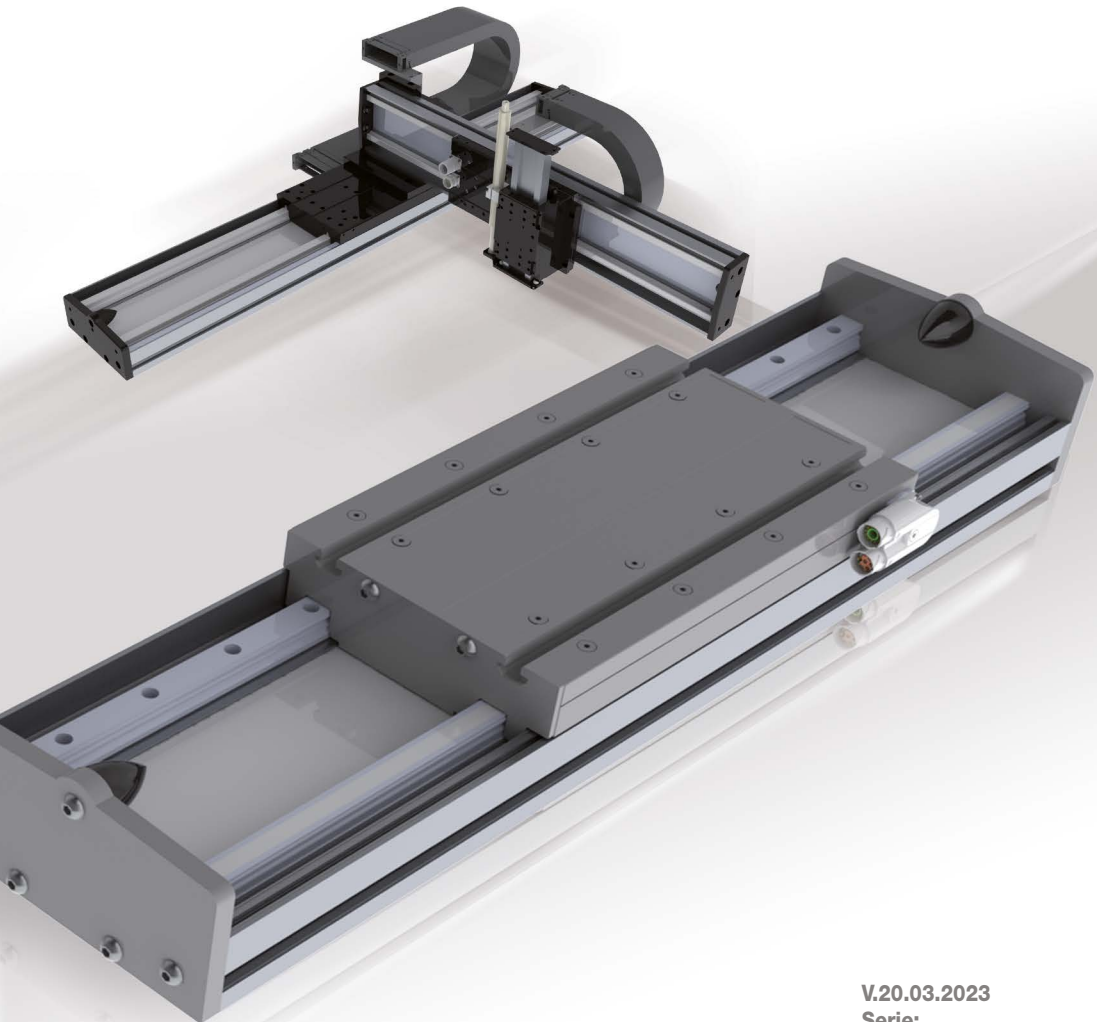


SINADRIVES[®]
DIRECT DRIVE EXPERTS

Accessories



V.20.03.2023

Serie:

MLE/ MLU/ MLZ

MLL/ MLLZ/ MCE

MLS/MLSZ

Table of Contents

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- 10. Axes special pinout**
- 11. Encoder cables special pinout**

SINADRIVES GmbH

Schumannstraße 27 | 60325 Frankfurt am Main
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www.sinadrives.com / info@sinadrives.com

or

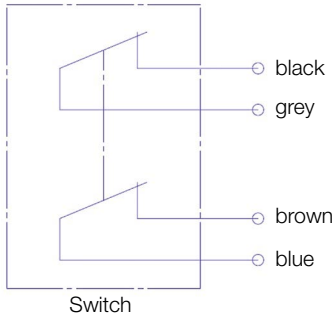
SINADRIVES, SAIN Automation Solutions S.L.

