

Looking ahead,
going beyond expectations
Ahead > Beyond



BSM 3S - Submersible motor

Databook 50/60Hz



General information

3S motors construction is completely manufactured of stainless steel.

3S motors, which are wound with PE2+PA insulated wires.

General features

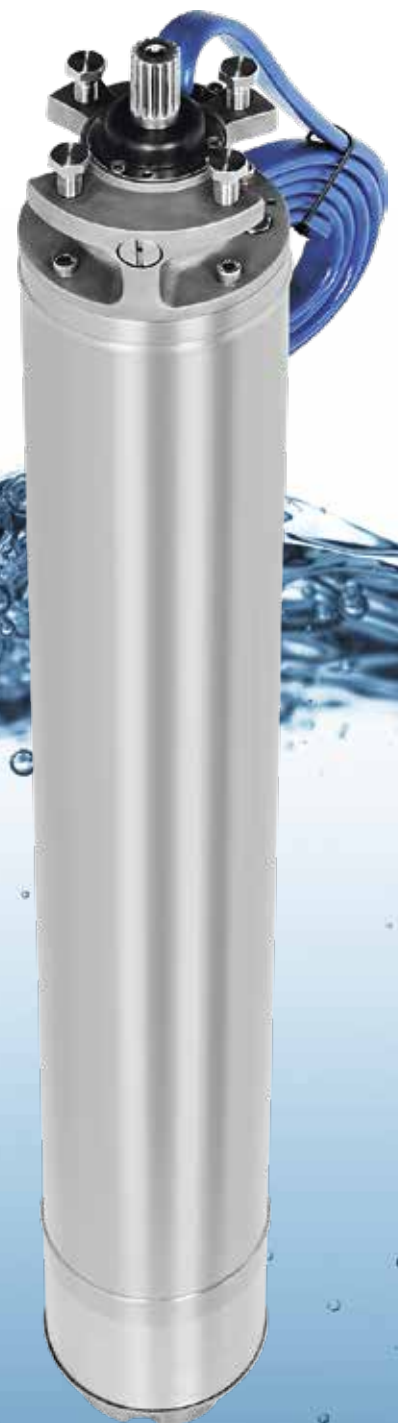
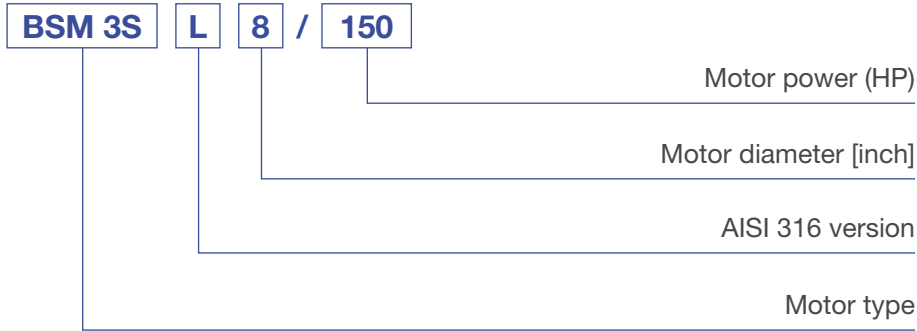
- High quality PE2+PA winding wires
- CCW direction of rotation
- Our motors can be operated horizontally
- Availability to be operated by Soft-Starter
- Flange with NEMA standards
- Standard dual flange
- Water coolant system
- Our rewindable motors provides long service life
- High efficiency provides operation cost savings
- Variable operation revolutions by frequency converter over 30Hz
- Standard voltage 380/460V - 50/60Hz
(Allowable voltage tolerance $\pm\%$ 10)
- Filter Check Valve

Main features

- Corrosion Resistant Construction
- Enhanced Cooling Properties



Type key



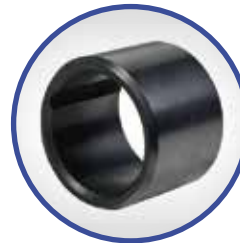
Pressure Balancing Checkvalve

Checkvalve controls the pressure changes inside the motor. When the pressure increases, it throws water out of the motor. When the pressure drops, it filtrates the water inside well and gets it inside the motor by the help of this checkvalve to balance the pressure inside. Thus why pressure differences inside motor never causes membrane under motor to blow up.



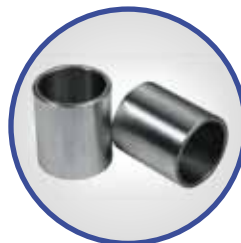
Water Lubricated Radial Carbon Bearings

Radial carbon bearings, which have channels in its structure that makes it possible to get lubricated by water easily, provides precise bearing of rotor shaft at up and down.



Chrome-plated Bearing Collet

Chrome-plated and precisely machined bearing collets which are located in the radial bearings operating area, have great importance for bearing the rotor.



Adjustment Screw

Standard shaft height can be precisely adjusted by the adjustment screw on the thrust bearing base.



Slinger (Sand Guard)

Slinger helps to prevent the sand inside the water of the well entering in mechanical seal and through mechanical seal to inside of the motor.





PT100 Overheating Protection

By connecting the PT100 thermal sensors to the slot that is standardly placed on upper bearing body, motor temperature can be easily measured.



Up-Thrust Ring

Provides safe operation conditions for motor by absorbing Up-Thrust loads with its machined surface and water channels on it.



Membrane

Membrane minimizes the expansion pressure that is caused by heating of cooling water's inside the motor



