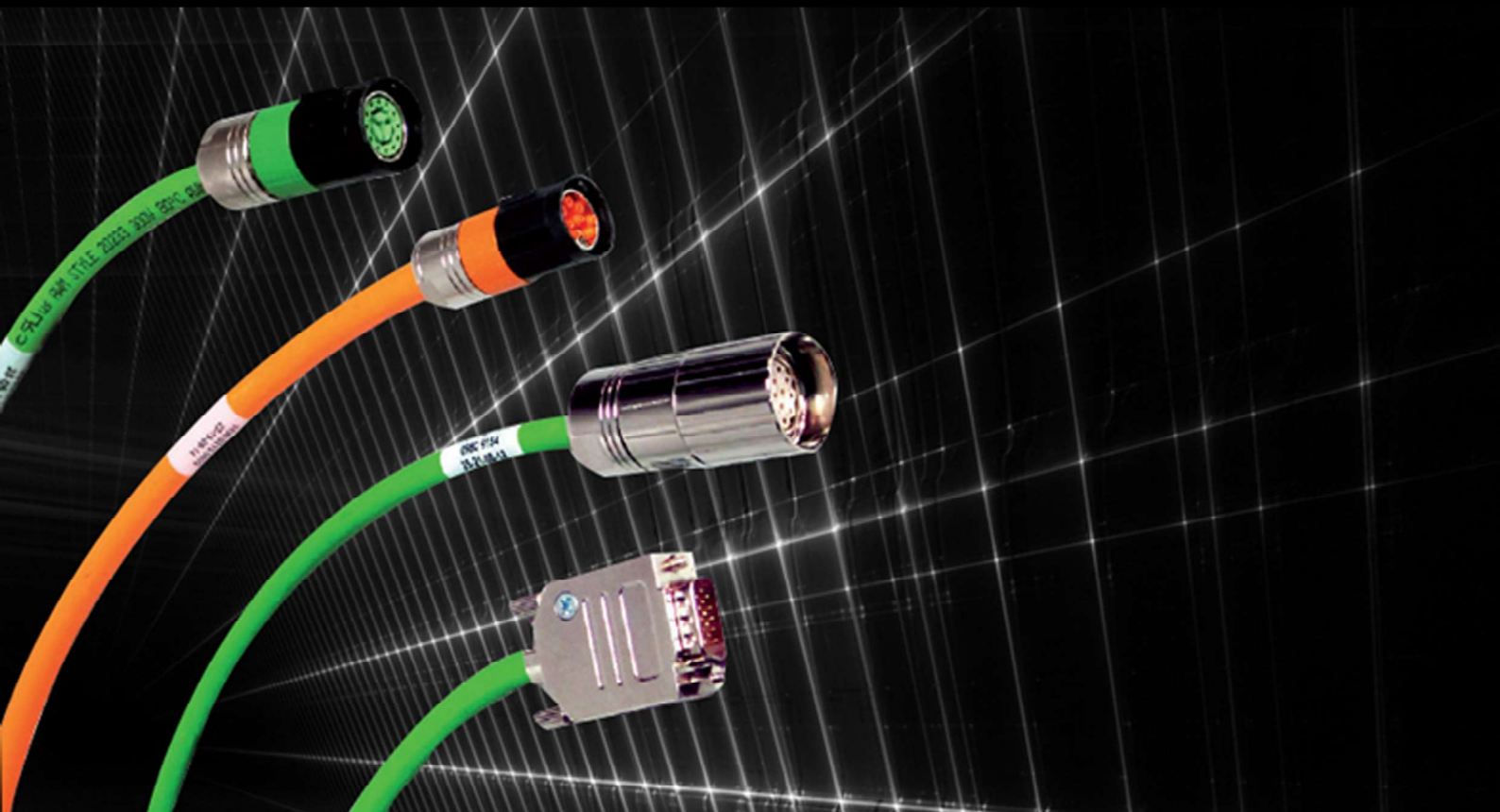


Mechatronic System Components



Harmonic
Drive SE



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Information

Connectors

- All extension cables on the actuator side are equipped with plug sockets (female).
- Unused contacts are not assembled.

Standard lengths

- 300 cm (not available for all cables)
- 500 cm
- 1000 cm
- 1500 cm
- Other cable length or other connector configurations are available on request only.
- Minimum quantity for SP cable length is ≥ 5 pcs each.

1. BHA

1.1 BHA Ordering Code APC (Actuator Power Cable)

Bremse Brake 00= without Brake 01 = Brake		Produkt Assignment 00 = BHA 01 = BDA 02 = CHA* 03 = LynxDrive 04 = FHA mini		Kabellänge Length [cm] 500 1000 1500		Regler Drive 00 = open end + YukonDrive 01 = - 02 = - 03 = Bosch Rexroth 04 = Beckhoff 05 = ELMO Gold Cello 99 = kundenspezifischer Regler								
APC	-	01	-	01	-	01	-	0500	-	00	-	01	-	00
		00 = - 01 = 9pol. itec female 02 = 8pol. M23 female 03 = 6pol. M23 female 04 = - 05 = - 06 = - 07 = - 08 = 8 pol. M17 female			P00 = - P01 = (4G1,0+2x(2x0,34)C)C P02 = (4G1,5+2x(2x0,75) C)C P03 = (4G1,0+2x(2x0,75)C)C P04 = (4G0,75+(2x0,34)C)C P05 = (4x0,5+2x(2x0,25)C)C P06 = (4x0,34+2x(2x0,15)C)C P07 = (4x2,5G+2x(2x0,15)C)C			00 = flying leads and YuconDrive			00 = PUR			
Type Kategorie		Actuator End [side-A] Antriebsseite			Cable Structure Kabeltyp			Drive End [side-B] Reglerseite			Outer jacket Kabelmantel			

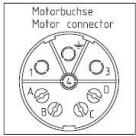
CHA* = CanisDrive, CHA-C, Alopex, FHA

1.2 Standard Length BHA APC

- 300 cm (not available for all cables)
- 500 cm
- 1000 cm
- 1500 cm

1.3 APC-M23/8pol. - Flying Leads (Size 20-58), Querschnitt 2,5 mm²

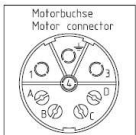
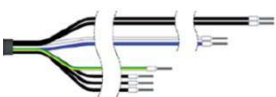


Actuator side	A-side	Signal	Label	Controller side
female  shield via housing	1	U (2,5 mm ²)	U1/L1	 flying leads
	2	PE (2,5 mm ²)	PE	
	3	W (2,5 mm ²)	W3/L3	
	4	V (2,5 mm ²)	V2/L2	
	A	Brake+	5	
	B	Brake-	6	
	C	TEMP+	7	
	D	TEMP-	8	

Ordering Code	Length	Mat.-no.
APC-01-02-00-P07-0300-00-00-00	300 cm	1044748
APC-01-02-00-P07-0500-00-00-00	500 cm	1044749
APC-01-02-00-P07-1000-00-00-00	1000 cm	1043114
APC-01-02-00-P07-1500-00-00-00	1500 cm	1044750

1.4 APC-M23/8pol. - Flying Leads (Size 17)



Actuator side	A-side	Signal	Label	Controller side
female  shield via housing	1	U (1,0 mm ²)	U1/L1	 flying leads
	2	PE (1,0 mm ²)	PE	
	3	W (1,0 mm ²)	W3/L3	
	4	V (1,0 mm ²)	V2/L2	
	A	Brake+	5	
	B	Brake-	6	
	C	TEMP+	7	
	D	TEMP-	8	

Ordering Code	Length	Mat.-no.
APC-01-02-00-P03-0500-00-00-00	500 cm	1044170
APC-01-02-00-P03-1000-00-00-00	1000 cm	1044202
APC-01-02-00-P03-1500-00-00-00	1500 cm	1044203

1.5 BHA Ordering Code AFC (Actuator Feedback Cable)

Encoder		Produkt		Kabellänge		Regler	
Feedback		Assignment		Length [cm]		Drive	
AE = Batteriebox MZE		00 = BHA		500		00 = -	
AS = Batteriebox MGS		01 = BDA		1000		01 = YukonDrive	
B = BiSS		02 = CHA*		1500		02 = offen	
C = DriveCliq		03 = LynxDrive				03 = Bosch Rexroth	
D = Hiperface DSL		04 = FHA mini				04 = Beckhoff	
E = EnDat						05 = ELMO Gold Cello	
H = Hiperface						99 = kundenspezifischer Regler	
R = Resolver							
S = SinCos							
SSI = SSI							
T = TTL							

AFC	-	H	-	05	-	01	-	F02	-	0500	-	11	-	01	-	00
				00 = -				F00 = -				00 = -				00 = PUR
				01 = -				F01 = -				01 = -				
				02 = -				F02 = (4x(2x0.25)+2x0.5)C				02 = offen				
				03 = -				F03 = (4x(2x0.15)C+4x0.15+2x0.5)C				03 =				
				04 = 17 pol. M17, female				F04 = (3x(2x0.14)C+4x0.14+2x0.5)C				04 =				
				05 = 12pol. Ytec, female				F05 = (3x(2x0.14)C+4x0.14+4x0.25+2x0.5)C				05 =				
				06 = 12pol. M23, female				F06 = (3x(2x0.14)C+2x(0.5)C)C				06 =				
				07 = 17pol. M23, female				F07 = (4x(2x0.5)C)C Igus				07 =				
				08 =				F08 = (6x(2x0.5)C)C Igus				08 =				
				09 =								09 = 15 pol. Sub-D, 3-rows, 45° side, male				
				10 =								10 = 9 pol. Sub-D, 2-rows, straight, male				
				11 =								11 = 15 pol. Sub-D, 3-rows, straight, male				
				12 = 15 pol. Sub-D, 3-reihig, straight, female								12 = 15 pol. Sub-D, 2-rows, 45° side, male				
												13 = 15 pol. Sub-D, 2-rows, straight, male				

Type	Actuator end [side-A]	Cable stucture	Drive end [side-B]	Outer jacket
Kategorie	Antriebsseite	Kabeltyp	Reglerseite	Kabelmantel

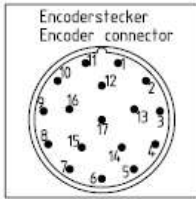
CHA* = CanisDrive, CHA-C, Aloplex, FHA
--

1.6 Standard Length BHA AFC

- 300 cm (not available for all cables)
- 500 cm
- 1000 cm
- 1500 cm

1.7 MZB / SZB / M23 17 pol.- flying leads

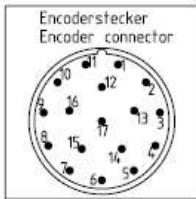


Actuator side	A-side	Signal	Colour	Controller side	
female  shield via housing inner shield via housing	1			flying leads	
	2				
	3	SLO+	bu		
	4				
	5	MA+	ye		
	6				
	7	GND	bn		
	8	Temp+ n.c.			
	9	Temp- n.c.			
	10	Up	wh		
	11				
	12				
	13	SLO-	rd		
	14	MA-	gn		
Außenschirm auf Gehäuse					

Ordering Code	Length	Mat.-no.
AFC-B-07-00-F02-0500-02-02-00	500 cm	1044173
AFC-B-07-00-F02-1000-02-02-00	1000 cm	1044204
AFC-B-07-00-F02-1500-02-02-00	1500 cm	1044205

1.8 MZE / SZE / M23 17 pol.-flying leads



Actuator side	A-side	Signal	Colour	Controller side	
female Encoderstecker Encoder connector  shield via housing inner shield via housing	1			flying leads	
	2				
	3	Data+	gn		
	4				
	5	Clock+	wh		
	6				
	7	GND	rd		
	8	Temp+ n.c.	gy		
	9	Temp- n.c.	pk		
	10	Up	bu		
	11				
	12				
	13	Data-	ye		
	14	Clock-	bn		
Außenschirm auf Gehäuse					

Ordering Code	Length	Mat.-no.
AFC-E-07-00-F02-0500-02-02-00	500 cm	1045088
AFC-E-07-00-F02-0500-02-02-00	1000 cm	1045089
AFC-E-07-00-F02-0500-02-02-00	1500 cm	1045090

1.9 MIH / M23 12pol.-flying leads

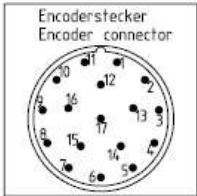


Actuator side	A-side	Signal	Colour	Controller side
female  shield via housing inner shield via housing	1	Us=7-12V	bk	flying leads
	2	GND	vt	
	3	Sin+	wh	
	4	Refsin	bn	
	5	Data+	gn	
	6	Data-	ye	
	7	Cos+	gy	
	8	Refcos	pk	
	9	Temp+	bu	
	10	Temp-	rd	
	11	n.c.		
	12	n.c.		

