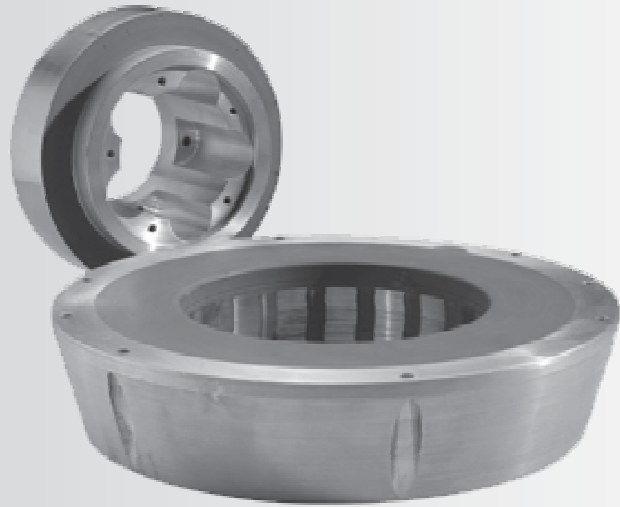
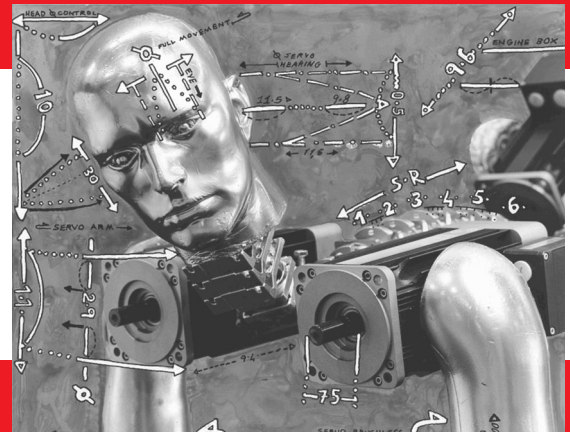
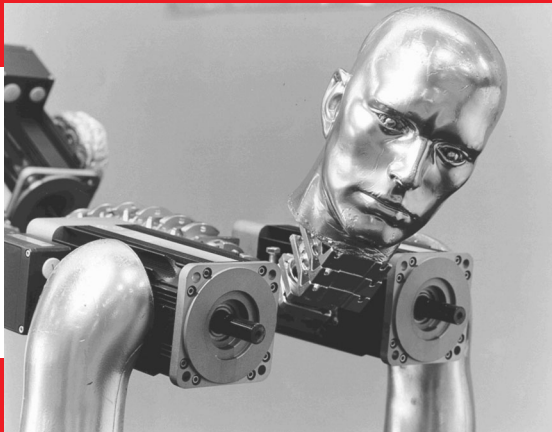


SKA DDR



DIRECT DRIVE TORQUE MOTORS (English version)

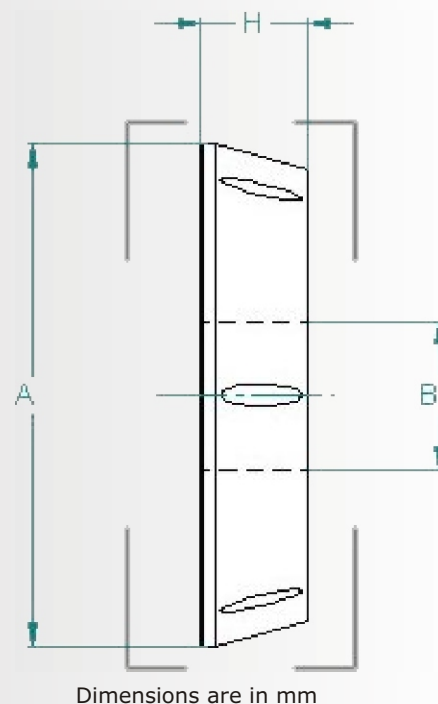


**MOTOR
POWER
COMPANY**

www.motorpowergroup.com

SKA DDR

SKA series introduces the new range of torque motors DDR: high torque rating combined to significant accelerations and decelerations. This motor technique, generally known as torque motor, represents another major step in the direct drive motion technology. Due to its construction, where load is mounted directly on the rotor (i.e. direct drive), the most valuable advantages are: elimination of traditional kinematics chain, reduced maintenance operations, shortened mounting time, substantial energy saving and, not less important, shrunk power transmission dimensions allowing an improved overall machine design.



General features

Model	External diameter (A)	Hole diameter (B)	Thickness (H)	Poles number	Stall torque (Nm)	Speed range (Rpm)
SKA DDR090	110	38	60 90 120	14	2 3.5 4.7	1700-300
SKA DDR148	180	78	60 90 120 150	14	8 14 20 26	1200-150
SKA DDR245	290	145	60 90 120 150	28	41 70 93 115	800-90
SKA DDR335	390	235	60 90 120 150 180	42	100 164 220 270 320	500-50
SKA DDR430	470	320	60 90 120 150 180 210	56	210 340 450 560 660 760	300-50

Multipolar permanent magnets synchronous brushless motor.

Two mounting solutions: Frameless and Power Pack.

Framless version includes rotor and stator. The stator is supplied with fixing holes and aluminum heatsink.

The Power Pack assembly is provided with mounting flange, bearings, feedback system and aluminium cover case without connections.

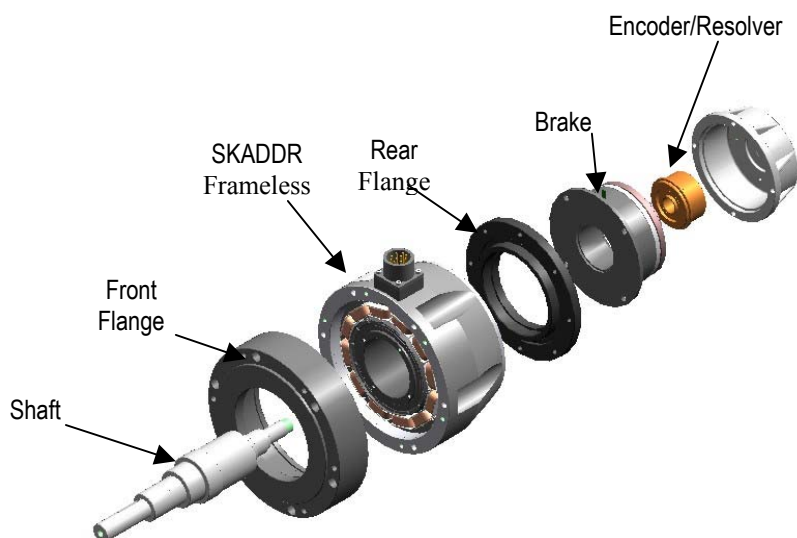
Power supply drives: 145Vac, 220Vac, 380Vac.

SKA_{ddr} SERIES

HOW TO ORDER AN SKA DDR TORQUE MOTOR SERIES

SKAddr	F	090	30	2	17	01	01	001	01	00	00
SERIES		TYPE	TYPE	RATED TORQUE [Nm]	WINDING CODE	SHAFT TYPE	HALL SENSOR	TRANSDUCER TYPE	OUTPUT CONNECTION	MODEL LIST	
SKAddr	F = Frameless PP = Power Pack	090 148 245 335 430	30 60 90 120 150 180	2 --- 760	See Data Sheet	01= Hollow Shaft 02= Output Shaft	00= Not present 01= Sonde Hall	001= TTL Ring magnetic enc. 002= TTL Ring optical enc. 003= SinCos optical enc. 004= 2Poles Resolver	01= Connector 02= Cable gland	00 00 =	STD

Power Pack System

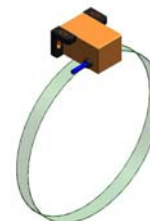


SKA_{ddr}

TRASDUCERS

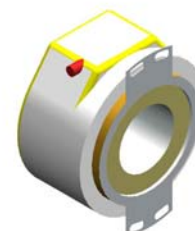
E TYPE: TTL RING ENCODER

RATED VOLTAGE	Vn	[Vdc]	5 ± 5%
RATED CURRENT	In	[mA]	120
FREQUENCY	F	[kHz]	250
WORKING TEMPERATURE	Tn	[°C]	0 ÷ + 50°
ELECTRONIC TYPE			LINE DRIVER AM 26 LS32
ZERO IMPULSE			STANDARD
RESOLUTION	R	[μm]	0.5 - 1 - 2.5 - 2 - 5 - 10
ACCURACY	A		1'
OPTICAL LINE PITCH	P	[μm]	200
MAX SPEED	S	[rpm]	200 - 500



S TYPE: SIN COS ENCODER

RATED VOLTAGE	Vn	[Vdc]	5 ± 5%
RATED CURRENT	In	[mA]	150
FREQUENCY	F	[kHz]	100 ÷ 200
WORKING TEMPERATURE	Tn	[°C]	0 ÷ + 100°
SIGNAL TYPE		[Vdc]	1 Vss
ZERO IMPULSE			STANDARD
RESOLUTION	A	[μm]	In funzione dell'interpolatore
ACCURACY			± 80" ÷ ± 18"
PULSES PER REVOLUTION	P	[ppr]	512 ÷ 5000
MAX SPEED	S	[rpm]	9000 ÷ 4000



