



# BOREHOLE RANGE

4" OIL FILLED MOTOR



24-01

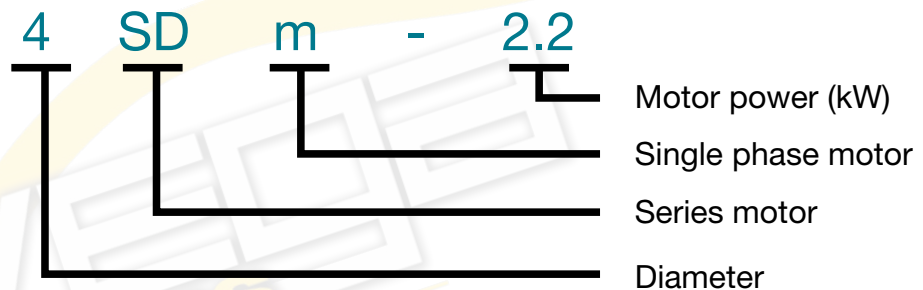
# 4" OIL FILLED MOTOR

## 220V Single phase

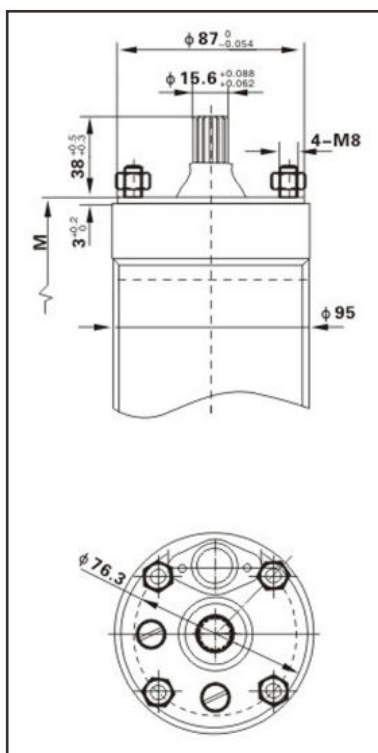


### Motor technical data

|                                                                                       |                    |
|---------------------------------------------------------------------------------------|--------------------|
| Single phase power:                                                                   | 0.37 to 2.2 kW     |
| Speed:                                                                                | 2850rpm            |
| Voltage:                                                                              | 220 ~ 240V/50Hz    |
| Insulation class:                                                                     | B                  |
| Protection grade:                                                                     | IP 68              |
| Highest temperature of Liquid:                                                        | 35°C               |
| Maximum solid handling:                                                               | 40g/m <sup>3</sup> |
| Motor casing:                                                                         | stainless steel    |
| Maximum diameter:                                                                     | Φ 95 mm            |
| Maximum Submersible depth:                                                            | 200m               |
| With sand proof cover/pressure balance membrane/mechanical seal for high performance. |                    |
| Flange and coupling according to NEMA standard.                                       |                    |

