

ASSUN

DRIVING THE FUTURE



TOTAL SOLUTION for Precision
DC Drive System 2020

DC BRUSHLESS MOTOR
SPEED DRIVER INTEGRATED SERIES

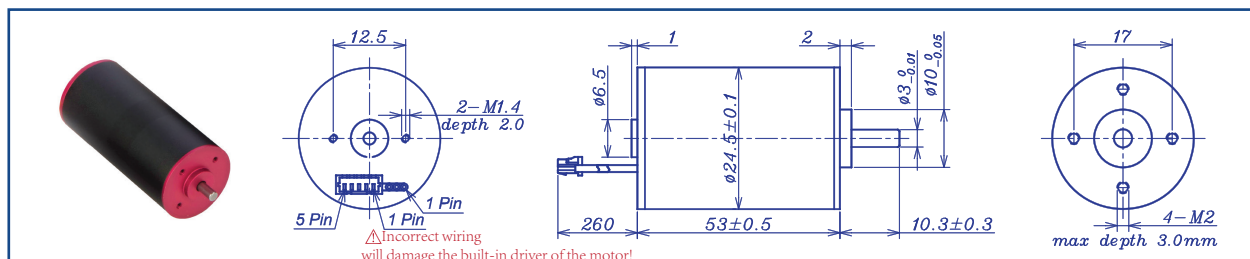
Assun driver integrated series BLDC motors are equipped with the speed driver inside of the motor for easier installation and more convenient use. Basic functions like speed control, rotation control and signal feedback can be achieved by the integrated driver.



DC BRUSHLESS MOTOR SPEED DRIVER INTEGRATED SERIES



AM-BD2453AN Series



		Brushless Motor			Ball Bearings		
Motor Model		1213	1210	1813	2414	2410	
Nominal voltage	V	12	12	18	24	24	
No load speed ±12%	rpm	13010	10460	12920	13625	9770	
No load current Max 150%	mA	180	140	115	100	75	
Recommend limit for continuous operating	Max cont. torque	mN.m	17.6	18.7	18.3	21.5	
	Rated Speed	rpm	11818	9188	11495	12429	8514
	Rated Current	mA	2200	1860	1500	1200	1000
	Rated Power	W	21.8	18.0	22.0	23.9	19.1
Starting current	mA	22222	14286	12676	12632	7273	
Stall torque	mN.m	193	153	166	209	167	
Maximum power output	W	65.6	40.2	56.0	74.6	42.7	
Maximum Efficiency	%	83	81	82	83	81	
Operating Range	V	10~28	10~28	10~28	10~28	10~28	
Type of Current		Controlled	Controlled	Controlled	Controlled	Controlled	
Mechanical time constant	ms	2.4	2.5	2.8	2.4	2.1	
Moment of inertia	gcm ²	3.45	3.45	3.45	3.45	3.45	
Torque constant	mN.m/A	8.7	10.8	13.2	16.7	23.2	
Speed constant	rpm/V	1093	880	724	572	411	
Speed/torque gradient	rpm/mN.m	67.6	68.2	78.0	65.2	58.5	
Weight	g	126.7	126.8	125.7	126.3	127.5	

ADDITIONAL INFORMATION					
Motor thermal resistance:	10.5 K/W	Motor thermal time constant:	768S		
Axial (dynamic):	2.5 N	Radial (5mm from mounting face):	16.0 N		
Press-fit force (static):	50 N	Max allowable screw depth into flange:	3.0 mm		
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<4.0N)		
Maximum winding temperature:	85°C	Ambient temperature range:	-30 to 65°C		
Standard rear shaft diameter:	3 mm	Standard rear shaft length "L":	0/3.7/5.5 mm		
Connection (AWG 22#)	Total Length: L _T =L ₁ +L ₂ +L ₃				
	L1:24GP	L1:28GP	L2:BD24	L3:EN16S	L3:EN16T
Cable 1: Red +Vcc	22.2	25.9	53.0	10.7	12.0
Cable 2: Blue GND	27.4	33.1			
Plug definition (AWG 28#) Molex: 51021-0500	32.6	40.3			
Plug 1: Red GND					
Plug 2: Black FG Pulse					
Plug 3 : Yellow CW/CCW	Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.				
Plug 4: Red PWM					
Plug 5: Blue Brake					

AM-BD2453AN Combination Scheme

Recommended Gearbox:
Planetary Gearbox:
AM-24GP
AM-28GP

Recommended Encoder:
Encoder S: AM-EN1611S***
2~3 Channels
Encoder T: AM-EN1612T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25°C. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

Download datasheet: <https://assunmotor.com/documents-download>

Visit Our Website and Online Shop at <https://assunmotor.com> Contact: info@assunmotor.com

AM-BD2845AN Series

⚠️ Incorrect wiring will damage the built-in driver of the motor!