Ordering Code	Length	Mat.-no.
AFC-H-06-00-F03-0500-02-02-00	500 cm	1045094
AFC-H-06-00-F03-1000-02-02-00	1000 cm	1045095
AFC-H-06-00-F03-1500-02-02-00	1500 cm	1045096

1.10 SSI/M23 17 pol.-flying leads



Actuator side	A-side	Signal	Colour	Controller side
female  shield via housing inner shield via housing	1	Cos+ / A+		flying leads
	2	Cos- / A-		
	3	Data+	wh	
	4	n.c.		
	5	Clock+	gn	
	6	n.c.		
	7	GND	bu	
	8	Temp+	gy	
	9	Temp-	pk	
	10	Up	rd	
	11	Sin+ / B+		
	12	Sin- / B-		
	13	Data-	bn	
	14	Clock-	ye	

Ordering Code	Length	Mat.-no.
AFC-SSI-07-00-F03-0500-02-02-00	500 cm	1045091
AFC-SSI-07-00-F03-1000-02-02-00	1000 cm	1045092
AFC-SSI-07-00-F03-1500-02-02-00	1500 cm	1045093

2. BDA

2.1 BDA Ordering Code APC (Actuator Power Cable)

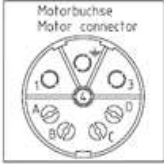
Bremse Brake 00= without Brake 01 = Brake		Produkt Assignment 00 = BHA 01 = BDA 02 = CHA* 03 = LynxDrive 04 = FHA mini		Kabellänge Length [cm] 500 1000 1500		Regler Drive 00 = open end + YukonDrive 01 = - 02 = - 03 = Bosch Rexroth 04 = Beckhoff 05 = CLMO Gold Cello 99 = kundenspezifischer Regler						
APC	-	01	-	01	-	01	-	00	-	01	-	00
		00 = - 01 = 9pol. itec female 02 = 8pol. M23 female 03 = 6pol. M23 female 04 = - 05 = - 06 = - 07 = - 08 = 8 pol. M17 female			P00 = - P01 = (4G1,0+2x(2x0,34)C)C P02 = (4G1,5+2x(2x0,75)C)C P03 = (4G1,0+2x(2x0,75)C)C P04 = (4G0,75+(2x0,34)C)C P05 = (4x0,5+2x(2x0,25)C)C P06 = (4x0,34+2x(2x0,15)C)C P07 = (4x2,5G+2x(2x0,15)C)C			00 = flying leads and YuconDrive			00 = PUR	
Type Kategorie		Actuator End [side-A] Antriebsseite			Cable Structure Kabeltyp			Drive End [side-B] Reglerseite			Outer jacket Kabelmantel	
CHA* = CanisDrive, CHA-C, Alopex, FHA												

2.2 Standard Length BDA APC

- 300 cm (not available for all cables)
- 500 cm
- 1000 cm
- 1500 cm

2.3 APC-M23/8pol. - Flying Leads / YukonDrive

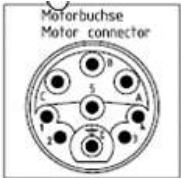
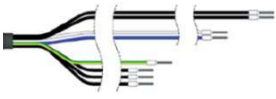


Actuator side	A-side	Signal	Label	Controller side
female 	1	U	U/L1/C/L+	 flying leads / YD
	2	PE	grün-gelb	
	3	W	W/L3/D/L-	
	4	V	V/L2	
	A	BR+	5	
	B	BR-	6	
	C	TEMP+	7	
	D	TEMP-	8	

Ordering Code	Length	Mat.-no.
APC-01-02-01-P02-0500-00-00-00	500 cm	1038623
APC-01-02-01-P02-1000-00-00-00	1000 cm	1038624
APC-01-02-01-P02-1500-00-00-00	1500 cm	1038625

2.4 APC-Springtec/9 pol. - Flying Leads / YukonDrive



Actuator side	A-side	Signal	Label	Controller side
Female  Springtec	A	U	U/L1/C/L+	 flying leads / YD
	B	W	W/L3/D/L-	
	C	V	V/L2	
	PE	Protection line	gnye	
	1	BR+	5	
	2	BR-	6	
	3	TEMP+	7	
	4	TEMP-	8	

Ordering Code	Length	Mat.-no.
APC-01-01-01-P02-0500-00-00-00	500 cm	1038620
APC-01-01-01-P02-1000-00-00-00	1000 cm	1038621
APC-01-01-01-P02-1500-00-00-00	1500 cm	1038622

2.5 BDA Ordering Code AFC (Actuator Feedback Cable)

Encoder Feedback		Produkt Assignment		Kabellänge Length [cm]		Regler Drive	
AE = Batteriebox MZE		00 = BHA		500		00 = -	
AS = Batteriebox MGS		01 = BDA		1000		01 = YukonDrive	
B = BiSS		02 = CHA*		1500		02 = offen	
C = DriveCliq		03 = LynxDrive				03 = Bosch Rexroth	
D = Hiperface DSL		04 = FHA mini				04 = Beckhoff	
E = EnDat						05 = ELMO Gold Cello	
H = Hiperface						99 = kundenspezifischer Regler	
R = Resolver							
S = SinCos							
SSI = SSI							
T = TTL							

AFC	-	H	-	05	-	01	-	F02	-	0500	-	11	-	01	-	00
				00 = -				F00 = -				00 = -				00 = PUR
				01 = -				F01 = -				01 = -				
				02 = -				F02 = (4x(2x0.25)+2x0.5)C				02 = offen				
				03 = -				F03 = (4x(2x0.15)C+4x0.15+2x0.5)C				03 =				
				04 = 17 pol. M17, female				F04 = (3x(2x0.14)C+4x0.14+2x0.5)C				04 =				
				05 = 12pol. Ytec, female				F05 = (3x(2x0.14)C+4x0.14+4x0.25+2x0.5)C				05 =				
				06 = 12pol. M23, female				F06 = (3x(2x0.14)C+2x(0.5)C)C				06 =				
				07 = 17pol., M23, female				F07 = (4x(2x0.5)C)C igus				07 =				
				08 =				F08 = (6x(2x0.5)C)C igus				08 =				
				09 =								09 = 15 pol. Sub-D, 3-rows, 45° side, male				
				10 =								10 = 9 pol. Sub-D, 2-rows, straight, male				
				11 =								11 = 15 pol. Sub-D, 3-rows, straight, male				
				12 = 15 pol. Sub-D, 3-reihig, straight, female								12 = 15 pol. Sub-D, 2-rows, 45° side, male				
												13 = 15 pol. Sub-D, 2-rows, straight, male				
Type				Actuator end [side-A]				Cable stucture				Drive end [side-B]				Outer jacket
Kategorie				Antriebsseite				Kabeltyp				Reglerseite				Kabelmantel

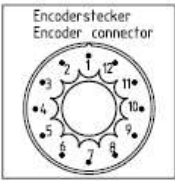
CHA* = CanisDrive, CHA-C, Aloplex, FHA
--

2.6 Standard Length BDA AFC

- 300 cm (not available for all cables)
- 500 cm
- 1000 cm
- 1500 cm

2.7 Resolver-itec/12 pol. - Flying Leads

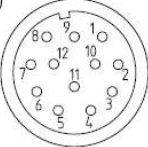


Actuator side	A-side	Signal	Colour	Controller side
female  Springtec	1			flying leads
	2			
	3	Sin- (S4)	bn	
	4	Cos- (S3)	bu	
	5	Vss- (R2)	wh	
	6			
	7	Sin+ (S2)	gn	
	8	Cos+ (S1)	vt	
	9	Vss+ (R1)	bn	
	1,2,6, 10-12			
	n.c.			

Ordering Code	Length	Mat.-no.
AFC-R-05-01-F02-0500-02-02-00	500 cm	1038637
AFC-R-05-01-F02-1000-02-02-00	1000 cm	1038638
AFC-R-05-01-F02-1500-02-02-00	1500 cm	1038639

2.8 Resolver-M23/12 pol. - Flying Leads

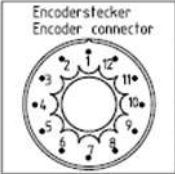
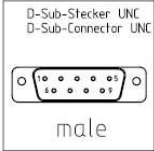


Actuator side	A-side	Signal	Colour	Controller side
female  shield via housing inner shield via housing	1	n.c		flying leads
	2	n.c		
	3	Sin- (S4)	bn	
	4	Cos- (S3)	bu	
	5	Vss- (R2)	wh	
	6			
	7	Sin+ (S2)	gn	
	8	Cos+ (S1)	vt	
	9	Vss+ (R1)	bn	
	1,2,6, 10,11,12			
	n.c.			

Ordering Code	Length	Mat.-no.
AFC-R-06-01-F02-0500-02-02-00	500 cm	1038640
AFC-R-06-01-F02-1000-02-02-00	1000 cm	1038641
AFC-R-06-01-F02-1500-02-02-00	1500 cm	1038642

2.9 Resolver-itec/12 pol. - Sub-D / YukonDrive

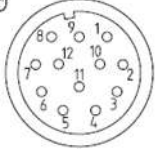
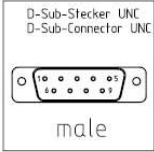


Actuator side	A-side	Signal	B-side	Controller side
female  Encoderstecker Encoder connector Springtec	1			male  D-Sub-Stecker UNC D-Sub-Connector UNC male vorne / front Sub-D, 9 pol. 2-rows, UNC, straight shield via housing inner shield via housing
	2			
	3	Sin- (S4)	2	
	4	Cos- (S3)	8	
	5	Vss- (R2)	7	
	6			
	7	Sin+ (S2)	1	
	8	Cos+ (S1)	3	
	9	Vss+ (R1)	6	
	1,2,6, 10,11,12 n.c.			

Ordering Code	Length	Mat.-no.
AFC-R-05-01-F02-0500-10-01-00	500 cm	1038649
AFC-R-05-01-F02-1000-10-01-00	1000 cm	1038650
AFC-R-05-01-F02-1500-10-01-00	1500 cm	1038651

2.10 Resolver-M23/12 pol. - Sub-D / YukonDrive

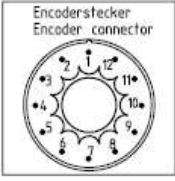


Actuator side	A-side	Signal	B-side	Controller side
female  shield via housing inner shield via housing	1			male  D-Sub-Stecker UNC D-Sub-Connector UNC male vorne / front Sub-D, 9 pol. 2-rows, UNC, straight shield via housing inner shield via housing
	2			
	3	Sin- (S4)	2	
	4	Cos- (S3)	8	
	5	Vss- (R2)	7	
	6			
	7	Sin+ (S2)	1	
	8	Cos+ (S1)	3	
	9	Vss+ (R1)	6	
	1,2,6, 10,11,12 n.c.			

