



SR 4410, SR 4430, SR 4460, 50 Hz

Technical Specification

Product Description

Usage

Mixer with two blade propeller and reduction gear. Intended for mixing liquid and sludge containing fibres and solids where very high thrust in relation to consumed power is wanted. The mixer is designed to be operated completely immersed in the liquid.

Denomination

| Standard version | Explosion proof version |
|------------------|-------------------------|
| 4410.011 | 4410.090 |
| 4430.010 | 4430.090 |
| 4460.010 | 4460.090 |

Installation

Tripod guide bar system, 100×100 mm (4×4 inches), or 150×100 mm (4×6 inches)

Application limits

| Feature | Description |
|--------------------|--|
| Liquid temperature | <ul style="list-style-type: none"> Maximum 40°C, (104°F) Optional configuration up to 60°C, (140°F). |
| Liquid viscosity | Maximum 5000 cp |
| pH | 6 - 11 |
| Depth of immersion | Maximum 20 m (65 ft) |

Motor data

| Feature | Description |
|--------------------------------------|--|
| Motor type | 4410: Squirrel-cage 4- or 6-pole induction motor 4430: Squirrel-cage 2- or 4-pole induction motor 4460: Squirrel-cage 2- or 4-pole induction motor |
| Frequency | 50 Hz |
| Supply | 3-phase |
| Starting method | <ul style="list-style-type: none"> Direct on-line Star-delta VFD |
| Maximum starts per hour | 30 evenly-spaced starts per hour |
| Voltage variation | <ul style="list-style-type: none"> Continuously running: Maximum ±5% Intermittently running: Maximum ±10% |
| Voltage imbalance between the phases | Maximum 2% |
| Stator insulation | In accordance with class H (180°C, 356°F), trickle impregnated |

Cables

- SUBCAB® heavy-duty submersible cable

Monitoring equipment

- Thermal contacts opening at 125°C, (257°F)
- Leakage sensor in stator housing (FLS), optional
- Leakage sensor in oil housing (CLS), optional

Materials

| Item | Material |
|-------------------|--|
| Gear housing | Cast iron, ASTM 35B |
| Stator housing | Cast iron, ASTM 35B |
| Oil housing | Cast iron, ASTM 35B |
| Shaft | Stainless steel, ASTM/AISI 431 |
| Propeller | Reinforced polyurethane plastic |
| Hub | Cast iron, ASTM 35B |
| Lifting device | Stainless steel ASTM 316L |
| Stand unit | Stainless steel ASTM 316L |
| Oil, oil housing | Paraffin oil ISO VG32 |
| Oil, gear housing | <ul style="list-style-type: none"> • Mineral oil with additives, viscosity close to ISO VG 220 • 4460 optional configuration up to 60°C (140°F): Mineral oil with additives, viscosity close to ISO VG 680 |
| O-rings | Nitrile rubber |

Surface treatment

Finishing coat:

- Two pack oxiran ester paint
- Optional version: Corrosion resistant primer
- Optional version: Wear resistant epoxy paint

Color: Navy Grey on cast iron parts

Mechanical face seals

| Inner seal | Outer seal |
|------------|--|
| Lip seal | Corrosion resistant cemented carbide (WCCR) / WCCR |

Hydraulic unit

Thin-sectioned, non-clogging propeller with double-curved blades made of reinforced polyurethane plastic. Cast iron hub.

Dimensions and weight

See the dimensional drawing.

Options and accessories

- Installation systems
- Lifting equipment
- Special cables
- Zinc anodes
- Electrical equipment such as control panels, monitoring equipment, variable frequency drives

Motor Rating

Table 1: 400V, 50 Hz, 3-phase

| Product | Propeller diameter, maximum mm | Rotations per minute, rpm | Poles | Rated Power, kW | Rated Current, A | Starting Current, A | Power factor $\cos\varphi$ |
|---------|--------------------------------|---------------------------|-------|-----------------|------------------|---------------------|----------------------------|
| 4410 | 2500 | 1385 | 4 | 2.3 | 5.5 | 24 | 0.82 |
| 4410 | 2500 | 930 | 6 | 0.9 | 2.7 | 10 | 0.67 |
| 4430 | 2500 | 1420 | 4 | 4.3 | 9.1 | 38 | 0.84 |
| 4430 | 1600 | 2875 | 2 | 4.4 | 8.5 | 65 | 0.92 |
| 4460 | 2500 | 1455 | 4 | 5.7 | 12 | 78 | 0.84 |
| 4460 | 1400 | 2914 | 2 | 7.5 | 14 | 114 | 0.91 |

Thrust Data

SR 4410

Data in clear water and open sea conditions. Minimum power margin 12%.

