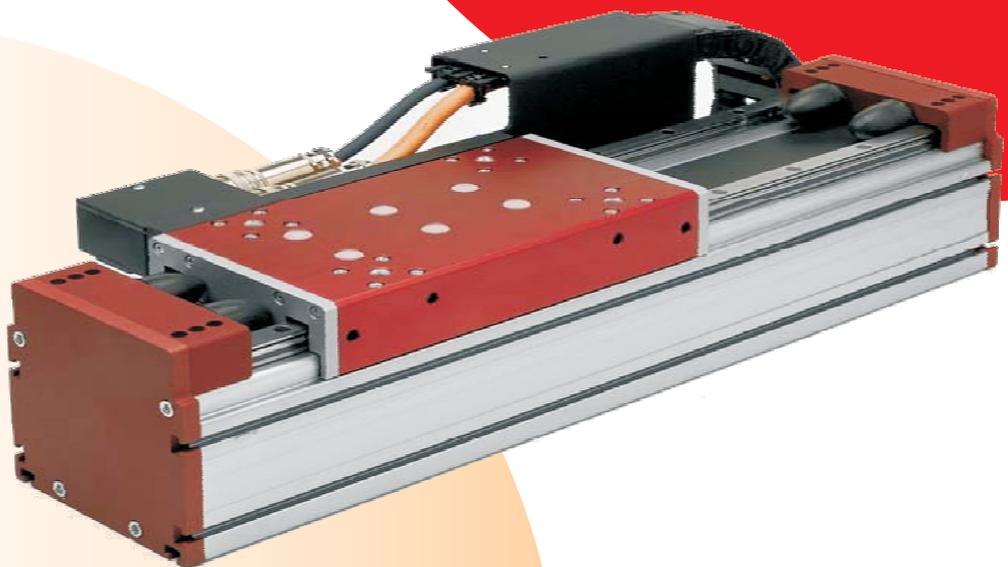


SKA ***COMPACT*** ***ALL IN ONE*** **Linear Axes**



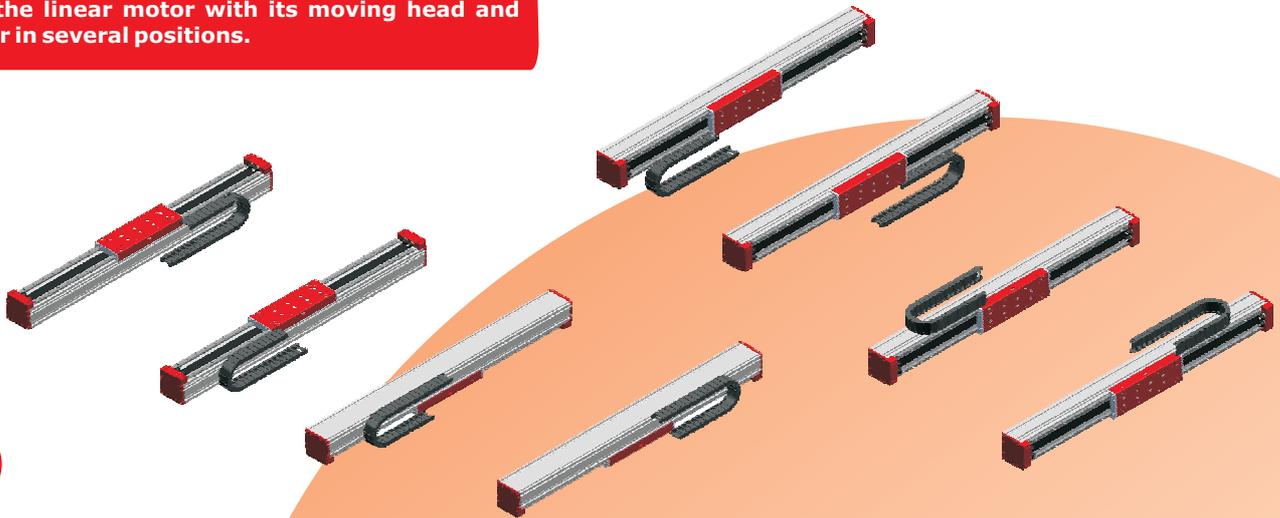
SKA COMPACT

Cutting-edge **all in one** linear axis based on iron core technology. A range of three sizes with aluminium carrying structure. The power components, moving coil and magnetic track, are preassembled and equipped with thermal sensor, moving head, linear guideways, encoder, stroke stopper, cables and cable carrier. A flexible motor payload capacity allows its fitting on any extruded structure side and in any direction.

