



**4" 3-wire  
Standard Motors  
PRODUCT CATALOG**



**Franklin Electric**



Franklin Electric



Quality in the Well



Franklin Electric



# 4" Super Stainless 3-wire

## Submersible Motors

### Quality in the Well

Franklin Electric 4" encapsulated submersible motors, built in ISO 9001 certified facilities for outstanding performance in 4" or larger water wells.

The single phase 3-wire motor has been designed for highest achievable starting torque and shaft power from single phase power supplies. It is therefore ideally suited for applications where starting torque is paramount and 3 phase motors cannot be used. It should ideally be combined to the Franklin Electric 3-wire control boxes for maximum system performance, protection and warranty.



### Features:

- Hermetically sealed stator with 316SS shell. Anti track, self healing stator resin prevents motor burn out, mechanically supports the winding and provides fast heat dissipation.
- High efficiency electrical design (low operation cost, cool running winding)
- Removable water bloc lead connector
- No-wear, water lubricated radial and thrust bearings for 100% maintenance free operation
- Non-contaminating FES 93 filling liquid
- Various agency approvals for use in drinking water

### Technical specification:

- 3-wire motor range: 0,25 – 2,2kW
- 4" NEMA flange
- Rotation: CCW facing shaft end
- Degree of protection: IP68
- Insulation: Cl.B
- Rated ambient temperature: 30°C
- Required cooling flow: min. 0,08m/s
- Max. starts/hr.: 20, equally distributed
- Mounting: vertical to horizontal, shaft upwards
- Voltage tolerance from nominal: -10% / +6%
- Protection requirements: EN 60947-4-1

### Optional:

- Motors in full 316SS
- Various cable lengths
- Alternative material executions



### 4" 3- wire Motor Numbers 50Hz

| P <sub>N</sub><br>[kW] | U <sub>N</sub><br>[V] | Digit 1-6 | Digit 7-10                               |                                          |                                          |                                          |
|------------------------|-----------------------|-----------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|
|                        |                       |           | 304SS Motors<br>(Single pack, with Lead) | 304SS Motors<br>(40 motors packing unit) | 316SS Motors<br>(Single pack, with Lead) | 316SS Motors<br>(40 motors packing unit) |
| 0,25                   | 220 / 230             | 214 753   | 6700L                                    | 6700                                     | 6800L                                    | 6800                                     |
| 0,37                   | 220 / 230             | 214 755   | 6700L                                    | 6700                                     | 6800L                                    | 6800                                     |
| 0,55                   | 220 / 230             | 214 757   | 6700L                                    | 6700                                     | 6800L                                    | 6800                                     |
| 0,75                   | 220 / 230             | 214 758   | 6700L                                    | 6700                                     | 6800L                                    | 6800                                     |
| 1,10                   | 220 / 230             | 224 750   | 6700L                                    | 6700                                     | 6800L                                    | 6800                                     |
| 1,50                   | 220 / 230             | 224 751   | 6700L                                    | 6700                                     | 6800L                                    | 6800                                     |
| 2,20                   | 220 / 230             | 224 752   | 6700L                                    | 6700                                     | 6800L                                    | 6800                                     |

### 4" 3-Wire Performance Data 50 Hz

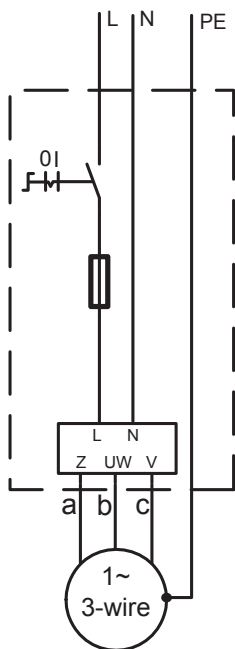
| P <sub>N</sub><br>[kW] | Thrust<br>F [N] | U <sub>N</sub><br>[V] | n <sub>N</sub><br>[min <sup>-1</sup> ] | I <sub>N</sub><br>[A] | I <sub>A</sub><br>[A] | η (Eff.) [%]<br>at % load |    |     | cos φ (Pf.)<br>at % load |      |      | T <sub>N</sub><br>[Nm] | T <sub>A</sub><br>[Nm] |
|------------------------|-----------------|-----------------------|----------------------------------------|-----------------------|-----------------------|---------------------------|----|-----|--------------------------|------|------|------------------------|------------------------|
|                        |                 |                       |                                        |                       |                       | 50                        | 75 | 100 | 50                       | 75   | 100  |                        |                        |
| 0,25                   | 4000            | 220                   | 2850                                   | 2,8                   | 9,3                   | 43                        | 50 | 53  | 0,61                     | 0,70 | 0,78 | 0,83                   | 1,45                   |
|                        |                 | 230                   | 2870                                   | 2,8                   | 9,7                   | 42                        | 50 | 53  | 0,58                     | 0,67 | 0,75 | 0,83                   | 1,65                   |
| 0,37                   | 4000            | 220                   | 2855                                   | 3,9                   | 13,1                  | 48                        | 55 | 56  | 0,58                     | 0,69 | 0,77 | 1,23                   | 1,90                   |
|                        |                 | 230                   | 2870                                   | 4,0                   | 13,7                  | 46                        | 53 | 56  | 0,55                     | 0,65 | 0,74 | 1,23                   | 2,05                   |
| 0,55                   | 4000            | 220                   | 2860                                   | 5,9                   | 20,6                  | 46                        | 53 | 56  | 0,58                     | 0,69 | 0,77 | 1,84                   | 3,0                    |
|                        |                 | 230                   | 2880                                   | 5,9                   | 21,6                  | 45                        | 53 | 56  | 0,53                     | 0,64 | 0,73 | 1,82                   | 3,2                    |
| 0,75                   | 4000            | 220                   | 2850                                   | 7,3                   | 26,6                  | 53                        | 59 | 60  | 0,59                     | 0,71 | 0,79 | 2,5                    | 3,8                    |
|                        |                 | 230                   | 2870                                   | 7,3                   | 27,8                  | 51                        | 58 | 61  | 0,55                     | 0,67 | 0,76 | 2,5                    | 4,2                    |
| 1,1                    | 4000            | 220                   | 2875                                   | 8,6                   | 41,3                  | 63                        | 68 | 69  | 0,69                     | 0,80 | 0,87 | 3,7                    | 6,9                    |
|                        |                 | 230                   | 2885                                   | 8,6                   | 41,2                  | 60                        | 67 | 68  | 0,65                     | 0,76 | 0,84 | 3,7                    | 6,8                    |
| 1,5                    | 4000            | 220                   | 2860                                   | 10,6                  | 55,4                  | 66                        | 71 | 71  | 0,75                     | 0,85 | 0,91 | 5,0                    | 9,6                    |
|                        |                 | 230                   | 2875                                   | 10,4                  | 53,3                  | 64                        | 70 | 71  | 0,69                     | 0,81 | 0,88 | 4,9                    | 9,5                    |
| 2,2                    | 4000            | 220                   | 2875                                   | 15,2                  | 71,2                  | 67                        | 73 | 74  | 0,76                     | 0,86 | 0,91 | 7,3                    | 13,8                   |
|                        |                 | 230                   | 2885                                   | 15,3                  | 74,5                  | 63                        | 70 | 73  | 0,69                     | 0,80 | 0,88 | 7,3                    | 15,0                   |



