ACR Series
Frameless Arc Motor

- Small thickness and light weight
- Large center hole
- Integrated Hall sensor and temperature sensor
- Direct drive with high torque without cogging effect
- Limit-angle or 360-degree operation
- Multi-coil and multi-track configurations

Akribis
where precision matters

■ Product Line Up

Limit-angle type

Model	Power radius (mm)
ACR335	335
ACR820	820
ACR1525	1525

360-degree type

Model	Power radius (mm)
ACR335	335
ACR820	820

■ Applications

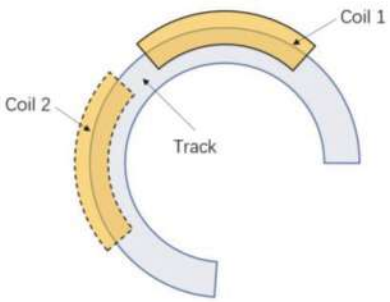
Some applications require rotary motion with a limited-angle operation where a DDR motor of a whole circle is not necessary. Using an Akribis ACR arc motor can help save cost and space especially with large power radius.

The ACR arc motor features a lower profile and a bigger center bore compared to conventional DDR motors. Based on electromagnetic and mechanical optimization, the motor maintains a good torque performance. This helps customers develop more compact products with increased competitiveness

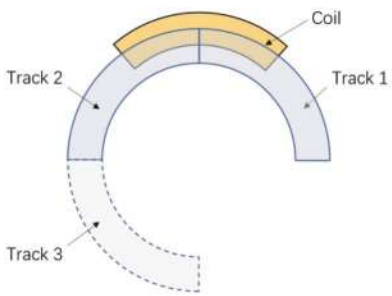
The potential applications of Akribis ACR motors include FPD processing machine, surface inspection machine, etc.

■ Configurations

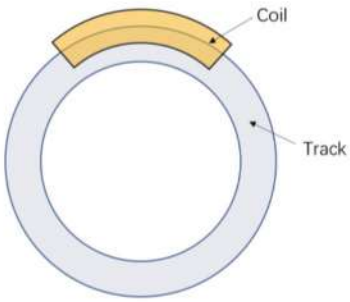
Akribis gives flexibility to customers to choose either the multi-coil configuration to increase the torque, or the multi-track configuration to extend the operation range. By combining track segments, even 360-degree operation is possible (for ACR335 and ACR820).



Multi-Coil Configuration



Multi-Track Configuration



360-Degree Configuration

■ Specifications

Specification	Unit	ACR335-S5	ACR820-S5	ACR1525-S5
Winding Type	-	Series	Series	Series
Continuous Torque @100C°	Nm	92.3	331.5	460.7
Peak Torque	Nm	276.9	994.5	1382.2
Torque Constant	Nm/Arms	77.2	195.0	257.3
Back EMF Constant	Vpeak/rpm	6.6	16.7	22.0
Motor Constant	Nm/Sqrt(W)	7.7	26.2	37.6
Continuous Current @100C°[1]	Arms	1.2	1.7	1.8
Peak Current	Arms	3.6	5.1	5.4
Line Resistance[2]	Ω	67.1	37.0	31.2
Line Inductance	mH	69.8	47.0	37.5
Electrical Time Constant	ms	1.0	1.3	1.2
Air Gap	mm	0.85	1.1	1.0
Magnetic Period	degree	9.0	4.0	1.84
Coil Weight	kg	1.8	2.5	2.2

