

ACD Series

Coreless Direct Drive Rotary Motor



- Direct drive, zero cogging coreless motor
- Encoder options of SINCOS or digital
- Precise homing through index pulse
- Fast response and settling
- Smooth motion even at low speeds (low velocity ripple)

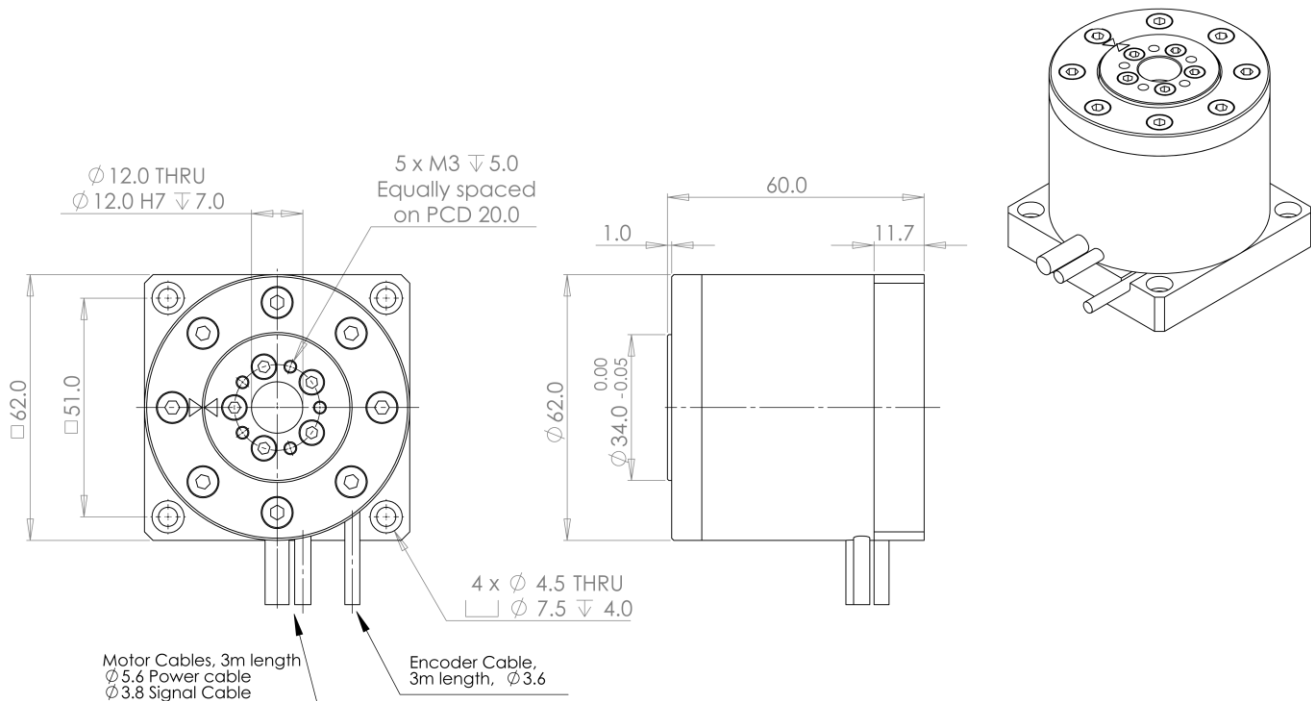
ACD62 Specifications		ACD62-60		ACD62-84	
Model	Units	D	Y	D	Y
Table diameter	mm	62		62	
Table height	mm	60		84	
Number of poles		8		8	
Continuous torque	Nm	0.115	0.115	0.341	0.341
Peak torque	Nm	0.40	0.40	1.19	1.19
Cogging torque	Nm	0	0	0	0
Torque constant	Nm/Arms	0.024	0.042	0.071	0.123
Back EMF constant	Vpeak/rpm	0.002	0.004	0.006	0.011
Continuous current	Arms	4.8	2.8	4.8	2.8
Peak current	Arms	16.8	9.7	16.8	9.7
Resistance ¹	ohms	0.73	1.51	1.01	2.21
Inductance ¹	mH	0.073	0.195	0.144	0.316
Electrical time constant	ms	0.10	0.13	0.14	0.14
Motor constant	Nm/SqRt(W)	0.028	0.034	0.071	0.083
Mass	Kg	0.50	0.50	0.80	0.80
Rotor Inertia	Kgm2	2.15683E-05	2.15683E-05	3.94386E-05	3.94386E-05
Max mechanical allowable speed	rpm	1,200	1,200	1,200	1,200
Max speed @24V DC	rpm	1,200	1,200	1,172	248
Max speed @48V DC	rpm	1,200	1,200	1,200	1,200
MS-6330 optical SINCOS encoder	lines	6,330	6,330	6,330	6,330
MS-6330 optical digital encoder (40X)	Counts/rev	253,200	253,200	253,200	253,200
Accuracy (based on MS-6330, 40X)	arc sec	+/- 51.2	+/- 51.2	+/- 51.2	+/- 51.2
Repeatability (based on MS-6330, 40X)	arc sec	+/- 5.12	+/- 5.12	+/- 5.12	+/- 5.12
Axial runout ²	um	12	12	12	12
Radial runout ²	um	10	10	10	10
Max axial load	N	50		50	
Max moment load	Nm	0.3		0.3	

