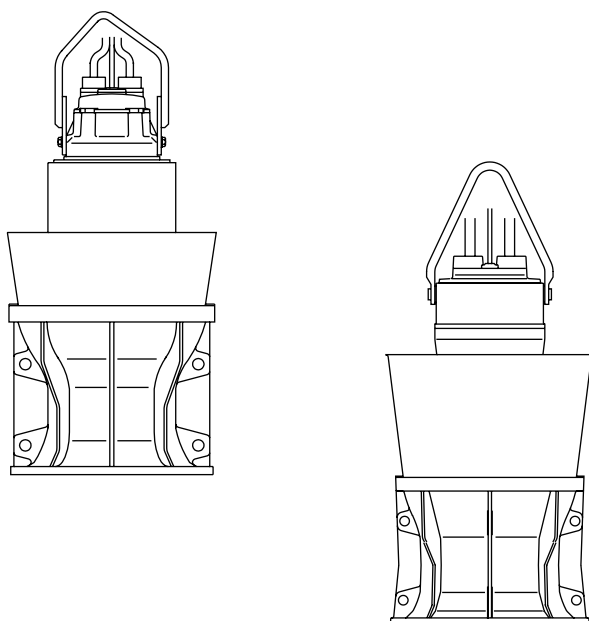




P7045, P7050, P7055

Large Submersible Pumps

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a xylem brand

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1 Product Description

1.1 Product overview

Submersible propeller pumps for clean, surface, or storm water. Intended for transport of large volumes of water at low heads, in column installation, in the most cost effective way. The pumps are designed with a considerably smaller footprint than conventional pumps. An N-version propeller design is available for pumping screened wastewater, with sustained high efficiency.

Installation

L-installation

Accessories

Mechanical accessories which are available include the following:

- Cable handling systems
- Lifting equipment

Electrical accessories which are available include the following:

- Pump controller
- Control panels
- Starters
- MAS and other monitoring relays

See your local sales and service representative for further information.

Options

The following options are available:

- Zinc anodes for corrosion protection
- Special coating system (with epoxy base coat) for demanding environments
- Power monitoring
- Monitoring options for temperature, vibration and water in the oil housing

1.2 Materials

Propeller

Table 1: P7050

Material	Internal material number	Standard	
		Europe	USA
Aluminum bronze: copper-aluminum alloy	M0467.5716.03	EN 1982 No. CC333G	ASTM C95500
Stainless steel: austenitic	M0344.2333.12	EN 10283 No. 1.4308	ASTM A 743 CF-8

Table 2: P7045, P7055

Material	Internal material number	Standard	
		Europe	USA
Cast iron	M0314.0125.00	EN 1561 No. JL 1040	ASTM-A 48 - No 35 B

Pump housing

Table 3: P7045, P7050, P7055

Material	Internal material number	Standard	
		Europe	USA
Cast iron	M0314.0125.00	EN 1561 No. JL 1040	ASTM-A 48 - No 35 B

Mechanical face seals

The inner seal is always corrosion resistant cemented tungsten carbide (WCCR). The outer seal can be either corrosion resistant cemented tungsten carbide (WCCR), or corrosion resistant silicon carbide (RSiC).

Seal	Material, rotating ring	Material, stationary ring
Inner	Corrosion resistant cemented tungsten carbide (WCCR)	WCCR
Outer	WCCR	WCCR

Drive unit shaft

Table 4: P7045, P7050, P7055

Material	Internal material number	Standard	
		Europe	USA
Structural steel	M0326.2172.00	EN 10025-2 Nos. 1.0045, 1.0553, 1.0577, 1.0596	ASTM A572 Grade 50
Duplex stainless steel	M0344.2324.02	EN 10088-3 No. 1.4460	ASTM/AISI 329

O-rings

Material	Internal material number	Standard	
		Europe	USA
Nitrile rubber 70° IRH	M0516.2637.04	–	–

Coating system

The following table describes the two variants of paint systems available for the pump, Standard and Special. The choice of coating system depends upon the service environment.

Coating system	Basecoat	Topcoat	Total dry film thickness
Standard	Acrylic (waterborne) or alkyd (solventborne)	Oxirane ester, 2-pack	120–350 µm
Special (option)	Epoxy, 2 layers	Oxirane ester, 2-pack, 1 layer	350–700 µm

Other coating systems are available for special requirements such as drinking water, high temperature or erosion applications. See the Xylem internal standard M0700.00.0001 (Coating Selection Guidelines).