## Standard Windings Resistance 50 Hz 304SS / 316SS Motors

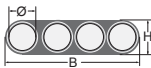
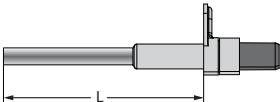
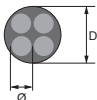
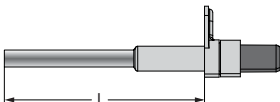
| P <sub>N</sub><br>[kW] | U <sub>N</sub><br>[V] | Stator Ref. | Main phase<br>Ohm | Start phase<br>Ohm |
|------------------------|-----------------------|-------------|-------------------|--------------------|
| 220 / 230              | 326 807 942 / 952     | 10,6 - 13,0 | 38,3 - 46,8       | 38,3 - 46,8        |
| 220 / 230              | 326 808 942 / 952     | 7,3 - 8,9   | 23,9 - 29,3       | 23,9 - 29,3        |
| 220 / 230              | 326 809 942 / 952     | 4,8 - 5,8   | 18,5 - 22,7       | 18,5 - 22,7        |
| 220 / 230              | 326 810 942 / 952     | 3,5 - 4,3   | 14,8 - 18,0       | 14,8 - 18,0        |
| 220 / 230              | 326 811 942 / 952     | 2,6 - 3,2   | 6,9 - 8,4         | 6,9 - 8,4          |
| 220 / 230              | 326 812 942 / 952     | 2,0 - 2,4   | 5,3 - 6,4         | 5,3 - 6,4          |
| 220 / 230              | 326 813 942 / 952     | 1,3 - 1,6   | 3,8 - 4,6         | 3,8 - 4,6          |

### Electrical connection 3-wire Motors



| a     | b     | c    | PE           |
|-------|-------|------|--------------|
| black | brown | grey | yellow/green |

### Motor Leads\*

| Ø [mm²]                                                                             | B [mm]                                                                                | H [mm]      |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------|
| 4X1,5                                                                               | 14,6 ± 0,3                                                                            | 5,1 ± 0,3   |
|    |    |             |
| L                                                                                   | 3 wireMotor- Flat Leads                                                               |             |
| [m]                                                                                 | 304 SS                                                                                | 316 SS      |
| 1,5                                                                                 | 310 178 401                                                                           | 310 178 501 |
| 2,5                                                                                 | 310 178 402                                                                           | 310 178 502 |
| 5                                                                                   | 310 178 405                                                                           | 310 178 505 |
| 10                                                                                  | 310 178 410                                                                           | 310 178 510 |
| 15                                                                                  | 310 178 415                                                                           | 310 178 515 |
| 20                                                                                  | 310 178 420                                                                           | 310 178 520 |
| 30                                                                                  | 310 178 430                                                                           | 310 178 530 |
| 40                                                                                  | 310 178 440                                                                           | 310 178 540 |
| 50                                                                                  | 310 178 450                                                                           | 310 178 550 |
| Ø [mm²]                                                                             | Ø D (mm)                                                                              |             |
| 4X1,5                                                                               | 9,8 ± 0,3                                                                             |             |
|  |  |             |
| L                                                                                   | 3 wire Motor- Pollution Recovery Round Leads                                          |             |
| [m]                                                                                 | 304 SS                                                                                | 316 SS      |
| 1,5                                                                                 | 310 318 401                                                                           | 310 318 501 |
| 2,5                                                                                 | 310 318 402                                                                           | 310 318 502 |
| 5                                                                                   | 310 318 405                                                                           | 310 318 505 |
| 10                                                                                  | 310 318 410                                                                           | 310 318 510 |
| 15                                                                                  | 310 318 415                                                                           | 310 318 515 |
| 20                                                                                  | 310 318 420                                                                           | 310 318 520 |
| 30                                                                                  | 310 318 430                                                                           | 310 318 530 |
| 40                                                                                  | 310 318 440                                                                           | 310 318 540 |
| 50                                                                                  | 310 318 450                                                                           | 310 318 550 |

\*Cables are designed for submerged operation. For air operation please consult Franklin Electric.

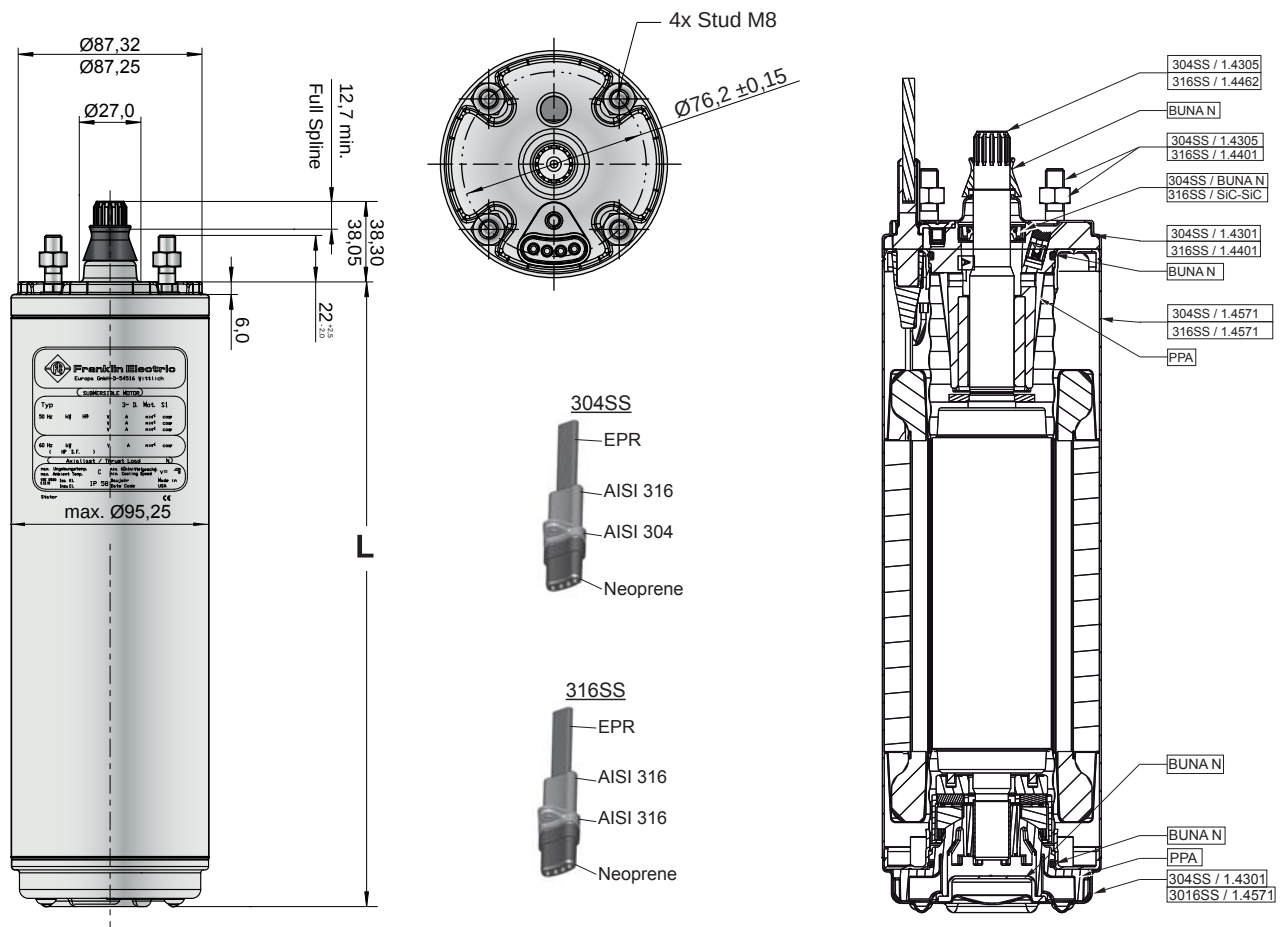
\*Cables are designed for submerged operation. For air operation please consult Franklin Electric.