EM TYPE: TTL MAGNETIC RING ENCODER

RATED VOLTAGE	Vn	[Vdc]	5 ± 2.5%
RATED CURRENT	In	[mA]	200
FREQUENCY	F	[kHz]	100
WORKING TEMPERATURE	Tn	[°C]	0 ÷ + 60°
ELECTRONIC TYPE			LINE DRIVER AM 26 LS32
ZERO IMPULSE			STANDARD
RESOLUTION	A	[μm]	Function of ring diameter
ACCURACY			± 6'
MAGNETIC LINE PITCH	P	[mm]	2
MAX SPEED	S	[rpm]	200 - 1700



RE TYPE: RESOLVER

RATED VOLTAGE	Vn	[V rms]	7 ± 5%
RATED CURRENT	In	[mA]	18
PHASE SHIFT			- 8°
ELECTRIC ERROR			± 10'
MIN. SINUS AMPLITUDE		[mVrms]	20
FREQUENCY	F	[KHz]	10
POLES NUMBER			2
TRANSFORMER RATIO			0.5 ± 5%
INPUT IMPEDANCE	Zro	[Ohm]	14 0 + j 360
OUTPUT IMPEDANCE	Zss	[Ohm]	130 + j 260
WORKING TEMPERATURE	Tn	[°C]	- 55 ÷ + 150°



SERIES

SKA_{ddr}**090 30/60**

TORQUE [Nm]

2 / 3.5

		SYMBOLS	UNITS	WINDING TYPE								
				17	18	19	50	51				
MOTOR SPEED	Vn drive 145 V (ac) 3phase		[rpm]	1000	650	-	-	-				
	Vn drive 220 V (ac) 3phase		[rpm]	1200*	1200*	750	500	300				
	Vn drive 380 V (ac) 3phase		[rpm]	-	-	1200*	800*	500*				
MOTOR RATINGS	COMMON RATINGS											
	Voltage constant ± 5%	Ke	[Vrms/krpm]	96	144	240	340	570				
	Poles number	P	[mm]	14								
	Temperature range	Tr	[°C]	0 ÷ 40°								
	SKAddr 090 30											
	Stall torque	Cn0	[Nm]	2.0								
	Peak torque	Cmax	[Nm]	15.9	15.9	14.3	10.5					
	Torque constant ± 5%	Kt	[Nm/Arms]	1.14	1.71	3.0	5.0					
	Stall current	In0	[Arms]	1.25	0.83	0.50	0.36					
	Peak current	I cmax	[Arms]	14	9.3	4.8	2.1					
	Phase/phase res. ± 5% a 20°C	Rff	[Ohm]	9.1	21.0	58	117					
	Phase/phase inductance	Lff	[mH]	22	50	140	281					
	Electrical time constant	Te	[msec]	2.4	2.4	2.4	2.4					
	Power loss	Pd	[W]	33								
	Thermal resistance	Rth	[°C/W]	3.2								
	Motor constance	Km	[Nm/√W]	0.36								
	Cogging torque	Tcog	[Nm]	0.06								
	Insulation class			F								
	SKAddr 090 60											
	Stall torque	Cn0	[Nm]	3.5								
	Peak torque	Cmax	[Nm]	28	28	28	21	13				
	Torque constant ± 5%	Kt	[Nm/Arms]	1.04	1.57	2.50	3.85	7.1				
	Stall current	In0	[Arms]	2.19	1.46	0.87	0.63	0.37				
	Peak current	I cmax	[Arms]	26.9	17.8	11.2	5.46	1.83				
	Phase/phase res. ± 5% a 20°C	Rff	[Ohm]	3.9	8.9	24	47	140				
	Phase/phase inductance	Lff	[mH]	12	27	72	142	430				
	Electrical time constant	Te	[msec]	3.0	3.0	3.0	3.0	3.1				
	Power loss	Pd	[W]	41								
	Thermal resistance	Rth	[°C/W]	2.6								
	Motor constance	Km	[Nm/√W]	0.55								
	Cogging torque	Tcog	[Nm]	0.10								
	Insulation class			F								
THERMAL PROTECTION	Type of thermal cut-off		N C : normally closed									
	Rated voltage	Vn	[Vac]	250								
	Rated current	In	[A]	2.5								
	Operative temperature	Tn	[°C]	140 °C ± 5%								
	Resetting temperature	Tr	[°C]	100 °C ± 15°C								
	Operative time		[ms]	1								
	Insulation class			F								

*Drive main voltage needed to supply the full peak torque

DATASHEET n°: 1B4101010502GB

SKA_{ddr}

090 90

4.7

			SYMBOLS	UNITS	WINDING TYPE										
					17	18	19	50	51	52					
MOTOR SPEED	Vn drive 145 V (ac) 3phase			[rpm]	1000	650	-	-	-	-					
	Vn drive 220 V (ac) 3phase			[rpm]	1200*	1200*	750	500	300						
	Vn drive 380 V (ac) 3phase			[rpm]	-	-	1200*	800*	500*	300*					
MOTOR RATINGS	COMMON RATINGS														
	Voltage constant ± 5%			Ke	[Vrms/krpm]	96	144	240	340	570	950				
	Poles number			P	[mm]	14									
	Temperature range			Tr	[°C]	0 ÷ 40°									
	SKAddr 090 90														
	Stall torque			Cn0	[Nm]	4.7									
	Peak torque			Cmax	[Nm]	40	40	40	30	19	12				
	Torque constant ± 5%			Kt	[Nm/Arms]	1.05	1.54	2.50	3.75	6.8	12				
	Stall current			In0	[Arms]	2.94	1.96	1.17	0.84	0.50	0.30				
	Peak current			I cmax	[Arms]	38	26	16	8.0	2.8	1.00				
	Phase/phase res. ± 5% a 20°C			Rff	[Ohm]	2.6	5.8	16.3	32.1	91.1	255				
	Phase/phase inductance			Lff	[mH]	8.6	20	54	107	305	870				
	Electrical time constant			Te	[msec]	3.3	3.4	3.3	3.3	3.3	3.4				
	Power loss			Pd	[W]	50									
	Thermal resistance			Rth	[°C/W]	2.1									
	Motor constance			Km	[Nm/√W]	0.68									
	Cogging torque			Tcog	[Nm]	0.14									
	Insulation class					F									
	SKAddr 090														
	Stall torque			Cn0	[Nm]										
	Peak torque			Cmax	[Nm]										
	Torque constant ± 5%			Kt	[Nm/Arms]										
	Stall current			In0	[Arms]										
	Peak current			I cmax	[Arms]										
	Phase/phase res. ± 5% a 20°C			Rff	[Ohm]										
	Phase/phase inductance			Lff	[mH]										
	Electrical time constant			Te	[msec]										
	Power loss			Pd	[W]										
	Thermal resistance			Rth	[°C/W]										
	Motor constance			Km	[Nm/√W]										
	Cogging torque			Tcog	[Nm]										
	Insulation class					F									
THERMAL PROTECTION	Type of thermal cut-off				N C : normally closed										
	Rated voltage			Vn	[Vac]	250									
	Rated current			In	[A]	2.5									
	Operative temperature			Tn	[°C]	140 °C ± 5%									
	Resetting temperature			Tr	[°C]	100 °C ± 15°C									
	Operative time				[ms]	1									
	Insulation class					F									