ACD120 Specifications		ACD120-80		ACD120-175	
Model	Units	D	Y	D	Y
Table diameter	mm	120		120	
Table height	mm	80		175	
Number of poles		12		12	
Continuous torque	Nm	1.8	1.8	9.2	9.2
Peak torque	Nm	6.5	6.5	32.3	32.3
Cogging torque	Nm	0	0	0	0
Torque constant	Nm/Arms	0.36	0.63	1.81	3.13
Back EMF constant	Vpeak/rpm	0.031	0.054	0.154	0.268
Continuous current	Arms	5.1	2.9	5.1	2.9
Peak current	Arms	17.9	10.3	17.9	10.3
Resistance ¹	ohms	1.80	4.64	4.02	12.07
Inductance ¹	mH	0.628	1.900	1.873	5.619
Electrical time constant	ms	0.35	0.41	0.47	5.06
Motor constant	Nm/SqRt(W)	0.27	0.29	0.90	0.90
Mass	Kg	3.2	3.2	7.0	7.0
Rotor Inertia	Kgm2	0.001078	0.001078	0.003208	0.003208
Max mechanical allowable speed	rpm	952	952	952	952
Max speed @150V DC	rpm	952	952	506	96
Max speed @230V AC	rpm	952	952	952	450
MS-8192 optical SINCOS encoder	lines	8,192	8,192		
MS-8192 optical digital encoder(40X)	Counts/rev	327,680	327,680		
MS-11450 optical SINCOS encoder	lines			11,450	11,450
MS-11450 optical digital encoder(40X)	Counts/rev			458,000	458,000
Accuracy (based on MS-8192, 40X)	arc sec	+/- 39.6	+/- 39.6		
Repeatability (based on MS-8192, 40X)	arc sec	+/- 3.96	+/- 3.96		
Accuracy (based on MS-11450, 40X)	arc sec			+/- 28.3	+/- 28.3
Repeatability (based on MS-11450, 40X)	arc sec			+/- 2.83	+/- 2.83
Axial runout ²	um	15	15	15	15
Radial runout ²	um	10	10	10	10
Max axial load	N	150		150	
Max moment load	Nm	10		10	

