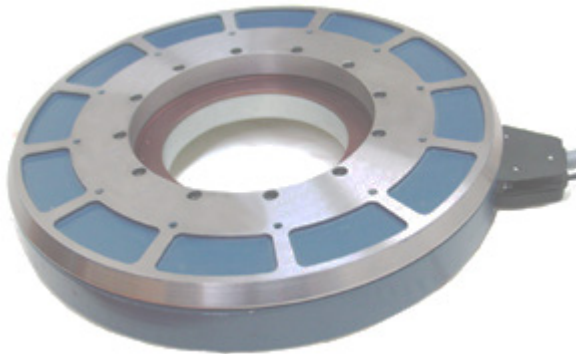


DIRECT DRIVE PLANAR SERVO RING ROTARY TABLES



Key features:

- ❑ Direct drive
- ❑ Low profile
- ❑ Large center aperture
- ❑ Brushless design
- ❑ Precision bearing system
- ❑ Integrated position feedback
- ❑ Built-in thermal sensors

Planar ServoRing rotary tables provide superior angular positioning and are designed to eliminate backlash, friction and wear problems associated with worm, gear and belt drives. Low maintenance and high throughput characteristics of the Planar ServoRing Stage yields the lowest total cost of ownership.

Compact package, Superior design

The design of the Planar ServoRing rotary stages was optimized to minimize stage height. The low profile of the stage reduces total system working height. Angular contact bearings are used to maximize performance with respect to wobble, moment stiffness and friction. ServoRing stage has large clear center aperture that can be used for air or wire line feed-through or beam delivery

Applications:

Semiconductor assembly
Precision machine tools
Wafer processing

Electronics assembly
Robotic handlers
Automation

Brushless Direct Drive

To maximize positioning performance Planar ServoRing utilizes direct drive three phase planar brushless motor technology. There are no brushes to replace and no gear trains or belts to maintain. "Lo-Cog" magnetic design assures smooth rotation and dynamic performance.

Accurate Positioning

Performance is assured with 18,000 lines encoder that results in 0.072 arc-sec positioning resolution. The motor and rotary encoders are directly coupled to eliminate coupling backlash. The low inertia and zero backlash make Planar ServoRing the ideal solution for applications requiring frequent directional changes.

Planar ServoRing™ Specifications

Parameter		Unit	PSR 150		PSR 200		PSR 300		
Tabletop diameter		mm	140		200		290		
Height		mm	40		42		42		
Aperture		mm	15		40		114		
Motor type			Three phase brushless Y winding (standard) Δ winding (optional)						
Number of pole pairs		P	13		17		31		
Peak Torque (note 1)		Tp Nm	23		45		110		
Continuous torque (note 2)		Tc Nm	8.7		17		41		
Peak current		Ip Amp			14				
Continuous current		Ic Amp			5.1				
Sine encoder (note 3)		Lines/rev	2,048		2,048		5,400		
standard			3,600		10,000		18,000		
Digital encoder (note 4)		Counts/rev	409,600		409,600		1,080,000		
standard			(note 4)		(note 4)		(note 4)		
Axial load (note 5)		Kg	30		50		80		
Bus voltage		V	VDC	150	310	150	310	150	310
			VAC	120	220	120	220	120	220
Max. speed @ Tp (note 6)		Np	RPM	330	790	175	430	50	150
Rated speed @ Tc (note 6)		Nc	RPM	900	2000	335	725	124	281
Radial/axial run-out (note 7)			Microns	15 (-N), 10(-P), 5 (-SP)					
Rotating inertia			Kg•m ²	0.004		0.01		0.062	
Stage weight			Kg	5		7		10	
Construction				Rotor – steel Stator - aluminum					

Note 1 1sec. duration, coil at 20°C

Note 2 Coil at 120°C

Note 3 1V_{pp} differential, quadrature, index mark

Note 4 RS422, TTL, 5VDC, differential, quadrature, index mark
Digital resolution = Fundamental resolution * Interpolation Factor * 4
Internal interpolation available x5, x10, x25, x50, x100
External interpolation available x200, x250

Note 5 Load capacity rated at 1/10 of bearing L₁₀ rating

Note 6 Rated speed based on amplifier bus voltage and motor "Y" winding.
Higher speed (Δ) winding on request.
Actual speed depends on the encoder resolution, interpolation factor and load.

