FLYGT
xylem

Technical Specification
90005801_5.0

EN

Flygt SR 4220

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Table of Contents

1 Product description

Products included

EN

Standard version	Explosion-proof version
4220.011	4220.090

1.1 Product design

SR 4220 is an adjustable-speed mixer with an integrated motor control unit. The mixer is submersible and intended for mixing liquids containing long-string fibers and solids such as often occurring in wastewater and sludge.

Drive unit

The drive unit consists of a stator housing, and a connection housing with a variable speed drive. The stator housing includes a permanent magnet synchronous motor with IE4 equivalent efficiency.

Hydraulic unit

The hydraulic unit is a three-blade, clog-free propeller with high efficiency. The propeller is available in different diameters:

Version	Propeller diameter
Standard	370 mm (14.6 in) 580 mm (22.8 in)
Explosion-proof	580 mm (22.8 in)

1.2 Approvals

Product approvals for hazardous locations

Product	Approval
4220.090	European Norm (EN) • ATEX Directive 2014/34/EU • EN IEC 60079-0:2018, EN 60079-1:2014, EN ISO 80079-36:2016, EN ISO 80079-37:2016 • Ⓔx II 2 G Ex db h IIB T4 Gb
	IEC • IECEx scheme 02 • IEC 60079-0:2017, IEC 60079-1:2014-06, ISO 80079-36:2016, ISO 80079-37:2016 • Ex db h IIB T4 Gb
	FM (FM Approvals) • Explosion proof for use in Class I, Div. 1, Group C and D
	CSA • For use in Class I, Div. 2, Group A. B. C and D. T3C • Ambient temperature: -20°C to 40°C
	UKEx • UK SI 2016 No. 1107 • EN IEC 60079-0:2018, EN 60079-1:2014, EN ISO 80079-36:2016, EN ISO 80079-37:2016 • Ⓔx II 2 G Ex db h IIB T4 Gb

Product	Approval
4220.011	CSA • For use in Class I, Div. 2, Group A. B. C and D. T3C • Ambient temperature: -20°C to 40°C

Protection mode h is insured by concept of protection c, as defined in clause 5 of standard ISO 80079-37.

1.3 Installation

- Guide bar system, 50×50 mm (2×2 in)
- Guide bar system, 60×60 mm (2.4×2.4 in)
- Guide bar system, 80×80 mm (3×3 in)
- Guide bar system, 50×100 mm (2×4 in)
- Guide bar system, 100×100 mm (4×4 in)

1.4 Cables

Screened Flygt SUBCAB - a heavy duty 4 screened cores motor power cable with four twisted pair screened control cores. Conductor insulation rating of 90°C, which allows for increased current. Superior mechanical strength and high abrasion and tear resistant. Chemical resistant within pH 3-10 and ozone, oil, and flame resistant. Used up to 70°C water temperature.

Cable length

The following cable lengths are available in the product specification:

meter, m	foot, ft
10	30
20	65

The maximum cable length that is approved for retrofit is 100 m (328 ft).

1.5 Monitoring equipment

- Leakage sensor in the stator housing (FLS)
- Supervision in the drive unit:
  - Over temperature, breaking operation at 90°C (194°F)
  - Overload
  - Undervoltage
  - Overvoltage
  - Phase loss

1.6 Options and accessories

- Installation systems
- Lifting equipment
- Zinc anodes
- Electrical equipment such as control panels, monitoring equipment

2 Technical reference

2.1 Materials

EN

Item	Material
Stator housing	Cast iron, ASTM 35B
Protective sleeve	Stainless steel, ASTM 316L
Connection housing	Stainless steel, ASTM 316L
Shaft	Stainless steel, ASTM/AISI 431
Oil housing	Stainless steel, ASTM 316L
Lifting device	Stainless steel, ASTM 316L
Hydraulic unit	Stainless steel, ASTM 316L
Hydraulic accessories	Stainless steel, ASTM 316L
Fixing plate	Stainless steel, ASTM 316L
Oil	Paraffin oil ISO VG32
O-rings	Fluorinated rubber

2.2 Surface treatment

Stainless steel parts are blasted to a dull gray surface.

