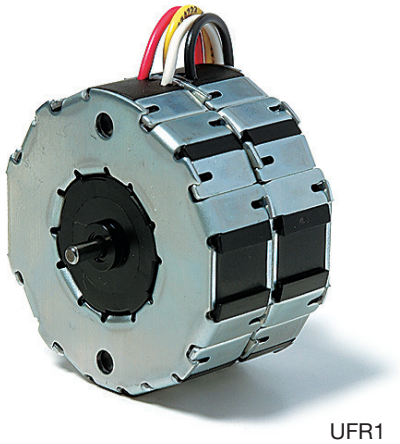
UFR

UFR1/UFR3/UFR4

Dimensions (mm)	∅ 52 x 28 / ∅ 52 x 42 / ∅ 52 x 56
Voltage (V)	12–230
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	D, M, B, F, V, J (i ≤ 2k), O, P



UFR1

Standard Data

Climatic class	wide-spread according to DIN IEC 60721-2-1 : 1992
Ambient temperature operation	°C -15...+55
Ambient temperature storage	°C -20...+100
Thermal resistance at f=0 R_{therm}	11 K/W (UFR1), 7 K/W (UFR4)
Thermal class	105 (A) according to DIN EN 60085 : 2004 (130 / B on request)
Approval	standard (UL/CSA on request)
Mounting	any position
Electrical connection	lead wires AWG22, insulation Ø 1.72 ± 0.08 mm
Protection	IP40 according to DIN EN 60529 : 2000
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
Electric strength	according to DIN EN 60034-1/DIN EN 60335-1

Order Reference

Type	Synchronous Motor						UFR	1	0	N	B4	R	N
Configuration	1	Two coils											
	3	Three coils											
	4	Four coils											
Rotor shaft, mounting	0	centring 8 mm, shaft 3.0 mm, clip	B	centring 10 mm, shaft 3.0 mm, clip									
	1	centring 8 mm, shaft 2.0 mm, clip	A	centring 10 mm, shaft 2.0 mm, clip									
	2	centring 8 mm, shaft 1.5 mm, clip	C	centring 10 mm, shaft 1.5 mm, clip									
	3	centring 8 mm, shaft 3.0 mm, screw plate*	D	centring 12 mm, shaft 3.0 mm, clip									
	4	centring 8 mm, shaft 2.0 mm, screw plate*	E	centring 10 mm, shaft 3.0 mm, screw plate*									
	5	centring 8 mm, shaft 1.5 mm, screw plate*	K	centring 10 mm, shaft 2.0 mm, screw plate*									
			M	centring 10 mm, shaft 1.5 mm, screw plate*									
Approval	N	Approval Standard											
Voltage/Frequency		See next page											
Direction		reversible											
Cable	N	cable 150 mm (other on request)											

* screw plate not for UFR3 and UFR4

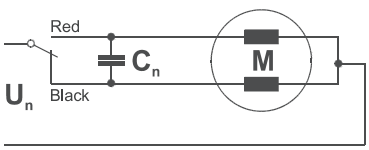
UFR

Technical Data

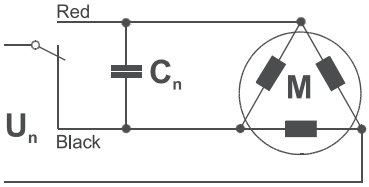
UFR1	Rated frequency	Hz	50	60			
	Speed n	rpm	500	600			
	Power output Pmech	W	1.5	1.6			
	Running torque Mn	cNm	2.8	2.6			
	Power consumption Pel	W	3.3	3.6			
	Detent torque M_S	cNm	0.46				
	Rotor inertia J_R	gcm2	14.2				
	Rated voltage U_N	V	12	24	48	110	230
	Duty cycle	%	100	100	100	100	100
	Resistance R_{20}	Ω	27	105	400	2400	9100
	Capacitor C_{50}	µF/V ±10%	39;33/24	10;8.2/45	2.7;2.2/90	0.47;0.39/230	0.12;0.10/440
	Winding code		B1/G1	B4/G4	C1/H1	C8/H8	D5/J5
UFR3	Rated frequency	Hz	50	60			
	Speed n	rpm	500	600			
	Power output Pmech	W	1.9	2			
	Running torque Mn	cNm	3.7	3.1			
	Power consumption Pel	W	6.1	5.1			
	Detent torque M_S	cNm	0.54				
	Rotor inertia J_R	gcm2	17				
	Rated voltage U_N	V	12	24	48	110	230
	Duty cycle	%	100	100	100	100	100
	Resistance R_{20}	Ω	19	70	280	1520	5850
	Capacitor C_{50}	µF/V ±10%	150;100/12	39;27/24	10;6.8/48	1.8;1.2/110	0.47;0.33/230
	Winding code		B1/G1	B4/G4	C1/H1	C8/H8	D5/J5
UFR4	Rated frequency	Hz	50	60			
	Speed n	rpm	500	600			
	Power output Pmech	W	2.8	3			
	Running torque Mn	cNm	5.3	4.7			
	Power consumption Pel	W	6.4	6.9			
	Detent torque M_S	cNm	0.8				
	Rotor inertia J_R	gcm2	24.2				
	Rated voltage U_N	V	24	48	110	230	
	Duty cycle	%	100	100	100	100	
	Resistance R_{20}	Ω	56	210	1200	4800	
	Capacitor C_{50}	µF/V ±10%	18;15/45	4.7;3.9/90	0.82;0.68/200	0.22;0.18/400	
	Winding code		B4/G4	C1/H1	C8/H8	D5/J5	
	Tolerance of voltage		standard power supply system + 10% ... - 10%				
	Winding temperature T_{max}	°C	105				
	Direction of rotation		reversible				