Avinguda Mas Pins, 164 Nave 6
17457 Riudellots de la Selva - Girona Spain
Tel. +34 972 442 452
www.sinadrives.com / info@sinadrives.com

Innovation & Excellence

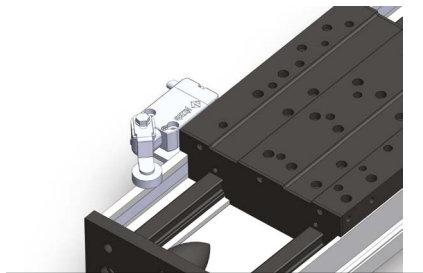
1. Limit switch

The limit switches have two closed contacts. On the image below, you can see the colour coding of the cable:

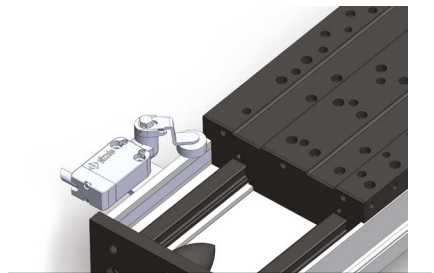


The head of the switch can turn 90, 180 or 270 degrees to reach the necessary position. To turn the head, loosen the 2 screws on the plastic housing. After positioning the head, the lever must now be adjusted to set the angle of actuation. To adjust the lever, loosen the screw on the head and bring it to the desired position.

Ensure the position is correct when mounting the limit switch.
You can see the correct and incorrect position in the following images.



CORRECT!
The carriage cannot damage the switch.



INCORRECT!
The carriage can damage the switch.

2. Power cable

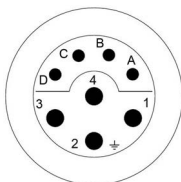
Designations

	KCPS	SS	AAA	BBB	LLL
Sinadrives power cable					
Type					
- SS: Standard (16A)					
- 10: 10A					
- 24: 24A					
Connector A					
- 04A: M23					
- 06A: YTEC					
Connector B					
- 05A: Free leads					
Cable length, in cm					

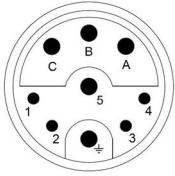
Technical data:

	KCPS-SS	KCPS-10	KCPS-24
Min. bend radius (static):	49mm	37mm	59mm
Min. bend radius (dynamic):	92mm	69mm	110mm
Operating temperature:	-40 .. +80°C	-40 .. +80°C	-40 .. +80°C
Diameter:	12,9mm	9,2mm	14,6mm
Cable cross-section:	4G1,5+2x2x0,75mm ²	4G0,75+2x0,5mm ²	4G2,5+2x2x1mm ²
Outer material:	PUR	PUR	PUR
Resistance:	resistant to oil, hydrolysis and microbic influences (VDE 0472)		
Weight:	0,19Kg/m	0,14Kg/m	0,34Kg/m
Nominal current:	16A	10A	24A
Lifetime:	10M cycles	10M cycles	10M cycles
Maximum acceleration:	50m/s ²	50m/s ²	50m/s ²
Maximum speed:	300m/min	300m/min	300m/min

Standard pinout:



M23	Signal	KCPS-SS-04A-05A KCPS-24-04A-05A	KCPS-10-04A-05A
		Output	Output
1	U	U/L1	U/L1
4	V	V/L2	V/L2
3	W	W/L3	W/L3
2	PE	green/yellow	green/yellow
A	KTY21	7	8R1 (Black)
B	KTY21	8	8R2 (White)
C	PTC+	5	n.c.
D	PTC-	6	n.c.