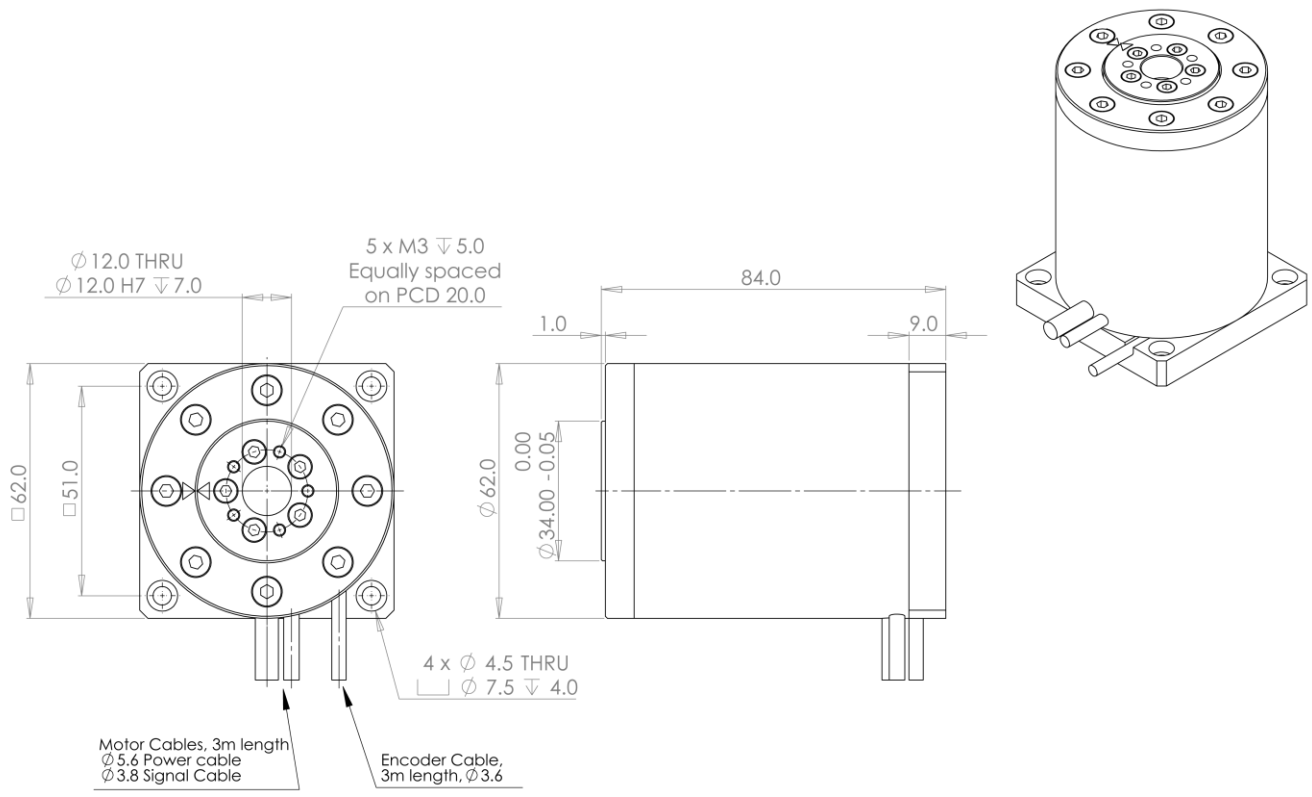
ACD200 Specifications		ACD200-115		ACD200-145	
Model	Units	D	Y	D	Y
Table diameter	mm	200		200	
Table height	mm	115		145	
Number of poles		16		16	
Continuous torque	Nm	12.9	12.9	25.8	25.8
Peak torque	Nm	45.2	45.2	90.3	90.3
Cogging torque	Nm	0	0	0	0
Torque constant	Nm/Arms	2.53	4.38	5.06	8.77
Back EMF constant	Vpeak/rpm	0.216	0.375	0.433	0.750
Continuous current	Arms	5.1	2.9	5.1	2.9
Peak current	Arms	17.9	10.3	17.9	10.3
Resistance ¹	ohms	5.2	15.6	7.6	22.7
Inductance ¹	mH	3.64	10.92	6.05	18.16
Electrical time constant	ms	0.70	0.70	0.80	0.80
Motor constant	Nm/SqRt(W)	1.11	1.11	1.84	1.84
Mass	Kg	12.0	12.0	15.0	15.0
Rotor Inertia	Kgm2	0.034922	0.034922	0.045706	0.045706
Max mechanical allowable speed	rpm	517	517	517	517
Max speed @150V DC	rpm	264			
Max speed @230V AC	rpm	517	372	381	88
MS-16384 optical SINCOS encoder	lines	16,384	16,384	16,384	16,384
MS-16384 optical digital encoder(40X)	Counts/rev	655,360	655,360	655,360	655,360
Accuracy (based on MS-16384, 40X)	arc sec	+/- 19.8	+/- 19.8	+/- 19.8	+/- 19.8
Repeatability (based on MS-16384, 40X)	arc sec	+/- 1.98	+/- 1.98	+/- 1.98	+/- 1.98
Axial runout ²	um	18	18	18	18
Radial runout ²	um	14	14	14	14
Max axial load	N	300		300	
Max moment load	Nm	15		15	

