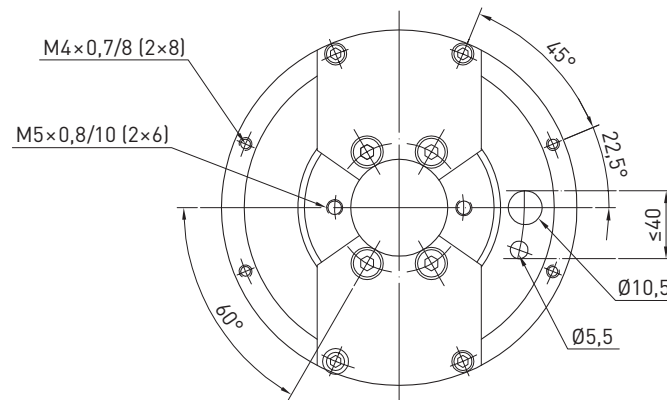
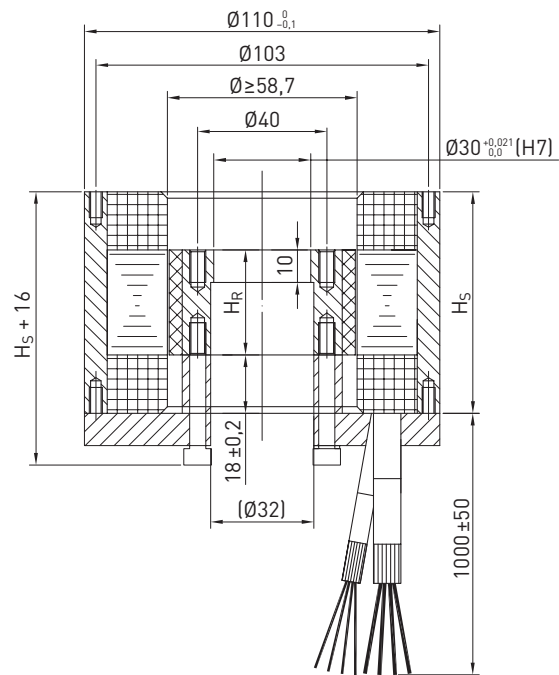


Dimensions DMRO



Torque Motors

HIWIN torque motors DMR

3.4.2 DMR1 specifications

Torque-speed curves (DC bus voltage: 600 VDC)

