

U0 (SM5021; SM5022)

Dimensions (mm)	∅ 50 x 21
Voltage (V)	6–230
Speed (rpm) 50 Hz	250/375/500
60 Hz	300/450/600
Pole number	24/16/12
Running torque (cNm) 50 Hz	2.0–3.3 (SM5021); 3.3–7.5 (SM5022)
60 Hz	1.8–3 (SM5021); 4.5–7.0 (SM5022)
Power output (W) 50 Hz	0.65–2.75 (SM5021); 1.3–2.73 (SM5022)
60 Hz	0.78–3.0 (SM5021); 1.8–2.83 (SM5022)
Gear combination	VK4, O, P, R



Standard Data

Climatic class	wide-spread according to DIN IEC 60721-2-1
Ambient temperature operation	°C -15 ... +40
Ambient temperature storage	°C -20 ... +100
Thermal class	B (SM5021) ; A (SM5022) according to DIN EN 60085
Approval	standard
Mounting	any position
Electrical connection	cable
Protection	IP 30 according to DIN EN 60529
Weight	170 ... 180 g (SM5021); 180 ... 195 g (SM5022)
Rotor stalling	motor can be stopped when voltage is applied, without being overheated
Bearings	Sintered bronze, self-lubricating

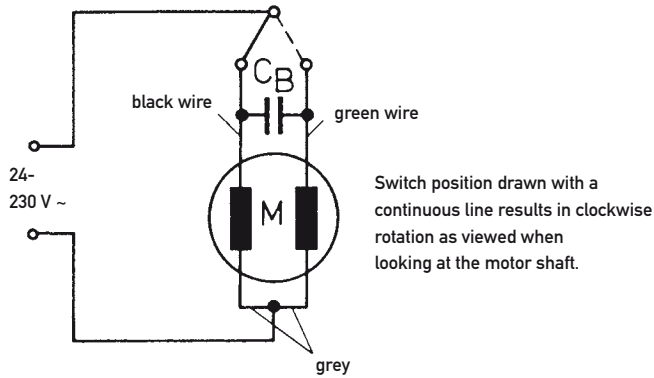
Order Reference

Type	Synchronous Motor	SM5021 R / SM5022 R	250	24 V	50 Hz
rpm	250 375 500				
Voltage	24 V 110 V 230 V				
Frequency	50 Hz 60 Hz 50/60 Hz				

