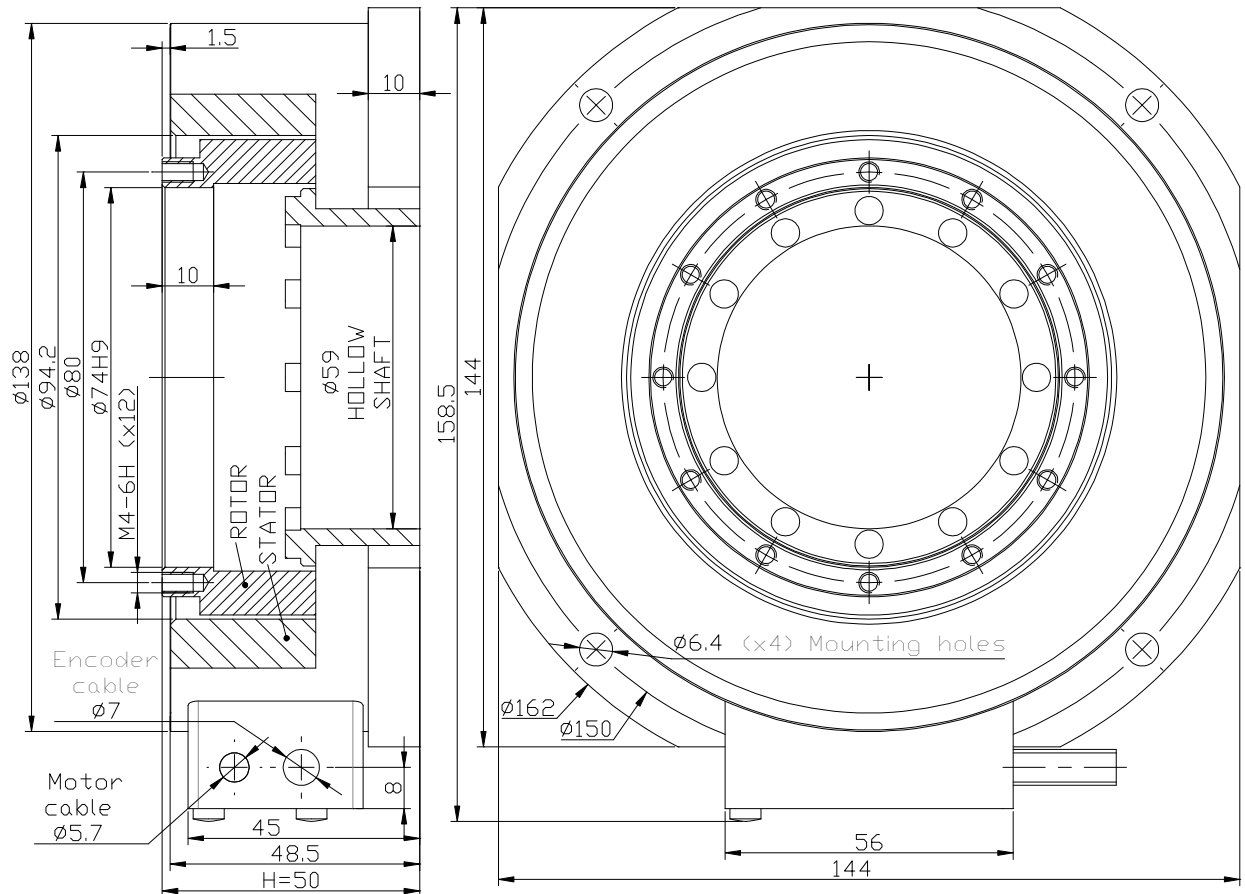


ROTARY TABLE RT24-94-HH



FEATURES:

- Iron-core three-phase rotary synchronous motor with rare-earth magnets for high force density.
- Direct drive (no gear, no backlash), small height from 50 mm with big hollow shaft (Ø59 mm).
- Built-in precision four-point ball bearing, sine 1Vpp encoder, thermistors for overheating protection.
- High precision, repeatability and resolution, low cogging, smooth movement, protection IP40
- High motor stiffness and large bandwidth by position regulator with encoder feedback.

APPLICATIONS:

Indexing tables, pick and place machines, semiconductor manufacturing.

CONSTRUCTION:

Motor consist of a fixed laminated stator stack with epoxy molded windings and rotated steel rotor ring with **11 pole pairs** glued permanent magnets, radial-thrust bearing and incremental sine encoder. Motor is compatible with standard motion servo controllers with supply up to **3x220V AC**.

