

BRAKE FEATURES

		SKA DDR 090	
Static Torque @20°C	Nm	2	4,5
Moment of Inertia	Kg cm ²	0,050	0,220
Rated Current	A	0,46	0,5
Input Power	W	11	12
Engaging Time	ms	6	7
Release Time	ms	25	35
Operating Voltage		24 Vdc +6% - 10% Stabilized	

		SKA DDR 148	
Static Torque @20°C	Nm	18	36
Moment of Inertia	Kg cm ²	1,9	6,21
Rated Current	A	1	1,08
Input Power	W	24	26
Engaging Time	ms	10	22
Release Time	ms	50	90
Operating Voltage		24 Vdc +6% - 10% Stabilized	

		SKA DDR 245 - 335 - 430	
Static Torque @20°C	Nm	72	
Moment of Inertia	Kg cm ²	15,3	
Rated Current	A	1,66	
Input Power	W	40	
Engaging Time	ms	7	
Release Time	ms	140	
Operating Voltage		24 Vdc +6% - 10% Stabilized	

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THERMAL PROTECTION FEATURES

PT 1000

Thermal protection features

Type	PT 1000-R8/2-2F
Sensor	Sensor RTD (Platinum Resistance Temperature Detectors) according to DIN EN 60751
Temperature range	from -40 °C to 250 °C
Accuracy	$\Delta t = \pm (0,3 + 0,04t) \text{ } ^\circ\text{C}$

°C	Resistance (Ω)
-40	843
-30	882
-20	922
-10	961
0	1000
10	1039
20	1078
30	1117
40	1155
50	1194
60	1232
70	1271
80	1309
90	1347
100	1385
110	1423
120	1461
130	1498
140	1536
150	1573
160	1611

WIRING MOTOR CONNECTIONS

CONNECTORS WITH 29 CONNECTION and PT1000 on power

POWER CONNECTOR

FEEDBACK CONNECTOR

RESOLVER

HIPERFACE ABSOLUTE ENCODER

PIN	FUNCTION	PIN	FEEDBACK FUNCTION	PIN	FEEDBACK FUNCTION
1	Phase U	1	-	1	-
2	PE	2	-	2	-
3	Phase W	3	-	3	0 Vdc
4	Phase V	4	-	4	7-12 Vdc
A	Brake 24V (#)	5	/Sin	5	/Sin
B	Brake 0V (#)	6	Sin +	6	Sin
C	PT 1000 (+)	7	/Ref	7	/DATA
D	PT 1000 (-)	8	Ref	8	DATA
(#) Optional		9	-	9	-
		10	Shield	10	Shield
		11	/Cos	11	/Cos
		12	Cos	12	Cos
		13	-	13	-
		14	-	14	-
		15	-	15	-
		16	-	16	-
		17	-	17	-

CONNECTORS WITH 29 CONNECTION and PT1000 on signal

POWER CONNECTOR

FEEDBACK CONNECTOR

RESOLVER

HIPERFACE ABSOLUTE ENCODER

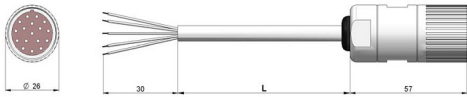
PIN	FUNCTION	PIN	FEEDBACK FUNCTION	PIN	FEEDBACK FUNCTION
1	Phase U	1	-	1	-
2	PE	2	-	2	-
3	Phase W	3	-	3	0 Vdc
4	Phase V	4	-	4	7-12 Vdc
A	Brake 24V (#)	5	/Sin	5	/Sin
B	Brake 0V (#)	6	Sin +	6	Sin
C		7	/Ref	7	/DATA
D		8	Ref	8	DATA
(#) Optional		9	-	9	-
		10	Shield	10	Shield
		11	/Cos	11	/Cos
		12	Cos	12	Cos
		13	-	13	-
		14	-	14	-
		15	-	15	-
		16	PT 1000 (+)	16	PT 1000 (+)
		17	PT 1000 (-)	17	PT 1000 (-)