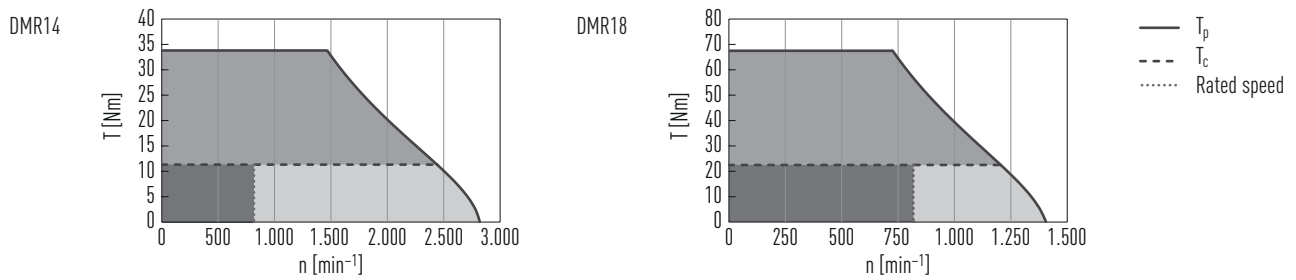


Table 3.2 Technical data for DMR1

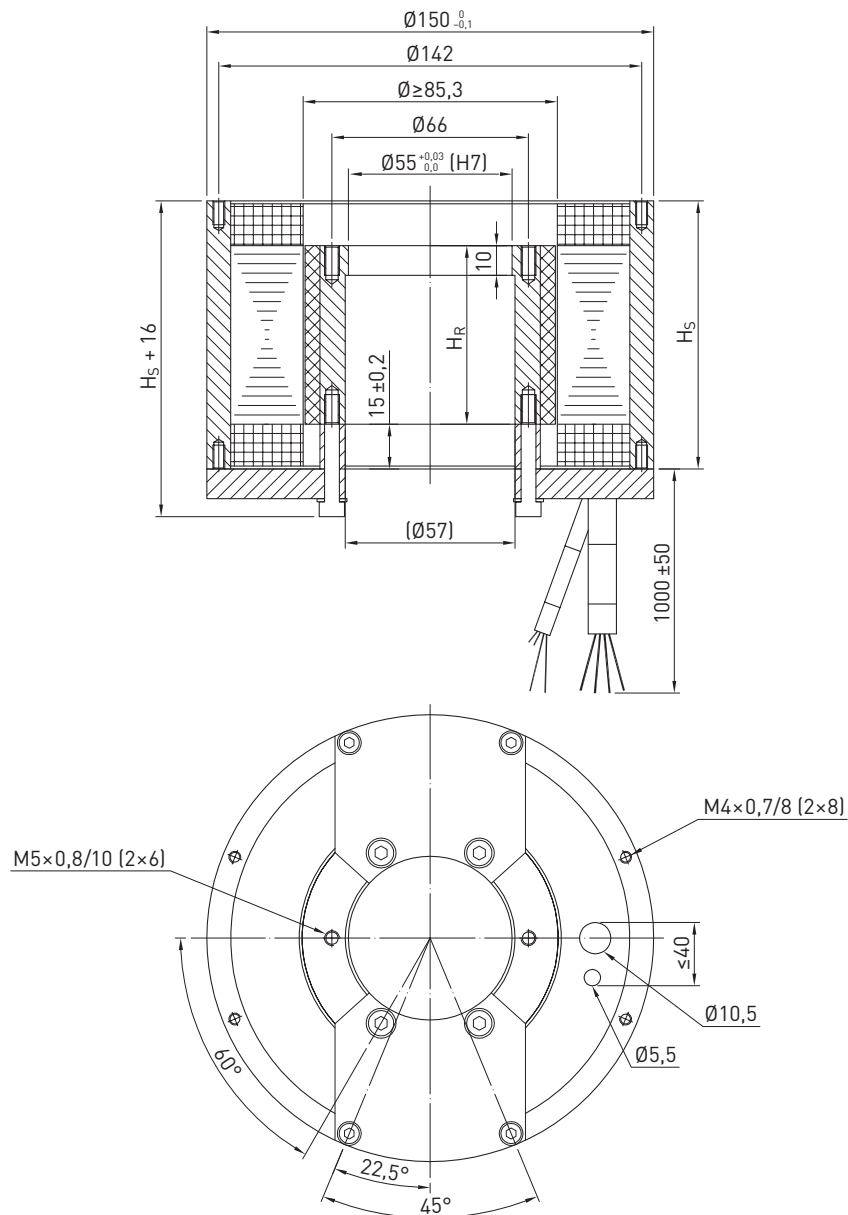
	Symbol	Unit	DMR14	DMR18
Torques and electrical parameters				
Peak torque (for 1 sec.)	T_p	Nm	33.8	67.5
Continuous torque ¹⁾	T_c	Nm	11.3	22.5
Stall torque	T_s	Nm	7.9	15.8
Peak current (for 1 sec.)	I_p	A	13.5	13.5
Continuous current ¹⁾	I_c	A	4.5	4.5
Stall current	I_s	A	3.2	3.2
Resistance ²⁾	R_{25}	Ω	3.9	6.5
Inductance ²⁾	L_{25}	mH	14	26
Motor constant	K_m	Nm/ $\sqrt{W}$	1.0	1.6
Electrical time constant	K_e	ms	3.6	4.0
Torque constant	K_t	Nm/A	2.50	5.0
Back emf constant	K_u	$V_{eff}/(\text{rad/s})$	1.2	2.4
Inertia of rotor	J	kgm ²	0.00088	0.00175
Thermal resistance	R_{th}	°C/W	0.80	0.48
Thermal time constant	T_{th}	s	2,290	2,520
Max. DC bus voltage	U_{max}	VDC	600	
Rated speed	n_N	min ⁻¹	818	818
Mechanical parameters				
Number of poles	$2p$		22	
Thermal sensor			PTC SNM 120	
Stator height	H_S	mm	70	110
Rotor height	H_R	mm	40	80
Mass of motor	M_m	kg	4.8	8.3