Y-TEC	Signal	KCPS-SS-06A-05A	KCPS-10-06A-05A
		Output	Output
A	U	U/L1	U/L1
B	V	V/L2	V/L2
C	W	W/L3	W/L3
PE	PE	green/yellow	green/yellow
1	KTY21	7	8R1 (Black)
2	KTY21	8	8R2 (White)
3	PTC+*	5	n.c.
4	PTC+*	6	n.c.

* only if the signal doesn't appear on the encoder connector (either there or here).

3. Encoder Cable

Designations

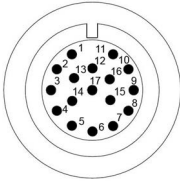
	KCES	SS	AAA	BBB	LLLL
Sinadrives encoder cable					
Type					
- SS: Standard					
- DQ: Drive-Cliq					
- HF: Hiperface					
Connector A					
- 04A: M23					
- 06A: YTEC					
- 01H: M12					
Connector B					
- 05A: Free leads					
- 01S: SUB-D (KEBA Pinout)					
- 02S: SUB-D (B&R Pinout)					
- ... (*)					
Cable length, in cm					

* Ask to our staff for more pinout options

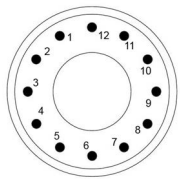
Technical data:

	KCES-SS	KCPS-DQ	KCPS-HF
Min. bend radius (static):	28mm	30mm	42mm
Min. bend radius (dynamic):	56mm	57mm	70mm
Operating temperature:	-40 .. +80°C	-40 °C a +80 °C	-40 °C a +80 °C
Diameter:	9,2mm	7,5mm	7mm
Cable cross-section:	4x2x0,34+4x0,5mm ²	2x2x0,20+2x0,38mm ²	8x0,25mm ²
Outer material:	PUR	PUR	PUR
Resistance:	resistant to oil, hydrolysis and microbic influences (VDE 0472)		
Weight:	0,13Kg/m	0,069Kg/m	0,08Kg/m
Lifetime:	6M cycles	6M cycles	2M cycles
Maximum acceleration:	30m/s ²	50 m/s ²	5 m/s ²
Maximum speed:	240m/min	600 m/min	198m/min

Standard pinout:



KES-SS-04A-05A		
M23	Signal	Output
1	A+ (COS)	green
2	A- (COS)	yellow
3	B+ (SIN)	brown
4	B- (SIN)	black
7	GND	black/white
8	Vcc	red/white
10	RI+/DATA+	violet
11	RI-/DATA-	blue
12	CLK+	red
13	CLK-	orange
16	Vcc sensor	yellow/white
17	GND sensor	blue/white



KES-SS-06A-05A		
Y-TEC	Signal	Output
1	A+ (COS)	green
2	A- (COS)	yellow
3	B+ (SIN)	brown
4	B- (SIN)	black
5	RI+/DATA+	violet
6	RI-/DATA-	blue
7	Vcc	red/white
8	GND	black/white
9	PTC+	yellow/white
10	PTC-	blue/white
11	CLK+	red
12	CLK-	orange

4. Central lubrication

As an option, SINADRIVES provides a central oil lubrication system. All locations to be lubricated are connected by a 6mm hose.

This system allows all the locations to be lubricated to be reached pneumatically or manually. The electrical and pneumatic pump is not included in the delivery. We recommend using a pump with a minimum pressure of 25 bar. The best way to control the system is via PIL. The dose time should be between 20-30 seconds.

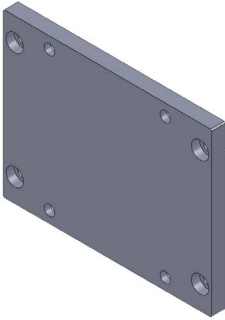
For the supply, we recommend a line with an outer diameter of 6mm and a wall thickness of 1.5mm that can withstand a minimum pressure of 25 bar.



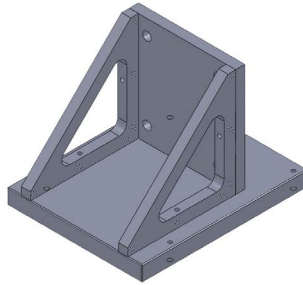
5. Mounting Block

Sinadrives offers the possibility to combine several axes in order to achieve complete portal solutions. The mounting blocks include the screws and pins to join easily two or more axes, with the aim of avoiding design time and difficulties.

