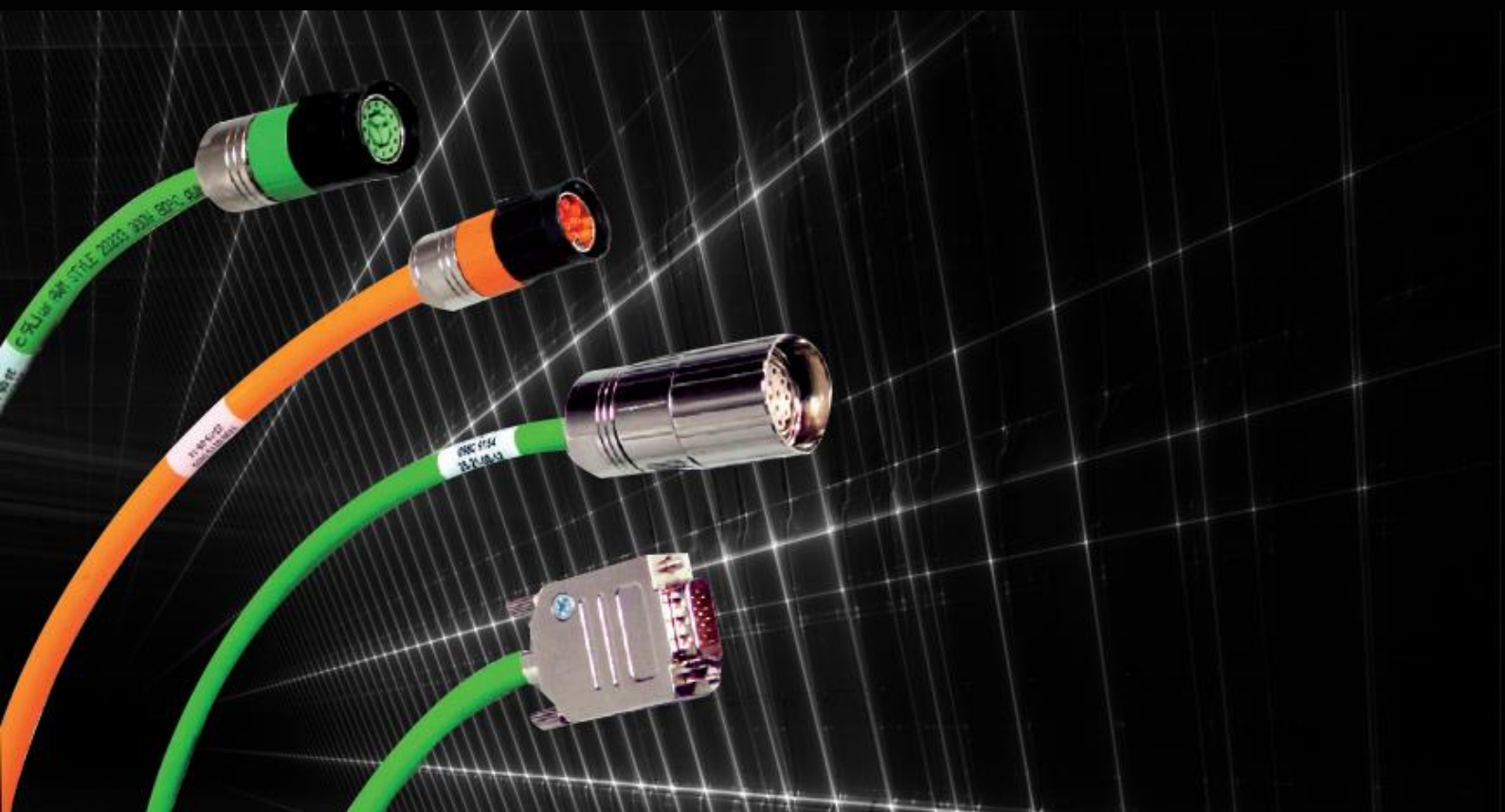


Cable and Components



Harmonic
Drive SE



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Date: 01/2021
Version: V05

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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 connector configurations are available on request only.
- Minimum quantity for SP cable length is ≥ 5 pcs each!

1. BHA (Basic Hollow shaft Actuator)

1.1 BHA Ordering Code APC (Actuator Power Cable)

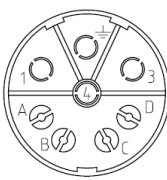
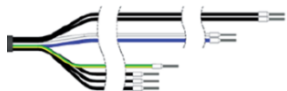

Bremse Brake		Produkt Assignment		Kabellänge Length [cm]		Regler Drive				
00 = without Brake 01 = Brake		00 = BHA 01 = BDA 02 = CHA* 03 = LynxDrive 04 = FHA mini		500 1000 1500		00 = open end + YukonDrive 01 = - 02 = - 03 = Bosch Rexroth 04 = Beckhoff 05 = ELMO Gold Cello 99 = kundenspezifischer Regler				
APC	-	01	-	01	-	01	-	01	-	00
Type		Actuator End [side-A]		Cable Structure		Drive End [side-B]		Outer jacket		Kabelmantel
Kategorie		Antriebsseite		Kabeltyp		Reglerseite				
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+2x(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				
CHA* = CanisDrive, CHA-C, Alopex, FHA										

1.2 Standard Length

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

1.3 Power cable (Size 20-58), Cross section 2,5 mm²

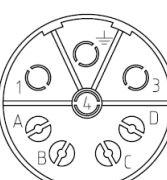
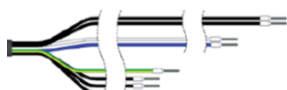



Actuator side M23, 8 pol.	A-side	Signal	Labeling	Controller side flying leads
female  shield via housing	1	U	U1/L1	
		PE	PE	
	3	W	W3/L3	
	4	V	V2/L2	
	A	Brake+	5	
	B	Brake-	6	
	C	TEMP+	7	
	D	TEMP-	8	

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 Power cable (Size 17), Cross section 1,0 mm²



Actuator side M23, 8 pol.	A-side	Signal	Labeling	Controller side flying leads
female  shield via housing	1	U	U1/L1	
		PE	PE	
	3	W	W3/L3	
	4	V	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 Feedback		Produkt Assignment		Kabellänge Length [cm]		Regler Drive		
BE = Cable Battery box MZE BS = Cable Battery box MGS B = BiSS C = DriveCliq D = Hiperface DSL E = EnDat H = Hiperface R = Resolver S = Sin/Cos SSI = SSI T = TTL		00 = BHA 01 = BDA 02 = CHA*, CanisDrive 03 = LynxDrive 04 = FHA mini		500 1000 1500		00 = - 01 = YukonDrive 02 = offen 03 = Bosch Rexroth 04 = Beckhoff 05 = ELMO Gold Cello 99 = kundenspezifischer Regler		
AFC	H	05	01	F02	0500	11	01	00
Type	Actuator end (side-A)			Cable stucture		Drive end (side-B)		Outer jacket
Kategorie	Antriebsseite			Kabeltyp		Reglerseite		Kabelmantel
00 = - 01 = - 02 = - 03 = - 04 = 17 pol. M17, female 05 = 12pol., Ytec, female 06 = 12pol., M23, female 07 = 17pol., M23, female 08 = - 09 = - 10 = - 11 = - 12 = 15 pol. Sub-D, 3-reihig, straight, female		F00 = - F01 = - F02 = (4x(2x0,25)+2x0,5)C F03 = (4x(2x0,15)C+4x0,15+2x0,5) F04 = (3x(2x0,14)C+4x0,14+2x0,5)C F05 = (3x(2x0,14)C+4x0,14+4x0,25+2x0,5)C F06 = (2x(2x0,14)C+2x(0,5)C)C F07 = (4x(2x0,5)C)C igus F08 = (4x(2x0,25)C+(2x0,5)C)C igus F09 = (5x(2x0,25)C+(2x0,25+2x0,5)C)C igus		00 = - 01 = - 02 = offen 03 = - 04 = - 05 = - 06 = - 07 = - 08 = - 09 = 15 pol. Sub-D, 3-rows, 45° side, male 10 = 9 pol. Sub-D, 2-rows, straight, male 11 = 15 pol. Sub-D, 3-rows, straight, male 12 = 15 pol. Sub-D, 2-rows, 45° side, male 13 = 15 pol. Sub-D, 2-rows, straight, male		00 = PUR		
CHA* = CHA-C, Aloplex, FHA								