Technical Data

Motor type (SM5021)		R-250/1	R250/1	R-500/1	R-500/1	R-375/1	R-375/1	R-375/2	R-375/2	
Rated frequency	Hz	50	60	50	60	50	60	50	60	
Speed of rotation	rpm	250	300	500	600	375	450	375	450	
Running torque M_n	cNm	2.5	2.5	2	1.8	2.3	2	3.3	3	
Power output	W	0.65	0.78	1	1.1	0.9	0.95	1.3	1.4	
Power consumption	VA	3.86	4.37	4.37	4.83	4.2	4.6	6	6.7	
Nominal current at 230 V	mA	16.8	19	19	21	18.3	20	26	29	
Max. permissible ext. inertia	gcm ²	30	10	10	10	15	10	10	10	
Detent torque M_s	cNm	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
Winding temperature increase	K	55	60	63	70	60	65	80	85	
Weight	g	180	180	170	170	180	180	180	180	
Capacitors	at U_N : 24 V	$\mu\text{F}/V\sim$	10/63	10/63	10/63	10/63	10/63	15/63	15/63	
	at U_N : 110 V	$\mu\text{F}/V\sim$	0.47/250	0.47/250	0.47/250	0.47/250	0.47/250	0.75/250	0.75/250	
	at U_N : 230 V	$\mu\text{F}/V\sim$	0.12/500	0.12/500	0.12/500	0.12/500	0.12/500	0.18/500	0.18/500	
Motor type (SM5022)		R-250/1	R-250/1	R-250/S2	R-250/S2	R-375/1	R-375/1	R-375/S2	R-375/S2	
Rated frequency	Hz	50	60	50	60	50	60	50	60	
Speed of rotation	rpm	250	300	250	300	375	450	375	450	
Running torque M_n	cNm	6	5.7	7.5	7	4.7	4.5	7	6.5	
Power output	W	1.57	1.8	2	2.2	1.85	2.1	2.7	3	
Power consumption	VA	6.1	6.6	9	9.7	6.45	6.9	9.2	10.4	
Nominal current at 230 V	mA	26.5	28.7	39.1	42.2	28	30	40	45	
Max. permissible ext. inertia	gcm ²	50	20	60	30	60	40	20	40	
Detent torque M_s	cNm	1	1	1	1	1	1	1	1	
Winding temperature increase	K	85	90	60 (S2 10 min.)		85	90	60 (S2 10 min.)		
Weight	g	195	195	195	195	195	195	195	195	
Capacitors	at U_N : 24 V	$\mu\text{F}/V\sim$	15/63	15/63	25/63	25/63	15/63	15/63	25/63	25/63
	at U_N : 110 V	$\mu\text{F}/V\sim$	0.75/250	0.75/250	1.2/250	1.2/250	0.75/250	0.75/250	1.2/250	1.2/250
	at U_N : 230 V	$\mu\text{F}/V\sim$	0.18/500	0.18/500	0.27/500	0.27/500	0.18/500	0.18/500	0.27/500	0.27/500
Motor type		R-500	R-500	R-500/S2	R-500/S2					
Rated frequency	Hz	50	60	50	60					
Speed of rotation	rpm	500	600	500	600					
Running torque M_n	cNm	3.7	3.2	5.2	4.5					
Power output	W	1.94	2	2.73	2.83					
Power consumption	VA	6.21	6.67	8.85	9.2					
Nominal current at 230 V	mA	27	29	38.5	40					
Max. permissible ext. inertia	gcm ²	35	15	45	25					
Detent torque M_s	cNm	1	1	1	1					
Winding temperature increase	K	85	90	55 (S2 10 min.)						
Weight	g	195	195	195	195					
Capacitors	at U_N : 24 V	$\mu\text{F}/V\sim$	15/63	15/63	25/63	25/63				
	at U_N : 110 V	$\mu\text{F}/V\sim$	0.75/250	0.75/250	1.2/250	1.2/250				
	at U_N : 230 V	$\mu\text{F}/V\sim$	0.18/500	0.18/500	0.27/500	0.27/500				

Circuit diagram Parallel circuit



Dimensions

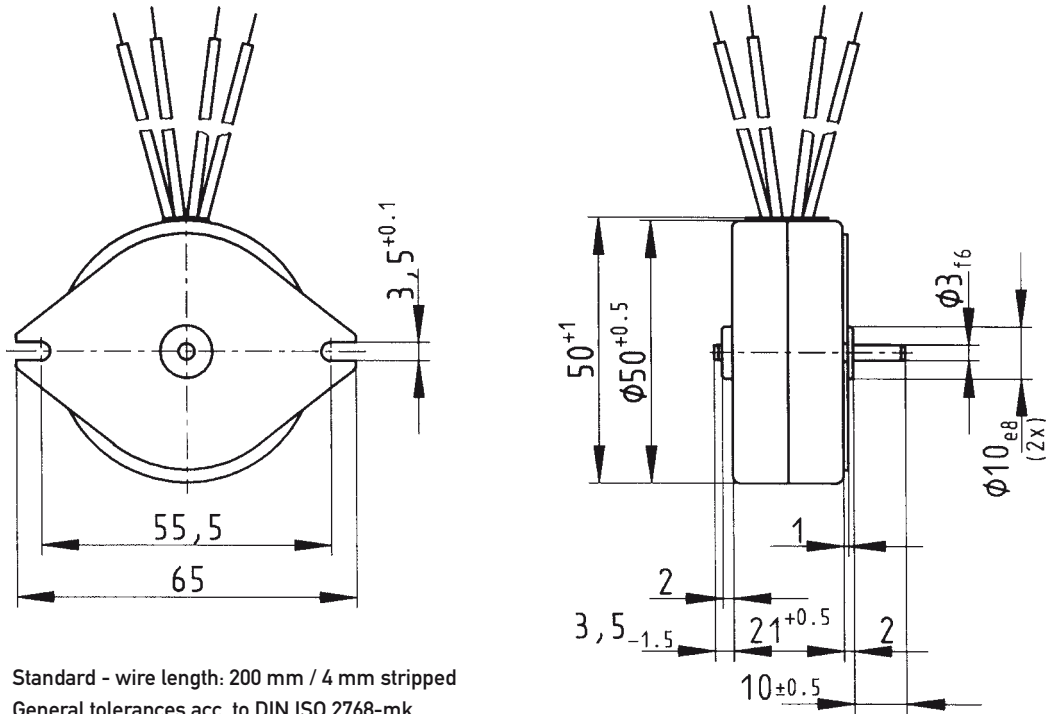
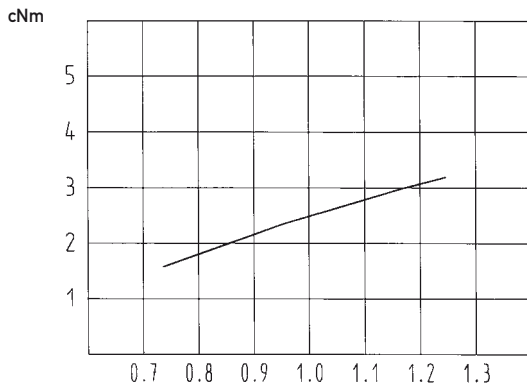