Note 7 -N standard ABEC 5 bearing, -P precision ABEC 7 bearing

I-SERV™ DIGITAL SERVO AMPLIFIER and INDEXER



Features:

- Advanced sine wave commutation technology
- Accurate torque control
- Stand-alone or CAN distributed drive
- Step/direction interface
- Electronic gearing to master encoder
- $\pm 10V$ velocity/current command interface
- Field oriented controls
- Auto-phasing and auto-tuning of the current loop
- 115/230VAC operation
- 24VDC stay-alive control power

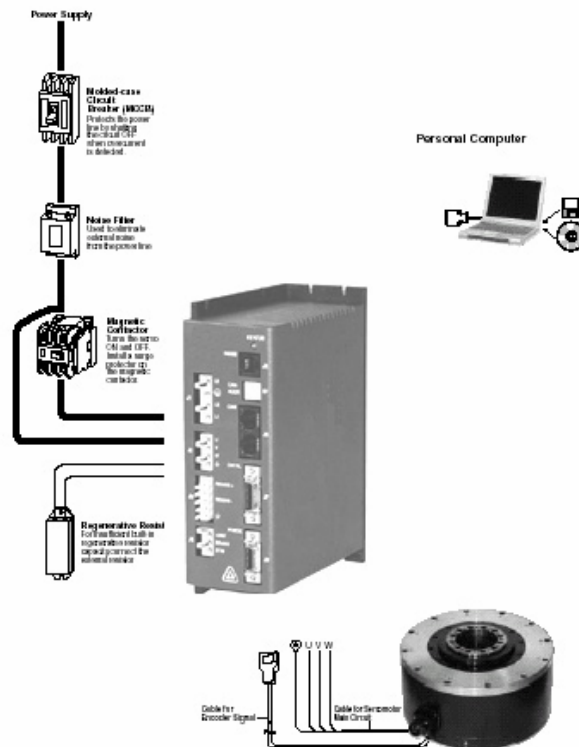
Operational modes:

- Torque control – from analog to CAN command
- Velocity control – from analog to CAN command
- Pulse/direction interface
- Position control – indexer or CAN command

Motion indexing:

- Stores up to 8 motion profiles in memory
- Start motion through CAN or digital I/O
- Homing function

System Configuration



ORDER CODE:

STAGE PSR 300 P732 N 5400 50 3 Y

Series	
Model	
Version	
Bearing precision	
	N-normal (standard) P-precision SP-super precision
Feedback lines/rev	
	PSR150: 2048 (standard), 3600 PSR200: 2048 (standard), 10000 PSR300: 5400 (standard), 18000
Interpolation	
	Sine 1Vpp: A Digital: 5, 10, 25, 50 (standard), 100, 200, 250
Cable length (m)	
	1, 2, 3 (standard), 5
Winding	
	Y – star (standard) T - triangle

Note: CPR (counts/rev) = lines/rev * interpolation factor * 4

AMPLIFIER I-SERV AC A D 3

Series	
Operating voltage	
	DC: 24-90 VDC AC: 110/220 VAC (standard)
Operating mode	
	A-amplifier (standard) I-indexer
Encoder interface	
	A- sine D-digital (standard)
Cable set length (m)	
	1, 3 (standard), 5, Custom

Note: Indexer includes single axis motion controller integrated with amplifier.

Interfaces:

- ASCII commands (RS232 link)
pulse/direction
- CAN bus with command libraries
- LabView
- PLC I/O with sequencer

ServoRing™ Inquiry Form

Company _____ Address _____

Contact name _____ Telephone / fax _____

E-mail _____ Project title _____

Short description _____

Position of the rotary table vertical horizontal angle [____°] to the horizontal plane

Controller Manufacturer _____ Model _____

Driver / Inverter Manufacturer _____ Model _____

Motion	Unit	Value	Performance	Unit	Value
Typical move	deg	_____	Repeatability	arc-sec	_____
Maximum speed	rpm	_____	Absolute accuracy	arc-sec	_____
Maximum acceleration	rad/sec ²	_____	Resolution	arc-sec	_____
Accel /decel time	sec	_____	Speed stability	%	_____
Total cycle time	sec	_____	Position stability	arc-sec	_____
Load			Axial run-out	μm	_____
Load inertia	Kg.m ²	_____	Radial run-out	μm	_____
Friction torque	Nm	_____			
Other resistance torque	Nm	_____			

Environmental	Unit	Value	Dimensions	Unit	Value
Ambient temperature	°C	_____	Max table outside diameter	mm	_____
Max temperature rise	°C	_____	Max table inside diameter	mm	_____
Water cooling available	yes/no	_____	Max table height	mm	_____
Clean room requirement	yes/no	_____	Other parameters		_____
Vacuum requirement	yes/no	_____			_____
		_____			_____

