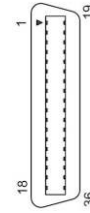


* EtherCAT In C5: RJ45		* EtherCAT Out C6: RJ45	
OR		OR	
* CAN In C5: RJ45		* CAN Out C6: RJ45	
1	CANH	1	CANH
2	CANL	2	CANL
3	FGND	3	FGND
4		4	
5		5	
6		6	
7	FGND	7	FGND
8		8	

RS232 C7: 4p4c	
1	RX
2	GND ISO
3	TX
4	

Daisy Chain C8: 0.1" IDC Female	
NELTRON 4401-10SR or COXOC 304A-10PSAAA03 (STX PN CONr00000010-67)	
1	DC Shield
2	
3	RXD
4	GND
5	TXD
6	GND
7	
8	
9	
10	



STO – Safe Torque Off P1: Molex 26-28 AWG	
1	24 VDC (STO enable)
2	Ground (24 VDC return)
3	
4	

Mating Connector:
Crimp Housing – PN 436450400 or equiv.
(STX PN CONr10000004-09)
Contacts – PN 0430300001 or equiv.
(STX PN PINr43030000-00)
Wired STO:
STX PN CONr00000004-AS

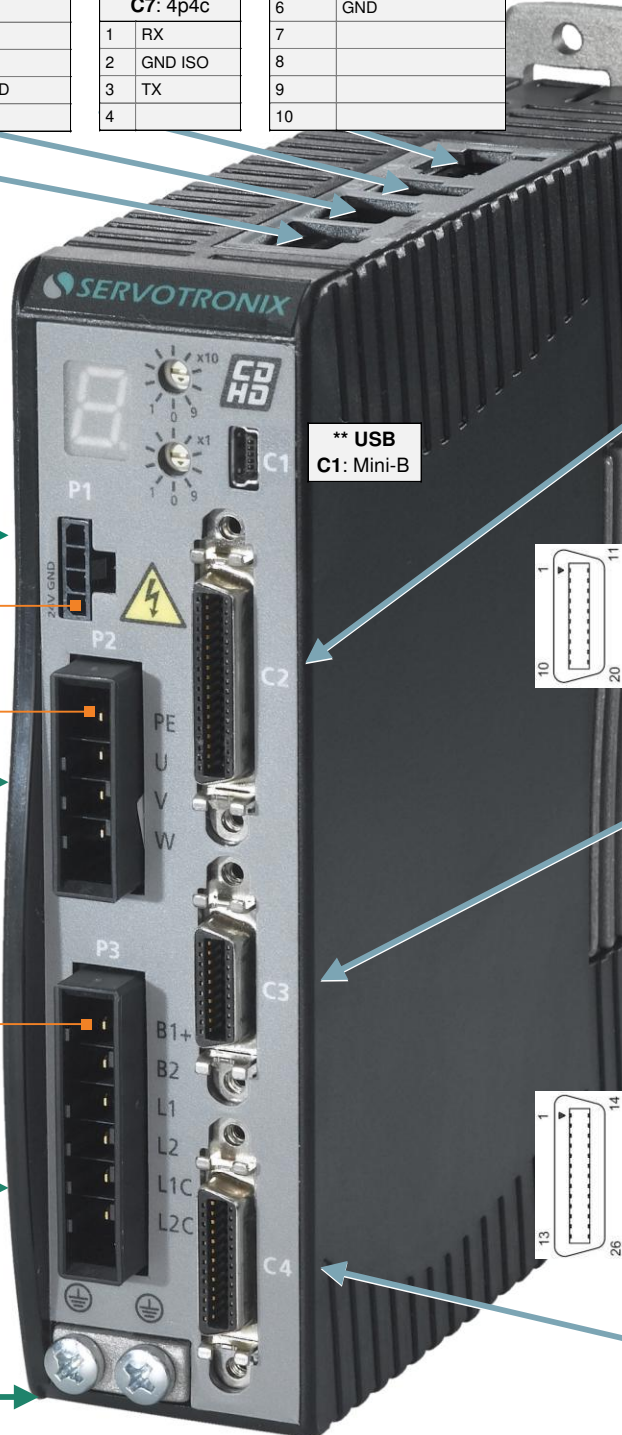
Motor P2: JST J300 18 AWG	
1	PE Functional Ground
2	U Motor Phase U
3	V Motor Phase V
4	W Motor Phase W

Mating Connector:
Crimp Housing – PN F32FSS-04V-KX
(STX PN CONr10000004-13)
Contacts – PN SF3F-71GF-P2.0
(STX PN PINrSF3F71GF-00)
Mating Connector:
Spring – PN 04JFAT-SBXGF-I
(STX PN CONr10000004-19)