		Brushless Motor				Ball Bearings			
Motor Model		1203	1215	1210	1813	1810	2412	2409	
Nominal voltage		V	12	12	12	18	18	24	24
No load speed ±12%		rpm	3300	14800	10000	12520	9680	11680	9080
No load current Max 150%		mA	55	300	190	170	120	120	85
Recommend limit for continuous operating	Max cont. torque	mN.m	25.2	20.7	26.2	23.8	26.0	24.1	27.9
	Rated Speed	rpm	2122	13760	8814	11502	8580	10608	7909
	Rated Current	mA	800	3000	2500	1920	1600	1360	1200
	Rated Power	W	5.6	29.9	24.2	28.7	23.4	26.8	23.1
Starting current		mA	2143	38710	19672	21687	13139	13636	8727
Stall torque		mN.m	71	21	221	293	229	263	216
Maximum power output		W	6.1	114.3	57.9	96.1	58.0	80.4	51.3
Maximum Efficiency		%	71	83	81	83	82	82	81
Operating Range		V	10~28	10~28	10~28	10~28	10~28	10~28	10~28
Type of Current			Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Mechanical time constant		ms	3.0	3.3	2.9	2.8	2.7	2.9	2.7
Moment of inertia		gcm ²	6.19	6.19	6.19	6.19	6.19	6.19	6.19
Torque constant		mN.m/A	33.8	7.7	11.3	13.6	17.6	19.4	25.0
Speed constant		rpm/V	282	1243	841	701	543	491	382
Speed/torque gradient		rpm/mN.m	46.7	50.2	45.2	42.7	42.3	44.4	42.0
Weight		g	138.8	138.8	138.7	139.1	140.1	138.4	139.2

ADDITIONAL INFORMATION			
Motor thermal resistance:	10.2 K/W	Motor thermal time constant:	822 S
Axial (dynamic):	4.0 N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	50 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum winding temperature:	85°C	Ambient temperature range:	-30 to 65°C
Standard rear shaft diameter:	4 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 22#)	Total Length: L _T =L1+L2+L3				
	L1:28GP	L1:32GP	L2:BD28	L3:EN16S	L3:EN16T
Cable 1: Red +Vcc	25.9	25.9	45.0	10.7	12.0
Cable 2: Blue GND	33.1	35.9			
Plug definition (AWG 28#) Molex: 51021-0500	40.3	44.4			
Plug 1: Red GND					
Plug 2: Black FG Pulse					
Plug 3: Yellow CW/CCW					
Plug 4: Red PWM					
Plug 5: Blue Brake					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.

AM-BD2845AN Combination Scheme

Recommended Gearbox:
Planetary Gearbox:
AM-28GP
AM-32GP

Recommended Encoder:
Encoder S: AM-EN161S***
2~3 Channels
Encoder T: AM-EN161T***
2~3 Channels

For more combination specs, visit Assun Motor website.

Motor data tested at 25°C. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

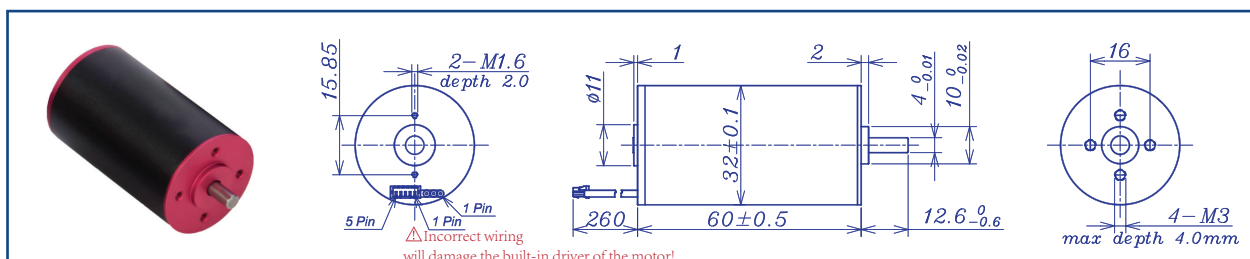
Download datasheet: <https://assunmotor.com/documents-download>