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DYNAMIC LAYING CABLES SPECIFICATIONS


SIGNAL CABLES for ALL SERVOMOTORS MODELS


MOTOR SIDE PIN	COLOUR	Signal free wire cable for general purpose	For cable order	
1	Grey/Pink		Lenght (mm)	Order code
2	Red		5000	003108011110
3	Blue1		10000	003108011112
4	Red1			
5	Yellow			
6	Green			
7	Grey			
8	Pink			
9	White/Green			
10	Shield2			
11	Black			
12	Violet			
13	Red/Blue			
14	Brown/Green			
15	Blue			
16	Brown			
17	White			

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DYNAMIC LAYING CABLES SPECIFICATIONS

SIGNAL CABLES for ALL SERVOMOTORS MODELS connection 29


MOTOR SIDE PIN	COLOUR	FUNCTION	DRIVE SIDE PIN	Resolver signal SUMITOMO cable for FLEXI PRO	For cable order	
5	Black/Blue	RefSin	19		Lenght (mm)	Order code
6	Blue	Sin	6		5000	003108011100
7	Black/Green	Ref-	21		10000	003108011102
8	Green	Ref+	8			
10	Shield	SHIELD	26			
11	Black/Red	RefCos	20			
12	Red	Cos	7			
16	White	PT 1000 (+)	12			
17	Black/White	PT 1000 (-)	25			

MOTOR SIDE PIN	COLOUR	FUNCTION	DRIVE SIDE PIN	Hiperface absolute encoder signal SUMITOMO cable for FLEXI PRO	For cable order	
17	White	PT 1000 (+)	25		Lenght (mm)	Order code
16	Brown	PT 1000 (-)	12		3000	003108011123
12	Pink	Cos	10		5000	003108020152
11	Grey	Cos-	23		10000	003108020153
10	Shield2	SHIELD	26			
8	Violet	Data+	1			
7	Black	Data-	14			
6	Green	Sin+	9			
5	Yellow	Sin-	22			
4	Red1	7-12V	18			
3	Blue1	GND	24			

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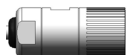

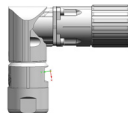
DYNAMIC LAYING CABLES SPECIFICATIONS

POWER CABLES

FUNCTION	PIN/M23	Power free wire cable	SKA DDR 090 - 148 - 245		SKA DDR 335 - 430	
Phase U	1		Lenght (mm)	Order code	Lenght (mm)	Order code
Phase V	4		3000	003108007314	3000	003108005080
Phase W	3		5000	003108007302	5000	003108005104
PE	2		10000	003108007316	10000	003108005106
N.C.	A					
N.C.	B					
PT 1000 (+)	C					
PT 1000 (-)	D					

Power free wire cable with M23 90° connector		SKA DDR 090 - 148 - 245		SKA DDR 335 - 430	
	Lenght (mm)	Order code	Lenght (mm)	Order code	
	3000	003108020075	3000	003108005108	
	5000	003108020076	5000	003108020014	
	10000	003108020077	10000	003108005110	

FLYING CONNECTORS M23

<p>Straight power connector pin included BSTA108NN00580236000 + 4 PIN 60.003.11 FM/2mm CRIMP,0,35-2,5 SPRING + 4 PIN 60.001.11 FM/1mm CRIMP,0,14-1 SPRING</p>	order code 007117000472		
<p>Straight signal connenctor pin included ASTA014NN00410235000 17p/FM + 17 PIN 60.011.11 FM/1mm CRIMP,0,14-1</p>	order code 007117000462		
<p>90° power connector pin included BSDA108NN00420200000 + 4 PIN 60.003.11 FM/2mm CRIMP,0,35-2,5 SPRING + 4 PIN 60.001.11 FM/1mm CRIMP,0,14-1 SPRING</p>	order code 007117002055		
<p>90° signal connenctor pin included ASDA014NN00480150000 + 17 PIN 60.011.11 FM/1mm CRIMP,0,14-1</p>	order code 007117002056		

The FLEXI PRO series features a high-performance digital servo drive offering advanced functionality, high power density and seamless commissioning in a superior package. The innovative hardware design and software algorithms boast outstanding performance in one of the smallest footprints in the market.