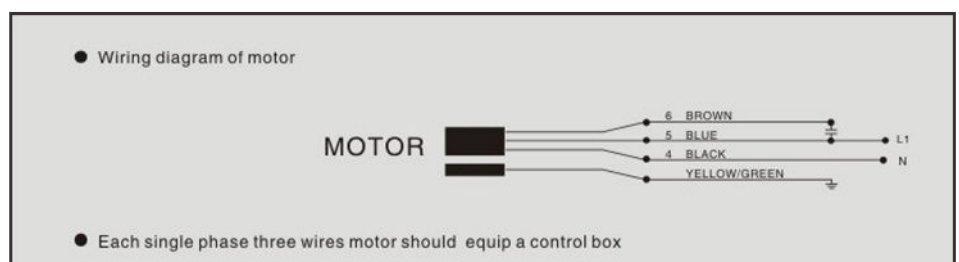


### Motor dimensions



| TYPE                    | MOTOR POWER |      | CAP | RUNNING | DIMENSIONS  |             |
|-------------------------|-------------|------|-----|---------|-------------|-------------|
|                         | kW          | HP   |     |         | Length (mm) | Weight (kg) |
| Single Phase 220V~/50HZ |             |      |     | Amps    |             |             |
| 4SDm-0.37               | 0.37        | 0.5  | 20  | 3.7     | 314         | 6.7         |
| 4SDm-0.55               | 0.55        | 0.75 | 25  | 4.7     | 329         | 7.3         |
| 4SDm-0.75               | 0.75        | 1.0  | 35  | 6.2     | 344         | 8.0         |
| 4SDm-1.1                | 1.1         | 1.5  | 45  | 8.0     | 399         | 10.6        |
| 4SDm-1.5                | 1.5         | 2.0  | 55  | 10.5    | 424         | 11.7        |
| 4SDm-2.2                | 2.2         | 3.0  | 60  | 15      | 502         | 15.7        |

### Motor wiring



# 4" OIL FILLED MOTOR 220V

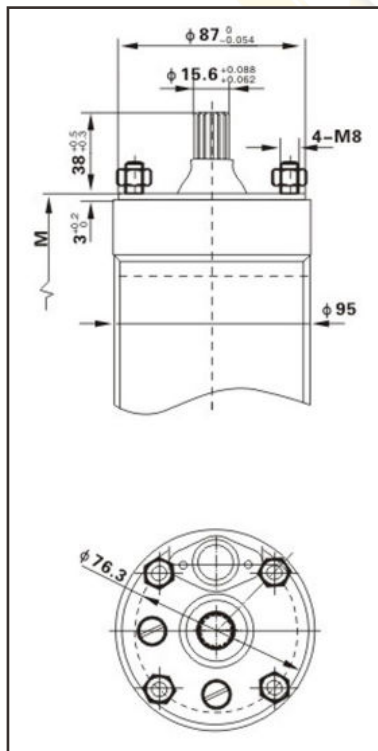
## 220V 3 Phase - Solar Application



### Motor technical data

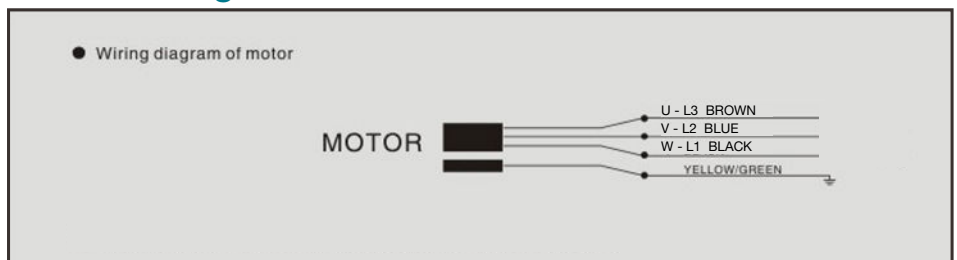
|                                                                                           |                    |
|-------------------------------------------------------------------------------------------|--------------------|
| Three phase power:                                                                        | 0.37 to 2.2kW      |
| Speed:                                                                                    | 2850rpm            |
| Voltage:                                                                                  | 220V- 3Phase       |
| Insulation class:                                                                         | B                  |
| Protection grade:                                                                         | IP 68              |
| Highest temperature of liquid:                                                            | 35°C               |
| Maximum solid handling:                                                                   | 40g/m <sup>3</sup> |
| Motor casing:                                                                             | stainless steel    |
| Maximum diameter:                                                                         | Φ 95 mm            |
| Maximum Submersible depth:                                                                | 200m               |
| With sand proof cover/pressure balance membrane/<br>mechanical seal for high performance. |                    |
| Flange and coupling according to NEMA standard.                                           |                    |