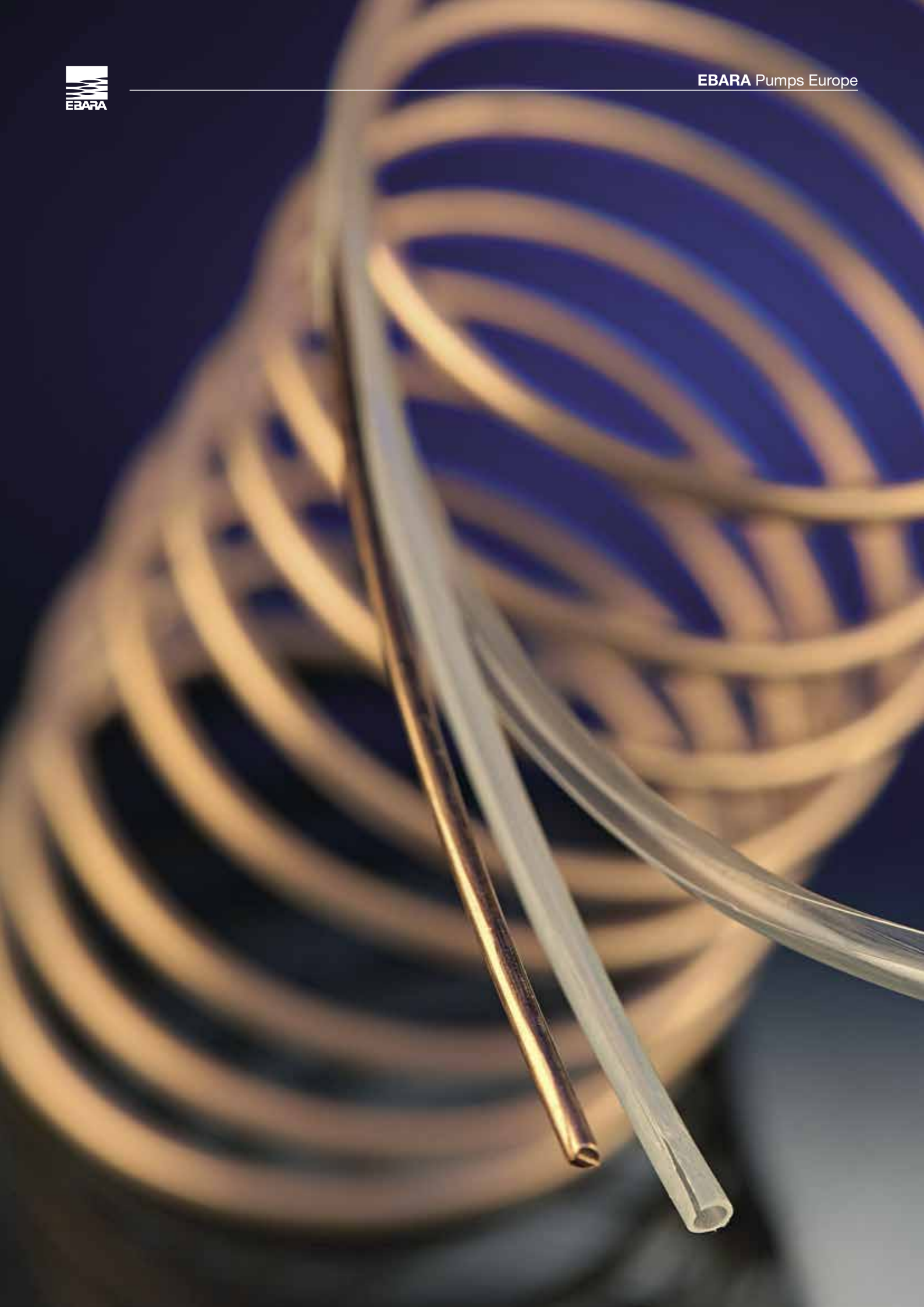
Cable Connection

Preventing the water inside the motor to run through the cable and reach connection parts of power cables by specially designed cable seals.



Heavy Duty Bearings With High Thrust Capacity

Heavy duty bearings provides the option to revolve both sides, has the capacity to carry high thrust load.



PE2+PA

A standard of BSM 3S Motors

Our submersible motors get their power from the PE2+PA winding wire used as standard. This wire, consisting of a single copper conductor, has a very high insulation resistance. PE2 (Polyethylene) provides electrical isolation, PA (Polyamide) provides mechanical protection. Increased heat resistance is achieved by cross-linking of polyethylene.

At the same time it ensures trouble-free operation and a long service life of the motors for many years.

Longer Life



High resistance against voltage fluctuation



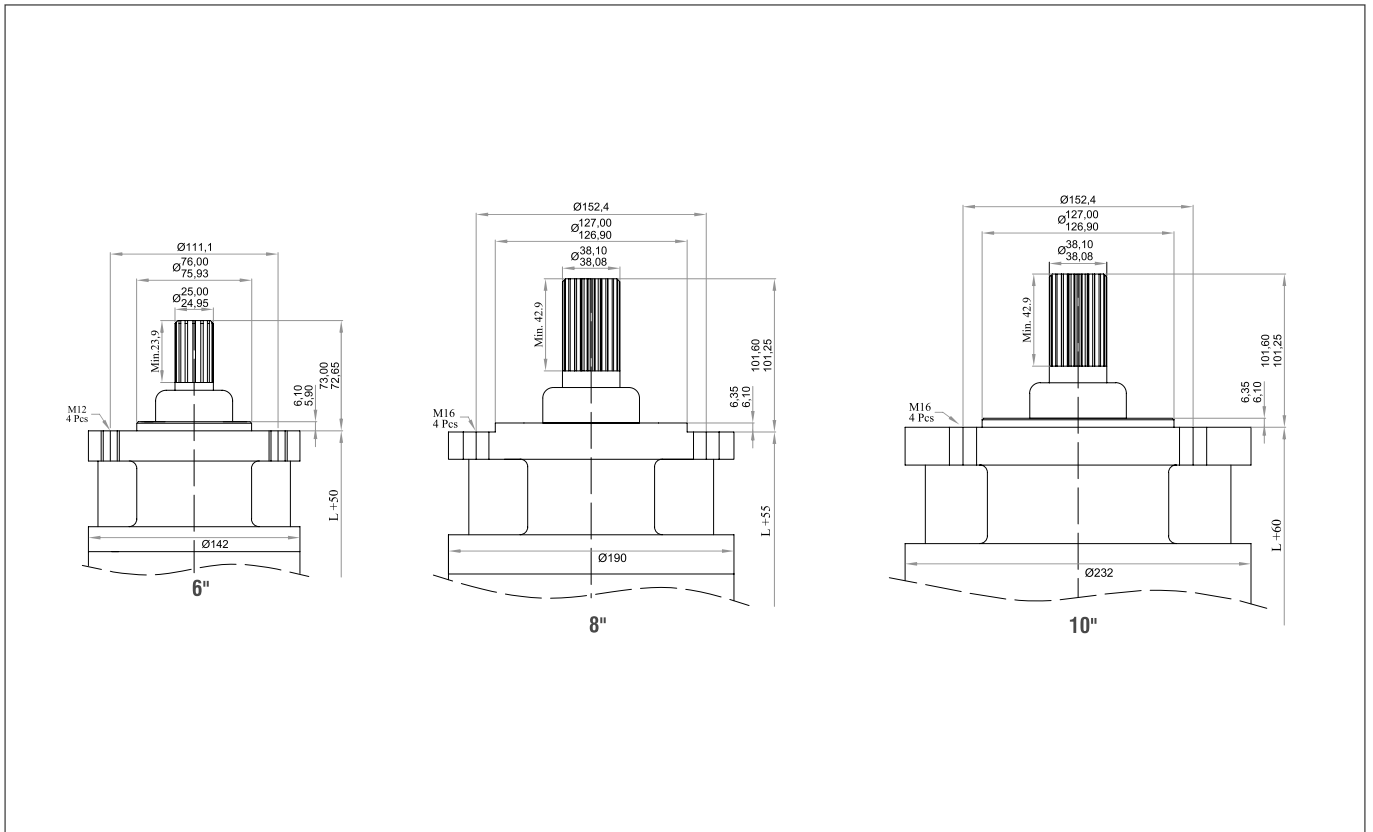
Gives more safety factor than standard motors



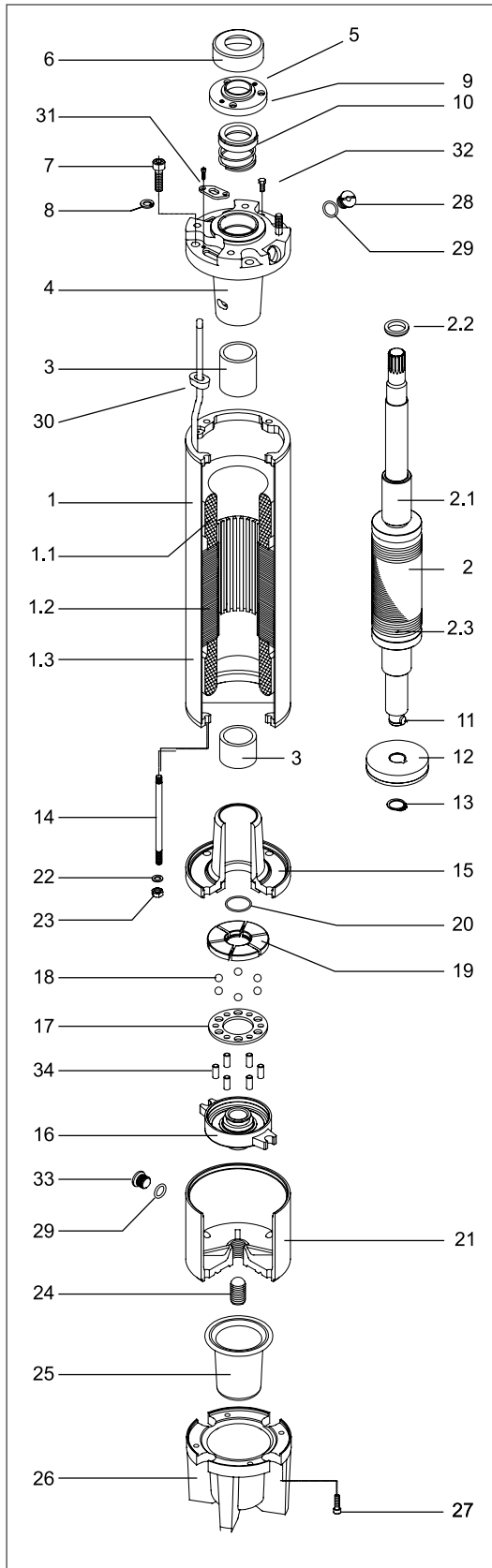
Technical Data

| | | | |
|---------------------------------|---------------------------|------------------|------------------------|
| Tensile Strength | Standard: IEC 60811-1-1 | 23°C (±5) | ≥ 10 N/mm ² |
| Elongation | Standard: IEC 60811-1-1 | 23°C (±5) | ≥ %100 |
| Dielectric constant | Standard: DIN 53483 | 20°C / 800 Hz | 2,3 |
| Specific insulation resistance | Standard: IEC 60093 | 20°C | 10 Ω cm |
| Dielectric breakdown strength | Standard: DIN VDE 0303-21 | 20°C/50 Hz | 70 kV/mm |
| Tensile strength after aging | | 80°C / 7x24 hour | ≥ 10 N/mm ² |
| Elongation at break after aging | | 80°C / 7x24 hour | ≥ %100 |