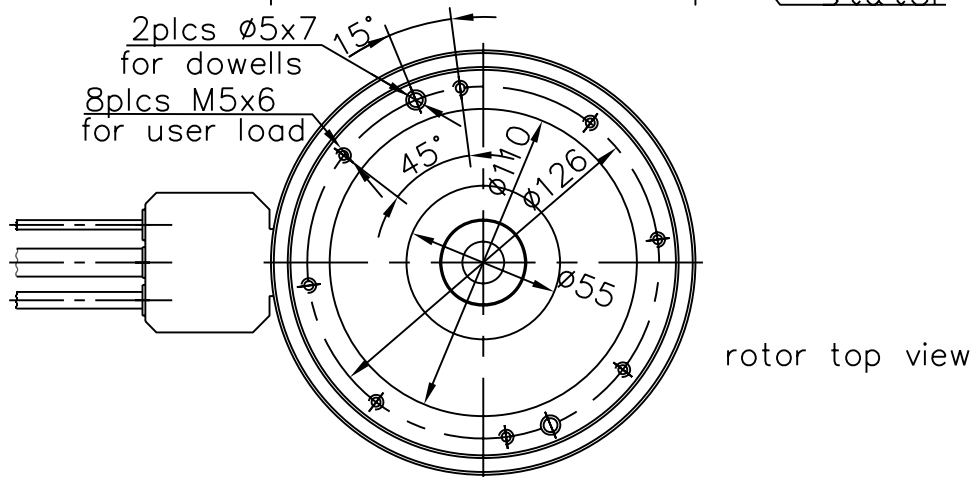
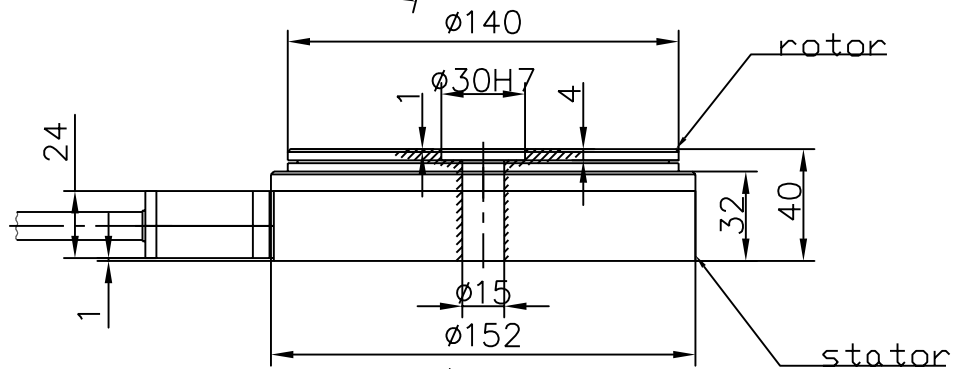
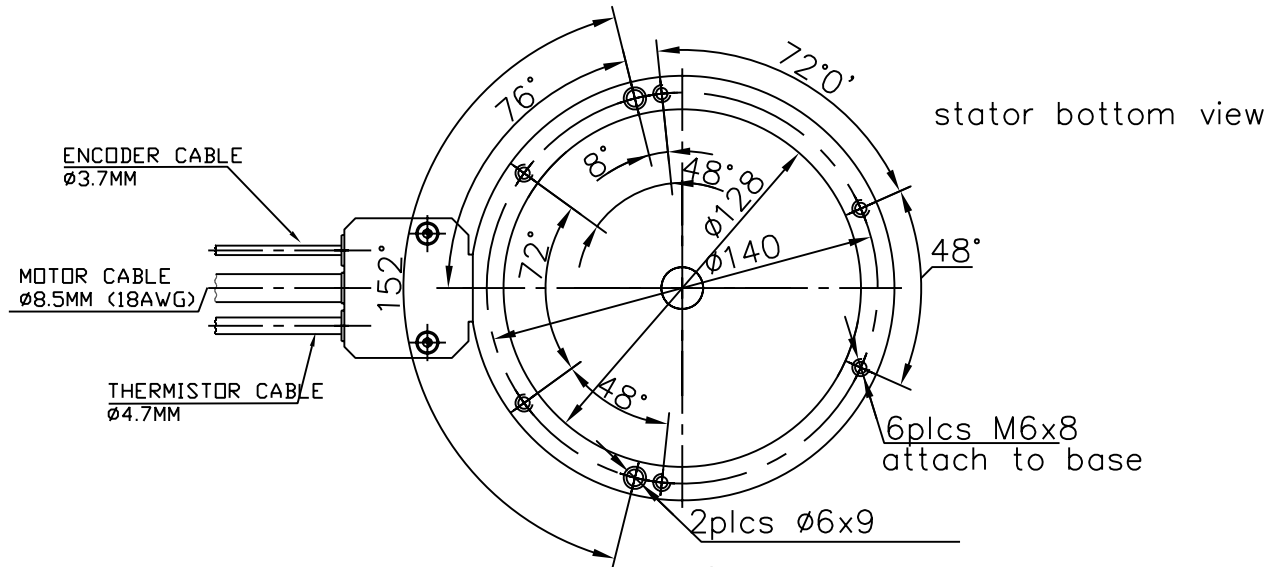
Power 24 - 90 VDC 1 x 110 V 1 x 220 V 3 x 220 V