1.6 Standard length

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

1.7 Feedback cable: MZB / SZB (BiSS)

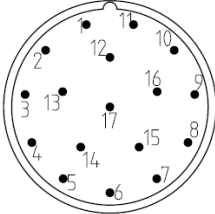


Actuator side M23, 17 pol.	A-side	Signal	Colour	Controller side flying leads
<p>female</p>  <p>shield via housing Inner shield via housing</p>	1	n.c.	-	flying leads
	2	n.c.	-	
	3	SLO+	bu	
	4	n.c.	-	
	5	MA+	ye	
	6	n.c.	-	
	7	GND	bn	
	8	TEMP+	gy	
	9	TEMP-	pk	
	10	Up	wh	
	11	n.c.	-	
	12	n.c.	-	
	13	SLO-	rd	
	14	MA-	gn	
	15	n.c.	-	
	16	n.c.	-	
	17	n.c.	-	

Ordering Code	Length	Mat.-no.
AFC-B-07-00-F06-0500-02-02-00	500 cm	1044173
AFC-B-07-00-F06-1000-02-02-00	1000 cm	1044204
AFC-B-07-00-F06-1500-02-02-00	1500 cm	1044205

1.8 Feedback cable: MZE / SZE (EnDat)

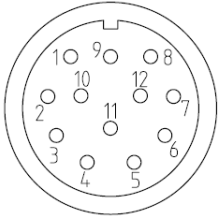


Actuator side M23, 17 pol.	A-side	Signal	Colour	Controller side flying leads
<p>female</p>  <p>shield via housing Inner shield via housing</p>	1	n.c.	-	flying leads
	2	n.c.	-	
	3	DATA+	bu	
	4	n.c.	-	
	5	CLOCK+	ye	
	6	n.c.	-	
	7	GND	bn	
	8	TEMP+	gy	
	9	TEMP-	pk	
	10	Up	wh	
	11	n.c.	-	
	12	n.c.	-	
	13	DATA-	rd	
	14	CLOCK-	gn	
	15	n.c.	-	
	16	n.c.	-	
	17	n.c.	-	

Ordering Code	Length	Mat.-no.
AFC-E-07-00-F06-0500-02-02-00	500 cm	1045088
AFC-E-07-00-F06-0500-02-02-00	1000 cm	1045089
AFC-E-07-00-F06-0500-02-02-00	1500 cm	1045090

1.9 Feedback cable: MIH (Hiperface)



Actuator side M23, 12pol.	A-side	Signal	Colour	Controller side flying leads
female  shield via housing Inner shield via housing	1	Us	bk 1	flying leads
	2	GND	bk 2	
	3	SIN+	wh	
	4	REF SIN	bn	
	5	DATA+	bu	
	6	DATA-	rd	
	7	COS+	gn	
	8	REF COS	ye	
	9	TEMP+	gy	
	10	TEMP-	pk	
	11	n.c.	-	
	12	n.c.	-	

Ordering Code	Length	Mat.-no.
AFC-H-06-00-F08-0500-02-02-00	500 cm	1045094
AFC-H-06-00-F08-1000-02-02-00	1000 cm	1045095
AFC-H-06-00-F08-1500-02-02-00	1500 cm	1045096

1.10 Feedback cable: SSI (not yet selectable)



Actuator side M23, 17pol.	A-side	Signal	Colour	Controller side flying leads
female  shield via housing Inner shield via housing	1	A+ / COS+	gn	flying leads
	2	A- / COS-	ye	
	3	DATA+	bu	
	4	n.c.	-	
	5	CLOCK+	bl	
	6	n.c.	-	
	7	GND	rd / bu	
	8	TEMP+	gy	
	9	TEMP-	pk	
	10	Up	wh / gn	
	11	B+ / SIN+	wh	
	12	B- / SIN-	bn	
	13	DATA-	rd	
	14	CLOCK-	vt	
	15	n.c.	-	
	16	n.c.	-	
	17	n.c.	-	

Ordering Code	Length	Mat.-no.
AFC-SSI-07-00-F09-0500-02-02-00	500 cm	1045091
AFC-SSI-07-00-F09-1000-02-02-00	1000 cm	1045092
AFC-SSI-07-00-F09-1500-02-02-00	1500 cm	1045093

2. BDA (Basic Dynamic Actuator)

2.1 BDA Ordering Code APC (Actuator Power Cable)

Bremse Brake		Produkt Assignment		Kabellänge Length [cm]		Regler Drive				
00= without Brake 01 = Brake		00 = BHA 01 = BDA 02 = CHA* 03 = LynxDrive 04 = FHA mini		500 1000 1500		00 = open end + YukonDrive 01 = - 02 = - 03 = Bosch Rexroth 04 = Beckhoff 05 = ELMO Gold Cello 99 = kundenspezifischer Regler				
APC	-	01	-	01	-	01	-	00	-	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 YukonDrive		00 = PUR				
Type	Actuator End [side-A]		Cable Structure		Drive End [side-B]		Outer jacket			
Kategorie	Antriebsseite		Kabeltyp		Reglerseite		Kabelmantel			

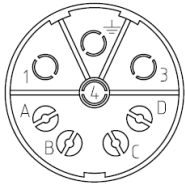
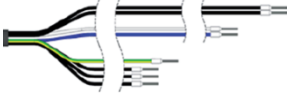

CHA* = CanisDrive, CHA-C, Alopex, FHA

2.2 Standard length

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

2.3 Power cable: M23

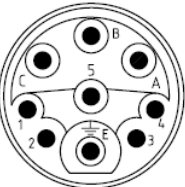




Actuator side M23/8pol.	A-side	Signal	Labeling	Controller side flying leads
female 	1	U	U/L1/C/L+	
		PE	gn / ye	
	3	W	W/L3/D/L-	
	4	V	V/L2	
	A	BR+	5	
	B	BR-	6	
	C	TEMP+	7	
	D	TEMP-	8	

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 Power cable: Springtec



Actuator side Springtec, 9 pol.	A-side	Signal	Labeling	Controller side flying leads
female 	A	U	U/L1/C/L+	
	B	W	W/L3/D/L-	
	C	V	V/L2	
		PE	gn / ye	
	1	BR+	5	
	2	BR-	6	
	3	TEMP+	7	
	4	TEMP-	8	
	5	n.c.	-	

