

UFR

Synchronous Motors

Rotational

UFR1/UFR3/UFR4

| | |
|----------------------|-----------------------------------|
| Dimensions (mm) | ∅ 52 x 28 / ∅ 52 x 42 / ∅ 52 x 56 |
| Voltage (V) | 24–230 |
| Speed (rpm.) 50 Hz | 500 |
| 60 Hz | 600 |
| Pole number | 12 |
| Running torque (cNm) | |
| 50 Hz | 2,8 / 3,7 / 5,3 |
| 60 Hz | 2,6 / 3,1 / 4,7 |
| Power output (W) | |
| 50 Hz | 1,5 / 1,9 / 2,8 |
| 60 Hz | 1,6 / 2 / 3 |
| Gear combination | A, D, M, B, F, V, J |



Standard Data

| | |
|--|--|
| Climatic class | wide-spread according to IEC 721, part 2-1 |
| Ambient temperature operation | °C -15...+60 |
| Ambient temperature storage | °C -20...+100 |
| Thermal resistance at f=0 R _{therm} | 11 K/W (UFR1), 7 K/W (UFR4) |
| Thermal class | A according to IEC 85 |
| Approval | Standard/UL/CSA |
| Mounting | any position |
| Electrical connection | wire |
| Protection | IP 40 according to DIN 40 050 / DIN EN 60034-5 |
| Weight | 180 g (UFR1), 370 g (UFR4) |
| Rotor stalling | motor can be stopped when voltage is applied, without being overheated |
| Bearings | sintered bronze, self-lubricating |
| Surge voltage strength | according to EN 60 034-1/EN 60-335-1 |

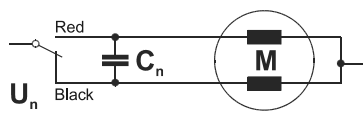
Order Reference

| | | | | | | | | |
|-----------------------|--|---|---|---|---|------------|---|---|
| Type | Synchronous Motor | UFR | 1 | 0 | N | 24 V/50 Hz | R | N |
| Configuration | 1 Two coils 3 Three coils 4 Four coils | | | | | | | |
| Rotor shaft, mounting | 0 centre bolt 8 mm, shaft 3.0 mm, clip 1 centre bolt 8 mm, shaft 2.0 mm, clip 2 centre bolt 8 mm, shaft 1.5 mm, clip | 3 centre bolt 8 mm, shaft 3.0 mm, screw plate 4 centre bolt 8 mm, shaft 2.0 mm, screw plate 5 centre bolt 8 mm, shaft 1.5 mm, screw plate | | | | | | |
| Approval | N Approval Standard UL Approval UL CSA Approval UL/CSA | | | | | | | |
| Voltage/Frequency | See page 26 | | | | | | | |
| Direction | reversible | | | | | | | |
| Cable | N wire 150 mm (other on request) | | | | | | | |