Circuit diagram

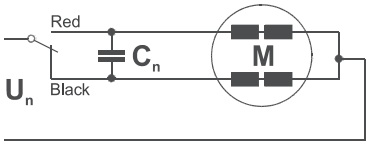
UFR1 Parallel circuit



UFR3 Parallel circuit



UFR4 Parallel circuit

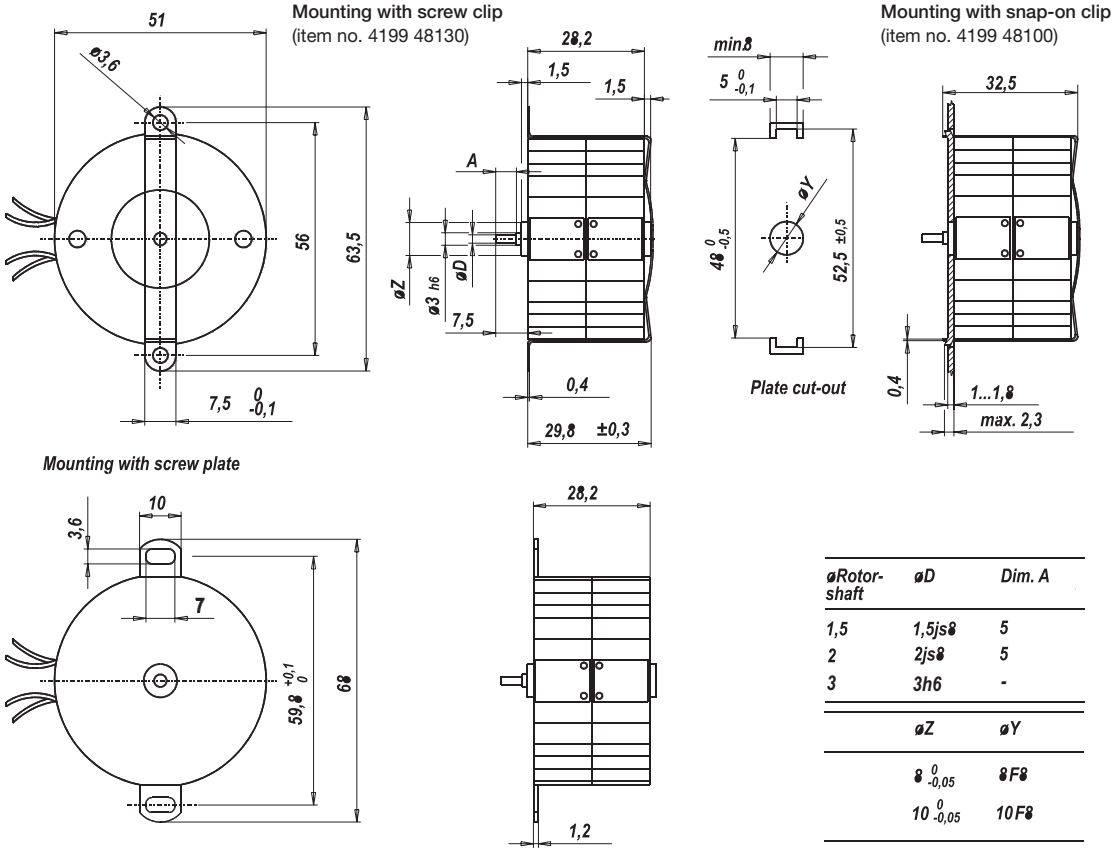


Red = clockwise rotation
Black = counter clockwise rotation

UFR

Dimensions

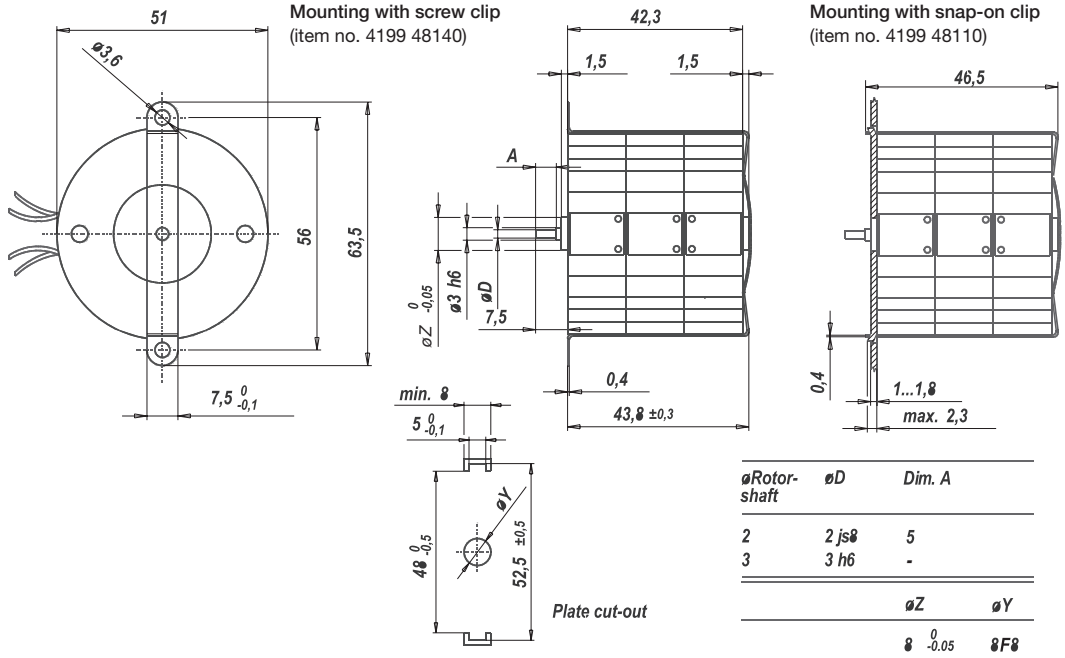
UFR1



øRotor-shaft	øD	Dim. A
