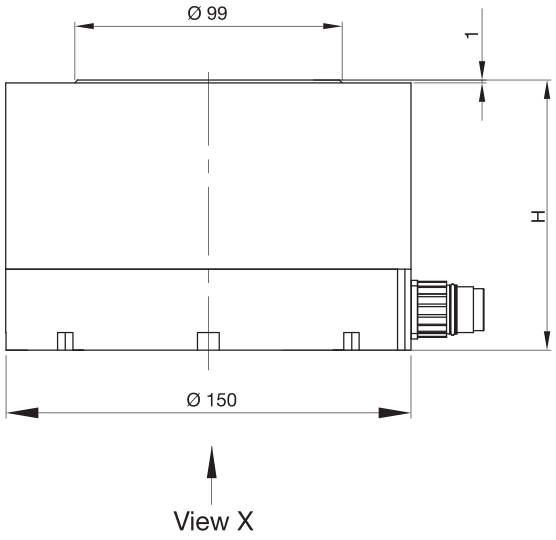
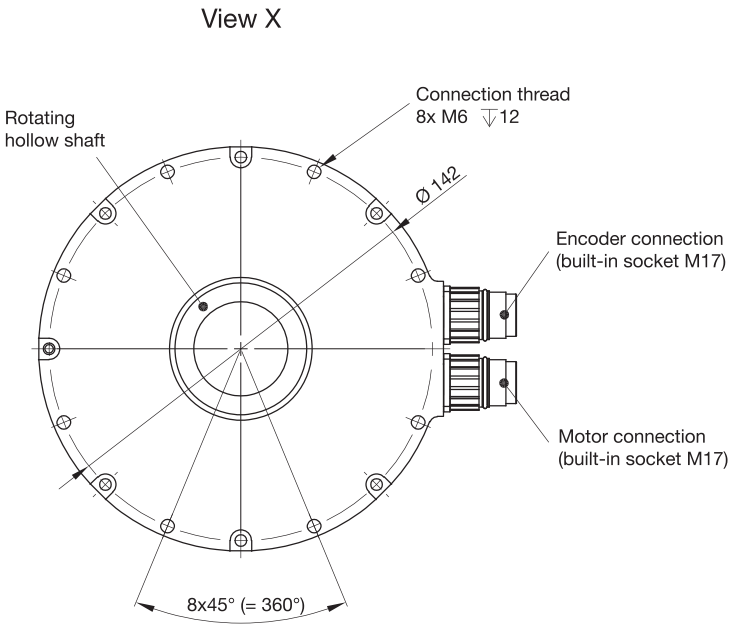
HIWIN rotary tables

5. TMS1X HIWIN rotary tables

Dimensions of the TMS1X HIWIN rotary table
(for values, see Table 5.1)





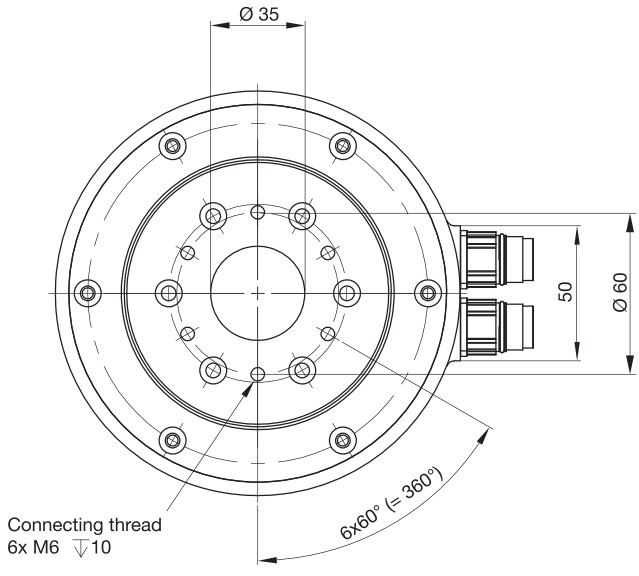


Table 5.1 **Specifications for HIWIN TMS1X Rotary Tables**

Specifications for HIWIN Rotary Tables

	Symbol	Unit	TMS12	TMS14	TMS16	TMS18
Peak torque for 1 second	T_p	Nm	12.5	25	37.5	50
Continuous torque (coil temp. 80°C)	T_c	Nm	5	10	15	20
Stall torque (coil temp. 80°C)	T_s	Nm	3.5	7	10.5	14
Moment of inertia of rotating parts	J	kgm^2	0.006	0.0065	0.007	0.0075
Mass	M_m	kg	5.7	7	8.3	9.5
Max. axial load	F_a	N	3700	3700	3700	3700
Max. radial load	F_r	N	1700	1700	1700	1700
Max. speed (at 400 V_{AC}) for 1 second	n_{max}	rpm	1000	1000	1000	1000
Nominal speed (at 400 V_{AC} and 30% DR)		rpm	500	500	500	500
Accuracy		arc sec	150	150	150	150
Repeatability		arc sec	6	6	6	6
Radial run-out		mm	0.03	0.03	0.03	0.03
Axial run-out		mm	0.03	0.03	0.03	0.03
Height	H	mm	100	120	140	160
Protection class			IP40			

Motor Specifications

	Symbol	Unit	TMS12	TMS14	TMS16	TMS18
Peak current for 1 second	I_p	A_{eff}	10	10	10	10
Continuous current (coil temp. 80°C)	I_c	A_{eff}	4	4	4	4
Motor constant (coil temp. 25°C)	K_m	$Nm/\sqrt{W}$	0.66	1.02	1.29	1.64
Coil resistance (coil temp. 25°C) [1]	R_{25}	Ω	1.2	2	2.8	3.1
Coil resistance (coil temp. 100°C) [1]	R_{100}	Ω	1.5	2.5	3.5	4.38
Motor inductance [2]	L	mH	4.3	7.5	10.5	11.6
Electric time constant	T_e	ms	3.6	3.75	3.75	3.6
Torque constant	K_t	Nm/A_{eff}	0.91	2.5	3.75	5
Voltage constant	K_v	$V_{rms}/(rad/s)$	0.53	1	1.5	2
Number of poles	2p	—	22	22	22	22
Thermal resistance	R_{th}	K/W	0.52	0.74	0.55	0.5
Thermal circuit breaker			Bimetal (break contact), switching point 100°C, 12 VDC/6 A, 24 VDC/3 A			
Max. intermediate circuit voltage		V	500	500	500	500

[1] Line resistance

[2] Line inductance

Encoder specifications (optical, incremental)

- 3600 lines/cycle
- Index mark
- Signal output sin/cos 1 V_{ss}