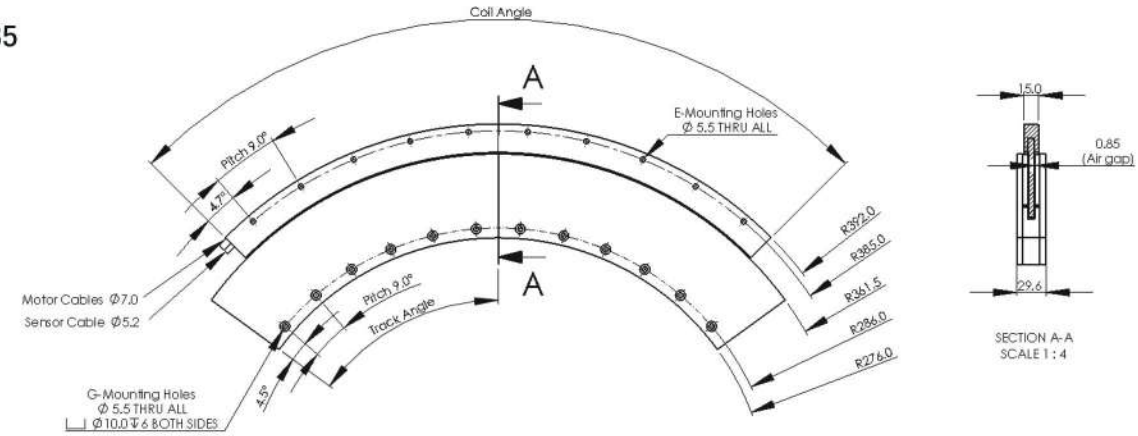
■ Magnet Track

Specification	Arc Angle	Weight	Moment of Inertia
Unit	degree	kg	$kg \cdot m^2$
ACR335-TR36	36	2.5	0.26
ACR335-TR54	54	3.7	0.39
ACR820-TR24	24	5.8	3.8
ACR820-TR28	28	6.8	4.4
ACR1525-TR11.04	11.04	4.4	10.0

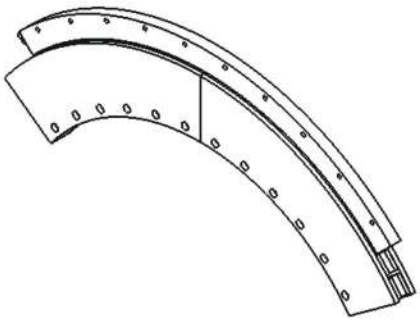
1 In the measurement of continuous current, the coil is mounted on the testing fixture and the ambient temperature is 25 ℃.
2 In the measurement of line resistance, the ambient temperature is 25 ℃.

