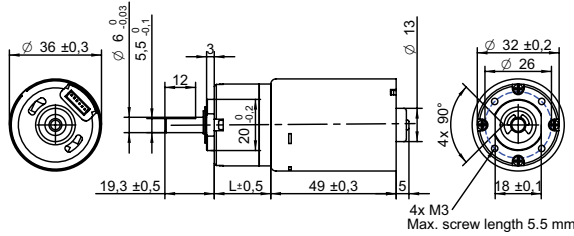


DRAWING (mm)
INTERNAL DRIVER



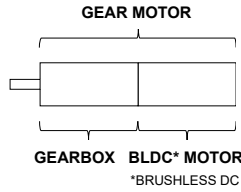
PHOTO



MODEL NO. DESIGNATION



Example: PBT13649-24-4



OPTIONS POWER SUPPLIES



● C = customizations are offered on demand even for smaller quantities. Typical customizations are indicated with a green dot at column end. Please contact us for any customization request.

GEAR MOTOR DATA														C		
Gear ratio		4:1	5:1	14:1	19:1	27:1	35:1	51:1	71:1	100:1	139:1	189:1	264:1	516:1	721:1	939:1
Nominal torque ^ gearbox limit	Ncm	12	15	36	39 ^A	59 ^A	59 ^A	78 ^A	78 ^A	98 ^A	98 ^A	120 ^A	120 ^A	120 ^A	120 ^A	120 ^A
Nominal speed	rpm	1300	1000	370	270	190	150	100	72	51	37	27	19	10	7	5
Peak torque	Ncm	59	59	120	120	180	180	240	240	290	290	350	350	350	350	350
Nominal power	W	16	16	14	14	14	14	12	12	12	12	9.8	9.8	9.8	9.8	9.8
Gearbox efficiency	%	80	80	70	70	70	70	60	60	60	60	50	50	50	50	50
Gearbox length L	mm	20.6	20.6	27	27	27	27	33.4	33.4	33.4	33.4	39.8	39.8	39.8	39.8	39.8
Weight	g	300	300	320	320	320	320	340	340	340	340	370	370	370	370	370

GEAR MOTOR COMBINED DATA			C	GEARBOX SHAFT DATA			C	GEARBOX-SPECIFIC DATA			C
Service life	hrs	5000		Radial play thrust play	mm	≤ 0.05 ≤ 0.3		Material gear stage	Ratio 5:1 sintered steel		●
Performance tolerances	%	± 15		Shaft axial load	N	29		Material > 5:1 ratio / stage	POM first + sintered steel		●
Operating temperature	°C	-10 to 60	●	Radial load	N	79		Direction of rotation	CCW or CW by reversed DIR polarity		
IP rating		IP30		Press fit force max.	N	150		Assembly front bell	mm	Maximum screw depth 5.5	
Manufacturing standard		ISO9001 ISO 14001 IATF 16949		Backlash no load	°	≤ 3.0					
Compliance		RoHS and REACH		Bearing type shaft material		Ball bearing SCM435					
Label CE UL		CE no UL no		Motor pinion material shape		Steel straight	●				

BRUSHLESS DC MOTOR DATA			C	BRUSHLESS DC MOTOR OTHER DATA			C	GEAR MOTOR RANGE STANDARD AVAILABILITY			
Brushless DC motor model: Transmotec BT3649-24-I				Number of pole pairs		2		Nominal voltage	V	12 24	See separate data sheet
Driver type		Internal		Number of phases		3		Nominal power	W	1.5 - 41	See separate data sheet
Nominal voltage	V	24		Max. winding temperature	°C	150		Diameter	mm	28 - 42	See separate data sheet
No load speed	rpm	6000		Motor insulation class		A		BRUSHLESS DC MOTOR DATA DIAGRAM			
No load current	mA	140		Slot pole pairs		6S4P					
Nominal speed	rpm	5100	●	Rotor magnet		BNM-8					
Nominal torque	mNm	37		Control and power harness length	mm	205 ± 10	●				
Nominal current	A	1.1		Control and power harness end connector		A1501H00-6P	●				
Start/Stall torque	mNm	260		Control and power harness		UL1007 26AWG 300V 80°C	●				
Start/Stall current	A	6.8		Housing material		SECD-0 1.0T	●				
Max. efficiency	%	77		Magnet material		Bonding NdFeB					
Nominal power	W	20		Rotor balancing grade		G6.3					
Terminal resistance	Ω	2.0									
Terminal inductance	mH	1.8									
Torque constant	mNm/A	39									
Speed constant	rpm/V	250									
Speed/ torque gradient	rpm/mNm	140									
Rotor inertia	gcm ²	45-49									

ACCESSORIES

Power supplies LRS V 3.3 - 48 See separate data sheet

CABLE AND PIN CONFIGURATION INTERNAL DRIVER

Color	Signal	Description
Red	Vcc	Supply voltage 12 V 24 V
Black	GND	0 V
Yellow	DIR	Motor direction. Open DIR: CW DIR connect to GND: CCW
Blue	PWM	Speed control. PWM 20 kHz 5V. Full speed, connects to GND. PWM, HI/LO, 0/100
White	Enable	Enable control. Open: motor runs Connect to GND: motor stops