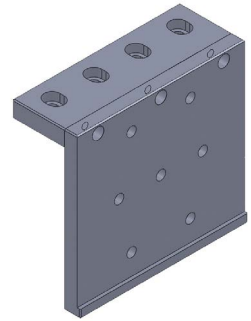
■ **AC01-Fxx000**



■ **AC01-Sxx000**



■ **AC01-Lxx000**



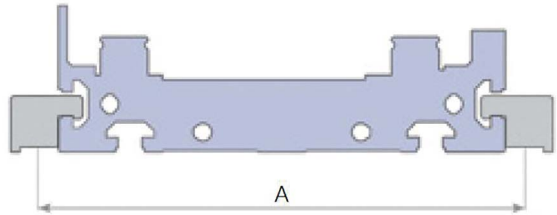
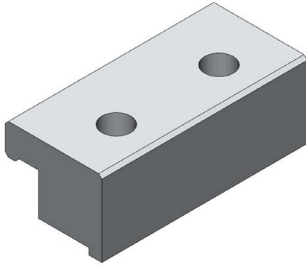
Designations

	AC01	F	L2	000
Mounting Block				
F: Flat mounting plate				
S: Square mounting block				
L: Lateral mounting block				
Base axis				
L2: MLL2				
E2: MLE2				
C3: MCE3				
...				
Version				
000: Generic				

6. Mounting Set

These pieces allow to fix easily Sinadrives stages to your machine body.

■ AC03-2501



Linear unit	A (mm)
MLE2 / MLL2	152
MLE3 / MLL3	157
MLE5 / MLL5	204

■ AC03-2502 (For MLx2)



■ AC03-2503 (For MLx3)

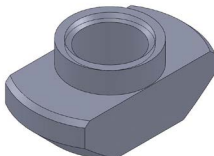


■ AC03-2505 (For MLx5)

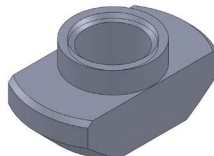


7. Nuts

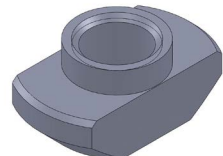
■ KTM05



■ KTM06



■ KTM08

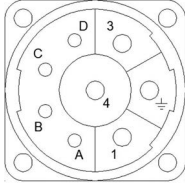


10. Axes special pinout

The special pinout in Sinadrives axes are defined in axis code after connector definition, as following example: MLE30420HS-00-40-0(04)-0-...

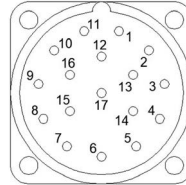
10.1. Code (01): Beckhoff AX5xxxx

M23 POWER CONNECTOR



PIN	Signal
1	U
4	V
3	W
2	PE
A	KTY+
B	KTY-
C	PTC+
D	PTC-

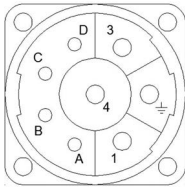
M23 ENCODER CONNECTOR



PIN	Signal
1	B- (SIN)
2	GND
3	A- (COS)
4	Vcc
7	RI-
9	B+ (SIN)
10	GND sens
11	A+ (COS)
12	Vcc sens
14	RI+

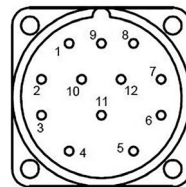
10.2. Code (02): IGAS Drive

M23 POWER CONNECTOR



PIN	Signal
1	U
4	V
3	W
2	PE
A	PTC+

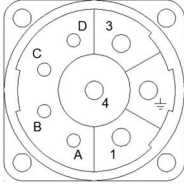
M23-12 ENCODER CONNECTOR



PIN	Signal
1	A+ (COS)
2	A- (COS)
3	B+ (SIN)
4	B- (SIN)
5	KTY+
6	KTY-
7	GND
8	Vcc
9	Vcc sens
10	GND sens
11	RI+
12	RI-

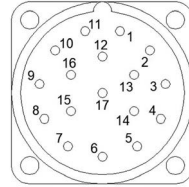
10.3. Code (03): AKM, Kollmorgen, Sigmatek - (PTC in power)