Table 2: 50 Hz, 4-pole 3-phase, 2.3 kW

| RPM | 25 | | | 27 | | | 29 | | | 31 | | |
|------------------------|----------------|-------------|------------|----------------|-------------|------------|----------------|-------------|------------|----------------|-------------|------------|
| Propeller diameter, mm | F_{thrust} N | P_{in} kW | Prop. code | F_{thrust} N | P_{in} kW | Prop. code | F_{thrust} N | P_{in} kW | Prop. code | F_{thrust} N | P_{in} kW | Prop. code |
| 2500 | 1710 | 1.50 | 440 | 1910 | 1.77 | 400 | 2200 | 2.19 | 450 | 2410 | 2.49 | 410 |
| 2200 | 1310 | 1.32 | 441 | 1490 | 1.60 | 401 | 1730 | 2.03 | 451 | 1980 | 2.42 | 411 |
| 2000 | 1190 | 1.21 | 442 | 1340 | 1.45 | 402 | 1550 | 1.82 | 452 | 1750 | 2.22 | 412 |
| 1800 | 890 | 1.00 | 443 | 1030 | 1.18 | 403 | 1200 | 1.46 | 453 | 1350 | 1.77 | 413 |
| 1700 | 780 | 0.94 | 444 | 890 | 1.06 | 404 | 1030 | 1.28 | 454 | 1160 | 1.54 | 414 |
| 1600 | 670 | 0.88 | 445 | 740 | 0.95 | 405 | 850 | 1.11 | 455 | 970 | 1.31 | 415 |
| 1500 | 560 | 0.81 | 446 | 630 | 0.86 | 406 | 740 | 1.00 | 456 | 840 | 1.17 | 416 |
| 1400 | 450 | 0.74 | 447 | 510 | 0.79 | 407 | 620 | 0.90 | 457 | 700 | 1.03 | 417 |

Table 3: 50 Hz, 4-pole 3-phase, 2.3 kW

| RPM | 34 | | | 38 | | | 40 | | | 45 | | |
|------------------------|----------------|-------------|------------|----------------|-------------|------------|----------------|-------------|------------|----------------|-------------|------------|
| Propeller diameter, mm | F_{thrust} N | P_{in} kW | Prop. code | F_{thrust} N | P_{in} kW | Prop. code | F_{thrust} N | P_{in} kW | Prop. code | F_{thrust} N | P_{in} kW | Prop. code |
| 2000 | 2060 | 2.70 | 462 | - | - | - | - | - | - | - | - | - |
| 1800 | 1570 | 2.27 | 463 | - | - | - | - | - | - | - | - | - |
| 1700 | 1370 | 2.00 | 464 | 1660 | 2.57 | 424 | - | - | - | - | - | - |
| 1600 | 1160 | 1.70 | 465 | 1410 | 2.32 | 425 | 1540 | 2.53 | 475 | - | - | - |
| 1500 | 1000 | 1.50 | 466 | 1230 | 2.07 | 426 | 1330 | 2.32 | 476 | - | - | - |

| RPM | 34 | | | 38 | | | 40 | | | 45 | | |
|------------------------|-----------------------|--------------------|------------|-----------------------|--------------------|------------|-----------------------|--------------------|------------|-----------------------|--------------------|------------|
| Propeller diameter, mm | F _{thrust} N | P _{in} kW | Prop. code | F _{thrust} N | P _{in} kW | Prop. code | F _{thrust} N | P _{in} kW | Prop. code | F _{thrust} N | P _{in} kW | Prop. code |
| 1400 | 840 | 1.29 | 467 | 1040 | 1.77 | 427 | 1110 | 2.00 | 477 | 1370 | 2.58 | 437 |

