

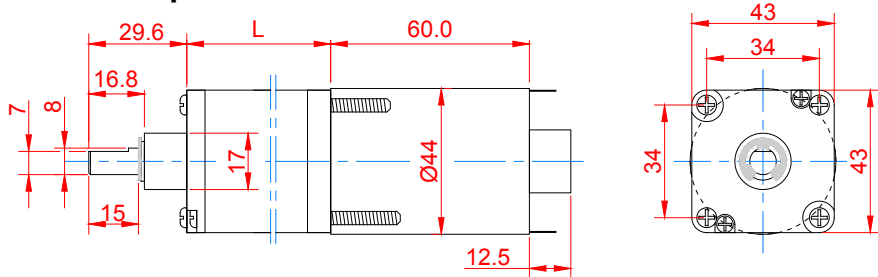
PLANETARY GEAR DC MOTORS

43 mm to Ø123 mm
12 W to 421 W



PDS4360	12V-24V	43 mm	carbon brushes	12 W	Page 3
PDS4377	12V-24V	43 mm	carbon brushes	13 W	Page 4
PD52103	12V-24V	Ø52 mm	carbon brushes	29 W	Page 5
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Magnetic encoder 48 counts per revolution 2 channels					Page 7
Optical encoder 2000 counts per revolution 2 channels					Page 7
Brake electro mechanic					Page 7

PDS4360 square 43 mm carbon brushes 12 W



MODEL NO. DESIGNATIONS



Reduction	4	14	24	49	60	75	84	103	144	171	210	259	294	325	361	443	504	619	864
Nominal torque 12 V (Nm)	0.14	0.44	0.76	1.40	1.74	2.14	2.40	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94
Nominal speed 12 (rpm)	725	207	120	59	48	39	34	28	20	17	14	11	10	9	8	7	6	5	3
Nominal torque 24 V (Nm)	0.14	0.44	0.76	1.40	1.72	2.14	2.4	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94
Nominal speed 24 (rpm)	800	228	133	65	53	43	38	31	22	19	15	12	11	10	9	7	6	5	4
Length (mm)	80.2	87.8	87.8	95.6	95.6	95.6	95.6	95.6	95.6	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4
Weight (g)	540	600	600	660	660	660	660	660	660	710	710	710	710	710	710	710	710	710	710

GEAR MOTOR FEATURES AND STANDARD DATA

	STANDARD	CUSTOMIZATION OPTIONS
Type	Planetary gear brush dc gear motor	
Motor type	Iron core. brush commutation	Winding parameters
Motor brush type	Carbon brushes	
Motor terminals	Soldering terminals	Wiring harnesses. cables. connectors
EMC filter	No	Yes
Gear material	Metal	
Motor pinion material	Plastic	Metal
Bearing	Sleeve bearing	
Shaft	Hardened stainless steel	Dimensions
Encoder option	Magnetic or optical (to order as option)	Through shaft dim. and screw holes
Environmental protection	IP55 (with encoder IP50)	
Operating temperature	-10...+60 °C	-40...+60 °C
RoHS compliance	Yes	
CE label	No	Yes
UL approval	No	Yes

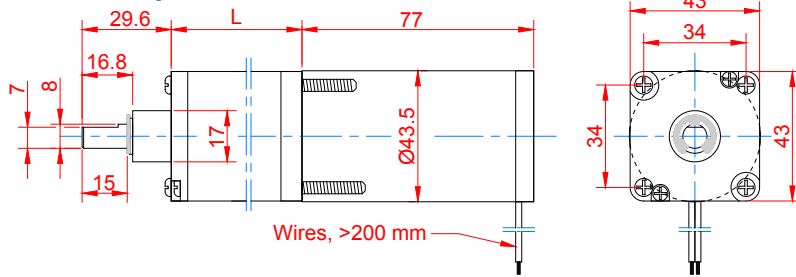
MOTOR DATA

Nominal voltage (V)	12	24
No load speed (rpm)	3700	4000
No load current (A)	1.2	0.6
Nominal speed (rpm)	2900	3200
Nominal torque (mNm)	39	39
Nominal current (A)	1.8	1.0
Stall torque mNm)	220	245
Starting current (A)	10	5
Output (W)	12	13
Length (mm)	60	60
Weight (g)	350	350

GEAR HEAD DATA

Reduction	4	14	24	49	60	75	84	103	144	171	210	259	294	325	361	443	504	619	864
Max. continuous torque (Nm)	0.58	1.96	1.96	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94
Intermittently permissible torque (Nm)	0.78	2.54	2.54	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43
Efficiency %	90	81	81	73	73	73	73	73	66	66	66	66	66	66	66	66	66	66	66
Length (mm)	20.2	27.8	27.8	35.6	35.6	35.6	35.6	35.6	35.6	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4
Weight (g)	190	250	250	310	310	310	310	310	310	360	360	360	360	360	360	360	360	360	360