Flange connection standards



Sectional view



| N° | Part name | Material |
|-----|-----------------------------|------------------------|
| 1 | Stator | - |
| 1.1 | Winding wire | PE2 / PA |
| 1.2 | Stator package | M700-50A/Magnetic Seal |
| 1.3 | Stator shell | AISI 304 |
| 2 | Rotor | - |
| 2.1 | Shaft sleeve | St 37 (Coated CrNi) |
| 2.2 | Balance ring | St 37 |
| 2.3 | Copper ring | Cu |
| 3 | Radial bearing | Carbon |
| 4 | Upper bearing body | GG20-22 |
| 5 | Bushing | Bronze |
| 6 | Slinger (sand guard) | NBR_EPDM |
| 7 | Hexagon socket cap screws | Inox |
| 8 | Copper ring | Cu |
| 9 | Cover seal | AISI 420 |
| 10 | Mechanical seal | SiC SiC |
| 11 | Axial thrust bearing key | AISI 420 |
| 12 | Axial thrust bearing | Carbon With Antimony |
| 13 | Retaining ring | St 37 |
| 14 | Tie rod | Inox |
| 15 | Lower bearing body | GG20-22 |
| 16 | Thrust bearing support | GG20-22 |
| 17 | Ball holder | St 37 (Coated Cr+3) |
| 18 | Thrust bearing ball | Inox |
| 19 | Tilting pads | AISI 420 |
| 20 | O-ring | NBR 70 |
| 21 | Thrust bearing body | GG20 |
| 22 | Copper ring | Cu |
| 23 | Nut | Inox |
| 24 | Screw (thrust bearing base) | Inox |
| 25 | Membrane | NBR-EPDM |
| 26 | Membrane body | GG22 |
| 27 | Hexagon socket cap screws | Inox |
| 28 | Check-valve | Bronze |
| 29 | O-ring | NBR 70 |
| 30 | Cable seal | NBR |
| 31 | Seal cover | AISI 304 |
| 32 | Nut | Inox |
| 33 | Plush (r 3/8") | Bronze |
| 34 | Ball holder pins | Inox |

Start of motor

Direct-On-Line Start (D.O.L)

| HP | Cable size | | | | | | | | | | | |
|------|------------|-------|-----|-----|------|------|------|------|------|------|------|-------|
| | 3x1,5 | 3x2,5 | 3x4 | 3x6 | 3x10 | 3x16 | 3x25 | 3x35 | 3x50 | 3x70 | 3x95 | 3x120 |
| 5,5 | 65 | 108 | 172 | 258 | 431 | 689 | | | | | | |
| 7,5 | 48 | 80 | 129 | 193 | 322 | 515 | | | | | | |
| 10 | 38 | 64 | 102 | 153 | 256 | 409 | 639 | | | | | |
| 12,5 | | 52 | 83 | 125 | 209 | 334 | 522 | 730 | | | | |
| 15 | | 45 | 72 | 109 | 181 | 289 | 452 | 633 | | | | |
| 17,5 | | | 61 | 92 | 153 | 245 | 383 | 536 | 765 | | | |
| 20 | | | 52 | 79 | 131 | 210 | 327 | 458 | 655 | | | |
| 25 | | | | | 106 | 170 | 266 | 372 | 531 | 744 | | |
| 30 | | | | | 90 | 145 | 226 | 316 | 452 | 633 | | |
| 35 | | | | | 76 | 122 | 190 | 266 | 380 | 532 | 722 | |
| 40 | | | | | 67 | 107 | 168 | 235 | 336 | 470 | 638 | |
| 50 | | | | | | 89 | 139 | 195 | 279 | 390 | 529 | |
| 60 | | | | | | | 115 | 160 | 229 | 321 | 434 | 548 |
| 70 | | | | | | | | 139 | 198 | 278 | 377 | 476 |
| 75 | | | | | | | | 131 | 187 | 262 | 356 | 450 |
| 80 | | | | | | | | 120 | 172 | 241 | 326 | 411 |
| 90 | | | | | | | | | 154 | 215 | 292 | 368 |
| 100 | | | | | | | | | 132 | 192 | 261 | 329 |
| 110 | | | | | | | | | 127 | 178 | 242 | 305 |
| 125 | | | | | | | | | | 157 | 213 | 269 |
| 135 | | | | | | | | | | 145 | 197 | 249 |
| 150 | | | | | | | | | | | 182 | 230 |

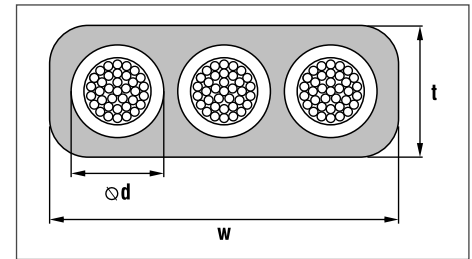
Star-Delta Start

| HP | Cable size | | | | | | | | | | | |
|------|------------|-------|-----|-----|------|------|------|------|------|------|------|-------|
| | 3x1,5 | 3x2,5 | 3x4 | 3x6 | 3x10 | 3x16 | 3x25 | 3x35 | 3x50 | 3x70 | 3x95 | 3x120 |
| 5,5 | 97 | 161 | 258 | 388 | 646 | | | | | | | |
| 7,5 | 72 | 121 | 193 | 290 | 483 | 773 | | | | | | |
| 10 | 57 | 96 | 153 | 230 | 383 | 613 | 958 | | | | | |
| 12,5 | 47 | 78 | 125 | 188 | 313 | 501 | 783 | | | | | |
| 15 | 41 | 68 | 109 | 163 | 271 | 434 | 678 | 949 | | | | |
| 17,5 | 34 | 57 | 92 | 138 | 230 | 367 | 574 | 803 | 982 | | | |
| 20 | 29 | 49 | 79 | 118 | 196 | 314 | 491 | 688 | 797 | | | |
| 25 | | 40 | 64 | 96 | 159 | 255 | 398 | 558 | 678 | | | |
| 30 | | | 54 | 81 | 136 | 217 | 339 | 475 | 570 | 949 | | |
| 35 | | | 46 | 68 | 114 | 182 | 285 | 399 | 503 | 798 | | |
| 40 | | | | 60 | 101 | 161 | 252 | 352 | 418 | 705 | | |
| 50 | | | | | 84 | 134 | 209 | 293 | 344 | 585 | 794 | |
| 60 | | | | | 69 | 110 | 172 | 241 | 297 | 481 | 653 | |
| 70 | | | | | 59 | 95 | 149 | 208 | 281 | 416 | 565 | |
| 75 | | | | | | 90 | 141 | 197 | 258 | 394 | 534 | 675 |
| 80 | | | | | | 82 | 129 | 180 | 231 | 361 | 490 | 619 |
| 90 | | | | | | 74 | 115 | 162 | 206 | 323 | 439 | 554 |
| 100 | | | | | | | 103 | 144 | 191 | 289 | 392 | 495 |
| 110 | | | | | | | 95 | 134 | 168 | 267 | 363 | 458 |
| 125 | | | | | | | | 118 | 144 | 235 | 319 | 402 |
| 135 | | | | | | | | 109 | 133 | 218 | 295 | 371 |
| 150 | | | | | | | | | 123 | 201 | 273 | 344 |