All the specifications in the table (except dimensions) are in $\pm 10\%$ of tolerance at 25 °C ambient temperature

¹⁾ Coil temperature: 120 °C

²⁾ Line to line

Dimensions DMR1



Torque Motors

HIWIN torque motors DMR

3.4.3 DMR3 specifications

Torque-speed curves (DC bus voltage: 600 VDC)

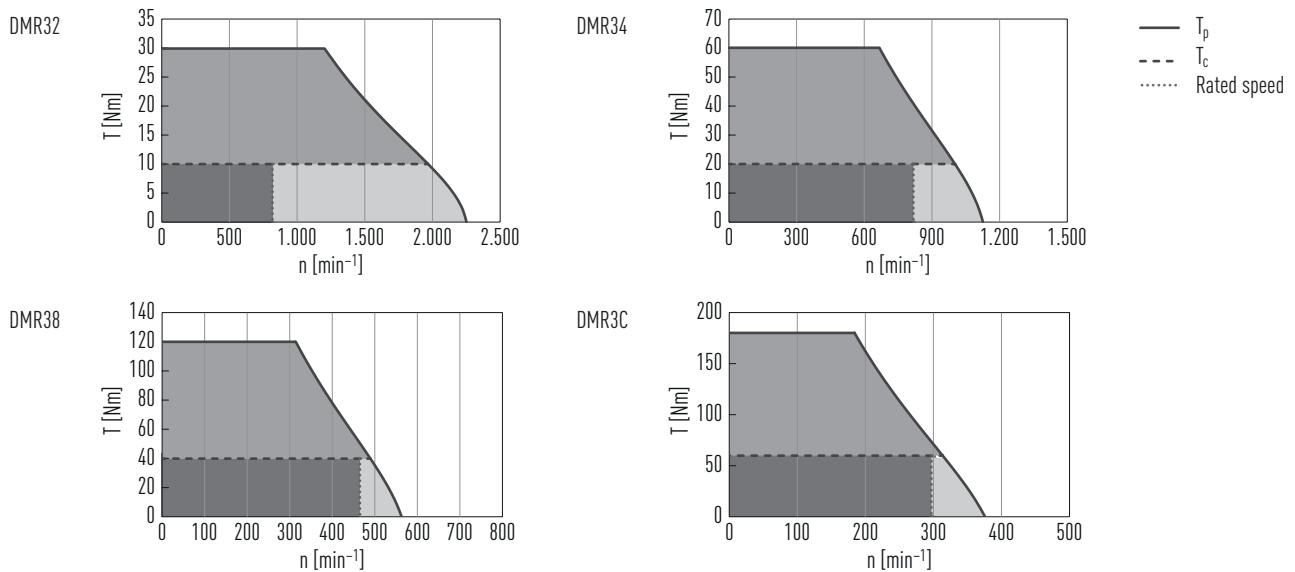


Table 3.3 Technical data for DMR3

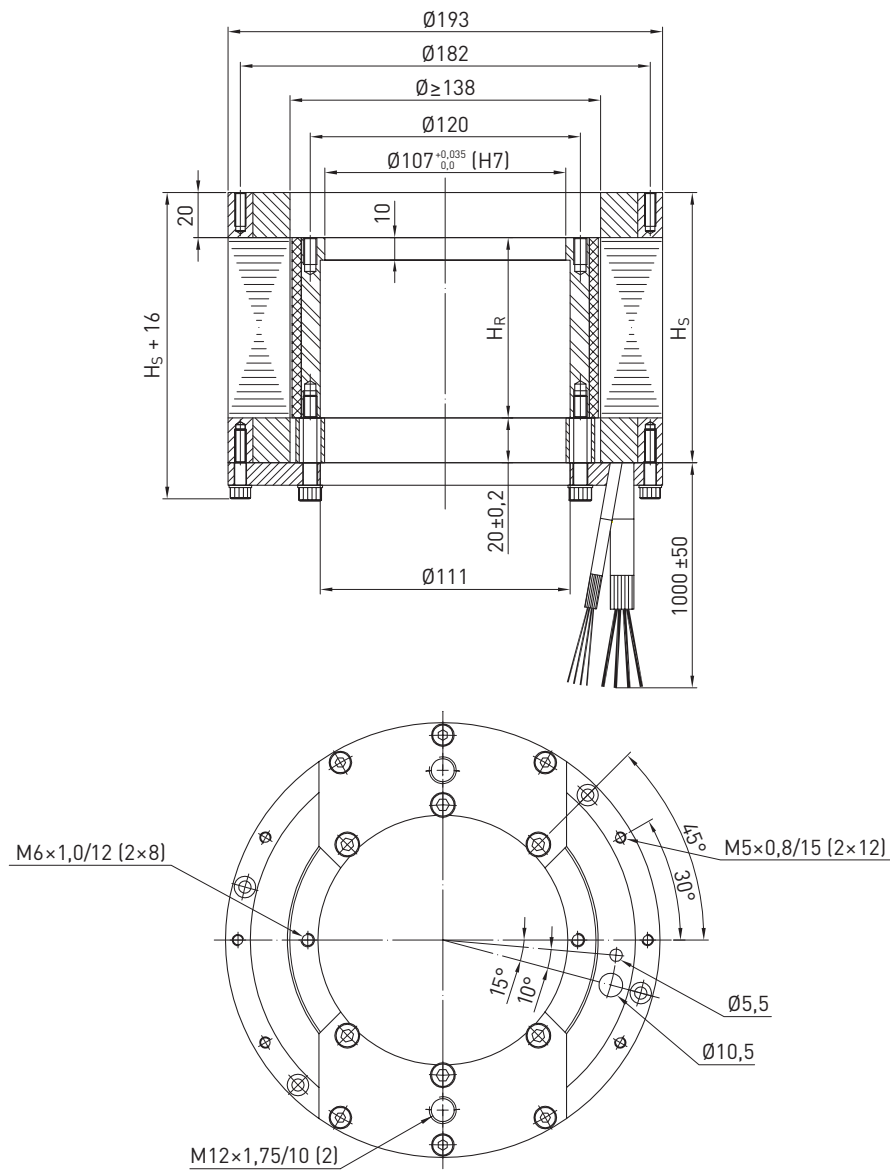
	Symbol	Unit	DMR32	DMR34	DMR38	DMR3C
Torques and electrical parameters						
Peak torque (for 1 sec.)	T _p	Nm	30	60	120	180
Continuous torque ¹⁾	T _c	Nm	10	20	40	60
Stall torque	T _s	Nm	7	14	28	42
Peak current (for 1 sec.)	I _p	A	10.2	10.2	10.2	10.2
Continuous current ¹⁾	I _c	A	3.4	3.4	3.4	3.4
Stall current	I _s	A	2.4	2.4	2.4	2.4
Resistance ²⁾	R ₂₅	Ω	5.0	7.5	12.0	17.1
Inductance ²⁾	L ₂₅	mH	20.6	34.6	53.6	84.4
Motor constant	K _m	Nm/√W	1.1	1.8	2.8	3.6
Electrical time constant	K _e	ms	4.1	4.6	4.5	4.9
Torque constant	K _t	Nm/A	3	6	12	18
Back emf constant	K _u	V _{eff} /rad/s	1.5	3.0	6.0	9.0
Inertia of rotor	J	kgm ²	0.002	0.005	0.009	0.014
Thermal resistance	R _{th}	°C/W	1.1	0.73	0.46	0.32
Thermal time constant	T _{th}	s	1,980	2,020	2,130	2,170
Max. DC bus voltage	U _{max}	VDC	600			
Rated speed	n _N	min ⁻¹	818	818	465	297
Mechanical parameters						
Number of poles	2p		22			
Thermal sensor			PTC SNM 120			
Stator height	H _S	mm	60	80	120	160
Rotor height	H _R	mm	20	40	80	120
Mass of motor	M _m	kg	5.7	8.2	13.2	18.1