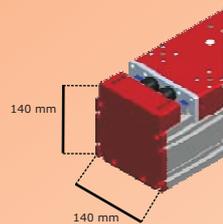
- 275N and 550N continuous force (825N and 1650N peak force)
- 5m/s speed
- 5g (50m/s²) acceleration
- 0,01 to 0,1 mm accuracy
- All mechanical components are completely sealed off for a high degree of protection
- Optional safety brake
- Feedback options: optical or magnetic encoder, Sin Cos, TTL and absolute encoder, Hall Sensor.



SKA COMPACT: the linear axis flexibility allows to employ the linear motor with its moving head and cable carrier in several positions.



SKA COMPACT



		SKA C 140.275	SKA C 140.550
Peak Force	(N)	825	1650
Continuous Force	(N)	275	550
Speed	(m/s)	5	5
Acceleration	(m/s ²)	50	50
Stroke		500 ÷ 3000 mm	

How to order SKA COMPACT

SKA C 140.275 15 1000 00 007 01

Series name Model Winding Stroke Hall Sensors Encoder Feedback Connectors

140.275
140.550

See data sheet

00 Without Hall Sensor
01 With Hall Sensor

006 TTL magnetic encoder 2 μm/P 2mm
Max speed 2m/sec

007 TTL magnetic encoder 10 μm/P 2mm
Max speed 4m/sec

008 TTL optical encoder 5 μm/P 200μm
Max speed 9m/sec

015 Sin-Cos optical encoder P 40μm
Max speed 10m/sec

019 TTL optical encoder 1 μm/P 200μm
Max speed 3m/sec

021 Sin-Cos optical encoder P 200μm
Max speed 10m/sec

024 TTL magnetic encoder 1 μm/P 2mm
Max speed 2m/sec

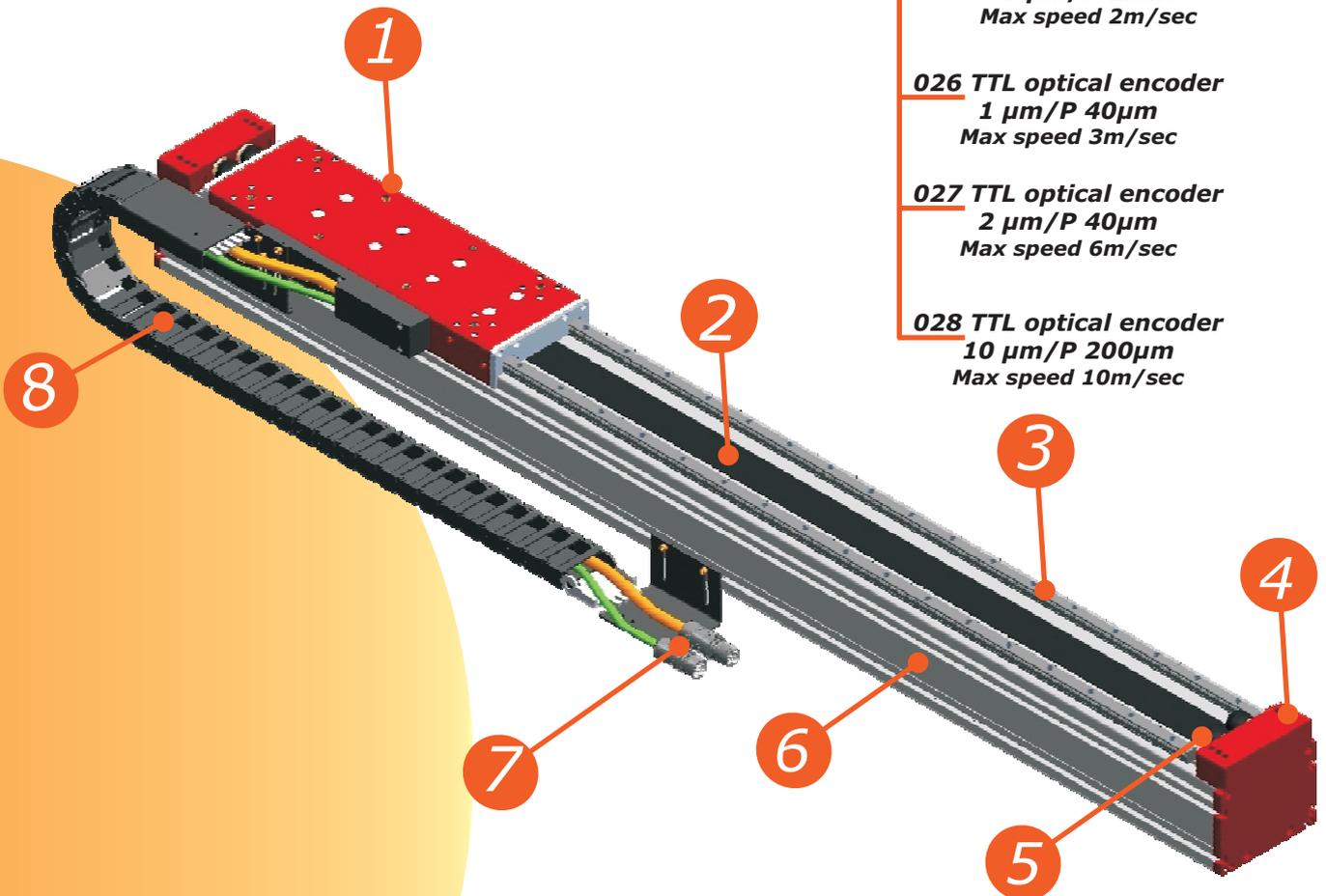
026 TTL optical encoder 1 μm/P 40μm
Max speed 3m/sec