**Franklin Electric**

Standard 0,25 - 3,7kW

Material Description



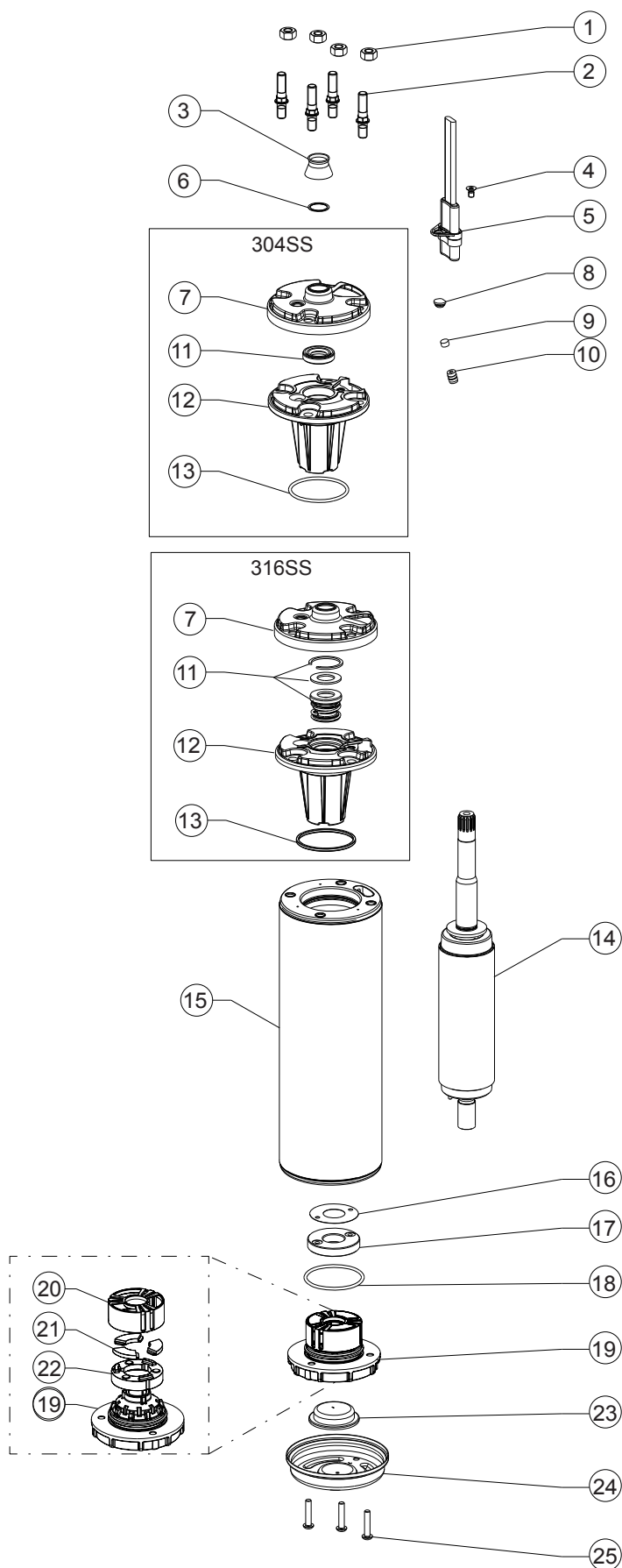
Tolerances according to NEMA MG 1-18.388

### 4" 3-wire Motors Lengths and Weights / Packing sizes

| P <sub>N</sub> |      | L<br>[mm] | M<br>[kg] | Motor with Lead<br>in single pack |       | Motor Package size<br>(40 motors per packing unit) |       |
|----------------|------|-----------|-----------|-----------------------------------|-------|----------------------------------------------------|-------|
| [kW]           | [HP] |           |           | [mm]                              | [kg]  | [mm]                                               | [kg]  |
| 0,25           | 0,33 | 237,2     | 5,58      | 400 x 100 x 110                   | 6,3   | 800 x 500 x 870                                    | 242   |
| 0,37           | 0,50 | 251,1     | 6,40      | 400 x 100 x 110                   | 7,2   | 800 x 500 x 870                                    | 274,8 |
| 0,55           | 0,75 | 271,2     | 7,25      | 530 x 100 x 110                   | 8,0   | 800 x 500 x 870                                    | 308,8 |
| 0,75           | 1,00 | 297,2     | 8,55      | 530 x 100 x 110                   | 9,3   | 800 x 500 x 870                                    | 360,8 |
| 1,10           | 1,50 | 353,2     | 11,05     | 796 x 100 x 110                   | 11,8  | 800 x 500 x 870                                    | 460,8 |
| 1,50           | 2,0  | 364,2     | 11,5      | 796 x 100 x 110                   | 12,3  | 800 x 500 x 870                                    | 478,8 |
| 2,20           | 3,0  | 451,2     | 16,65     | 796 x 100 x 110                   | 17,35 | 800 x 500 x 870                                    | 684,8 |



## 4" 3- wire Motors Parts Description Design start 07.2016



| Pos. | Part Description           | Qty. | Part No.    |
|------|----------------------------|------|-------------|
| 1    | Nut M8                     | 4    | Kit C       |
| 2    | Stud M8                    | 4    | Kit C       |
| 3    | Protector, Spline          | 1    | Kit B       |
| 4    | Screw (Motor lead)         | 1    | Kit C       |
| 5    | Motor lead                 | 1    | see page 22 |
| 6    | Washer                     | 1    | Kit B       |
| 7    | Top Endbell, Cover         | 1    | Kit         |
| 8    | Plug                       | 1    | Kit B       |
| 9    | Filter                     | 1    | Kit B       |
| 10   | Valve                      | 1    | Kit         |
| 11   | Shaft Seal                 | 1    | Kit B       |
| 12   | Top Endbell                | 1    | Kit         |
| 13   | O- Ring                    | 1    | Kit B       |
| 14   | Rotor                      | 1    | see page 25 |
| 15   | Stator                     | 1    | see page 25 |
| 16   | Washer                     | 1    | Kit A       |
| 17   | Thrust disk assy           | 1    | Kit A       |
| 18   | O- Ring                    | 1    | Kit B       |
| 19   | Bottom Endbell             | 1    | A1          |
| 20   | Bearing cage               | 1    | Kit A       |
| 21   | Segments                   | 3    | Kit A       |
| 22   | Rocking Disk               | 1    | Kit A       |
| 23   | Diaphragm                  | 1    | Kit B       |
| 24   | Bottom Endbell Cover 304SS | 1    | 156 414 201 |
|      | Bottom Endbell Cover 316SS |      | 156 414 301 |
| 25   | Screw, Cover               | 3    | Kit C       |