Table 4: 50 Hz 6-pole 3-phase, 0.9 kW

| RPM | 17 | | | 18 | | | 19 | | | 21 | | |
|------------------------|-----------------------|--------------------|------------|-----------------------|--------------------|------------|-----------------------|--------------------|------------|-----------------------|--------------------|------------|
| Propeller diameter, mm | F _{thrust} N | P _{in} kW | Prop. code | F _{thrust} N | P _{in} kW | Prop. code | F _{thrust} N | P _{in} kW | Prop. code | F _{thrust} N | P _{in} kW | Prop. code |
| 2500 | 890 | 0.71 | 640 | 980 | 0.78 | 600 | 1110 | 0.88 | 650 | 1220 | 0.97 | 610 |
| 2200 | 650 | 0.62 | 641 | 730 | 0.68 | 601 | 830 | 0.77 | 651 | 920 | 0.85 | 611 |
| 2000 | 590 | 0.56 | 642 | 660 | 0.62 | 602 | 750 | 0.70 | 652 | 830 | 0.77 | 612 |
| 1800 | 440 | 0.49 | 643 | 490 | 0.54 | 603 | 560 | 0.60 | 653 | 620 | 0.65 | 613 |
| 1700 | 400 | 0.48 | 644 | 450 | 0.52 | 604 | 510 | 0.58 | 654 | 570 | 0.64 | 614 |
| 1600 | 370 | 0.47 | 645 | 410 | 0.51 | 605 | 460 | 0.57 | 655 | 510 | 0.63 | 615 |
| 1500 | 290 | 0.42 | 646 | 330 | 0.46 | 606 | 380 | 0.51 | 656 | 420 | 0.56 | 616 |
| 1400 | 220 | 0.37 | 647 | 250 | 0.40 | 607 | 290 | 0.44 | 657 | 330 | 0.48 | 617 |

Table 5: 50 Hz 6-pole 3-phase, 0.9 kW

| RPM | 23 | | | 26 | | |
|------------------------|-----------------------|--------------------|------------|-----------------------|--------------------|------------|
| Propeller diameter, mm | F _{thrust} N | P _{in} kW | Prop. code | F _{thrust} N | P _{in} kW | Prop. code |
| 2500 | 1390 | 1.11 | 660 | - | - | - |
| 2200 | 1060 | 1.00 | 661 | - | - | - |
| 2000 | 970 | 0.93 | 662 | - | - | - |
| 1800 | 720 | 0.76 | 663 | 900 | 0.99 | 623 |
| 1700 | 650 | 0.74 | 664 | 790 | 0.93 | 624 |
| 1600 | 590 | 0.72 | 665 | 680 | 0.84 | 625 |
| 1500 | 490 | 0.63 | 666 | 580 | 0.74 | 626 |
| 1400 | 390 | 0.55 | 667 | 470 | 0.64 | 627 |

SR 4430

Data in clear water and open sea conditions. Minimum power margin 12%.

Table 6: 50 Hz, 4-pole 3-phase, 4.3 kW

| RPM | 25 | | | 27 | | | 30 | | | 32 | | |
|------------------------|-----------------------|--------------------|------------|-----------------------|--------------------|------------|-----------------------|--------------------|------------|-----------------------|--------------------|------------|
| Propeller diameter, mm | F _{thrust} N | P _{in} kW | Prop. code | F _{thrust} N | P _{in} kW | Prop. code | F _{thrust} N | P _{in} kW | Prop. code | F _{thrust} N | P _{in} kW | Prop. code |
| 2500 | 1750 | 1.47 | 440 | 1960 | 1.7 | 400 | 2270 | 2.06 | 450 | 2530 | 2.44 | 410 |
| 2200 | 1340 | 1.32 | 441 | 1540 | 1.56 | 401 | 1800 | 1.93 | 451 | 2080 | 2.34 | 411 |
| 2000 | 1210 | 1.22 | 442 | 1370 | 1.43 | 402 | 1600 | 1.75 | 452 | 1830 | 2.1 | 412 |
| 1800 | 900 | 1.01 | 443 | 1040 | 1.18 | 403 | 1220 | 1.44 | 453 | 1390 | 1.71 | 413 |
| 1700 | 790 | 0.94 | 444 | 900 | 1.07 | 404 | 1040 | 1.28 | 454 | 1190 | 1.51 | 414 |

| RPM | 25 | | | 27 | | | 30 | | | 32 | | |
|------------------------|-----------------------|--------------------|------------|-----------------------|--------------------|------------|-----------------------|--------------------|------------|-----------------------|--------------------|------------|
| Propeller diameter, mm | F _{thrust} N | P _{in} kW | Prop. code | F _{thrust} N | P _{in} kW | Prop. code | F _{thrust} N | P _{in} kW | Prop. code | F _{thrust} N | P _{in} kW | Prop. code |
| 1600 | 680 | 0.87 | 445 | 750 | 0.95 | 405 | 860 | 1.12 | 455 | 990 | 1.31 | 415 |
| 1500 | 570 | 0.79 | 446 | 630 | 0.86 | 406 | 750 | 1.01 | 456 | 850 | 1.17 | 416 |
| 1400 | 460 | 0.71 | 447 | 510 | 0.76 | 407 | 630 | 0.91 | 457 | 710 | 1.04 | 417 |