027 TTL optical encoder 2 μm/P 40μm
Max speed 6m/sec

028 TTL optical encoder 10 μm/P 200μm
Max speed 10m/sec

01 Double Connector M23

- ① Moving head
- ② Protection cover
- ③ Linear guideways
- ④ Stroke stopper
- ⑤ Rubber bumpers
- ⑥ Aluminium extruded profile
- ⑦ Connectors
- ⑧ Cable carrier chain with dynamic laying cables



SERIES

SKA COMPACT

TRANSDUCER SERIES PAGE 1

TRANSDUCERS

TTL OPTICAL ENCODER P200 μ m (FEEDBACK ORDER NR. 008 - 019 - 028)			
RATED VOLTAGE	Vn	[Vdc]	5 \pm 5%
RATED CURRENT	In	[mA]	120
MAX OUTPUT FREQUENCY	F	[MHz]	5
WORKING TEMPERATURE	Tn	[°C]	0° \div + 50°
ELECTRONIC TYPE			LINE DRIVER AM 26 LS32
ZERO PULSE			STANDARD
RESOLUTION	R	[μ m]	1 - 5 - 10
ACCURACY	A	[μ m]	\pm 30 μ m/m
OPTICAL LINE PITCH	P	[μ m]	200
MAX SPEED	S	[m/s]	It depends of resolution

SIN COS OPTICAL ENCODER P200 μ m (FEEDBACK ORDER NR. 021)			
RATED VOLTAGE	Vn	[Vdc]	5 \pm 5%
RATED CURRENT	In	[mA]	120
MAX OUTPUT FREQUENCY	F	[KHz]	50
WORKING TEMPERATURE	Tn	[°C]	0° \div + 50°
SIGNAL TYPE		[Vdc]	1 Vpp
ZERO PULSE			STANDARD
RESOLUTION	R	[μ m]	Function of the interpolator
ACCURACY	A	[μ m]	\pm 30 μ m/m
OPTICAL LINE PITCH	P	[μ m]	200
MAX SPEED	S	[m/s]	It depends of interpolator

TTL OPTICAL ENCODER P40 μ m (FEEDBACK ORDER NR. 026 - 027)			
RATED VOLTAGE	Vn	[Vdc]	5 \pm 5%
RATED CURRENT	In	[mA]	120
MAX OUTPUT FREQUENCY	F	[MHz]	5
WORKING TEMPERATURE	Tn	[°C]	0° \div + 50°
ELECTRONIC TYPE			LINE DRIVER AM 26 LS32
ZERO PULSE			STANDARD
RESOLUTION	R	[μ m]	1 - 2
ACCURACY	A	[μ m]	\pm 5 μ m/m
OPTICAL LINE PITCH	P	[μ m]	40
MAX SPEED	S	[m/s]	It depends of resolution

SERIES

SKA COMPACT

TRANSDUCER SERIES PAGE 2

SIN COS OPTICAL ENCODER P40µm (FEEDBACK ORDER NR. 015)

