

# ADR-P Series



Direct drive,  
brushless motor



integrated with  
hall sensors



Low cogging torque



Low speed and  
high speed windings

## Specifications

# ADR110/135-P

ADR110-P Specifications		ADR110-P-22		ADR110-P-45	
Model	Units	S	P	S	P
Number of poles		16		16	
Continuous torque	Nm	1.9	1.9	4.2	4.2
Peak torque	Nm	5.8	5.8	12.6	12.6
Max. cogging torque (peak to peak)	Nm	0.0022	0.0022	0.0047	0.0047
Torque constant	Nm/Arms	0.65	0.32	1.40	0.70
Back EMF constant	Vpeak/rpm	0.055	0.028	0.119	0.060
Continuous current	Arms	3.0	6.0	3.0	6.0
Peak current	Arms	9.0	18.0	9.0	18.0
Continuous thermal power	W	28.8	28.8	44.1	43.6
Peak thermal power	W	259.2	259.2	396.9	392.0
Max bus voltage	Vdc	550.0	550.0	550.0	550.0
Resistance <sup>①</sup>	ohms	3.20	0.80	4.90	1.21
Inductance <sup>①</sup>	mH	17.15	4.29	26.26	6.49
Electrical time constant	ms	5.36	5.36	5.36	5.36
Motor constant	Nm/Sqrt(W)	0.36	0.36	0.63	0.63
Rotor inertia	kg·m <sup>2</sup>	0.0001463	0.0001463	0.0002990	0.0002990
Rotor mass	kg	0.25	0.25	0.40	0.40
Stator mass	kg	0.88	0.88	1.80	1.80

ADR135-P Specifications		ADR135-P-27		ADR135-P-54	
Model	Units	S	P	S	P
Number of poles		16		16	
Continuous torque	Nm	4.5	4.5	10.3	10.3
Peak torque	Nm	13.6	13.6	31.0	31.0
Max. cogging torque (peak to peak)	Nm	0.0090	0.0090	0.0210	0.0210
Torque constant	Nm/Arms	1.51	0.76	3.44	1.72
Back EMF constant	Vpeak/rpm	0.129	0.065	0.294	0.147
Continuous current	Vdc	550.0	550.0	550.0	550.0
Peak current	Arms	9.0	18.0	9.0	18.0
Continuous thermal power	W	52.3	52.3	83.8	83.8
Peak thermal power	W	470.6	470.6	754.1	754.1
Max bus voltage	Arms	3.0	6.0	3.0	6.0
Resistance <sup>①</sup>	ohms	5.81	1.45	9.31	2.33
Inductance <sup>①</sup>	mH	39.51	9.88	63.31	15.83
Electrical time constant	ms	6.80	6.80	6.80	6.80
Motor constant	Nm/Sqrt(W)	0.63	0.63	1.13	1.13
Rotor inertia	kg·m <sup>2</sup>	0.0004243	0.0004243	0.0008463	0.0008463
Rotor mass	kg	0.45	0.45	0.90	0.90
Stator mass	kg	1.45	1.45	3.00	3.00

① Terminal to terminal, at 25 Deg C

# ADR175/220-P

## Specifications

ADR175-P Specifications		ADR175-P-36		ADR175-P-72	
Model	Units	S	P	S	P
Number of poles		16		16	
Continuous torque	Nm	14.3	14.3	31.5	31.5
Peak torque	Nm	42.9	42.9	94.4	94.4
Max. cogging torque (peak to peak)	Nm	0.0850	0.0850	0.1880	0.1880
Torque constant	Nm/Arms	3.58	1.79	7.87	3.93
Back EMF constant	Vpeak/rpm	0.306	0.153	0.672	0.336
Continuous current	Arms	4.0	8.0	4.0	8.0
Peak current	Arms	12.0	24.0	12.0	24.0
Continuous thermal power	W	78.6	78.6	130.9	130.9
Peak thermal power	W	707.0	707.0	1177.9	1177.9
Max bus voltage	Vdc	550.0	550.0	550.0	550.0
Resistance <sup>①</sup>	ohms	4.91	1.23	8.18	2.05
Inductance <sup>①</sup>	mH	42.57	10.64	70.92	17.73
Electrical time constant	ms	8.67	8.67	8.67	8.67
Motor constant	Nm/Sqrt(W)	1.61	1.61	2.75	2.75
Rotor inertia	kg·m <sup>2</sup>	0.0024531	0.0024531	0.0048915	0.0048915
Rotor mass	kg	1.10	1.10	2.10	2.10
Stator mass	kg	3.50	3.50	5.90	5.90