**4" 3- wireSpare Parts 304SS and 316SS Design start 07.2016**

| $P_N$<br>[kW] | 0,25 - 2,2kW                                        |                                        |                    |
|---------------|-----------------------------------------------------|----------------------------------------|--------------------|
| <b>Kit A1</b> | <b>End bell, upper 304SS (Pos. 7 - 13)</b>          | incl. Pos.: 7 - 13                     | <b>308 462 901</b> |
|               | <b>End bell, upper 316SS (Pos. 7 - 13)</b>          |                                        | <b>308 462 951</b> |
| <b>Kit A2</b> | <b>Endbell lower incl. Thrust Bearing Kit 4000N</b> | incl. Pos.: 16 - 22                    | <b>308 464 911</b> |
| <b>Kit B</b>  | <b>Seal Kit 304SS</b>                               | incl. Pos.: 3, 6, 8, 9, 11, 13, 18, 23 | <b>308 650 201</b> |
|               | <b>Seal Kit 316SS</b>                               |                                        | 308 650 251        |
| <b>Kit C</b>  | <b>Fastener Kit 304SS</b>                           | incl. Pos.: 1, 2, 4, 25                | <b>308 656 201</b> |
|               | <b>Fastener Kit 316SS</b>                           |                                        | <b>308 656 251</b> |

**Replacement 304SS Motors 3- wire Stators and Rotors 50 Hz Design start 07.2016**

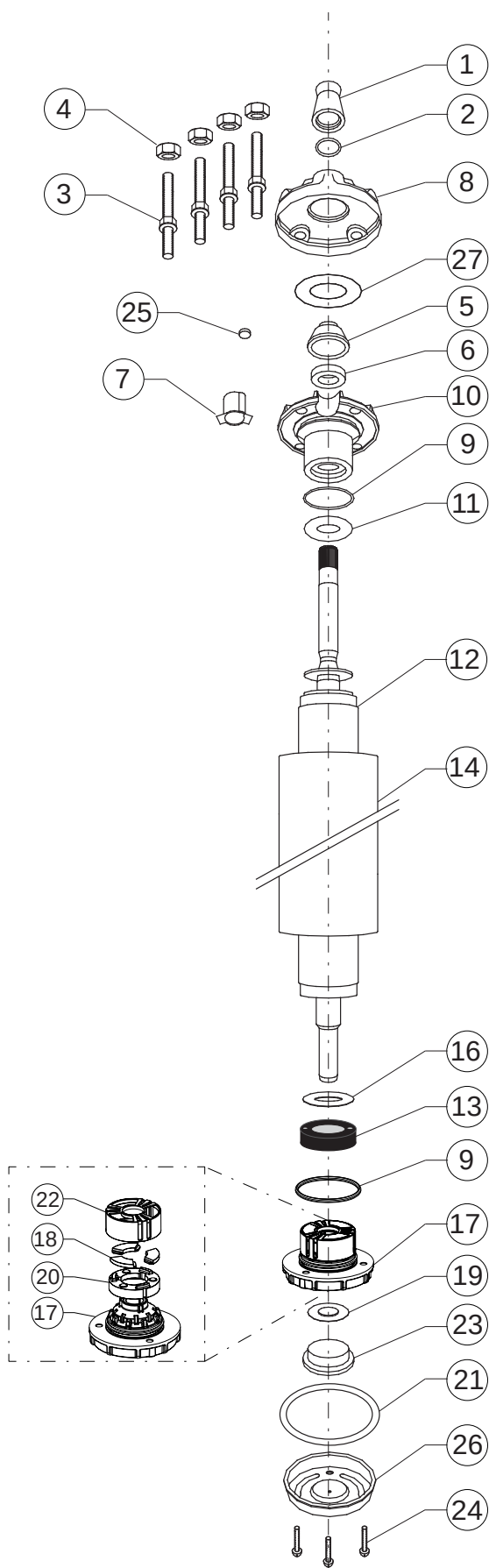
| $P_N$<br>[kW] | $U_N$<br>[V] | Motor Nb.        | Stator      | Rotor        |
|---------------|--------------|------------------|-------------|--------------|
| <b>0,25</b>   | 220 / 230    | 214 753 6700 / L | 305 491 741 | 178 164 901K |
| <b>0,37</b>   | 220 / 230    | 214 755 6700 / L | 305 491 742 | 178 164 902K |
| <b>0,55</b>   | 220 / 230    | 214 757 6700 / L | 305 491 743 | 178 164 903K |
| <b>0,75</b>   | 220 / 230    | 214 758 6700 / L | 305 491 744 | 178 164 905K |
| <b>1,10</b>   | 220 / 230    | 224 750 6700 / L | 305 491 745 | 178 164 908K |
| <b>1,50</b>   | 220 / 230    | 224 751 6700 / L | 305 491 746 | 178 164 909K |
| <b>2,20</b>   | 220 / 230    | 224 752 6700 / L | 305 491 747 | 178 164 911K |

**Replacement 316SS Motors 3- wire Stators and Rotors 50 Hz Design start 07.2016**

| $P_N$<br>[kW] | $U_N$<br>[V] | Motor Nb.        | Stator      | Rotor        |
|---------------|--------------|------------------|-------------|--------------|
| <b>0,25</b>   | 220 / 230    | 214 753 6800 / L | 305 491 741 | 178 164 951K |
| <b>0,37</b>   | 220 / 230    | 214 755 6800 / L | 305 491 742 | 178 164 952K |
| <b>0,55</b>   | 220 / 230    | 214 757 6800 / L | 305 491 743 | 178 164 953K |
| <b>0,75</b>   | 220 / 230    | 214 758 6800 / L | 305 491 744 | 178 164 955K |
| <b>1,10</b>   | 220 / 230    | 224 750 6800 / L | 305 491 745 | 178 164 958K |
| <b>1,50</b>   | 220 / 230    | 224 751 6800 / L | 305 491 746 | 178 164 959K |
| <b>2,20</b>   | 220 / 230    | 224 752 6800 / L | 305 491 747 | 178 164 961K |