RATED VOLTAGE	Vn	[Vdc]	5 ± 5%
RATED CURRENT	In	[mA]	120
MAX OUTPUT FREQUENCY	F	[KHz]	250
WORKING TEMPERATURE	Tn	[°C]	0° ÷ + 50°
SIGNAL TYPE		[Vdc]	1 Vpp
ZERO PULSE			STANDARD
RESOLUTION	R	[µm]	Function of the interpolator
ACCURACY	A	[µm]	± 5 µm/m
OPTICAL LINE PITCH	P	[µm]	40
MAX SPEED	S	[m/s]	It depends of interpolator

TTL MAGNETIC ENCODER (FEEDBACK ORDER NR. 006 - 007 - 024)

RATED VOLTAGE	Vn	[Vdc]	5 ± 2.5%
RATED CURRENT	In	[mA]	200
MAX OUTPUT FREQUENCY	F	[KHz]	500
WORKING TEMPERATURE	Tn	[°C]	0° ÷ + 50°
ELECTRONIC TYPE			LINE DRIVER AM 26 LS32
ZERO PULSE			STANDARD
RESOLUTION	R	[µm]	1 - 2 - 10
ACCURACY	A	[mm]	± [0.025+(0.02*L)] (L: stroke length in mt)
MAGNETIC TAPE PITCH	P	[mm]	2
MAX SPEED	S	[m/s]	It depends of resolution

HALL SENSOR

RATED VOLTAGE	Vn	[Vdc]	5 ÷ 24
RATED CURRENT	In	[mA]	100
WORKING TEMPERATURE	Tn	[°C]	-20° ÷ +100°
N° OF COMMUTATION SIGNALS			3 Common Mode 5v

TRANSDUCERS

IRON CORE LINEAR AXES "ALL IN ONE"



SERIES

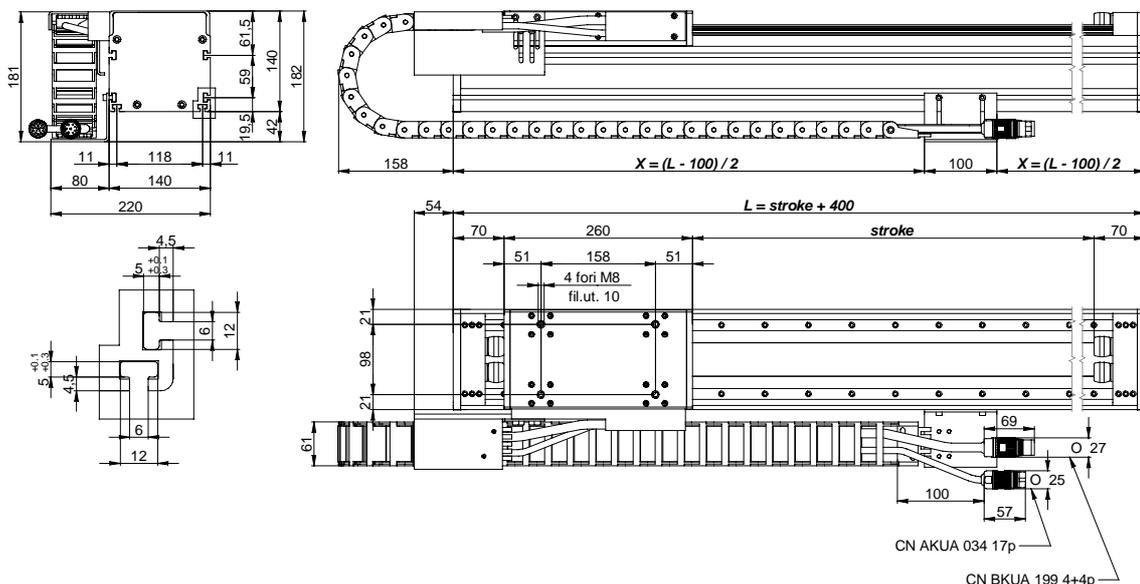
SKA COMPACT 140.275

FORCE [N]