### Motor dimensions



| TYPE                       | MOTOR POWER |      | RUNNING | DIMENSIONS     |                |
|----------------------------|-------------|------|---------|----------------|----------------|
| Single Phase<br>220V~/50HZ | kW          | HP   | Amps    | Length<br>(mm) | Weight<br>(kg) |
| 4SD-0.37                   | 0.37        | 0.5  | 2.8     | 314            | 6.7            |
| 4SD-0.55                   | 0.55        | 0.75 | 3.6     | 329            | 7.3            |
| 4SD-0.75                   | 0.75        | 1.0  | 4       | 344            | 8.0            |
| 4SD-1.1                    | 1.1         | 1.5  | 5.9     | 399            | 10.6           |
| 4SD-1.5                    | 1.5         | 2.0  | 7.8     | 424            | 11.7           |
| 4SD-2.2                    | 2.2         | 3.0  | 11.6    | 344            | 8.0            |

### Motor wiring



*Note: These motors make use of our TGP inverters*

## Cable Size Chart

| 220V SINGLE PHASE |                               |     |     |     |     |      |      |      |      |
|-------------------|-------------------------------|-----|-----|-----|-----|------|------|------|------|
| mm <sup>2</sup>   | Cable Size (mm <sup>2</sup> ) |     |     |     |     |      |      |      |      |
|                   | 1.5                           | 2.5 | 4   | 6   | 10  | 16   | 25   | 35   | 50   |
| 0.37kW            | 120                           | 200 | 320 | 480 | 810 | 1260 | 1900 | 2590 | 3580 |
| 0.55kW            | 80                            | 13  | 220 | 320 | 550 | 850  | 1290 | 1760 | 2430 |
| 0.75kW            | 60                            | 100 | 170 | 250 | 430 | 670  | 1010 | 1380 | 1910 |
| 1.1kW             | 40                            | 70  | 120 | 180 | 300 | 470  | 710  | 960  | 1360 |
| 1.5kW             | 30                            | 60  | 90  | 130 | 230 | 360  | 550  | 760  | 1060 |
| 2.2kW             | 20                            | 40  | 60  | 90  | 150 | 230  | 350  | 490  | 680  |

| 220V THREE PHASE |                               |     |      |      |      |      |      |      |    |
|------------------|-------------------------------|-----|------|------|------|------|------|------|----|
| mm <sup>2</sup>  | Cable Size (mm <sup>2</sup> ) |     |      |      |      |      |      |      |    |
|                  | 1.5                           | 2.5 | 4    | 6    | 10   | 16   | 25   | 35   | 50 |
| 0.37kW           | 470                           | 783 | 1253 | 1879 | -    | -    | -    | -    | -  |
| 0.55kW           | 319                           | 534 | 858  | 1293 | 2192 | -    | -    | -    | -  |
| 0.75kW           | 238                           | 394 | 632  | 951  | 1612 | -    | -    | -    | -  |
| 1.1kW            | 174                           | 290 | 470  | 702  | 1195 | 1856 | -    | -    | -  |
| 1.5kW            | 128                           | 215 | 342  | 510  | 870  | 1357 | 2065 |      | -  |
| 2.2kW            | 87                            | 145 | 232  | 348  | 597  | 928  | 1415 | 1943 |    |