Power cable info

Cable data

| Model | Size | Power | | D.O.L. [mm ²] | S.D. [mm ²] | Axial Thrust [kN] | Start [start/h] | Length [m] |
|---------------|------|-------|------|------------------------------|----------------------------|----------------------|--------------------|---------------|
| | | kW | HP | | | | | |
| BSM 3S 6/5.5 | 6" | 4 | 5,5 | 4x2,5 | 4x2,5+3x2,5 | 20 | 20 | 4 |
| BSM 3S 6/7.5 | 6" | 5,5 | 7,5 | 4x2,5 | 4x2,5+3x2,5 | 20 | 20 | 4 |
| BSM 3S 6/10 | 6" | 7,5 | 10 | 4x2,5 | 4x2,5+3x2,5 | 20 | 20 | 4 |
| BSM 3S 6/12.5 | 6" | 9,3 | 12,5 | 4x2,5 | 4x2,5+3x2,5 | 20 | 20 | 4 |
| BSM 3S 6/15 | 6" | 11 | 15 | 4x4 | 4x2,5+3x2,5 | 20 | 20 | 4 |
| BSM 3S 6/17.5 | 6" | 13 | 17,5 | 4x4 | 4x2,5+3x2,5 | 20 | 20 | 4 |
| BSM 3S 6/20 | 6" | 15 | 20 | 4x4 | 4x2,5+3x2,5 | 20 | 20 | 4 |
| BSM 3S 6/25 | 6" | 18,5 | 25 | 4x6 | 4x4+3x4 | 20 | 20 | 4 |
| BSM 3S 6/30 | 6" | 22 | 30 | 4x6 | 4x4+3x4 | 20 | 20 | 4 |
| BSM 3S 6/35 | 6" | 26,5 | 35 | 4x10 | 4x6+3x6 | 26,5 | 15 | 4 |
| BSM 3S 6/40 | 6" | 30 | 40 | 4x10 | 4x6+3x6 | 26,5 | 15 | 4 |
| BSM 3S 6/50 | 6" | 37 | 50 | 3x16+1G16 | 4x10+3x10 | 26,5 | 15 | 4 |
| BSM 3S 6/60 | 6" | 45 | 60 | 3x16+1G16 | 4x10+3x10 | 26,5 | 15 | 4 |
| BSM 3S 8/40 | 8" | 30 | 40 | 4x16 | 4x10+3x10 | 45 | 15 | 4 |
| BSM 3S 8/50 | 8" | 37 | 50 | 4x16 | 4x10+3x10 | 45 | 15 | 4 |
| BSM 3S 8/60 | 8" | 45 | 60 | 4x16 | 4x10+3x10 | 45 | 15 | 4 |
| BSM 3S 8/70 | 8" | 52 | 70 | 4x16 | 4x10+3x10 | 45 | 15 | 4 |
| BSM 3S 8/75 | 8" | 55 | 75 | 4x16 | 4x10+3x10 | 45 | 15 | 4 |
| BSM 3S 8/80 | 8" | 60 | 80 | 4x16 | 4x10+3x10 | 45 | 15 | 4 |
| BSM 3S 8/90 | 8" | 67 | 90 | 4x16 | 4x10+3x10 | 45 | 15 | 4 |
| BSM 3S 8/100 | 8" | 75 | 100 | 3x25+1G25 | 4x16+3x16 | 45 | 15 | 4 |
| BSM 3S 10/110 | 10" | 81 | 110 | 3x25+1G25 | 4x16+3x16 | 75 | 10 | 4 |
| BSM 3S 10/125 | 10" | 92 | 125 | 3x25+1G25 | 4x16+3x16 | 75 | 10 | 4 |
| BSM 3S 10/150 | 10" | 110 | 150 | 3x35+1G35 | 3x25+3x25 | 75 | 10 | 4 |



Flat Cable Dimensions

| Type mm ² | Thickness (t) mm | Width (w) mm | Diameter (d) mm |
|-------------------------|---------------------|-----------------|--------------------|
| 3x2,5 | 6,4±0,2 | 15,0±0,3 | 3,6 |
| 3x4 | 7,1±0,5 | 16,5±0,5 | 4,1 |
| 3x6 | 8,0±0,5 | 18,3±0,5 | 4,6 |
| 3x10 | 8,8±0,5 | 21,8±0,5 | 6 |
| 3x16 | 10,5±0,5 | 25,4±0,5 | 7 |
| 3x25 | 12,0±0,5 | 33,0±0,5 | 9 |
| 3x35 | 13,5±1,0 | 34,5±1,0 | 10,1 |
| 4x2,5 | 6,4±0,2 | 18,0±0,3 | 3,6 |
| 4x4 | 7,1±0,5 | 20,2±0,5 | 4,1 |
| 4x6 | 8,0±0,5 | 22,4±0,5 | 4,6 |
| 4x10 | 8,8±0,5 | 28,0±0,5 | 6 |
| 4x16 | 10,5±0,5 | 33,7±0,5 | 7 |

220-230V cable sizes may vary

50/60 Hz - 380/400/415/440/460V

Voltage drop and cable power loss

To determine the cable section it should be considered that the voltage drop must not exceed %3.
The formulas used for voltage drop calculation are given below.

Direct Starter

1 cable

$$U_v = \frac{3,1 \times L \times I \times \cos\Phi}{q \times U} \quad q = \frac{3,1 \times L \times I \times \cos\Phi}{U_v \% \times U}$$

2 cables in parallel

$$U_v = \frac{1,55 \times L \times I \times \cos\Phi}{q \times U} \quad q = \frac{1,55 \times L \times I \times \cos\Phi}{U_v \% \times U}$$

Delta Star Starter

$$U_v = \frac{2,1 \times L \times I \times \cos\Phi}{q \times U} \quad q = \frac{2,1 \times L \times I \times \cos\Phi}{U_v \% \times U}$$

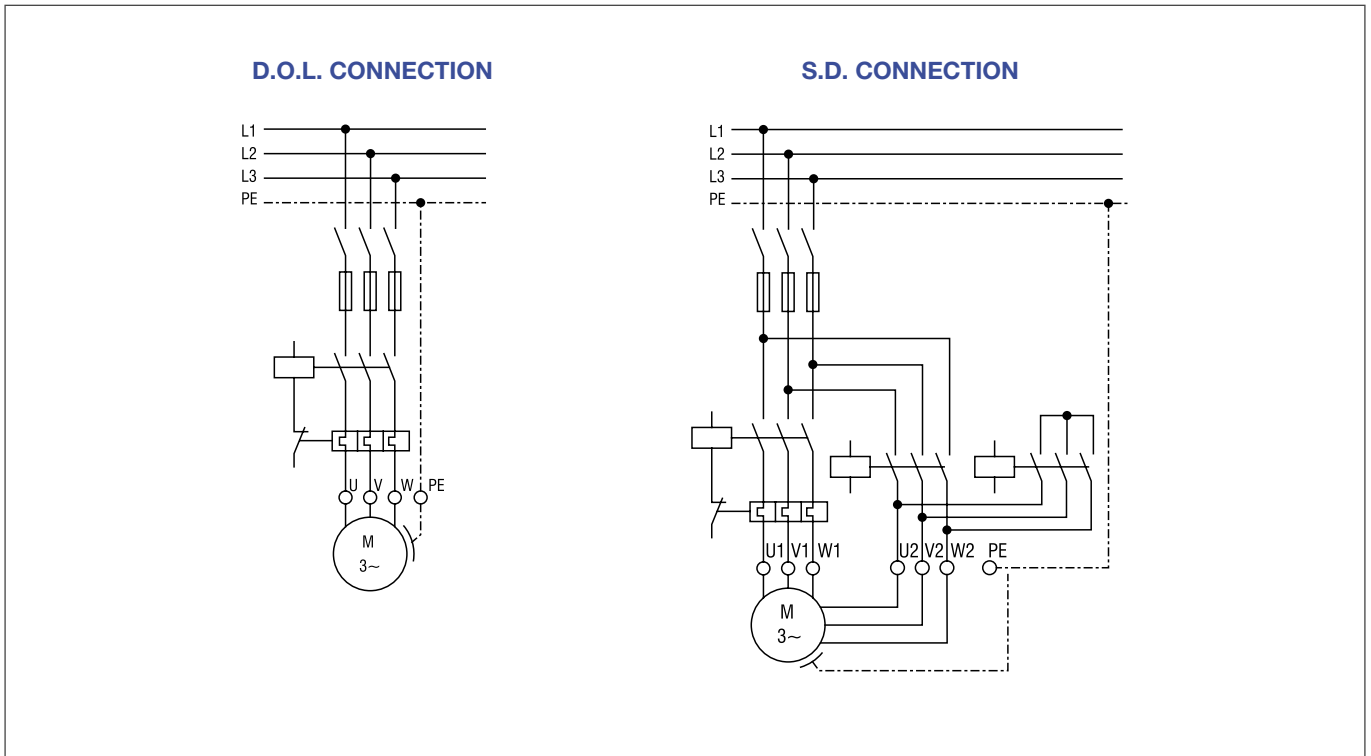
- L : Cable length (m)
- I : Current at nominal vol. (A)
- q : Conductor section (mm²)
- cosΦ : Power factor
- P_v : Power loss (%)
- U_v : Voltage drop (%)
- U : Nominal voltage (V)