275

	SINEWAVE FORM	SYMBOLS	UNITS	WINDING TYPE			
				15	16	17	31
MOTOR SPEED	Vn drive 3phase 230 V (ac)		[m/s]	3	2	1.5	1
	Vn drive 3phase 400 V (ac)		[m/s]	5	4	3	2
FEATURES							
	Voltage constant ± 5%	Ke	[Vrms/m/s]	55	72	97	116
	Pole Pitch	P	[mm]	24			
	Temperature range	Tr	[°C]	0 ÷ 40°			
SKAC. 140.275							
MOTOR RATINGS	Continuous force (0 m/s)	Fn0	[N]	275			
	Peak force	Fmax	[N]	825			
	Force constant ± 5%	Kf	[N/Arms]	91	121	161	192
	Rated current (0 m/s)	In0	[Arms]	3.0	2.28	1.71	1.43
	Peak current	I fmax	[Arms]	12.0	9.13	6.84	5.7
	Phase/phase res. ± 5% a 20°C	Rff	[Ohm]	4.9	8.8	15	23
	Phase/phase inductance	Lff	[mH]	68	120	206	325
	Electrical time constant	Te	[msec]	13.8			
	Attractive force	Fm	[N]	1202			
	Dissipated power	Pd	[W]	96			
	Thermal resistance	Rth	[°C/W]	0.94			
	Motor constant	Km	[N/√W]	28.1			
	Moving head weight		[kg]	7			
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]	130 °C ± 5%			
	Resetting temperature	Tr	[°C]	100 °C ± 15°C			
	Operative time		[ms]	1			
	Insulation class			F			

SKA COMPACT 140.275
OVERALL DIMENSIONS



IRON CORE LINEAR AXES "ALL IN ONE"



SERIES

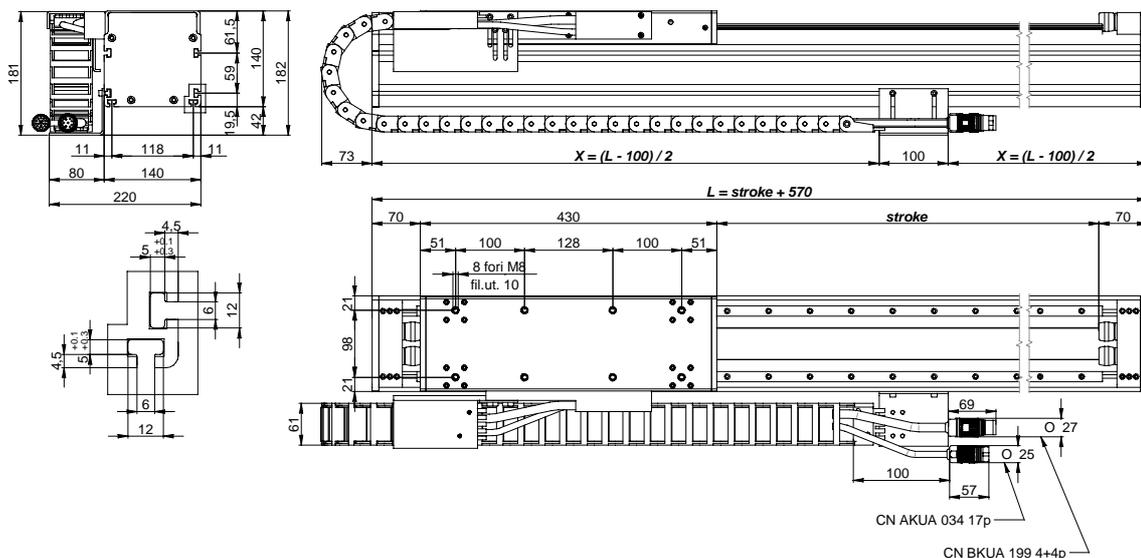
SKA COMPACT 140.550

FORCE [N]

550

	SINEWAVE FORM	SIMBOLS	UNITS	WINDING TYPE		
				16	17	31
MOTOR SPEED	Vn drive 3phase 230 V (ac)		[m/s]	2	1.5	1
	Vn drive 3phase 400 V (ac)		[m/s]	4	3	2
MOTOR RATINGS	FEATURES					
	Voltage constant ± 5%	Ke	[Vrms/m/s]	72	97	116
	Pole Pitch	P	[mm]	24		
	Temperature range	Tr	[°C]	0 ÷ 40°		
	SKAC. 140.550					
	Continuous force (0 m/s)	Fn0	[N]	550		
	Peak force	Fmax	[N]	1650		
	Force constant ± 5%	Kf	[N/Arms]	113	151	192
	Rated current (0 m/s)	In0	[Arms]	4.87	3.65	2.86
	Peak current	I fmax	[Arms]	19.47	14.59	11.4
	Phase/phase res. ± 5% a 20°C	Rff	[Ohm]	4.4	7.5	12
	Phase/phase inductance	Lff	[mH]	60	103	162
	Electrical time constant	Te	[msec]	13.8		
	Attractive force	Fm	[N]	2405		
	Dissipated power	Pd	[W]	192		
Thermal resistance	Rth	[°C/W]	0.47			
Motor constant	Km	[N/√W]	39.7			
Moving head weight		[kg]	12			
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]	130 °C ± 5%		
	Resetting temperature	Tr	[°C]	100 °C ± 15°C		
	Operative time		[ms]	1		
	Insulation class			F		