2.3 Mechanical face seals

The inner seal uses the patented Active Seal technology, which is a zero leakage seal, allowing no liquid to penetrate from the buffer fluid compartment to the stator housing.

	Inner seal	Outer seal
Standard	Corrosion resistant cemented carbide (WCCR)/ Aluminum oxide (Al_2O_3)	WCCR / WCCR
Optional	WCCR / Al_2O_3	Silicon carbide (RSiC) / RSiC

2.4 Drive unit data

The drive unit includes a synchronous motor with IE4 equivalent efficiency.

NOTICE:

Do not connect a starter or an external Variable Frequency Drive (VFD) to this unit.

Feature	Description
Input frequency	50–60 Hz
Input supply	3–phase, 380–480 V
Maximum starts for each hour	Mixer only: 60 Mixer with gateway or controller: 240
Design in applicable parts	According to IEC 60034–1
Voltage variation	• Continuously running: Maximum ±5% • Intermittently running: Maximum ±10%
Voltage imbalance between the phases	Maximum of 2%
Stator insulation class	In accordance with class H (180°C, 356°F)
Total harmonic distortion (THD) at full load	< 27%

Motor encapsulation

Motor encapsulation is in accordance with IP68.

Motor rating

Table 1: Propeller diameter: 580 mm (22.8 in)

Rated power (kW)	Rated power (Hp)	Voltage (V) / Rated current (A)	Voltage (V) / Starting current (A)	Power factor	Stator housing unit (part no)	
					Standard version	Explosion-proof version
1.1	1.5	380/2.5-480/1.9	380/2.5-480/1.9	0.7135	810 62 00	810 62 05
1.5	2.0	380/3.2-480/2.5	380/3.2-480/2.5	0.8525	810 62 04	810 62 05
2.2	3.0	380/4.6-480/3.6	380/4.6-480/3.6	0.9045	810 62 04	810 62 05

Table 2: Propeller diameter: 370 mm (14.6 in)

Rated power (kW)	Rated power (Hp)	Voltage (V) / Rated current (A)	Voltage (V) / Starting current (A)	Power factor	Stator housing unit (part no)
1.1	1.5	380/2.3-480/1.9	380/2.3-480/1.9	0.778	810 62 00
1.5	2.0	380/3.2-480/2.5	380/3.2-480/2.5	0.7979	810 62 00
2.2	3.0	380/4.6-480/3.6	380/4.6-480/3.6	0.9109	810 62 00
3.0	4.0	380/6.5-480/5.1	380/6.5-480/5.1	0.8328	810 62 06

For more information about available propeller diameters, see *Product design* on page 2.

2.5 Thrust data

Performance measurement standard

Performance according to ISO 21630:2007.

Table 3: Propeller diameter 580 mm (22.8 in)

Rated shaft power, kW	Maximum thrust, N	Maximum Input power, kW
1.1	440	1.12
1.5	670	1.57
2.2	870	2.41

Table 4: Propeller diameter 370 mm (14.6 in)

Rated shaft power, kW	Maximum thrust, N	Maximum Input power, kW
1.1	380	1.09
1.5	510	1.68
2.2	670	2.64
3.0	790	3.05

2.6 Application limits

Data	Description
Liquid temperature	Maximum 40°C (104°F)
Liquid density	1100 kg/m³ (9.2 lb for each US gal) maximum
pH of the mixed liquid	1–12
Depth of immersion	Maximum 20 m (65 ft)

2.7 Dimensions and weight

For more information, search for the dimensional drawing on the *Xylect* website.

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Visit our Web site for the latest version of this document and more information
The original instruction is in English. All non-English instructions are translations of the original instruction.

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