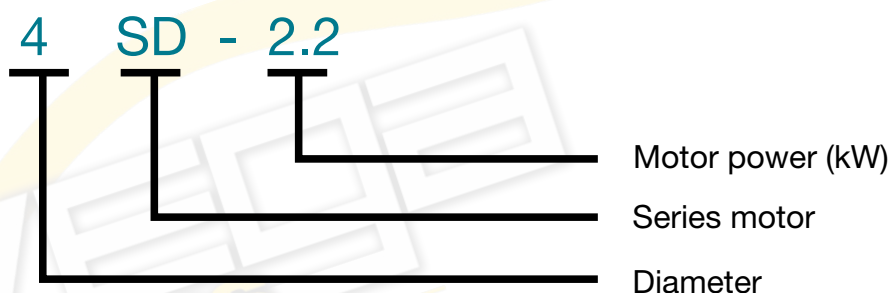
# 4" OIL FILLED MOTOR

## 380V Three phase

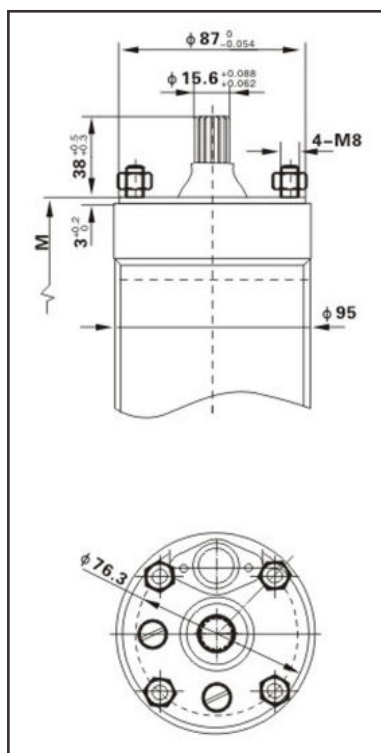


### Motor technical data

|                                                                                       |                    |
|---------------------------------------------------------------------------------------|--------------------|
| Three phase power:                                                                    | 0.37 to 7.5kW      |
| Speed:                                                                                | 2850rpm            |
| Voltage:                                                                              | 380 ~ 415V/50Hz    |
| Insulation class:                                                                     | B                  |
| Protection grade:                                                                     | IP 68              |
| Highest temperature of liquid:                                                        | 35°C               |
| Maximum solid handling:                                                               | 40g/m <sup>3</sup> |
| Motor casing:                                                                         | stainless steel    |
| Maximum diameter:                                                                     | Φ 95 mm            |
| Maximum Submersible depth:                                                            | 200m               |
| With sand proof cover/pressure balance membrane/mechanical seal for high performance. |                    |
| Flange and coupling according to NEMA standard.                                       |                    |



### Motor dimensions



| TYPE<br>Three Phase<br>380V~/50HZ | MOTOR POWER |      |                 | DIMENSIONS  |             |
|-----------------------------------|-------------|------|-----------------|-------------|-------------|
|                                   | kW          | HP   | RUNNING<br>AMPS | Length (mm) | Weight (kg) |
| 4SD - 0.37                        | 0.37        | 0.5  | 1.5             | 314         | 6.7         |
| 4SD - 0.55                        | 0.55        | 0.75 | 1.8             | 329         | 7.3         |
| 4SD - 0.75                        | 0.75        | 1.0  | 2.5             | 344         | 8           |
| 4SD - 1.1                         | 1.1         | 1.5  | 3.2             | 379         | 9.8         |
| 4SD - 1.5                         | 1.5         | 2.0  | 4.3             | 424         | 11.7        |
| 4SD - 2.2                         | 2.2         | 3.0  | 6.0             | 514         | 15.7        |
| 4SD - 3                           | 3.0         | 4.0  | 8.0             | 594         | 19.8        |
| 4SD - 4                           | 4.0         | 5.5  | 10.0            | 698         | 23.7        |
| 4SD - 5.5                         | 5.5         | 7.5  | 13.0            | 788         | 28          |
| 4SD - 7.5                         | 7.5         | 10.0 | 17.0            | 908         | 34          |