Expected annual requirement _____

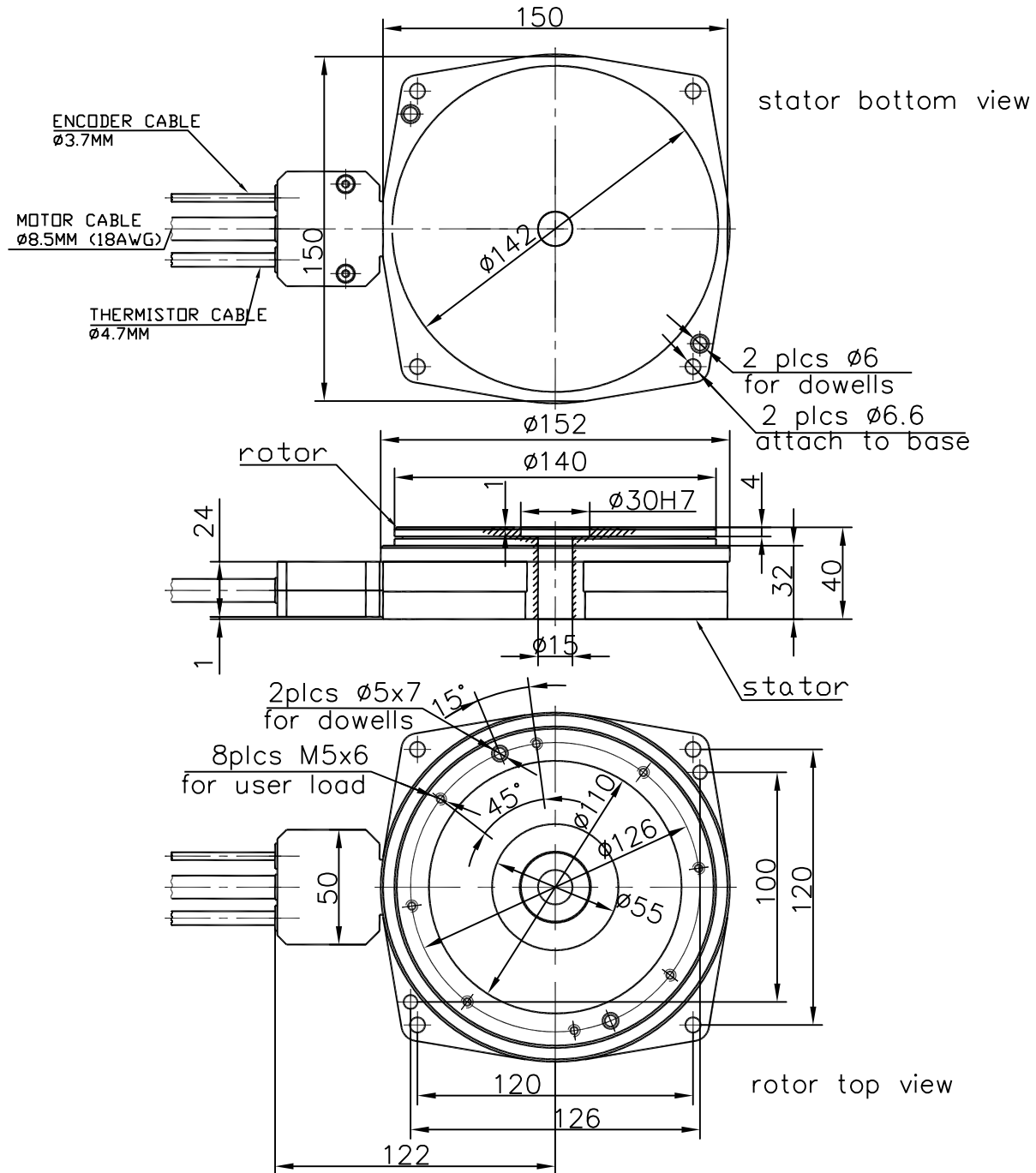
Prototype required by _____

Series production starts by _____

PSR150 ver. P729
 (dim's in mm)

