

Item No. : 2	Project:
Quantity : 1 set	Application : river water
Description	Consultant pump specification
<u>General Specification</u> Pump model Pump type Liquid Temperature Installation type <u>Pump Data</u> Impeller type Performance Curve Flow rate (Capacity) Total dynamic head Pump efficiency Overall efficiency Solid passage dia. Outer diameter of impeller Shaft power Speed Total discharge conn. Column size Power cable & Control cable <u>Materials</u> Motor casing/housing Pump casing Impeller Vane/blades Impeller Hub Wearing ring Shaft Studs, Nuts, Screws O-ring Double Mechanical seal Heavy duty bearing <u>Surface treatment</u> <u>Motor data</u> Drive unit / Motor model Design Motor Protection type Insulation class Main voltage Rated power of motor Motor speed Motor efficiency Service factor Starting method Rated current <u>Monitoring system, Std.</u>	O-SAP 500-50 Submersible propeller pump (direct drive) Not more than 60°C Installation with pipe column Axial Flow with statically or dynamically balanced see the drawings 800 l/s (2880 m3/hr) 8 m 81.0% 72.5% Dia. 110mm 450 mm 77.5 kW 980 rpm D/N 600mm D/N 850mm - 1x20 m Submersible power cable - 1x20 m Submersible auxiliary control cable Cast Iron Cast Iron with Zinc Anode Duplex SS 2205 Duplex SS 2205 N/A SS 420 Stainless steel NBR Tungsten carbide & Silicon carbide Roller bearing with grease lubricate Impeller is painted by epoxy resin Paintmaterial: bituminous epoxy resin All cast parts are primed with a re-rust paint The finishing coat is two pack paint The color is black paint 110KW/ 6P Squirrel-cage, induction motor IP68 Class H 380v, 3 pH, 50 Hz. 110KW 980rpm 89.5% 1.2 VSD 120A - 3 pcs PT100 at stator winding (A/B/C three phases) - PT100 at upper bearing - PT100 at lower bearing - Upper water leakage sensor (Float switch/ leakage electrode in motor junction chamber) - Lower water leakage sensor (Float switch/ leakage electrode in motor chamber) - Moisture sensor (HM1500 in motor junction chamber) - Vibration Sensor in top bearing housing - WLC Type Float Switch for LWL and HWL (external of pump)

**SUBMERSIBLE MOTOR PUMPS****MOTOR DATA****ELECTRICAL DATA**

Hz	Poles	Phaes	Output(kW)	Voltage(V)	Remarks
50	6	3	110	380	

Name Plate Rating	Output	kW	110
		Hp	150
	Phase		3
	Poles		6
	Voltage (V)		380
	Amperes (A)		220
	Speed (RPM)		980
	Rating		Continuous
	Rotor Type		Squirrel Cage
Insulation Class			H
Capacitor	Start		-
Size - μ F	Run		-
No Load Amperes			77
100% Load	Current (Amperes)		220
	Efficiency (%)		89.5
	Power Factor (%)		85.0
	Speed (RPM)		980
Start Current (A)			770
Full Load Torque (Kg-m)			109.33
Locked Rotor Torque (%)			130
Number of Starts Per Hour			6
Design Standard			IEC
Voltage Tolerance (%)			$\pm 10\%$
Frequency Tolerance (%)			$\pm 5\%$

ITEM	LOAD		
	50%	75%	100%
POWER INPUT[Kw]	61.5	92.2	122.9
POWER OUTPUT[kW]	55	82.5	110
CURRENT[A]	150.9	164.8	219.7
POWER FACTOR[%]	62.4	76.6	85
EFFICIENCY[%]	88.7	89.2	89.5
SPEED[RPM]	991	986	980