DC BRUSHLESS MOTOR — SPEED DRIVER INTEGRATED SERIES

ASSUN

DRIVING THE FUTURE

AM-BD3260AN Series



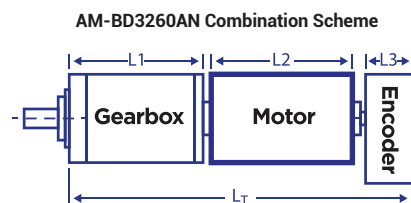
		Brushless Motor			Ball Bearings			
Motor Model		1212	1208	2413	2409	2408	2407	
Nominal voltage	V	12	12	24	24	24	24	
No load speed	±12% rpm	12191	8127	12832	9752	8448	7008	
No load current	Max 150% mA	355	192	190	127	110	86	
Recommend limit for continuous operating	Max cont. torque	mN.m	23.8	36.5	21.5	29.7	32.0	36.1
	Rated Speed	rpm	11671	7362	12390	9133	7769	6237
	Rated Current	mA	2900	2800	1400	1400	1300	1200
	Rated Power	W	29.1	28.2	27.9	28.4	26.1	23.6
Starting current	mA	60000	27907	35294	20168	14907	10213	
Stall torque	mN.m	557	388	624	468	398	328	
Maximum power output	W	177.9	82.6	209.5	119.5	88.1	60.2	
Maximum Efficiency	%	85	84	86	85	84	82	
Operating Range	V	10~28	10~28	10~28	10~28	10~28	10~28	
Type of Current		Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	
Mechanical time constant	ms	3.0	2.9	2.9	2.9	3.0	3.0	
Moment of inertia	gcm ²	13.3	13.3	13.3	13.3	13.3	13.3	
Torque constant	mN.m/A	9.3	14.0	17.8	23.4	26.9	32.4	
Speed constant	rpm/V	1022	682	538	409	355	294	
Speed/torque gradient	rpm/mN.m	21.9	20.9	20.6	20.8	21.2	21.3	
Weight	g	240	240	240	240	240	240	

ADDITIONAL INFORMATION

Motor thermal resistance:	7.8 K/W	Motor thermal time constant:	1089 S
Axial (dynamic):	4.0 N	Radial (5mm from mounting face):	16.0 N
Press-fit force (static):	50 N	Max allowable screw depth into flange:	3.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<4.0N)
Maximum radial play:	85°C	Ambient temperature range:	-30 to 65°C
Standard Rear Shaft Diameter:	4 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 20#)	Total Length: L _T =L ₁ +L ₂ +L ₃				
	L1:32GP	L1:36GP	L2:BD32	L3:EN22S	L3:EN24T
Cable 1: Red +Vcc	27.4	39.6	60.0	10.7	12.0
Cable 2: Blue GND	35.9	48.9			
Plug definition (AWG 28#) Molex: 51021-0500	44.4	57.6			
Plug 1: Red GND					
Plug 2: Black FG Pulse					
Plug 3: Yellow CW/CCW					
Plug 4: Red PWM					
Plug 5: Blue Brake					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.



Recommended Gearbox:
Planetary Gearbox:
AM-32GP
AM-36GP

Recommended Encoder:
Encoder S: AM-EN221S***
2~3 Channels
Encoder T: AM-EN2412T***
2~3 Channels