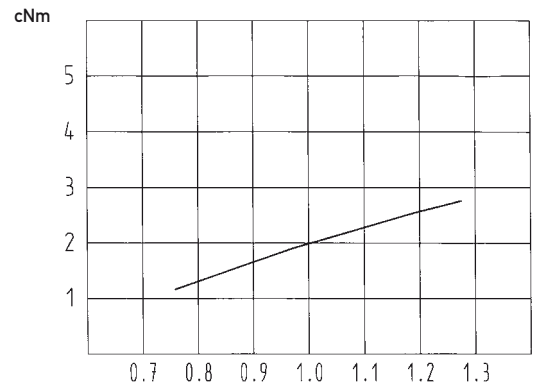
Chart: Torque versus voltage

UOM1 (SM 5021 R-250/1)



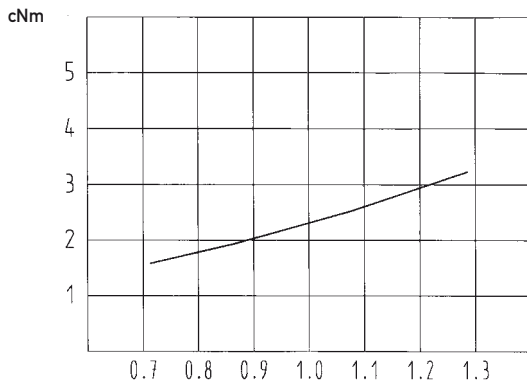
Supply voltage / Nominal voltage

UOR1 (SM 5021 R-500/1)



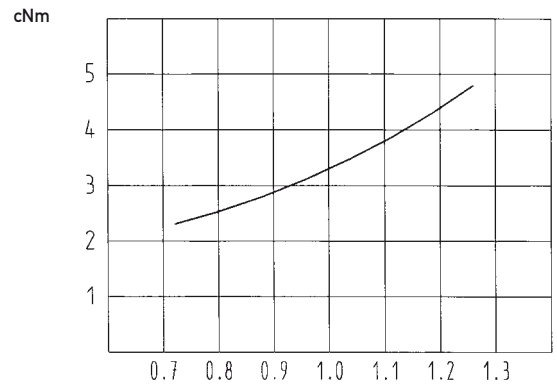
Supply voltage / Nominal voltage

UOU1 (SM 5021 R-375/1)