The power loss along the feeling cable has to be calculated adjacent to

$$P_v = \frac{U_v}{\cos^2\Phi}$$

Power cable info

Wiring diagram

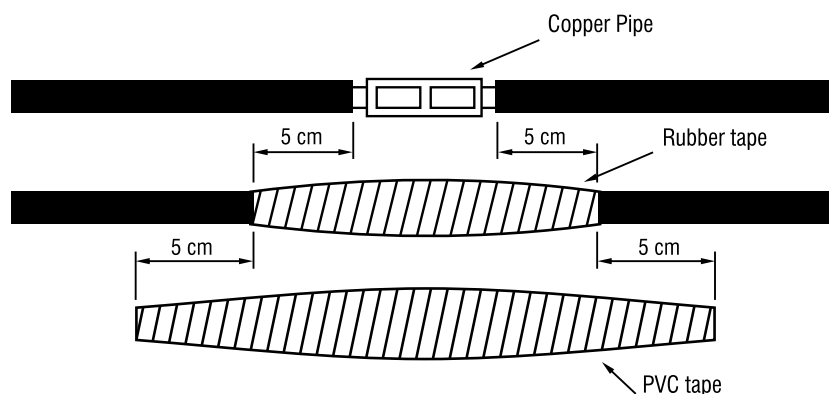


Power cable connection

Connection of the power cable that will be used along the well and until the control panel with the power cable on the motor must be done very carefully and by the professionals only. If the insulation after connection is not done properly; short circuit might happen during the connection area is in the water.

Insulation of each cable should be stripped only as far as necessary to provide room for a stake type connector. Each individual joint should be taped with PVC tape, using two layers by wrapping tightly for eliminating airspaces as much as possible.

Total thickness of tape should be no less than the thickness of the cable insulation in order to prevent the smashing of the cables when the pump is lowered in the well.



Performance table

| 6" BSM 3S - three phase water filled submersible motors | | | | | | | | | | | | | | 50Hz Performance table | |
|---------------------------------------------------------|----------------|------|----------------------|----------------|-------------------|-----------------------|-----------------------|---------------------|----|-----|---------------|----|-----|------------------------|----------------|
| Model | P _N | | Axial Thrust [kN] | Voltage [V] | Rotation [rpm] | I _N [A] | I _A [A] | Efficiency (% load) | | | CosΦ (% load) | | | Length [mm] | Weight [Kg] |
| | kW | HP | | | | | | 50 | 75 | 100 | 50 | 75 | 100 | | |
| BSM 3S 6/5.5 | 4 | 5,5 | 20 | 380 | 2770 | 10,2 | 39,4 | 67 | 71 | 71 | 63 | 71 | 84 | 594 | 38 |
| | | | | 400 | 2785 | 9,8 | 37,8 | 68 | 72 | 72 | 59 | 67 | 82 | | |
| | | | | 415 | 2795 | 9,5 | 36,9 | 68 | 72 | 72 | 58 | 66 | 81 | | |
| BSM 3S 6/7.5 | 5,5 | 7,5 | 20 | 380 | 2780 | 13,3 | 52,7 | 70 | 73 | 75 | 63 | 71 | 84 | 623 | 42 |
| | | | | 400 | 2795 | 12,8 | 50,6 | 71 | 74 | 76 | 59 | 67 | 82 | | |
| | | | | 415 | 2805 | 12,3 | 48,7 | 72 | 75 | 77 | 58 | 66 | 81 | | |
| BSM 3S 6/10 | 7,5 | 10 | 20 | 380 | 2790 | 17,2 | 66,4 | 77 | 79 | 79 | 63 | 71 | 84 | 703 | 48 |
| | | | | 400 | 2805 | 16,5 | 63,8 | 79 | 80 | 80 | 59 | 67 | 82 | | |
| | | | | 415 | 2815 | 16,1 | 62,2 | 79 | 80 | 80 | 58 | 66 | 81 | | |
| BSM 3S 6/12.5 | 9,3 | 12,5 | 20 | 380 | 2850 | 20,8 | 80,3 | 80 | 81 | 81 | 63 | 71 | 84 | 743 | 53 |
| | | | | 400 | 2855 | 20,2 | 78,1 | 80 | 81 | 81 | 59 | 67 | 82 | | |
| | | | | 415 | 2865 | 19,5 | 75,3 | 81 | 82 | 82 | 58 | 66 | 81 | | |
| BSM 3S 6/15 | 11 | 15 | 20 | 380 | 2810 | 23,7 | 91,6 | 81 | 82 | 82 | 67 | 75 | 86 | 796 | 58 |
| | | | | 400 | 2825 | 22,8 | 88,0 | 82 | 83 | 83 | 63 | 71 | 84 | | |
| | | | | 415 | 2835 | 22,2 | 85,9 | 82 | 83 | 83 | 61 | 69 | 83 | | |
| BSM 3S 6/17.5 | 13 | 17,5 | 20 | 380 | 2820 | 28,7 | 110,9 | 80 | 81 | 81 | 65 | 73 | 85 | 856 | 63 |
| | | | | 400 | 2835 | 27,6 | 106,6 | 81 | 82 | 82 | 61 | 69 | 83 | | |
| | | | | 415 | 2845 | 26,6 | 102,7 | 82 | 83 | 83 | 59 | 67 | 82 | | |
| BSM 3S 6/20 | 15 | 20 | 20 | 380 | 2850 | 33,1 | 127,9 | 80 | 81 | 81 | 65 | 73 | 85 | 918 | 70 |
| | | | | 400 | 2855 | 32,2 | 124,5 | 80 | 81 | 81 | 61 | 69 | 83 | | |
| | | | | 415 | 2865 | 31,0 | 120,0 | 81 | 82 | 82 | 59 | 67 | 82 | | |
| BSM 3S 6/25 | 18,5 | 25 | 20 | 380 | 2850 | 41,8 | 161,6 | 80 | 81 | 81 | 61 | 69 | 83 | 951 | 74 |
| | | | | 400 | 2865 | 40,2 | 155,4 | 81 | 82 | 82 | 58 | 66 | 81 | | |
| | | | | 415 | 2875 | 38,8 | 149,8 | 82 | 83 | 83 | 57 | 65 | 80 | | |
| BSM 3S 6/30 | 22 | 30 | 20 | 380 | 2860 | 48,5 | 187,6 | 81 | 82 | 82 | 63 | 71 | 84 | 1051 | 85 |
| | | | | 400 | 2875 | 46,7 | 180,3 | 82 | 83 | 83 | 59 | 67 | 82 | | |
| | | | | 415 | 2885 | 45,0 | 173,9 | 83 | 84 | 84 | 58 | 66 | 81 | | |
| BSM 3S 6/35 | 26,5 | 35 | 26,5 | 380 | 2870 | 56,4 | 217,9 | 83 | 84 | 84 | 65 | 73 | 85 | 1166 | 96 |
| | | | | 400 | 2885 | 54,9 | 212,0 | 83 | 84 | 84 | 61 | 69 | 83 | | |
| | | | | 415 | 2895 | 52,9 | 204,4 | 84 | 85 | 85 | 59 | 67 | 82 | | |
| BSM 3S 6/40 | 30 | 40 | 26,5 | 380 | 2880 | 64,6 | 249,7 | 82 | 83 | 83 | 65 | 73 | 85 | 1196 | 101 |
| | | | | 400 | 2895 | 62,1 | 240,0 | 83 | 84 | 84 | 61 | 69 | 83 | | |
| | | | | 415 | 2905 | 59,9 | 231,4 | 84 | 85 | 85 | 59 | 67 | 82 | | |
| BSM 3S 6/50 | 37 | 50 | 26,5 | 380 | 2890 | 79,7 | 315,6 | 80 | 81 | 83 | 65 | 73 | 85 | 1296 | 108 |
| | | | | 400 | 2905 | 76,7 | 303,3 | 81 | 82 | 84 | 61 | 69 | 83 | | |
| | | | | 415 | 2915 | 74,7 | 288,8 | 83 | 84 | 84 | 59 | 67 | 82 | | |
| BSM 3S 6/60 | 45 | 60 | 26,5 | 380 | 2890 | 96,9 | 374,7 | 82 | 81 | 83 | 65 | 73 | 85 | 1296 | 108 |
| | | | | 400 | 2905 | 93,2 | 360,2 | 81 | 82 | 84 | 61 | 69 | 83 | | |
| | | | | 415 | 2915 | 87,7 | 339,0 | 83 | 84 | 84 | 59 | 67 | 85 | | |