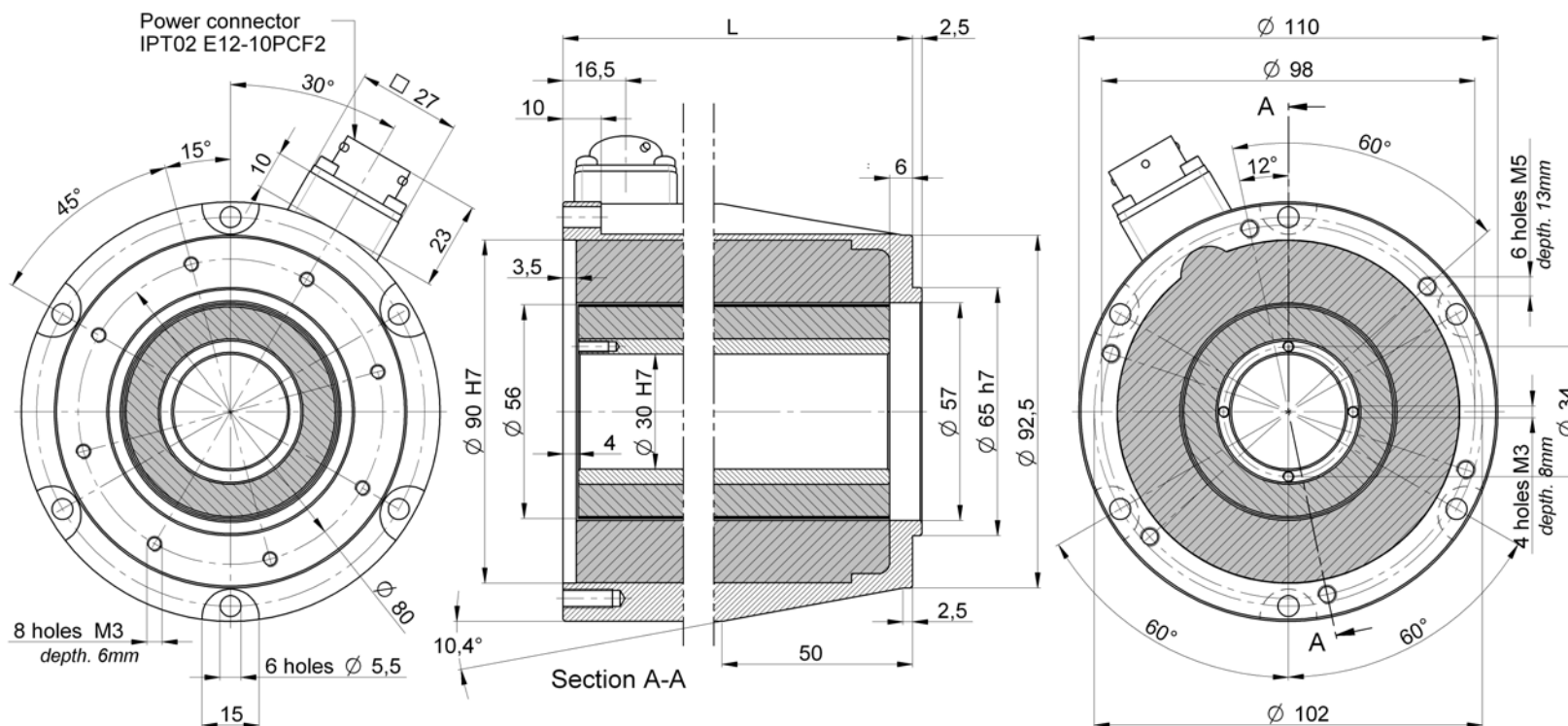
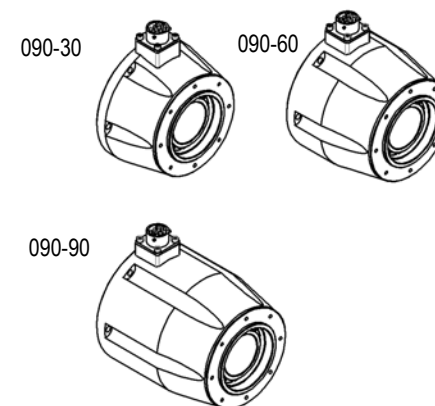
*Drive main voltage needed to supply the full peak torque

DATASHEET n°: 1B4102020502GB

SKAddr 090 *Power Elements*

MECHANICAL DATA			090-30	090-60	090-90			
Motor lenght	L	[mm]	60	90	120			
Motor weight	Wm	[Kg]	1.66	2.9	4.15			
Stator weight	Ws	[Kg]	1.24	2.2	3.16			
Rotor inertia	Jr	[Kg cm ²]	2.5	4.15	5.8			
Max theorethical acceleration	α_{max}	[rad s ²]	50400	55180	57068			

Wiring diagram A = Phase U B = Phase V C = Phase W F = Thermal Prot. G = Thermal Prot.



SERIES

TORQUE [Nm]

SKA_{ddr}

148 30/60

8/14

		SYMBOLS	UNITS	WINDING TYPE										
				17	18	19	50	51	52					
MOTOR SPEED	Vn drive 145 V (ac) 3phase		[rpm]		1000*	650*	400	280	-	-				
	Vn drive 220 V (ac) 3phase		[rpm]		-	1000*	750*	500*	300	-				
	Vn drive 380 V (ac) 3phase		[rpm]		-	-	1000*	800*	500*	300*				
MOTOR RATINGS	COMMON RATINGS													
	Voltage constant ± 5%	Ke	[Vrms/krpm]		96	144	240	340	570	950				
	Poles number	P	[mm]	14										
	Temperature range	Tr	[°C]	0 ÷ 40°										
	SKAddr 148 30													
	Stall torque	Cn0	[Nm]	8.0										
	Peak torque	Cmax	[Nm]		35	35	35	35	35	24				
	Torque constant ± 5%	Kt	[Nm/Arms]		1.30	1.94	3.26	4.54	7.61	13.7				
	Stall current	In0	[Arms]		5.00	3.33	2.00	1.43	0.85	0.51				
	Peak current	I cmax	[Arms]		26.9	18.0	10.7	7.71	4.60	1.75				
	Phase/phase res. ± 5% a 20°C	Rff	[Ohm]		1.53	3.60	9.5	18.8	53.5	149				
	Phase/phase inductance	Lff	[mH]		5.3	12.6	33	66	187	521				
	Electrical time constant	Te	[msec]		3.5	3.5	3.5	3.5	3.5	3.5				
	Power loss	Pd	[W]	87										
	Thermal resistance	Rth	[°C/W]	1.21										
	Motor constance	Km	[Nm/√W]	0.86										
	Cogging torque	Tcog	[Nm]	0.24										
	Insulation class			F										
	SKAddr 148 60													
	Stall torque	Cn0	[Nm]	14										
	Peak torque	Cmax	[Nm]		72	72	72	72	72	65				
	Torque constant ± 5%	Kt	[Nm/Arms]		1.30	1.94	3.26	4.54	7.61	13.4				
	Stall current	In0	[Arms]		8.75	5.83	3.50	2.50	1.49	0.89				
	Peak current	I cmax	[Arms]		55.4	37.1	22.1	15.9	9.5	4.9				
	Phase/phase res. ± 5% a 20°C	Rff	[Ohm]		0.53	1.25	3.36	6.6	18.8	52.3				
	Phase/phase inductance	Lff	[mH]		2.6	6.2	16	32	92	254				
	Electrical time constant	Te	[msec]		4.9	4.9	4.9	4.8	4.9	4.9				
	Power loss	Pd	[W]	93										
	Thermal resistance	Rth	[°C/W]	1.13										
	Motor constance	Km	[Nm/√W]	1.45										
	Cogging torque	Tcog	[Nm]	0.42										
	Insulation class			F										
THERMAL PROTECTION	Type of thermal cut-off			N C : normally closed										
	Rated voltage	Vn	[Vac]	250										
	Rated current	In	[A]	2.5										
	Operative temperature	Tn	[°C]	140 °C ± 5%										
	Resetting temperature	Tr	[°C]	100 °C ± 15°C										
	Operative time		[ms]	1										
	Insulation class			F										

* Drive main voltage needed to supply the full peak torque

DATASHEET n°: 1B4102010502GB

SERIES

SKA_{ddr}

148 90/120

TORQUE [Nm]

20/26

			WINDING TYPE									
			17	18	19	50	51	52	53			
MOTOR SPEED	Vn drive 145 V (ac) 3phase	[rpm]	900*	650*	400*	280	170	-	-			
	Vn drive 220 V (ac) 3phase	[rpm]	-	900*	750*	500*	300*	180*	-			
	Vn drive 380 V (ac) 3phase	[rpm]	-	-	-	800*	500*	300*	150*			
MOTOR RATINGS	COMMON RATINGS											
	Voltage constant ± 5%	Ke	[Vrms/krpm]	96	144	240	340	570	950	1900		
	Poles number	P	[mm]	14								
	Temperature range	Tr	[°C]	0 ÷ 40°								
	SKAddr 148 90											
	Stall torque	Cn0	[Nm]	20								
	Peak torque	Cmax	[Nm]	106	106	106	106	106	90	60		
	Torque constant ± 5%	Kt	[Nm/Arms]	1.30	1.94	3.26	4.54	7.61	13.1	28.6		
	Stall current	In0	[Arms]	12.5	8.33	5.00	3.57	2.13	1.27	0.64		
	Peak current	I cmax	[Arms]	81.5	54.6	32.5	23.3	13.9	6.85	2.1		
	Phase/phase res. ± 5% a 20°C	Rff	[Ohm]	0.30	0.70	1.90	3.9	11.0	30.8	124		
	Phase/phase inductance	Lff	[mH]	1.7	3.9	10.6	22	62	172	691		
	Electrical time constant	Te	[msec]	5.6	5.6	5.6	5.6	5.6	5.6	5.6		
	Power loss	Pd	[W]	112								
	Thermal resistance	Rth	[°C/W]	0.94								
	Motor constance	Km	[Nm/√W]	1.89								
	Cogging torque	Tcog	[Nm]	0.60								
	Insulation class			F								
	SKAddr 148 120											
	Stall torque	Cn0	[Nm]	26								
	Peak torque	Cmax	[Nm]	141	141	141	141	141	141	141	85	
	Torque constant ± 5%	Kt	[Nm/Arms]	1.30	1.94	3.26	4.54	7.61	12.7	28.8		
	Stall current	In0	[Arms]	16.3	10.8	6.50	4.64	2.77	1.66	0.83		
	Peak current	I cmax	[Arms]	108	72.7	43.3	31.1	18.5	11.1	2.95		
	Phase/phase res. ± 5% a 20°C	Rff	[Ohm]	0.22	0.50	1.38	2.79	7.80	21.6	87		
	Phase/phase inductance	Lff	[mH]	1.3	3.0	8.3	17	47	130	524		
	Electrical time constant	Te	[msec]	6.0	6.0	6.0	6.1	6.0	6.0	6.0		
	Power loss	Pd	[W]	133								
	Thermal resistance	Rth	[°C/W]	0.79								
	Motor constance	Km	[Nm/√W]	2.25								
	Cogging torque	Tcog	[Nm]	0.78								
	Insulation class			F								
THERMAL PROTECTION	Type of thermal cut-off		N C : normally closed									
	Rated voltage	Vn	[Vac]	250								
	Rated current	In	[A]	2.5								
	Operative temperature	Tn	[°C]	140 °C ± 5%								
	Resetting temperature	Tr	[°C]	100 °C ± 15°C								
	Operative time		[ms]	1								
	Insulation class			F								