AC Input and Regeneration P3: JST J300 18 AWG	
1	B1+ DC Bus +
2	B2 Regen Bus -
3	L1 AC Phase 1
4	L2 AC Phase 2
5	L1C Logic AC Phase 1
6	LC2 Logic AC Phase 2

Mating Connector:
Crimp Housing – PN F32FSS-06V-KX
(STX PN CONr00000006-91)
Contacts – PN SF3F-71GF-P2.0
(STX PN PINrSF3F71GF-00)
Mating Connector:
Spring – PN 06JFAT-SBXGF-I
(STX PN CONr10000006-06)

Functional Ground PE: Terminal M4	
M4 ring or spade terminal	



**** USB**
C1: Mini-B



Controller I/F			
C2: MDR 36 Plug 24-28 AWG			
1	24 VDC return	19	24 VDC
2	*** Common output	20	*** Common input
3	Digital output 1	21	Digital input 2
4	Digital input 1	22	Equivalent encoder output A-
5	Equivalent encoder output A-	23	Equivalent encoder output B+
6	Equivalent encoder output B-	24	Equivalent encoder output Z+
7		25	Ground
8	Analog input 1+	26	Analog input 1-
9	Direction input+	27	Direction input-
10	Ground	28	Secondary encoder B-
11	Pulse input-	29	Pulse input+
12	Secondary encoder A-	30	Ground
13	Ground	31	Digital input 3
14	Digital input 4	32	Digital input 5
15	Digital input 6	33	Digital output 2
16	Digital output 3	34	
17		35	* Analog input 2-
18	* Analog input 2+	36	Analog output

Mating Connector:
3M Solder Plug Connector
PN 10136-3000PE (STX PN CONr00000036-01) or equiv.
3M Solder Plug Junction Shell
PN 10336-52F0-008 (STX PN HODr00000036-00) or equiv.
Mating Cable (STX PN CBL-MDRFL-36-0x, x=1|2|3 meter)

Machine I/F			
C3: MDR 20 Plug 24-28 AWG			
1	Secondary encoder A+	11	Secondary encoder A-
2	Pulse input +	12	Pulse input -
3	Secondary encoder B+	13	Secondary encoder B-
4	Direction input+	14	Direction input-
5	Secondary encoder Z+	15	Secondary encoder Z-
6	Secondary encoder 5V	16	Secondary encoder ground
7	Digital input 7	17	Digital input 8
8	Digital input 9	18	Digital input 10
9	Digital input 11	19	Digital output 4
10	Digital output 5	20	Digital output 6
11	24 VDC	21	Digital output 8
12	*** Common input	22	Digital output 10
13		23	Digital output 11
14	Fault relay 1	24	Digital output 12
15		25	Digital output 13
16		26	Digital output 14
17		27	Digital output 15
18		28	Digital output 16
19		29	Digital output 17
20		30	Digital output 18