1.3 Mounting-related data

Depth of immersion

The maximum depth of immersion is 20 m (65 ft.).

Weight

See the dimensional drawing for pump weights.

Cables

Table 5: P7045, P7050, P7055

SUBCAB®	Maximum voltage 600–1000 V, intended for drive units up to 1 kV. To be dimensioned by Xylem.
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Engineering data

Performance curves, motor data and dimensional drawings are available from your local sales and service representative.

Pump (ball-) throughlet

Pump	Throughlet	
	mm	in.
P7045	Max. 85	Max 3.34
P7050	Max. 80	Max. 3.15
P7055	Max. 110	Max. 4.33

1.4 Drive units

P7045

Drive unit	Maximum number of starts per hour
600	Max. 15

P7050

Drive unit	Maximum number of starts per hour
680	Max. 15

P7055

Drive unit	Maximum number of starts per hour
600	Max. 15
680	Max. 15

2 Operational Data

2.1 Application limits

Table 6: Process data

Parameter	Value
Liquid temperature	Max. +40°C (+105°F)
Depth of immersion	Max. 20 m (65 ft)
pH of pumped liquid	pH 5.5-14
Liquid density	Max. 1100 kg/m ³ (9.17 lb per gal.)

2.2 Motor Data

Motor characteristics

Feature	Description
Frequency	50 Hz or 60 Hz
Stator insulation class	H (180°C [360°F])
Voltage variation	Max. +/- 10%
Voltage imbalance between the phases	2%

Motor encapsulation

Motor encapsulation is in accordance with IP68.

2.3 Monitoring with MAS-711: optional P7055/680

This section only applies to P7055 with 680 drive using MAS-711 as an option.

The pump is designed for use with the Flygt MAS-711 monitoring system. The parameters tracked are chosen by the customer and can include the following:

- Temperature (main and support bearings, stator windings)
- Vibration
- Leakage (in stator housing, junction box, and water into oil chamber)
- Power monitoring

Table 7: Parameters monitored

Description	Sensor	Standard or optional
Pump memory	Printed circuit board for pump memory includes a temperature sensor.	Standard
Leakage in the junction box	Float Switch Leakage Sensor (FLS)	Standard
Main bearing temperature	Pt100 analogue temperature sensor	Standard
Leakage in the stator housing	Float Switch Leakage Sensor (FLS)	Standard
Stator winding temperature	See table below.	Standard
Support bearing temperature	Pt100 analogue temperature sensor	Optional
Water in oil (not applicable for 7X6 drive units)	Capacitive Leakage Sensor (CLS)	Optional
Vibration	VIS 10	Optional
Power monitoring	Separate electronic instrument using three current transformers.	Optional
Pump current	A current transformer in the control cabinet is required.	

Table 8: Stator winding temperature, monitoring configurations

Drive units	Sensors in coil ends of stator windings	Additional sensors, incorporated in the stator windings:	
		Always (standard)	Additional option
Up to 1 kV	One of the following choices: • 3 thermal switches (standard), or • 3 PTC-thermistors (optional)	Pt100 analogue temperature sensor in 1 stator winding (standard)	Pt100 analogue temperature sensors in 2 additional stator windings (optional)
1.2–6.6 kV	PTC-thermistors (3+3) 3 sensors are connected in series, and 3 are built-in reserves.	Pt100 analogue temperature sensors in all 3 stator windings (3+3) Each winding has 1 sensor connected, and 1 built-in reserve.	

2.4 The monitoring equipment: P7045, P7055

The table below shows the monitoring systems that may be used.

Drive unit	Monitoring Systems		
	MAS-711	CAS	MiniCAS
600	–	–	X
680	X ⁽¹⁾	X ⁽²⁾	X
⁽¹⁾ Partially available. Please contact your local sales and service representative.			
⁽²⁾ Older pumps may be equipped with CAS.			

The CAS system has been replaced by the MAS system. CAS is no longer available as a spare part, but if necessary CAS may be replaced by the MAS 711 together with the MRM-01 relay.

For more information on the CAS and MiniCAS systems, please contact your local sales and service representative.

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- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're a global team unified in a common purpose: creating advanced technology solutions to the world's water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services, and agricultural settings. With its October 2016 acquisition of Sensus, Xylem added smart metering, network technologies and advanced data analytics for water, gas and electric utilities to its portfolio of solutions. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise with a strong focus on developing comprehensive, sustainable solutions.

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Let's Solve Water

The original instruction is in English. All non-English instructions are translations of the original instruction.

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