All the specifications in the table (except dimensions) are in ± 10 % of tolerance at 25 °C ambient temperature

¹⁾ Coil temperature: 120 °C

²⁾ Line to line

Dimensions DMR3



Torque Motors

HIWIN torque motors DMR

3.4.4 DMR7 specifications

Torque-speed curves (DC bus voltage: 600 VDC)

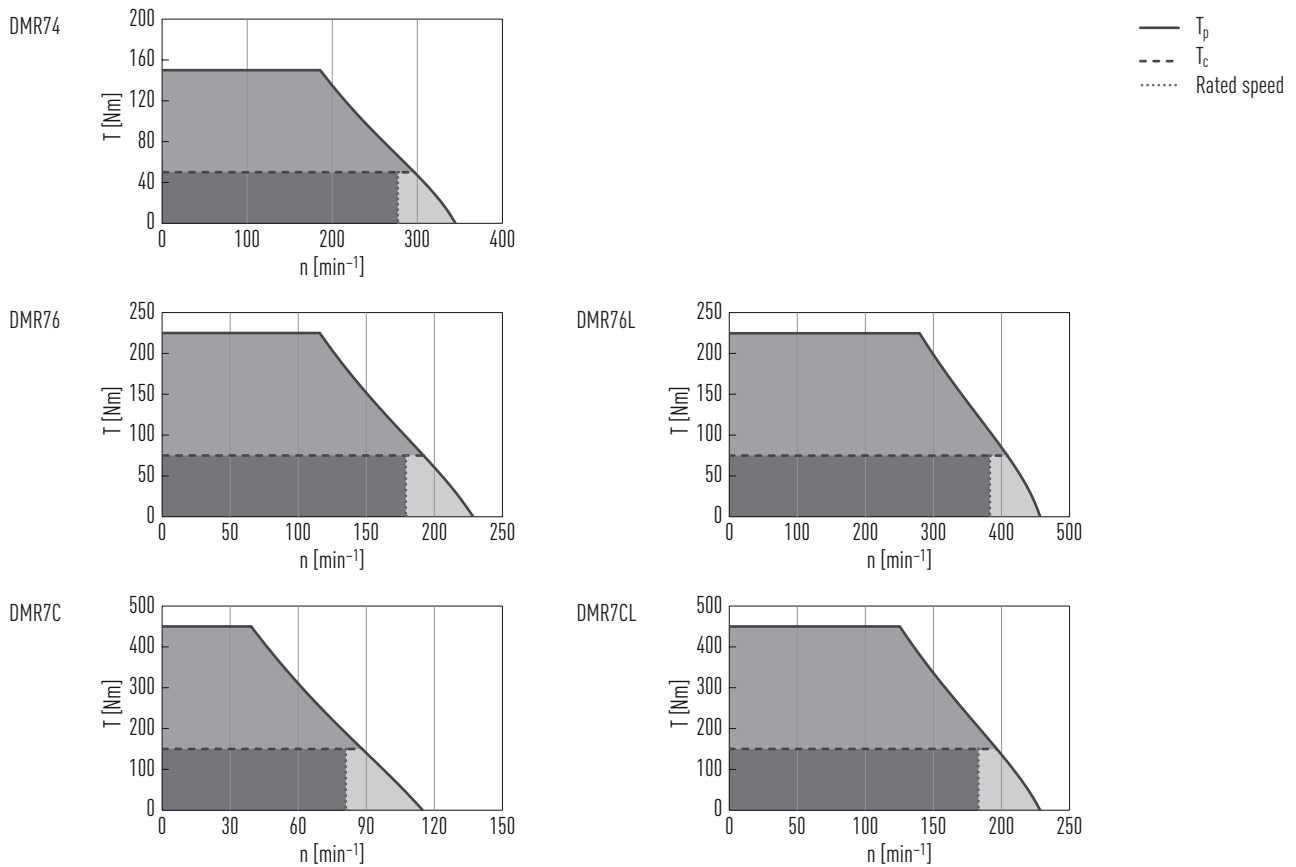


Table 3.4 Technical data for DMR7

	Symbol	Unit	DMR74	DMR76	DMR76L	DMR7C	DMR7CL
Torques and electrical parameters							
Peak torque (for 1 sec.)	T_p	Nm	150	225		450	
Continuous torque ¹⁾	T_c	Nm	50	75		150	
Stall torque	T_s	Nm	35.0	52.5		105.0	
Peak current (for 1 sec.)	I_p	A	10.2	10.2	20.4	10.2	20.4
Continuous current ¹⁾	I_c	A	3.4	3.4	6.8	3.4	6.8
Stall current	I_s	A	2.4	2.4	4.8	2.4	4.8
Resistance ²⁾	R_{25}	Ω	12.9	17.0	4.3	29.0	7.3
Inductance ²⁾	L_{25}	mH	55.0	76.0	19.0	145.0	36.3
Motor constant	K_m	Nm/ $\sqrt{W}$	3.9	5.1	5.0	7.7	7.7
Electrical time constant	K_e	ms	4.3	4.5	4.4	5.0	5.0
Torque constant	K_t	Nm/A	17.0	25.6	12.8	51.1	25.5
Back emf constant	K_u	$V_{eff}/(rad/s)$	9.8	14.8	7.4	29.5	14.8
Inertia of rotor	J	kgm ²	0.044	0.061		0.11	
Thermal resistance	R_{th}	°C/W	0.42	0.32		0.19	
Thermal time constant	T_{th}	s	2,230	2,330		2,350	
Max. DC bus voltage	U_{max}	VDC	600				
Rated speed	n_N	min ⁻¹	277	179	383	81	183

All the specifications in the table (except dimensions) are in $\pm 10\%$ of tolerance at 25 °C ambient temperature

¹⁾ Coil temperature: 120 °C

²⁾ Line to line

Torque Motors

HIWIN torque motors TM-5

4. HIWIN torque motors TM-5