ADR220-P Specifications		ADR220-P-50		ADR220-P-100	
Model	Units	S	P	S	P
Number of poles		24		24	
Continuous torque	Nm	43.0	43.0	91.9	91.9
Peak torque	Nm	129.1	129.1	275.8	275.8
Max. cogging torque (peak to peak)	Nm	0.3340	0.3340	0.7130	0.7130
Torque constant	Nm/Arms	7.97	2.66	17.02	5.67
Back EMF constant	Vpeak/rpm	0.681	0.227	1.456	0.485
Continuous current	Arms	5.4	16.2	5.4	16.2
Peak current	Arms	16.2	48.6	16.2	48.6
Continuous thermal power	W	169.4	169.4	286.6	286.6
Peak thermal power	W	1524.8	1524.8	2579.8	2579.8
Max bus voltage	Vdc	550.0	550.0	550.0	550.0
Resistance <sup>①</sup>	ohms	5.81	0.65	9.83	1.09
Inductance <sup>①</sup>	mH	57.62	6.40	97.48	10.83
Electrical time constant	ms	9.92	9.92	9.92	9.92
Motor constant	Nm/Sqrt(W)	3.31	3.31	5.43	5.43
Rotor inertia	kg·m <sup>2</sup>	0.0092486	0.0092486	0.0183136	0.0183136
Rotor mass	kg	2.30	2.30	4.50	4.50
Stator mass	kg	7.50	7.50	15.00	15.00

① Terminal to terminal, at 25 Deg C

# ADR360-P

## Specifications

ADR360-P Specifications		ADR360-P-70		ADR360-P-140	
Model	Units	S	P	S	P
Number of poles		32		32	
Continuous torque	Nm	171.0	171.0	358.0	358.0
Peak torque	Nm	513.0	513.0	1074.0	1074.0
Max. cogging torque (peak to peak)	Nm	1.8600	1.8600	3.9600	3.9600
Torque constant	Nm/Arms	17.10	8.55	35.80	17.90
Back EMF constant	Vpeak/rpm	1.462	0.731	3.061	1.530
Continuous current	Arms	10.0	20.0	10.0	20.0
Peak current	Arms	30.0	60.0	30.0	60.0
Continuous thermal power	W	292.0	292.0	514.0	514.0
Peak thermal power	W	2628.0	2628.0	4626.0	4626.0
Max bus voltage	Vdc	550.0	550.0	550.0	550.0
Resistance <sup>①</sup>	ohms	2.92	0.73	5.14	1.29
Inductance <sup>①</sup>	mH	30.37	7.59	53.46	13.36
Electrical time constant	ms	10.40	10.40	10.40	10.40
Motor constant	Nm/Sqrt(W)	10.01	10.01	15.79	15.79
Rotor inertia	kg·m <sup>2</sup>	0.1144768	0.1144768	0.2272427	0.2272427
Rotor mass	kg	7.30	7.30	13.80	13.80
Stator mass	kg	17.50	17.50	33.00	33.00

① Terminal to terminal, at 25 Deg C.