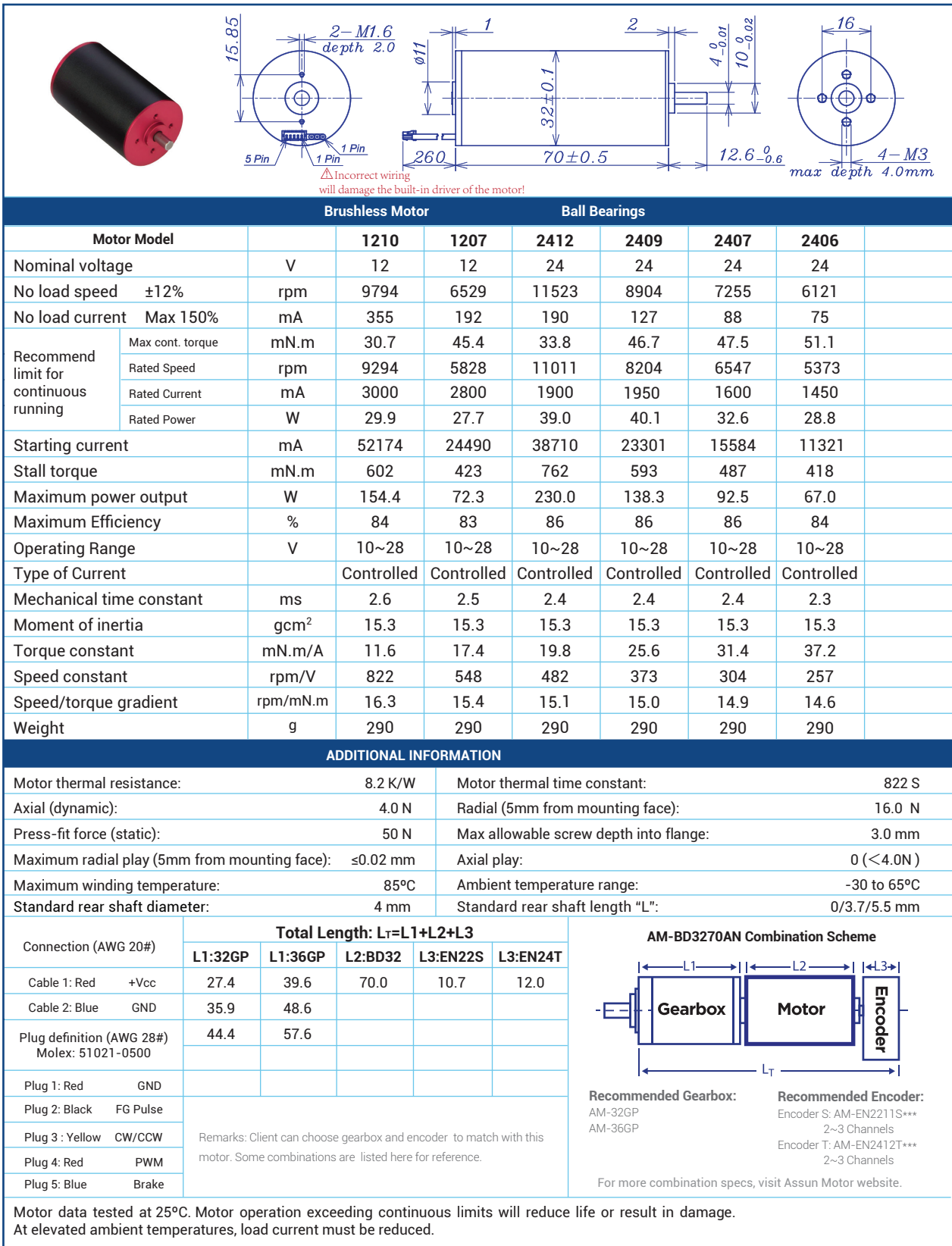
For more combination specs, visit Assun Motor website.

Motor data tested at 25°C. Motor operation exceeding continuous limits will reduce life or result in damage.
At elevated ambient temperatures, load current must be reduced.

Download datasheet: <https://assunmotor.com/documents-download>

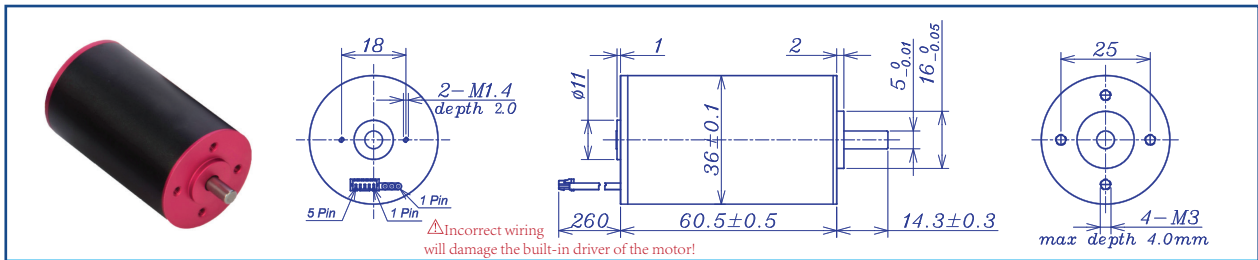
Visit Our Website and Online Shop at <https://assunmotor.com> Contact: info@assunmotor.com