Dimensions

ACR335

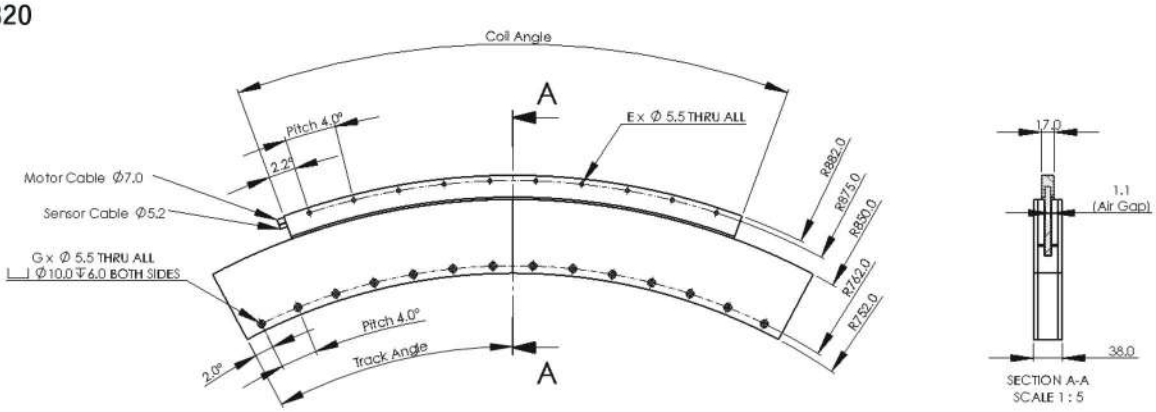


ACR335 Coil		
	Coil Angle	E
ACR335-S5	90.4°	10

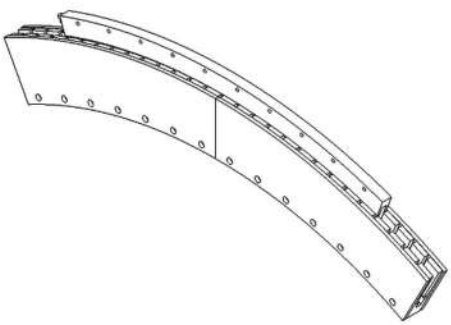


ACR335 Magnet Track		
	Track Angle	G
ACR335-TR36	36°	4
ACR335-TR54	54°	6

ACR820

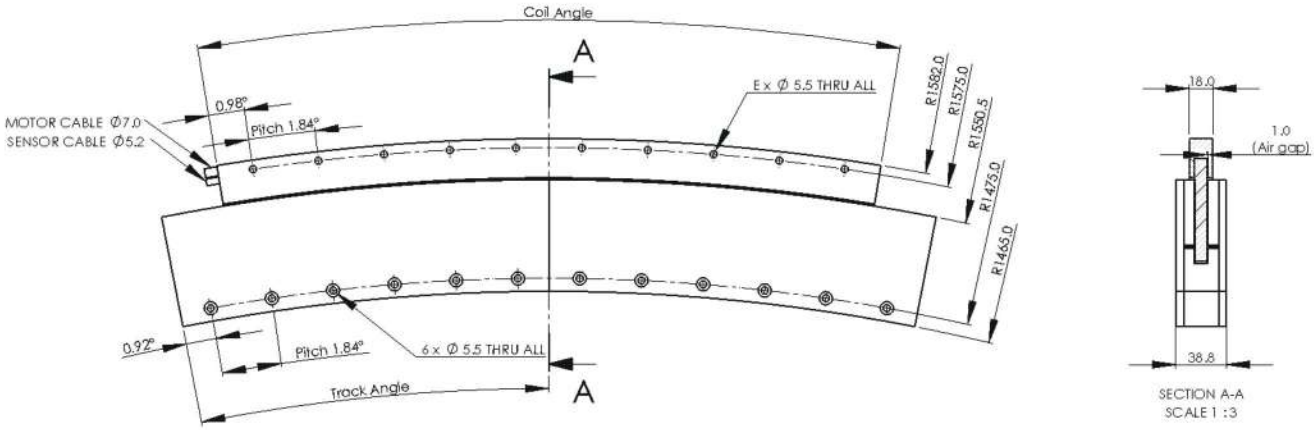


ACR820 Coil		
	Coil Angle	E
ACR820-S5	40.4°	10



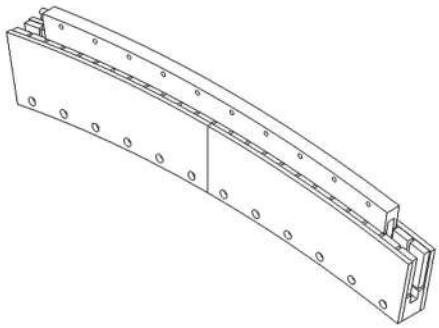
ACR335 Magnet Track		
	Track Angle	G
ACR820-TR24	24°	6
ACR820-TR28	28°	7

ACR1525-S5-TR22



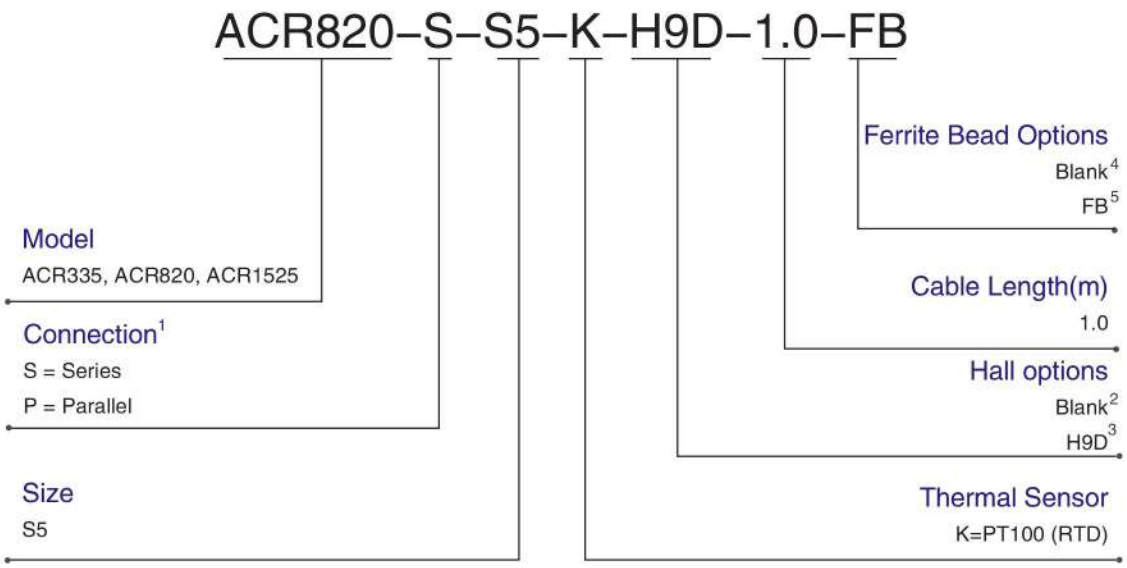
ACR1525 Coil		
	Coil Angle	E
ACR1525-S5	18.52°	10

ACR1525 Magnet Track		
	Track Angle	G
ACR1525-TR11.04	11.04°	6



Part Numbering

Coil:



1.Please refer to the Specifications for the available connection types.