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		
BE = Cable Battery box MZE BS = Cable Battery box MGS B = BiSS C = DriveCliq D = Hiperface DSL E = EnDat H = Hiperface R = Resolver S = Sin/Cos SSI = SSI T = TTL		00 = BHA 01 = BDA 02 = CHA*, CanisDrive 03 = LynxDrive 04 = FHA mini		500 1000 1500		00 = - 01 = YukonDrive 02 = offen 03 = Bosch Rexroth 04 = Beckhoff 05 = ELMO Gold Cello 99 = kundenspezifischer Regler		
AFC	H	05	01	F02	0500	11	01	00
Type	Actuator end (side-A)			Cable sturcture		Drive end (side-B)		Outer jacket
Kategorie	Antriebsseite			Kabeltyp		Reglerseite		Kabelmantel
	00 = - 01 = - 02 = - 03 = - 04 = 17 pol. M17 female 05 = 12pol., Vtec, female 06 = 12pol., M23, female 07 = 17pol., M23, female 08 = - 09 = - 10 = - 11 = - 12 = 15 pol. Sub-D, 3-reihig, straight, female			F00 = - F01 = - F02 = (4x(2x0,25)+2x0,5)C F03 = (4x(2x0,15)C+4x0,15+2x0,5) F04 = (3x(2x0,14)C+4x0,14+2x0,5)C F05 = (3x(2x0,14)C+4x0,14+4x0,25+2x0,5)C F06 = (2x(2x0,14)C+2x(0,5)C)C F07 = (4x(2x0,5)C)C igus F08 = (4x(2x0,25)C+(2x0,5)C)C igus F09 = (5x(2x0,25)C+(2x0,25+2x0,5)C)C igus		00 = - 01 = - 02 = offen 03 = - 04 = - 05 = - 06 = - 07 = - 08 = - 09 = 15 pol. Sub-D, 3-rows, 45° side, male 10 = 9 pol. Sub-D, 2-rows, straight, male 11 = 15 pol. Sub-D, 3-rows, straight, male 12 = 15 pol. Sub-D, 2-rows, 45° side, male 13 = 15 pol. Sub-D, 2-rows, straight, male		00 = PUR
CHA* = CHA-C, Aloplex, FHA								

2.6 Standard length

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

2.7 Feedback cable: Resolver, Springtec



Actuator side Springtec, 12 pol.	A-side	Signal	Colour	Controller side flying leads
female 	1	n.c.	-	flying leads
	2	n.c.	-	
	3	SIN- (S4)	bn	
	4	COS- (S3)	bu	
	5	VSS- (R2)	wh	
	6	n.c.	-	
	7	SIN+ (S2)	gn	
	8	COS+ (S1)	vt	
	9	VSS+ (R1)	bn	
	10	n.c.	-	
	11	n.c.	-	
	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 Feedback cable: Resolver, M23

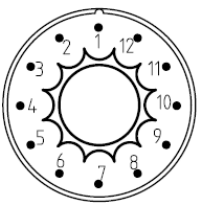
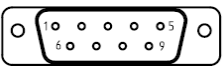


Actuator side M23, 12 pol.	A-side	Signal	Colour	Controller side flying leads
female  shield via housing Inner shield via housing	1	n.c.	-	flying leads
	2	n.c.	-	
	3	SIN- (S4)	bn	
	4	COS- (S3)	bu	
	5	VSS- (R2)	wh	
	6	n.c.	-	
	7	SIN+ (S2)	gn	
	8	COS+ (S1)	vt	
	9	VSS+ (R1)	bn	
	10	n.c.	-	
	11	n.c.	-	
	12	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 Feedback cable: Resolver, Springtec - YukonDrive



Actuator side Springtec, 12 pol.	A-side	Signal	B-side	Controller side SUB-D, 9 pol.
female 	1	n.c.	n.c.	male  shield via housing Inner shield via housing
	2	n.c.	n.c.	
	3	SIN- (S4)	2	
	4	COS- (S3)	8	
	5	VSS- (R2)	7	
	6	n.c.	n.c.	
	7	SIN+ (S2)	1	
	8	COS+ (S1)	3	
	9	VSS+ (R1)	6	
	10	n.c.	n.c.	
	11	n.c.	n.c.	
	12	n.c.	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 Feedback cable: Resolver, M23 - YukonDrive

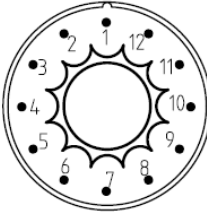


Actuator side M23, 12 pol.	A-side	Signal	B-side	Controller side SUB-D 9 pol.
female  shield via housing Inner shield via housing	1	n.c.	n.c.	male  shield via housing Inner shield via housing
	2	n.c.	n.c.	
	3	SIN- (S4)	2	
	4	COS- (S3)	8	
	5	VSS- (R2)	7	
	6	n.c.	n.c.	
	7	SIN+ (S2)	1	
	8	COS+ (S1)	3	
	9	VSS+ (R1)	6	
	10	n.c.	n.c.	
	11	n.c.	n.c.	
	12	n.c.	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 Feedback cable: Hiperface, Springtec

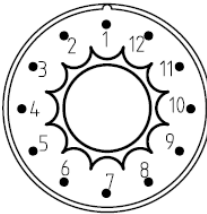
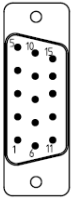


Actuator side Springtec, 12 pol.	A-side	Signal	Colour	Controller side flying leads
female 	1	GND (0,5mm ²)	bn	flying leads
	2	n.c.	-	
	3	REF COS	bn	
	4	REF SIN	bu	
	5	n.c.	-	
	6	n.c.	-	
	7	COS+	gn	
	8	SIN+	vt	
	9	n.c.	-	
	10	DATA+	gy	
	11	DATA-	pk	
	12	Us (0,5mm ²)	wh	

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 Feedback cable: Hiperface, Springtec - YukonDrive

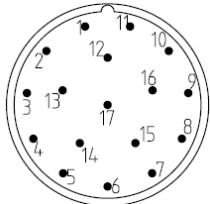


Actuator side Springtec, 12 pol.	A-side	Signal	B-side	Controller side SUB-D 15 pol.
female 	1	GND	8	male  shield via housing Inner shield via housing
	2	n.c.	n.c.	
	3	REF COS	1	
	4	REF SIN	6	
		Us-Switch	7	
		Us-Switch	12	
	7	COS+	2	
	8	SIN+	11	
	9	n.c.	n.c.	
	10	DATA+	4	
	11	DATA-	5	
	12	Us	3	

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 Feedback cable: Hiperface - flying leads

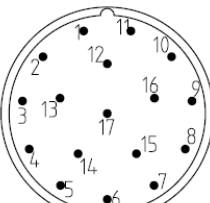
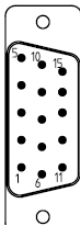


Actuator side M23, 17 pol.	A-side	Signal	Colour	Controller side flying leads
<p>female</p>  <p>shield via housing Inner shield via housing</p>	1	REF SIN	bn	flying leads
	2	GND (0,5mm ²)	bn	
	3	REF COS	bu	
	4	n.c.	-	
	5	DATA+	gy	
	6	Us (0,5mm ²)	wh	
	7	n.c.	-	
	8	n.c.	-	
	9	SIN+	gn	
	10	n.c.	-	
	11	COS+	vt	
	12	n.c.	-	
	13	DATA-	pk	
	14	n.c.	-	
	15	n.c.	-	
	16	n.c.	-	
	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 Feedback cable: Hiperface - YukonDrive



Actuator side M23, 12 pol.	A-side	Signal	B-side	Controller side SUB-D, 15 pol.
<p>female</p>  <p>shield via housing Inner shield via housing</p>	1	REF SIN	6	<p>male</p>  <p>shield via housing Inner shield via housing</p>
	2	GND	8	
	3	REF COS	1	
	4	n.c.	n.c.	
	5	DATA+	4	
	6	Us	3	
	7	Us-Switch	7	
	8	Us-Switch	12	
	9	SIN+	11	
	10	n.c.	n.c.	
	11	COS+	2	
	12	n.c.	n.c.	
	13	DATA-	5	
	14	n.c.	n.c.	
	15	n.c.	n.c.	
	16	n.c.	n.c.	
	17	n.c.	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 Brake		Produkt Assignment		Kabellänge Length [cm]		Regler Drive								
00 = without Brake 01 = Brake		00 = BHA 01 = BDA 02 = CHA* 03 = LynxDrive 04 = FHA mini		500 1000 1500		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
Type		00 = - 01 = 9pol. itec female 02 = 8pol. M23 female 03 = 6pol. M23 female 04 = - 05 = - 06 = - 07 = - 08 = 8 pol. M17 female	Actuator End [side-A]		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+2x(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	Cable Structure		00 = flying leads and YuconDrive	Drive End [side-B]		00 = PUR	Outer jacket		Kabelmantel
Kategorie		Antriebsseite		Kabeltyp		Reglerseite								

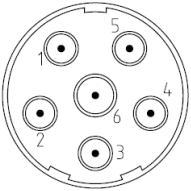

CHA* = CanisDrive, CHA-C, Alopex, FHA

3.2 Standard length

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

3.3 Power cable M23, 6 pol.

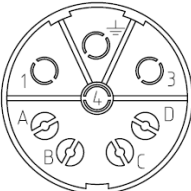



Actuator side M23, 6 pol.	A-side	Signal	Label	Controller side flying leads
female  shield via housing	1	U	U1/L1/C/L+	
	2	V	V/L2	
	3	PE	gn / ye	
	4	Brake+	5	
	5	Brake-	6	
	6	W	W/L3/D/L	

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 Power cable M23, 8 pol.

