors, ensuring correct motor rotation.

Soft start (380-460 V) is built in with the AquaTronic unit, where three thyristors reduces start current to three times the nominal current. Here two relays ensure correct motor rotation.

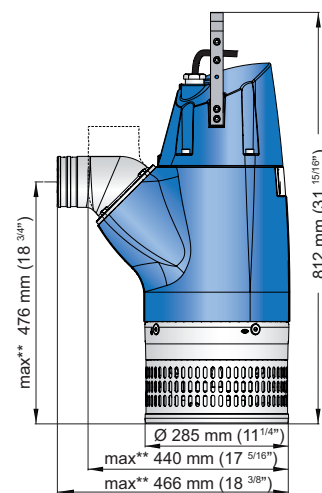
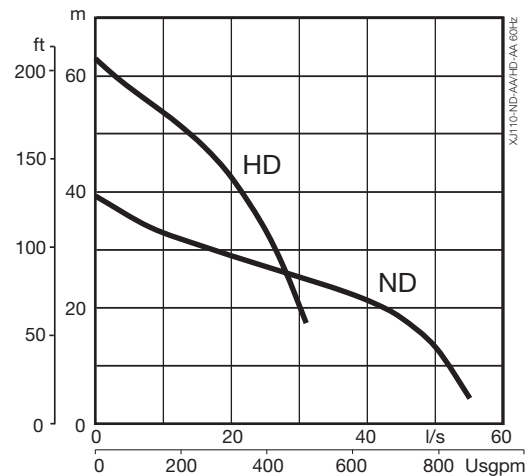
The AquaTronic unit monitors motor temperature, by use of NTC thermistors built into stator windings, and stops the motor at high temperature. It will also stop the motor at high amperage or if a phase is missing.

**XJ 110:** Direct on line start with built in contactor. Pumps to be used with VFD must have terminal block instead of contactor. Thermal switches (140 °C/284 °F, ±5) built into the stator windings are connected to the contactor and stop the pump at high temperature.

## Power Cable

20 m type H07RN8-F (standard cable):  
 4 x 6 sq.mm. (230 V)  
 4 x 4 sq.mm. (380-460 V)

20 m type NSSHÖU.../3E (heavy duty cable):  
 3x6+3x6/3E+3x1.5 (3 control cables included) (230, 380, 460 and 575 V or terminal block)



\*\* Max measurement based on largest discharge size.

## Shaft Seal

Double mechanical seal in oil bath.  
 Primary seal: Silicon carbide on silicon carbide.  
 Secondary seal: Silicon carbide on carbon.

## Bearings

Upper bearing: Single-row deep groove ball bearing.  
 Lower bearing: Double angular contact ball bearing.

## Discharge Connections

3" (standard HD), 4" (standard ND), 6" hose connections.  
 3", 4", 6" G/B.S.P. threaded connections.  
 3", 4", 6" NPT threaded connections.

## Weight

81 kg / 179 lbs (without cable)

## Options and Accessories

AquaPlug. AquaTronic control panel. Level sensor. Service data kit.  
 Zinc anodes. Surface protection coating. Series connection.  
 Floatation system. Discharge connection accessories and hose.

## Pump control

Features	XJ 110	XJ 110 AT				Service Data Kit Read out
		AT	AT + Level Sensor	AT + AquaPlug / AquaTronic Control Panel	AT + AquaPlug/ AquaTronic Control Panel + Level Sensor	
Run mode	X	X	X	X	X	
Integrated start equipment	X	X	X	X	X	
Automatic direction of rotation		X	X	X	X	
Motor protection high temp	X	X	X	X	X	X
Motor protection high amp		X	X	X	X	X
Protection against missing phase		X	X	X	X	X
Level control			X		X	
Dry run protection			X		X	
Automatic restarting			X		X	
Stop mode				X	X	
E-mode (Automatic stop/run)					X	
Indication of water in oil				X	X	X
Indication of low motor insulation				X	X	X
Indication of high or low voltage				XX	XX	X
Indication of high temperature				XX	XX	X
Indication of high amp				XX	XX	X
Indication of phase unbalance				XX	XX	X
USB cable connection		X	X	X	X	X
Crash log (10 latest)						X
Documentation (spare part list, workshop manual)						X

XX = Fault indication when pump is automatically stopped to protect the motor.

## Materials

Description	Material	EN	ASTM
Castings	Aluminium	EN 1706:AC-43100	ASTM AISI10mg
Strainer/Handle	Stainless steel	10088:X5CrNi18-10 (1.4301)	AISI 304
Rotor shaft	Stainless steel	10088:X20Cr13 (1.4021)	AISI 420
Impeller / Wear ring	White cast iron	EN-GJN-HV600(XCr23)	ASTM A 532: Alloy III A
Fasteners	Stainless steel	10088:X5CrNiMo 17122 (1.4401)	AISI 316
Wear parts / O-rings	Nitrile rubber		
Coating	2 component epoxy paint 120 µm		