Ordering Code	Length	Mat.-no.
AFC-R-06-01-F02-0500-10-01-00	500 cm	1038652
AFC-R-06-01-F02-1000-10-01-00	1000 cm	1038653
AFC-R-06-01-F02-1500-10-01-00	1500 cm	1038654

2.11 HIPERFACE-itec/12 pol. - Flying Leads

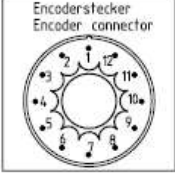
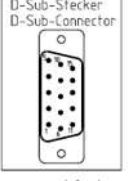


Actuator side	A-side	Signal	Colour	Controller side
female  Springtec	1	GND (0,5)	bn	flying leads
	2			
	3	REFCOS	bn	
	4	REFSIN	bu	
	5			
	6			
	7	Cos+	gn	
	8	Sin+	vt	
	9			
	10	DATA+	gy	
	11	DATA-	pk	
	12	Us (0,5)	wh	

Ordering Code	Length	Mat.-no.
AFC-H-05-01-F02-0500-02-02-00	500 cm	1038643
AFC-H-05-01-F02-1000-02-02-00	1000 cm	1038644
AFC-H-05-01-F02-1500-02-02-00	1500 cm	1038645

2.12 HIPERFACE-itec/12 pol. - Sub-D / YukonDrive



Actuator side	A-side	Signal	B-side	Controller side
female  Springtec	1	GND	8	male  varre / front Sub-D, 15 pol. 3-rows, UNC, straight shield via housing inner shield via housing
	2			
	3	REFCOS	1	
	4	REFSIN	6	
	5			
	6			
	7	Cos+	2	
	8	Sin+		
	9			
	10	DATA+	4	
	11	DATA-	5	
	12	Us (7-12V)	3	
	2,5,6,9 n.c.			

Ordering Code	Length	Mat.-no.
AFC-H-05-01-F02-0500-11-01-00	500 cm	1038655
AFC-H-05-01-F02-1000-11-01-00	1000 cm	1038656
AFC-H-05-01-F02-1500-11-01-00	1500 cm	1038657

2.13 HIPERFACE-M23/17 pol. - Flying Leads

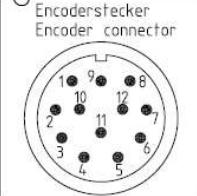


Actuator side	A-side	Signal	Colour	Controller side
female  shield via housing inner shield via housing	1	REFSIN	bn	flying leads
	2	GND (0,5)	bn	
	3	REFCOS	bu	
	4			
	5	DATA+	gy	
	6	Us (0,5)	wh	
	7			
	8			
	9	Sin+	gn	
	10			
	11	Cos+	vt	
	12			
	13	DATA-	pk	
	4,7,8,10,12,14-17 n.c.			

Ordering Code	Length	Mat.-no.
AFC-H-07-01-F02-0500-02-02-00	500 cm	1038646
AFC-H-07-01-F02-0500-02-02-00	1000 cm	1038647
AFC-H-07-01-F02-0500-02-02-00	1500 cm	1038648

2.14 HIPERFACE-M23/12 pol.- Sub-D / YukonDrive



Actuator side	A-side	Signal	B-side	Controller side
female  shield via housing inner shield via housing	1	REFSIN	6	male  vorne / front Sub-D, 15 pol. 3-rows, UNC, straight shield via housing inner shield via housing
	2	GND	8	
	3	REFCOS	1	
	4			
	5	DATA+	4	
	6	Us	3	
	7			
	8			
	9	Sin+	11	
	10			
	11	Cos+	2	
	12			
	13	DATA-	5	
	4,7,8,10,12,14-17 n.c.			

Ordering Code	Length	Mat.-no.
AFC-H-07-01-F02-0500-11-01-00	500 cm	1038658
AFC-H-07-01-F02-1000-11-01-00	1000 cm	1038659
AFC-H-07-01-F02-1500-11-01-00	1500 cm	1038660

3. CanisDrive

3.1 CanisDrive Ordering Code APC (Actuator Power Cable)

Bremse		Produkt		Kabellänge		Regler	
Brake		Assignment		Length [cm]		Drive	
00 = without Brake		00 = BHA		500		00 = open end + YukonDrive	
01 = Brake		01 = BDA		1000		01 = -	
		02 = CHA*		1500		02 = -	
		03 = LynxDrive				03 = Bosch Rexroth	
		04 = FHA mini				04 = Beckhoff	
						05 = ELMO Gold Cello	
						99 – kundenspezifischer Regler	

APC	-	01	-	01	-	01	-	P01	-	0500	-	00	-	01	-	00			
				00 = - 01 = 9pol. itec female 02 = 8pol. M23 female 03 = 6pol. M23 female 04 = - 05 = - 06 = - 07 = - 08 = 8 pol. M17 female				P00 = - P01 = (4G1,0+2x(2x0,34)C)C P02 = (4G1,5+2x(2x0,75) C)C P03 = (4G1,0+2x(2x0,75)C)C P04 = (4G0,75+(2x0,34)C)C P05 = (4x0,5+2x(2x0,25)C)C P06 = (4x0,34+2x(2x0,15)C)C P07 = (4x2,5G+2x(2x0,15)C)C				00 = flying leads and YuconDrive				00 = PUR			
Type				Actuator End [side-A]				Cable Structure				Drive End [side-B]				Outer jacket			
Kategorie				Antriebsseite				Kabeltyp				Reglerseite				Kabelmantel			

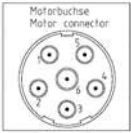
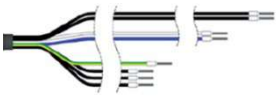
CHA* = CanisDrive, CHA-C, Alopex, FHA

3.2 Standard Length CanisDrive

- 300 cm (not available for all cables)
- 500 cm
- 1000 cm
- 1500 cm

3.3 APC-M23/6 pol. - Flying Leads

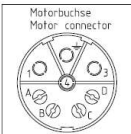


Actuator side	A-side	Signal	Label	Controller side
female  shield via housing	1	U	U1/L1/C/L+	 flying leads
	2	V	V/L2	
	3	PE	gn/ye	
	4	Brake+	5	
	5	Brake-	6	
	6	W	W/L3/D/L	

Ordering Code	Length	Mat.-no.
APC-01-03-02-P02-0300-00-00-00	300 cm	1038764
APC-01-03-02-P02-0500-00-00-00	500 cm	1038711
APC-01-03-02-P02-1000-00-00-00	1000 cm	1038749
APC-01-03-02-P02-1500-00-00-00	1500 cm	1038750

3.4 APC-M23/8 pol. - Flying Leads

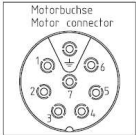
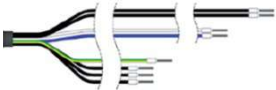


Actuator side	A-side	Signal	Label	Controller side
female  shield via housing	1	U	U1	 flying leads
	2	PE	PE	
	3	W	W3	
	4	V	V2	
	A	Brake+	5	
	B	Brake-	6	
	C	TEMP+	7	
	D	TEMP-	8	

Ordering Code	Length	Mat.-no.
APC-01-02-02-P02-0300-00-00-00	300 cm	1039141
APC-01-02-02-P02-0500-00-00-00	500 cm	1039142
APC-01-02-02-P02-1000-00-00-00	1000 cm	1039143
APC-01-02-02-P02-1500-00-00-00	1500 cm	1040153

3.5 APC-M17/8 pol. - Flying Leads



Actuator side	A-side	Signal	Colour	Controller side
female  Motorbuchse Motor connector Shield via housing	1	U	rd	 flying leads
	2	TEMP+	wh	
	3	Brake+	wh	
	4	Brake-	bk	
	5	TEMP-	bu	
	6	W	wh	
	7	V	bk	
	8	PE	gn-ye	

Ordering Code	Length	Mat.-no
APC-01-08-02-P01-0300-00-00-00	300 cm	1021095
APC-01-08-02-P01-0500-00-00-00	500 cm	1021097
APC-01-08-02-P01-1000-00-00-00	1000 cm	1021104

3.6 CanisDrive Ordering Code AFC (Actuator Feedback Cable)

Encoder		Produkt		Kabellänge		Regler	
Feedback		Assignment		Length (cm)		Drive	
AE = Batteriebox MZE		00 = BHA		500		00 = -	
AS = Batteriebox MGS		01 = BDA		1000		01 = YukonDrive	
B = BiSS		02 = CHA*		1500		02 = offen	
C = DriveCliq		03 = LynxDrive				03 = Bosch Rexroth	
D = Hiperface DSL		04 = FHA mini				04 = Beckhoff	
E = EnDat						05 = ELMO Gold Cello	
H = Hiperface						99 = kundenspezifischer Regler	
R = Resolver							
S = SinCos							
SSI = SSI							
T = TTL							

AFC	-	H	-	05	-	01	-	F02	-	0500	-	11	-	01	-	00
				00 = -				F00 = -				00 = -				00 = PUR
				01 = -				F01 = -				01 = -				
				02 = -				F02 = (4x(2x0.25)+2x0.5)C				02 = offen				
				03 = -				F03 = (4x(2x0.15)C+4x0.15+2x0.5)C				03 =				
				04 = 17 pol. M17, female				F04 = (3x(2x0.14)C+4x0.14+2x0.5)C				04 =				
				05 = 12pol. Ytec, female				F05 = (3x(2x0.14)C+4x0.14+4x0.25+2x0.5)C				05 =				
				06 = 12pol. M23, female				F06 = (3x(2x0.14)C+2x(0.5)C)C				06 =				
				07 = 17pol. M23, female				F07 = (4x(2x0.5)C)C igus				07 =				
				08 =				F08 = (6x(2x0.5)C)C igus				08 =				
				09 =								09 = 15 pol. Sub-D, 3-rows, 45° side, male				
				10 =								10 = 9 pol. Sub-D, 2-rows, straight, male				
				11 =								11 = 15 pol. Sub-D, 3-rows, straight, male				
				12 = 15 pol. Sub-D, 3-reihig, straight, female								12 = 15 pol. Sub-D, 2-rows, 45° side, male				
												13 = 15 pol. Sub-D, 2-rows, straight, male				

Type	Actuator end [side-A]	Cable stucture	Drive end [side-B]	Outer jacket
Kategorie	Antriebsseite	Kabeltyp	Reglerseite	Kabelmantel

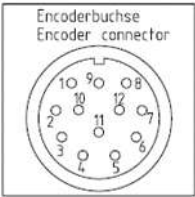
CHA* = CanisDrive, CHA-C, Aloplex, FHA
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3.7 Standard Length CanisDrive AFC

- 300 cm (not available for all cables)
- 500 cm
- 1000 cm
- 1500 cm

3.8 HIPERFACE SIH, MIH, SHH, MHH M23/12 pol - Flying Leads

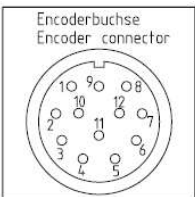
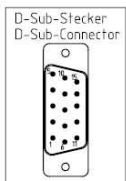


Actuator side	A-side	Signal	Colour	Controller side
female  Encoderbuchse Encoder connector shield via housing inner shield via housing	1	7- 12 V	bn-rd	flying leads
	2	GND	bn-bu	
	3	SIN+	ye	
	4	REFSIN	gn	
	5	DATA+	rd	
	6	DATA-	og	
	7	COS	bk	
	8	REFCOS	bn	
	9	TEMP+	wh-ye	
	10	TEMP-	wh-bk	
	11	n.c.	bu	
	12	n.c.	gy	

Ordering Code	Length	Mat.-no.
AFC-H-06-02-F04-0300-02-02-00	300 cm	1034532
AFC-H-06-02-F04-0500-02-02-00	500 cm	1019785
AFC-H-06-02-F04-1000-02-02-00	1000 cm	1039257
AFC-H-06-02-F04-1500-02-02-00	1500 cm	1040154

3.9 HIPERFACE SIH, MIH, SHH, MHH M23/12 pol. - D-SUB/15 pol./YukonDrive



Actuator side	A-side	Signal	B-side	Controller side
female  Encoderbuchse Encoder connector shield via housing inner shield via hosing	1	7- 12 V	3	male  D-Sub-Stecker D-Sub-Connector vorne / front Sub-D, 15 pol. 3-rows, UNC, straight shield via housing inner shield via housing
	2	GND	8	
	3	SIN+	11	
	4	REFSIN	6	
	5	DATA+	4	
	6	DATA-	5	
	7	COS	2	
	8	REFCOS	1	
	9	TEMP+	10	
	10	TEMP-	9	
	11	n.c.		
	12	n.c.		

