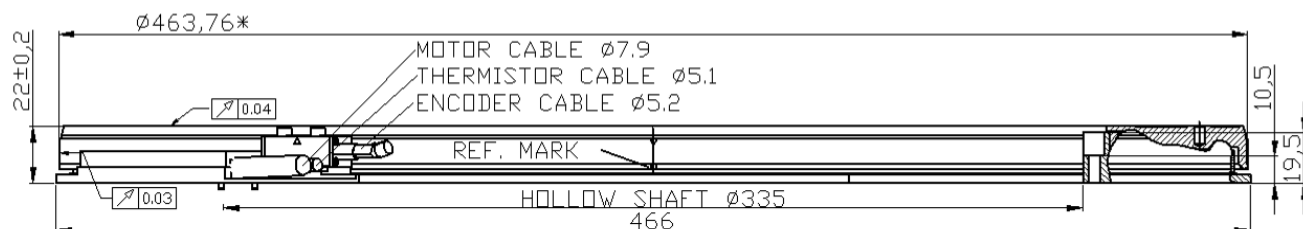


INDEXING TABLE RSMR-T-36-460-25-C-HS1-KF-AM



FEATURES:

- Ironless three-phase rotary synchronous motor with rare-earth magnets for high torque density.
- Direct pancake drive (no gear, no backlash), small height 22 mm, big hollow shaft Ø385 mm (15").
- Built-in precision four-point ball bearing, sine encoder, PTC thermistors for overheating protection.
- Low price, high precision, repeatability and resolution, zero cogging and low ripple, smooth movement.
- High motor stiffness and large bandwidth by position regulator with encoder feedback.
- Low rotor inertia, high peak torque, large acceleration, very fast indexing times.

APPLICATIONS:

Wafer inspection, indexing tables, pick and place machines, tilt and swivel systems.

CONSTRUCTION:

Motor consist of a steel rotor ring with glued permanent magnets and fixed stator with encapsulated in thermally conductive epoxy windings. The smoothness of movement is achieved by sinusoidal commutation of motor phase currents.

SPECIFICATIONS RSMR-T-36-460-25-C-**-KF-AM		**=HS1	**=HT1
Number of poles pairs P		36	
Peak / rated torque Mp / Ma	Nm	102 / 28	
Bearing friction / Cogging torque Mb / Mc	Nm	3.0 / 0.0	
Viscous damping	Nm/rpm	0,07	
Peak / rated current at Mp / Ma	Arms	8,7 / 2,4	15,1 / 4,2
Inductance L	mH	18	6
Resistance R	Ohm	25	8,3
Maximum short-time velocity Np at Mp / Na at Ma	Rpm	1 / 108	71 / 227
Maximum continuous no-load velocity	Rpm	169	289
Rated power dissipation	W	284	
Supply voltage ~AC	V	220	
Rotor moment of inertia	Kg•m ²	0,44	
Motor weight	Kg	10,4	
Maximal axial / radial payload	Kg	49 / 48	
Maximal payload tilting torque	Nm	51	
Axial / radial runout	micron	40 / 30	
Number of encoder lines		1600	
Position accuracy / Repeatability / Resolution	arc.sec.	20 / 3 / 1	
Degree of protection		IP20	

ORDER EXAMPLE: RSMR-T-36-460-25-C-HS1-KF-AM-3000-N0-A

Where RSMR-T-36 is type, 460 is middle diameter of rotor, 25 is magnet length, C – no cooling (only), H – winding wire code, S – internal star connection, 1-number of parallel coils; KF-bearing code, AM-encoder code, 3000-cable length mm, N0-without motor connector (flying leads), A-standard version.

ADDITIONAL IMPORTANT INFORMATION:

Motor is designed for indexing table applications, i.e. fast movements in start-stop mode. Used four-point ball bearing has high stiffness, accepts loads in any direction and allows any orientation of rotary axis (vertical, horizontal, inclined, upside-down). But bearing has limited velocity by consistent grease. It is allowed to use the motor for fast rotating at speed about 360 rpm for short time about 5 seconds, but continuous long time rotating with high speeds must be prevented.

Mounting threaded holes at diameter 477 mm on rotor for mounting user's payload are thru holes. All 34 holes must be used to prevent sliding the payload on rotor under peak acceleration and torque. Tightening torque is 3 Nm, in two stages, crosswise. Screws must be screwed into holes 4 mm max deep to prevent damage of stator windings. Using too long screws can damage the stator's windings.

Pin assignment for Encoder WMK-101 D-Sub-15M plug

P2 15 pin D-Sub Encoder Male Connector, Front view

Negative sin	Orange	AXM	09	⊙	⊙	01	AXP	Red	Positive sinus
Ground sensor		GNDS	10	⊙	⊙	02	GND	Black	Ground
Negative cos	Green	BXM	11	⊙	⊙	03	BXP	Yellow	Positive cosinus
+5V sensor		+5VS	12	⊙	⊙	04	+5V	Brown	Supply voltage +5V
			13	⊙	⊙	05			
Positive reference	Blue	RXP	14	⊙	⊙	06			
			15	⊙	⊙	07	RXM	Violet	Negative reference
				⊙	⊙	08			

Screen is connected to metal plug housing.

Sin, cos are differential 1V_{ptp} (point to point) analog voltages of encoder with return GND. Voltage range of sin, cos differential outputs AXP,AXM,BXP,BXM is 2.5V $\pm$ 0.25V (from 2.25 to 2.75V). Use twisted pair screened cable, screen connection to connector's case. Reference voltage (index pulse) RXP, RXM is pulse with level according RS422 standard.

The sensor lines GNDS ground sensor and +5VS supply voltage sensor are connected internally in readhead to the corresponding supply lines GND and +5V. If servocontroller supports sensor lines, connect they to correspondent servocontrollers inputs, if not, connect it to supply lines.

Wire assignment for Motor Cable OLFLEX-FD CLASSIC 810 CY (4G0,5) Ø7,9

Wire number	Wire color	Cross Section	Description	Connection
01	White	0.5 qmm	U	Motor phase U
02	Yellow	0.5 qmm	V	Motor phase V
03	Brown	0.5 qmm	W	Motor phase W
04	Green	0.5 qmm	GND	Motor case, ground

Wire assignment for Thermistor Cable UNITRONIC-FD CP Plus UL/CSA 4G0,14 Ø5,1 mm

Wire number	Wire color	Cross Section	Description	Connection
01	White	0.14 qmm	PTC1	PTC pin 1
02	Brown	0.14 qmm	PTC2	PTC pin 2

Wire colors according DIN 47100 color code.

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 C° to more that 12 KOhm at 125 C°. PTC can be used in servo-amplifier for motor overheating protection.