

## 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

Model		ACD62-60		ACD62-84	
Parameters	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
Continuous thermal power	W	16.9	11.6	23.2	16.9
Peak thermal power	W	206.6	141.6	283.7	207.4
Max. bus voltage	W	330.0	330.0	330.0	330.0
Resistance <sup>1</sup>	ohms	0.73	1.51	1.01	2.21
Inductance <sup>1</sup>	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	Kgm <sup>2</sup>	0.0000216	0.0000216	0.0000394	0.0000394
Rec. max speed @48VDC (DIGITAL/SINCOS)	rpm	1,200	1,200	1,200	1,200
AB-1620 optical SINCOS encoder	lines	1,620	1,620	1,620	1,620
DIGITAL resolution (at 64X interpolation)	Counts/rev	103,680	103,680	103,680	103,680
SINCOS Resolution (at 512X interpolation)	Counts/rev	829,440	829,440	829,440	829,440
SINCOS Resolution (at 4096X interpolation)	Counts/rev	6,635,520	6,635,520	6,635,520	6,635,520
Accuracy	arc sec	+/- 30	+/- 30	+/- 30	+/- 30
Repeatability	arc sec	+/- 3	+/- 3	+/- 3	+/- 3
Axial runout <sup>2</sup>	um	12	12	12	12
Radial runout <sup>2</sup>	um	10	10	10	10
Max axial load <sup>3</sup>	N	50		50	
Max moment load <sup>3</sup>	Nm	0.3		0.3	

1. Terminal to terminal, at 25°C.

2. Values are based on axis of rotation (bearings) runout only. Surface or table top runout is not part the specification.