1,5	1,5js8	5
2	2js8	5
3	3h6	-

	øZ	øY
	8 0 -0,05	8F8
	10 0 -0,05	10F8

UFR3



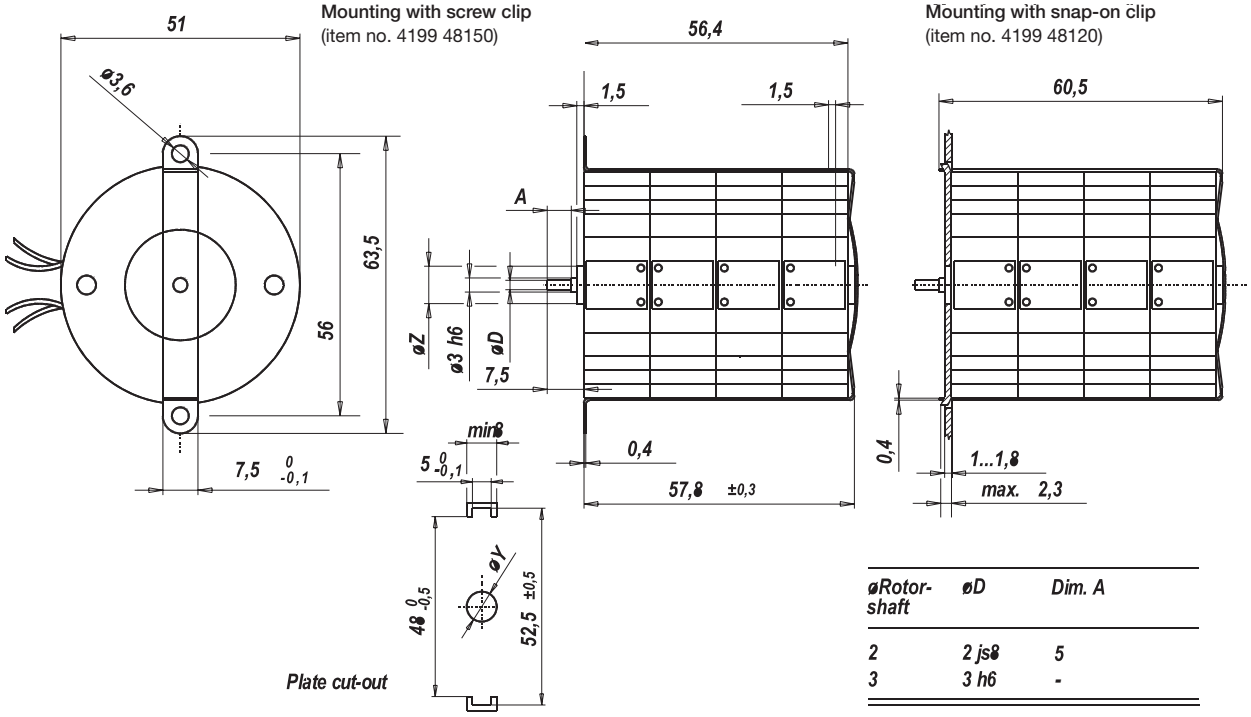
øRotor-shaft	øD	Dim. A
2	2 js8	5
3	3 h6	-

	øZ	øY
	8 0 -0.05	8F8
	10 0 -0.05	10F8

UFR

Dimensions

UFR4



øRotor-shaft	øD	Dim. A
2	2 js8	5
3	3 h6	-

øZ	øY
8 0 -0.05	8F8
10 0 -0.05	10F8