Ordering Code	Length	Mat.-no.
AFC-H-06-02-F04-0300-11-01-00	300 cm	1039258
AFC-H-06-02-F04-0500-11-01-00	500 cm	1039259
AFC-H-06-02-F04-1000-11-01-00	1000 cm	1039260

3.10 MGSe-M23/17 pol. - Flying Leads

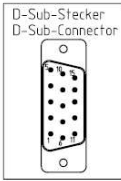


Actuator side	A-side	Signal	Colour	Controller side
 female shield via housing inner shield via housing	1	A+	rd	flying leads
	2	A-	wh	
	3	DATA+	gn	
	4	UBAT+	wh-rd	
	5	CLOCK+	bu	
	6	UBAT-	bk	
	7	0V	bk	
	8	TEMP+	wh-bn	
	9	TEMP-	wh-bu	
	10	Up+	rd	
	11	B+	bk	
	12	B-	wh	
	13	DATA-	wh	
	14	CLOCK-	wh	
	15	n.c.		
	16	Reset	wh-bk	
	17	Inner shield		

Ordering Code	Length	Mat.-no.
AFC-E-07-02-F03-0500-02-02-00	500 cm	1025610
AFC-E-07-02-F03-1000-02-02-00	1000 cm	1025896
AFC-E-07-02-F03-1500-02-02-00	1500 cm	1025897

3.11 MGSe-M23/17 pol. – SUB-D/15 pol./YukonDrive

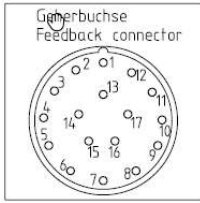


Actuator side	A-side	Signal	B-side	Controller side
female  shield via housing inner shield via housing	1	A+	2	male  Sub-D, 15 pol. 3-rows, UNC, straight shield via housing inner shield via housing
	2	A-	1	
	3	DATA+	4	
	4	UBAT+	7	
	5	CLOCK+	14	
	6	UBAT-	8	
	7	0V	8	
	8	TEMP+	10	
	9	TEMP-	9	
	10	+Up	3	
	11	B+	11	
	12	B-	6	
	13	DATA-	5	
	14	CLOCK-	15	
	15	n.c.		
	16	Reset	12	
	17	Inner shield	13	

Ordering Code	Length	Mat.-no.
AFC-E-07-02-F03-0500-11-01-00	500 cm	1039678
AFC-E-07-02-F03-1000-11-01-00	1000 cm	1039679
AFC-E-07-02-F03-1500-11-01-00	1500 cm	1025873

3.12 MGSi-SPEEDCON M17/17 pol. – Flying Leads

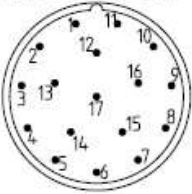


Actuator side	A-side	Signal	Colour	Controller side
female  shield via housing inner shield via housing	1	A+ / COS+	rd	flying leads
	2	A- / COS-	wh	
	3	DATA+	gn	
	4	n.c.		
	5	CLOCK+	bu	
	6	n.c.		
	7	GND/0V	bk	
	8	TEMP+	wh-bn	
	9	TEMP-	wh-bu	
	10	+Up	rd	
	11	B+ / SIN+	bk	
	12	B- / SIN-	wh	
	13	DATA-	wh	
	14	CLOCK-	wh	
	15	GND/Sense-	wh-bk	
	16	+Up / Sense+	wh-rd	
	17	n.c.		

Ordering Code	Length	Mat.-no.
AFC-E-04-02-F03-0300-02-02-00	300 cm	1017382
AFC-E-04-02-F03-0500-02-02-00	500 cm	1021256
AFC-E-04-02-F03-1000-02-02-00	1000 cm	1021257

3.13 MZE/SZE-M23/17 pol. - Flying Leads

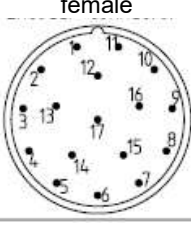
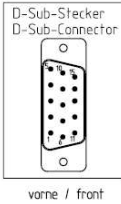


Actuator side	A-side	Signal	Colour	Controller side
 female Sub-D, 15 pol. 3-rows, UNC, straight shield via housing inner shield via housing	1	n.c.		flying leads
	2	n.c.		
	3	DATA+	gn	
	4	UBAT+	bk	
	5	CLOCK+	rd	
	6	UBAT-	bn	
	7	0V	bn-bu	
	8	TEMP+	gy	
	9	TEMP-	bu	
	10	+Up	bn-rd	
	11	n.c.		
	12	n.c.		
	13	DATA-	ye	
	14	CLOCK-	og	
	15	Sense-	wh-bk	
	16	Sense+	wh-ye	
	17	Inner shield	-	

Ordering Code	Length	Mat.-no.
AFC-E-07-02-F04-0500-02-02-00	500 cm	1032999
AFC-E-07-02-F04-1000-02-02-00	1000 cm	1033000
AFC-E-07-02-F04-1500-02-02-00	1500 cm	1033001

3.14 MZE/SZE-M23/17 pol. – SUB-D/15 pol. YukonDrive

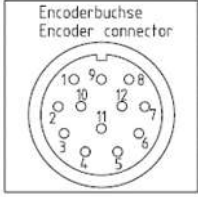


Actuator side	A-side	Signal	B-side	Controller side
 female also valid for 17-pin socket shield via housing	1	n.c.	2	 male D-Sub-Stecker D-Sub-Connector varre / front Sub-D, 15 pol. 3-rows, UNC, straight
	2	n.c.	6	
	3	DATA+	4	
	4	UBAT+	7	
	5	CLOCK+	14	
	6	UBAT-	8	
	7	0V		
	8	TEMP+	10	
	9	TEMP-	9	
	10	+Up	3	
	11	n.c.		
	12	n.c.		
	13	DATA-	5	
	14	CLOCK-	15	
	15	Sense-	13	
	16	Sense+	12	
	17	Inner shield	housing	

Ordering Code	Lenght	Mat.-no.
AFC-E-07-02-F04-0500-11-01-00	500 cm	1033012
AFC-E-07-02-F04-1000-11-01-00	1000 cm	1033013
AFC-E-07-02-F04-1500-11-01-00	1500 cm	1033014

3.15 Resolver-M23/12 pol. – Flying Leads

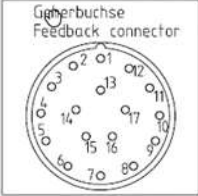


Actuator side	A-side	Signal	B-side	Controller side
female  Encoderbuchse Encoder connector shield via housing inner shield via housing	1	SIN+ (S2)	ye	flying leads
	2	SIN- (S4)	gn	
	3	n.c.	bn-bu	
	4	n.c.	bn-rd	
	5	n.c.	bu	
	6	n.c.	gy	
	7	Vss- (R2)	og	
	8	TEMP+	wh-ye	
	9	TEMP-	wh-bk	
	10	Vss+ (R1)	rd	
	11	COS+ (S1)	bk	
	12	COS- (S3)	bn	

Ordering Code	Length	Mat.-no.
AFC-R-06-02-F04-0300-02-02-00	300 cm	1024553
AFC-R-06-02-F04-0500-02-02-00	500 cm	1024558
AFC-R-06-02-F04-1000-02-02-00	1000 cm	1024559

3.16 Resolver-M17/17 pol. – Flying Leads

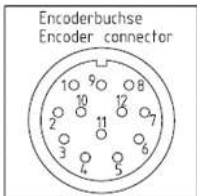
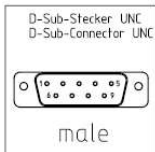


Actuator side	A-side	Signal	B-side	Drive side
female  Geberbuchse Feedback connector shield via housing inner shield via housing	1	SIN+ (S2)	ye	flying leads
	2	SIN- (S4)	gn	
	3	n.c.		
	4	n.c.		
	5	n.c.		
	6	n.c.		
	7	Vss- (R2)	og	
	8	TEMP+	gy	
	9	TEMP-	wh-bk	
	10	Vss+ (R1)	rd	
	11	COS+ (S1)	bk	
	12	COS- (S3)	bn	
	13 – 17	n.c.		

Ordering Code	Length	Mat.-no.
AFC-R-04-02-F04-0300-02-02-00	300 cm	1017290
AFC-R-04-02-F04-0500-02-02-00	500 cm	1017291
AFC-R-04-02-F04-1000-02-02-00	1000 cm	1017294
AFC-R-04-02-F04-1500-02-02-00	1500 cm	

3.17 Resolver-M23/12 pol. - SUB-D/9 pol. / YukonDrive

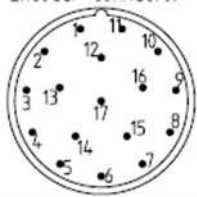


Actuator side	A-side	Signal	B-side	Controller side
female  Encoderbuchse Encoder connector shield via housing inner shield vial housing	1	SIN+ (S2)	1	male  D-Sub-Stecker UNC D-Sub-Connector UNC male vorne / front Sub-D, 9 pol. 2-rows, UNC, straight shield via housing inner shield vial housing
	2	SIN- (S4)	2	
	3	n.c.	n.c.	
	4	n.c.	n.c.	
	5	n.c.	n.c.	
	6	n.c.	n.c.	
	7	Vss- (R2)	7	
	8	TEMP+	5	
	9	TEMP-	9	
	10	Vss+ (R1)	6	
	11	COS+ (S1)	3	
	12	COS- (S3)	8	

Ordering Code	Length	Mat.-no.
AFC-R-06-02-F04-0300-10-01-00	300 cm	1039680
AFC-R-06-02-F04-0500-10-01-00	500 cm	1039681
AFC-R-06-02-F04-1000-10-01-00	1000 cm	1039682

3.18 EnDat-M23/17 pol. - Flying Leads

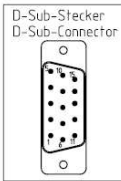


Actuator side	A-side	Signal	Colour	Controller side
female  shield via housing inner shield via hosing	1	A+	ye	flying leads
	2	A-	gn	
	3	DATA+	rd	
	4	UBAT+	wh-ye	
	5	CLOCK+	bu	
	6	UBAT-	gy	
	7	M-Encoder	bn-bu	
	8	TEMP+	gn-bk	
	9	TEMP-	gn-rd	
	10	P-Encoder	bn-rd	
	11	B+	bk	
	12	B-	bn	
	13	DATA-	og	
	14	CLOCK-	wh-bk	
	15	0V sense	bn-ye	
	16	5 V sense	bn-gy	
	17	n.c.	-	

Ordering Code	Length	Mat.-no.
AFC-E-07-02-F05-0500-02-02-00	500 cm	1038716
AFC-E-07-02-F05-1000-02-02-00	1000 cm	1038753
AFC-E-07-02-F05-1500-02-02-00	1500 cm	1038754

3.19 EnDat-M23/17 pol. – SUB-D, 15 pol./YukonDrive

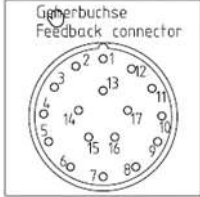


Actuator side	A-side	Signal	B-side	Controller side
female  shield via housing inner shield via hosing	1	A+	1	male  varne / front Sub-D, 15 pol. 3-rows, UNC, straight shield via housing inner shield vial housing
	2	A-	2	
	3	DATA+	4	
	4	n.c.	-	
	5	CLOCK+	14	
	6	n.c.	7	
	7	GND	8	
	8	TEMP+	10	
	9	TEMP-	9	
	10	5VDC	3	
	11	B+	11	
	12	B-	6	
	13	DATA-	5	
	14	CLOCK-	15	
	15	0V sense	13	
	16	5V sense	12	
	17	n.c.	-	

Ordering Code	Length	Mat.-no.
AFC-E-07-02-F05-0500-11-01-00	500 cm	1038775
AFC-E-07-02-F05-1000-11-01-00	1000 cm	1038776
AFC-E-07-02-F05-1500-11-01-00	1500 cm	1038777

3.20 TTL-M17/17 pol. - Flying Leads

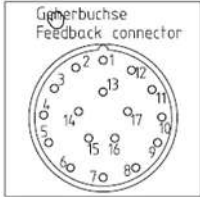
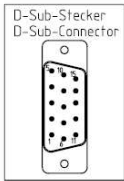