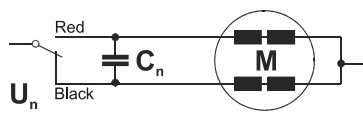
Technical Data

| | | | | | | |
|-----------------------------------|------------------------------|--|--------|--------|----------|-----------|
| UFR1 | Rated frequency | Hz | 50 | 60 | | |
| | Speed n | rpm | 500 | 600 | | |
| | Power output P_{mech}^* | W | 1,5 | 1,6 | | |
| | Running torque M_n^* | cNm | 2,8 | 2,6 | | |
| | Power consumption P_{el}^* | W | 3,3 | 3,6 | | |
| | Detent torque M_S | cNm | 0,46 | | | |
| | Rotor inertia J_R | gcm ² | 14,2 | | | |
| Capacitors at Rated voltage U_N | | V | 24 | 48 | 110 | 230 |
| Operation capacitor C_{50} | | μF/VAC | 10/45 | 2,7/90 | 0,47/200 | 0,1/400 |
| Operation capacitor C_{60} | | μF/VAC | 8,2/45 | 2,2/90 | 0,39/200 | 0,082/440 |
| UFR3 | Rated frequency | Hz | 50 | 60 | | |
| | Speed n | rpm | 500 | 600 | | |
| | Power output P_{mech}^* | W | 1,9 | 2 | | |
| | Running torque M_n^* | cNm | 3,7 | 3,1 | | |
| | Power consumption P_{el}^* | W | 6,1 | 5,1 | | |
| | Detent torque M_S | cNm | 0,54 | | | |
| | Rotor inertia J_R | gcm ² | 17 | | | |
| Capacitors at Rated voltage U_N | | V | 24 | 48 | 110 | 230 |
| Operation capacitor C_{50} | | μF/VAC | 39/24 | 10/50 | 1,8/110 | 0,39/240 |
| Operation capacitor C_{60} | | μF/VAC | 27/24 | 6,8/50 | 1,2/110 | 0,27/240 |
| UFR4 | Rated frequency | Hz | 50 | 60 | | |
| | Speed n | rpm | 500 | 600 | | |
| | Power output P_{mech}^* | W | 2,8 | 3 | | |
| | Running torque M_n^* | cNm | 5,3 | 4,7 | | |
| | Power consumption P_{el}^* | W | 6,4 | 6,9 | | |
| | Detent torque M_S | cNm | 0,8 | | | |
| | Rotor inertia J_R | gcm ² | 24,2 | | | |
| Capacitors at Rated voltage U_N | | V | 24 | 48 | 110 | 230 |
| Operation capacitor C_{50} | | μF/VAC | 18/45 | 7/90 | 0,82/200 | 0,22/440 |
| Operation capacitor C_{60} | | μF/VAC | 15/45 | 3,9/90 | 0,68/200 | 0,18/440 |
| Tolerance of voltage | | Standard power supply system + 10% ... - 10% | | | | |
| Winding temperature T_{max} | | 105°C | | | | |
| Duty cycle | | 100% | | | | |
| Direction of rotation | | reversible | | | | |
| * at rated voltage | | | | | | |