M23 POWER CONNECTOR



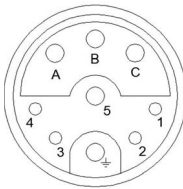
PIN	Signal
1	U
4	V
3	W
2	PE
A	PTC+
B	PTC-

M23 ENCODER CONNECTOR



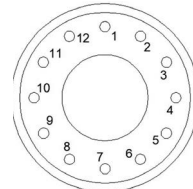
PIN	Signal
1	B- (SIN)
2	GND
3	A- (COS)
4	Vcc
5	RI+
7	KTY+
9	B+ (SIN)
10	GND sens
11	A+ (COS)
12	Vcc sens
13	RI-
14	KTY-

YTEC POWER CONNECTOR



PIN	Signal
A	U
B	V
C	W
PE	PE
1	PTC+
2	PTC-

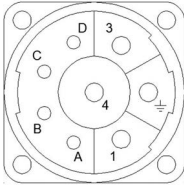
YTEC ENCODER CONNECTOR



PIN	Signal
1	KTY+
2	KTY-
4	B- (SIN)
5	A- (COS)
6	RI+
7	RI-
8	B+ (SIN)
9	A+ (COS)
10	Vcc
11	GND

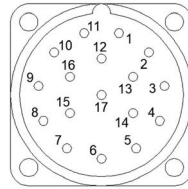
10.4. Code (04): AKM, Kollmorgen, Sigmatek - (PTC in feedback)

M23 POWER CONNECTOR



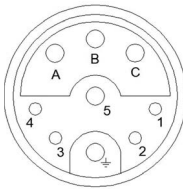
PIN	Signal
1	U
4	V
3	W
2	PE
A	KTY+
B	KTY-

M23 ENCODER CONNECTOR



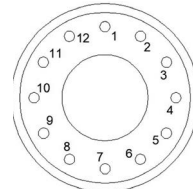
PIN	Signal
1	B- (SIN)
2	GND
3	A- (COS)
4	Vcc
5	RI+
7	PTC+
9	B+ (SIN)
10	GND sens
11	A+ (COS)
12	Vcc sens
13	RI-
14	PTC-

YTEC POWER CONNECTOR



PIN	Signal
A	U
B	V
C	W
PE	PE
1	KTY+
2	KTY-

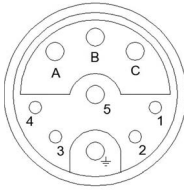
YTEC ENCODER CONNECTOR



PIN	Signal
1	PTC+
2	PTC-
4	B- (SIN)
5	A- (COS)
6	RI+
7	RI-
8	B+ (SIN)
9	A+ (COS)
10	Vcc
11	GND

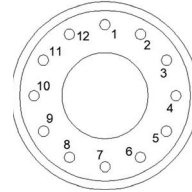
10.6. Code (06): Schneider

YTEC POWER CONNECTOR



PIN	Signal
A	U
B	V
C	W
PE	PE
1	PTC+
2	PTC-
3	KTY+
4	KTY-

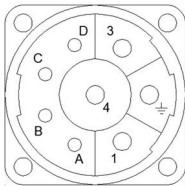
YTEC ENCODER CONNECTOR



PIN	Signal
1	A+ (COS)
2	A- (COS)
3	B+ (SIN)
4	B- (SIN)
7	Vcc (10V)
8	GND
9	Vcc aux (5V)
11	RI+
12	RI-

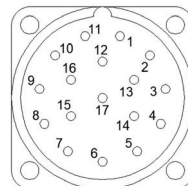
10.7. Code (07): Kruss (Standard + HALL signals)

M23 POWER CONNECTOR



PIN	Signal
1	U
4	V
3	W
2	PE
A	KTY+
B	KTY-
C	PTC+
D	PTC-

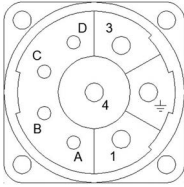
M23 ENCODER CONNECTOR



PIN	Signal
1	A+ (COS)
2	A- (COS)
3	B+ (SIN)
4	B- (SIN)
7	GND
8	Vcc
10	RI+
11	RI-
12	HALL 1
13	HALL 2
14	HALL Vcc
15	HALL GND
16	Vcc sens
17	GND sens