4" 3- wire Motors\* 304SS Parts Description Design up to 06.2016



| Pos. | Part Description           | Qty. | Part No.    |
|------|----------------------------|------|-------------|
| 1    | Protector, Spline          | 1    | Kit B       |
| 2    | Washer                     | 1    | Kit B       |
| 3    | Stud                       | 4    | Kit C       |
| 4    | Nut                        | 4    | Kit C       |
| 5    | Seal cover                 | 1    | Kit         |
| 6    | Shaft Seal                 | 1    | Kit B       |
| 7    | Connector boss             | 1    | 151 820 102 |
| 8    | Top Endbell, Cover         | 1    | Kit         |
| 9    | O-Ring                     | 2    | Kit B       |
| 10   | Top Endbell                | 1    | Kit         |
| 11   | Upthrust washer            | 1    | Kit         |
| 12   | Rotor                      | 1    | page 27     |
| 13   | Thrust disk assy           | 1    | Kit A       |
| 14   | Stator                     | 1    | page 27     |
| 15   | Leveling Disk (only 1500N) | 1    | Kit A       |
| 16   | Washer                     | 1    | Kit A       |
| 17   | Bottom Endbell             | 1    | Kit         |
| 18   | Segments                   | 3    | Kit A       |
| 19   | Diaphragm Insert           | 1    | 151 314 101 |
| 20   | Rocking Disk               | 1    | Kit A       |
| 21   | Gasket                     | 1    | Kit B       |
| 22   | Bearing cage               | 1    | Kit A       |
| 23   | Diaphragm                  | 1    | Kit B       |
| 24   | Screw, Seal                | 3    | Kit C       |
| 25   | Filter                     | 1    | Kit B       |
| 26   | Bottom Endbell Cover       | 1    | 156 414 101 |
| 27   | Washer                     | 1    | Kit         |

\* Spare Parts for Brackish Water Motors on Request



### 4" 3- wire Spare Parts 304SS Design up to 06.2016

| P <sub>N</sub><br>[kW]                      | Thrust<br>Bearing                                          | End bell upper<br>Pos. 5 - 10, 27 | End bell, Lower<br>Pos. 17               | Upthrust<br>washer<br>Pos. 11 |
|---------------------------------------------|------------------------------------------------------------|-----------------------------------|------------------------------------------|-------------------------------|
| 0,25 - 0,55                                 | Kit A1                                                     | 177 231 904                       | Kit A1                                   | 150 954 102                   |
| 0,75                                        |                                                            | 177 233 904                       |                                          | 151 093 105                   |
| 1,10 – 1,5                                  |                                                            |                                   |                                          |                               |
| 2,2                                         |                                                            |                                   |                                          |                               |
| Kit 1500N<br>0,25 – 0,55kW<br>up to 07.2008 | Thrust bearing Kit                                         |                                   | incl. Pos.:<br>13, 15, 16, 18            | 308 652 101                   |
| Kit A1                                      | End bell (lower) incl. Thrust bearing Kit<br>3000N / 4000N |                                   | inkl. Pos.:<br>9, 13, 16, 17, 18, 20, 22 | 308 464 901                   |
| Kit B1                                      | Seal Kit                                                   |                                   | incl. Pos.: 1, 2, 6, 9, 21, 23, 25, 27   | 308 650 101                   |
| Kit B2                                      | Seal Kit (Viton)                                           |                                   | incl. Pos.: 1, 2, 6, 9, 21, 23, 25, 27   | 308 650 104                   |
| Kit C                                       | Screw Kit                                                  |                                   | incl. Pos.: 3, 4, 24                     | 308 656 101                   |

### Replacement Stators and Rotors 50 Hz Design up to 06.2016

| P <sub>N</sub><br>[kW] | U <sub>N</sub><br>[V] | Motor No.        | Stator      | Rotor        |
|------------------------|-----------------------|------------------|-------------|--------------|
| 0,25                   | 220 / 230             | 214 753 1621 / L | 305 491 141 | 178 156 902K |
| 0,37                   | 220 / 230             | 214 755 1621 / L | 305 491 142 | 178 157 902K |
| 0,55                   | 220 / 230             | 214 757 1621 / L | 305 491 143 | 178 158 902K |
| 0,75                   | 220 / 230             | 214 758 1621 / L | 305 491 144 | 178 160 902K |
| 1,10                   | 220 / 230             | 224 750 1621 / L | 305 491 145 | 178 163 902K |
| 1,50                   | 220 / 230             | 224 751 1621 / L | 305 491 146 | 178 124 902K |
| 2,20                   | 220 / 230             | 224 752 2521 / L | 305 491 147 | 178 126 902K |

### VDE / ACS / KTW Approved Leads\* Design up to 06.2016

| Ø<br>[mm²]  | B<br>[mm]  | B1<br>[mm] | H<br>[mm] | L<br>[m] | Part Numbers |             |
|-------------|------------|------------|-----------|----------|--------------|-------------|
|             |            |            |           |          | Standard     | 304 SS      |
| 3X1,5+1G1,5 | 16,8 ± 0,3 | 10,7 ± 0,3 | 5,0 ± 0,3 | 1,5      | 310 113 001  | 310 113 401 |
|             |            |            |           | 2,5      | 310 113 002  | 310 113 402 |
|             |            |            |           | 5        | 310 113 005  | 310 113 405 |
|             |            |            |           | 10       | 310 113 010  | 310 113 410 |
|             |            |            |           | 15       | 310 113 015  | 310 113 415 |
|             |            |            |           | 20       | 310 113 020  | 310 113 420 |
|             |            |            |           | 30       | 310 113 030  | 310 113 430 |
|             |            |            |           | 40       | 310 113 040  | 310 113 440 |
|             |            |            |           | 50       | 310 113 050  | 310 113 450 |

| L<br>[m] | Pollution Recovery Motor cable* |  |
|----------|---------------------------------|--|
|          | Modelnb. (only in 316SS)        |  |
| 1,5      | 310 313 501                     |  |
| 2,5      | 310 313 502                     |  |
| 10       | 310 313 510                     |  |
| 20       | 310 313 520                     |  |
| 30       | 310 313 530                     |  |
| 40       | 310 313 540                     |  |
| 50       | 310 313 550                     |  |