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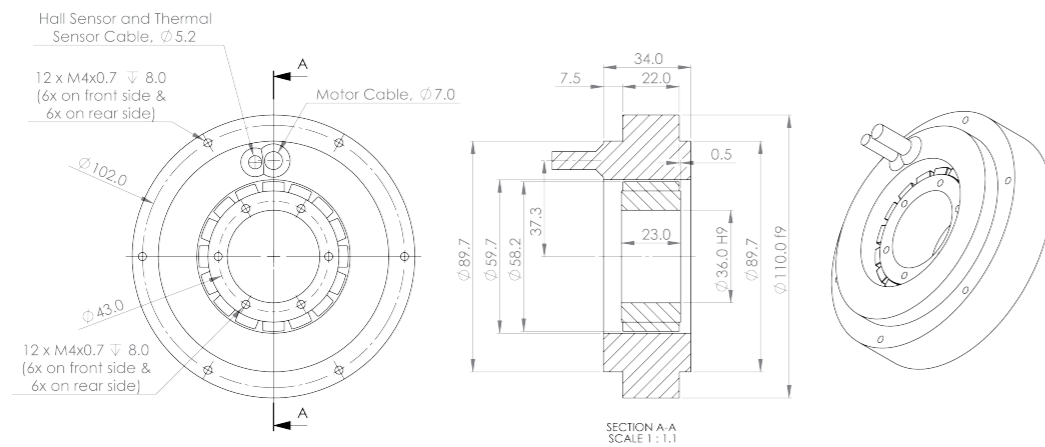
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Dimensions

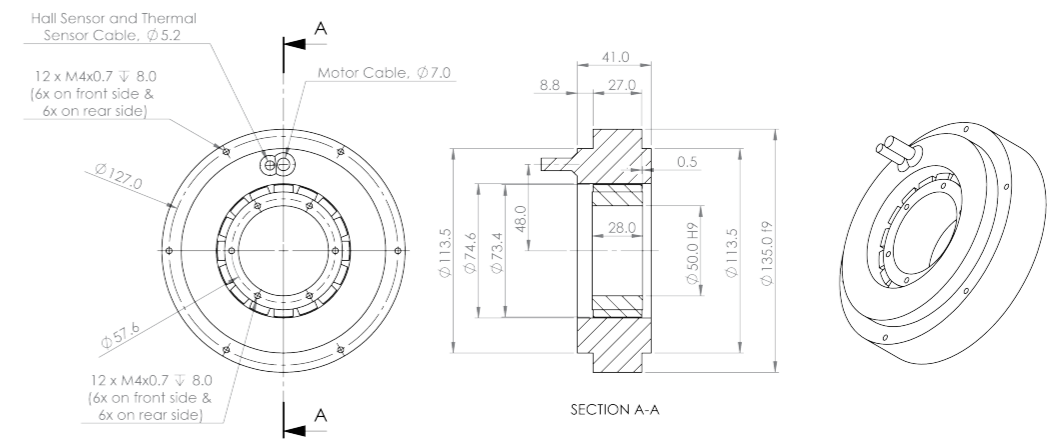
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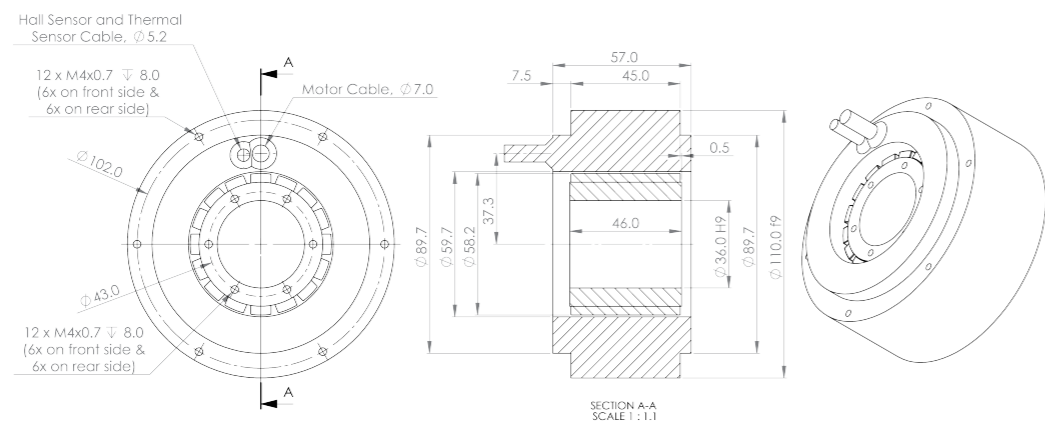
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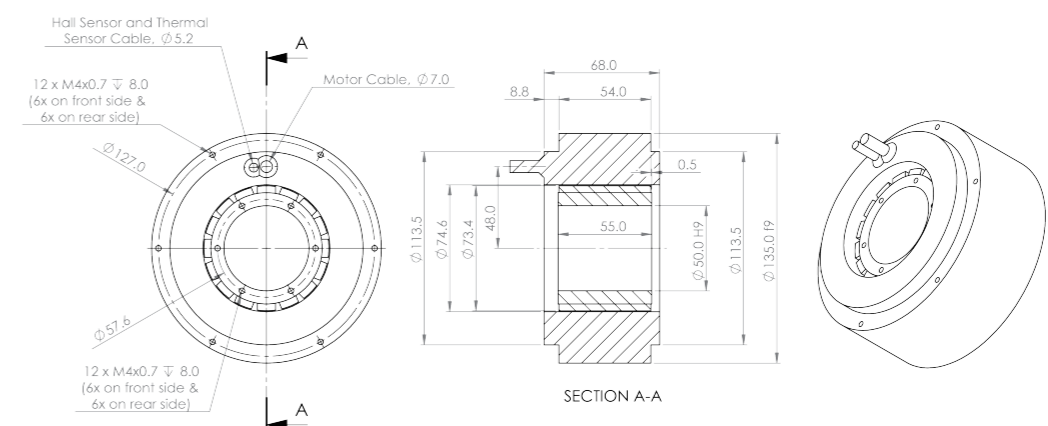
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ADR110-P-45