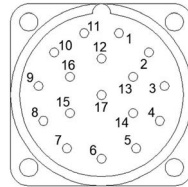
10.51. Code (51): Beckhoff AX5xxxx (Absolute encoder)

M23 POWER CONNECTOR



PIN	Signal
1	U
4	V
3	W
2	PE
A	KTY+
B	KTY-
C	PTC+
D	PTC-

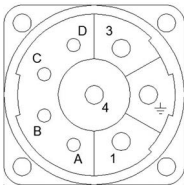
M23 ENCODER CONNECTOR



PIN	Signal
1	A+ (COS)
2	GND
3	B+ (SIN)
4	Vcc
5	DATA+
8	CLK+
9	A- (COS)
10	GND sens
11	B- (SIN)
12	Vcc sens
13	DATA-
15	CLK-

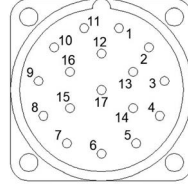
10.54. Code (54): ESR, AMO (Absolute encoder)

M23 POWER CONNECTOR



PIN	Signal
1	W
4	V
3	U
2	PE
A	KTY+
B	KTY-
C	PTC+
D	PTC-

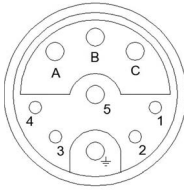
M23 ENCODER CONNECTOR



PIN	Signal
1	Vcc sens
4	GND sens
7	Vcc
8	CLK+
9	CLK-
10	GND
12	B+ (SIN)
13	B- (SIN)
14	DATA+
15	A+ (COS)
16	A- (COS)
17	DATA-

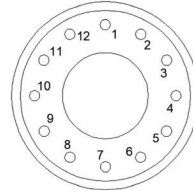
10.55. Code (55): B&R

YTEC POWER CONNECTOR



PIN	Signal
A	U
B	V
C	W
PE	PE
1	KTY+
2	KTY-
3	PTC+
4	PTC-

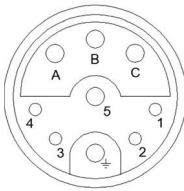
YTEC ENCODER CONNECTOR



PIN	Signal
1	Vcc
2	DATA+
3	DATA-
4	CLK+
5	CLK-
7	GND

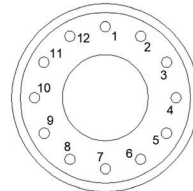
10.56. Code (56): STÖBER

YTEC POWER CONNECTOR



PIN	Signal
A	U
B	V
C	W
PE	PE
1	KTY+
2	KTY-
3	PTC+
4	PTC-

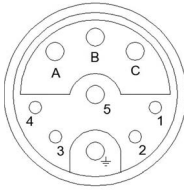
YTEC ENCODER CONNECTOR



PIN	Signal
1	CLK+
5	DATA+
6	DATA-
8	CLK-
10	GND
12	Vcc

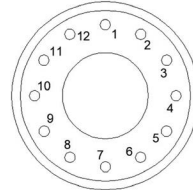
10.T0. Code (T0): Thermal sensors available on YTEC power connector

YTEC POWER CONNECTOR



PIN	Signal
A	U
B	V
C	W
PE	PE
1	KTY+
2	KTY-
3	PTC+
4	PTC-

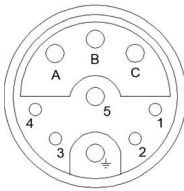
YTEC ENCODER CONNECTOR



PIN	Signal
9	not connected
10	not connected
*	other pins as Sinadrives standard

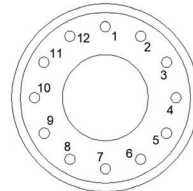
10.T1. Code (T1): Thermal sensors interchanged