* Drive main voltage needed to supply the full peak torque

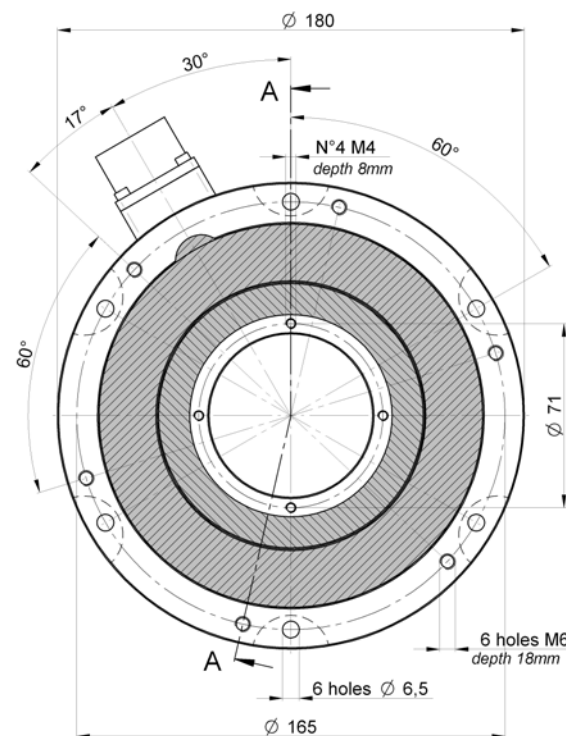
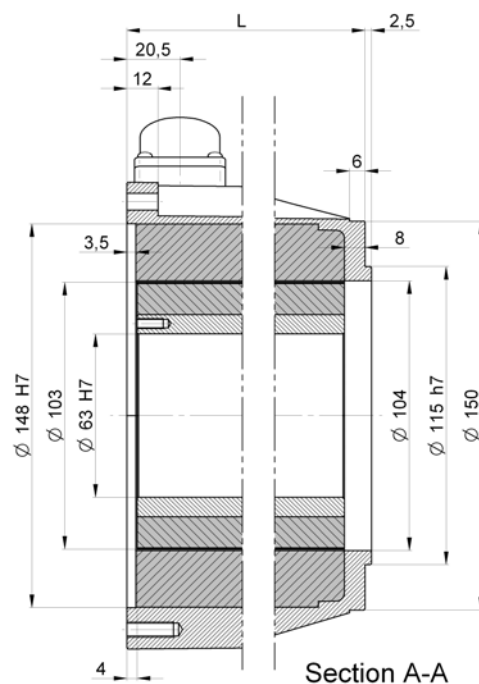
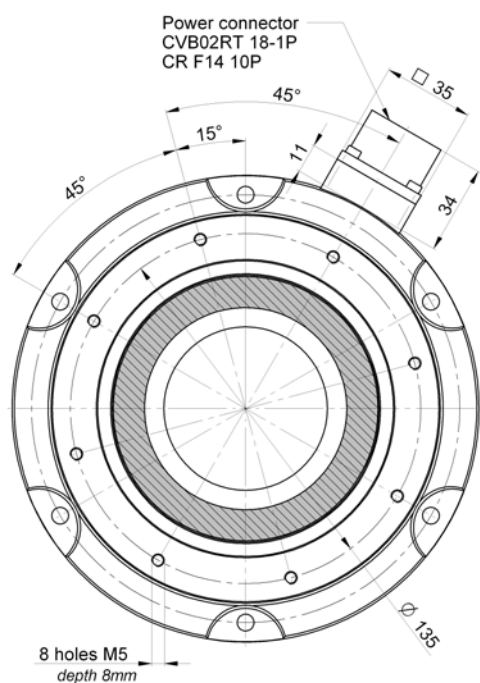
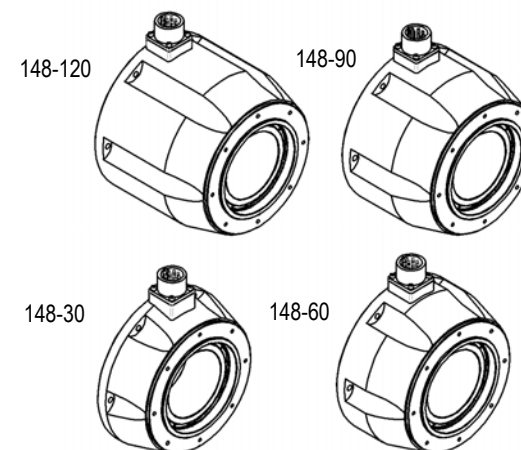
DATASHEET n°: 1B4102020502GB

SKAddr 148 *Power Elements*

MECHANICAL DATA			148-30	148-60	148-90	148-120		
Motor lenght	L	[mm]	62	92	122	152		
Motor weight	Pm	[Kg]	4.6	7.7	10.8	13.8		
Stator weight	Ps	[Kg]	3.3	5.6	7.9	10.2		
Rotor inertia	Jr	[Kg cm ²]	26.6	43.2	59.9	76.5		
Max theorethical acceleration	α_{max}	[rad s ²]	14661	16203	16694	16993		

Wiring diagram

A = Phase U B = Phase V C = Phase W F = Thermal Prot. G = Thermal Prot.



SERIES

TORQUE [Nm]

SKA_{ddr} 245 30/60
41/70

		SYMBOLS	UNITS	WINDING YPE									
				19	50	51	52	53	54				
MOTOR SPEED	Vn drive 145 V (ac) 3phase		[rpm]	400	300	170	100	50	-				
	Vn drive 220 V (ac) 3phase		[rpm]	750	500	300	180	90	50				
	Vn drive 380 V (ac) 3phase		[rpm]	-	800	500	300	150	90				
MOTOR RATINGS	COMMON RATINGS												
	Voltage constant ± 5%	Ke	[Vrms/krpm]	240	340	570	950	1900	3150				
	Poles number	P	[mm]	28									
	Temperature range	Tr	[°C]	0 ÷ 40°									
	SKAddr 245 30												
	Stall torque	Cn0	[Nm]	41									
	Peak torque	Cmax	[Nm]	128	128	128	128	128					
	Torque constant ± 5%	Kt	[Nm/Arms]	3.3	4.7	7.9	13.2	26.4					
	Stall current	In0	[Arms]	10.3	7.32	4.36	2.61	1.31					
	Peak current	I cmax	[Arms]	38.6	27.4	16.1	9.7	4.8					
	Phase/phase res. ± 5% a 20°C	Rff	[Ohm]	0.76	1.52	4.38	12.2	48.7					
	Phase/phase inductance	Lff	[mH]	8.0	16	46	127	508					
	Electrical time constant	Te	[msec]	10.4	10.4	10.4	10.4	10.4					
	Power loss	Pd	[W]	182									
	Thermal resistance	Rth	[°C/W]	0.58									
	Motor constance	Km	[Nm/√W]	3.05									
	Cogging torque	Tcog	[Nm]	1.23									
	Insulation class			F									
	SKAddr 245 60												
	Stall torque	Cn0	[Nm]	70									
	Peak torque	Cmax	[Nm]	241	241	241	241	241	202				
	Torque constant ± 5%	Kt	[Nm/Arms]	3.3	4.7	7.9	13.2	26.4	44.0				
	Stall current	In0	[Arms]	17.5	12.5	7.45	4.46	2.23	1.34				
	Peak current	I cmax	[Arms]	73.9	51.5	30.9	18.2	9.1	4.6				
	Phase/phase res. ± 5% a 20°C	Rff	[Ohm]	0.31	0.64	1.79	5.11	20.5	56.1				
	Phase/phase inductance	Lff	[mH]	4.4	9.0	25	72	287	790				
	Electrical time constant	Te	[msec]	14.0	14.0	14.0	14.0	14.0	14.0				
	Power loss	Pd	[W]	215									
	Thermal resistance	Rth	[°C/W]	0.49									
	Motor constance	Km	[Nm/√W]	4.77									
	Cogging torque	Tcog	[Nm]	2.10									
	Insulation class			F									
THERMAL PROTECTION	Type of thermal cut-off		N C : normalmente chiusa										
	Rated voltage	Vn	[Vac]	250									
	Rated current	In	[A]	2.5									
	Operative temperature	Tn	[°C]	140 °C ± 5%									
	Resetting temperature	Tr	[°C]	100 °C ± 15°C									
	Operative time		[ms]	1									
	Insulation class			F									