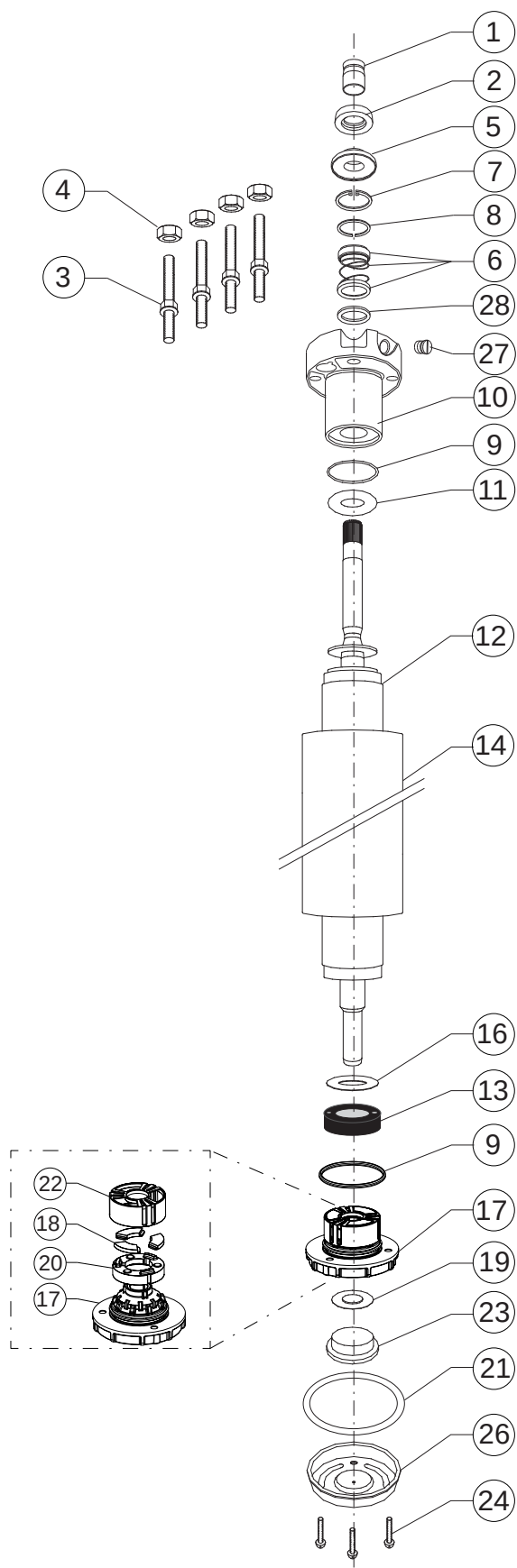
\*Cables are designed for submerged operation. For air operation please consult Franklin Electric.

\* Spare Parts for Brackish Water Motors on Request



Franklin Electric

## 4" 3- wire Motors\* 316SS Parts Description Design up to 06.2016



| Pos. | Part Description           | Qty. | Part No.       |
|------|----------------------------|------|----------------|
| 1    | Protector, Spline          | 1    | Kit C          |
| 2    | Slinger                    | 1    | Kit C          |
| 3    | Stud                       | 4    | Kit D          |
| 4    | Nut                        | 4    | Kit D          |
| 5    | Seal cover                 | 1    | Kit B + C      |
| 6    | Shaft Seal                 | 1    | Kit B          |
| 7    | Retain Ring                | 1    | Kit B          |
| 8    | Ring                       | 1    | Kit B          |
| 9    | O-Ring                     | 2    | Kit B          |
| 10   | Top Endbell                | 1    | Kit            |
| 11   | Upthrust washer            | 1    | Kit            |
| 12   | Rotor                      | 1    | page 29        |
| 13   | Thrust disk assy           | 1    | Kit A          |
| 14   | Stator                     | 1    | page 29        |
| 15   | Leveling Disk (only 1500N) | 1    | Kit A          |
| 16   | Washer                     | 1    | Kit A          |
| 17   | Bottom Endbell             | 1    | Kit            |
| 18   | Segments                   | 3    | Kit A          |
| 19   | Diaphragm Insert           | 1    | 151 314 101    |
| 20   | Rocking Disk               | 1    | Kit A          |
| 21   | Gasket                     | 1    | Kit B          |
| 22   | Bearing cage               | 1    | Kit A          |
| 23   | Diaphragm                  | 1    | Kit B          |
| 24   | Screw, Seal                | 3    | Kit D          |
| 25   | Valve                      |      | Incl. Pos.: 10 |
| 26   | Bottom Endbell Cover       | 1    | 156 414 102    |
| 27   | Sealing Screw              | 1    | 308 279 903    |
| 28   | Washer                     | 1    | 308 747 201    |

\* Spare Parts for Brackish Water Motors on Request



### 4" 3- wire Spare Parts 316SS Design up to 06.2016

| P <sub>N</sub><br>[kW]     | Thrust<br>Bearing                                          | End bell, upper<br>(Pos. 10) | End bell, lower<br>(Pos. 17)             | Upthrust washer<br>(Pos. 11) |
|----------------------------|------------------------------------------------------------|------------------------------|------------------------------------------|------------------------------|
| 0,25 - 0,55                | Kit A1                                                     | 177 390 955                  | Kit A1                                   | 308 268 104                  |
| 0,75                       |                                                            |                              |                                          |                              |
| 1,1 - 1,5                  |                                                            |                              |                                          |                              |
| 2,2 - 3,0                  |                                                            |                              |                                          |                              |
| Kit 1500N<br>up to 07.2008 | Thrust bearing Kit                                         |                              | inkl. Pos.: 13, 15, 16, 18, 20           | 308 652 101                  |
| Kit A1                     | End bell (lower) incl. Thrust bearing Kit<br>3000N / 4000N |                              | inkl. Pos.:<br>9, 13, 16, 17, 18, 20, 22 | 308 464 901                  |
| Kit B                      | Seals                                                      |                              | inkl. Pos.: 5, 6, 7, 8, 9, 21, 23        | 308 650 105                  |
| Kit B2                     | Seal Kit (Viton)                                           |                              | inkl. Pos.: 5, 6, 7, 8, 9, 21, 23        | 308 650 106                  |
| Kit C                      | Sand Protection Seal Kit                                   |                              | inkl. Pos.: 1, 2, 5                      | 308 825 201                  |
| Kit D                      | Screw Kit                                                  |                              | inkl. Pos.: 3, 4, 24                     | 308 656 102                  |

### Replacement Standard Motor\* Stators and Rotors 50 Hz

| P <sub>N</sub><br>[kW] | U <sub>N</sub><br>[V] | Motor No.        | Stator      | Rotor        |
|------------------------|-----------------------|------------------|-------------|--------------|
| <b>0,25</b>            | 220 / 230             | 214 753 0521 / L | 305 491 501 | 178 156 912K |
| <b>0,37</b>            | 220 / 230             | 214 755 0521 / L | 305 491 502 | 178 157 912K |
| <b>0,55</b>            | 220 / 230             | 214 757 0521 / L | 305 491 503 | 178 158 912K |
| <b>0,75</b>            | 220 / 230             | 214 758 0521 / L | 305 491 504 | 178 160 912K |
| <b>1,10</b>            | 220 / 230             | 224 750 0521 / L | 305 491 505 | 178 163 912K |
| <b>1,50</b>            | 220 / 230             | 224 751 0521 / L | 305 491 506 | 178 124 912K |
| <b>2,20</b>            | 220 / 230             | 224 752 2221 / L | 305 491 507 | 178 126 912K |

### VDE / ACS / KTW Approved Leads\* Design up to 06.2016

| Ø<br>[mm²]  | B<br>[mm]  | B1<br>[mm] | H<br>[mm] | L<br>[m] | Part Numbers |
|-------------|------------|------------|-----------|----------|--------------|
| 3X1,5+1G1,5 | 16,8 ± 0,3 | 10,7 ± 0,3 | 5,0 ± 0,3 |          | <b>316SS</b> |
|             |            |            |           | 1,5      | 310 113 501  |
|             |            |            |           | 2,5      | 310 113 502  |
|             |            |            |           | 5        | 310 113 505  |
|             |            |            |           | 10       | 310 113 510  |
|             |            |            |           | 15       | 310 113 515  |
|             |            |            |           | 20       | 310 113 520  |
|             |            |            |           | 30       | 310 113 530  |
|             |            |            |           | 40       | 310 113 540  |
|             |            |            |           | 50       | 310 113 550  |

| L<br>[m] | Pollution Recovery Motor cable* |  |
|----------|---------------------------------|--|
|          | Modelnb. (only in 316SS)        |  |
| 1,5      | 310 313 501                     |  |
| 2,5      | 310 313 502                     |  |
| 10       | 310 313 510                     |  |
| 20       | 310 313 520                     |  |
| 30       | 310 313 530                     |  |
| 40       | 310 313 540                     |  |
| 50       | 310 313 550                     |  |

\*Cables are designed for submerged operation. For air operation please consult Franklin Electric.