Supply voltage / Nominal voltage

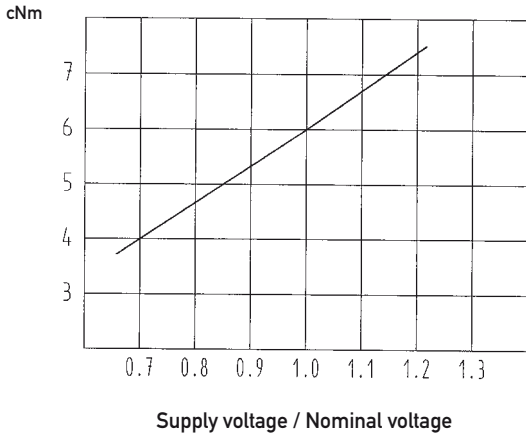
UOU1 (SM 5021 R-375/2)



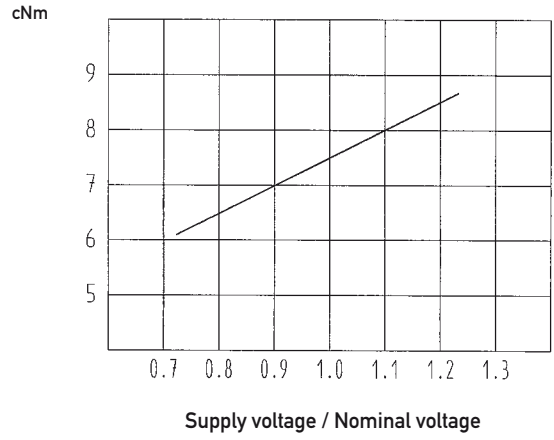
Supply voltage / Nominal voltage

Chart: Torque versus voltage

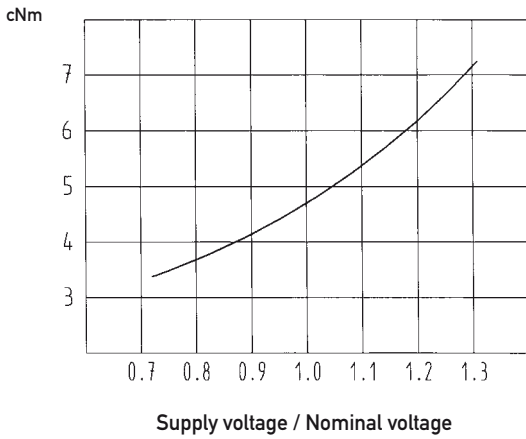
UOM5 (SM 5022 R-250)



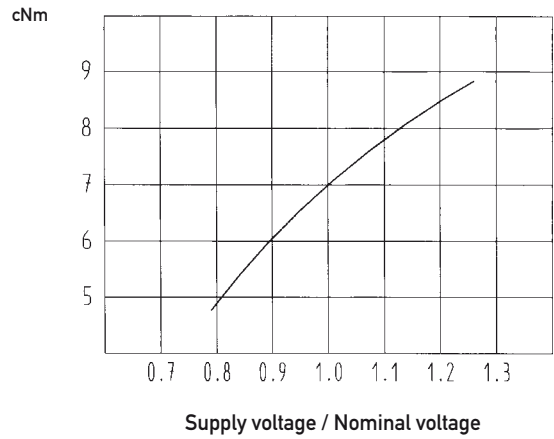
UOM5 (SM 5022 R-250/S2)



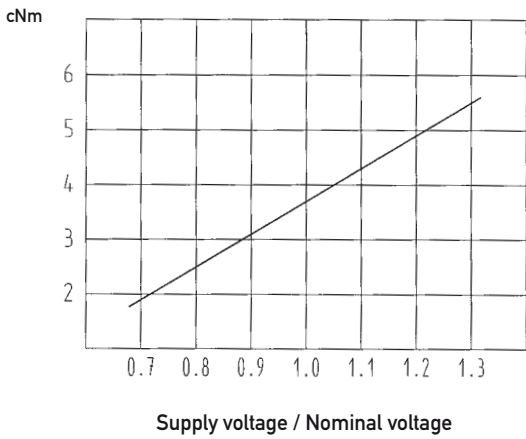
UOU5 (SM 5022 R-375)



UOU5 (SM 5022 R-375/S2)



UOR5 (SM 5022 R-500)



UOR5 (SM 5022 R-500/S2)