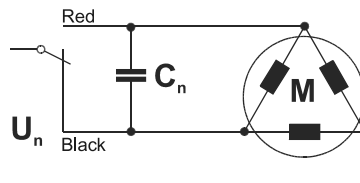
Connection sheet UFR1 Parallel circuit



UFR4 Parallel circuit



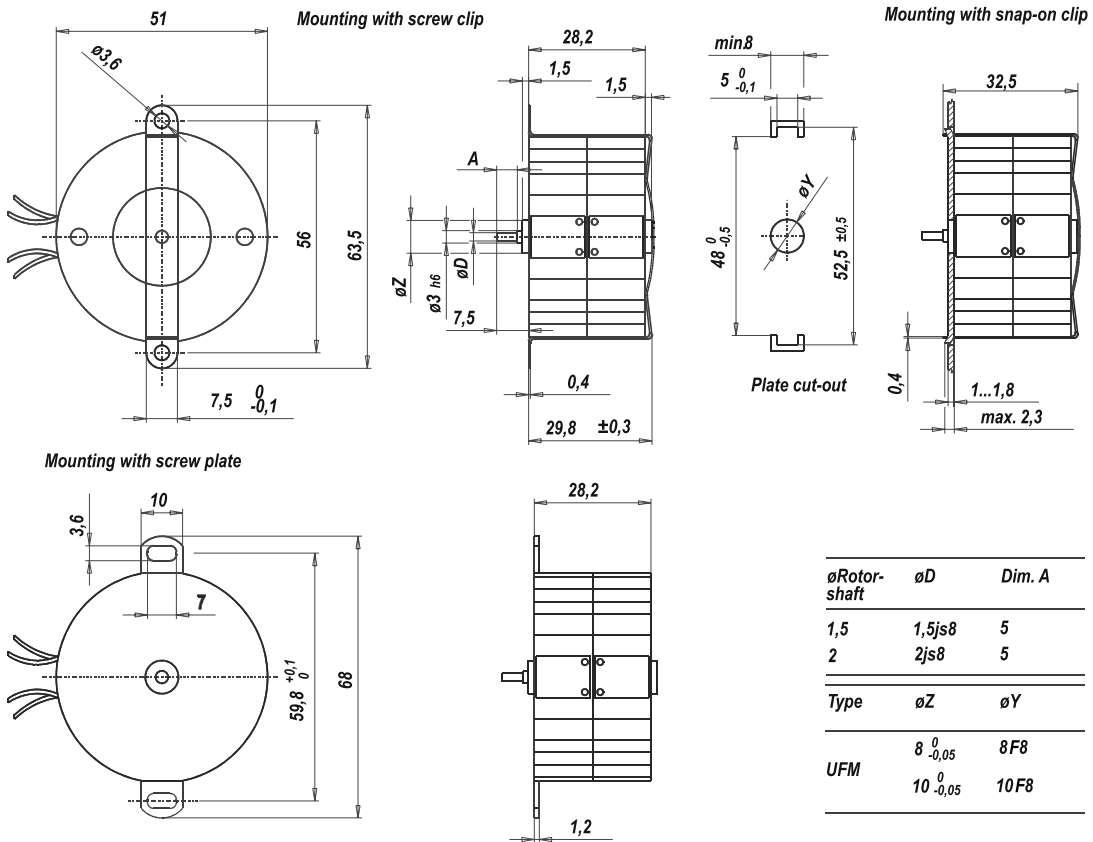
UFR3 Parallel circuit



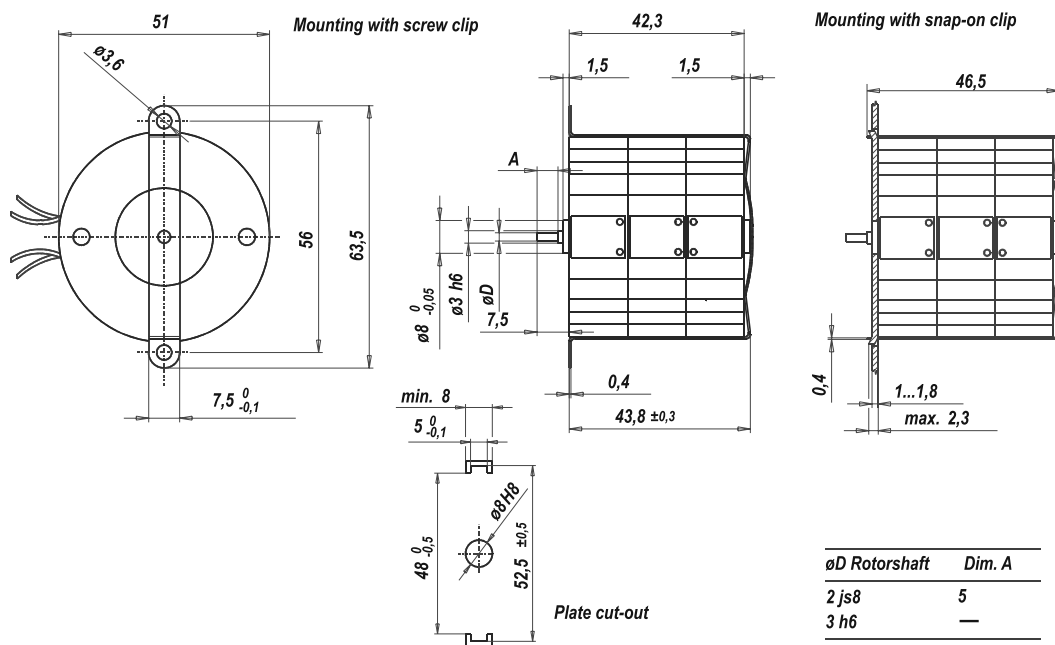
Red = clockwise rotation
Black = anti clockwise rotation

Drawing

UFR1



UFR3



Drawing

UFR4

