

## 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	A, D, M, B, F, V, J, O



## Standard Data

Climatic class	wide-spread according to DIN IEC 60721-2-1
Ambient temperature operation	°C -15...+55
Ambient temperature storage	°C -20...+100
Thermal resistance at f=0 R <sub>therm</sub>	11 K/W (UFR1), 7 K/W (UFR4)
Thermal class	A according to DIN EN 60085
Approval	standard (UL/CSA on request)
Mounting	any position
Electrical connection	cabl
Protection	IP 30 according to DIN EN 60529
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

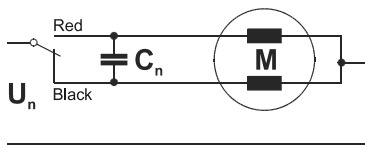
Type	Synchronous Motor	UFR	1	0	N	24 V/50 Hz	R	N
Configuration	1 Two coils 3 Three coils 4 Four coils							
Rotor shaft, mounting	0 centring 8 mm, shaft 3.0 mm, clip 1 centring 8 mm, shaft 2.0 mm, clip 2 centring 8 mm, shaft 1.5 mm, clip 3 centring 8 mm, shaft 3.0 mm, screw plate* 4 centring 8 mm, shaft 2.0 mm, screw plate* 5 centring 8 mm, shaft 1.5 mm, screw plate*	A centring 12 mm, shaft 3.0 mm, clip E centring 10 mm, shaft 3.0 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

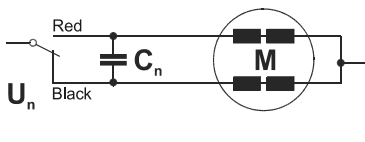
## Technical Data

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 $P_{et}$	W	3.3	3.6		
	Detent torque $M_s$	cNm	0.46			
	Rotor inertia $J_R$	gcm <sup>2</sup>	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	0.12/400
Operation capacitor $C_{60}$		μF/VAC	8.2/45	2.2/90	0.39/200	0.10/400
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 $P_{et}$	W	6.1	5.1		
	Detent torque $M_s$	cNm	0.54			
	Rotor inertia $J_R$	gcm <sup>2</sup>	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 $P_{et}$	W	6.4	6.9		
	Detent torque $M_s$	cNm	0.8			
	Rotor inertia $J_R$	gcm <sup>2</sup>	24.2			
Capacitors at Rated voltage $U_N$		V	24	48	110	230
Operation capacitor $C_{50}$		μF/VAC	18/45	4.7/90	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				