Table 7: 50 Hz, 4-pole 3-phase, 4.3 kW

| RPM | 35 | | | 40 | | | 41 | | | 46 | | |
|------------------------|-----------------------|--------------------|------------|-----------------------|--------------------|------------|-----------------------|--------------------|------------|-----------------------|--------------------|------------|
| Propeller diameter, mm | F _{thrust} N | P _{in} kW | Prop. code | F _{thrust} N | P _{in} kW | Prop. code | F _{thrust} N | P _{in} kW | Prop. code | F _{thrust} N | P _{in} kW | Prop. code |
| 2500 | 2960 | 3.10 | 460 | 3450 | 4.02 | 420 | 3620 | 4.41 | 470 | - | - | - |
| 2200 | 2470 | 3.06 | 461 | 3030 | 4.23 | 421 | 3250 | 4.76 | 471 | - | - | - |
| 2000 | 2170 | 2.73 | 462 | 2600 | 3.73 | 422 | 2790 | 4.19 | 472 | - | - | - |
| 1800 | 1640 | 2.16 | 463 | 2010 | 2.95 | 423 | 2170 | 3.34 | 473 | 2600 | 4.49 | 433 |
| 1700 | 1420 | 1.91 | 464 | 1750 | 2.58 | 424 | 1900 | 2.93 | 474 | 2310 | 4.00 | 434 |
| 1600 | 1200 | 1.66 | 465 | 1490 | 2.22 | 425 | 1630 | 2.54 | 475 | 2010 | 3.50 | 435 |
| 1500 | 1030 | 1.47 | 466 | 1280 | 1.97 | 426 | 1390 | 2.21 | 476 | 1720 | 3.04 | 436 |
| 1400 | 850 | 1.29 | 467 | 1070 | 1.71 | 427 | 1150 | 1.90 | 477 | 1440 | 2.58 | 437 |

Table 8: 50 Hz, 2-pole 3-phase, 4.4 kW

| RPM | 50 | | | 54 | | |
|------------------------|-----------------------|--------------------|------------|-----------------------|--------------------|------------|
| Propeller diameter, mm | F _{thrust} N | P _{in} kW | Prop. code | F _{thrust} N | P _{in} kW | Prop. code |
| 1600 | 2420 | 4.63 | 245 | - | - | - |
| 1500 | 2040 | 4.07 | 246 | - | - | - |
| 1400 | 1650 | 3.45 | 247 | 1790 | 4.01 | 207 |

SR 4460

Data in clear water and open sea conditions. Minimum power margin 12%.

Table 9: 50 Hz 4-pole 3-phase, 5.7 kW

| RPM | 36 | | | 40 | | | 42 | | | 47 | | |
|------------------------|-----------------------|--------------------|------------|-----------------------|--------------------|------------|-----------------------|--------------------|------------|-----------------------|--------------------|------------|
| Propeller diameter, mm | F _{thrust} N | P _{in} kW | Prop. code | F _{thrust} N | P _{in} kW | Prop. code | F _{thrust} N | P _{in} kW | Prop. code | F _{thrust} N | P _{in} kW | Prop. code |
| 2500 | 3000 | 3.3 | 460 | 3600 | 4.1 | 420 | 3900 | 4.5 | 470 | 4700 | 6.0 | 430 |
| 2200 | 2500 | 3.3 | 461 | 3100 | 4.4 | 421 | 3400 | 5.0 | 471 | 4300 | 6.7 | 431 |
| 2000 | 2100 | 2.9 | 462 | 2500 | 3.9 | 422 | 2700 | 4.3 | 472 | 3400 | 5.7 | 432 |
| 1800 | 1600 | 2.4 | 463 | 2000 | 3.1 | 423 | 2200 | 3.5 | 473 | 2700 | 4.6 | 433 |

| RPM | 36 | | | 40 | | | 42 | | | 47 | | |
|------------------------|-----------------------|--------------------|------------|-----------------------|--------------------|------------|-----------------------|--------------------|------------|-----------------------|--------------------|------------|
| Propeller diameter, mm | F _{thrust} N | P _{in} kW | Prop. code | F _{thrust} N | P _{in} kW | Prop. code | F _{thrust} N | P _{in} kW | Prop. code | F _{thrust} N | P _{in} kW | Prop. code |
| 1700 | 1400 | 2.1 | 464 | 1700 | 2.8 | 424 | 1900 | 3.1 | 474 | 2400 | 4.1 | 434 |

Table 10: 50 Hz 2-pole 3-phase, 7.5 kW

| RPM | 69 | | |
|------------------------|-----------------------|--------------------|------------|
| Propeller diameter, mm | F _{thrust} N | P _{in} kW | Prop. code |
| 1400 | 3000 | 7.6 | 287 |

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