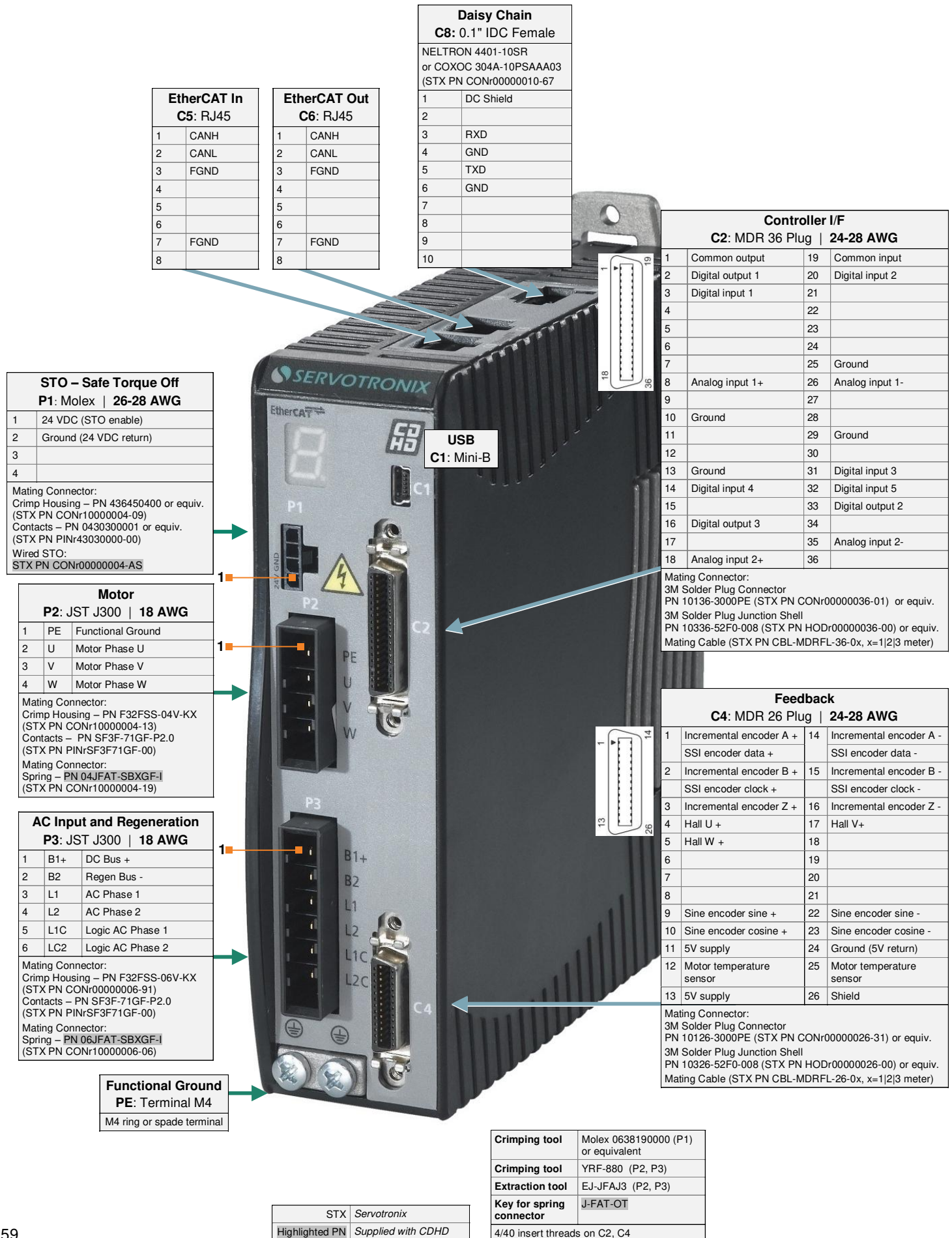
Mating Connector:
3M Solder Plug Connector
PN 10120-3000PE (STX PN CONr00000020-38) or equiv.
3M Solder Plug Junction Shell
PN 10320-52F0-008 (STX PN HODr00000020-00) or equiv.
Mating Cable (STX PN CBL-MDRFL-20-0x, x=1|2|3 meter)

Feedback			
C4: MDR 26 Plug 24-28 AWG			
1	Incremental encoder A +	14	Incremental encoder A -
2	SSI encoder data +	15	SSI encoder data -
3	Incremental encoder B +	16	Incremental encoder B -
4	SSI encoder clock +	17	SSI encoder clock -
5	Incremental encoder Z +	18	Incremental encoder Z -
6	Hall U +	19	Hall V +
7	Hall W +	20	** 8V supply
8	Resolver sine +	21	Resolver sine -
9	Resolver cosine +	22	Resolver cosine -
10	Resolver reference +	23	Resolver reference -
11	Sine encoder sine +	24	Sine encoder sine -
12	Sine encoder cosine +	25	Sine encoder cosine -
13	5V supply	26	Ground (5V/8V return)
14	Motor temperature sensor	27	Motor temperature sensor
15	5V supply	28	Shield

Mating Connector:
3M Solder Plug Connector
PN 10126-3000PE (STX PN CONr00000026-31) or equiv.
3M Solder Plug Junction Shell
PN 10326-52F0-008 (STX PN HODr00000026-00) or equiv.
Mating Cable (STX PN CBL-MDRFL-26-0x, x=1|2|3 meter)

*	See ordering options
**	AF and EC models only
***	EC models only
STX	Servotronic
Highlighted PN	Supplied with CDHD

Crimping tool	Molex 0638190000 (P1) or equivalent
Crimping tool	YRF-880 (P2, P3)
Extraction tool	EJ-JFAJ3 (P2, P3)
Key for spring connector	J-FAT-OT
4/40 insert threads on C2, C3, C4	



STO – Safe Torque Off	
P1: Molex 26-28 AWG	
1	24 VDC (STO enable)
2	Ground (24 VDC return)
3	
4	

Mating Connector:
 Crimp Housing – PN 436450400 or equiv.
 (STX PN CONr10000004-09)
 Contacts – PN 0430300001 or equiv.
 (STX PN PINr43030000-00)

Wired STO:
 STX PN CONr00000004-AS

Motor	
P2: JST J300 18 AWG	
1	PE Functional Ground
2	U Motor Phase U
3	V Motor Phase V
4	W Motor Phase W