ADR135-P-54



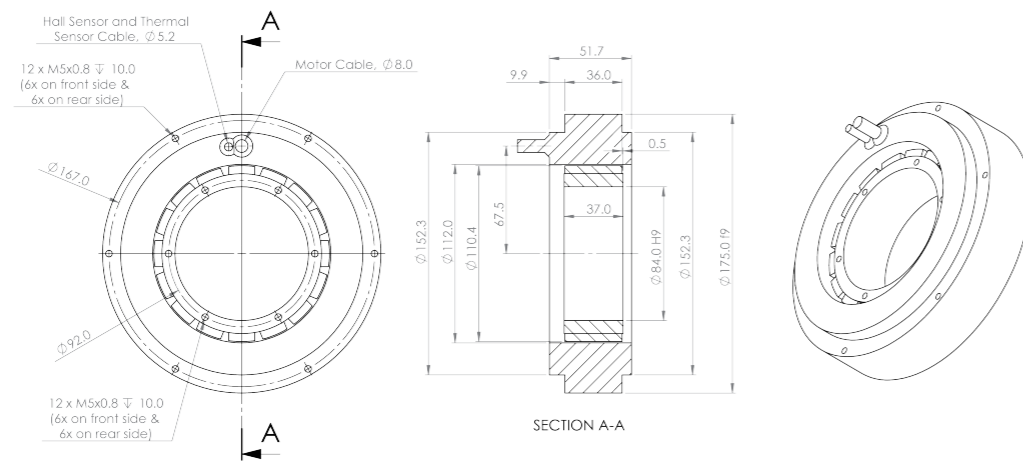
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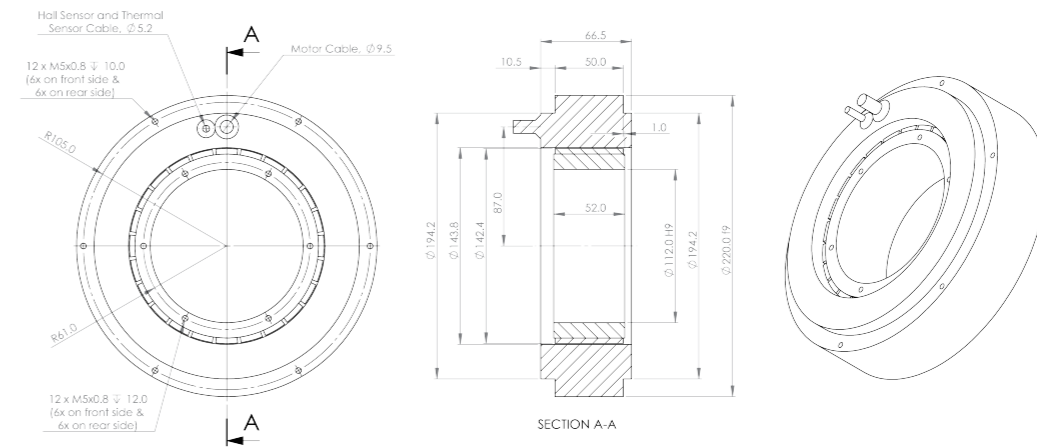
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