SUBMERSIBLE MOTOR PUMPS

CIRCLE DIAGRAM

MOTOR SPECIFICATION

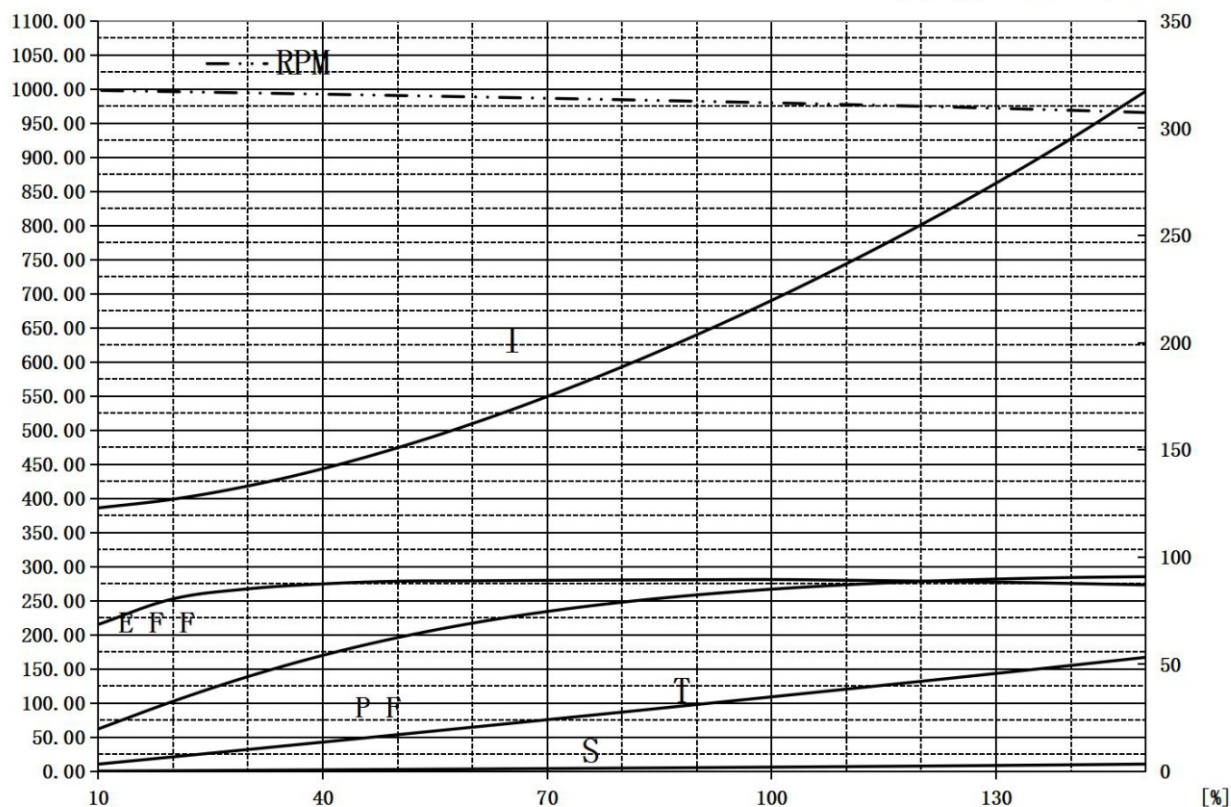
Motor Type	:	Totally Enclosed, Submerged Type (IP 68)				
Motor Output	:	110	[kW]	Voltage	:	380 [V]
Revolution	:	980	[rpm]	No. of Poles	:	6 [P]
Frequency	:	50	[Hz]	Rate Current	:	220 [A]
Efficiency	:	89.5	[%]	Power Factor	:	85.0 [%]
Rotor Type	:	Squirrel Cage			Ins. of Class:	H
Cooling Method	:	Water			Liquid Temp. :	AMB
Starting Method:	VFD				Rating :	CONT.