Actuator side	A-side	Signal	Colour	Controller side
female  shield via housing inner shield via housing	1	U+	bn-gy	flying leads
	2	U-	bn-ye	
	3	V+	bu	
	4	V-	gy	
	5	W+	wh-bk	
	6	W-	wh-ye	
	7	GND	bn-bu	
	8	+5V	bn-rd	
	9	Z+ (Index+)	rd	
	10	Z- (Index-)	og	
	11	A+	ye	
	12	A-	gn	
	13	B+	bk	
	14	B-	bn	
	15	TEMP+	gn-bk	
	16	TEMP-	gn-rd	
	17	n.c.	-	

Ordering Code	Length	Mat.-no.
AFC-T-04-02-F05-0300-02-02-00	300 cm	1021181
AFC-T-04-02-F05-0500-02-02-00	500 cm	1021182
AFC-T-04-02-F05-1000-02-02-00	1000 cm	1021183

3.21 TTL-M17/17 pol. - SUB-D/15 pol./YukonDrive



Actuator side	A-side	Signal	B-side	Controller side
female Ggterbuchse Feedback connector  shield via housing inner shield via housing	1	U+	4	male D-Sub-Stecker D-Sub-Connector  vorne / front Sub-D, 15 pol. 3-rows, UNC, straight shield via housing inner shield vial housing
	2	U-	5	
	3	V+	14	
	4	V-	15	
	5	W+	7	
	6	W-	12	
	7	GND	8	
	8	+5V	3	
	9	Z+ (Index+)	10	
	10	Z- (Index-)	9	
	11	A+	2	
	12	A-	1	
	13	B+	11	
	14	B-	6	
	15	n.c.	n.c.	
	16	n.c.	-	
	17	n.c.	-	

Ordering Code	Length	Mat.-no.
AFC-T-04-02-F05-0300-11-01-00	300 cm	1021105
AFC-T-04-02-F05-0500-11-01-00	500 cm	1021147
AFC-T-04-02-F05-1000-11-01-00	1000 cm	1021149

4. LynxDrive

4.1 LynxDrive Ordering Code APC (Actuator Power Cable)

Bremse Brake 00= without Brake 01 = Brake		Produkt Assignment 00 = BHA 01 = BDA 02 = CHA* 03 = LynxDrive 04 = FHA mini		Kabellänge Length [cm] 500 1000 1500		Regler Drive 00 = open end + YukonDrive 01 = - 02 = - 03 = Bosch Rexroth 04 = Beckhoff 05 = ELMO Gold Cello 99 = kundenspezifischer Regler								
APC	-	01	-	01	-	P01	-	0500	-	00	-	01	-	00
		00 = - 01 = 9pol. itec female 02 = 8pol. M23 female 03 = 6pol. M23 female 04 = - 05 = - 06 = - 07 = - 08 = 8 pol. M17 female		P00 = - P01 = (4G1,0+2x(2x0,34)C)C P02 = (4G1,5+2x(2x0,75) C)C P03 = (4G1,0+2x(2x0,75)C)C P04 = (4G0,75+(2x0,34)C)C P05 = (4x0,5+2x(2x0,25)C)C P06 = (4x0,34+2x(2x0,15)C)C P07 = (4x2,5G+2x(2x0,15)C)C		00 = flying leads and YuconDrive		00 = PUR						
Type Kategorie		Actuator End [side-A] Antriebsseite		Cable Structure Kabeltyp		Drive End [side-B] Reglerseite		Outer jacket Kabelmantel						

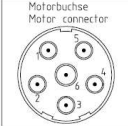
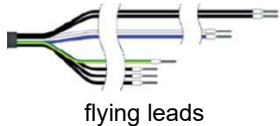
CHA* = CanisDrive, CHA-C, Alopex, FHA

4.2 Standard Length LynxDrive APC

- 300 cm (not available for all cables)
- 500 cm
- 1000 cm
- 1500 cm

4.3 APC-M23/6 pol. - Flying Leads

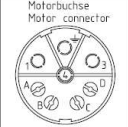
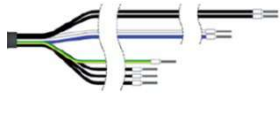


Actuator side	A-side	Signal	Label	Controller side
female  shield via housing	1	U	U/L1/C/L+	 flying leads
	2	V	V/L2	
	3	PE	gn-ye	
	4	Brake+	5	
	5	Brake-	6	
	6	W	W/L3/D/L-	

Ordering Code	Length	Mat.-no.
APC-01-03-03-P02-0300-00-00-00	300 cm	1038764
APC-01-03-03-P02-0500-00-00-00	500 cm	1038711
APC-01-03-03-P02-1000-00-00-00	1000 cm	1038749
APC-01-03-03-P02-1500-00-00-00	1500 cm	1038750

4.4 APC-M23/8 pol. - Flying Leads



Actuator side	A-side	Signal	Label	Controller side
female  shield via housing	1	U	U1	 flying leads
	2	PE	gn-ye	
	3	W	W3	
	4	V	V2	
	A	TEMP+	5	
	B	TEMP-	6	
	C	Brake+	7	
	D	Brake-	8	

Ordering Code	Length	Mat.-no.
APC-01-02-03-P02-0300-00-00-00	300 cm	1039159
APC-01-02-03-P02-0500-00-00-00	500 cm	1039160
APC-01-02-03-P02-1000-00-00-00	1000 cm	1039161

4.5 LynxDrive Ordering Code AFC (Actuator Power Cable)

Encoder		Produkt		Kabellänge		Regler	
Feedback		Assignment		Length [cm]		Drive	
AE = Batteriebox MZE		00 = BHA		500		00 = -	
AS = Batteriebox MGS		01 = BDA		1000		01 = YukonDrive	
B = BiSS		02 = CHA*		1500		02 = offen	
C = DriveCliq		03 = LynxDrive				03 = Bosch Rexroth	
D = Hiperface DSL		04 = FHA mini				04 = Beckhoff	
E = EnDat						05 = ELMO Gold Cello	
H = Hiperface							
R = Resolver							
S= Sin/Cos							
SSI = SSI							
T = TTL						99 = kundenspezifischer Regler	

AFC	-	H	-	05	-	01	-	F02	-	0500	-	11	-	01	-	00	
				00 = -				F00 = -				00 = -				00 = PUR	
				01 = -				F01 = -				01 = -					
				02 = -				F02 = (4x(2x0,25)+2x0,5)C				02 = offen					
				03 = -				F03 = (4x(2x0,15)C+4x0,15+2x0,5)				03 =					
				04 = 17 pol. M17, female				F04 = (3x(2x0,14)C+4x0,14+2x0,5)C				04 =					
				05 = 12pol. Ytec, female				F05 = (3x(2x0,14)C+4x0,14+4x0,25+2x0,5)C				05 =					
				06 = 12pol. M23, female				F06 = (3x(2x0,14)C+2x(0,5)C)C				06 =					
				07 = 17pol. M23, female				F07 = (4x(2x0,5)C)C igus				07 =					
				08 =				F08 = (6x(2x0,5)C)C igus				08 =					
				09 =								09 = 15 pol. Sub-D, 3-rows, 45° side, male					
				10 =								10 = 9 pol. Sub-D, 2-rows, straight, male					
				11 =								11 = 15 pol. Sub-D, 3-rows, straight, male					
				12 = 15 pol. Sub-D, 3-reihig, straight, female								12 = 15 pol. Sub-D, 2-rows, 45° side, male					
												13 = 15 pol. Sub-D, 2-rows, straight, male					
Type				Actuator end [side-A]				Cable stucture				Drive end [side-B]				Outer jacket	
Kategorie				Antriebsseite				Kabeltyp				Reglersseite				Kabelmantel	

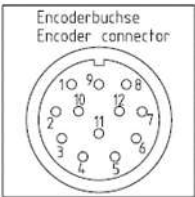
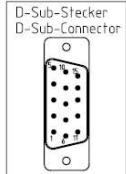
CHA* = CanisDrive, CHA-C, Aloplex, FHA
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4.6 Standard Length LynxDrive AFC

- 300 cm (not available for all cables)
- 500 cm
- 1000 cm
- 1500 cm

4.7 HIPERFACE SIH, MIH, SHH, MHH - M23/12 pol. – D-SUB/15 pol./YukonDrive

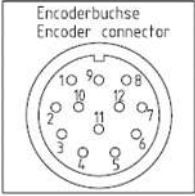
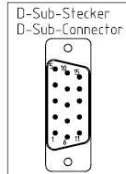


Actuator side	A-side	Signal	B-side	Controller side
female  Encoderbuchse Encoder connector shield via housing inner shield via housing	1	7- 12 V	3	male  D-Sub-Stecker D-Sub-Connector vorne / front Sub-D, 15 pol. 3-rows, UNC, straight shield via housing inner shield vial housing
	2	GND	8	
	3	SIN+	11	
	4	REFSIN	6	
	5	DATA+	4	
	6	DATA-	5	
	7	COS	2	
	8	REFCOS	1	
	9	TEMP+	10	
	10	TEMP-	9	
	11	n.c.		
	12	n.c.		

Ordering Code	Length	Mat.-no.
AFC-H-06-03-F04-0300-11-01-00	300 cm	1039258
AFC-H-06-03-F04-0500-11-01-00	500 cm	1039259
AFC-H-06-03-F04-1000-11-01-00	1000 cm	1039260

4.8 HIPERFACE SIH, MIH, SHH, MHH - M23/12 pol. – D-SUB/15 pol./45°C/Yukondr.

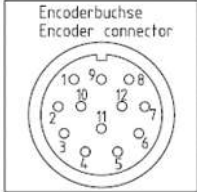
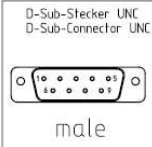


Actuator side	A-side	Signal	B- side	Controller side
female  Encoderbuchse Encoder connector shield via housing inner shield via housing	1	7- 12 V	3	male  D-Sub-Stecker D-Sub-Connector vorne / front Sub-D, 15 pol. 3-rows, UNC, 45° shield via housing inner shield vial housing
	2	GND	8	
	3	SIN+	11	
	4	REFSIN	6	
	5	DATA+	4	
	6	DATA-	5	
	7	COS	2	
	8	REFCOS	1	
	9	TEMP+	10	
	10	TEMP-	9	
	11	n.c.		
	12	n.c.		

Ordering Code	Length	Mat.-no.
AFC-H-06-03-F04-0500-09-01-00	500 cm	1039115
AFC-H-06-03-F04-1000-09-01-00	1000 cm	314278
AFC-H-06-03-F04-1500-09-01-00	1500 cm	1034975

4.9 Resolver-M23/12 pol. - SUB-D/9 pol./YukonDrive

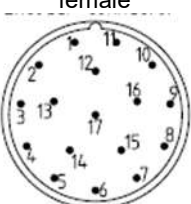


Actuator side	A-side	Signal	B-side	Controller side
female Encoderbuchse Encoder connector  shield via housing inner shield via housing	1	SIN+ (S2)	1	male D-Sub-Stecker UNC D-Sub-Connector UNC  male vorne / front Sub-D, 9 pol. 2-rows, UNC, straight shield via housing inner shield vial housing
	2	SIN- (S4)	2	
	3	n.c.	n.c.	
	4	n.c.	n.c.	
	5	n.c.	n.c.	
	6	n.c.	n.c.	
	7	Vss- (R2)	7	
	8	TEMP+	5	
	9	TEMP-	9	
	10	Vss+ (R1)	6	
	11	COS+ (S1)	3	
	12	COS- (S3)	8	

Ordering Code	Length	Mat.-no.
AFC-R-06-03-F04-0300-10-01-00	300 cm	1039680
AFC-R-06-03-F04-0500-10-01-00	500 cm	1039681
AFC-R-06-03-F04-1000-10-01-00	1000 cm	1039682

4.10 EnDat-M23/17 pol. - Flying Leads

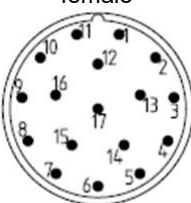
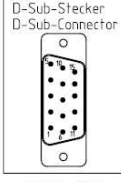