SKA COMPACT 140.550
OVERALL DIMENSIONS

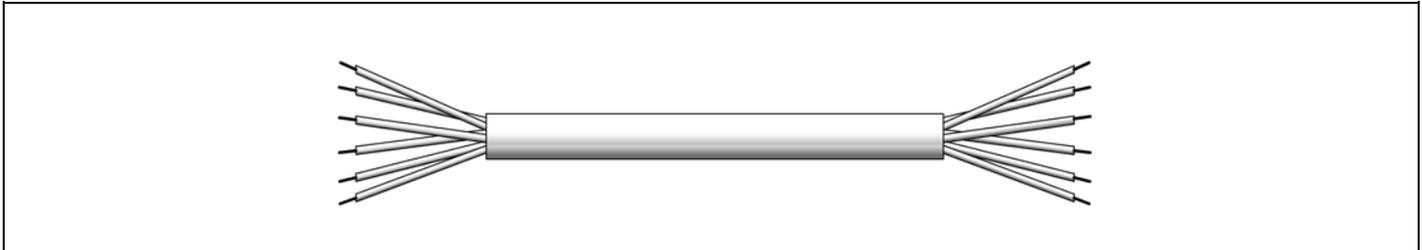


SERIES

SKA COMPACT

POWER CABLE DATA

MOTOR POWER CABLE + THERMAL PROTECTION



TECHNICAL DATA

<p>Description:.....FE(4G1,5+4x0,25)ccST/R-Pu Moving speed.....100 m/min Maximum acceleration.....4 m/s² Outer Ø.....9 ± 0.2mm Minimum bending radius.....10 x Ø Operating temperature :.....-20°C +80°C static application -5°C +80°C dynamic laying Rated voltage:.....1000 V Test voltage:.....3kV Max conductor resistance (20°): 0.25mm².....80 Ω/km 1.5 mm².....13,3 Ω/km</p>	<p>Insulation: polyolefin, red, black color (Ø outer 1,25mm) UNEL grey, black, brown, yellow/green (Ø outer 2,4mm) Jacket : polyurethane compound, black RAL 9005 glazed Conductor : electrolytic copper braid not tinned – 2 wires 0.25 mm² - 4 wires 1,5 mm²· Class 5 IEC 60228 Shield jacket: full tinned copper covered ≥85% Shield wire: tinned copper – 1 wire 0.5 mm²</p>
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UL COMPLIANCE

