



# PLANETARY GEAR DC MOTORS

Ø 43 - 123 mm  
12 - 421W

Transmotec sell a broad range of geared DC motors in standard and customized configurations. Our motors are often available with gear heads, encoders and wire harnesses. Transmotec is the ideal supplier source especially to instrument and apparatus builders. We keep a high number of motors in stock for immediate delivery.

## Customizations include:

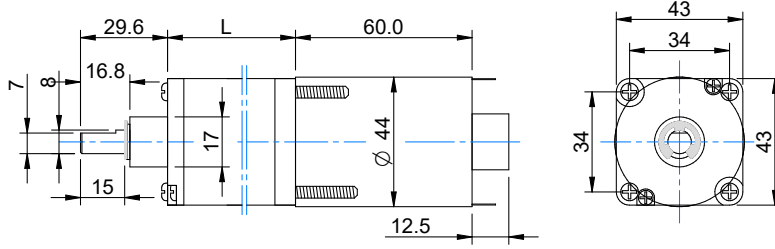
- ✓ Customized harness
- ✓ Shaft configuration
- ✓ Winding configuration
- ✓ And more...

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Brake (electro mechanic)				<a href="#">5</a>

# PDS4360 / Ø 43mm / 12W / 13W

## DRAWING (mm)



## PHOTO



## MODEL NO. DESIGNATION

PDS4360 - VOLTAGE - REDUCTION

Example: PDS4360-12-4

## ADDITIONAL

### GEAR MOTOR DATA

Reduction	4:1	14:1	24:1	49:1	60:1	75:1	84:1	103:1	144:1	171:1	210:1	259:1	294:1	325:1	361:1	443:1	504:1	619:1	864:1
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 V (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 V (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	710	710	710	710	710	710	710	710	710	710	710

\* Nominal speed and nominal torque have a tolerance of  $\pm 15\%$

### GEAR HEAD DATA

Reduction	4:1	14:1	24:1	49:1	60:1	75:1	84:1	103:1	144:1	171:1	210:1	259:1	294:1	325:1	361:1	443:1	504:1	619:1	864:1
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	360	360	360	360	360	360	360	360	360	360	360

### GEAR MOTOR FEATURES AND STANDARD DATA

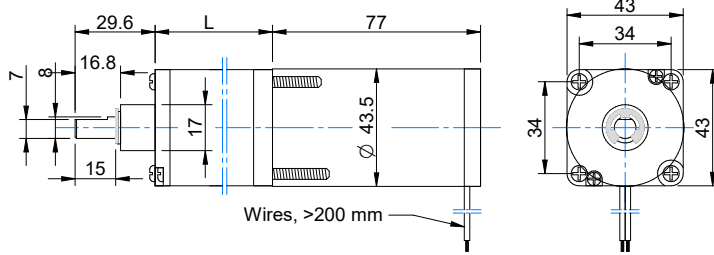
	STANDARD	CUSTOMIZATION OPTIONS
Type	Planetary gear brush dc gear motor	
Motor type	Iron core. brush commutation	Winding parameters
Motor brush type	Carbon brushes	
Motor terminals	Soldering terminals	Wiring harnesses. cables. connectors
EMC filter	No	Yes
Gear material	Metal	
Motor pinion material	Plastic	Metal
Bearing	Sleeve bearing	
Shaft	Hardened stainless steel	Dimensions
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

# PDS4377 / Ø 43mm / 12.5W / 14.8W

## DRAWING (mm)



## PHOTO



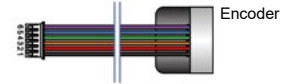
## MODEL NO. DESIGNATION

PDS4377 - VOLTAGE - REDUCTION - ME / OE

Example: PDS4377-12-4

ME = Magnetic encoder  
OE = Optical encoder

## ADDITIONAL



GEAR MOTOR DATA																			
Reduction	4:1	14:1	24:1	49:1	60:1	84:1	103:1	144:1	171:1	210:1	259:1	294:1	325:1	361:1	443:1	504:1	619:1	864:1	
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 V (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 V (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	

\* Nominal speed and nominal torque have a tolerance of ± 15%

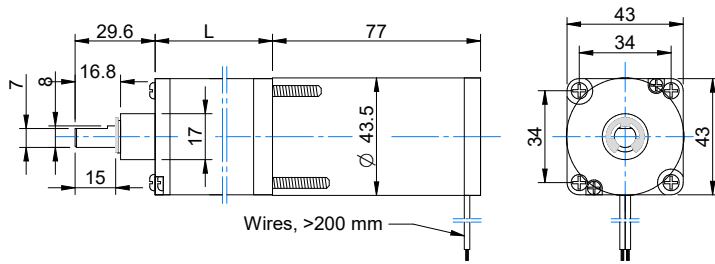
GEAR HEAD DATA																			
Reduction	4:1	14:1	24:1	49:1	60:1	84:1	103:1	144:1	171:1	210:1	259:1	294:1	325:1	361:1	443:1	504:1	619:1	864:1	
Max. continuous torque (Nm)	0.58	1.96	1.96	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	2.94	
Intermittently permissible torque (Nm)	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	

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	Magetic/Optical (to order as option)	Through shaft dim. and screw holes
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