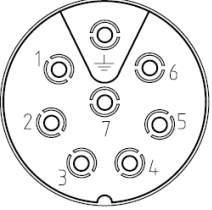
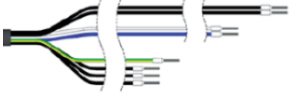



Actuator side M23, 8 pol.	A-side	Signal	Label	Controller side flying leads
female  shield via housing	1	U	U1	
	2	PE	gn / ye	
	3	W	W3	
	4	V	V2	
	A	Brake+	5	
	B	Brake-	6	
	C	TEMP+	7	
	D	TEMP-	8	

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 Power cable: M17, 8 pol.



Actuator side M17, 8 pol.	A-side	Signal	Colour	Controller side flying leads
female 	1	U	rd	
	2	TEMP+	wh	
	3	Brake+	wh	
	4	Brake-	bk	
	5	TEMP-	bu	
	6	W	wh	
	7	V	bk	
		PE	gn / ye	
shield via housing				

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 Feedback		Produkt Assignment		Kabellänge Length [cm]		Regler Drive		
BE = Cable Battery box MZE BS = Cable Battery box MGS B = BiSS C = DriveCliq D = Hiperface DSL E = EnDat H = Hiperface R = Resolver S = Sin/Cos SSI = SSI T = TTL		00 = BHA 01 = BDA 02 = CHA*, CanisDrive 03 = LynxDrive 04 = FHA mini		500 1000 1500		00 = - 01 = YukonDrive 02 = offen 03 = Bosch Rexroth 04 = Beckhoff 05 = ELMO Gold Cello 99 = kundenspezifischer Regler		
AFC	H	05	01	F02	0500	11	01	00
Type	Actuator end (side-A)			Cable structure		Drive end (side-B)		Outer jacket
Kategorie	Antriebsseite			Kabeltyp		Reglerseite		Kabelmantel
	00 = - 01 = - 02 = - 03 = - 04 = 17 pol. M17, female 05 = 12pol., Ytec, female 06 = 12pol., M23, female 07 = 17pol., M23, female 08 = - 09 = - 10 = - 11 = - 12 = 15 pol. Sub-D, 3-reihig, straight, female			F00 = - F01 = - F02 = (4x(2x0,25)+2x0,5)C F03 = (4x(2x0,15)C+4x0,15+2x0,5) F04 = (3x(2x0,14)C+4x0,14+2x0,5)C F05 = (3x(2x0,14)C+4x0,14+4x0,25+2x0,5)C F06 = (2x(2x0,14)C+2x(0,5)C)C F07 = (4x(2x0,5)C)C igus F08 = (4x(2x0,25)C+(2x0,5)C)C igus F09 = (5x(2x0,25)C+(2x0,25+2x0,5)C)C igus		00 = - 01 = - 02 = offen 03 = - 04 = - 05 = - 06 = - 07 = - 08 = - 09 = 15 pol. Sub-D, 3-rows, 45° side, male 10 = 9 pol. Sub-D, 2-rows, straight, male 11 = 15 pol. Sub-D, 3-rows, straight, male 12 = 15 pol. Sub-D, 2-rows, 45° side, male 13 = 15 pol. Sub-D, 2-rows, straight, male		00 = PUR

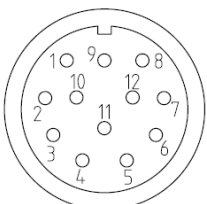
CHA* = CHA-C, Aloplex, FHA

3.7 Standard length

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

3.8 Feedback cable: SIH, MIH, SHH, MHH (Hiperface)

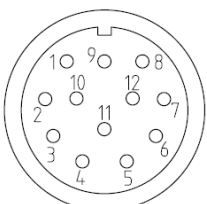
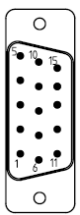


Actuator side M23, 12 pol. female	A-side	Signal	Colour	Controller side flying leads
 shield via housing Inner shield via housing	1	U	bn / rd	flying leads
	2	GND	bn / bu	
	3	SIN+	ye	
	4	REF SIN	gn	
	5	DATA+	rd	
	6	DATA-	og	
	7	COS	bk	
	8	REF COS	bn	
	9	TEMP+	wh / ye	
	10	TEMP-	wh / bk	
	11	n.c.	-	
	12	n.c.	-	

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 Feedback cable: SIH, MIH, SHH, MHH, (Hiperface) - YukonDrive

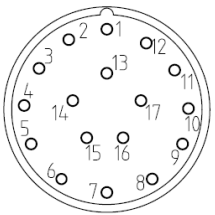


Actuator side M23, 12 pol. female	A-side	Signal	B-side	Controller side Sub-D, 15 pol male
 shield via housing Inner shield via hosing	1	U	3	 shield via housing Inner shield via housing
	2	GND	8	
	3	SIN+	11	
	4	REF SIN	6	
	5	DATA+	4	
	6	DATA-	5	
	7	COS	2	
	8	REF COS	1	
	9	TEMP+	10	
	10	TEMP-	9	
	11	n.c.	n.c.	
	12	n.c.	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 Feedback cable: MGS_i (SSI/EnDat)

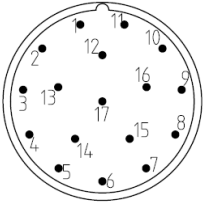


Actuator side M17, 17 pol.	A-side	Signal	Colour	Controller side flying leads
<p>female</p>  <p>shield via housing Inner shield via housing</p>	1	A+ / COS+	rd	flying leads
	2	A- / COS-	wh	
	3	DATA+	gn	
	4	n.c.	-	
	5	CLOCK+	bu	
	6	n.c.	-	
	7	GND / 0V	bk	
	8	TEMP+	wh / bn	
	9	TEMP-	wh / bu	
	10	+Up	rd	
	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

3.11 Feedback cable: SZE (EnDat)



Actuator side M23, 17 pol.	A-side	Signal	Colour	Controller side flying leads
<p>female</p>  <p>shield via housing Inner shield via housing</p>	1	n.c.	-	flying leads
	2	n.c.	-	
	3	DATA+	gn	
	4	n.c.	-	
	5	CLOCK+	rd	
	6	n.c.	-	
	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

3.12 Feedback cable: SZE (EnDat)

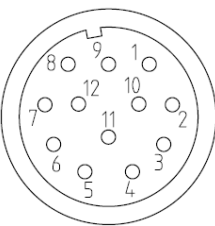


Actuator side M23,17 pol.	A-side	Signal	B-side	Controller side SUB-D, 15 pol.
<p>female</p>  <p>Outer shield via housing</p>	1	n.c.	n.c.	<p>male</p>  <p>Inner and outer shield via housing</p>
	2	n.c.	n.c.	
	3	DATA+	4	
	4	Ubat+	7	
	5	CLOCK+	14	
	6	Ubat-	-	
	7	0V	8	
	8	TEMP+	10	
	9	TEMP-	9	
	10	+Up	3	
	11	n.c.	n.c.	
	12	n.c.	n.c.	
	13	DATA-	5	
	14	CLOCK-	15	
	15	n.c.	n.c.	
	16	n.c.	n.c.	
	17	Inner shield	housing	