3. Please contact our sales team (+44) 01202 599922 for inverted mount application.

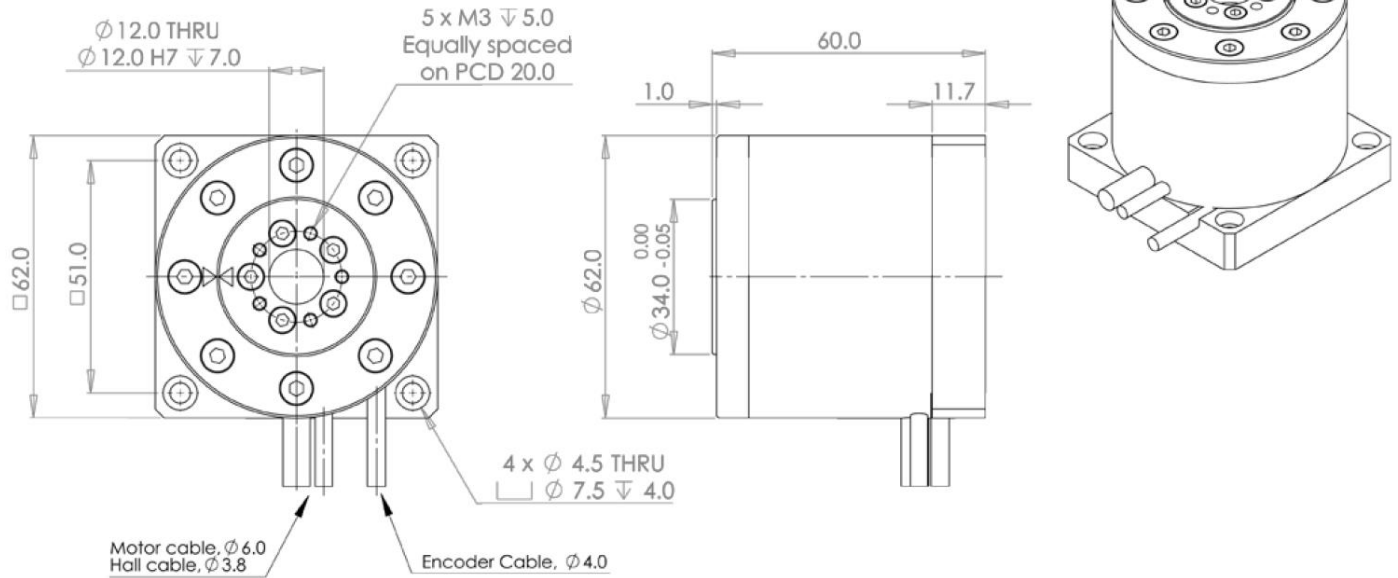
## ACD120 Specifications

Model		ACD120-80		ACD120-175	
Parameters	Units	D	Y	D	Y
Table diameter	mm	120		120	
Table height	mm	80		175	
Number of poles		12		12	
Continuous torque	Nm	1.846	1.846	9.216	9.216
Peak torque	Nm	6.46	6.46	32.25	32.25
Cogging torque	Nm	0	0	0	0
Torque constant	Nm/Arms	0.362	0.627	1.807	3.132
Back EMF constant	V <sub>peak</sub> /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
Continuous thermal power	W	46.7	40.2	104.7	104.5
Peak thermal power	W	572.6	492.2	1282.1	1280.6
Max. bus voltage	W	330.0	330.0	330.0	330.0
Resistance <sup>1</sup>	ohms	1.80	4.64	4.02	12.07
Inductance <sup>1</sup>	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)	0.270	0.291	0.901	0.901
Mass	Kg	3.20	3.20	7.00	7.00