4.1 Special characteristics of the torque motors TM-5

The TM-5 series torque motors are ready-to-install motor elements consisting of a stator and rotor, specially designed for the machine tool range. Thanks to the integrated cooling channels, the torque motor can be operated with liquid cooling. This means that no additional process heat is introduced into the machine and higher continuous torques can be achieved. The wear- and maintenance-free direct drives are characterised by high torques and a low cogging torque.



Key features of the torque motors TM-5:

- Optimised for highest torques
- Wear- and maintenance-free direct drive
- Play-free and highly precise
- Prepared for liquid cooling
- UL-certified

Typical fields of application for the torque motors TM-5:

- Machine tools
- Servo presses
- Laser processing

4.2 Order code for torque motors TM-5

TM-5 7 5 SA0 1 20 S 00							
Series:	Outer diameter [mm]:	Rotor height [mm]:	Winding variant	Special equipment:	Cable outlet orientation:	Cable length:	Thermal sensors:
TM-5	1: 160 2: 198 4: 230 7: 310 A: 385 D: 485 G: 565	3: 30 5: 50 7: 70 A: 100 F: 150		00: Rotor and stator separately (standard) 03: Rotor and stator mounted with installation clamp	S: Straight, potted in the stator V: Straight, with strain relief plate A: Straight, with PG screw connections H: 90° motor cable outlet with strain relief plate	05: 500 10: 1,000 20: 2,000 (standard)	0: 3 × PTC100, 3 × PTC130, 1 × PT1000 (standard) 1: 3 × PTC100, 3 × PTC130, 3 × PT1000

4.3 TM-5 torques

