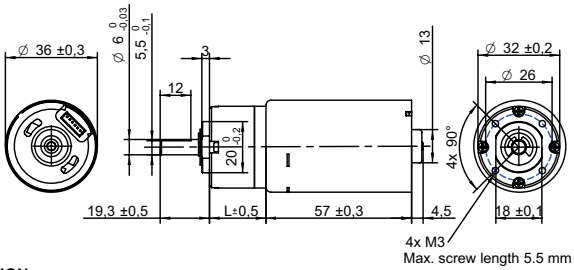
PBTI3657-12 | Ø 36 mm | BRUSHLESS DC PLANETARY GEAR MOTOR

DRAWING (mm)
INTERNAL DRIVER



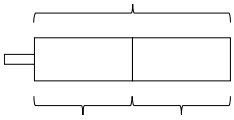
PHOTO

MODEL NO. DESIGNATION

PBTI3657	-	VOLTAGE	-	GEAR RATIO

Example: PBTI3657-12-4

GEAR MOTOR



GEARBOX BLDC* MOTOR
*BRUSHLESS DC

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	9.2	11	28	38	54	59^	78^	78^	98^	98^	120^	120^	120^	120^	120^
Nominal speed	rpm	1300	1000	370	270	190	150	100	73	52	37	27	20	10	7	6
Peak torque	Ncm	59	59	120	120	180	180	240	240	290	290	350	350	350	350	350
Nominal power	W	12	12	11	11	11	11	9.4	9.4	9.4	9.4	7.8	7.8	7.8	7.8	7.8
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	330	330	350	350	350	350	380	380	380	380	400	400	400	400	400

GEAR MOTOR COMBINED DATA			C
Service life	hrs	5000	
Performance tolerances	%	± 15	
Operating temperature	°C	-10 to 60	●
IP rating		IP30	
Manufacturing standard		ISO9001 | ISO 14001 | IATF 16949	
Compliance		RoHS and REACH	
Label CE | UL		CE no | UL no	

GEARBOX SHAFT DATA			C
Radial play | thrust play	mm	≤ 0.05 | ≤ 0.3	
Shaft axial load	N	29	
Radial load	N	79	
Press fit force max.	N	150	
Backlash no load	°	≤ 3.0	
Bearing type | shaft material		Ball bearing | SCM435	
Motor pinion material | shape		Steel | straight	●

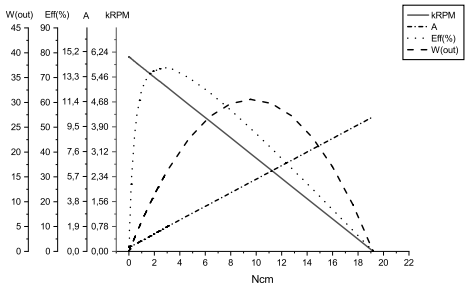
GEARBOX-SPECIFIC DATA			C
Material gear stage		Ratio 5:1 sintered steel	●
Material > 5:1 ratio / stage		POM first + sintered steel	●
Direction of rotation		CCW or CW by reversed DIR polarity	
Assembly front bell	mm	Maximum screw depth 5.5	

BRUSHLESS DC MOTOR DATA			C
Brushless DC motor model: Transmotec BT3657-12-I			
Driver type		Internal	
Nominal voltage	V	12	
No load speed	rpm	6000	
No load current	mA	270	
Nominal speed	rpm	5200	●
Nominal torque	mNm	29	
Nominal current	A	1.8	
Start/Stall torque	mNm	190	
Start/Stall current	A	10	
Max. efficiency	%	74	
Nominal power	W	16	
Terminal resistance	Ω	0.6	
Terminal inductance	mH	0.4	
Torque constant	mNm/A	19	
Speed constant	rpm/V	500	
Speed/ torque gradient	rpm/mNm	180	
Rotor inertia	gcm^2	52~61	

BRUSHLESS DC MOTOR OTHER DATA			C
Number of pole pairs		2	
Number of phases		3	
Max. winding temperature	°C	150	
Motor insulation class		A	
Slot pole pairs		6S4P	
Rotor magnet		BNM-8	
Control and power harness length	mm	205 ± 10	●
Control and power harness end connector		A1501H00-6P	●
Control and power harness		UL1007 26AWG 300V 80°C	●
Housing material		SECD-0 1.0T	
Magnet material		Bonding NdFeB	
Rotor balancing grade		G6.3	

GEAR MOTOR RANGE STANDARD AVAILABILITY			
Nominal voltage	V	12 | 24	*See seperate data sheet*
Nominal power	W	1.5 - 41	*See seperate data sheet*
Diameter	mm	28 - 42	*See seperate data sheet*

BRUSHLESS DC MOTOR DATA DIAGRAM



ACCESSORIES			
Power supplies LRS	V	3.3 - 48	*See separate data sheet*

CABLE AND PIN CONFIGURATION INTERNAL DRIVER			C
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	

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EU: +46 8 792 35 30
US: +1-339-234-9200
info@transmotec.com