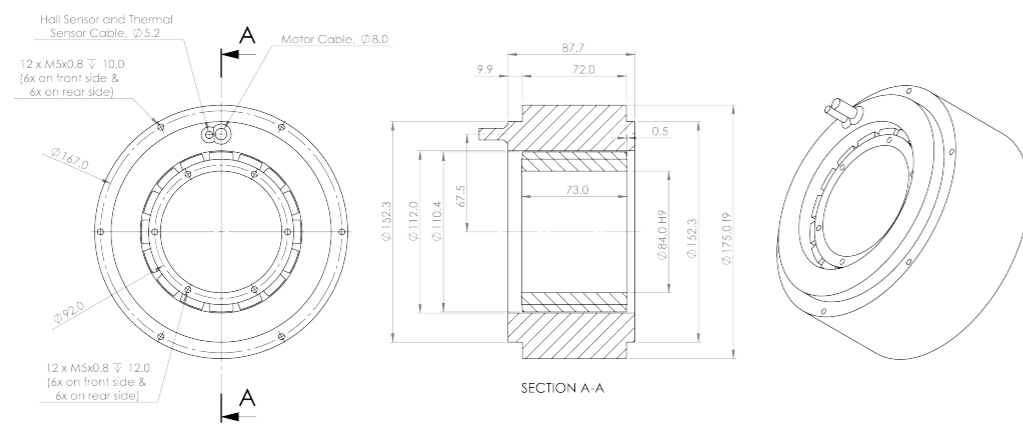
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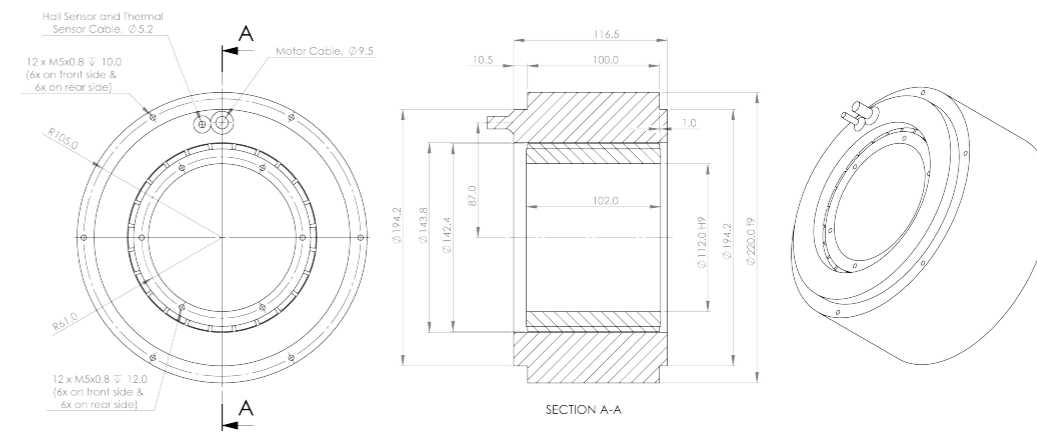
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ADR175-P-72