AM-BD3270AN Series



Download datasheet: <https://assunmotor.com/documents-download>

AM-BD3660AN Series

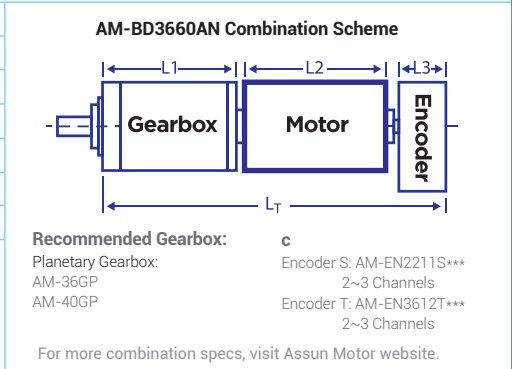


		Brushless Motor			Ball Bearings		
Motor Model		1211	1209	2413	2410	2408	2407
Nominal voltage	V	12	12	24	24	24	24
No load speed ±12%	rpm	11200	8840	12500	10200	8200	6966
No load current Max 150%	mA	320	230	220	165	100	85
Recommend limit for continuous operating	Max cont. torque	mN.m	39.5	43.4	32.5	41.0	56.1
	Rated Speed	rpm	10472	8066	11997	9525	7409
	Rated Current	mA	4200	3600	2000	2000	1900
	Rated Power	W	43.3	36.7	40.8	40.9	38.8
Starting current	mA	60000	38710	44444	27907	18750	14118
Stall torque	mN.m	607	496	807	620	518	459
Maximum power output	W	178.1	114.8	264.0	165.5	111.3	83.7
Maximum Efficiency	%	86	85	86	85	86	85
Operating Range	V	10~28	10~28	10~28	10~28	10~28	10~28
Type of Current		Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Mechanical time constant	ms	3.2	3.1	2.7	2.9	2.8	2.7
Moment of inertia	gcm ²	16.75	16.75	16.75	16.75	16.75	16.75
Torque constant	mN.m/A	10.2	12.9	18.2	22.3	27.8	32.7
Speed constant	rpm/V	938	741	523	428	343	292
Speed/torque gradient	rpm/mN.m	18.4	17.8	15.5	16.5	15.8	15.2
Weight	g	326.3	326.8	327.4	327.2	328.1	328.4

ADDITIONAL INFORMATION			
Motor thermal resistance:	6.9 K/W	Motor thermal time constant:	1188 S
Axial (dynamic):	6.0 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	110 N	Max allowable screw depth into flange:	4.0 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<6.0N)
Maximum winding temperature:	85°C	Ambient temperature range:	-30 to 65°C
Standard rear shaft diameter:	5 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 20#)	Total Length: L _T =L ₁ +L ₂ +L ₃				
	L1:36GP	L1:40GP	L2:BD36	L3:EN22S	L3:EN36T
Cable 1: Red +Vcc	25.9	25.9	60.5	10.7	12.0
Cable 2: Blue GND	33.1	35.9			
Plug definition (AWG 28#) Molex: 51021-0500	40.3	44.4			
Plug 1: Red GND					
Plug 2: Black FG Pulse					
Plug 3: Yellow CW/CCW					
Plug 4: Red PWM					
Plug 5: Blue Brake					

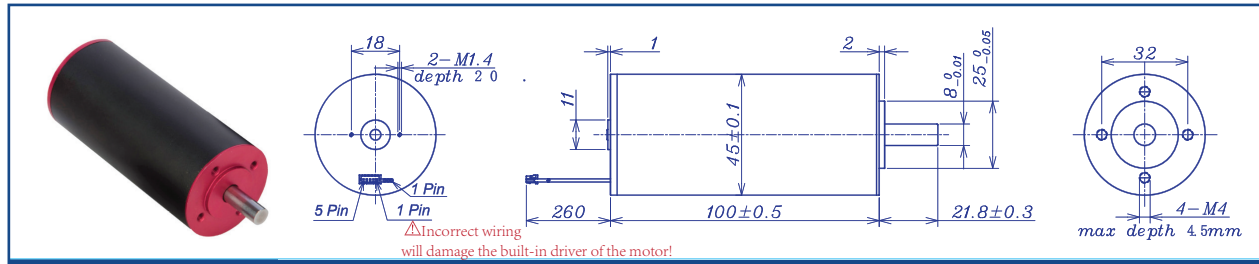
Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.