DATASHEET n°: 1B4103010502GB

SERIES

SKA_{ddr} 245 90/120

TORQUE [Nm]

93/115

	SYMBOLS	UNITS	WINDING TYPE							
			51	52	53	54				
SPEED MOTOR	Vn drive 145 V (ac) 3phase	[rpm]	170	100	50	-				
	Vn drive 220 V (ac) 3phase	[rpm]	300	180	90	50				
	Vn drive 380 V (ac) 3phase	[rpm]	500	300	150	90				
MOTOR RATINGS	COMMON RATINGS									
	Voltage constant $\pm 5\%$	Ke	[Vrms/krpm]	570	950	1900	3150			
	Poles number	P	[mm]				28			
	Temperature range	Tr	[°C]				0 ÷ 40°			
	SKAddr 245 90									
	Stall torque	Cn0	[Nm]				93			
	Peak torque	Cmax	[Nm]	350	350	350	320			
	Torque constant $\pm 5\%$	Kt	[Nm/Arms]	7.9	13.2	26.4	43.8			
	Stall current	In0	[Arms]	9.89	5.92	2.96	1.79			
	Peak current	I cmax	[Arms]	44.7	26.5	13.2	7.3			
	Phase/phase res. $\pm 5\%$ a 20°C	Rff	[Ohm]	1.14	3.22	12.9	35.3			
	Phase/phase inductance	Lff	[mH]	18	51	204	560			
	Electrical time constant	Te	[msec]	15.8	15.8	15.8	15.8			
	Power loss	Pd	[W]				250			
	Thermal resistance	Rth	[°C/W]				0.42			
	Motor constance	Km	[Nm/√W]				5.88			
	Cogging torque	Tcog	[Nm]				2.79			
	Insulation class						F			
	SKAddr 245 120									
	Stall torque	Cn0	[Nm]				115			
	Peak torque	Cmax	[Nm]	458	458	458	438			
	Torque constant $\pm 5\%$	Kt	[Nm/Arms]	7.9	13.2	26.4	43.8			
	Stall current	In0	[Arms]	12.2	7.32	3.66	2.21			
	Peak current	I cmax	[Arms]	58.6	34.6	17.3	10.0			
	Phase/phase res. $\pm 5\%$ a 20°C	Rff	[Ohm]	0.82	2.35	9.41	25.7			
	Phase/phase inductance	Lff	[mH]	14	40	160	435			
	Electrical time constant	Te	[msec]	16.9	16.9	16.9	16.9			
	Power loss	Pd	[W]				275			
	Thermal resistance	Rth	[°C/W]				0.38			
	Motor constance	Km	[Nm/√W]				6.93			
	Cogging torque	Tcog	[Nm]				3.45			
	Insulation class						F			
THERMAL PROTECTION	Type of thermal cut-off						N C : normalmente chiusa			
	Rated voltage	Vn	[Vac]				250			
	Rated current	In	[A]				2.5			
	Operative temperature	Tn	[°C]				140 °C $\pm$ 5%			
	Resetting temperature	Tr	[°C]				100 °C $\pm$ 15°C			
	Operative time		[ms]				1			
	Insulation class						F			

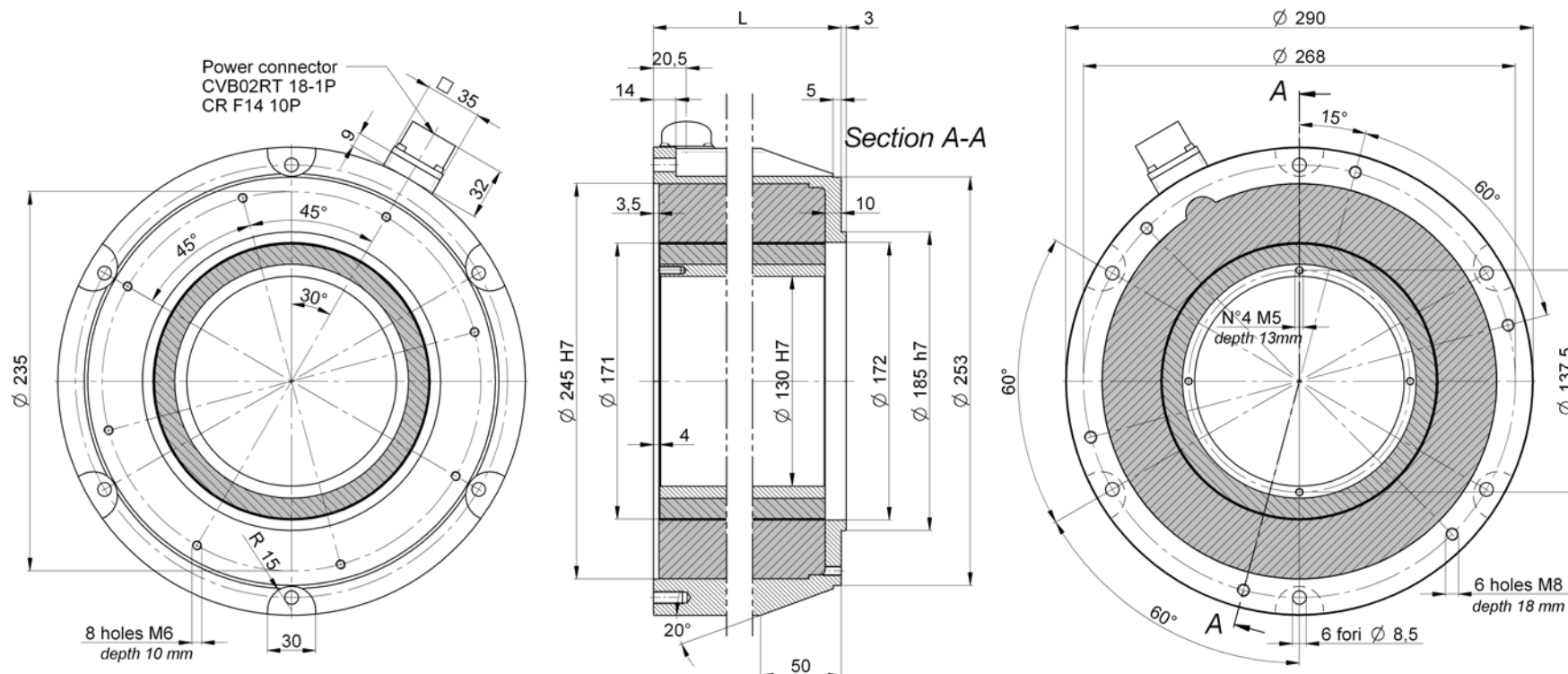
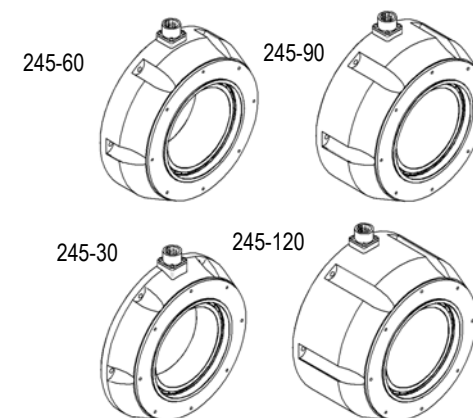
DATASHEET n°: 1B4103020502GB

SKAddr 245 *Power Elements*

MECHANICAL DATA			245-30	245-60	245-90	245-120		
Motor lenght	L	[mm]	60	90	120	150		
Motor weight	Pm	[Kg]	11.5	19.2	26.9	34.6		
Stator weight	Ps	[Kg]	9.2	15.4	21.7	27.9		
Rotor inertia	Jr	[Kg m ²]	0.0138	0.021	0.03	0.038		
Max theorethical acceleration	α_{max}	[rad s ²]	9492	11238	11233	11500		

Wiring diagram

A = Phase U B = Phase V C = Phase W F = Thermal Prot. G = Thermal Prot.