Ordering Code	Length	Mat.-no.
AFC-E-07-02-F04-0500-11-01-00	500 cm	1046020
AFC-E-07-02-F04-1000-11-01-00	1000 cm	1046021
AFC-E-07-02-F04-1500-11-01-00	1500 cm	1046022

3.13 Feedback cable: R00 (Resolver)



Actuator side M23, 12 pol.	A-side	Signal	B-side	Controller side flying leads
<p>female</p>  <p>shield via housing Inner shield via housing</p>	1	SIN+ (S2)	ye	<p>flying leads</p>
	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

3.14 Feedback cable: R00 (Resolver)-M17

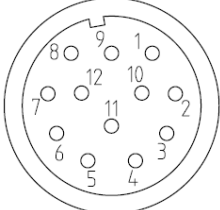
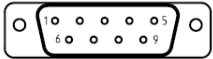


Actuator side M17, 17 pol.	A-side	Signal	B-side	Controller side flying leads
<p>female</p>  <p>shield via housing Inner shield via housing</p>	1	SIN+ (S2)	ye	flying leads
	2	SIN- (S4)	gn	
	3	n.c.	-	
	4	n.c.	-	
	5	n.c.	-	
	6	n.c.	-	
	7	VSS- (R2)	og	
	8	TEMP+	gy	
	9	TEMP-	wh-bk	
	10	VSS+ (R1)	rd	
	11	COS+ (S1)	bk	
	12	COS- (S3)	bn	
	13	n.c.	-	
	14	n.c.	-	
	15	n.c.	-	
	16	n.c.	-	
	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

3.15 Feedback cable: R00 (Resolver)- YukonDrive

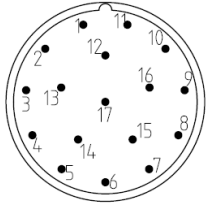


Actuator side M23, 12 pol.	A-side	Signal	B-side	Controller side SUB-D, 9 pol.
<p>female</p>  <p>shield via housing Inner shield via housing</p>	1	SIN+ (S2)	1	<p>male</p>  <p>shield via housing Inner shield via housing</p>
	2	SIN- (S4)	2	
	3	n.c.	n.c.	
	4	n.c.	n.c.	
	5	n.c.	n.c.	
	6	n.c.	n.c.	
	7	VSS- (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

3.16 Feedback cable: SIE/SZE (EnDat) +M/P-Encoder



Actuator side M23, 17 pol.	A-side	Signal	Colour	Controller side flying leads
<p>female</p>  <p>shield via housing Inner shield via hosing</p>	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 SENCE	bn / ye	
	16	5 V SENCE	bn / gy	
	17	n.c.	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

3.17 Feedback cable: SIE/SZE (EnDat) - YukonDrive

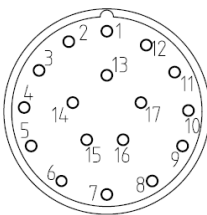


Actuator side M23, 17 pol.	A-side	Signal	B-side	Controller side SUB-D, 15 pol.
<p>female</p>  <p>shield via housing Inner shield via hosing</p>	1	A+	2	<p>male</p>  <p>shield via housing Inner shield via hosing</p>
	2	A-	1	
	3	DATA+	4	
	4	n.c.	n.c.	
	5	CLOCK+	14	
	6	n.c.	n.c.	
	7	GND	8	
	8	TEMP+	10	
	9	TEMP-	9	
	10	5VDC	3	
	11	B+	11	
	12	B-	6	
	13	DATA-	5	
	14	CLOCK-	15	
	15	0V SENCE	13	
	16	5V SENCE	12	
	17	n.c.	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

3.18 Feedback cable: TTL



Actuator side M17, 17 pol.	A-side	Signal	Colour	Controller side flying leads
<p>female</p>  <p>shield via housing Inner shield via housing</p>	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

3.19 Feedback cable: TTL -YukonDrive



Actuator side M17, 17 pol.	A-side	Signal	B-side	Controller side SUB-S 15 pol.
<p>female</p>  <p>shield via housing Inner shield via housing</p>	1	U+	4	<p>male</p>  <p>shield via housing Inner shield via housing</p>
	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.	n.c.	
	17	n.c.	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		Produkt Assignment		Kabellänge Length [cm]		Regler Drive				
00 = without Brake 01 = Brake		00 = BHA 01 = BDA 02 = CHA* 03 = LynxDrive 04 = FHA mini		500 1000 1500		00 = open end + YukonDrive 01 = - 02 = - 03 = Bosch Rexroth 04 = Beckhoff 05 = ELMO Gold Cello 99 = kundenspezifischer Regler				
APC	-	01	-	01	-	01	-	01	-	00
Type		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+2x(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		Outer jacket Kabelmantel
Kategorie		Actuator End [side-A] Antriebsseite		Cable Structure Kabeltyp		Drive End [side-B] Reglerseite				

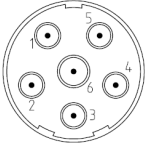
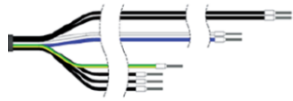
CHA* = CanisDrive, CHA-C, Alopex, FHA

4.2 Standard length

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

4.3 Power cable: M23, 6 pol.

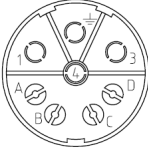
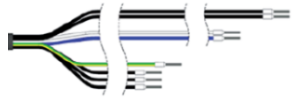


Actuator side M23, 6 pol.	A-side	Signal	Label	Controller side flying leads
female  shield via housing	1	U	U/L1/C/L+	
	2	V	V/L2	
	3	PE	gn / ye	
	4	Brake+	5	
	5	Brake-	6	
	6	W	W/L3/D/L-	

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 Power cable: M23, 8 pol.



Actuator side M23, 8 pol.	A-side	Signal	Label	Controller side flying leads
female  shield via housing	1	U	U1	
	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)

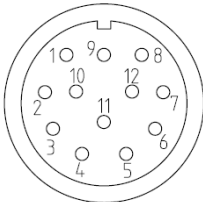
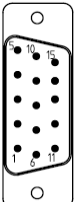
Encoder Feedback		Produkt Assignment		Kabellänge Length [cm]		Regler Drive		
BE = Cable Battery box MZE BS = Cable Battery box MGS B = BiSS C = DriveCliq D = Hiperface DSL E = EnDat H = Hiperface R = Resolver S = Sin/Cos SSI = SSI T = TTL		00 = BHA 01 = BDA 02 = CHA*, CanisDrive 03 = LynxDrive 04 = FHA mini		500 1000 1500		00 = - 01 = YukonDrive 02 = offen 03 = Bosch Rexroth 04 = Beckhoff 05 = ELMO Gold Cello 99 = kundenspezifischer Regler		
AFC	H	05	01	F02	0500	11	01	00
Type	Actuator end (side-A)			Cable sturcture		Drive end (side-B)		Outer jacket
Kategorie	Antriebsseite			Kabeltyp		Reglerseite		Kabelmantel
00 = - 01 = - 02 = - 03 = - 04 = 17 pol. M17, female 05 = 12pol., Ytec, female 06 = 12pol., M23, female 07 = 17pol., M23, female 08 = - 09 = - 10 = - 11 = - 12 = 15 pol. Sub-D, 3-reihig, straight, female		F00 = - F01 = - F02 = (4x(2x0,25)+2x0,5)C F03 = (4x(2x0,15)C+4x0,15+2x0,5) F04 = (3x(2x0,14)C+4x0,14+2x0,5)C F05 = (3x(2x0,14)C+4x0,14+4x0,25+2x0,5)C F06 = (2x(2x0,14)C+2x(0,5)C)C F07 = (4x(2x0,5)C)C igus F08 = (4x(2x0,25)C+(2x0,5)C)C igus F09 = (5x(2x0,25)C+(2x0,25+2x0,5)C)C igus		00 = - 01 = - 02 = offen 03 = - 04 = - 05 = - 06 = - 07 = - 08 = - 09 = 15 pol. Sub-D, 3-rows, 45° side, male 10 = 9 pol. Sub-D, 2-rows, straight, male 11 = 15 pol. Sub-D, 3-rows, straight, male 12 = 15 pol. Sub-D, 2-rows, 45° side, male 13 = 15 pol. Sub-D, 2-rows, straight, male		00 = PUR		
CHA* = CHA-C, Aloplex, FHA								