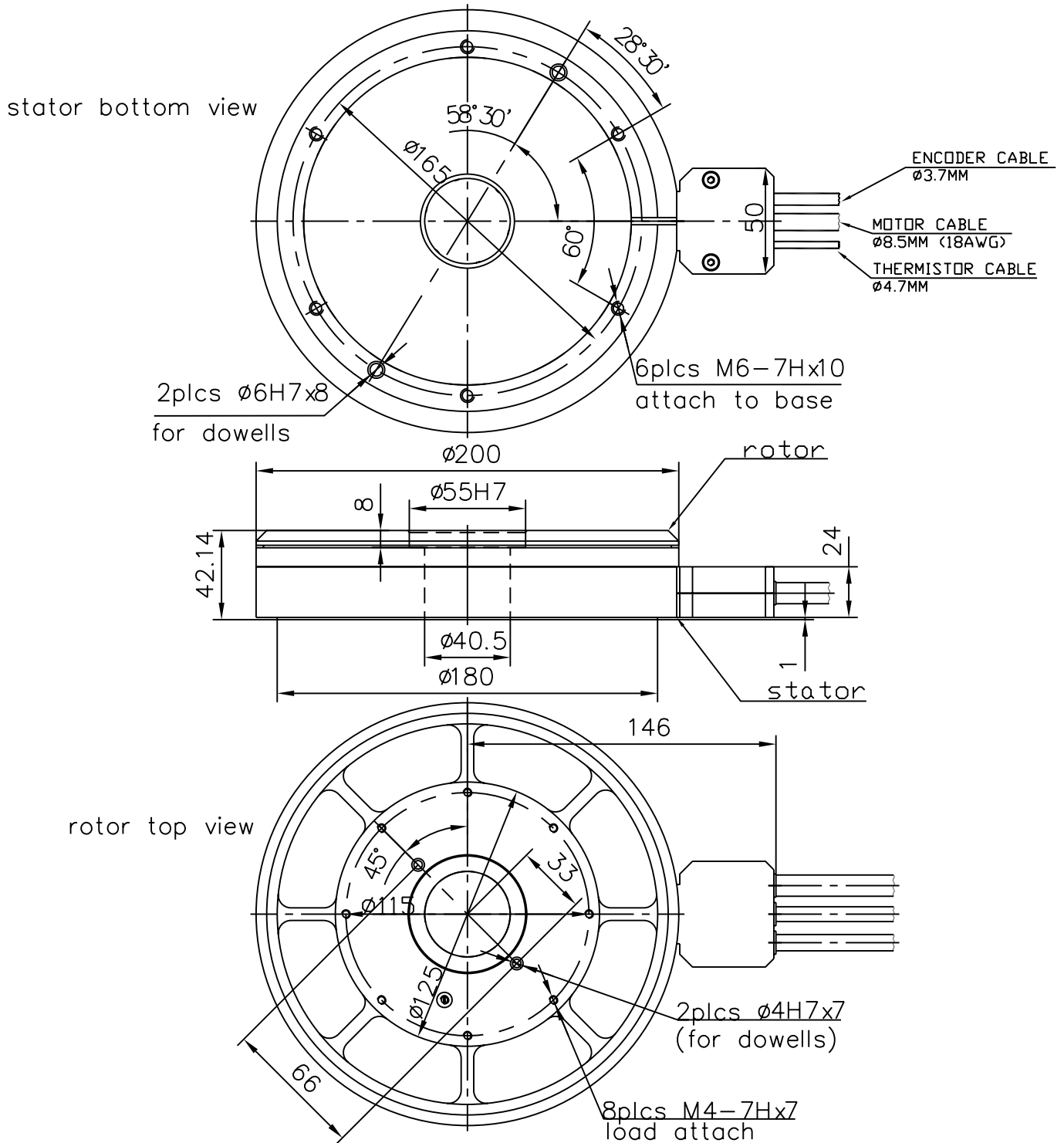


PSR150 ver. P729M2
(dim's in mm)



PSR200 ver. P723

(dim's in mm)



PSR300 ver. P732

(dim's in mm)