Performance table

6" BSM 3S - three phase water filled submersible motors 60Hz Performance table

| Model | P _N | | Axial Thrust [kN] | Voltage [V] | Rotation [rpm] | I _N [A] | I _A [A] | Efficiency (% load) | | | CosΦ (% load) | | | Length [mm] | Weight [Kg] |
|---------------|----------------|------|----------------------|----------------|-------------------|-----------------------|-----------------------|---------------------|----|-----|---------------|----|-----|----------------|----------------|
| | kW | HP | | | | | | 50 | 75 | 100 | 50 | 75 | 100 | | |
| BSM 3S 6/5.5 | 4 | 5,5 | 20 | 220 | 3510 | 19,2 | 102 | 69 | 74 | 76 | 51 | 63 | 72 | 594 | 38 |
| | | | | 380 | 3540 | 11,4 | 61 | 65 | 71 | 76 | 50 | 62 | 70 | | |
| | | | | 460 | 3530 | 8,8 | 47 | 69 | 75 | 77 | 55 | 66 | 74 | | |
| BSM 3S 6/7.5 | 5,5 | 7,5 | 20 | 220 | 3480 | 23,8 | 126 | 73 | 77 | 77 | 60 | 72 | 79 | 623 | 42 |
| | | | | 380 | 3490 | 13,6 | 72 | 75 | 77 | 77 | 63 | 74 | 80 | | |
| | | | | 460 | 3490 | 11,7 | 62 | 73 | 76 | 75 | 64 | 75 | 79 | | |
| BSM 3S 6/10 | 7,5 | 10 | 20 | 220 | 3480 | 32,8 | 174 | 74 | 78 | 78 | 57 | 70 | 77 | 703 | 48 |
| | | | | 380 | 3490 | 18,3 | 97 | 75 | 78 | 78 | 63 | 74 | 80 | | |
| | | | | 460 | 3480 | 15,1 | 80 | 74 | 77 | 77 | 66 | 76 | 81 | | |
| BSM 3S 6/12.5 | 9,3 | 12,5 | 20 | 220 | 3480 | 40,7 | 216 | 74 | 78 | 78 | 58 | 70 | 77 | 743 | 53 |
| | | | | 380 | 3480 | 22,4 | 119 | 76 | 79 | 79 | 63 | 74 | 80 | | |
| | | | | 460 | 3470 | 18,3 | 97 | 77 | 79 | 79 | 66 | 77 | 81 | | |
| BSM 3S 6/15 | 11 | 15 | 20 | 220 | 3480 | 46,3 | 245 | 76 | 79 | 80 | 59 | 71 | 78 | 796 | 58 |
| | | | | 380 | 3500 | 26,5 | 140 | 76 | 80 | 80 | 61 | 73 | 79 | | |
| | | | | 460 | 3490 | 21,3 | 113 | 77 | 80 | 79 | 67 | 76 | 82 | | |
| BSM 3S 6/17.5 | 13 | 17,5 | 20 | 220 | 3490 | 56,9 | 302 | 75 | 79 | 80 | 54 | 67 | 75 | 856 | 63 |
| | | | | 380 | 3510 | 31,7 | 168 | 76 | 80 | 81 | 58 | 70 | 77 | | |
| | | | | 460 | 3500 | 25,2 | 134 | 77 | 80 | 80 | 64 | 75 | 81 | | |
| BSM 3S 6/20 | 15 | 20 | 20 | 220 | 3490 | 60,1 | 318 | 79 | 82 | 82 | 62 | 73 | 80 | 918 | 70 |
| | | | | 380 | 3500 | 34,4 | 182 | 80 | 82 | 82 | 65 | 76 | 81 | | |
| | | | | 460 | 3500 | 28,4 | 150 | 79 | 81 | 81 | 67 | 77 | 82 | | |
| BSM 3S 6/25 | 18,5 | 25 | 20 | 220 | 3480 | 77,9 | 413 | 76 | 80 | 81 | 58 | 70 | 77 | 951 | 74 |
| | | | | 380 | 3500 | 46,3 | 245 | 75 | 79 | 80 | 57 | 69 | 76 | | |
| | | | | 460 | 3490 | 35,9 | 190 | 79 | 81 | 81 | 64 | 75 | 80 | | |
| BSM 3S 6/30 | 22 | 30 | 20 | 220 | 3500 | 91,6 | 495 | 81 | 83 | 83 | 64 | 73 | 76 | 1051 | 85 |
| | | | | 380 | 3520 | 52,4 | 283 | 81 | 83 | 83 | 66 | 74 | 77 | | |
| | | | | 460 | 3510 | 41,1 | 222 | 82 | 83 | 83 | 71 | 78 | 81 | | |
| BSM 3S 6/35 | 26,5 | 35 | 26,5 | 220 | 3500 | 110,5 | 597 | 82 | 84 | 84 | 62 | 71 | 75 | 1166 | 96 |
| | | | | 380 | 3510 | 60,0 | 324 | 82 | 84 | 84 | 61 | 73 | 80 | | |
| | | | | 460 | 3510 | 48,9 | 264 | 82 | 83 | 83 | 63 | 75 | 82 | | |
| BSM 3S 6/40 | 30 | 40 | 26,5 | 220 | 3500 | 124,8 | 674 | 77 | 81 | 82 | 57 | 70 | 77 | 1196 | 101 |
| | | | | 380 | 3520 | 68,7 | 371 | 78 | 82 | 83 | 61 | 73 | 80 | | |
| | | | | 460 | 3510 | 56,1 | 303 | 80 | 83 | 83 | 63 | 74 | 81 | | |
| BSM 3S 6/50 | 37 | 50 | 26,5 | 220 | 3500 | 155,9 | 842 | 76 | 80 | 81 | 58 | 70 | 77 | 1296 | 108 |
| | | | | 380 | 3520 | 90,2 | 487 | 76 | 80 | 81 | 58 | 70 | 77 | | |
| | | | | 460 | 3510 | 69,2 | 374 | 81 | 83 | 84 | 62 | 74 | 80 | | |
| BSM 3S 6/60 | 45 | 60 | 26,5 | 220 | 3500 | 189,5 | 1023 | 75 | 79 | 80 | 58 | 71 | 78 | 1296 | 108 |
| | | | | 380 | 3520 | 109,7 | 592 | 75 | 79 | 80 | 58 | 71 | 78 | | |
| | | | | 460 | 3510 | 84,1 | 454 | 80 | 82 | 83 | 62 | 75 | 81 | | |