4.6 Standard length

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

4.7 Feedback cable: SIH, MIH, SHH, MHH (Hiperface) - YukonDrive

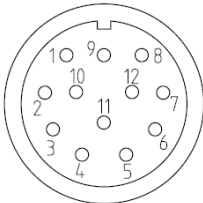
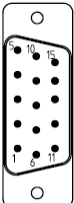


Actuator side M23, 12 pol.	A-side	Signal	B- side	Controller side SUB-D 15 pol.
female				male
	1	7- 12 V	3	
	2	GND	8	
	3	SIN+	11	
	4	REF SIN	6	
	5	DATA+	4	
	6	DATA-	5	
	7	COS	2	
	8	REF COS	1	
	9	TEMP+	10	
	10	TEMP-	9	
	11	n.c.	n.c.	
	12	n.c.	n.c.	
		Us-Switch	7	
		Us-Switch	12	
shield via housing Inner shield via housing				shield via housing Inner shield via housing

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
AFC-H-06-03-F04-1500-11-01-00	1500 cm	1045843

4.8 Feedback cable: SIH, MIH, SHH, MHH (Hiperface) SUB-D 45°-YukonDrive

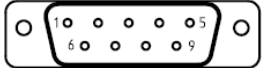


Actuator side M23, 12 pol.	A-side	Signal	B- side	Controller side SUB-S, 15 pol. 45°
female				male
	1	7- 12 V	3	
	2	GND	8	
	3	SIN+	11	
	4	REF SIN	6	
	5	DATA+	4	
	6	DATA-	5	
	7	COS	2	
	8	REF COS	1	
	9	TEMP+	10	
	10	TEMP-	9	
	11	n.c.	n.c.	
	12	n.c.	n.c.	
		Us-Switch	7	
		Us-Switch	12	
shield via housing Inner shield via housing				shield via housing Inner shield via housing

Ordering Code	Length	Mat.-no.
AFC-H-06-03-F04-0300-09-01-00	300 cm	1039256
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 Feedback cable: R00 (Resolver) - YukonDrive

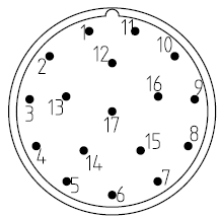


Actuator side M23, 12 pol.	A-side	Signal	B-side	Controller side SUB-D, 9 pol.
female  shield via housing Inner shield via housing	1	SIN+ (S2)	1	male  shield via housing Inner shield via housing
	2	SIN- (S4)	2	
	3	n.c.	n.c.	
	4	n.c.	n.c.	
	5	n.c.	n.c.	
	6	n.c.	n.c.	
	7	VSS- (R2)	7	
	8	TEMP+	5	
	9	TEMP-	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 Feedback cable: SIE (EnDat), +M/P-Encoder



Actuator side M23, 17 pol.	A-side	Signal	Colour	Controller side flying leads
female  shield via housing Inner shield via housing	1	A+ (COS+)	ye	flying leads
	2	A- (COS-)	gn	
	3	DATA+	rd	
	4	n.c.	-	
	5	CLOCK+	bu	
	6	n.c.	-	
	7	M-Encoder	bn / bu	
	8	TEMP+	gn / bk	
	9	TEMP-	gn / rd	
	10	P-Encoder	bn / rd	
	11	B+ (SIN+)	bk	
	12	B- (SIN-)	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 Feedback cable: SIE/SZE (EnDat) - YukonDrive



Actuator side M23, 17 pol.	A-side	Signal	B-side	Controller side SUB-D 15 pol.
<p>female</p>  <p>shield via housing</p>	1	A+ (COS+)	2	<p>male</p>  <p>Inner and outer shield via housing</p>
	2	A- (COS-)	1	
	3	DATA+	4	
	4	n.c.	n.c.	
	5	CLOCK+	14	
	6	n.c.	n.c.	
	7	GND	8	
	8	TEMP+	10	
	9	TEMP-	9	
	10	5VDC	3	
	11	B+ (SIN+)	11	
	12	B- (SIN-)	6	
	13	DATA-	5	
	14	CLOCK-	15	
	15	0V SENSE	13	
	16	5V SENSE	12	
	17	n.c.	n.c.	

Ordering Code	Length	Mat.-no.
AFC-E-07-03-F05-0300-11-01-00	300 cm	1038774
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		Produkt Assignment		Kabellänge Length [cm]		Regler Drive		
00 = without Brake 01 = Brake		00 = BHA 01 = BDA 02 = CHA* 03 = LynxDrive 04 = FHA mini		500 1000 1500		00 = open end + YukonDrive 01 = - 02 = - 03 = Bosch Rexroth 04 = Beckhoff 05 = ELMO Gold Cello 99 = kundenspezifischer Regler		
APC	-	01	-	01	-	01	-	00
Type		Actuator End [side-A]		Cable Structure		Drive End [side-B]		Outer jacket
Kategorie		Antriebsseite		Kabeltyp		Reglerseite		Kabelmantel
		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 YukonDrive		00 = PUR

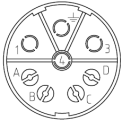
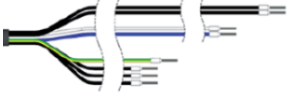

CHA* = CanisDrive, CHA-C, Alopex, FHA

5.2 Standard length

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

5.3 Power cable: M23, 8 pol.



Actuator side M23, 8 pol.	A-side	Signal	Label	Controller side flying leads
female  Shield via housing	1	U	U1	 flying leads
		PE	gn / ye	
	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

5.4 FHA Ordering Code AFC (Actuator Feedback Cable)

Encoder Feedback		Produkt Assignment		Kabellänge Length [cm]		Regler Drive		
BE = Cable Battery box MZE BS = Cable Battery box MGS B = BiSS C = DriveCliq D = Hiperface DSL E = EnDat H = Hiperface R = Resolver S = Sin/Cos SSI = SSI T = TTL		00 = BHA 01 = BDA 02 = CHA*, CanisDrive 03 = LynxDrive 04 = FHA mini		500 1000 1500		00 = - 01 = YukonDrive 02 = offen 03 = Bosch Rexroth 04 = Beckhoff 05 = ELMO Gold Cello 99 = kundenspezifischer Regler		
AFC	H	05	01	F02	0500	11	01	00
Type	Actuator end [side-A]			Cable stucture		Drive end [side-B]		Outer jacket
Kategorie	Antriebsseite			Kabeltyp		Reglerseite		Kabelmantel
00 = - 01 = - 02 = - 03 = - 04 = 17 pol. M17, female 05 = 12pol., Ytec, female 06 = 12pol., M23, female 07 = 17pol., M23, female 08 = - 09 = - 10 = - 11 = - 12 = 15 pol. Sub-D, 3-reihig, straight, female		F00 = - F01 = - F02 = (4x(2x0,25)+2x0,5)C F03 = (4x(2x0,15)C+4x0,15+2x0,5) F04 = (3x(2x0,14)C+4x0,14+2x0,5)C F05 = (3x(2x0,14)C+4x0,14+4x0,25+2x0,5)C F06 = (2x(2x0,14)C+2x(0,5)C)C F07 = (4x(2x0,5)C)C igus F08 = (4x(2x0,25)C+(2x0,5)C)C igus F09 = (5x(2x0,25)C+(2x0,25+2x0,5)C)C igus		00 = - 01 = - 02 = offen 03 = - 04 = - 05 = - 06 = - 07 = - 08 = - 09 = 15 pol. Sub-D, 3-rows, 45° side, male 10 = 9 pol. Sub-D, 2-rows, straight, male 11 = 15 pol. Sub-D, 3-rows, straight, male 12 = 15 pol. Sub-D, 2-rows, 45° side, male 13 = 15 pol. Sub-D, 2-rows, straight, male		00 = PUR		
CHA* = CHA-C, Aloplex, FHA								