Motor data tested at 25°C. Motor operation exceeding continuous limits will reduce life or result in damage. At elevated ambient temperatures, load current must be reduced.

Download datasheet: <https://assunmotor.com/documents-download>

AM-BD45100AN Series

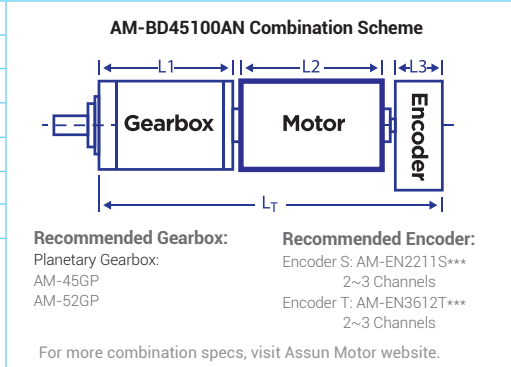


		Brushless Motor			Ball Bearings		
Motor Model		2411	2406	2407	2404	2405	2403
Nominal voltage	V	24	24	24	24	24	24
No load speed ±12%	rpm	11240	5900	6912	4272	5208	3240
No load current Max 150%	mA	600	320	320	180	220	160
Recommend limit for continuous operating	Max cont. torque	mN.m	48.7	134.4	121.4	171.6	170.9
	Rated Speed	rpm	11059	5539	6539	3782	2748
	Rated Current	mA	3000	3800	4000	3400	2600
	Rated Power	W	56.4	78.0	83.2	68.0	49.2
Starting current	mA	150000	57143	68571	28235	40678	16216
Stall torque	mN.m	3034	2195	2252	1496	1771	1125
Maximum power output	W	892.8	339.0	407.6	167.3	241.4	95.4
Maximum Efficiency	%	88	86	87	85	86	81
Operating Range	V	10~28	10~28	10~28	10~28	10~28	10~28
Type of Current		Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Mechanical time constant	ms	4.3	3.1	3.5	3.3	3.4	3.3
Moment of inertia	gcm ²	109.8	109.8	109.8	109.8	109.8	109.8
Torque constant	mN.m/A	20.3	38.6	33.0	53.3	43.8	70.0
Speed constant	rpm/V	470	247	289	179	218	136
Speed/torque gradient	rpm/mN.m	3.7	2.7	3.1	2.9	2.9	2.9
Weight	g	846.5	850.2	852.5	841.5	847.5	840.3

ADDITIONAL INFORMATION			
Motor thermal resistance:	3.6 K/W	Motor thermal time constant:	1286S
Axial (dynamic):	6.0 N	Radial (5mm from mounting face):	28.0 N
Press-fit force (static):	110 N	Max allowable screw depth into flange:	4.5 mm
Maximum radial play (5mm from mounting face):	≤0.02 mm	Axial play:	0 (<6.0N)
Maximum winding temperature:	85°C	Ambient temperature range:	-30 to 65°C
Standard rear shaft diameter:	8 mm	Standard rear shaft length "L":	0/3.7/5.5 mm

Connection (AWG 18#)	Total Length: L _T =L ₁ +L ₂ +L ₃				
	L1:45GP	L1:52GP	L2:BD45	L3:EN22S	L3:EN36T
Cable 1: Red +Vcc	62.8	81.0	100.0	10.7	12.0
Cable 2: Blue GND	74.8				
Plug definition (AWG 28#) Molex: 51021-0500					
Plug 1: Red GND					
Plug 2: Black FG Pulse					
Plug 3 : Yellow CW/CCW					
Plug 4: Red PWM					
Plug 5: Blue Brake					

Remarks: Client can choose gearbox and encoder to match with this motor. Some combinations are listed here for reference.



Motor data tested at 25°C. Motor operation exceeding continuous limits will reduce life or result in damage. At elevated ambient temperatures, load current must be reduced.

Download datasheet: <https://assunmotor.com/documents-download>