Mating Connector:
 Crimp Housing – PN F32FSS-04V-KX
 (STX PN CONr10000004-13)
 Contacts – PN SF3F-71GF-P2.0
 (STX PN PINrSF3F71GF-00)

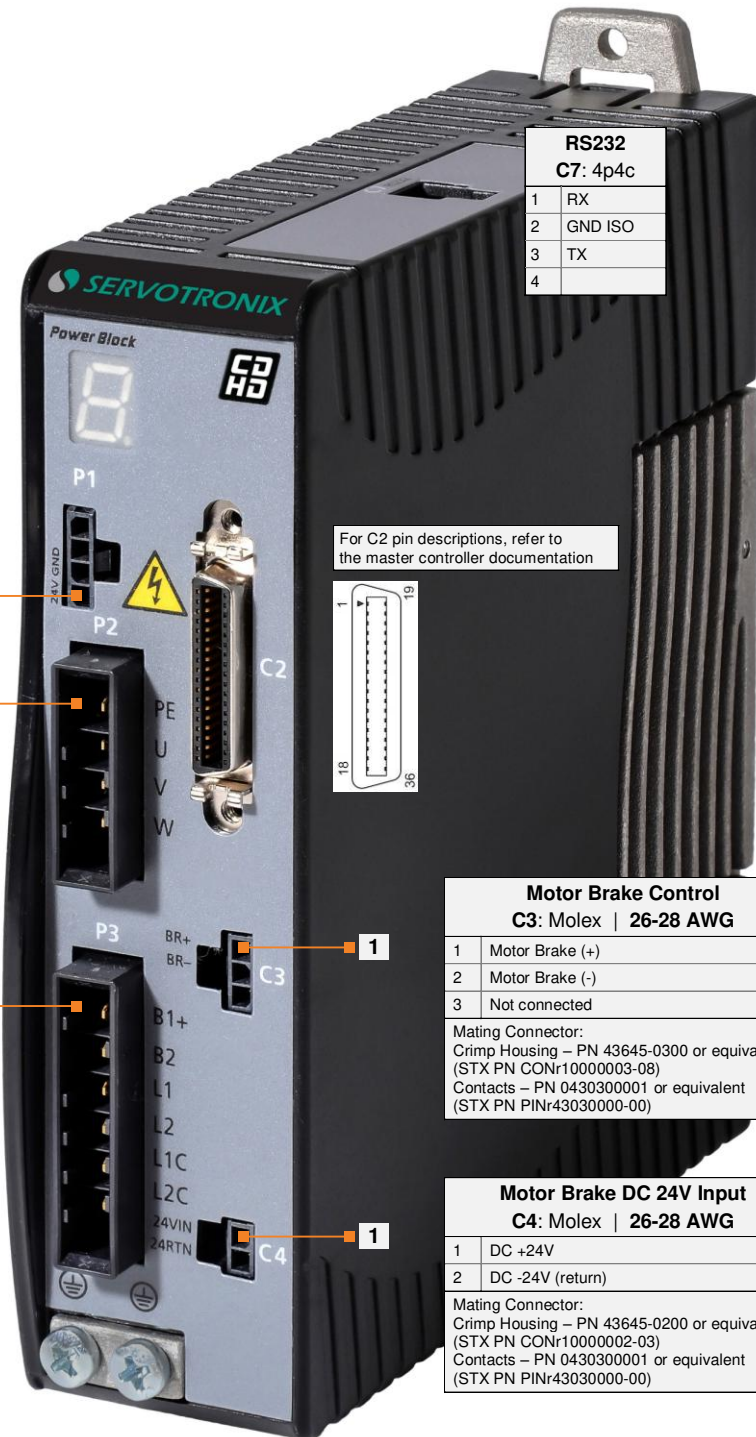
Mating Connector:
 Spring – PN 04JFAT-SBXGF-I
 (STX PN CONr10000004-19)

AC Input and Regeneration	
P3: JST J300 18 AWG	
1	B1+ DC Bus +
2	B2 Regen Bus -
3	L1 AC Phase 1
4	L2 AC Phase 2
5	L1C Logic AC Phase 1
6	LC2 Logic AC Phase 2

Mating Connector:
 Crimp Housing – PN F32FSS-06V-KX
 (STX PN CONr00000006-91)
 Contacts – PN SF3F-71GF-P2.0
 (STX PN PINrSF3F71GF-00)

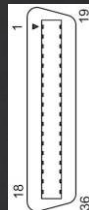
Mating Connector:
 Spring – PN 06JFAT-SBXGF-I
 (STX PN CONr10000006-06)