FEATURES

- > **MULTIFEEDBACK**
- > **DIGITAL I/O: 11 DIGITAL INPUT AND 6 OUTPUT CUSTOMIZABLE WITH SEVERAL BUILT-IN FUNCTIONS AND INTERNAL SCRIPT**
- > **CONTROL: HD ADVANCED CONTROL LOOP WITH ADAPTIVE GAINS**
- > **SERVO MODES: TORQUE, VELOCITY AND POSITION WITH S-CURVE PROFILE**
- > **STO SIL 2**
- > **INTEGRATED SUPPORT FOR EXTERNAL BRAKING RESISTOR**
- > **COMPLETE MOTOR DATABASE**

BENEFITS

- > **INTELLIGENT AUTO-TUNING - MINIMIZES POSITION ERROR AND SETTLING TIME TO ALMOST ZERO**

Engineering experience and expertise has been implemented in a sophisticated Auto-Tuning function that performs optimal configurations for a difference-making performance

- > **NEW CURRENT LOOP DESIGN - ACHIEVES AN INDUSTRY-LEADING FREQUENCY RESPONSE OF UP TO 3.0 KHZ**

Rapid control loop sample rates and flexible filtering options provide a faster response, and ensure maximum machine accuracy and throughput

- > **INNOVATIVE ANTI-VIBRATION ALGORITHM - ELIMINATES MECHANICAL RESONANCE**

An active-non-linear algorithm eliminates vibration in highly flexible resonant systems. Commissioning is easy since only few gain parameters are required



INTERFACE

- > **USB WITH DAISY CHAIN CAPABILITY**
- > **PULSE & DIRECTION**
- > **ANALOG VELOCITY AND TORQUE COMMAND $\pm 10V$**

CANopen

EtherCAT

PROFI[®]
INDUSTRIAL ETHERNET
NET

FLEXIBLE AND COMPREHENSIVE

PRODUCT DATA

FEATURE	UNITS	FPRO 1D5	FPRO 003	FPRO 4D5	FPRO 006	FPRO 008	FPRO 010	FPRO 013	FPRO 020	FPRO 024	FPRO 003	FPRO 006	FPRO 012	FPRO 024	FPRO 030		
Input Voltage	VAC	120/240 VAC Single Phase			240 VAC Single or Three Phase					120/240 VAC Three Phase		400/480 VAC Three Phase					
Max Continuous power output	W	350	700	1000	1400	1800	2300	3000	4500	5500	1100	2200	4400	9000	11000		
Efficiency at rated Power	%	> 90															
Auxiliary Supply Voltage		120 .. 240 Vac										24 Vdc					
Continuous current rms	A rms	1,5	3	4,5	6	8	10	13	20	24	3	6	12	24	30		
Peak current	A rms	4,5	9	18	18	28	28	28	48	48	9	18	24	72	90		
Ambient Operating Temperature	°C	0 to + 45															
Maximum Humidity	%	90% not condensing															
Vibration		0.6G 10-60 Hz															
Shock		1 G															
Mounting Method		Wall Mount															
Dimensions	WxDxH mm	43x144x150			55x167x150			62x182x170			117x194x234		110x193x163		FPRO 012 117x194x234		
		FPRO 024 - FPRO 030 147x209x353															
Weight	Kg	0,7	0,75	0,97	0,97	1,15	1,15	1,15	3,2	3,2	2,1	2,1	3,2	10,5	10,5		

FLEXI PRO SUITE

> SIMPLIFIES SETUP, TESTING AND TUNING

User-friendly FLEXI SUITE software provides step-by-step guidance through the setup and tuning process. Setup and testing are intuitive thanks to auto-tuning functions and graphic representations of control loops