Rotor Inertia	Kgm <sup>2</sup>	0.0010780	0.0010780	0.0032075	0.0032075
Rec. max speed @230VAC (DIGITAL/SINCOS)	rpm	952	952	220	220
AB-2868 optical SINCOS encoder	lines	2,868	2,868	2,868	2,868
DIGITAL resolution (at 64X interpolation)	Counts/rev	183,552	183,552	183,552	183,552
SINCOS Resolution (at 512X interpolation)	Counts/rev	1,468,416	1,468,416	1,468,416	1,468,416
SINCOS Resolution (at 4096X interpolation)	Counts/rev	11,747,328	11,747,328	11,747,328	11,747,328
Accuracy	arc sec	+/- 30	+/- 30	+/- 30	+/- 30
Repeatability	arc sec	+/- 3	+/- 3	+/- 3	+/- 3
Axial runout <sup>2</sup>	um	15.00	15.00	15.00	15.00
Radial runout <sup>2</sup>	um	10.00	10.00	10.00	10.00
Max axial load <sup>3</sup>	N	150		150	
Max moment load <sup>3</sup>	Nm	10		10	

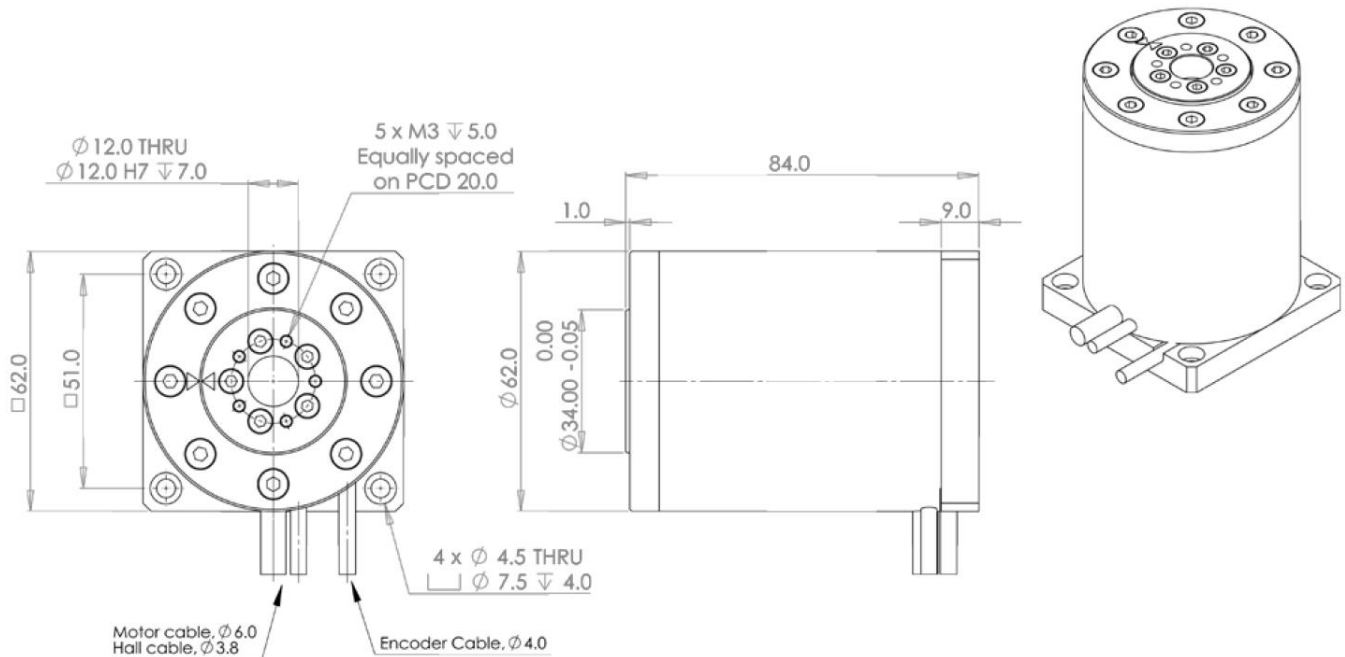
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**OUTLINE DRAWINGS / DIMENSIONS**