5.5 Standard length

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

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



Actuator side M23, 17 pol.	A-side	Signal	B-side	Controller side SUB-D 15 pol.
<p>female</p> <p>shield via housing</p>	1	A+ (COS+)	2	<p>male</p> <p>Inner and outer shield via housing</p>
	2	A- (COS-)	1	
	3	R+ (REF+)	4	
	4	n.c.	n.c.	
	5	n.c.	n.c.	
	6	n.c.	n.c.	
	7	GND	8	
	8	TEMP+	10	
	9	TEMP-	9	
	10	5 V	3	
	11	B+ (SIN+)	11	
	12	B- (SIN-)	6	
	13	R- (REF-)	5	
	14	n.c.	n.c.	
	15	SENSE-	13	
	16	SENSE+	12	
	17	Inner shield	housing	

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 Brake		Produkt Assignment		Kabellänge Length [cm]		Regler Drive								
00 = without Brake 01 = Brake		00 = BHA 01 = BDA 02 = CHA* 03 = LynxDrive 04 = FHA mini		500 1000 1500		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		Actuator End [side-A]		Cable Structure		Drive End [side-B]		Outer jacket						
Kategorie		Antriebsseite		Kabeltyp		Reglerseite		Kabelmantel						

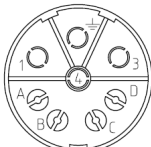
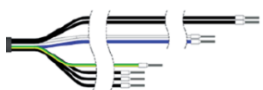

CHA* = CanisDrive, CHA-C, Alopex, FHA

6.2 Standard length

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

6.3 Power cable:

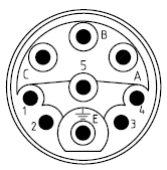




Actuator side M23, 8 pol.	A-side	Signal	Label	Controller side flying leads
female  Shield via housing	1	U	U/L1/C/L+	
		PE	gn / ye	
	3	V	V/L2/	
	4	W	W/L3	
	A	n.c.	-	
	D	n.c.	-	
	C	n.c.	-	
	D	n.c.	-	

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 Power cable: Springtec



Actuator side Springtec, 9 pol.	A-side	Signal	Label	Controller side flying leads
female  shield via housing	A	U	U (rd)	
	B	V	V (wt)	
	C	W	W (bl)	
	1	n.c.	-	
	2	n.c.	-	
		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 Feedback Cable)

Encoder Feedback		Produkt Assignment		Kabellänge Length [cm]		Regler Drive		
BE = Cable Battery box MZE BS = Cable Battery box MGS B = BiSS C = DriveCliq D = Hiperface DSL E = EnDat H = Hiperface R = Resolver S = Sin/Cos SSI = SSI T = TTL		00 = BHA 01 = BDA 02 = CHA*, CanisDrive 03 = LynxDrive 04 = FHA mini		500 1000 1500		00 = - 01 = YukonDrive 02 = offen 03 = Bosch Rexroth 04 = Beckhoff 05 = ELMO Gold Cello 99 = kundenspezifischer Regler		
AFC	H	05	01	F02	0500	11	01	00
Type	Actuator end [side-A]			Cable sturcture		Drive end [side-B]		Outer jacket
Kategorie	Antriebsseite			Kabeltyp		Reglerseite		Kabelmantel
	00 = - 01 = - 02 = - 03 = - 04 = 17 pol. M17, female 05 = 12pol., Vtec, female 06 = 12pol., M23, female 07 = 17pol., M23, female 08 = - 09 = - 10 = - 11 = - 12 = 15 pol. Sub-D, 3-reihig, straight, female			F00 = - F01 = - F02 = (4x(2x0,25)+2x0,5)C F03 = (4x(2x0,15)C+4x0,15+2x0,5) F04 = (3x(2x0,14)C+4x0,14+2x0,5)C F05 = (3x(2x0,14)C+4x0,14+4x0,25+2x0,5)C F06 = (2x(2x0,14)C+2x(0,5)C)C F07 = (4x(2x0,5)C)C igus F08 = (4x(2x0,25)C+(2x0,5)C)C igus F09 = (5x(2x0,25)C+(2x0,25+2x0,5)C)C igus		00 = - 01 = - 02 = offen 03 = - 04 = - 05 = - 06 = - 07 = - 08 = - 09 = 15 pol. Sub-D, 3-rows, 45° side, male 10 = 9 pol. Sub-D, 2-rows, straight, male 11 = 15 pol. Sub-D, 3-rows, straight, male 12 = 15 pol. Sub-D, 2-rows, 45° side, male 13 = 15 pol. Sub-D, 2-rows, straight, male		00 = PUR
CHA* = CHA-C, Aloplex, FHA								

6.6 Standard length

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

6.7 Feedback cable: TTL - YukonDrive



Actuator side M23, 17 pol.	A-side	Signal	B-side	Controller side SUB-D, 15 pol.
female	1	U	4	Male
 <p>Innershield via housing shield via housing</p>	2	U\	5	 <p>Inner and outer shield via housing</p>
	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.	n.c.	
	16	n.c.	n.c.	
	17	n.c.	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

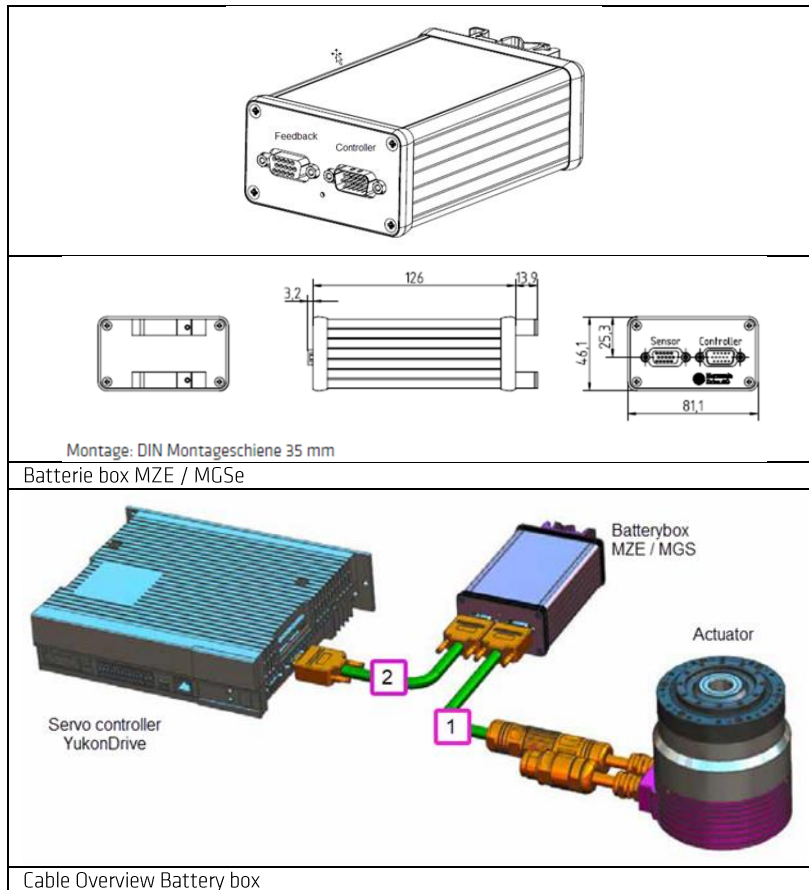
7. Cables Battery box

7.1 Cables Battery box

- MZE (BE)