# PD52103 / Ø 52mm / 97.5W / 97.5W

## DRAWING (mm)



## PHOTO



## MODEL NO. DESIGNATION

PD52103 - VOLTAGE - REDUCTION - ME / OE / B

Example: PD52103-12-4

ME = Magnetic encoder  
OE = Optical encoder  
B = Brake

## ADDITIONAL



Encoder



Brake

## GEAR MOTOR DATA

Reduction	4.5:1	6:1	8:1	20:1	28:1	39:1	50:1	91:1	127:1	162:1	225:1	244:1	276:1	313:1
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 V (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 V (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

\* Nominal speed and nominal torque have a tolerance of ± 15%

## GEAR HEAD DATA

Reduction	4.5:1	6:1	8:1	20:1	28:1	39:1	50:1	91:1	127:1	162:1	225:1	244:1	276:1	313:1
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

## GEAR MOTOR FEATURES AND STANDARD DATA

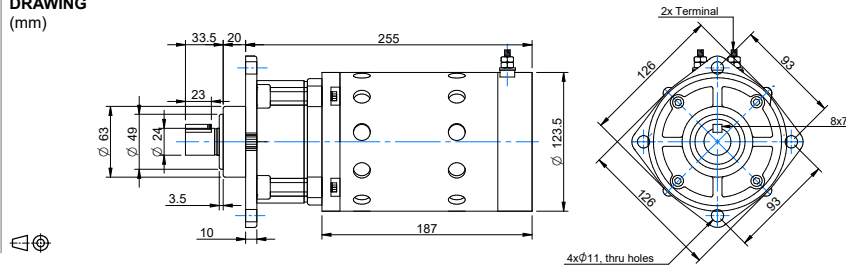
	STANDARD	CUSTOMIZATION OPTIONS
Type	Planetary gear brush dc gear motor	
Motor type	Iron core. brush commutation	Winding parameters
Motor brush type	Carbon brushes	
Motor terminals	Soldering terminals	Wiring harnesses. cables. connectors
EMC filter	No	Yes
Gear material	Metal	
Motor pinion material	Plastic	Metal
Bearing	Sleeve bearing	
Shaft	Hardened stainless steel	Dimensions
Encoder option	Magnetic/Optical (to order as option)	Through shaft dim. and screw holes
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

# PDS132190 / Ø 132mm / 421W / 421W

## DRAWING (mm)



## PHOTO



## MODEL NO. DESIGNATION

PDS132190 - VOLTAGE - REDUCTION - B  
 Example: PDS132190-12-4 B = Brake

## ADDITIONAL



Brake

### GEAR MOTOR DATA

Reduction	10:1
Nominal torque 12 V (Nm) *	16
Nominal speed 12 V (rpm) *	202
Nominal torque 24 V (Nm) *	16
Nominal speed 24 V (rpm) *	202
Length (mm)	255
Weight (kg)	31.5

\* Nominal speed and nominal torque have a tolerance of ± 15%

### GEAR HEAD DATA

Reduction	10:1
Max. continuous torque (Nm)	29.4
Intermittently permissible torque (Nm)	44.0
Efficiency (%)	80
Weight (kg)	21

### GEAR MOTOR FEATURES AND STANDARD DATA

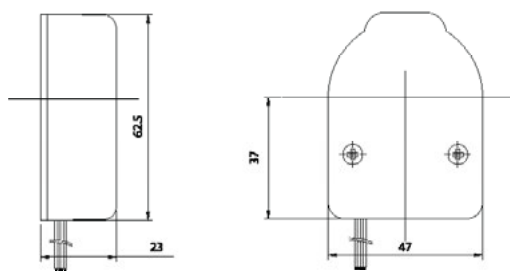
	STANDARD	CUSTOMIZATION OPTIONS
Type	Planetary gear brush dc gear motor	
Motor type	Iron core. brush commutation	Winding parameters
Motor brush type	Carbon brushes	
Motor terminals	Screw bolt terminals	Wiring harnesses. cables. connectors
EMC filter	No	Yes
Gear material	Metal	
Motor pinion material	Plastic	
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

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

**DRAWING**  
(mm)



**PHOTO**

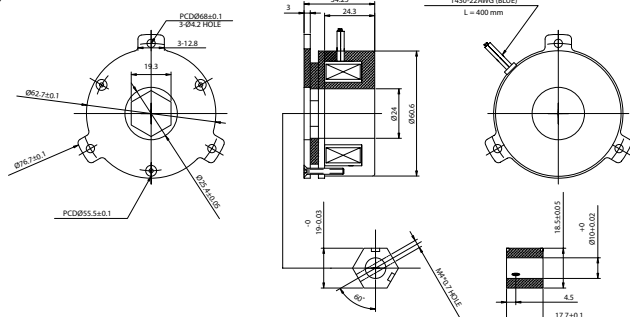


**ENCODER DATA**

	MAGNETIC		OPTICAL	
Pulses per revolution PPR two channels	24		1000	
Counts per revolution CPR two channels	48		2000	
Phase shift	90°		90°	
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			< 100g	
Wire length	400mm		110mm	

**Brake / Electro mechanic**

**DRAWING**  
(mm)



**PHOTO**



**BRAKE DATA**

Voltage	24VDC
Power	16W
Resistance	35Ω ±5%
Insulation class	F
Dynamic friction	3.4 Nm
Static friction	3.9 Nm
Insulation resistance	500 VDC / 50 MΩ
Insulation capacity	1500 VAC / 1mA / 1s
Release time	40 ms
Activation time	140 ms
Operating voltage	12V
Release voltage	5V
Clearance	0.12~0.15 mm
Weight	0.7 kg
Wire length	400 mm