Actuator side	A-side	Signal	Colour	Controller side
 female shield via housing inner shield vial housing	1	A+	ye	flying leads
	2	A-	gn	
	3	DATA+	rd	
	4	(Optional) UBAT+	wh-ye	
	5	CLOCK+	bu	
	6	(Optional) UBAT-	gy	
	7	M-Encoder	bn-bu	
	8	TEMP+	gn-bk	
	9	TEMP-	gn-rd	
	10	P-Encoder	bn-rd	
	11	B+	bk	
	12	B-	bn	
	13	DATA-	og	
	14	CLOCK-	wh-bk	
	15	0V sense	bn-ye	
	16	5 V sense	Bn-gy	
	17	n.c.	-	

Ordering Code	Length	Mat.-no.
AFC-E-07-03-F05-0500-02-02-00	500 cm	1038716
AFC-E-07-03-F05-1000-02-02-00	1000 cm	1038753
AFC-E-07-03-F05-1500-02-02-00	1500 cm	1038754

4.11 EnDat-M23/17 pol. – SUB-D/15 pol./YukonDrive



Actuator side	A-side	Signal	B-side	Controller side
female  shield via housing	1	A+	1	male  Sub-D, 15 pol. 3-rows, UNC, straight shield via housing inner shield vial housing
	2	A-	2	
	3	DATA+	4	
	4	n.c.	-	
	5	CLOCK+	14	
	6	n.c.	7	
	7	GND	8	
	8	TEMP+	10	
	9	TEMP-	9	
	10	5VDC	3	
	11	B+	11	
	12	B-	6	
	13	DATA-	5	
	14	CLOCK-	15	
	15	0V sense	13	
	16	5V sense	12	
	17	n.c.	-	

Ordering Code	Length	Mat.-no.
AFC-E-07-03-F05-0500-11-01-00	500 cm	1038775
AFC-E-07-03-F05-1000-11-01-00	1000 cm	1038776
AFC-E-07-03-F05-1500-11-10-00	1500 cm	1038777

5. CHA-C/FHA

5.1 CHA-C/FHA Ordering Code APC (Actuator Power Cable)

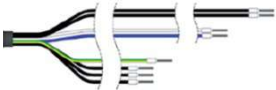
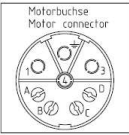
Bremse Brake 00= without Brake 01 = Brake		Produkt Assignment 00 = BHA 01 = BDA 02 = CHA* 03 = LynxDrive 04 = FHA mini		Kabellänge Length [cm] 500 1000 1500		Regler Drive 00 = open end + YukonDrive 01 = - 02 = - 03 = Bosch Rexroth 04 = Beckhoff 05 = ELMO Gold Cello 99 = kundenspezifischer Regler										
APC	-	01	-	01	-	01	-	P01	-	0500	-	00	-	01	-	00
		00 = - 01 = 9pol. itec female 02 = 8pol. M23 female 03 = 6pol. M23 female 04 = - 05 = - 06 = - 07 = - 08 = 8 pol. M17 female		P00 = - P01 = (4G1,0+2x(2x0,34)C)C P02 = (4G1,5+2x(2x0,75) C)C P03 = (4G1,0+2x(2x0,75)C)C P04 = (4G0,75+(2x0,34)C)C P05 = (4x0,5+2x(2x0,25)C)C P06 = (4x0,34+2x(2x0,15)C)C P07 = (4x2,5G+2x(2x0,15)C)C		00 = flying leads and YuconDrive		00 = PUR								
Type Kategorie		Actuator End [side-A] Antriebsseite		Cable Structure Kabeltyp		Drive End [side-B] Reglerseite		Outer jacket Kabelmantel								
CHA* = CanisDrive, CHA-C, Alopex, FHA																

5.2 Standard Length CHA-C/FHA APC

- 300 cm (not available for all cables)
- 500 cm
- 1000 cm
- 1500 cm

5.3 CHA-C/FHA-M23/8 pol. - Flying Leads



Actuator side	A-side	Signal	Label	Controller side
female	1	U	U/L1/C/L+	 flying leads
 Shield via housing	2	PE	gn-ye	
	3	W	W/L3/D/L	
	4	V	V/L2	
	A	Brake+		
	B	Brake-		
	C	Temp+		
	D	Temp-	-	

Ordering Code	Length	Mat.-no.
APC-01-02-02-P02-0300-00-00-00	300 cm	1039141
APC-01-02-02-P02-0500-00-00-00	500 cm	1039142
APC-01-02-02-P02-1000-00-00-00	1000 cm	1019143

5.4 FHA Ordering Code AFC (Actuator Power Cable)

Encoder		Produkt		Kabellänge		Regler	
Feedback		Assignment		Length [cm]		Drive	
AE = Batteriebox MZE		00 = BHA		500		00 = -	
AS = Batteriebox MGS		01 = BDA		1000		01 = YukonDrive	
B = BiSS		02 = CHA*		1500		02 = offen	
C = DriveCliq		03 = LynxDrive				03 = Bosch Rexroth	
D = Hiperface DSL		04 = FHA mini				04 = Beckhoff	
E = EnDat						05 = ELMO Gold Cello	
H = Hiperface						99 = kundenspezifischer Regler	
R = Resolver							
S = SinCos							
SSI = SSI							
T = TTL							

AFC	-	H	-	05	-	01	-	F02	-	0500	-	11	-	01	-	00
				00 = -				F00 = -				00 = -				00 = PUR
				01 = -				F01 = -				01 = -				
				02 = -				F02 = (4x(2x0.25)+2x0.5)C				02 = offen				
				03 = -				F03 = (4x(2x0.15)C+4x0.15+2x0.5)C				03 =				
				04 = 17 pol. M17, female				F04 = (3x(2x0.14)C+4x0.14+2x0.5)C				04 =				
				05 = 12pol. Ytec, female				F05 = (3x(2x0.14)C+4x0.14+4x0.25+2x0.5)C				05 =				
				06 = 12pol. M23, female				F06 = (3x(2x0.14)C+2x(0.5)C)C				06 =				
				07 = 17pol. M23, female				F07 = (4x(2x0.5)C)C igus				07 =				
				08 =				F08 = (6x(2x0.5)C)C igus				08 =				
				09 =								09 = 15 pol. Sub-D, 3-rows, 45° side, male				
				10 =								10 = 9 pol. Sub-D, 2-rows, straight, male				
				11 =								11 = 15 pol. Sub-D, 3-rows, straight, male				
				12 = 15 pol. Sub-D, 3-reihig, straight, female								12 = 15 pol. Sub-D, 2-rows, 45° side, male				
												13 = 15 pol. Sub-D, 2-rows, straight, male				

Type	Actuator end [side-A]	Cable stucture	Drive end [side-B]	Outer jacket
Kategorie	Antriebsseite	Kabeltyp	Reglerseite	Kabelmantel

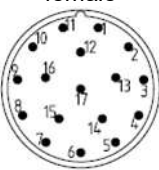
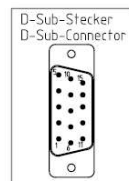
CHA* = CanisDrive, CHA-C, Aloplex, FHA
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5.5 Standard Length FHA - AFC

- 300 cm (not available for all cables)
- 500 cm
- 1000 cm
- 1500 cm

5.6 C1024 (Sin/Cos) - M23/17 pol. - D-SUB/15 pol./YukonDrive



Actuator side	A-side	Signal	B-side	Controller side
female  Innershield pin 17 shield via housing	1	A+	1	male  vorne / front Sub-D, 15 pol. 3-rows, UNC, straight Innershield pin 1 shield via housing
	2	A-	2	
	3	R+	4	
	4	n.c.		
	5	n.c.		
	6	n.c.		
	7	GND	8	
	8	Temp+	10	
	9	Temp-	9	
	10	5 V	3	
	11	B+	11	
	12	B-	6	
	13	R-	5	
	14			
	15	Sense-	13	
	16	Sense+	12	
	17	Inner shield		

Ordering Code	Length	Mat.-no.
AFC-S-07-02-F04-0500-11-01-00	500 cm	
AFC-S-07-02-F04-1000-11-01-00	1000 cm	
AFC-S-07-02-F04-1500-11-01-00	1500 cm	1044377

6. FHA mini

6.1 FHA mini: Ordering Code APC (Actuator Power Cable)

Bremse		Produkt		Kabellänge		Regler	
Brake		Assignment		Length [cm]		Drive	
00= without Brake		00 = BHA		500		00 = open end + YukonDrive	
01 = Brake		01 = BDA		1000		01 = -	
		02 = CHA*		1500		02 = -	
		03 = LynxDrive				03 = Bosch Rexroth	
		04 = FHA mini				04 = Beckhoff	
						05 = ELMO Gold Cello	
						99 – kundenspezifischer Regler	

APC	-	01	-	01	-	01	-	P01	-	0500	-	00	-	01	-	00
		00 = - 01 = 9pol. itec female 02 = 8pol. M23 female 03 = 6pol. M23 female 04 = - 05 = - 06 = - 07 = - 08 = 8 pol. M17 female				P00 = - P01 = (4G1,0+2x(2x0,34)C)C P02 = (4G1,5+2x(2x0,75) C)C P03 = (4G1,0+2x(2x0,75)C)C P04 = (4G0,75+(2x0,34)C)C P05 = (4x0,5+2x(2x0,25)C)C P06 = (4x0,34+2x(2x0,15)C)C P07 = (4x2,5G+2x(2x0,15)C)C				00 = flying leads and YuconDrive				00 = PUR		
Type		Actuator End [side-A]				Cable Structure				Drive End [side-B]				Outer jacket		
Kategorie		Antriebsseite				Kabeltyp				Reglerseite				Kabelmantel		

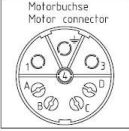
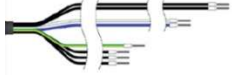
CHA* = CanisDrive, CHA-C, Alopex, FHA

6.2 Standard Length FHA mini

- 300 cm (not available for all cables)
- 500 cm
- 1000 cm
- 1500 cm

6.3 APC -M23/8 pol. - Flying Leads

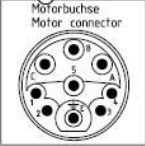
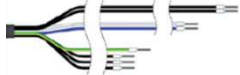


Actuator side	A-side	Signal	Label	Controller side
female  Shield via housing	1	U	U/L1/C/L+	 flying leads
	2/PE	PE	gn-ye	
	3	V	V/L2/	
	4	W	W/L3	
	A	n.c.	-	
	D	n.c.	-	
	C	n.c.	-	
	D	n.c.	-	

Ordering Code	Length	Mat.-no.
APC-01-02-04-P04-0300- 00-00-00	300 cm	1044217
APC-01-02-04-P04-0500- 00-00-00	500 cm	1044321
APC-01-02-04-P04-1000- 00-00-00	1000 cm	1044323
APC-01-02-04-P04-1500-00-00-00	1500 cm	1044325

6.4 APC Springtec/9 pol. - Flying Leads



Actuator side	A-side	Signal	Label	Controller side
female  Shield via housing	A	U	U (rd)	 flying leads
	B	V	V (wt)	
	C	W	W (bl)	
	1	n.c.	-	
	2	n.c.	-	
	PE	PE	gn-ye	
	3	n.c.	-	
	4	n.c.	-	
	5	n.c.	-	

Ordering Code	Length	Mat.-no.
APC-01-01-04-P04-0300- 00-00-00	300 cm	1044233
APC-01-01-04-P04-0500- 00-00-00	500 cm	1044326
APC-01-01-04-P04-1000- 00-00-00	1000 cm	1044327
APC-01-01-04-P04-1500- 00-00-00	1500 cm	1044328

6.5 FHA mini: Ordering Code AFC (Actuator Power Cable)

Encoder		Produkt		Kabellänge		Regler	
Feedback		Assignment		Length [cm]		Drive	
AE = Batteriebox MZE		00 = BHA		500		00 = -	
AS = Batteriebox MGS		01 = BDA		1000		01 = YukonDrive	
B = BiSS		02 = CHA*		1500		02 = offen	
C = DriveCliq		03 = LynxDrive				03 = Bosch Rexroth	
D = Hiperface DSL		04 = FHA mini				04 = Beckhoff	
E = EnDat						05 = ELMO Gold Cello	
H = Hiperface							
R = Resolver							
S= Sin/Cos							
SSI = SSI							
T = TTL						99 = kundenspezifischer Regler	