1. Terminal to terminal, at 25 Deg C.
2. Values are based on axis of rotation (bearings) runout only. Surface or tabletop runout is not part of the specification.

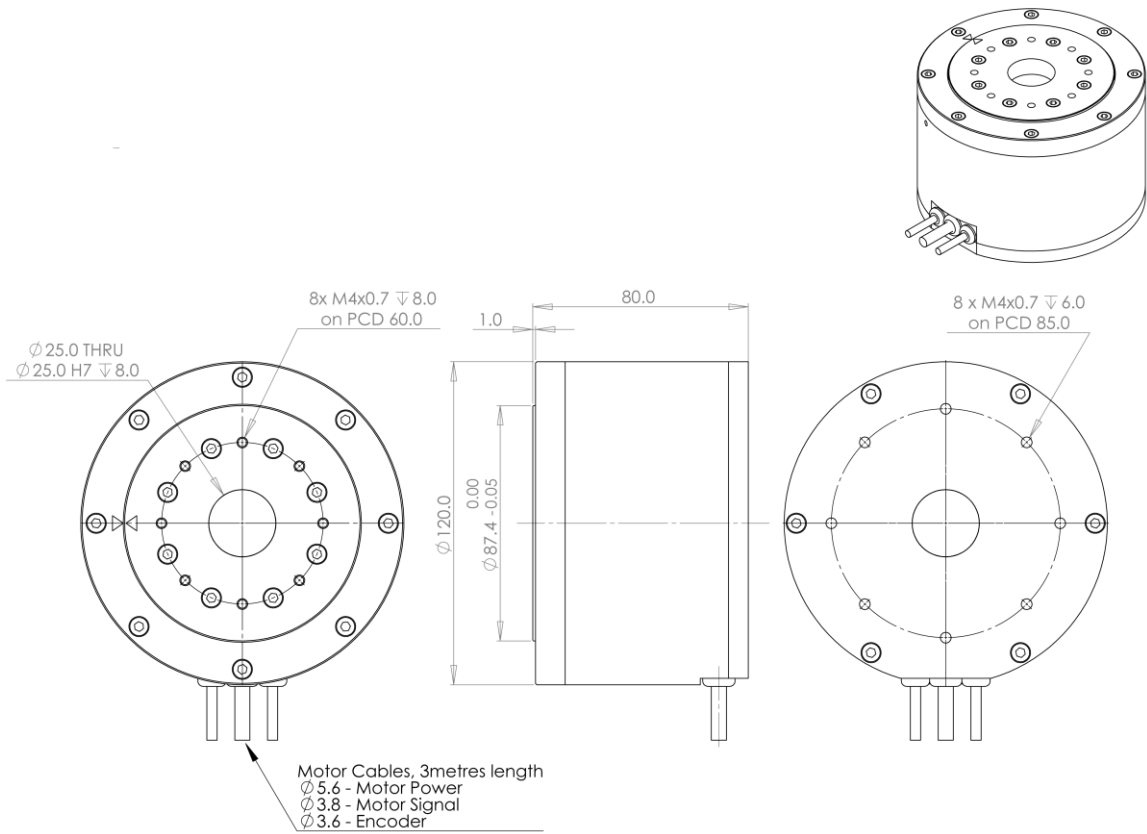
ACD62-60-MS



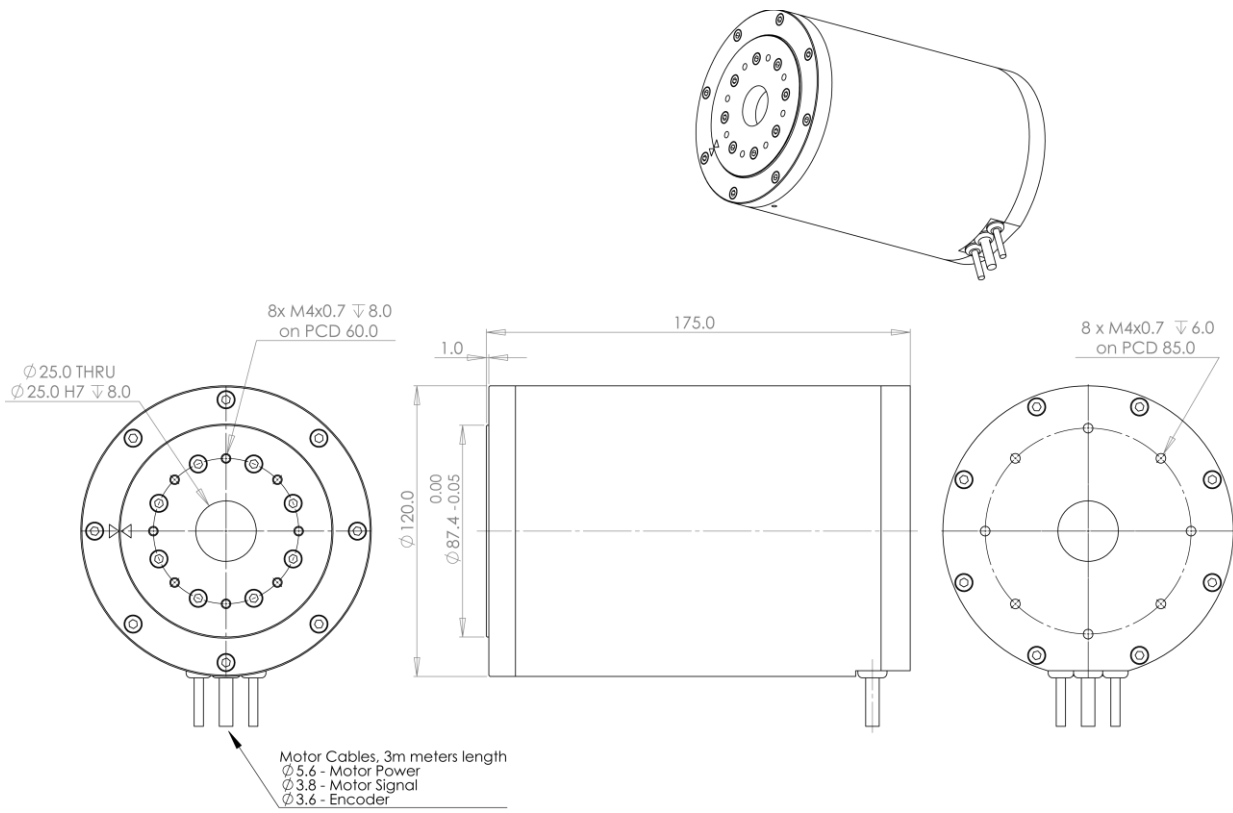
ACD62-84-MS