PDS4377 square 43 mm carbon brushes 13 W



MODEL NO. DESIGNATIONS



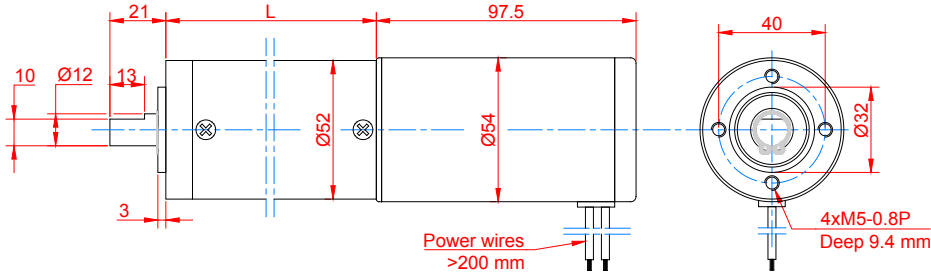
GEAR MOTOR DATA																		
Reduction	4	14	24	49	60	84	103	144	171	210	259	294	325	361	443	504	619	864
Nominal torque 12 V (Nm)	0.16	0.50	0.86	1.58	1.93	2.70	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94
Nominal speed 12 (rpm)	675	193	113	55	45	32	26	19	16	13	10	9	8	8	6	5	4	3
Nominal torque 24 V (Nm)	0.16	1.58	1.93	2.70	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94
Nominal speed 24 (rpm)	800	229	133	65	53	38	31	22	19	15	12	11	10	9	7	6	5	4
Length (mm)	97.2	104.8	104.8	112.7	112.7	112.7	112.7	112.7	120.4	120.4	120.4	120.4	120.4	120.4	120.4	120.4	120.4	120.4
Weight (g)	550	610	610	670	670	670	670	670	720	720	720	720	720	720	720	720	720	720

GEAR MOTOR FEATURES AND STANDARD DATA		
	STANDARD	CUSTOMIZATION OPTIONS
Type	Planetary gear brush dc gear motor	
Motor type	Iron core. brush commutation	Winding parameters
Motor brush type	Carbon brushes	
Motor terminals	Soldering terminals	Wiring harnesses. cables. connectors
EMC filter	No	Yes
Gear material	Metal	
Motor pinion material	Plastic	Metal
Bearing	Sleeve bearing	
Shaft	Hardened stainless steel	Dimensions
Encoder option	Magnetic (to order as option)	Through shaft dim. and screw holes
Brake option	Electric brake (to order as option)	
Environmental protection	IP55 (with encoder or brake IP50)	
Operating temperature	-10...+60 °C	-40...+60 °C
RoHS compliance	Yes	
CE label	No	Yes
UL approval	No	Yes

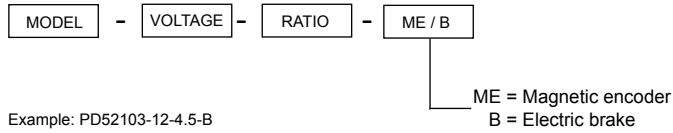
MOTOR DATA		
Nominal voltage (V)	12	24
No load speed (rpm)	3600	4000
No load current (A)	1.0	0.5
Nominal speed (rpm)	2700	3200
Nominal torque (mNm)	44	44
Nominal current (A)	2.0	1.1
Stall torque mNm)	166	176
Starting current (A)	7	4
Output (W)	12.5	14.8
Length (mm)	77	77
Weight (g)	360	360

GEAR HEAD DATA																		
Reduction	4	14	24	49	60	84	103	144	171	210	259	294	325	361	443	504	619	864
Max. continuous torque (Nm)	0.58	1.96	1.96	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94
Intermittently permissible torque (Nm)	0.78	2.54	2.54	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43
Efficiency %	90	81	81	73	73	73	73	73	66	66	66	66	66	66	66	66	66	66
Length (mm)	20.2	27.8	27.8	35.65	35.65	35.65	35.65	35.65	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4
Weight (g)	190	250	250	310	310	310	310	310	360	360	360	360	360	360	360	360	360	360

