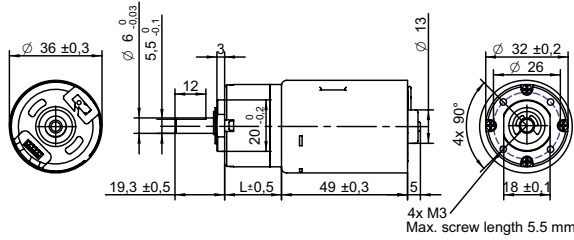


DRAWING (mm)
EXTERNAL DRIVER



PHOTO

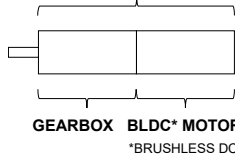


MODEL NO. DESIGNATION

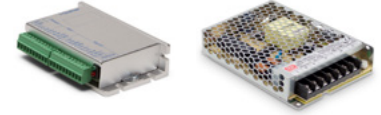


Example: PBT3649-12-4

GEAR MOTOR



OPTIONS DRIVERS AND 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

		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
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	9.3	9.3	9.3	9.3	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	300	300	320	320	320	320	340	340	340	340	370	370	370	370	370

GEAR MOTOR COMBINED DATA

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

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
Bearing type shaft material		Ball bearing SCM435
Motor pinion material shape		Steel straight ●

GEARBOX-SPECIFIC DATA

Material gear stage		Ratio 5:1 sintered steel ●
Material > 5:1 ratio / stage		POM first + sintered steel ●
Assembly front bell	mm	Maximum screw depth 5.5

BRUSHLESS DC MOTOR DATA

Brushless DC motor model: Transmotec BT3649-12		
Driver type	External	
Nominal voltage	V	12
Commutator (hall) voltage	V	3.3-5
No load speed	rpm	6000
No load current	mA	280
Nominal speed	rpm	5200 ●
Nominal torque	mNm	29
Nominal current	A	1.8
Start/Stall torque	mNm	210
Start/Stall current	A	11
Max. efficiency	%	75
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	46-48

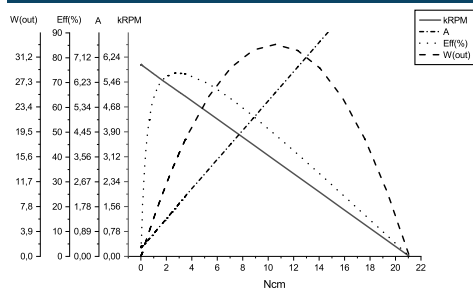
BRUSHLESS DC MOTOR OTHER DATA

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
Hall sensors and power harness length	mm	160 ± 10 ●
Power harness end connector		A2502X-03P ●
Power harness		UL3132 22AWG 300V 150°C ●
Hall sensors harness end connector		A1501H00-5P ●
Hall sensors 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 separate data sheet
Nominal power	W	1.6 - 39	See separate data sheet
Diameter	mm	28 - 42	See separate data sheet

BRUSHLESS DC MOTOR DATA DIAGRAM



ACCESSORIES

Power supplies LRS V 3.3 - 48 See separate data sheet

CABLE AND PIN CONFIGURATION EXTERNAL DRIVER

Power		Hall	
Phase	Cable color	Phase	Cable color
U	White	HU	Green
V	Brown	HV	Blue
W	Grey	HW	Yellow
		+5V	Red
		GND	Black