AFC	-	H	-	05	-	01	-	F02	-	0500	-	11	-	01	-	00
				00 = -		F00 = -		00 = -		00 = PUR						
				01 = -		F01 = -		01 = -								
				02 = -		F02 = (4x(2x0.25)+2x0.5)C		02 = offen								
				03 = -		F03 = (4x(2x0.15)C+4x0.15+2x0.5)C		03 =								
				04 = 17 pol. M17, female		F04 = (3x(2x0.14)C+4x0.14+2x0.5)C		04 =								
				05 = 12pol. Ytec, female		F05 = (3x(2x0.14)C+4x0.14+4x0.25+2x0.5)C		05 =								
				06 = 12pol. M23, female		F06 = (3x(2x0.14)C+2x(0.5)C)C		06 =								
				07 = 17pol., M23, female		F07 = (4x(2x0.5)C)C igus		07 =								
				08 =		F08 = (6x(2x0.5)C)C igus		08 =								
				09 =				09 = 15 pol. Sub-D, 3-rows, 45° side, male								
				10 =				10 = 9 pol. Sub-D, 2-rows, straight, male								
				11 =				11 = 15 pol. Sub-D, 3-rows, straight, male								
				12 = 15 pol. Sub-D, 3-reihig, straight, female				12 = 15 pol. Sub-D, 2-rows, 45° side, male								
								13 = 15 pol. Sub-D, 2-rows, straight, male								
Type				Actuator end [side-A]			Cable stucture			Drive end [side-B]			Outer jacket			
Kategorie				Antriebsseite			Kabeltyp			Reglerseite			Kabelmantel			

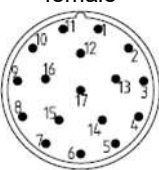
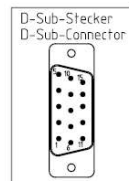
CHA* = CanisDrive, CHA-C, Aloplex, FHA
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6.6 Standard Length FHA mini - AFC

- 300 cm (not available for all cables)
- 500 cm
- 1000 cm
- 1500 cm

6.7 TTL-M23/17 pol. - Sub-D / YukonDrive

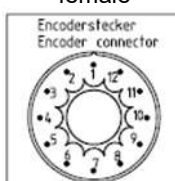
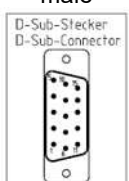


Actuator side	A-side	Signal	B-side	Controller side
 female Innershield via housing shield via housing	1	U	4	 male Sub-D, 15 pol. 3-rows, UNC, straight Innershield pin 1 shield via housing
	2	U\	5	
	3	V	14	
	4	V\	15	
	5	W	7	
	6	W\	12	
	7	GND	8	
	8	+5V	3	
	9	Z	10	
	10	Z\	9	
	11	A	2	
	12	A\	1	
	13	B	11	
	14	B\	6	
	15	n.c.	-	
	16	n.c.	-	
	17	n.c.	-	

Ordering Code	Length	Mat.-no.
AFC-T-07-04-F05-0300-11-01-00	300 cm	1044206
AFC-T-07-04-F05-0500-11-01-00	500 cm	1044208
AFC-T-07-04-F05-1000-11-01-00	1000 cm	1044210
AFC-T-07-04-F05-1000-11-01-00	1500 cm	1044212

6.8 MZE-Speedtec/12 pol. - Sub-D / YukonDrive

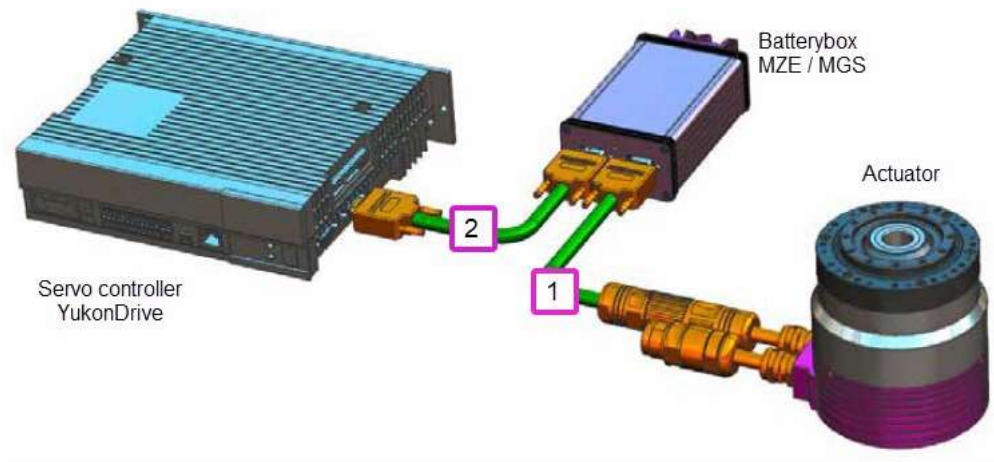


Actuator side	A-side	Signal	B-side	Controller side
 female Encoderstecker Encoder connector Springtec Shield via housing	1	+5V	3	 male Sub-D, 15 pol. 3-rows, UNC, straight shield via housing inner shield via housing
	2	Data+	4	
	3	Data-	5	
	4	Clock+	14	
	5	Clock-	15	
	6	Ubat-	8	
	7	GND	8	
	12	Ubat+	7	

Ordering Code	Length	Mat.-no.
AFC-E-05-04-F04-0300-11-01-00	300 cm	1044226
AFC-E-05-04-F04-0500-11-01-00	500 cm	1044227
AFC-E-05-04-F04-1000-11-01-00	1000 cm	1044228
AFC-E-05-04-F04-1500-11-01-00	1500 cm	1044229

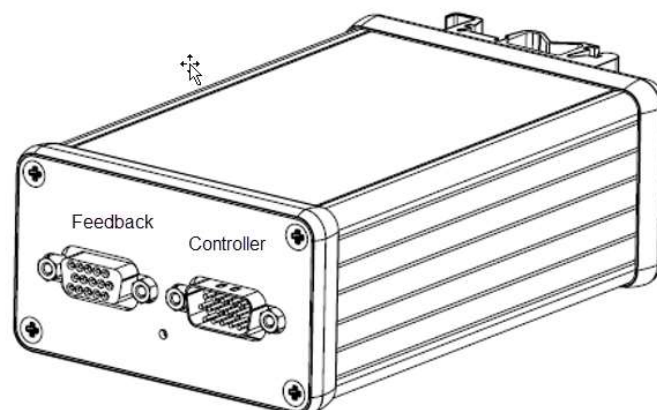
7. Battery Box Cables

7.1 Battery Box Cables MZE and MGS



7.2 Legend

- 1 Actuator – Batterybox cable
- 2 Battery box – Servocontroller cable



7.3 Encoder Cable Battery Box MZE

7.3.1 MZE-M23/17 pol. – SUB-D/15 pol./YukonDrive

1

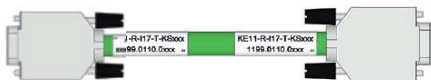


Actuator side	A-side	Signal	B-side	Controller side
female Innershield pin 17 shield via housing	1	n.c.		
	2	n.c.		
	3	DATA+	4	
	4	UBAT+	7	
	5	CLOCK+	14	
	6	UBAT-		
	7	0V	8	
	8	TEMP+	10	
	9	TEMP-	9	
	10	+Up	3	
	11	n.c.		
	12	n.c.		
	13	DATA-	5	
	14	CLOCK-	15	
	15	n.c.		
	16	n.c.		
	17	Inner shield	1	
				male D-Sub-Stecker D-Sub-Connector voire / front Sub-D, 15 pol. 3-rows, UNC, straight Innershield pin 1

Ordering Code	Length	Mat.-no.
AFC-E-07-02-F04-0500-11-01-00	500 cm	1033012
AFC-E-07-02-F04-1000-11-01-00	1000 cm	1033013
AFC-E-07-02-F04-1500-11-01-00	1500 cm	1033014

7.4 MZE-SUB-D/15 pol. – SUB-D/15 pol./YukonDrive

2



Actuator side	A-side	Signal	B-side	Controller side
	1	Inner shield	housing	
	2	n.c.		
	3	+Up	3	
	4	DATA+	4	
	5	DATA-	5	
	6	n.c.		
	7	n.c.		
	8	0V	8	
	9	TEMP-	9	
	10	TEMP+	10	
	11	n.c.		
	12	n.c.		
	13	n.c.		
	14	CLOCK+	14	
	15	CLOCK-	15	

female

Innershield pin 1 shield via housing

male

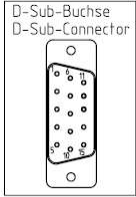
Sub-D, 15 pol. 3-rows, UNC, straight Innershield pin 1

Ordering Code	Length	Mat.-no.
AFC-AE-12-02-F04-0050-11-01-00	50 cm	1038614
AFC-AE-12-02-F04-0100-11-01-00	100 cm	1038615
AFC-AE-12-02-F04-0200-11-01-00	200 cm	1038616

7.4.1 MZE-SUB-D/15 pol. – Flying Leads

2

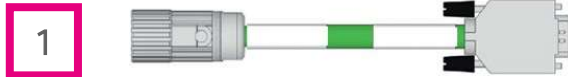


Actuator side	A-side	Signal	Colour	Controller side
female  vorne / front Innershield pin 1 shield via housing	1	Inner shield		flying leads
	2	n.c.		
	3	+Up	bn-rd	
	4	DATA+	gn	
	5	DATA-	ye	
	6	n.c.		
	7	n.c.		
	8	0V	bn-bu	
	9	TEMP-	bu	
	10	TEMP+	gy	
	11	n.c.		
	12	n.c.		
	13	n.c.		
	14	CLOCK+	rd	
	15	CLOCK-	og	

Ordering Code	Length	Mat.-no.
AFC-AE-12-02-F04-0050-02-02-00	50 cm	1041403
AFC-AE-12-02-F04-0100-02-02-00	100 cm	1041404
AFC-AE-12-02-F04-0200-02-02-00	200 cm	1041405

7.5 Encoder Cable Battery Box MGS

7.5.1 MGS-M23/17 pol. – SUB-D/15 pol./YukonDrive

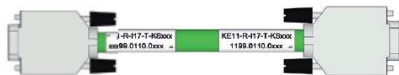


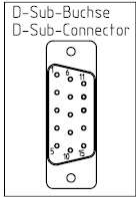
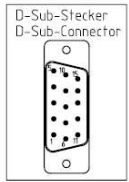
Actuator side	A-side	Signal	Colour	Controller side
female Innershield pin 17 shield via housing	1	A+	2	male Sub-D, 15 pol. 3-rows, UNC, straight Innershield pin 13
	2	A-	1	
	3	DATA+	4	
	4	UBAT+	7	
	5	CLOCK+	14	
	6	UBAT-		
	7	0V	8	
	8	TEMP+	10	
	9	TEMP-	9	
	10	Up+	3	
	11	B+	11	
	12	B-	6	
	13	DATA-	5	
	14	CLOCK-	15	
	15	n.c.	-	
	16	Reset	12	
	17	Inner shield	13	

Ordering Code	Length	Mat.-no.
AFC-AS-07-02-F03-0500-11-01-00	500 cm	1039678
AFC-AS-07-02-F03-1000-11-01-00	1000 cm	1039679
AFC-AS-07-02-F03-1500-11-01-00	1500 cm	1025873

7.5.2 MGS-SUB-D/15 pol. – SUB-D/15 pol./YukonDrive

2



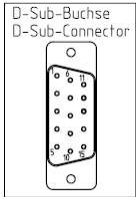
Actuator side	A-side	Signal	Colour	Controller side
female D-Sub-Buchse D-Sub-Connector  vorne / front Innershield pin 13 shield via housing	1	A- (COS-)	1	male D-Sub-Stecker D-Sub-Connector  vorne / front Innershield pin 13 Sub-D, 15 pol. 3-rows, ,UNC, straight
	2	A+ (COS+)	2	
	3	+Up	3	
	4	DATA+	4	
	5	DATA-	5	
	6	B- (SIN-)	6	
	7	n.c.		
	8	0V / UBAT-	8	
	9	TEMP-	9	
	10	TEMP+	10	
	11	B+ (SIN+)	11	
	12	n.c.	n.c.	
	13	Inner shield	housing	
	14	CLOCK+	14	
	15	CLOCK-	15	

