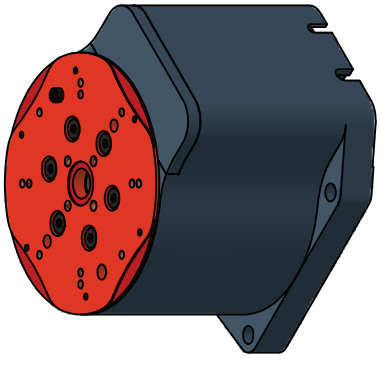




# ALIO STAGE AND MOTOR SPECIFICATIONS

MODEL	UNITS	AI-TM-104R-AB
TRAVEL	deg	360 degrees continuous
DIAMETER	mm	104
MAX VELOCITY [7]	deg/sec	1440
ASSEMBLY MASS	kg	3.1
MOVING MASS	kg	1.1
MASS MOMENT OF INERTIA	kg*mm <sup>2</sup>	1100
RESOLUTION (STANDARD)[8]	arc-sec	0.020
(OPTIONAL - 5um)[9]	arc-sec	21
(OPTIONAL - 1um)[9]	arc-sec	4.1
(OPTIONAL - 0.5um)[9]	arc-sec	2.1
(OPTIONAL - 0.2um)[9]	arc-sec	0.8
(OPTIONAL - 0.1um)[9]	arc-sec	0.41
(OPTIONAL - 50nm)[9]	arc-sec	0.21
(OPTIONAL - 20nm)[9]	arc-sec	0.08
(OPTIONAL - 10nm)[9]	arc-sec	0.041
(OPTIONAL - 5nm)[9]	arc-sec	0.021
AXIAL RUNOUT (STANDARD)	um	< +/- 1
RADIAL RUNOUT (STANDARD)	um	< +/- 1
MAX AXIAL LOAD	N	80
MAX RADIAL LOAD	N	40
AIR SUPPLY REQUIRED	psi	60-80
AIR CONSUMPTION	NLPM	<9
<b>MOTOR INFORMATION</b>		
MOTOR TYPE	--	FRAMELESS TORQUE MOTOR
MOTOR MODEL	--	089100-9Y
MAGNETIC PITCH (N-N)	deg	60
MAX VOLTAGE (LINE TO LINE)[1]	VDC	340
MAX MOTOR TEMP	°C	155
TORQUE CONSTANT	Nm/Arms	0.68
PHASE RESISTANCE (@25°C)[2]	Ohm	3.9
INDUCTANCE	mH	8.9
CONTINUOUS TORQUE [3]	Nm	2.6
CONTINUOUS CURRENT [3]	Arms	3.8
PEAK TORQUE	Nm	8.2
PEAK CURRENT	Arms	12.0
BACKEMF CONSTANT	Vrms/krpm	41

- Notes:
1. Back EMF plus IR drop must not exceed maximum line to line voltage.
  2. Resistance values do not include cable resistance. Cable resistance adds 0.3 ohm/m.
  3. Continuous operating limits are based on continuous operation at maximum temperature with aluminum heat sink (300mm x 300mm x 25mm).
  4. All specifications may vary by 12% from listed values.
  5. Additional motor winding options are available for optimized performance as necessary per customer requirements.
  6. "Standard" models (green cells) are readily available while "Optional" models may have longer lead times.
  7. Maximum velocity capability is dependent on payload, acceleration, encoder resolution, amplifier, and bus voltage. Greater rotational speeds than specified are available.
  8. Default resolution is an analog 1Vp-p sin/cos encoder output signal with 4096 interpolation in the controller.
  9. Optional resolutions are digital quadrature output to the controller with angular resolutions corresponding to 5um - 0.005um linear resolution.



## AIR QUALITY REQUIREMENTS

AIR SUPPLY MUST BE FREE OF CONTAMINANTS AND MOISTURE (<85% RELATIVE HUMIDITY). FILTERED AIR SUPPLY TO ISO 8573.1 QUALITY CLASS 3 OR BETTER

CLASS: 3 (MINIMUM)

DIRT: 5 MICRON PARTICAL SIZE OR SMALLER

WATER: -4 F, PRESSURE DEWPOINT

(128 ppm. vol.) AT 100 psig

OIL: 1.0 mg/m<sup>3</sup> (INCLUDING VAPOR)

CLASS: 2 (RECOMMENDED)

DIRT: 1 MICRON PARTICAL SIZE OR SMALLER

WATER: -40 F, PRESSURE DEWPOINT

(16 ppm. vol.) AT 100 psig

OIL: 1 mg/m<sup>3</sup> (INCLUDING VAPOR)

ALIO INDUSTRIES PROPRIETARY INFORMATION  
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A

DRAWN  
NBROWN  
CHECKED



TITLE

AI-TM-(DIAMETER)R-AB

SIZE

B

DWG NO

0010-08011

REV

001

FINISH SEE NOTES

SCALE

ALIO STD TEMPLATE - REV 006

SHEET 1

OF 1

1

2

3

4

1

2

3

4

1

2

3

4

1

2

3

4

1

2

3

4

1

2