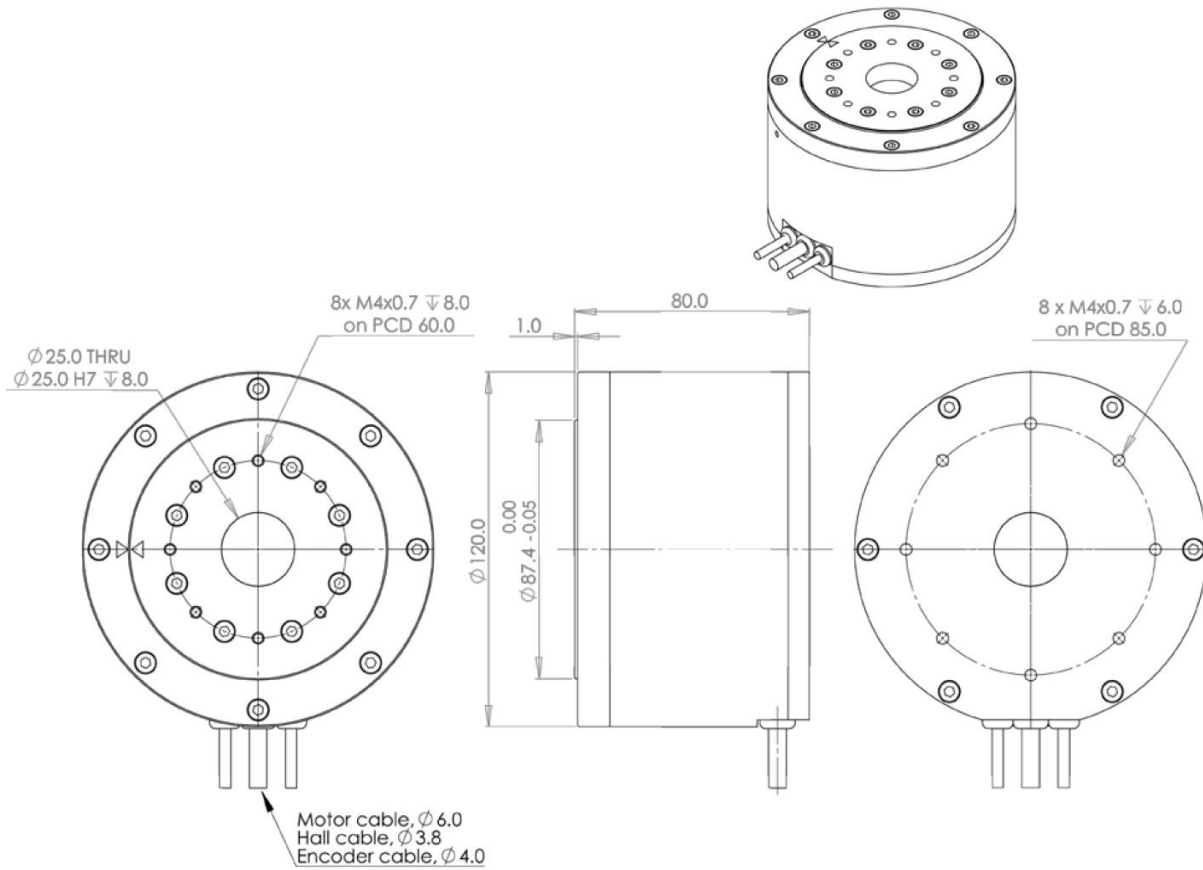
**ACD62-60-MS**



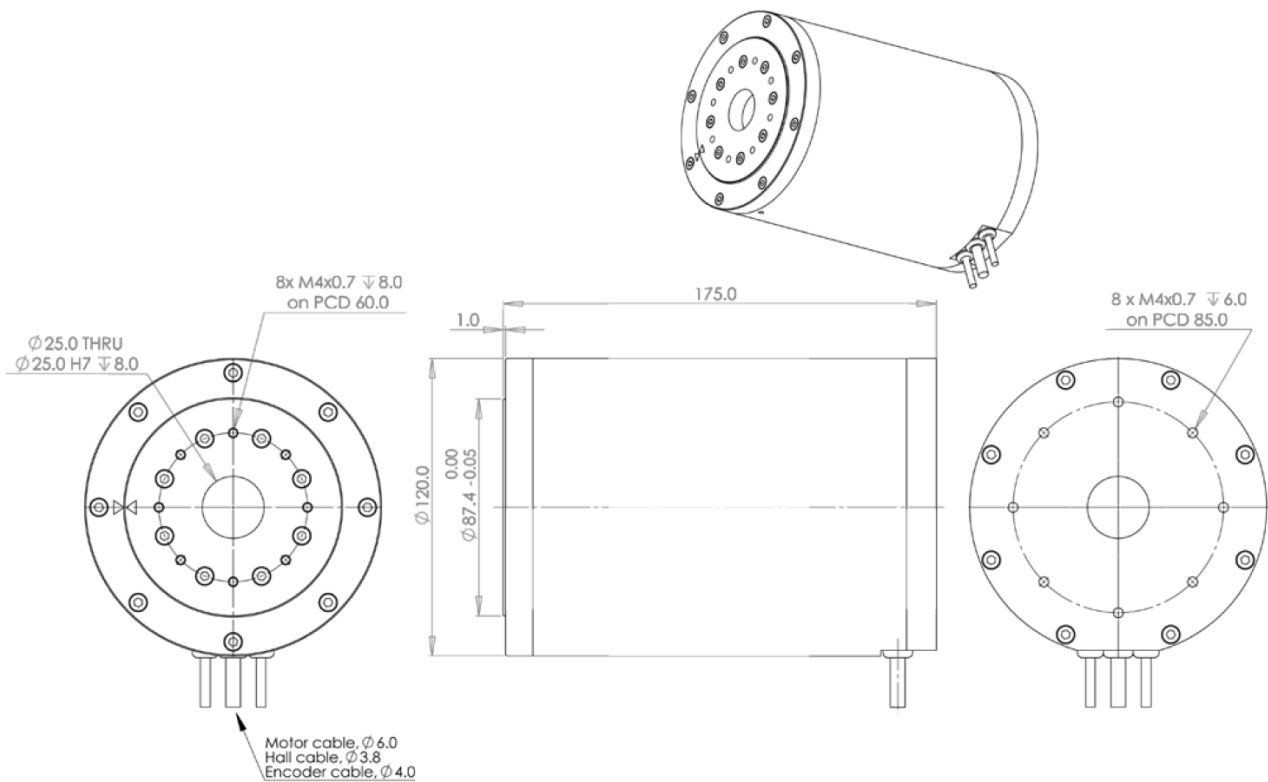
**ACD62-84-MS**



**ACD120-80**



**ACD120-175**



**Part Number Configuration**

Motor	Model	Connection	Thermal Sensor	Cable Length	Encoder Option	Interpolation Option
ACD62	60/84	D/Y	K	3.0	AB-1620	SINCOS / 64X
ACD120	80				AB-2868	
	175				AB-2868	

**K= PT100 (RTD)**

**Example: ACD120-80-Y-K-3.0-AB-2868-SINCOS**