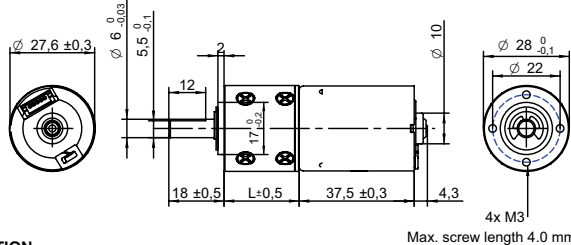


**DRAWING (mm)**  
**EXTERNAL DRIVER**



**PHOTO**

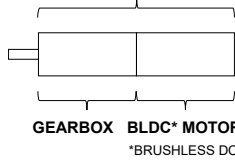


**MODEL NO. DESIGNATION**

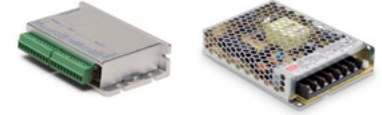


Example: PBT2838-12-4

**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														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	2.1	2.6	6.4	9	12	16	20	28	39	55	62	87	98 <sup>A</sup>	98 <sup>A</sup>	98 <sup>A</sup>
Nominal speed	rpm	1300	1000	360	270	190	150	99	71	51	36	27	19	10	7	5
Peak torque	Ncm	59	59	88	88	120	120	180	180	240	240	290	290	290	290	290
Nominal power	W	2.8	2.8	2.4	2.4	2.4	2.4	2.1	2.1	2.1	2.1	1.7	1.7	1.7	1.7	1.7
Gearbox efficiency	%	80	80	70	70	70	70	60	60	60	60	50	50	50	50	50
Gearbox length   L	mm	24.5	24.5	30.9	30.9	30.9	30.9	37.3	37.3	37.3	37.3	43.7	43.7	43.7	43.7	43.7
Weight	g	140	140	150	150	150	150	160	160	160	160	180	180	180	180	180

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	25		Material > 5:1 ratio / stage	POM first + sintered steel	●	
Operating temperature	°C	-10 to 60	●	Radial load	N	34		Assembly front bell	mm	Maximum screw depth 4.0	
IP rating		IP30		Press fit force max.	N	98					
Manufacturing standard		ISO9001   ISO 14001   IATF 16949		Backlash no load	°	≤ 2.5					
Compliance		RoHS and REACH		Bearing type   shaft material		Ball bearing   AISI 1144					
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			
<b>Brushless DC motor model: Transmotec BT2838-12</b>				Number of pole pairs		2		Nominal voltage	V	12   24	See separate data sheet
Driver type		External		Number of phases		3		Nominal power	W	1.6 - 39	See separate data sheet
Nominal voltage	V	12		Max. winding temperature	°C	150		Diameter	mm	28 - 42	See separate data sheet
Commutator (hall) voltage	V	3.3-5		Motor insulation class		A		<b>BRUSHLESS DC MOTOR DATA DIAGRAM</b>			
No load speed	rpm	6000		Slot pole pairs		6S4P					
No load current	mA	54		Rotor magnet		BNM-8					
Nominal speed	rpm	5100	●	Hall sensors and power harness length	mm	160 ± 10	●				
Nominal torque	mNm	6.6		Power harness end connector		A2502X-03P	●				
Nominal current	A	0.4		Power harness		UL3132 22AWG 300V 150°C	●				
Start/Stall torque	mNm	40		Hall sensors harness end connector		KR1500 MX1.5mm	●				
Start/Stall current	A	2.1		Hall sensors harness		UL10368 26AWG 300V 80°C	●				
Max. efficiency	%	72		Housing material		SECD-0 0.7T					
Nominal power	W	3.5		Magnet material		Bonding NdFeB					
Terminal resistance	Ω	3.1		Rotor balancing grade		G6.3					

CABLE AND PIN CONFIGURATION EXTERNAL DRIVER						C
Power			Hall			
Phase	Cable color		Phase	Cable color		
U	Grey		HU	Green		
V	White		HV	Blue		
W	Brown		HW	Yellow		
			+5V	Red		
			GND	Black		

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