## CSR PERFORMANCE DATA OF THREE PHASE MOTORS (380VOLT/50HZ)

| $P_N$ |      | THRUST<br>LOAD | $V_N$ | $n_N$ | $I_N$ | $I_A$ | $\eta$ (%)           |                      |                       | $\cos\phi$           |                      |                       | $T_N$ | $T_A$ |
|-------|------|----------------|-------|-------|-------|-------|----------------------|----------------------|-----------------------|----------------------|----------------------|-----------------------|-------|-------|
| (kW)  | (HP) | (N)            | (V)   | rpm   | (A)   | (A)   | 50%<br>rated<br>load | 75%<br>rated<br>load | 100%<br>rated<br>load | 50%<br>rated<br>load | 75%<br>rated<br>load | 100%<br>rated<br>load | (Nm)  | (Nm)  |
| 0.55  | 0.75 | 1500           | 380   | -     | 1.60  | 6.00  | 61                   | 67                   | 67                    | 0.59                 | 0.72                 | 0.80                  | 1.90  | 3.10  |
| 0.75  | 1    | 1500           | 380   | 2850  | 2.10  | 8.90  | 63                   | 68                   | 70                    | 0.57                 | 0.70                 | 0.79                  | 2.50  | 4.80  |
| 1.1   | 1.5  | 3000           | 380   | -     | 3.00  | 13.80 | 69                   | 72                   | 72                    | 0.59                 | 0.73                 | 0.81                  | 3.80  | 9.60  |
| 1.5   | 2    | 3000           | 380   | -     | 3.90  | 18.60 | 69                   | 72                   | 73                    | 0.59                 | 0.72                 | 0.81                  | 5.00  | 11.30 |
| 2.2   | 3    | 4000           | 380   | -     | 5.80  | 28.70 | 72                   | 75                   | 75                    | 0.58                 | 0.72                 | 0.81                  | 7.60  | 21.70 |
| 3     | 4    | 4000           | 380   | -     | 8.80  | 30.60 | 69                   | 72                   | 70                    | 0.59                 | 0.72                 | 0.83                  | 10.50 | 21.44 |
| 4     | 5.5  | 4000           | 380   | -     | 10.80 | 32.30 | 63                   | 67                   | 70                    | 0.73                 | 0.79                 | 0.83                  | 13.40 | 21.24 |
| 5.5   | 7.5  | 4000           | 380   | -     | 14.80 | 50.50 | 70                   | 73                   | 74                    | 0.75                 | 0.79                 | 0.84                  | 18.93 | 37.18 |
| 7.5   | 10   | 4000           | 380   | 2850  | 18.00 | 61.00 | 71                   | 72                   | 73                    | 0.99                 | 0.95                 | 0.91                  | 24.60 | 45.00 |

|       |   |                    |            |   |                   |
|-------|---|--------------------|------------|---|-------------------|
| $P_N$ | - | Rated Output Power | $\eta$     | - | Motor Efficiency  |
| $V_N$ | - | Rated Voltage      | $\cos\phi$ | - | Power Factor      |
| $n_N$ | - | RPM                | $T_N$      | - | Full Load Torque  |
| $I_N$ | - | Full Load Current  | $T_A$      | - | Starting Torque   |
| $I_A$ | - | Starting Current   | $F_{[N]}$  | - | Axial Thrust Load |

## Cable Size Chart

| 380V THREE PHASE |                               |      |      |      |      |      |      |      |      |
|------------------|-------------------------------|------|------|------|------|------|------|------|------|
| mm <sup>2</sup>  | Cable Size (mm <sup>2</sup> ) |      |      |      |      |      |      |      |      |
|                  | 1.5                           | 2.5  | 4    | 6    | 10   | 16   | 25   | 35   | 50   |
| 0.37kW           | 810                           | 1350 | 2160 | 3240 | -    | -    | -    | -    | -    |
| 0.55kW           | 550                           | 920  | 1480 | 2230 | 3780 | -    | -    | -    | -    |
| 0.75kW           | 410                           | 680  | 1090 | 1640 | 2780 | -    | -    | -    | -    |
| 1.1kW            | 300                           | 500  | 810  | 1210 | 2060 | 3200 | -    | -    | -    |
| 1.5kW            | 220                           | 370  | 590  | 880  | 1500 | 2340 | 3560 | -    | -    |
| 2.2kW            | 150                           | 250  | 400  | 600  | 1030 | 1600 | 2440 | 3350 | -    |
| 3W               | 113                           | 188  | 300  | 447  | 736  | 1190 | 1859 | 2603 | 3719 |
| 4kW              | 89                            | 147  | 235  | 350  | 578  | 909  | 1447 | 2025 | 2750 |
| 5.5kW            | 60                            | 110  | 170  | 260  | 440  | 690  | 1060 | 1450 | 2030 |
| 7.5kW            | 50                            | 80   | 130  | 200  | 340  | 530  | 810  | 1110 | 1560 |