PD52103 Ø52 mm carbon brushes 29 W



MODEL NO. DESIGNATIONS



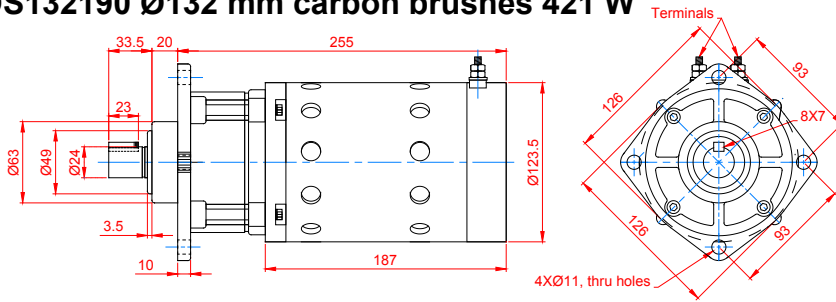
GEAR MOTOR DATA														
Reduction	4.5	6	8	20	28	39	50	91	127	162	225	244	276	313
Nominal torque 12 V (Nm)	0.3	0.4	0.6	1.1	1.5	2.1	2.8	4.0	5.5	7.0	9.8	10.6	12.0	13.6
Nominal speed 12 (rpm)	689	517	388	155	111	80	62	34	24	19	14	13	11	10
Nominal torque 24 V (Nm)	0.3	0.4	0.6	1.1	1.5	2.1	2.8	4.0	5.5	7.0	9.8	10.6	12.0	13.6
Nominal speed 24 (rpm)	689	517	388	155	111	80	62	34	24	19	14	13	11	10
Length (mm)	146.5	146.5	143.5	161.5	161.5	161.5	161.5	176.5	176.5	176.5	176.5	176.5	176.5	176.5
Weight (Kg)	1.40	1.40	1.40	1.55	1.55	1.55	1.55	1.70	1.70	1.70	1.70	1.70	1.70	1.70

GEAR MOTOR FEATURES AND STANDARD DATA		
	STANDARD	CUSTOMIZATION OPTIONS
Type	Planetary gear brush dc gear motor	
Motor type	Iron core. brush commutation	Winding parameters
Motor brush type	Carbon brushes	
Motor terminals	Cable wires 200 mm	Wiring harnesses. cables. connectors
EMC filter	No	Yes
Gear material	Ratio ≤ 8 plastic ≥ 20 metal	
Motor pinion material	Plastic	
Bearing	Ball bearing	
Shaft	Hardened stainless steel	Dimensions
Encoder option	Magnetic (to order as option)	Through shaft dim. and screw holes
Brake option	Electric brake (to order as option)	
Environmental protection	IP55 (with encoder or brake IP50)	
Operating temperature	-10...+60 °C	-40...+60 °C
RoHS compliance	Yes	
CE label	No	Yes
UL approval	No	Yes

MOTOR DATA		
Nominal voltage (V)	12	24
No load speed (rpm)	3600	3600
No load current (A)	0.6	0.4
Nominal speed (rpm)	3100	3100
Nominal torque (mNm)	88	88
Nominal current (A)	3.3	1.6
Stall torque Nm)	0.7	0.7
Starting current (A)	22	11
Output (W)	29	29
Length (mm)	97.5	97.5
Weight (Kg)	0.8	0.8

GEAR HEAD DATA														
Reduction	4.5	6	8	20	28	39	50	91	127	162	225	244	276	313
Max. continuous torque (Nm)	2.94	2.94	2.94	14.7	14.7	14.7	14.7	24.5	24.5	24.5	24.5	24.5	24.5	24.5
Intermittently permissible torque (Nm)	3.92	3.92	3.92	17.64	17.64	17.64	17.64	29.4	29.4	29.4	29.4	29.4	29.4	29.4
Efficiency %	79	79	79	62	62	62	62	49	49	49	49	49	49	49
Length (mm)	49	49	46	64	64	64	64	79	79	79	79	79	79	79
Weight (Kg)	0.6	0.6	0.6	0.75	0.75	0.75	0.75	0.9	0.9	0.9	0.9	0.9	0.9	0.9

PDS132190 Ø132 mm carbon brushes 421 W



MODEL NO. DESIGNATIONS



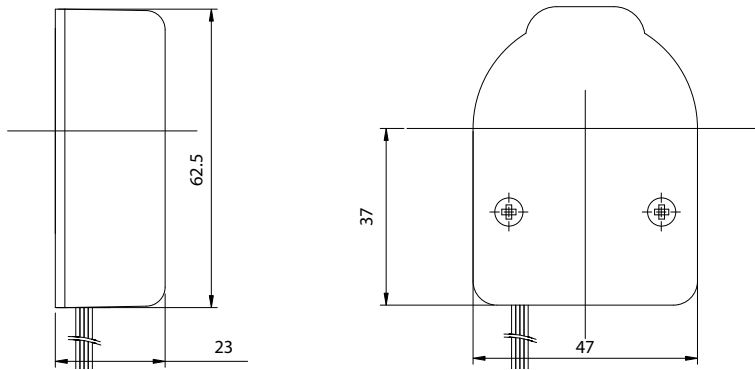
GEAR MOTOR DATA	
Reduction	10
Nominal torque 12 V (Nm)	16
Nominal speed 12 (rpm)	202
Nominal torque 24 V (Nm)	16
Nominal speed 24 (rpm)	202
Length (mm)	255
Weight (Kg)	31.5