- MGSe (BS)

(e = external battery)



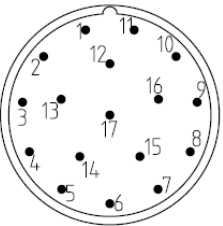
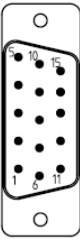
Legend

- 1 Cable: Actuator – Battery box
- 2 Cable: Battery box – Servo controller

7.2 Encoder cable Battery box MZE (CanisDrive and FHA mini)

7.2.1 Feedback cable No.1: MZE - Battery box (CanisDrive only)



Actuator side M23, 17 pol.	A-side	Signal	B-side	Controller side SUB-D 15 pol.
<p>female</p>  <p>Outer shield via housing</p>	1	n.c.	n.c.	<p>male</p>  <p>Outer shield via housing</p>
	2	n.c.	n.c.	
	3	DATA+	4	
	4	Ubat+	7	
	5	CLOCK+	14	
	6	Ubat-	8	
	7	0V	8	
	8	TEMP+	10	
	9	TEMP-	9	
	10	Ub	3	
	11	n.c.	n.c.	
	12	n.c.	n.c.	
	13	DATA-	5	
	14	CLOCK-	15	
	15	SENSE-	13	
	16	SENSE+	12	
	17	Inner shield	1	

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

7.3 Feedback cable No.1: MZE - flying leads



Actuator side M23, 17 pol.	A-side	Signal	Colour	Controller side flying leads
<p>female</p>  <p>Outer shield via housing</p>	1	n.c.	n.c.	<p>flying leads</p>
	2	n.c.	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	Ub	bn / rd	
	11	n.c.	n.c.	
	12	n.c.	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-BE-07-02-F04-0500-02-02-00	500 cm	1032999
AFC-BE-07-02-F04-1000-02-02-00	1000 cm	1033000
AFC-BE-07-02-F04-1500-02-02-00	1500 cm	1033001

7.3.1 Feedback cable No 1: MZE - Speedtec - Battery box (FHA mini only)



Actuator side Springtec, 12 pol.	A-side	Signal	B-side	Controller side SUB-D 15 pol.
female	1	Ub	3	male
	2	DATA+	4	
	3	DATA-	5	
	4	CLOCK+	14	
	5	CLOCK-	15	
	6	Ubat-	8	
	7	GND	8	
	8	n.c.	n.c.	
	9	n.c.	n.c.	
	10	n.c.	n.c.	
	11	n.c.	n.c.	
	12	Ubat+	7	
	shield via housing	housing	Inner shield	

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

7.4 Feedback cable No.2: MZE - Battery box - YukonDrive (CanisDrive, FHA mini)



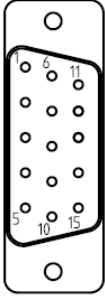
Actuator side SUB-D 15 pol.	A-side	Signal	B-side	Controller side SUB-D, 15 pol.
female	1	Inner shield	housing	male
	2	n.c.	n.c.	
	3	Ub	3	
	4	DATA+	4	
	5	DATA-	5	
	6	n.c.	n.c.	
	7	n.c.	n.c.	
	8	0V	8	
	9	TEMP-	9	
	10	TEMP+	10	
	11	n.c.	n.c.	
	12	SENSE+	12	
	13	SENSE-	13	
	14	CLOCK+	14	
	15	CLOCK-	15	
	Outer shield via housing			

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

7.4.1 Feedback cable No.2: MZE - Battery box - flying leads

2



Actuator side SUB D 15 pol.	A-side	Signal	Colour	Controller side flying leads
female  shield via housing	1	Inner shield		flying leads
	2	n.c.	-	
	3	Ub	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	SENSE+	wh / ye	
	13	SENSE-	wh / bk	
	14	CLOCK+	rd	
	15	CLOCK-	og	

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

7.5 Encoder Cable Battery box MGSe

7.5.1 Feedback cable NO.1: MGSe - Battery box

1



Actuator side M23, 17 pol.	A-side	Signal	B-side	Controller side SUB D 15 pol.
<p>female</p> <p>Outer shield via housing</p>	1	A+ (COS+)	2	<p>male</p> <p>Outer shield via housing</p>
	2	A- (COS-)	1	
	3	DATA+	4	
	4	Ubat+	7	
	5	CLOCK+	14	
	6	Ubat-	8	
	7	0V	8	
	8	TEMP+	10	
	9	TEMP-	9	
	10	Ub	3	
	11	B+ (SIN+)	11	
	12	B- (SIN-)	6	
	13	DATA-	5	
	14	CLOCK-	15	
	15	n.c.	n.c.	
	16	Reset	12	
	17	Inner shield	13	

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

7.5.2 Feedback cable No1: MGSe - flying leads

1


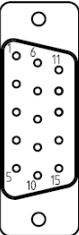
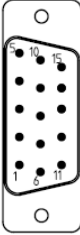


Actuator side M23, 17 pol.	A-side	Signal	Colour	Controller side flying leads
<p>female</p> <p>shield via housing outer shield via housing</p>	1	A+ (COS+)	rd	<p>flying leads</p>
	2	A- (COS-)	wh	
	3	DATA+	gn	
	4	Ubat+	wh / rd	
	5	CLOCK+	bu	
	6	Ubat-	bk	
	7	0V	bk	
	8	TEMP+	wh / bn	
	9	TEMP-	wh / bu	
	10	Ub	rd	
	11	B+ (SIN+)	bk	
	12	B- (SIN-)	wh	
	13	DATA-	wh	
	14	CLOCK-	wh	
	15	n.c.	-	
	16	Reset	wh / bk	
	17	Inner shield		

Ordering Code	Length	Mat.-no.
AFC-BS-07-02-F03-0500-02-02-00	500 cm	1025610

AFC-BS-07-02-F03-1000-02-02-00	1000 cm	1025896
AFC-BS-07-02-F03-1500-02-02-00	1500 cm	1025897

7.5.3 Feedback cable No2: MGSe Battery box - YukonDrive

2				
Actuator side SUB D 15 pol.	A-side	Signal	B-side	Controller side SUB D 15 pol.
female				male
				
shield via housing				Inner and outer shield via housing
	1	A- (COS-)	1	
	2	A+ (COS+)	2	
	3	Ub	3	
	4	DATA+	4	
	5	DATA-	5	
	6	B- (SIN-)	6	
	7	n.c.	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-BS-12-02-F04-0050-11-01-00	50 cm	1041417
AFC-BS-12-02-F04-0100-11-01-00	100 cm	1041418
AFC-BS-12-02-F04-0200-11-01-00	200 cm	1041419

7.6 Feedback cable No2: MGS Battery box- flying leads

2				
Actuator side SUB D, 15 pol.	A-side	Signal	Colour	Controller side flying leads
female				
				
shield via housing				flying leads
	1	A- (COS-)	wh	
	2	A+ (COS+)	rd	
	3	Ub	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-BS-12-02-F04-0050-02-02-00	50 cm	1041420
AFC-BS-12-02-F04-0100-02-02-00	100 cm	1041421
AFC-BS-12-02-F04-0200-02-02-00	200 cm	1041422



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