Performance table

| 8" BSM 3S - three phase water filled submersible motors | | | | | | | | | | | 50Hz Performance table | | | | |
|---------------------------------------------------------|----------------|-----|-------------------|-------------|----------------|--------------------|--------------------|---------------------|----|-----|------------------------|----|-----|-------------|-------------|
| Model | P _N | | Axial Thrust [kN] | Voltage [V] | Rotation [rpm] | I _N [A] | I _A [A] | Efficiency (% load) | | | CosΦ (% load) | | | Length [mm] | Weight [Kg] |
| | kW | HP | | | | | | 50 | 75 | 100 | 50 | 75 | 100 | | |
| BSM 3S 8/40 | 30 | 40 | 45 | 380 | 2880 | 63,2 | 239 | 82 | 83 | 83 | 73 | 78 | 87 | 948 | 125 |
| | | | | 400 | 2895 | 60,7 | 229 | 83 | 84 | 84 | 67 | 74 | 85 | | |
| | | | | 415 | 2905 | 59,2 | 223 | 83 | 84 | 84 | 65 | 73 | 84 | | |
| BSM 3S 8/50 | 37 | 50 | 45 | 380 | 2890 | 76,1 | 287 | 84 | 85 | 85 | 73 | 78 | 87 | 1008 | 134 |
| | | | | 400 | 2905 | 73,1 | 276 | 85 | 86 | 86 | 67 | 74 | 85 | | |
| | | | | 415 | 2915 | 72,2 | 269 | 85 | 86 | 86 | 65 | 73 | 84 | | |
| BSM 3S 8/60 | 45 | 60 | 45 | 380 | 2890 | 92,6 | 349 | 84 | 85 | 85 | 73 | 78 | 87 | 1093 | 148 |
| | | | | 400 | 2905 | 89,0 | 336 | 85 | 86 | 86 | 67 | 74 | 85 | | |
| | | | | 415 | 2915 | 86,8 | 327 | 85 | 86 | 86 | 65 | 73 | 84 | | |
| BSM 3S 8/70 | 52 | 70 | 45 | 380 | 2890 | 105,7 | 399 | 84 | 85 | 85 | 75 | 81 | 88 | 1178 | 166 |
| | | | | 400 | 2905 | 101,6 | 383 | 85 | 86 | 86 | 70 | 76 | 86 | | |
| | | | | 415 | 2915 | 99,1 | 374 | 85 | 86 | 86 | 67 | 74 | 85 | | |
| BSM 3S 8/75 | 55 | 75 | 45 | 380 | 2890 | 113,2 | 427 | 83 | 84 | 84 | 75 | 81 | 88 | 1178 | 166 |
| | | | | 400 | 2905 | 110,0 | 415 | 83 | 84 | 84 | 70 | 76 | 86 | | |
| | | | | 415 | 2915 | 106,0 | 400 | 84 | 85 | 85 | 67 | 74 | 85 | | |
| BSM 3S 8/80 | 60 | 80 | 45 | 380 | 2890 | 122,0 | 460 | 85 | 86 | 86 | 73 | 78 | 87 | 1233 | 181 |
| | | | | 400 | 2905 | 118,6 | 447 | 85 | 86 | 86 | 67 | 74 | 85 | | |
| | | | | 415 | 2915 | 115,7 | 436 | 85 | 86 | 86 | 65 | 73 | 84 | | |
| BSM 3S 8/90 | 67 | 90 | 45 | 380 | 2890 | 137,8 | 520 | 84 | 85 | 85 | 73 | 78 | 87 | 1258 | 186 |
| | | | | 400 | 2905 | 132,4 | 499 | 85 | 86 | 86 | 67 | 74 | 85 | | |
| | | | | 415 | 2915 | 129,2 | 487 | 85 | 86 | 86 | 65 | 73 | 84 | | |
| BSM 3S 8/100 | 75 | 100 | 45 | 380 | 2890 | 154,3 | 582 | 83 | 84 | 84 | 75 | 81 | 88 | 1283 | 191 |
| | | | | 400 | 2905 | 148,3 | 559 | 84 | 85 | 85 | 70 | 76 | 86 | | |
| | | | | 415 | 2915 | 144,6 | 545 | 84 | 85 | 85 | 67 | 74 | 85 | | |

| 8" BSM 3S - three phase water filled submersible motors | | | | | | | | | | | 60Hz Performance table | | | | |
|---------------------------------------------------------|----------------|-----|-------------------|-------------|----------------|--------------------|--------------------|---------------------|----|-----|------------------------|----|-----|-------------|-------------|
| Model | P _N | | Axial Thrust [kN] | Voltage [V] | Rotation [rpm] | I _N [A] | I _A [A] | Efficiency (% load) | | | CosΦ (% load) | | | Length [mm] | Weight [Kg] |
| | kW | HP | | | | | | 50 | 75 | 100 | 50 | 75 | 100 | | |
| BSM 3S 8/40 | 30 | 40 | 45 | 220 | 3480 | 115,1 | 612 | 81 | 84 | 84 | 77 | 78 | 82 | 948 | 125 |
| | | | | 380 | 3490 | 66,3 | 352 | 82 | 84 | 84 | 77 | 78 | 82 | | |
| | | | | 460 | 3480 | 54,1 | 288 | 81 | 83 | 83 | 79 | 81 | 84 | | |
| BSM 3S 8/50 | 37 | 50 | 45 | 220 | 3490 | 139,5 | 742 | 82 | 85 | 85 | 77 | 78 | 82 | 1008 | 134 |
| | | | | 380 | 3500 | 80,7 | 430 | 82 | 85 | 85 | 77 | 78 | 82 | | |
| | | | | 460 | 3480 | 65,9 | 351 | 83 | 84 | 84 | 79 | 81 | 84 | | |
| BSM 3S 8/60 | 45 | 60 | 45 | 220 | 3480 | 167,6 | 892 | 83 | 85 | 85 | 70 | 78 | 83 | 1093 | 148 |
| | | | | 380 | 3490 | 97,0 | 516 | 83 | 85 | 85 | 70 | 78 | 83 | | |
| | | | | 460 | 3490 | 79,2 | 421 | 84 | 85 | 85 | 74 | 81 | 84 | | |
| BSM 3S 8/70 | 52 | 70 | 45 | 220 | 3490 | 189,1 | 1000 | 84 | 86 | 86 | 72 | 80 | 84 | 1178 | 166 |
| | | | | 380 | 3500 | 109,5 | 583 | 84 | 86 | 86 | 72 | 80 | 84 | | |
| | | | | 460 | 3495 | 90,4 | 481 | 84 | 85 | 85 | 76 | 83 | 85 | | |
| BSM 3S 8/75 | 55 | 75 | 45 | 220 | 3490 | 200,0 | 1064 | 84 | 86 | 86 | 68 | 77 | 84 | 1178 | 166 |
| | | | | 380 | 3500 | 115,8 | 616 | 84 | 86 | 86 | 68 | 77 | 84 | | |
| | | | | 460 | 3500 | 95,7 | 509 | 85 | 86 | 86 | 74 | 81 | 84 | | |
| BSM 3S 8/80 | 60 | 80 | 45 | 220 | 3490 | 215,7 | 1148 | 85 | 87 | 87 | 74 | 81 | 84 | 1233 | 181 |
| | | | | 380 | 3500 | 124,9 | 664 | 85 | 87 | 87 | 74 | 81 | 84 | | |
| | | | | 460 | 3500 | 103,1 | 549 | 85 | 86 | 86 | 77 | 83 | 85 | | |
| BSM 3S 8/90 | 67 | 90 | 45 | 220 | 3500 | 252,7 | 1344 | 84 | 86 | 86 | 70 | 79 | 81 | 1258 | 186 |
| | | | | 380 | 3510 | 146,3 | 778 | 84 | 86 | 86 | 70 | 79 | 81 | | |
| | | | | 460 | 3500 | 116,5 | 620 | 85 | 86 | 86 | 74 | 82 | 84 | | |
| BSM 3S 8/100 | 75 | 100 | 45 | 220 | 3490 | 266,5 | 1418 | 85 | 87 | 87 | 74 | 82 | 85 | 1283 | 191 |
| | | | | 380 | 3500 | 154,3 | 821 | 85 | 87 | 87 | 74 | 82 | 85 | | |
| | | | | 460 | 3500 | 127,4 | 678 | 85 | 87 | 87 | 74 | 82 | 85 | | |