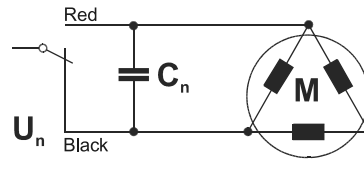
Circuit diagram UFR1 Parallel circuit



UFR4 Parallel circuit



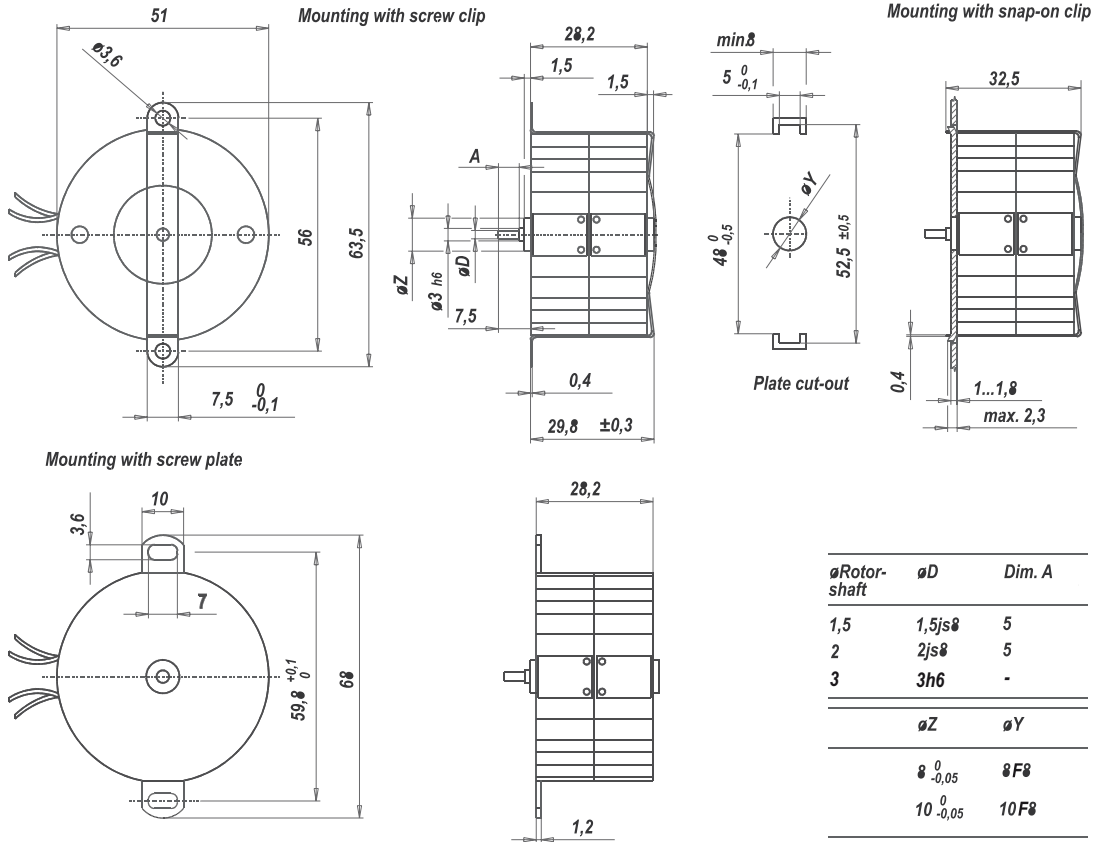
UFR3 Parallel circuit



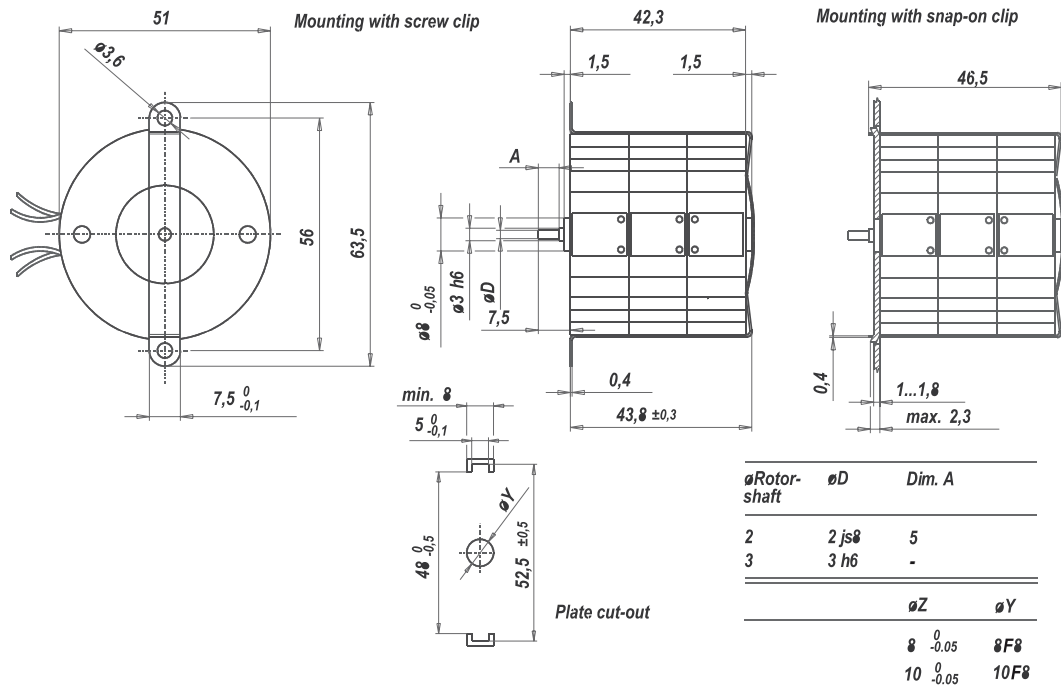
Red = clockwise rotation  
Black = counter clockwise rotation

Dimensions

UFR1



UFR3



Dimensions

UFR4