YTEC POWER CONNECTOR



PIN	Signal
A	U
B	V
C	W
PE	PE
1	PTC+
2	PTC-

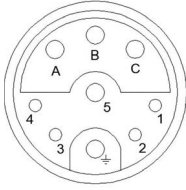
YTEC ENCODER CONNECTOR



PIN	Signal
9	KTY+
10	KTY-
*	other pins as Sinadrives standard

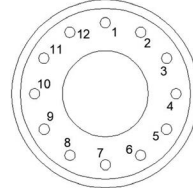
10.T2. Code (T2): Brake available

YTEC POWER CONNECTOR



PIN	Signal
A	W
B	V
C	U
PE	PE
1	BRAKE+
2	BRAKE-
3	KTY+
4	KTY-

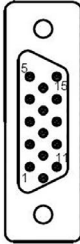
YTEC ENCODER CONNECTOR



PIN	Signal
*	pins as Sinadrives standard

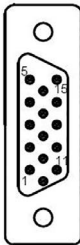
11. Encoder cables special pinout

11.1a.- KES-SS-04A-01S: KEBA ServoOne Junior



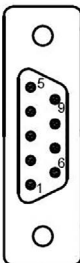
SUB-D 15pin-HD	
PIN	Signal
1	A- (COS)
2	A+ (COS)
3	Vcc
4	RI+ / DATA+
5	RI- / DATA-
6	B- (SIN)
8	GND
11	B+ (SIN)
12	Vcc sens
13	GND sens
14	CLK+
15	CLK-

11.1b.- KES-SS-06A-01S: KEBA ServoOne Junior



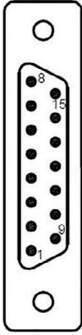
SUB-D 15pin-HD	
PIN	Signal
1	A- (COS)
2	A+ (COS)
3	Vcc
4	RI+ / DATA+
5	RI- / DATA-
6	B- (SIN)
8	GND
9	PTC-
10	PTC+
11	B+ (SIN)
14	CLK+
15	CLK-

11.2.- KES-SS-xxx-02S: B&R - 8BAC0120.001-2 module



SUB-D 9pin	
PIN	Signal
1	Vcc
4	DATA+
5	CLK+
6	GND
8	DATA-
9	CLK-

11.3.- KES-SS-xxx-03S: Beckhoff AX5000 (X11 and X21)



SUB-D 15pin	
PIN	Signal
1	B+ (SIN)
2	GND
3	A+ (COS)
4	Vcc
7	RI-
9	B- (SIN)
10*	GND sens
11	A- (COS)
12*	Vcc sens
14	RI+

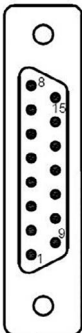
*Only available on AC05-EM03xx

11.4.- KES-SS-xxx-04S: Panasonic



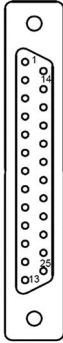
MUF-PK10K-X	
PIN	Signal
1	Vcc
2	GND
3	RD - EXPS
4	/RD - /EXPS
5	A+
6	A-
7	B+
8	B-
9	RI+
10	RI-

11.5.- KES-SS-xxx-05S: Lenze 9400 (X8) / B&R 8ECG adapter cable (Absolute)



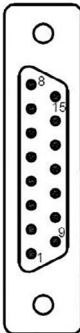
SUB-D 15pin	
PIN	Signal
1	A+ (COS)
2	GND
3	B+ (SIN)
4	Vcc
5	RI+ / DATA+
8	CLK+
9	A- (COS)
11	B- (SIN)
13	RI- / DATA-
15	CLK-

11.6.- KES-SS-xxx-06S: Siemens SMC20



SUB-D 25pin	
PIN	Signal
2	GND
3	A+ (COS)
4	A- (COS)
6	B+ (SIN)
7	B- (SIN)
14	Vcc sens
16	GND sens
17	RI+
18	RI-

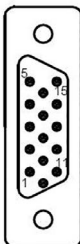
11.7.- KES-SS-xxx-07S: SEW (DEU21B)



SUB-D 15pin	
PIN	Signal
1	A+ (COS)
2	B+ (SIN)
3	CLK+
4	DATA+
6*	PTC-
8	GND
9	A- (COS)
10	B- (SIN)
11	CLK-
12	DATA-
14*	PTC+
15	Vcc

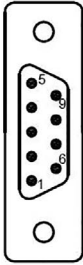
*Only available in AC05-EY07xx

11.8.- AC05-EM08xx / AC05-EY08xx: Emerson, Control Techniques



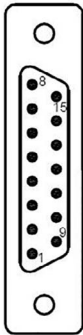
SUB-D 15pin-HD	
PIN	Signal
1	A+ (COS)
2	A- (COS)
3	B+ (SIN)
4	B- (SIN)
5	RI+ / DATA+
6	RI- / DATA-
11	CLK+
12	CLK-
13	Vcc
14	GND