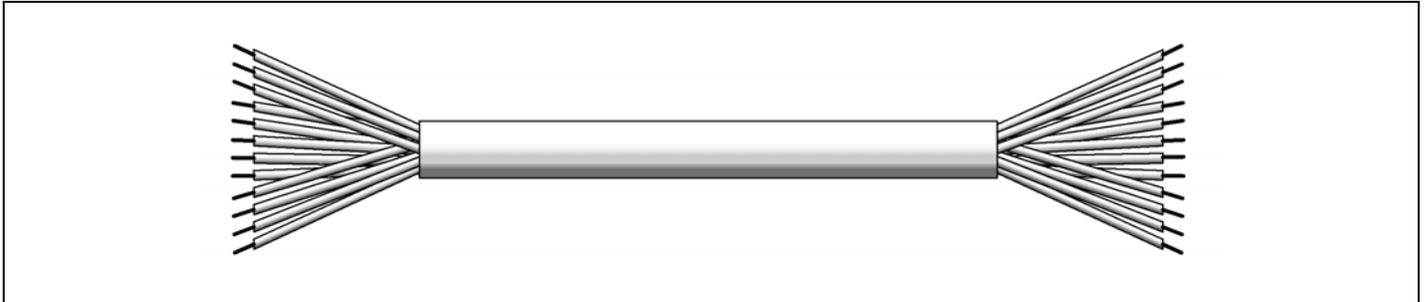
NORM UL 758 and CSA C22.2 No. 210.2

SERIES

SKA COMPACT

SIGNAL CABLE

FEEDBACK CABLE



TECHNICAL DATA

Description :.....FE(8x2xAWG 28)ccST/R-Pu	Insulation: polyolefin, couple colors DIN 47100, Ø outer 0.85mm
Maximum speed.....100 m/min	Jacket : polyurethane compound, black RAL 9005 glazed
Maximum acceleration4 m/s ²	Conductor : electrolytic copper braid not tinned, 16 wires (8 twisted pairs), AWG28 – 0.088mm ²
Outer Ø:.....7 ± 0.2	Shield jacket: full tinned copper, covered ≥85%
Minimum bending radius.....10 x Ø	Shield wire: tinned copper – 1 wire AWG 28
Operating temperature:.....-20°C +80°C static application	Insulation resistance: power: ≥20 Mohm. Km
.....-5°C +80°C dynamyc laying	
Rated voltage:.....300 V	
Conductor resistance:..... ≤ 215 Ω/km	
Characteristic impedance :.....100 Ω	
Capacitance:.....50 pF/m	
Nominal velocity of propagation :.....66%	

UL COMPLIANCE

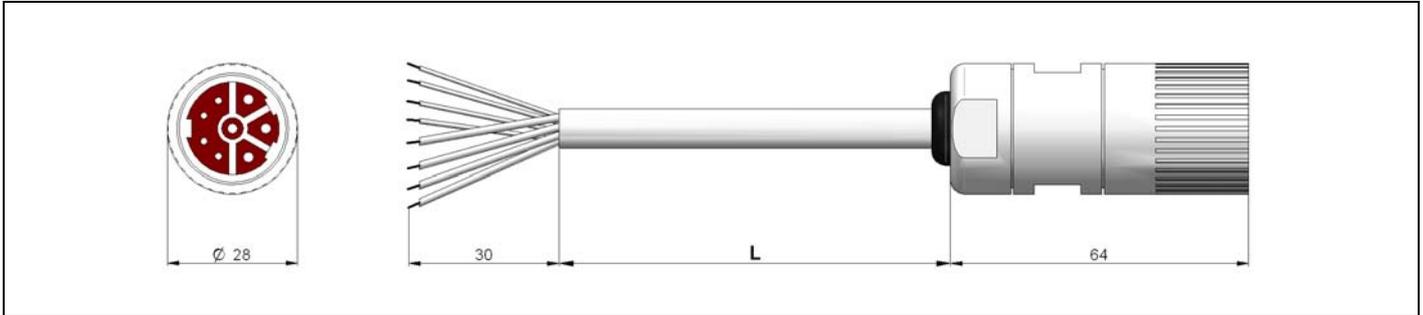
NORM UL 758 and CSA C22.2 No. 210.2

SERIES

SKA COMPACT

POWER CABLE 02

Power Cable 8pin M23 – Flying leads



CONNECTION		
4+4 pin Power		
<i>Pin</i>	<i>FUNCTIONS</i>	<i>COLOR</i>
1	Phase U	Grey
2	PE	Yellow/Green
3	Phase W	Brown
4	Phase V	Black
Brake (optional)		
<i>Pin</i>	<i>FUNCTIONS</i>	<i>COLOR</i>
A	+24 Vdc	Red
B	0	Black
Thermal Protection (optional)		
<i>Pin</i>	<i>FUNCTIONS</i>	<i>COLOR</i>
C	PT / (PTC+)	
D	PT / (PTC-)	

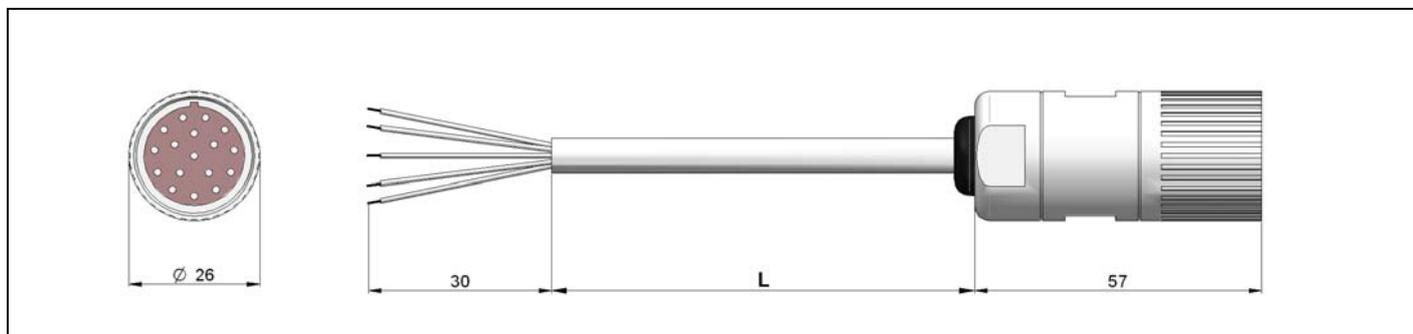
<i>Length mm</i>	<i>Code</i>
3000	003108010650
5000	003108010652
10000	003108010654