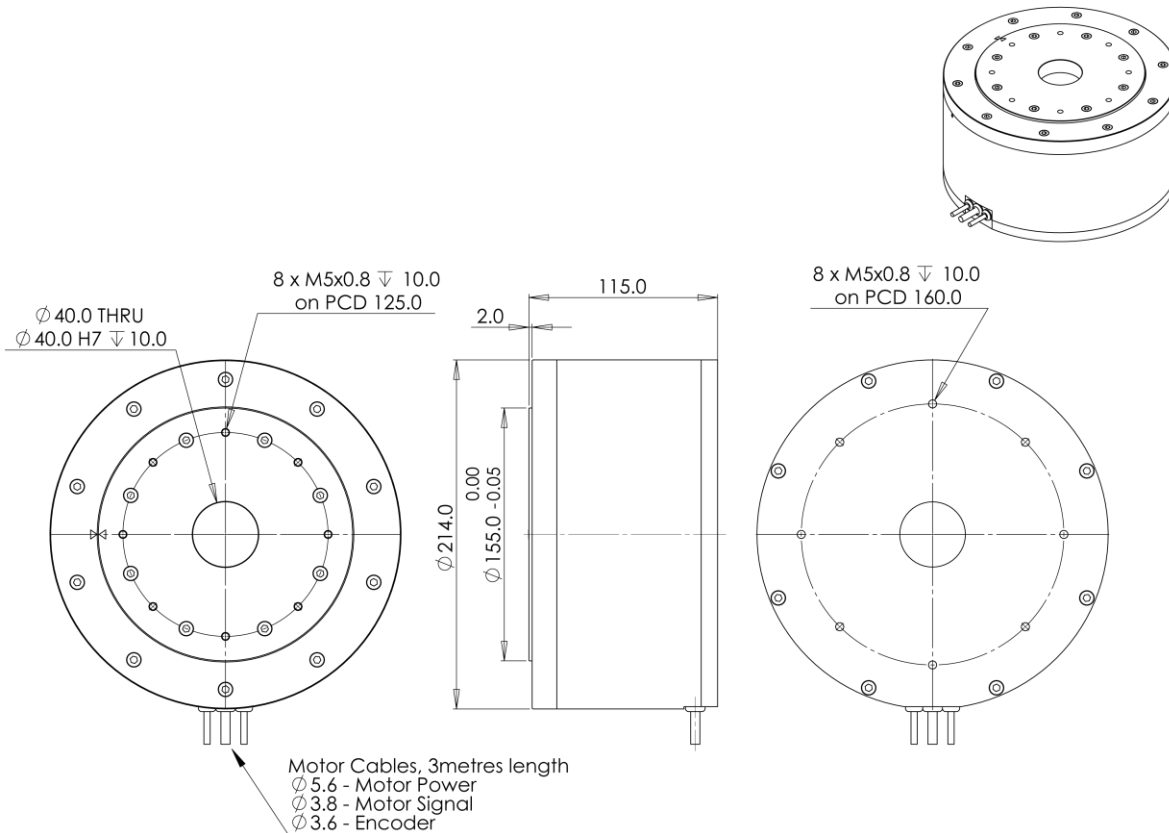
ACD120-80



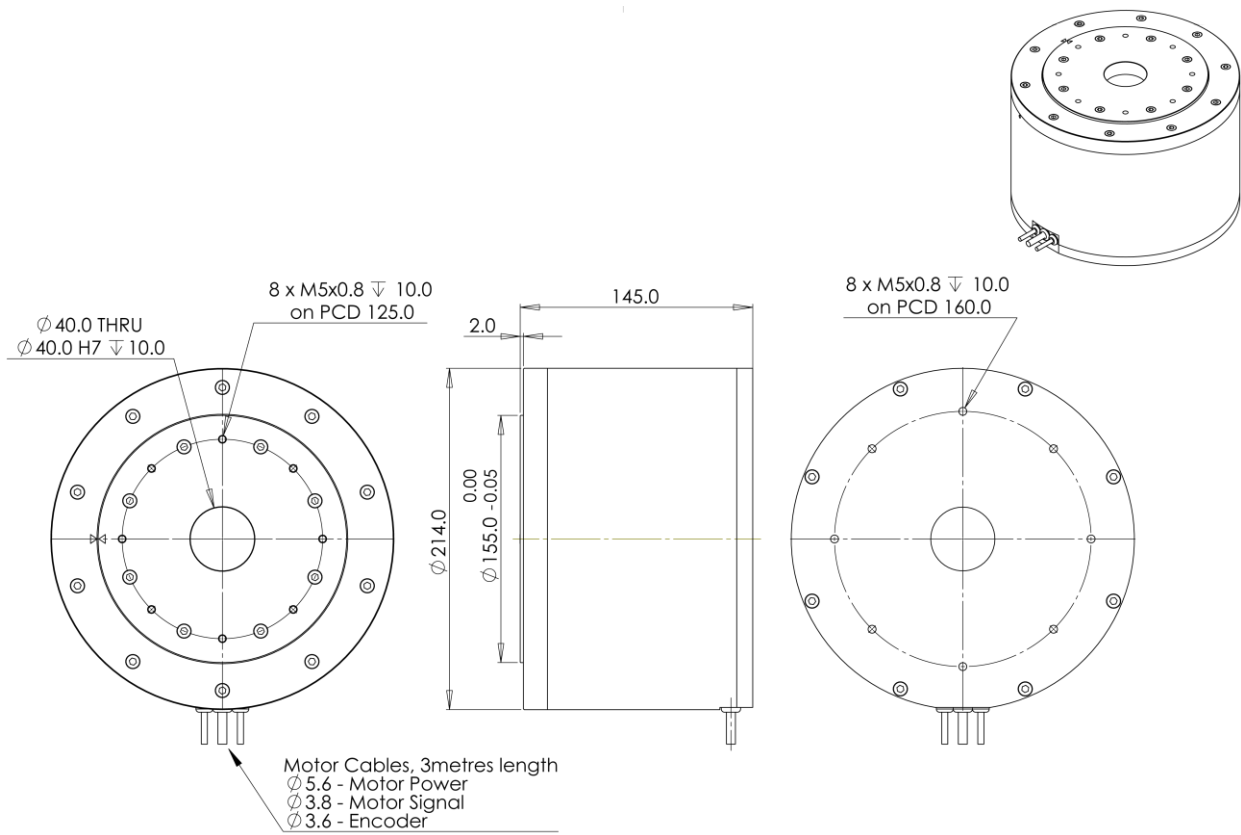
ACD120-175



ACD200-115



ACD200-145



Part Numbering

Motor	Model	Connection	Thermal Sensor	Cable Length	Encoder Option	Interpolation Option
ACD62	60/84	D/Y	K	3.0	MS-6330	40X
ACD120	80				MS-8192	256X
	175				MS-11450	1024X