SPECIFICATIONS RT24-94-		25-GS1	25-GT1	50-GS1	50-GT1	75-GS1	75-GT1
Motor height H	mm	50		75		100	
Peak / rated torque Mp / Ma	Nm	24 / 5,6		49 / 12,0		74 / 18,6	
Cogging / friction torque Md /Mb	Nm	0,7 / 0,3		1,3 / 0,3		2,0 / 0,3	
Peak / rated current at Mp / Ma	Arms	20/4,7	35/8,1	20/4,9	35/8,5	20/5,0	35/8,7
Inductance L	mH	2,0	0,7	4,1	1,4	6,2	2,1
Resistance R	Ohm	1,7	0,6	2,7	0,9	3,6	1,2
Maximum velocity Np at Mp	Rpm	273	273	273	273	273	273
Maximum velocity Na at Ma	Rpm	273	273	273	273	273	273
Maximum velocity Nb at Mb	Rpm	273	273	273	273	273	273
Rotor inertia	Kg•m ²	0,0009		0,0018		0,0028	
Motor weight	Kg	3,8		5,4		7,0	
Maximal axial / radial payload	Kg	40 / 25					
Maximal payload tilting torque	Nm	20					
Axial / radial runout	micron	30 / 30					
Number of optical encoder lines	1Vpp	1080					
Accuracy, repeatability, resolution	arc.sec.	55 / 3 / 0,1					

ORDER EXAMPLE: RT24-94-25-C-GS1-KF-PR-3000-N0-B, where RT24 is type, 94 is inner diameter of stator, 25 or 50 or 75 are magnet heights, C – air cooling (only), G – winding wire code, S or T – internal star or triangle connection, 1-number of parallel coils, KF-bearing code, PR-encoder code, 3000-cable length mm, N0-without motor connector (flying leads), B-cable to side.

ADDITIONAL IMPORTANT INFORMATION:

Motor is designed as fast start-stop indexing table. Tighten stator 4xM6 screws, torque 7Nm, rotor by all 12xM4 screws, torque 2Nm, strength 8.8. Four-point ball bearing has high stiffness, accepts any direction of rotary axis and load (vertical, upside-down, horizontal, inclined). But bearing has limited velocity **273 rpm** by consistent grease. It is allowed to use the motor for fast rotating at speed about 273 rpm for short time about 5 seconds, but prevent continuous long time rotating with high speeds.

Pin assignment for PR256 Encoder D-Sub-15M high density 3-row plug

Pin Nr.	Wire color	Cross Section	Signal	Description
04	Violet	0,14mm ²	SEN+	Sensor line for +5V supply voltage
05	Black	0,14mm ²	SEN-	Sensor line for GND of supply voltage
06	Pink	0,14mm ²	ZERO+	Positive reference pulse
07	Grey	0,14mm ²	ZERO-	Negative reference pulse
10	Brown	0,14mm ²	+5V	+5V supply voltage
11	White	0,14mm ²	0V	Ground of of supply voltage
12	Green	0,14mm ²	SIN+	Positive sinus voltage 1Vpp
13	Yellow	0,14mm ²	SIN-	Negative sinus voltage 1Vpp
14	Blue	0,14mm ²	COS+	Positive cosinus voltage 1Vpp
15	Red	0,14mm ²	COS-	Negative cosinus voltage 1Vpp

Encoder pinout is compatible with Kollmorgen AKD servocontroller

Cable screen is connected to metal plug housing. High flex screened encoder cable UNITRONIC-FD CY 10x0,14 Ø7,0mm is suitable for drag chains, bending radius 50mm. Pins 1-3, 8-9 are not used.

Sin, cos are differential 1Vptp (point to point) analog voltages of encoder with return GND. Voltage range of sin, cos differential outputs is 2.5V +/- 0.25V (from 2.25 to 2.75V). Use twisted pair screened cable, screen connection to connector's case. Reference voltage is pulse with level according RS422 standard.

The sensor lines SEN+ supply voltage sensor and SEN- ground sensor are connected internally in encoder readhead to the corresponding supply lines +5V and 0V (GND). If servocontroller supports sensor lines, connect them to correspondent servocontrollers inputs, if not, connect it to supply lines.

Wire assignment for screened Motor Cable SAB SD 200 C 7x0,34 Ø5,7 mm

Wire color	Cross Section	Description	Connection
White	0,34mm ²	U	Motor phase U
Blue	0,34mm ²	V	Motor phase V
Brown	0,34mm ²	W	Motor phase W
Grey	0,34mm ²	PTC1	PTC pin 1
Pink	0,34mm ²	PTC2	PTC pin 2
Yellow	0,34mm ²	GND	Motor case, ground
Green	0,34mm ²	GND	Motor case, ground

Motor cable is suitable for continuous bending in drag chain applications, bending radius 50mm.

PTC is non-linear positive temperature coefficient thermistor correspondent to DIN-44081 norm. Three serial connected PTC are mounted in motor windings and changes resistance from approx. 150 Ohm at 115 Co to more than 12 kOhm at 125 Co. PTC can be used in servo-amplifier for motor overheating protection.