SERIES

SKA_{ddr}

335 30/60

TORQUE [Nm]

100/164

		SYMBOLS	UNITS	WINDING TYPE							
				19	50	51	52	53	54	55	
MOTOR SPEED	Vn drive 145 V (ac) 3phase		[rpm]	400	280	170	100	50	-	-	
	Vn drive 220 V (ac) 3phase		[rpm]	-	500	300	180	90	50	-	
	Vn drive 380 V (ac) 3phase		[rpm]	-	-	500	300	150	90	50	
MOTOR RATINGS	COMMON RATINGS										
	Voltage constant ± 5%	Ke	[Vrms/krpm]	240	340	570	950	1900	3150	5700	
	Poles number	P	[mm]	42							
	Temperature range	Tr	[°C]	0 ÷ 40°							
	SKAddr 335 30										
	Stall torque	Cn0	[Nm]	100							
	Peak torque	Cmax	[Nm]	290	290	290	290	290	290	167	
	Torque constant ± 5%	Kt	[Nm/Arms]	3.32	4.7	7.9	13.2	26.4	43.8	81.9	
	Stall current	In0	[Arms]	25.0	17.9	10.6	6.36	3.18	1.92	1.06	
	Peak current	I cmax	[Arms]	87.4	61.9	36.7	22.3	11.0	6.61	2.04	
	Phase/phase res. ± 5% a 20°C	Rff	[Ohm]	0.22	0.47	1.24	3.50	14.0	38.7	126	
	Phase/phase inductance	Lff	[mH]	2.1	4.6	12	34	136	376	1225	
	Electrical time constant	Te	[msec]	9.72	9.72	9.72	9.72	9.72	9.72	9.72	
	Power loss	Pd	[W]	315							
	Thermal resistance	Rth	[°C/W]	0.33							
	Motor constance	Km	[Nm/√W]	5.63							
	Cogging torque	Tcog	[Nm]	3							
	Insulation class			F							
	SKAddr 335 60										
	Stall torque	Cn0	[Nm]	164							
	Peak torque	Cmax	[Nm]	550	550	550	550	550	550	393	
	Torque constant ± 5%	Kt	[Nm/Arms]	3.32	4.7	7.9	13.2	26.4	43.8	81.9	
	Stall current	In0	[Arms]	41.0	29.2	17.4	10.4	5.22	3.15	1.74	
	Peak current	I cmax	[Arms]	166	117	69.5	41.8	20.8	12.5	4.8	
	Phase/phase res. ± 5% a 20°C	Rff	[Ohm]	0.09	0.19	0.52	1.41	5.80	16.4	53.1	
	Phase/phase inductance	Lff	[mH]	1.2	2.5	6.8	18	75	210	690	
	Electrical time constant	Te	[msec]	13.3	13.1	13.0	13.0	13.0	12.8	13.0	
	Power loss	Pd	[W]	355							
	Thermal resistance	Rth	[°C/W]	0.30							
	Motor constance		[Nm/√W]	8.7							
	Cogging torque		[Nm]	4.9							
	Insulation class			F							
THERMAL PROTECTION	Type of thermal cut-off	Cmax	N C : normally closed								
	Rated voltage	Kt	[Vac]	250							
	Rated current	In0	[A]	2.5							
	Operative temperature	Tn	[°C]	140 °C ± 5%							
	Resetting temperature	Tr	[°C]	100 °C ± 15°C							
	Operative time		[ms]	1							
	Insulation class			F							

Pagina Dati n°: 1B4104010502GB

SERIES

SKA_{ddr} 335 90/120

TORQUE [Nm]

220/270

		SYMBOLS	UNITS	WINDING TYPE								
				50	51	52	53	54	55			
MOTOR SPEED	Tensione nominale drive 125 V (ac) trifase		[rpm]	280	170	100	50	-	-			
	Tensione nominale drive 220 V (ac) trifase		[rpm]	-	300	180	90	50	-			
	Tensione nominale drive 380 V (ac) trifase		[rpm]	-	-	300	150	90	50			
MOTOR RATINGS	COMMON RATINGS											
	Voltage constant $\pm 5\%$	Ke	[Vrms/krpm]	340	570	950	1900	3150	5700			
	Poles number	P	[mm]	42								
	Temperature range	Tr	[°C]	0 ÷ 40°								
	SKAddr 335 90											
	Stall torque	Cn0	[Nm]	220								
	Peak torque	Cmax	[Nm]	800	800	800	800	800	624			
	Torque constant $\pm 5\%$	Kt	[Nm/Arms]	4.7	7.9	13.2	26.4	43.8	81.9			
	Stall current	In0	[Arms]	38.3	23.4	14.0	7.00	4.22	2.33			
	Peak current	I cmax	[Arms]	170	101	60.6	30.3	18.3	7.62			
	Phase/phase res. $\pm 5\%$ a 20°C	Rff	[Ohm]	0.12	0.32	0.92	3.70	10.2	33.7			
	Phase/phase inductance	Lff	[mH]	1.8	4.4	12.9	53	144	480			
	Electrical time constant	Te	[msec]	15.0	13.8	14.0	14.3	14.1	14.2			
	Power loss	Pd	[W]	400								
	Thermal resistance	Rth	[°C/W]	0.26								
	Motor constance	Km	[Nm/√W]	11.0								
	Cogging torque	Tcog	[Nm]	6.6								
	Insulation class	F										
	SKAddr 335 120											
	Stall torque	Cn0	[Nm]	270								
	Peak torque	Cmax	[Nm]	1043	1043	1043	1043	1043	852			
	Torque constant $\pm 5\%$	Kt	[Nm/Arms]	4.7	7.9	13.2	26.4	43.8	81.9			
	Stall current	In0	[Arms]	48.2	28.7	17.2	8.59	5.18	2.86			
	Peak current	I cmax	[Arms]	222	132	79.0	39.6	23.8	10.4			
	Phase/phase res. $\pm 5\%$ a 20°C	Rff	[Ohm]	0.09	0.24	0.67	2.72	7.43	24.6			
	Phase/phase inductance	Lff	[mH]	1.4	3.5	10.4	42.1	116	382			
	Electrical time constant	Te	[msec]	15.5	15.6	15.5	15.5	15.6	15.5			
	Power loss	Pd	[W]	420								
	Thermal resistance	Rth	[°C/W]	0.25								
	Motor constance	Km	[Nm/√W]	12.6								
	Cogging torque	Tcog	[Nm]	8.1								
	Insulation class	F										
THERMAL PROTECTION	Type of thermal cut-off	N C : normally closed										
	Rated voltage	Vn	[Vac]	250								
	Rated current	In	[A]	2.5								
	Operative temperature	Tn	[°C]	140 °C $\pm 5\%$								
	Resetting temperature	Tr	[°C]	100 °C $\pm 15^{\circ}\text{C}$								
	Operative time		[ms]	1								
	Insulation class	F										

Pagina Dati n°: 1B4104020502GB

SERIES

TORQUE [Nm]

SKA_{ddr} 335 150/335
320

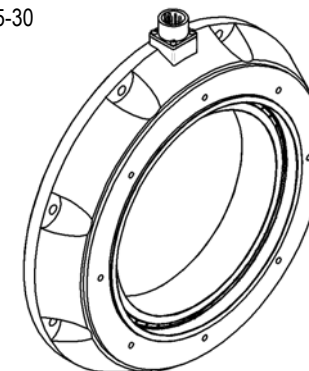
		SYMBOLS	UNITS	WINDING TYPE							
				50	51	52	53	54	55		
MOTOR SPEED	Tensione nominale drive 125 V (ac) trifase	[rpm]	280	170	100	50	-	-			
	Tensione nominale drive 220 V (ac) trifase	[rpm]	-	300	180	90	50	-			
	Tensione nominale drive 380 V (ac) trifase	[rpm]	-	-	300	150	90	50			
MOTOR RATINGS	COMMON RATINGS										
	Voltage constant ± 5%	Ke	[Vrms/krpm]	340	570	950	1900	3150	5700		
	Poles number	P	[mm]	42							
	Temperature range	Tr	[°C]	0 ÷ 40°							
	SKAddr 335 150										
	Stall torque	Cn0	[Nm]	320							
	Peak torque	Cmax	[Nm]	1290	1290	1290	1290	1290	1097		
	Torque constant ± 5%	Kt	[Nm/Arms]	4.7	7.9	13.2	26.4	43.8	81.9		
	Stall current	In0	[Arms]	57.1	34.0	20.4	10.2	6.14	3.39		
	Peak current	I cmax	[Arms]	275	163	97.7	48.9	29.4	13.4		
	Phase/phase res. ± 5% a 20°C	Rff	[Ohm]	0.07	0.19	0.53	2.10	5.95	19.2		
	Phase/phase inductance	Lff	[mH]	1.1	3.0	8.6	34	96	311		
	Electrical time constant	Te	[msec]	15.7	15.8	16.2	16.2	16.2	16.2		
	Power loss	Pd	[W]	490							
	Thermal resistance	Rth	[°C/W]	0.21							
	Motor constance	Km	[Nm/√W]	14.4							
	Cogging torque	Tcog	[Nm]	9.60							
	Insulation class			F							
	SKAddr 335										
	Stall torque	Cn0	[Nm]								
	Peak torque	Cmax	[Nm]								
	Torque constant ± 5%	Kt	[Nm/Arms]								
	Stall current	In0	[Arms]								
	Peak current	I cmax	[Arms]								
	Phase/phase res. ± 5% a 20°C	Rff	[Ohm]								
	Phase/phase inductance	Lff	[mH]								
	Electrical time constant	Te	[msec]								
	Power loss	Pd	[W]								
	Thermal resistance	Rth	[°C/W]								
	Motor constance	Km	[Nm/√W]								
	Cogging torque	Tcog	[Nm]								
	Insulation class			F							
THERMAL PROTECTION	Type of thermal cut-off		N C : normally closed								
	Rated voltage	Vn	[Vac]	250							
	Rated current	In	[A]	2.5							
	Operative temperature	Tn	[°C]	140 °C ± 5%							
	Resetting temperature	Tr	[°C]	100 °C ± 15°C							
	Operative time		[ms]	1							
	Insulation class			F							