GEAR MOTOR FEATURES AND STANDARD DATA		
	STANDARD	CUSTOMIZATION OPTIONS
Type	Planetary gear brush dc gear motor	
Motor type	Iron core. brush commutation	Winding parameters
Motor brush type	Carbon brushes	
Motor terminals	Screw bolt terminals	Wiring harnesses. cables. connectors
EMC filter	No	Yes
Gear material	Metal	
Motor pinion material	Plastic	
Bearing	Ball bearing	
Shaft	Hardened stainless steel	Dimensions
Brake option	Electric brake (to order as option)	
Environmental protection	IP55 (with encoder or brake IP50)	
Operating temperature	-10...+60 °C	-40...+60 °C
RoHS compliance	Yes	
CE label	No	Yes
UL approval	No	Yes

MOTOR DATA		
Nominal voltage (V)	12	24
No load speed (rpm)	2400	2400
No load current (A)	5.5	2.5
Nominal speed (rpm)	2020	2020
Nominal torque (Nm)	2	2
Nominal current (A)	43	22
Stall torque Nm)	8.2	8.2
Starting current (A)	262	131
Output (W)	421	421
Length (mm)	187	187
Weight (Kg)	10.5	10.5

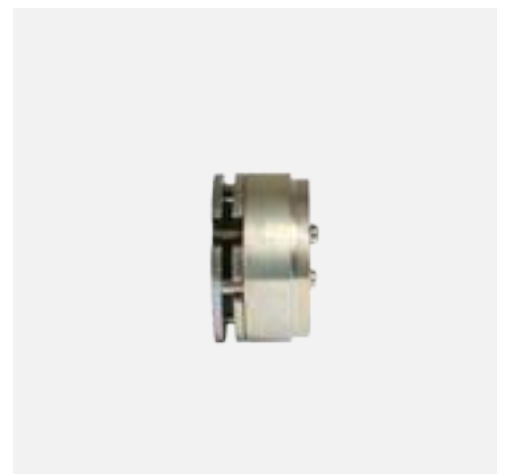
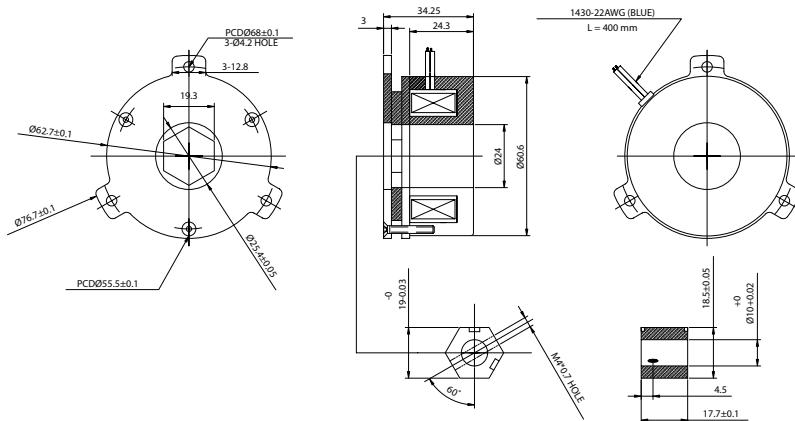
GEAR HEAD DATA	
Reduction	10
Max. continuous torque (Nm)	29.4
Intermittently permissible torque (Nm)	44.0
Efficiency %	80
Weight (Kg)	21

Magnetic encoder 48 counts per revolution 2 channels Optical encoder 2000 counts per revolution 2 channels



ENCODER DATA				
	MAGNETIC		OPTICAL	
Pulses per revolution PPR two channels together	24		1000	
Counts per revolution CPR two channels together	48		2000	
Phase shift	90 degrees		90 degrees	
VCC	+5 VDC	Orange lead	+5 VDC	Pin 1
GND	0 VDC	Green lead	0 VDC	Pin 5 Pin 8
Signal A		Blue lead		A- Pin 6
Signal B		Yellow lead		B- Pin 7
Current			< 80 mA	
Index		-	Z+ Pin 4	
Output wave			Line driver	
Frequency response			25 KHz max.	
Connection	Flying wire		DB9 female	
Weight		< 100 g		
Wire length	400 mm		110 mm	

Brake electro mechanic



BRAKE DATA	
Voltage	24VDC
Power	16W
Resistance	35Ω ±5%
Insulation class	F
Dynamic friction	35 Kgcm
Static friction	40 Kgcm
Insulation resistance	500 VDC / 50 MΩ
Insulation capacity	1500 VAC / 1mA / 1SEC
Release time	40 msec
Activation time	140 msec
Operating voltage	12V
Release voltage	5V
Clearance	0.12~0.15 mm
Weight	0.7 kg
Wire length	400 mm