ITT

Water & Wastewater

Flygt 4650 LSPM

Submersible high-efficiency compact mixer

Direct drive with a minimum of parts results in a robust and compact design, allowing for optimal positioning, mixing, and system efficiency. The class-leading thrust-per-power ratio of the Flygt 4650 LSPM is achieved through careful hydraulic design, as well as the pioneering Flygt line-started, permanent-magnet (LSPM) motor technology (with pending design patents).

High efficiency direct-online
The Flygt 4650 LSPM motor offers the high efficiency of a synchronous permanent-magnet motor and the direct-online starting capability of an induction motor.

15% higher motor efficiency
The Flygt 4650 LSPM motor results in higher efficiency at comparable power, which leads to reduced power consumption and a lower energy bill.

40% lower current consumption
The Flygt 4650 LSPM motor has a higher power factor, with lower current consumption that demands less power supplies and cables.

50% more power and thrust
The Flygt 4650 LSPM technology has higher power capability, which can be used for producing more thrust and more mixing with the same compact frame size.

Engineered for life

Flygt 4650.510/590 LSPM compact mixer 50 Hz

Submersible mixer for mixing of wastewater and sludge, and for similar applications where the fluid may contain fibers and solids.

Versions

- Standard 4650.510
- Explosion proof 4650.590

Installation

- Guide bar
- Flange mounted

Process data

Liquid temperature ..... max 40°C
Liquid density ..... max 1,100 kg/m³
Liquid pH range ..... pH 5–8
Depth of immersion ..... max 20 m

Motor data

Line-started squirrel-cage permanent-magnet 12-pole three-phase motor.
Frequency ..... 50 Hz
Speed ..... 500 rpm
Insulation class ..... H IEC 85 (180°C)
Voltage variation
– continuous running ..... max ± 5%
– intermittent running ..... max ± 10%
Phases voltage imbalance ..... max 2%
No. of starts per hour ..... max 30
Thermal contacts opening temp ..140°C

Performance*

5.0 kW version
Propeller blade angle ..... 3°-9°
Thrust ..... 900-1,700 N
Thrust-to-power ratio ... 270-340 N/kW
Rated motor efficiency 86%
Rated current ..... 10 A
Rated power factor 0.81

7.0 kW version
Propeller blade angle ..... 3°-11°
Thrust ..... 900-2,000 N
Thrust-to-power ratio ... 270-340 N/kW
Rated motor efficiency 85%
Rated current ..... 13 A
Rated power factor 0.88

8.5 kW version
Propeller blade angle ..... 3°-15°
Thrust ..... 900-2,700 N
Thrust-to-power ratio ... 270-340 N/kW
Rated motor efficiency 83%
Rated current ..... 17 A
Rated power factor 0.90

*Thrust and thrust-to-power ratio depends on the selected propeller angle. Data for 400 V.

Materials

Propeller ..... ASTM 316L
Motor casing ..... ASTM 316L
Shaft ..... ASTM 420
Seal holder ..... ASTM 304
Fixing plate ..... ASTM 304
Stator housing ..... cast iron
O-rings, bushings nitrile or fluor rubber
Inner seal ..... WCCR cemented carbide
Outer seal ..... WCCR cemented carbide

Cable

SUBCAB® submersible cable

Weight and dimensions

Weight, without jet ring* ..... 150 kg
Weight, with jet ring* ..... 175 kg
Height, without jet ring ..... 580 mm
Height, with jet ring ..... 820 mm
Length, without jet ring ..... 845 mm
Length, with jet ring ..... 895 mm
Propeller diameter ..... 580 mm
*excluding cable

Options

Jet ring
Extended jet ring
Patented vortex protection shield
Abrasion resistant propeller
Warm liquid version
RSiC outer seal
FLS stator leakage sensor
CLS water-in-oil sensor
Seal holder and fixing plate in 316L
Threaded cable entry
Cable protection hose
NSSHÖU heavy-duty cable
Kit for off-horizontal installation
Zinc anodes

Accessories

Installation guidebar systems, davits, and other mechanical accessories. Electrical accessories such as monitoring relays, mixer controllers, variable frequency drives, and control panels.

Flygt 4650.510 50HZ 02.06.09 700 Trosa Tryckeri AB 70047