DATASHEET n°: 1B4104030502GB

SKAddr 335 *Power Elements*

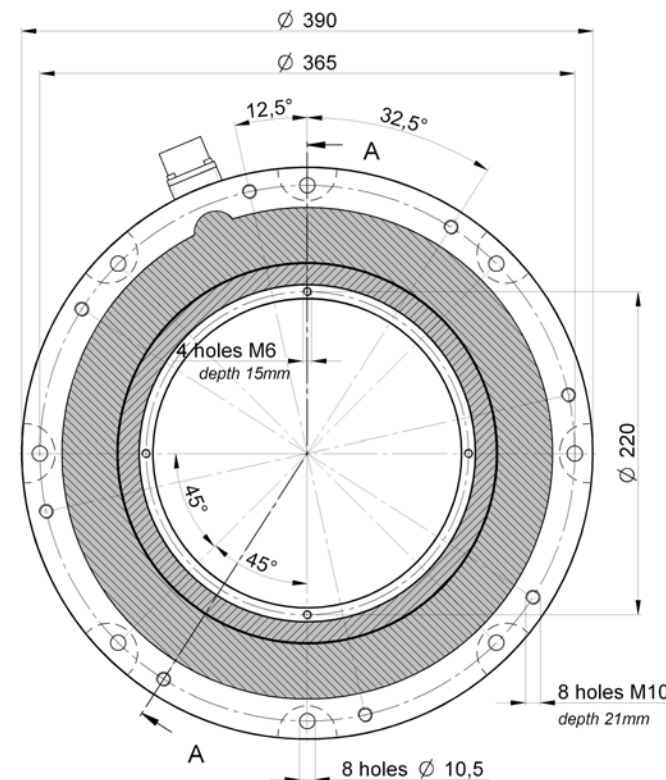
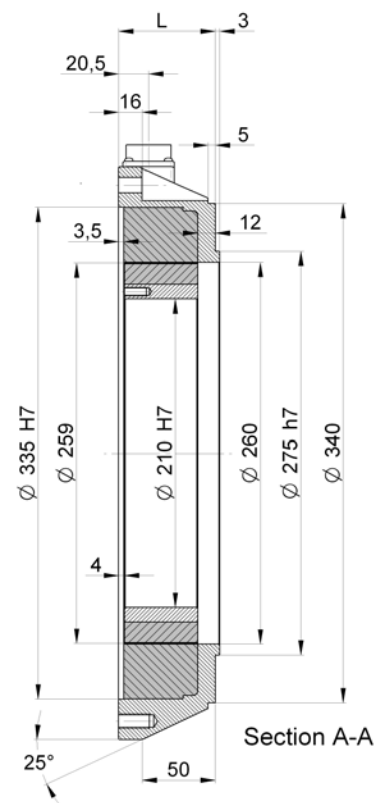
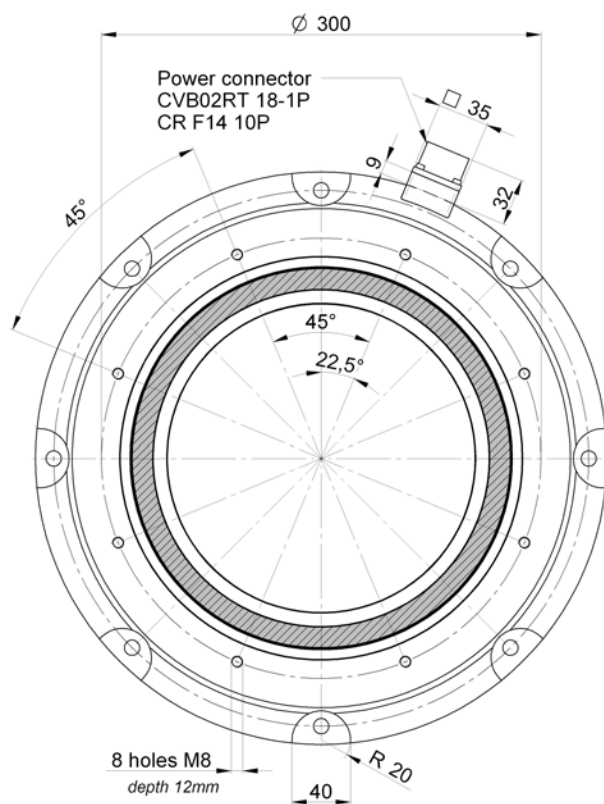
335-30

MECHANICAL DATA			335-30	335-60	335-90	335-120	335-150
Motor lenght	L	[mm]	60	90	120	150	180
Motor weight	Pm	[Kg]	18.2	31	43.5	54.6	66
Stator weight	Ps	[Kg]	14	24	34.2	43	51.7
Rotor inertia	Jr	[Kg m ²]	0.0556	0.0931	0.129	0.167	0.195
Max theorethical acceleration	α_{max}	[rad s ²]	5734	6122	6356	6407	6667



Wiring diagram

A = Phase U B = Phase V C = Phase W F = Thermal Prot. G = Thermal Prot.



SERIES

SKA_{ddr} 430 30/60

TORQUE [Nm]

210/340

		SYMBOLS	UNITS	WINDING TYPE							
				52	53	54	55				
MOTOR SPEED	Vn drive 145 V (ac) 3phase		[rpm]	100	50	-	-				
	Vn drive 220 V (ac) 3phase		[rpm]	180	90	50	-				
	Vn drive 380 V (ac) 3phase		[rpm]	300	150	90	50				
MOTOR RATINGS	DATI COMUNI										
	Voltage constant ± 5%	Ke	[Vrms/krpm]	950	1900	3150	5700				
	Poles number	P	[mm]	56							
	Temperature range	Tr	[°C]	0 ÷ 40°							
	SKAddr 430 30										
	Stall torque	Cn0	[Nm]	210							
	Peak torque	Cmax	[Nm]	458	458	458	436				
	Torque constant ± 5%	Kt	[Nm/Arms]	11.3	22.7	37.9	68.4				
	Stall current	In0	[Arms]	13.3	6.68	4.01	2.23				
	Peak current	I cmax	[Arms]	40.4	20.2	12.1	6.37				
	Phase/phase res. ± 5% a 20°C	Rff	[Ohm]	1.11	4.47	12.5	40.3				
	Phase/phase inductance	Lff	[mH]	16.0	66.0	183	593				
	Electrical time constant	Te	[msec]	14.4	14.8	14.6	14.7				
	Power loss	Pd	[W]	450							
	Thermal resistance	Rth	[°C/W]	0.23							
	Motor constance	Km	[Nm/√W]	9.90							
	Cogging torque	Tcog	[Nm]	6.30							
	Insulation class			F							
	SKAddr 430 60										
	Stall torque	Cn0	[Nm]	340							
	Peak torque	Cmax	[Nm]		868	868	868				
	Torque constant ± 5%	Kt	[Nm/Arms]		22.7	37.9	68.4				
	Stall current	In0	[Arms]		10.9	6.58	3.64				
	Peak current	I cmax	[Arms]		38.2	22.9	12.7				
	Phase/phase res. ± 5% a 20°C	Rff	[Ohm]		1.89	5.22	16.9				
	Phase/phase inductance	Lff	[mH]		36.9	102	330				
	Electrical time constant	Te	[msec]		19.5	19.5	19.5				
	Power loss	Pd	[W]	490							
	Thermal resistance	Rth	[°C/W]	0.21							
	Motor constance	Km	[Nm/√W]	15.4							
	Cogging torque	Tcog	[Nm]	10.2							
	Insulation class			F							
THERMAL PROTECTION	Type of thermal cut-off		N C : normally closed								
	Rated voltage	Vn	[Vac]	250							
	Rated current	In	[A]	2.5							
	Operative temperature	Tn	[°C]	140 °C ± 5%							
	Resetting temperature	Tr	[°C]	100 °C ± 15°C							
	Operative time		[ms]	1							
	Insulation class			F							

DATASHEET n°: 1B4105010502GB

SERIES

TORQUE [Nm]