\* Spare Parts for Brackish Water Motors on Request



**Franklin Electric**

## Termination Kit 4"

This proven, sturdy solution is your choice of cable joining in temporary pump applications or when re-usage if the drop cable is desired. Furthermore, the flexibility and safety it provides for under field service conditions makes it the preferred choice over conventional, not breakable splicing kits.

| Kit- Type            | Mod. Number | Description                                                                           |
|----------------------|-------------|---------------------------------------------------------------------------------------|
| <b>Standard</b>      | 308 090 901 | without . Strain relief<br><b>Attention:</b> Limited shelf life of Resin and Hardener |
| <b>Strain Relief</b> | 308 090 902 | incl. Strain relief<br><b>Attention:</b> Limited shelf life of Resin and Hardener     |



## Double Plug Lead for Termination Kit

Required for use of lead termination kit. Connected between termination kit and 4" motor.

- PSC / 2-wire / 3-wire Motors and 3 ~ Motors up to 2,2kW
- Material: Connector- Ni plated brass; Lead: rubber
- 2 / 3 wire lead with ground
- Optional strain relief
- Max. current 16 amps.
- Approvals: KTW

### 4" High Thrust and Motor Design up to 06.2016

| Mod. No.           | 2 - wire                                                | Mod. No.           | PSC / 3 - wire / 3-Phase (up to 2,2kW)                        |
|--------------------|---------------------------------------------------------|--------------------|---------------------------------------------------------------|
| <b>310 131 001</b> | 3X1,5mm <sup>2</sup><br>1,5 m - without . Strain relief | <b>310 111 001</b> | 3X1,5+1G1,5mm <sup>2</sup><br>1,5 m - without . Strain relief |
| <b>310 131 002</b> | 3X1,5mm <sup>2</sup><br>2,5 m - without . Strain relief | <b>310 111 002</b> | 3X1,5+1G1,5mm <sup>2</sup><br>2,5 m - without . Strain relief |
| <b>310 132 001</b> | 3X1,5mm <sup>2</sup><br>1,5 m - incl. Strain relief     | <b>310 112 001</b> | 3X1,5+1G1,5mm <sup>2</sup><br>1,5 m - incl. Strain relief     |
| <b>310 132 002</b> | 3X1,5mm <sup>2</sup><br>2,5 m - incl. Strain relief     | <b>310 112 002</b> | 3X1,5+1G1,5mm <sup>2</sup><br>2,5 m - incl. Strain relief     |



### 4" Standard Motor start 07.2016

| Mod. No.           | PSC / 3 - wire / 3-Phase (up to 2,2kW)                        |
|--------------------|---------------------------------------------------------------|
| <b>309 111 401</b> | 3X1,5+1G1,5mm <sup>2</sup><br>1,5 m - without . Strain relief |



## Lead Termination Kit 1,5 - 10mm<sup>2</sup>

- 3M Quality
  - 4 wire
  - 1,5 - 10mm<sup>2</sup>
  - up to 1,1kV
- Part number: 308 090 921**



### PTC Lead (only as spare parts)

| Ø = 2x0,75 mm <sup>2</sup> | D = 7,0 mm | L (m) | Mod.-No.    |
|----------------------------|------------|-------|-------------|
|                            |            | 4     | 310 364 004 |
|                            |            | 10    | 310 364 010 |
|                            |            | 20    | 310 364 020 |
|                            |            | 30    | 310 364 030 |

### Brackish Water Motor Lead (only as spare parts)

| Ø = 4x1,5 mm <sup>2</sup> | L (m) | Mod.-No.     |
|---------------------------|-------|--------------|
|                           | 2,5   | 310 113 402G |

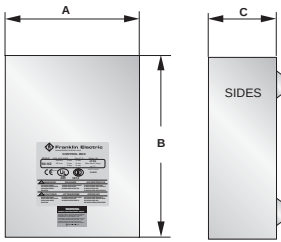
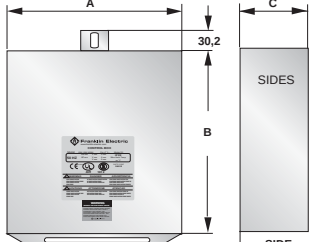
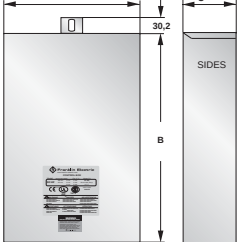


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### 3- wire Motor Control Boxes

|                              |                                                                                                                                                                                                                                                    |                                                                                     |                     |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------|
| <b>Application:</b>          | Control and Protection of Franklin Electric 3-wire single phase motors.                                                                                                                                                                            |                                                                                     |                     |
| <b>Specification:</b>        | <ul style="list-style-type: none"> <li>Voltage: 220 – 230 V</li> <li>Degree of protection: IP 23</li> <li>Metal version</li> <li>Includes starting capacitor</li> <li>Manual reset overload</li> <li>Max. Amb Temp. 40°C</li> <li>50 Hz</li> </ul> |  |                     |
| <b>Ordering information:</b> | <b>Motor Rating</b>                                                                                                                                                                                                                                | <b>Control Box Mod. Number</b>                                                      | <b>Weights (kg)</b> |
| <b>220 / 230 / 240 V</b>     | 0,25                                                                                                                                                                                                                                               | 280 355 2115                                                                        | 1,36                |
|                              | 0,37                                                                                                                                                                                                                                               |                                                                                     |                     |
|                              | 0,55                                                                                                                                                                                                                                               |                                                                                     |                     |
|                              | 0,75                                                                                                                                                                                                                                               | 280 358 2115                                                                        | 2,8                 |
|                              | 1,1                                                                                                                                                                                                                                                | 282 350 8114                                                                        |                     |
|                              | 1,5                                                                                                                                                                                                                                                | 282 351 8114                                                                        |                     |
|                              | 2,2                                                                                                                                                                                                                                                | 282 352 8114                                                                        |                     |
|                              | 3,7                                                                                                                                                                                                                                                | 282 253 4014                                                                        | 4,7                 |