MOTOR CIRCLE DIAGRAM

(L- CIRCLE, 110 [kW])

Torque[Kg-m]/Current[A]/Revolution[RPM]

EFF [%]/PF [%]/Slip [%] POWER [KW]





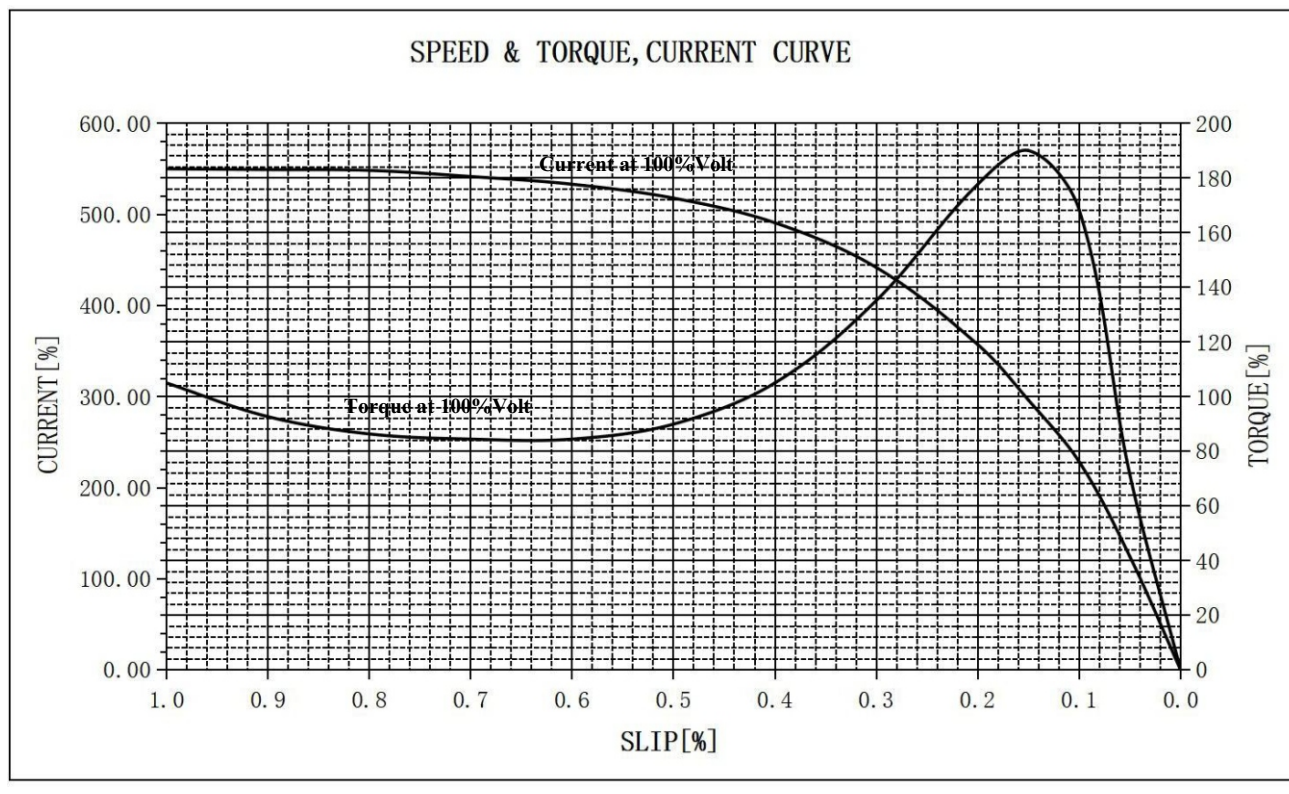
SUBMERSIBLE MOTOR PUMPS

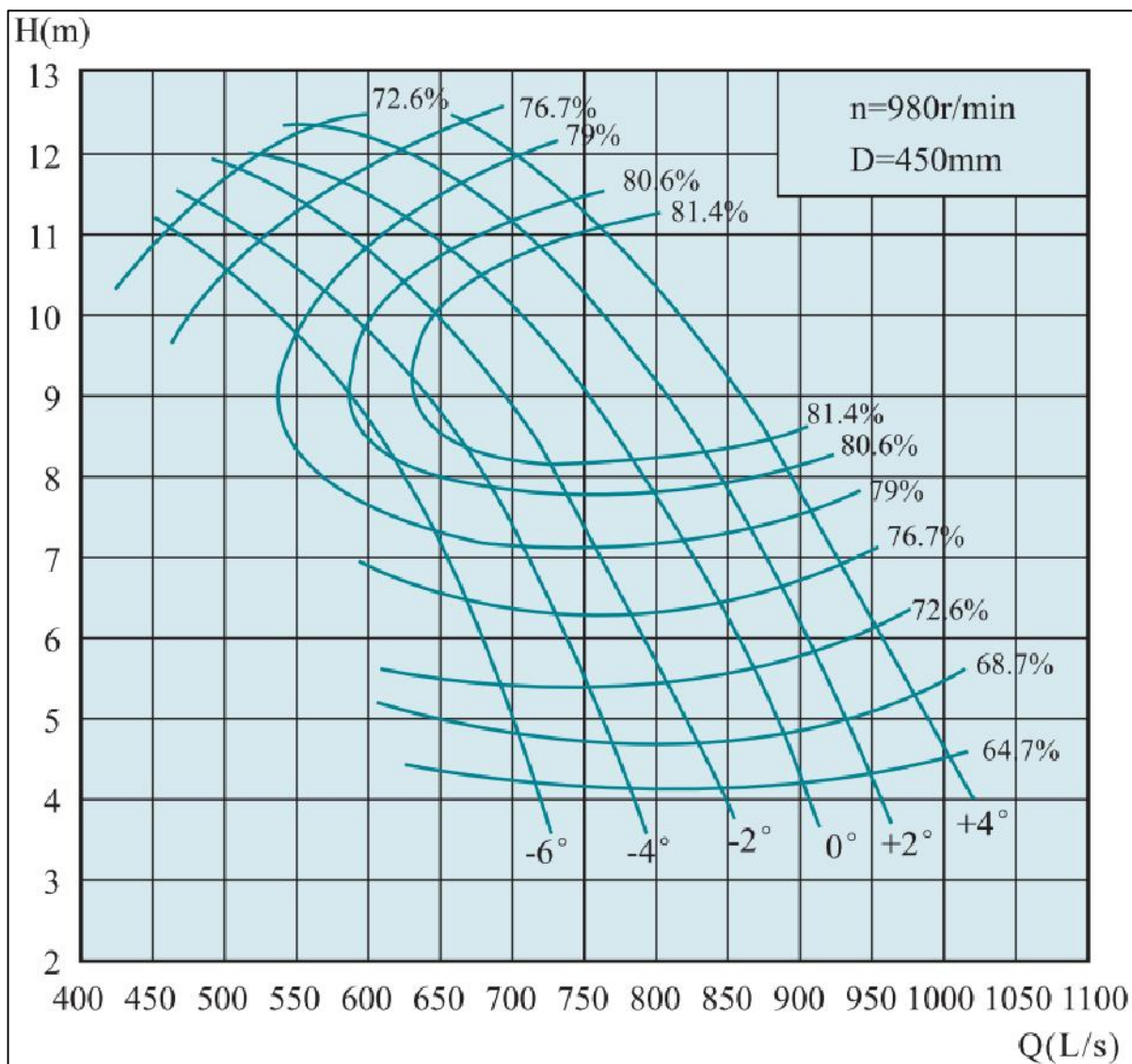
SPEED & TORQUE & CURRENT CURVE

MOTOR SPECIFICATION

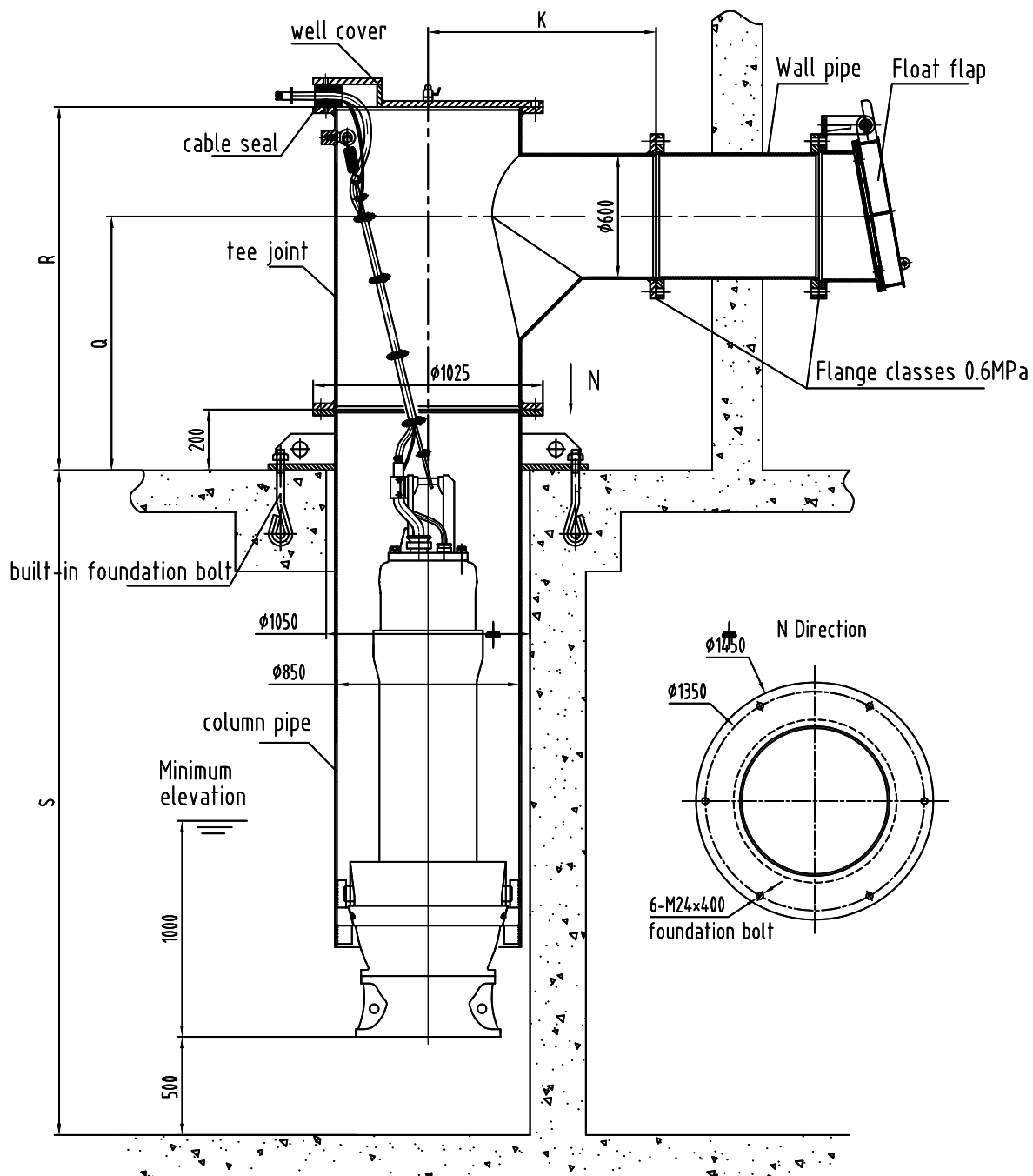
Motor Type	:	Totally Enclosed, Submerged Type (IP 68)					
Motor Output	:	110	[kW]	Voltage	:	380	[V]
Revolution	:	980	[rpm]	No. of Poles	:	6	[P]
Frequency	:	50	[Hz]	Rate Current	:	220	[A]
Torque	:	109.3	[%]	Starting Current	:	770	[A]
Starting Torque:		130	[%]	Ins. of Class	:	H	
Starting Method:		VFD		Liquid Temp.	:	AMB	
				Rating	:	CONT.	

SPEED & TORQUE & CURRENT CURVE





Angle	Capacity		Head (m)	Speed (r/min)	Power (kW)		Eff. (%)	Outer diameter of impeller (mm)
	(m ³ /h)	(l / s)			Shaft power	Motor power		
0°	3178.4	882.9	4.93	980	62.2	110	68.7	450
	2635.6	732.1	9.35		81.6		82.3	
	2104.6	584.6	11.72		87.6		76.7	



pump model	O-SAP 500-50		
weight:	990Kg	The axial water thrust:	23100N
speed:	980r/min		