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Let's Solve Water



Flygt 4320 Geared Adaptive Mixer

ADVANCED SIMPLICITY FOR PROCESS CONTROL

FLYGT
a xylem brand

With its ability to continuously adjust the output to the actual demand, Xylem's range of Flygt adaptive mixers represent a new level in mixing performance. The submersible geared Flygt 4320 adaptive mixer revolutionizes the wastewater treatment industry by bringing full automation into the mixing process. Along with the integrated power electronics, high-efficiency IE4 equivalent motor and optimized hydraulics, these enhanced capabilities bring a number of unmatched customer benefits:

SPEND UP TO 50% LESS ON ENERGY
Whether you operate the mixer with full automation or manage it from your control room, the Flygt 4320 provides significant energy savings. By continuously matching output to real demand, it saves costs and optimizes process efficiency.

INCREASE MIXER UPTIME
Diminish wear and tear by adjusting output and detecting overload conditions to protect the motor and minimize stress on the mixer. This prolongs mixer lifetime and reduces maintenance need.

IMPROVE PROCESS RESILIENCY
Experience full and immediate flexibility with Flygt 4320. With automated mixer control or SCADA-integrated management, you can be sure the mixer will adapt to handle both unexpected events and planned changes with maintained efficiency.

REDUCE MIXER INVENTORY
Flygt adaptive mixers can be deployed across different applications, reducing the need for inventory of back-up mixers and spares and lowering capital investment for re-build or replacements.

Scalable Mixer System

Whether you choose a standard or a fully automated Flygt 4320 adaptive mixer you can be assured of its unparalleled performance to meet your shifting process demands of wastewater treatment.



	FLYGT 4320 AD	FLYGT 4320 ADF	FLYGT 4320 ADC
Gateway or controller		FPG 415 gateway	APP 412 controller
IE4 motor efficiency	✔	✔	✔
High efficiency propeller	✔	✔	✔
Soft start	✔	✔	✔
Power factor close to 1	✔	✔	✔
Always correct propeller rotation	✔	✔	✔
Automatic overload speed control	✔	✔	✔
Easily variable speed		✔	✔
Analog I/O and Modbus RTU/TCP		✔	✔
Full status and alarms information		✔	✔
FOP 315 push-button operator panel (optional)		✔	✔
FOP 402 touch-screen operator panel (optional)		✔	✔
Oxidation ditch mixer process control			✔
Multiple-mixer control			✔

FLYGT 4320 AD STANDARD CONTROL
Standard version with pre-set control incorporates many built-in valuable features providing energy savings, key autonomous protection features, and scalability for ADF or ADC functionality at a later stage. It can easily replace any traditional geared mixer without any infrastructure modifications.

FLYGT 4320 ADF FLEXIBLE CONTROL
Gear up your Flygt 4320 for tank-side and remote operations by adding the FPG 415 gateway with analog I/O and fieldbuses. Ease of connectivity and connections to the operator panel allow fully integrated monitoring functions, so you can be assured of optimal mixer operation wherever you may be.

FLYGT 4320 ADC AUTOMATED CONTROL
A complete, pre-engineered and optimized package for easy and efficient automation of mixer operation. Can be operated to control multiple mixers.

Oxidation Ditch Process Controls:

- Set-point speed: set mixer speed as a function of whether an aeration system is on or off.
- Patented curve-based speed control, also called airflow control.

Gateways and Controllers

GATEWAY – FPG 415

The FPG 415 gateway enables monitoring and control of mixer performance and status, including speed, power, alarms, running time and energy consumption, via operator panel or remote communications.

Communication	Modbus RTU / TCP, 4-20 mA
Standard Input/Output	4×DO, 4×DI, 1×AO, 1xAI
Ports	USB, RS485, Ethernet, operator panel, mixer
Environment class	IP 20, operation temperature -20°C to +65°C
Power supply	24 VDC
(W×L×H)	45×100×100 mm, DIN mount
Approvals	CE, UL, CSA, RCM



CONTROLLER – APP 412

The APP 412 controller has the features of the FPG 415 gateway plus automatic mixer speed control functions for common wastewater treatment processes.

JOG WHEEL OPERATOR PANEL – FOP 315

The FOP 315 jog wheel operator panel is a traditional push-button interface for operator's inspection and mixer control.

Screen	3.5" monochrome LCD
Environment class	Handheld: IP20 Door mount. Front: IP 54; Back: IP21 Operation temp: -20°C to +70°C (-4°F to 158°F)
Power supply	24 VDC
Size (W×L×H)	205×33×110 mm, DIN mount
Approvals	CE, UL



TOUCH SCREEN OPERATOR PANEL – FOP 402

The FOP 402 touch screen operator panel is a full text and graphics interface for quick and easy operator's management of Flygt adaptive mixers.

Screen	7" color touch screen
Environment class	Front: IP65; Back: IP20
	Operation temp: -20°C to +60°C
	(-4°F to 140°F)
Power supply	24 VDC
Size (W×L×H)	197×42×140 mm
Approvals	CE, UL



TECHNICAL DATA

Rated Power 50/60 Hz, kW (hp)	1.1 (1.5)	2.2 (3.0)	4.0 (5.5)	5.5 (7.5)
Propeller speed, rpm	variable, up to 70			
Maximum thrust, N*				
1.4 m (55 in.) propeller	790	1,370	2,170	2,610
2.0 m (79 in.) propeller	1,230	2,020	3,160	3,830
2.5 m (98 in.) propeller	1,580	2,550	4,150	5,170
Maximum efficiency, N/kW*				
1.4 m (55 in.) propeller	over 600			
2.0 m (79 in.) propeller	over 1,100			
2.5 m (98 in.) propeller	over 1,700			

*According to ISO 21630:2007 and depending on product configuration

Flygt 4320 Adaptive Mixer

Motor data	Type Efficiency Frequency Voltage Speed, max Insulation class	Synchronous permanent magnet motor IE4 level according to IEC/TS 60034-30-2 Ed. 1 50-60 Hz 380-480 V 2,300 rpm H (180°C, 356°F)
Materials	Drive and gear housing, hub Wetted metal parts Lifting handle and guidebar bracket Propeller shaft Propeller blades O rings	Cast iron, ASTM 35B Stainless steel, ASTM 316L Stainless steel, ASTM 316L Stainless steel, ASTM/AISI 431 Reinforced polyurethane plastic Nitrile rubber
Cable	Screened Flygt SUBCAB® with integrated control leads	10 or 20 m (30 or 60 ft)
Weight and dimensions	Weight, max Length, excl. bracket Propeller diameter Guide bar bracket	300 kg (154 lb) 1,026 mm (26.0 in.) 1.4-2.5 m (55-98 in.) 100 x 100 (4 x 4 in.) 150 x 150 mm (6 x 6 in.)
Application data	Liquid temperature, max Liquid density, max Liquid viscosity, max ph-range of mixed liquid Depth of immersion, max	40°C (104°F) 1,100 kg/m^3 (9.2 lb per US gal) 5,000 cp 6-11 20 m (65 ft)
Approvals	CE, CSA, UL	

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