Performance table

10" BSM 3S - three phase water filled submersible motors 50Hz Performance table

| Model | P _N | | Axial Thrust [kN] | Voltage [V] | Rotation [rpm] | I _N [A] | I _A [A] | Efficiency (% load) | | | CosΦ (% load) | | | Length [mm] | Weight [Kg] |
|---------------|----------------|-----|----------------------|----------------|-------------------|-----------------------|-----------------------|---------------------|----|-----|---------------|----|-----|----------------|----------------|
| | kW | HP | | | | | | 50 | 75 | 100 | 50 | 75 | 100 | | |
| BSM 3S 10/110 | 81 | 110 | 75 | 380 | 2890 | 164,7 | 615 | 84 | 84 | 85 | 76 | 81 | 88 | 1282 | 188 |
| | | | | 400 | 2905 | 158,3 | 590 | 85 | 85 | 86 | 72 | 77 | 86 | | |
| | | | | 415 | 2915 | 152,6 | 569 | 86 | 86 | 87 | 69 | 75 | 85 | | |
| BSM 3S 10/125 | 92 | 125 | 75 | 380 | 2900 | 184,9 | 690 | 85 | 85 | 86 | 76 | 81 | 88 | 1342 | 201 |
| | | | | 400 | 2915 | 179,8 | 671 | 85 | 85 | 86 | 72 | 77 | 86 | | |
| | | | | 415 | 2925 | 175,3 | 654 | 85 | 85 | 86 | 69 | 75 | 85 | | |
| BSM 3S 10/150 | 110 | 150 | 75 | 380 | 2900 | 223,6 | 835 | 85 | 85 | 86 | 74 | 80 | 87 | 1422 | 249 |
| | | | | 400 | 2915 | 217,5 | 811 | 85 | 85 | 86 | 69 | 75 | 85 | | |
| | | | | 415 | 2925 | 212,1 | 791 | 85 | 85 | 86 | 66 | 73 | 84 | | |

10" BSM 3S - three phase water filled submersible motors 60Hz Performance table

| Model | P _N | | Axial Thrust [kN] | Voltage [V] | Rotation [rpm] | I _N [A] | I _A [A] | Efficiency (% load) | | | CosΦ (% load) | | | Length [mm] | Weight [Kg] |
|---------------|----------------|-----|----------------------|----------------|-------------------|-----------------------|-----------------------|---------------------|----|-----|---------------|----|-----|----------------|----------------|
| | kW | HP | | | | | | 50 | 75 | 100 | 50 | 75 | 100 | | |
| BSM 3S 10/110 | 81 | 110 | 75 | 380 | 3500 | 170,5 | 904 | 85 | 85 | 85 | 80 | 83 | 85 | 1282 | 188 |
| | | | | 460 | 3510 | 137,6 | 729 | 85 | 85 | 85 | 82 | 85 | 87 | | |
| BSM 3S 10/125 | 92 | 125 | 75 | 380 | 3510 | 193,7 | 1.027 | 85 | 85 | 85 | 80 | 83 | 85 | 1342 | 201 |
| | | | | 460 | 3520 | 156,3 | 829 | 85 | 85 | 85 | 82 | 85 | 87 | | |
| BSM 3S 10/150 | 110 | 150 | 75 | 380 | 3515 | 234,3 | 1242 | 85 | 86 | 85 | 79 | 82 | 84 | 1422 | 249 |
| | | | | 460 | 3520 | 189,1 | 1002 | 85 | 86 | 85 | 81 | 84 | 86 | | |

Other information

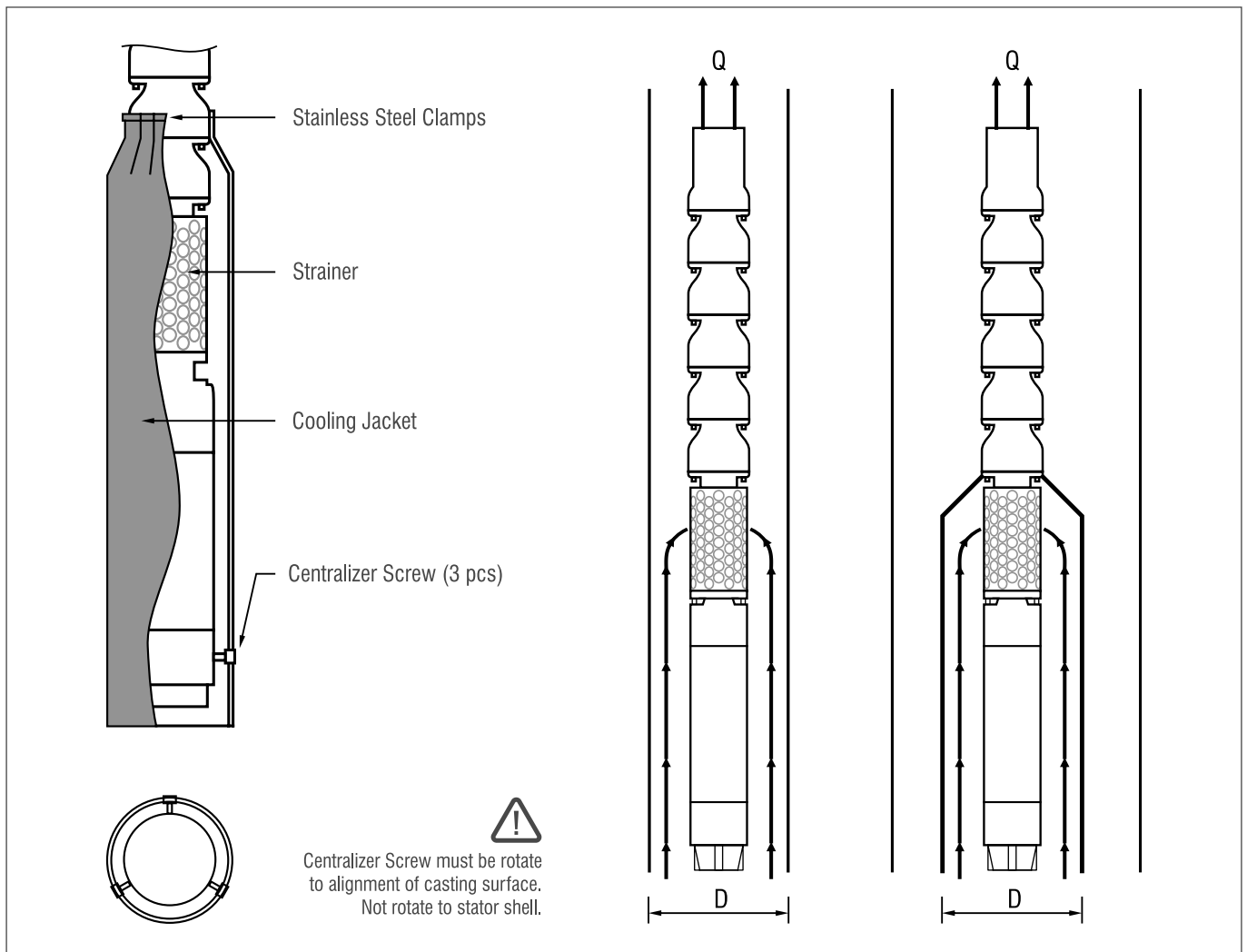
Use cooling jacket

Cooling of submersible motors is provided with the flow of the water around it. That's allows water flow around motors has vital importance during submersible pump installation. This flow rate depends on diameter and power of motor.

The most important factor of submersible motors' long service life is that the motor has to be cooled well. Required flow velocity around the motor is given in the table below for motors being cooled well enough.

If the motor will be installed in an open body of water (i.e pool) or diameter of the well is much bigger than the diameter of the motor, Flow Inducer Sleeve must be used to provide the flow velocities that are given in the table below, around the motor.

| Motor type | Motor rating mm | Min. Water Flow (m/s) Kg |
|------------|-----------------|-----------------------------|
| 6" | 5.5 - 18.5 kW | 0.2 |
| | 22 - 45 kW | 0.5 |
| 8" | 60 - 110 kW | 0.5 |
| | 81 - 220 kW | 0.5 |
| 10" | 60 - 75 kW | 0.5 |





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