Ordering Code	Length	Mat.-no.
AFC-AS-12-02-F04-0050-11-01-00	50 cm	1041417
AFC-AS-12-02-F04-0100-11-01-00	100 cm	1041418
AFC-AS-12-02-F04-0200-11-01-00	200 cm	1041419

7.6 MGS-SUB-D/15 pol. - Flying Leads

2



Actuator side	A-side	Signal	Colour	Controller side
female  vorne / front Innershield pin 13 shield via housing	1	A- (COS-)	wh	flying leads
	2	A+ (COS+)	rd	
	3	+Up	rd	
	4	DATA+	gn	
	5	DATA-	wh	
	6	B- (SIN-)	wh	
	7	n.c.		
	8	0V / UBAT-	bk	
	9	TEMP-	wh-bn	
	10	TEMP+	wh-bu	
	11	B+ (SIN+)	bk	
	12	n.c.		
	13	Inner shield		
	14	CLOCK+	bu	
	15	CLOCK-	wh	

Ordering Code	Length	Mat.-no.
AFC-AS-12-02-F04-0050-02-02-00	50 cm	1041420
AFC-AS-12-02-F04-0100-02-02-00	100 cm	1041421
AFC-AS-12-02-F04-0200-02-02-00	200 cm	1041422

8. Appendix

8.1 Actuator Power Cable Types

Code	Type	Manufacturer
P01	(4G1,0+2x(2x0,34)C)C	LEONI
P02	(4G1,5+2x(2x0,75) C)C	IGUS
P03	(4G1,0+2x(2x0,75)C)C	IGUS
P04	(4G0,75+2x(2x0,35)C)C	HELU Topserv 121
P05	(4x0,5+2x(2x0,25)C)	LEONI
P06	(4x0,34+2x(2x0,15)C)	LEONI
P07	(4G2,5+2x(2x1,5)C)C	IGUS

8.2 Power Cable APC P01

Technical data	P01
Cable structure	(4G1,0+2x(2x0,34)C)C
Number of cores	8
Colour code	rd, bk, wt, gn-ye, wt/bl, wt/bk
Temperature, flexible	-50°C to +90°C
Temperature, fixed	-40°C to +90°C
Rated voltage, signal	-
Rated voltage, power	600V
Oil resistance (DIN EN 50363-4-1)	yes
Flame retardant	yes
Halogen free	-
Silicone free	-
CFC free	-
Capable for energy chains	yes
v max, traversing speed	
a max, acceleration	
Min. bending factor	5 million
Bending radius, flexible	10 x d optimal
Bending radius, fixed	5 x d
Outer diameter Ø	Ø 9,8 ± 0,2 mm
Weight	163 kg/km
Outer jacket	PUR
Approvals	CE / ROHS / UL Style 20689 90°C 150 V

8.3 Power Cable APC P02, P03

Technical data	P02, P03
Cable structure	(4G1,5+2x(2x0,75)C)C
Number of cores	8
Colour code	U, V, W / 5, 6, 7, 8
Temperature, flexible	-25°C to +80°C
Temperature, fixed	
Rated voltage, signal	-
Rated voltage, power	600V/1000V
Oil resistance (DIN EN 50363-4-1)	yes
Flame retardant	yes
Halogen free	yes
Silicone free	yes
Capable for energy chains	yes
v max, traversing speed	10 m/s
a max, acceleration	50 m/s ²
Min. bending factor	-25°C - +80°C 5 million
Bending radius, flexible	8 x d optimal
Bending radius, fixed	-
Outer diameter Ø	Ø 13,5 mm
Weight	298 kg/km
Outer jacket	PUR
Approvals	CE, RoHS, UL- Style 10989 und 2570, 1.000 V, 80 °C

[Kommentare]

8.4 Power Cable APC P04

Technical data	P04
Cable structure	(4G0,75+2x(2x0,35)C)C
Number of cores	8
Colour code	U, V, W gn/ye, 5,6,7,8
Temperature, flexible	-30°C to +80°C
Temperature, fixed	-40°C to +80°C
Rated voltage, signal	U ₀ /U 300/500V
Rated voltage, power	600V/1000V
Oil resistance (DIN EN 50363-4-1)	yes
Flame retardant	yes
Halogen free	yes
Silicone free	yes
Capable for energy chains	yes
v max, traversing speed	
a max, acceleration	
Min. bending factor	min 5 million
Bending radius, flexible	7,5 x d
Bending radius, fixed	4 x d
Outer diameter Ø	Ø 9,4 ± 0,3 mm
Weight	153 kg/km
Outer jacket	PUR
Approvals	CE / ROHS / UL AWM Style 21223 CSA AWM

8.5 Power Cable APC P05

Technical data	P05
Cable structure	(4x0,5+2x(2x0,25))
Number of cores	8
Colour code	U, V, W gn/ye, 5,6,7,8
Temperature, flexible	-40°C to +80°C
Temperature, fixed	-50°C to +80°C
Rated voltage, signal	U ₀ /U 300/300V
Rated voltage, power	600V/1000V
Oil resistance (DIN EN 50363-4-1)	yes
Flame retardant	yes
Halogen free	yes
Silicone free	yes
Capable for energy chains	yes (UL Subject 758. Style 20235 80°C)
v max, traversing speed	180 m/min
a max, acceleration	7,0 m/s ²
Min. bending factor	min 2 million
Bending radius, flexible	7,5 x d
Bending radius, fixed	5 x d
Outer diameter Ø	Ø 9,4 ± 0,3 mm
Weight	140 kg/km
Outer jacket	PUR
Approvals	CE, RoHS, UL Style 20235 I/II A/B 80°C

8.6 Power Cable APC P06

Technical data	P06
Cable structure	(4x0,34+2x(2x0,15))
Number of cores	8
Colour code	rd, bk, wt, gr/ye, wt, bl, wt, bk
Temperature, flexible	-50°C to +90°C
Temperature, fixed	-40°C to +80°C
Rated voltage, signal	
Rated voltage, power	450V
Oil resistance (DIN EN 50363-4-1)	yes
Flame retardant	yes
Halogen free	yes
Silicone free	yes
Capable for energy chains	yes
v max, traversing speed	300 m/min
a max, acceleration	20 m/s ²
Min. bending factor	min 2 million
Bending radius, flexible	10 x d
Bending radius, fixed	2 x d
Outer diameter Ø	Ø 7,4 - 0,3 mm
Weight	87 g/m
Outer jacket	PUR
Approvals	CE, RoHS, UL-Style 20668 90°C 300 V

8.7 Power Cable APC P07

Technical data		P07
Cable structure		(4G2,5+2x(2x1,5)C)C
Number of cores		6
Colour code		U, V, W gn/ye, 5,6,7,8
Temperature, flexible		-40°C to +80°C
Temperature, fixed		-50°C to +80°C
Rated voltage, signal		
Rated voltage, power		600/1000V
Oil resistance (DIN EN 50363-4-1)		yes
Flame retardant		yes
Halogen free		yes
Silicone free		yes
Capable for energy chains		yes
v max, traversing speed		10 m/s
a max, acceleration		50 m/s ²
Min. bending factor		min 5 million
Bending radius, flexible		8 x d
Bending radius, fixed		5 x d
Outer diameter Ø		Ø 16 mm
Weight		421 kg/km
Outer jacket		PUR
Approvals		CE, RoHS, UL-Style 10989 und 21223, 1.000 V, 80 °C

8.8 Actuator Feedback Cable Types

Code	Type	Manufacturer
F01	tbd.	
F02	(4x(2x0,25)+2x0,5)C	IGUS
F03	(4x(2x0,15)C+4x0,15+2x0,5)C	LEONI / IGUS
F04	(3x(2x0,14)C+4x0,14+2x0,5)C	HELU Topeber 512
F05	(3x(2x0,14)C+4x0,14+4x0,25+2x0,5)C	HELU

8.9 Feedback Cable AFC F01

tbd.

8.10 Feedback Cable AFC F02

Technical data		F02
Cable structure		(4x(2x0,25)+2x0,5)C
Number of cores		10
Colour code		br/gn, bl/vi, gr/pk, rt/bk, wt, br
Temperature, flexible		-40°C to +80°C
Temperature, fixed		-50°C to +80°C
Rated voltage, signal		
Rated voltage, power		
Oil resistance (DIN EN 50363-10-2)		yes
Flame retardant		yes
Halogen free		yes
Silicone free		yes
Capable for energy chains		yes
v max, traversing speed		10 m/s
a max, acceleration		50 m/s ²
Min. bending factor		min 5 million
Bending radius, flexible		6 x d
Bending radius, fixed		57 mm
Outer diameter Ø		Ø 8,0 mm
Weight		85 kg/km
Outer jacket		PUR
Approvals		CE, RoHS, UL Style 1589 und 2560, 30 V, 60 °C

8.11 Feedback Cable AFC F03

Technical data	F03
Cable structure	(4x(2x0,15)C+4x0,15+2x0,5)C
Number of cores	14
Colour code	wt/bk, wt/rd, wt/bl, wt/gn, wt/bl, wt/bk, wt/rd, wt/br, rd, bk
Temperature, flexible	-40°C to +80°C
Temperature, fixed	-50°C to +80°C
Rated voltage, signal	450 V
Rated voltage, power	
Oil resistance (DIN EN 50363-10-2)	yes
Flame retardant	yes
Halogen free	yes
Silicone free	yes
Capable for energy chains	yes
v max, traversing speed	
a max, acceleration	
Min. bending factor	
Bending radius, flexible	5 x d
Bending radius, fixed	10 x d
Outer diameter Ø	Ø 7,7 mm
Weight	100 kg/km
Outer jacket	PUR
Approvals	CE, RoHS, UL (E310776; Style 1589 + 2502, 30 C/80°C

8.12 Feedback Cable AFC F04

Technical data	F04
Cable structure	(3x(2x0,14)C+4x0,14+2x0,5)C Topgeber 700657
Number of cores	12
Colour code	gn, ye, bk, br, rd, or, gn, bl, wt/ye, wt/bk, br/rd, br/bl
Temperature, flexible	-30°C to +80°C
Temperature, fixed	-40°C to +80°C
Rated voltage, signal	300 V
Rated voltage, power	
Oil resistance (DIN EN 50363-10-2)	yes
Flame retardant	yes
Halogen free	yes
Silicone free	yes
Capable for energy chains	yes
v max, traversing speed	
a max, acceleration	
Min. bending factor	
Bending radius, flexible	10 x d
Bending radius, fixed	6 x d
Outer diameter Ø	Ø 8,9 mm
Weight	120 kg/km
Outer jacket	PUR
Approvals	CE, RoHS, UL AWM Style 20233 und 20236

8.13 Feedback Cable AFC F05

Technical data	F05
Cable structure	(3x(2x0,14)C+4x0,14+4x0,25+2x0,5)C
Number of cores	16
Colour code	gn/ye, br/bk, rd/or, gr, bl, wt/ye, wt/bk, br/ye, br/gr, gn/bk, gn/rd, br/rd, br/bl
Temperature, flexible	-20°C to +70°C
Temperature, fixed	-40°C to +80°C
Rated voltage, signal	30 V
Rated voltage, power	
Oil resistance (DIN EN 50363-10-2)	yes
Flame retardant	yes
Halogen free	yes
Silicone free	yes
Capable for energy chains	yes
v max, traversing speed	300 m/s
a max, acceleration	50 m/s ²
Min. bending factor	10 million
Bending radius, flexible	7,5 x d
Bending radius, fixed	4 x d
Outer diameter Ø	Ø 9,4 mm
Weight	131 kg/km
Outer jacket	PUR
Approvals	CE, RoHS, UL AWM Style 20233 und 20236



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