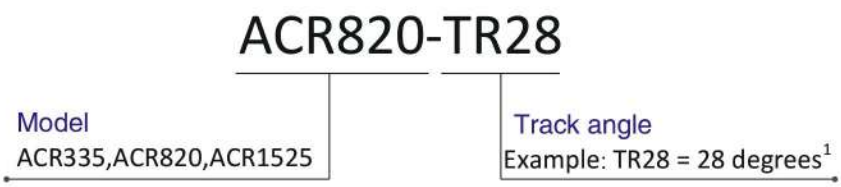
2.Blank = comes with built-in hall sensor & hall cable terminated in flying leads. (standard).

3.H9D = comes with built-in hall sensor & hall cable terminated with 9-Pins D-Sub connector.

4.Blank = motor cable terminated in flying leads without ferrite bead (standard).

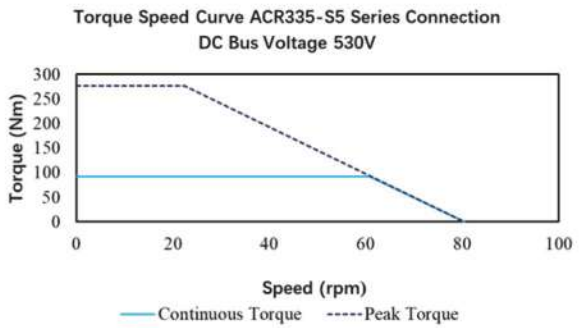
5.FB = motor cable terminated with ferrite bead.

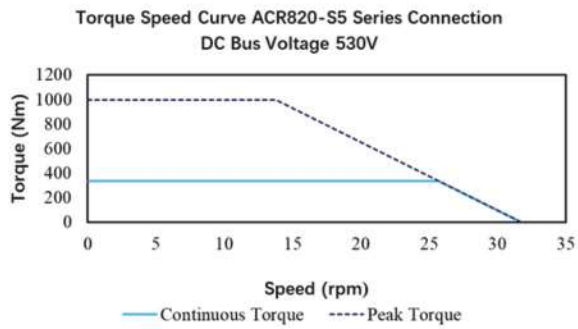
Track:

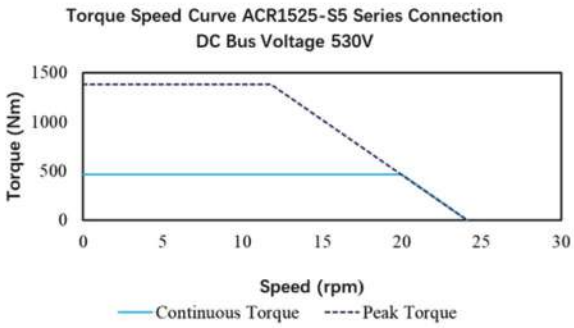
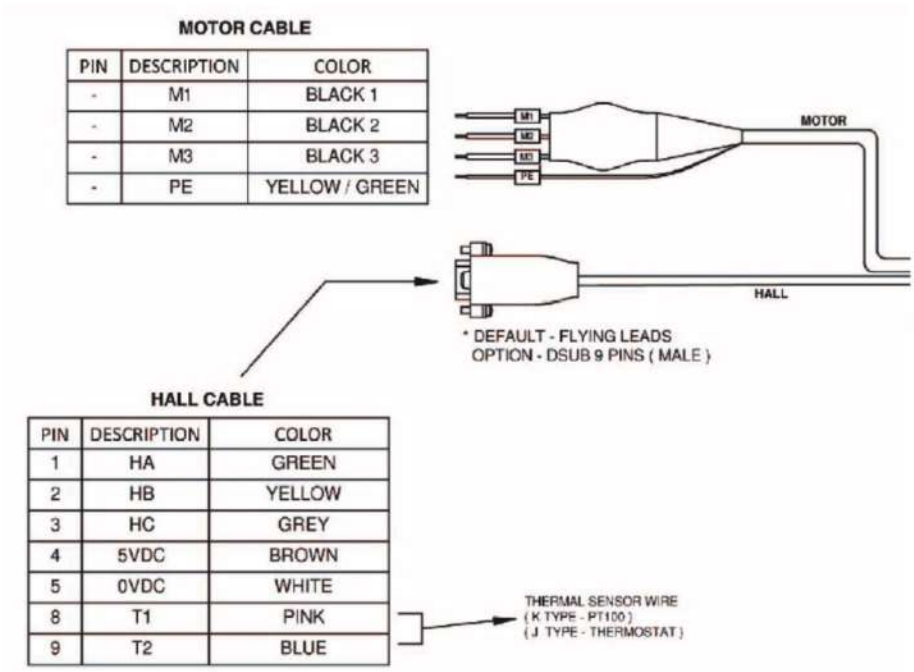


1.Track angle should be multiple of one segment, see Dimensions.

Torque-Speed Curve







Wire Connection