SKA_{ddr} 430 90/120
450/560

	SYMBOLS	UNITS	WINDING TYPE					
			53	54	55			
MOTOR SPEED	Vn drive 145 V (ac) 3phase	[rpm]	50	-	-			
	Vn drive 220 V (ac) 3phase	[rpm]	90	50	-			
	Vn drive 380 V (ac) 3phase	[rpm]	150	90	50			
MOTOR RATINGS	DATI COMUNI							
	Voltage constant $\pm 5\%$	Ke	[Vrms/krpm]	1900	3150	5700		
	Poles number	P	[mm]				56	
	Temperature range	Tr	[°C]				0 ÷ 40°	
	SKAddr 430 90							
	Stall torque	Cn0	[Nm]				450	
	Peak torque	Cmax	[Nm]	1254	1254	1254		
	Torque constant $\pm 5\%$	Kt	[Nm/Arms]	22.7	37.9	68.4		
	Stall current	In0	[Arms]	14.3	8.63	4.78		
	Peak current	I cmax	[Arms]	55.2	33.1	18.3		
	Phase/phase res. $\pm 5\%$ a 20°C	Rff	[Ohm]	1.19	3.31	10.77		
	Phase/phase inductance	Lff	[mH]	26.2	73.0	237		
	Electrical time constant	Te	[msec]	22.0	22.1	22.0		
	Power loss	Pd	[W]				550	
	Thermal resistance	Rth	[°C/W]				0.19	
	Motor constance	Km	[Nm/√W]				19.2	
	Cogging torque	Tcog	[Nm]				13.5	
	Insulation class						F	
	SKAddr 430 120							
	Stall torque	Cn0	[Nm]				560	
	Peak torque	Cmax	[Nm]		1649	1649		
	Torque constant $\pm 5\%$	Kt	[Nm/Arms]		37.9	68.4		
	Stall current	In0	[Arms]		10.7	5.94		
	Peak current	I cmax	[Arms]		43.5	24.1		
	Phase/phase res. $\pm 5\%$ a 20°C	Rff	[Ohm]		2.42	7.80		
	Phase/phase inductance	Lff	[mH]		57	183		
	Electrical time constant	Te	[msec]		23.6	23.5		
	Power loss	Pd	[W]				620	
	Thermal resistance	Rth	[°C/W]				0.17	
	Motor constance	Km	[Nm/√W]				22.5	
	Cogging torque	Tcog	[Nm]				16.8	
	Insulation class						F	
THERMAL PROTECTION	Type of thermal cut-off						N C : normally closed	
	Rated voltage	Vn	[Vac]				250	
	Rated current	In	[A]				2.5	
	Operative temperature	Tn	[°C]				140 °C $\pm 5\%$	
	Resetting temperature	Tr	[°C]				100 °C $\pm 15\%$	
	Operative time		[ms]				1	
	Insulation class						F	

DATASHEET n°: 1B4105020502GB

SERIES

TORQUE [Nm]

SKA_{ddr} 430 150/180

660/760

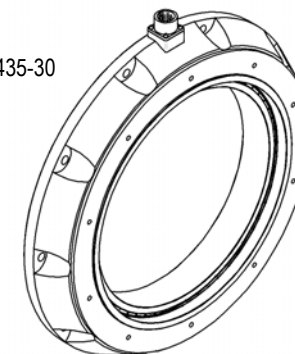
	SYMBOLS	UNITS	WINDING TYPE									
				54	55							
MOTOR SPEED	Vn drive 145 V (ac) 3phase	[rpm]		-	-							
	Vn drive 220 V (ac) 3phase	[rpm]		50	-							
	Vn drive 380 V (ac) 3phase	[rpm]		90	50							
MOTOR RATINGS	COMMON RATINGS											
	Voltage constant $\pm 5\%$	Ke	[Vrms/krpm]	3150	5700							
	Poles number	P	[mm]							56		
	Temperature range	Tr	[°C]							0 ÷ 40°		
	SKAddr 430 150											
	Stall torque	Cn0	[Nm]							660		
	Peak torque	Cmax	[Nm]		2025	2025						
	Torque constant $\pm 5\%$	Kt	[Nm/Arms]		37.9	68.4						
	Stall current	In0	[Arms]		12.7	7.00						
	Peak current	I cmax	[Arms]		53.4	29.6						
	Phase/phase res. $\pm 5\%$ a 20°C	Rff	[Ohm]		1.88	6.21						
	Phase/phase inductance	Lff	[mH]		46.2	152						
	Electrical time constant	Te	[msec]		24.6	24.5						
	Power loss	Pd	[W]							680		
	Thermal resistance	Rth	[°C/W]							0.15		
	Motor constance	Km	[Nm/√W]							25.3		
	Cogging torque	Tcog	[Nm]							19.8		
	Insulation class									F		
	SKAddr 430 180											
	Stall torque	Cn0	[Nm]							760		
	Peak torque	Cmax	[Nm]			2400						
	Torque constant $\pm 5\%$	Kt	[Nm/Arms]			68.4						
	Stall current	In0	[Arms]			8.06						
	Peak current	I cmax	[Arms]			35.1						
	Phase/phase res. $\pm 5\%$ a 20°C	Rff	[Ohm]			5.14						
	Phase/phase inductance	Lff	[mH]			129						
	Electrical time constant	Te	[msec]			25.1						
	Power loss	Pd	[W]							745		
	Thermal resistance	Rth	[°C/W]							0.14		
	Motor constance	Km	[Nm/√W]							27.8		
	Cogging torque	Tcog	[Nm]							22.8		
	Insulation class									F		
THERMAL PROTECTION	Type of thermal cut-off									N C : normally closed		
	Rated voltage	Vn	[Vac]							250		
	Rated current	In	[A]							2.5		
	Operative temperature	Tn	[°C]							140 °C $\pm 5\%$		
	Resetting temperature	Tr	[°C]							100 °C $\pm 15\%$		
	Operative time		[ms]							1		
	Insulation class									F		

DATASHEET n°: 1B4105030502GB

SKAddr 430 *Power Elements*

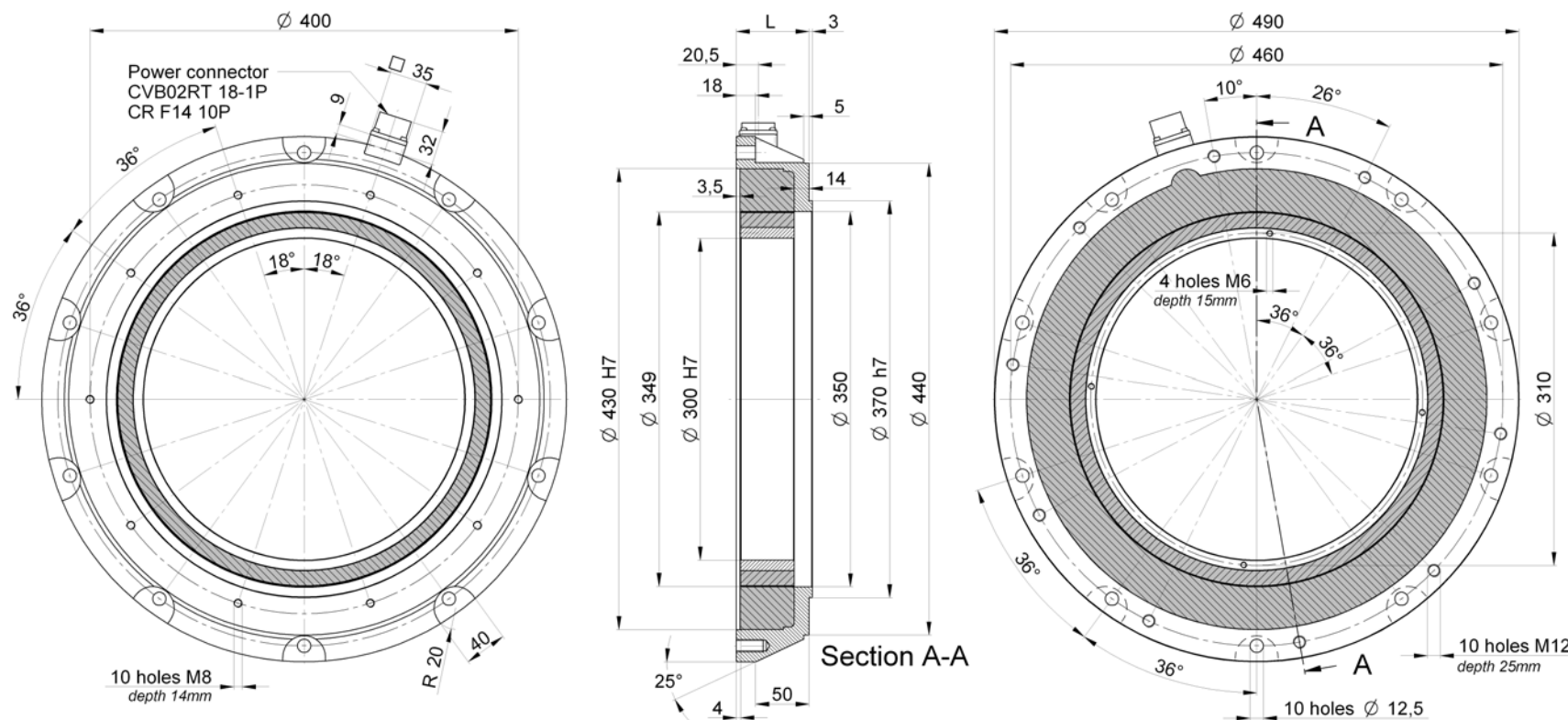
MECHANICAL DATA			430-30	430-60	430-90	430-120	430-150	430-180
Motor lenght	L	[mm]	60	90	120	150	180	210
Motor weight	Pm	[Kg]	26	44.2	62.4	78.5	94.6	110.8
Stator weight	Ps	[Kg]	20.5	35.1	49.7	65.5	75.3	88
Rotor inertia	Jr	[Kg m ²]	0.59	0.97	1.34	1.69	2.04	2.4
Max theorethical acceleration	α_{max}	[rad s ²]	810	890	918	950	961	970

435-30



Wiring diagram

A = Phase U B = Phase V C = Phase W F = Thermal Prot. G = Thermal Prot.



DIRECT DRIVE TORQUE MOTORS