ACD200	115/145				MS-16384	SINCOS

K- PT100 (RTD)

Example: ACD120-80-Y-K-3.0-MS-8192-40X

Connector Pin Assignment

ACD

MICROE - M1500 (DIGITAL)

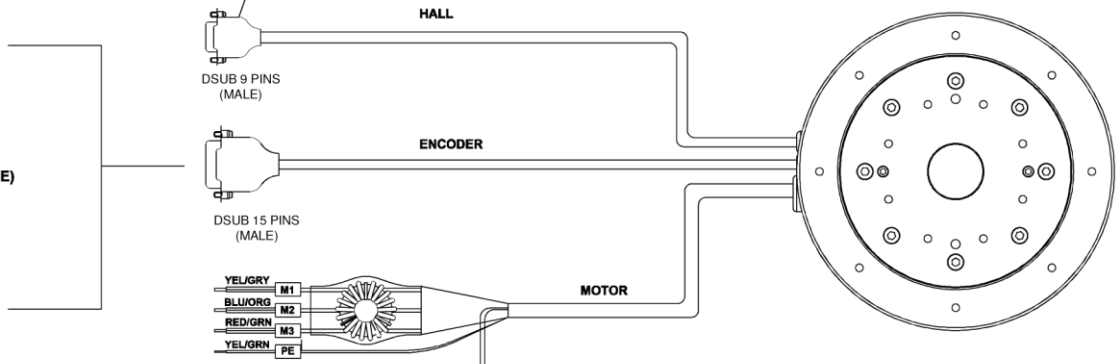
Pin	Description
12	+5VDC
5	A+
4	A-
10	B+
9	B-
14	Z+
15	Z-
13	0VDC

MICROE - M1000 (ANALOGUE)

Pin	Description
12	+5VDC
8	SIN+
15	SIN-
7	COS+
14	COS-
2	Z+
1	Z-
13	0VDC

HALL CABLE

Pin	Description	Color
1	HA	Grey
2	HB	Yellow
3	HC	Blue
4	+5VDC	Red
5	0VDC	Black



MOTOR CABLE

Description	Color
M1	YEL/GRY
M2	BLU/ORG
M3	RED/GRN
PE	YEL/BLK

THERMAL SENSOR WIRE
(K TYPE - PT100)
(BROWN & BROWN/BLACK)