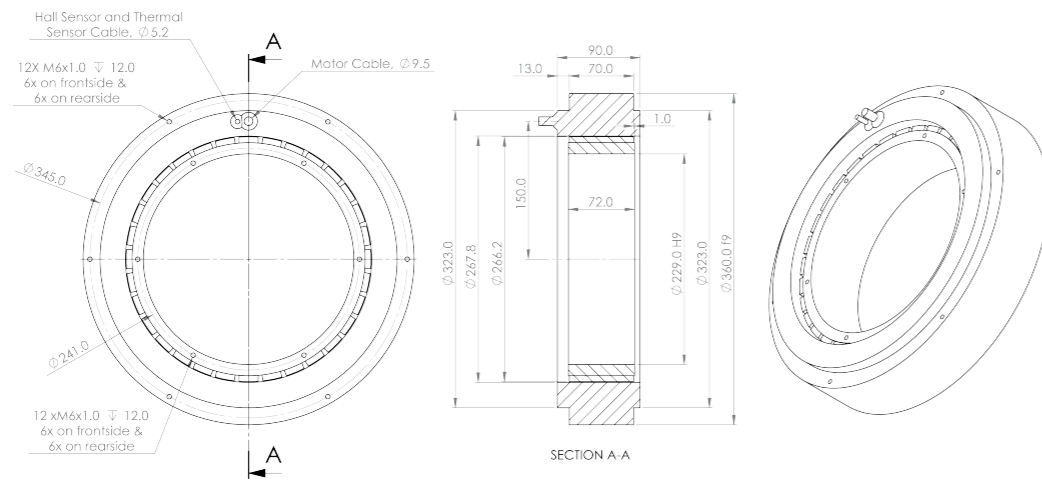
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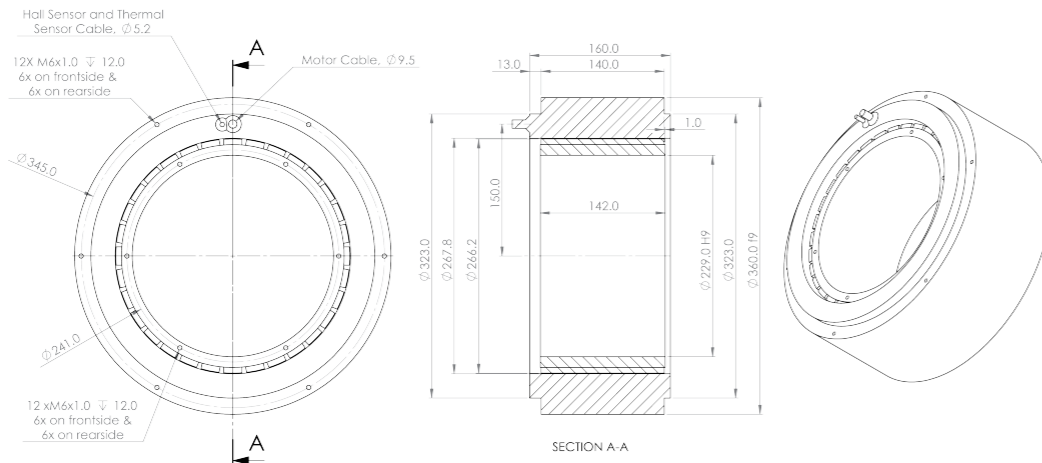
# ADR360-P

## Dimensions

### ADR360-P-70



### ADR360-P-140



# ADR-P

## Part Numbering

### ADR175-P-36-S-J-3.0

#### Motor

ADR110-P/ADR135-P/ADR175-P  
ADR220-P/ADR360-P

#### Model

22/45, 27/54, 36/72  
50/100,70/140

#### Cable Length

3.0

#### Thermal Sensor

J = Thermostat (standard)  
K = PT100 (RTD)

#### Winding

S/P

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