SERIES

SKA COMPACT

SIGNAL CABLE 05

Feedback cable 17pin M23 – Flying Leads



CONNECTION			
Cn 17 pin Feedback			
Pin	Color	Encoder TTL	Encoder SinCos
		FUNCTIONS	FUNCTIONS
1	GREY-PINK	HALL W	HALL W
2	WHITE-YELLOW	HALL U	HALL U
3	WHITE	0V	0V
4	BROWN	+5V	+5V
5	YELLOW	A/	Sin -
6	GREEN	A	Sin +
7	GREY	Z/	Ref -
8	PINK	Z	Ref +
9	WHITE-GREEN	HALL V	HALL V
10	Shield wire	Shield	Shield
11	BLACK	B/	Cos -
12	VIOLET	B	Cos +
13	RED-BLUE	HALL W/	HALL W/
14	BROWN-GREEN	HALL V/	HALL V/
15	YELLOW-BROWN	HALL U/	HALL U/
16	-	-	-
17	-	-	-

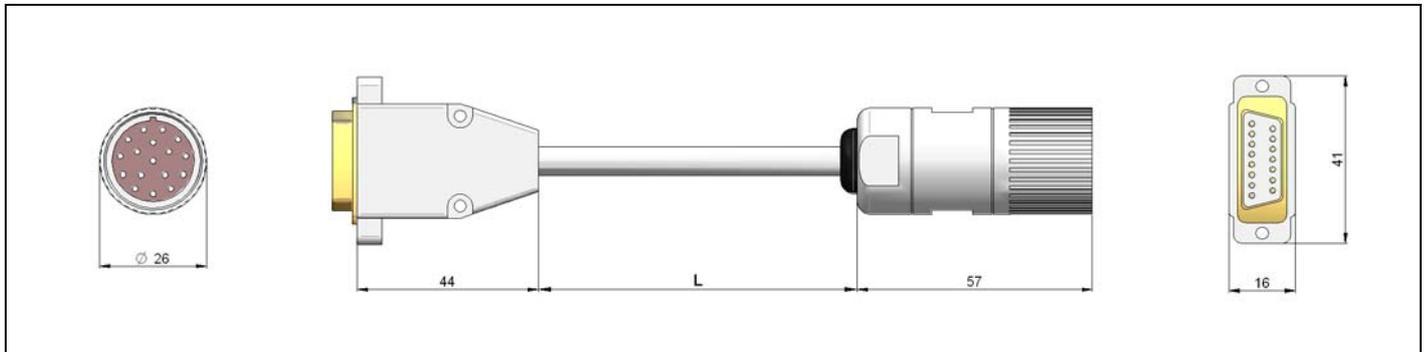
Length mm	Code
3000	003108010500
5000	003108010502
10000	003108010504

SERIES

SKA COMPACT

SIGNAL CABLE 07

Feedback Cable 17pin M23 -15pin D Type



CONNECTION				
Motor Side		Drive Side		
<i>Pin</i>	<i>Color</i>	<i>Pin</i>	<i>Encoder FUNCTIONS</i>	<i>Encoder SinCos FUNCTIONS</i>
1	GREY-PINK	1	HALL W	HALL W
2	WHITE-YELLOW	2	HALL U	HALL U
3	WHITE	3	0V	0V
4	BROWN	4	+5V	+5V
5	YELLOW	5	A/	Sin -
6	GREEN	6	A	Sin +
7	GREY	7	Z/	Ref -
8	PINK	8	Z	Ref +
9	WHITE-GREEN	10	HALL V	HALL V
10	Shield wire	Case	Shield	Shield
11	BLACK	14	B/	Cos -
12	VIOLET	15	B	Cos +
13	RED-BLUE	-	-	-
14	BROWN-GREEN	-	-	-
15	YELLOW-BROWN	-	-	-

<i>Lenght mm</i>	<i>Code</i>
3000	003108010580
5000	003108010582
10000	003108010584



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