### Outline Drawing [mm]

| 0,25 – 0,75 kW                                                                      |     |    | 1,1 kW / 1,5 kW / 2,2kW                                                             |     |     | 3,7 kW                                                                                |     |     |
|-------------------------------------------------------------------------------------|-----|----|-------------------------------------------------------------------------------------|-----|-----|---------------------------------------------------------------------------------------|-----|-----|
|  |     |    |  |     |     |  |     |     |
| A                                                                                   | B   | C  | A                                                                                   | B   | C   | A                                                                                     | B   | C   |
| 125                                                                                 | 215 | 68 | 205                                                                                 | 216 | 154 | 205                                                                                   | 384 | 154 |

### Spare Parts Control Box 50 Hz

| P <sub>N</sub><br>[kW] | Box Nb.    | Relay-Kit | Qty. | Start Capacitor         | Qty. | Run Capacitor            | Qty. | Overload relay of main phases | Qty. | Overload relay of start phases | Qty. |
|------------------------|------------|-----------|------|-------------------------|------|--------------------------|------|-------------------------------|------|--------------------------------|------|
|                        |            | Pos. 1    |      | Pos. 2                  |      | Pos. 3                   |      | Pos. 4                        |      | Pos. 5                         |      |
| 0,37                   | 2803552115 | 305213912 | 1    | 305218957<br>48µF 220V  | 1    | -----                    | 0    | *                             | 1    | -----                          | 0    |
| 0,55                   | 2803572115 | 305213912 | 1    | 305218906<br>65µF 220V  | 1    | -----                    | 0    | *                             | 1    | -----                          | 0    |
| 0,75                   | 2803582115 | 305213912 | 1    | 305218918<br>95µF 220V  | 1    | -----                    | 0    | *                             | 1    | -----                          | 0    |
| 1,1                    | 2823508114 | 305213912 | 1    | 305207913<br>115µF 220V | 1    | 305 204 902<br>10µF 370V | 1    | 305 215 914                   | 1    | -----                          | 0    |
| 1,5                    | 2823518114 | 305213912 | 1    | 305208915<br>208µF 220V | 1    | 305 204 903<br>20µF 370V | 1    | 305 215 902                   | 1    | 305 215 906                    | 1    |
| 2,2                    | 2823528114 | 305213912 | 1    | 305208919<br>300µF 220V | 1    | 305 203 902<br>35µF 370V | 1    | 305 215 907                   | 1    | 305 214 907                    | 1    |
| 3,7                    | 2822534014 | 305213912 | 1    | 305208915<br>208µF 220V | 2    | 305 203 909<br>45µF 370V | 1    | 305 214 902                   | 1    | 305 215 902                    | 1    |
|                        |            |           |      |                         |      | 305 203 901<br>30µF 370V | 1    |                               |      |                                |      |



**Franklin Electric**

## 4" Corrosion protection in aggressive water for Standard Motors

Wells with extremely high levels of chlorides and other elements in combination with high temperatures will aggressively attack and corrode nearly any type of metal, including stainless steel. Typical severe applications are geothermal wells and mine wells, and applications with low service times.

**Material Specification:** GG25

| LT                                                                                  | HT                                                                                  |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |
| 308 250 912                                                                         | 308 250 913                                                                         |

## 4" Corrosion protection in aggressive water for NextGen Motors

Wells with extremely high levels of chlorides and other elements in combination with high temperatures will aggressively attack and corrode nearly any type of metal, including stainless steel. Typical severe applications are geothermal wells and mine wells, and applications with low service times.

These sacrificial anodes, affixed to the motor body, will increase the service life of the motor when used in such environments.

**Material Specification:** GG25

| LT                                                                                   |
|--------------------------------------------------------------------------------------|
|  |
| 308 250 914                                                                          |

## Motor Filling Liquid

| Filling liquid 5 L FES92   |   |       |                                                         |   |       |
|----------------------------|---|-------|---------------------------------------------------------|---|-------|
| 4" Encapsulated            | → | FES93 | 8" Encapsulated Standard                                | → | FES91 |
| 6" Encapsulated Standard   | → | FES91 | 8" Encapsulated HighTemp75                              | → | FES92 |
| 6" Encapsulated HighTemp90 | → | FES92 | 6" / 8" / 10" / 12" Rew Motors<br>6" / 8" Rew PM Motors |   | FES93 |



**Part number:**  
**308 353 941**

| FES91                                                                               | FES92                                                                               | FES93                                                                                |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |  |

## Motor Filling Kit

This kit contains all necessary tools to check and replenish Franklin Electric submersible motors with FES 91, 92 or 93 filling liquid (fill solution/concentrate must be ordered separately).

**Part number: 308 726 103**





## Couplings

Franklin Electric offers this line of motor-pump couplings for maximum customer convenience in matching the Franklin motor to a variety of pump shafts. Couplings are designed to transmit the pump thrust to the motor in order to provide maximum benefits from the Franklin internal thrust bearing construction.

Hardened stainless steel spacer discs in the 4" and 6" couplings assure positive bearing between motor and pump shafts, and assure full support for downward thrust created by the pump.

8" couplings DO NOT contain hardened spacer discs, since the motor shaft itself is hardened.



### 4" Motor - Pump couplings

**Application:** Allow connection of pump to motors shaft.

**Specification:**

- Material: 304 / 316 SS
- NEMA standard measuring on motor shaft
- separation washer between motor & pump shafts

| Coupling 1 | 304                        |                            |                            | Coupling Insert only (316SS) |
|------------|----------------------------|----------------------------|----------------------------|------------------------------|
|            | 151 551 911                |                            |                            | 151 970 102                  |
|            | Dimension D<br>Max. / Min. | Dimension N<br>Max. / Min. | Dimension H<br>Max. / Min. |                              |
|            | 19,075 / 19,063            | 4,838 / 4,788              | 20,70 / 20,53              |                              |

|            |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Coupling 2 | 316SS                                                                                                                                                                                                                                                                                                                                                                                                                           |
|            | 308 712 904                                                                                                                                                                                                                                                                                                                                                                                                                     |
|            |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|            | Dimension D<br>Max. / Min.                                                                                                                                                                                                                                                                                                                                                                                                      |
|            | 17,50 / 17,48                                                                                                                                                                                                                                                                                                                                                                                                                   |
|            | <p>Technical drawing of a coupling flange. The drawing shows a cross-section of the flange with the following dimensions: outer diameter <math>\varnothing 222.62 \pm 0.05</math>, inner diameter <math>\varnothing 137.79 \pm 0.03</math>, flange thickness <math>28.6 \pm 0.4</math>, total thickness <math>41.3 \pm 0.4</math>, and a <math>30^\circ</math> chamfer. The dimension D is indicated as the inner diameter.</p> |

This image shows a full page of blank graph paper. The grid consists of small, equal-sized squares formed by thin, light gray lines. The grid covers the entire area of the page, leaving no margins or other markings. There are 20 columns and 20 rows of squares, creating a total of 400 square units.

This image shows a full page of blank graph paper. The grid consists of small, equal-sized squares formed by thin, light gray lines. There are no margins, text, or other markings on the page.





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