11.11.- KES-SS-xxx-11S: KEBA resolver



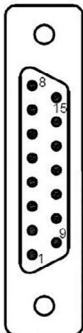
SUB-D 9pin	
PIN	Signal
1	A+ (COS)
2	A- (COS)
3	B+ (SIN)
4	Vcc
5	PTC+
7	GND
8	B- (SIN)
9	PTC-

11.13a.- KES-SS-04A-13S: Beckhoff AX5000 (Absolute - X41 or X42)



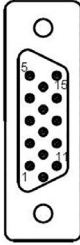
SUB-D 15pin	
PIN	Signal
2	GND
4	Vcc
5	DATA+
8	CLK+
10	Vcc sensor
12	GND sensor
13	DATA-
15	CLK-

11.13b.- KES-SS-06A-13S: Beckhoff AX5000 (Absolute - X41 or X42)



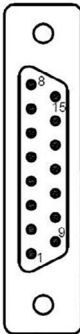
SUB-D 15pin	
PIN	Signal
2	GND
4	Vcc
5	DATA+
8	CLK+
13	DATA-
15	CLK-

11.14.- KES-SS-06A-14S: Parker (Analog Hall)



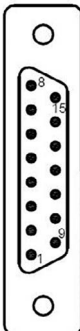
SUB-D 15pin-HD	
PIN	Signal
4	Vcc
5	PTC+
7	A- (COS)
8	A+ (COS)
10	PTC-
11	B- (SIN)
12	B+ (SIN)
15	GND

11.15.- KES-SS-06A-15S: B&R 8ECG adapter cable (Sin/Cos)



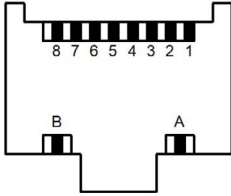
SUB-D 15pin	
PIN	Signal
1	A+ (COS)
2	GND
3	B+ (SIN)
4	Vcc
5	RI+
8	PTC+
9	A- (COS)
11	B- (SIN)
13	RI-
15	PTC-

11.16.- KES-SS-xxx-15S: OMRON SC01K-E adapter (Sin/Cos)



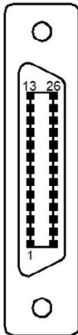
SUB-D 15pin	
PIN	Signal
4	RI-
5	A- (COS)
6	B- (SIN)
8	Vcc
9	GND
12	RI+
13	A+ (COS)
14	B+ (SIN)

11.17.- KES-SS-xxx-17S: Siemens Drive-Cliq



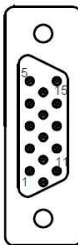
RJ45	
PIN	Signal
1	TXP
2	TXN
3	RXP
6	RXN
A	Vcc
B	GND

11.18.- KES-SS-xxx-18S: Yaskawa (Absolute)



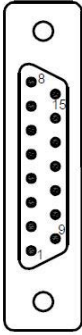
PIN	Signal
1	CLK+
2	CLK-
8	Vcc
14	DATA+
15	DATA-
24	GND

11.19.- KES-SS-xxx-19S: Schneider



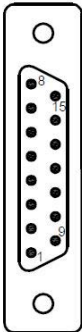
SUB-D 15pin-HD	
PIN	Signal
1	RI+
2	RI-
4	B+ (SIN)
5	B- (SIN)
8	GND
9	A+ (COS)
10	A- (COS)
15	Vcc

11.21.- KES-SS-xxx-21S: Bosch Rexroth



SUB-D 15pin	
PIN	Signal
2	A+ (COS)
3	A- (COS)
4	GND
5	B+ (SIN)
6	B- (SIN)
9	RI+
10	RI-
12	Vcc

11.23.- KES-SS-xxx-23S: Infranor PAC (Absolute)



SUB-D 15pin	
PIN	Signal
2	CLK-
3	DATA-
7	Vcc
8	GND
9	CLK+
10	DATA+
12	PTC-
13	PTC+

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