Functional Ground	
PE: Terminal M4	
M4 ring or spade terminal	



RS232	
C7: 4p4c	
1	RX
2	GND ISO
3	TX
4	

For C2 pin descriptions, refer to the master controller documentation



Motor Brake Control	
C3: Molex 26-28 AWG	
1	Motor Brake (+)
2	Motor Brake (-)
3	Not connected

Mating Connector:
 Crimp Housing – PN 43645-0300 or equivalent
 (STX PN CONr10000003-08)
 Contacts – PN 0430300001 or equivalent
 (STX PN PINr43030000-00)

Motor Brake DC 24V Input	
C4: Molex 26-28 AWG	
1	DC +24V
2	DC -24V (return)

Mating Connector:
 Crimp Housing – PN 43645-0200 or equivalent
 (STX PN CONr10000002-03)
 Contacts – PN 0430300001 or equivalent
 (STX PN PINr43030000-00)

Crimping tool	Molex 0638190000 (P1, C3, C4) or equivalent
Crimping tool	YRF-1070 (P2, P3, P4)
Extraction tool	EJ-JFAJ3
Key for spring connector	J-FAT-OT

STX	Servotronic
Highlighted PN	Supplied with CDHD

*** EtherCAT In**
C5: RJ45

OR

* CAN In	
C5: RJ45	
1	CANH
2	CANL
3	FGND
4	
5	
6	
7	FGND
8	

*** EtherCAT Out**
C6: RJ45

OR

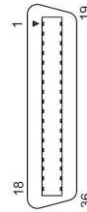
* CAN Out	
C6: RJ45	
1	CANH
2	CANL
3	FGND
4	
5	
6	
7	FGND
8	

RS232
C7: 4p4c

1	RX
2	GND ISO
3	TX
4	

Daisy Chain
C8: 0.1" IDC Female
 NELTRON 4401-10SR
 or COXOC 304A-10PSAA03
 (STX PN CONr00000010-67)

1	DC Shield
2	
3	RXD
4	GND
5	TXD
6	GND
7	
8	
9	
10	



Controller I/F
C2: MDR 36 Plug | 24-28 AWG

1	24 VDC return	19	24 VDC
2	*** Common output	20	*** Common input
3	Digital output 1	21	Digital input 2
4	Digital input 1	22	Equivalent encoder output A-
5	Equivalent encoder output A-	23	Equivalent encoder output A+
6	Equivalent encoder output B-	24	Equivalent encoder output B+
7	Equivalent encoder output Z-	25	Equivalent encoder output Z+
8	Ground	26	Ground
9	Analog input 1+	27	Analog input 1-
10	Direction input+	28	Direction input-
11	Secondary encoder B+	29	Secondary encoder B-
12	Ground	30	Pulse input+
13	Pulse input-	31	Secondary encoder A+
14	Secondary encoder A-	32	Digital input 3
15	Ground	33	Digital input 5
16	Digital input 4	34	Digital output 2
17	Digital input 6	35	* Analog input 2-
18	Digital output 3	36	Analog output

Mating Connector:
 3M Solder Plug Connector
 PN 10136-3000PE (STX PN CONr00000036-01) or equiv.
 3M Solder Plug Junction Shell
 PN 10336-52F0-008 (STX PN HODr00000036-00) or equiv.
 Mating Cable (STX PN CBL-MDRFL-36-0x, x=1|2|3 meter)

STO – Safe Torque Off
P1: Molex | 26-28 AWG

1	24 VDC (STO enable)
2	Ground (24 VDC return)
3	
4	

Mating Connector:
 Crimp Housing – PN 436450400 or equiv.
 (STX PN CONr10000004-09)
 Contacts – PN 0430300001 or equiv.
 (STX PN PINr43030000-00)
Wired STO:
 STX PN CONr00000004-AS

Motor
P2: JST J300 | 16 AWG

1	PE	Functional Ground
2	U	Motor Phase U
3	V	Motor Phase V
4	W	Motor Phase W

Mating Connector:
 Crimp Housing – PN F32FSS-04V-KX
 (STX PN CONr10000004-13)
 Contacts – PN SF3F-71GF-P2.0
 (STX PN PINrSF3F71GF-00)
Mating Connector:
 Spring – PN 04JFAT-SBXGF-I
 (STX PN CONr10000004-19)

Regeneration
P3: JST J300 | 16 AWG

1	B1+	DC Bus +
2	B2	Regen Bus -

Mating Connector:
 Crimp Housing – PN F32FSS-02V-KX
 (STX PN CONr10000002-10)
 Contacts – PN SF3F-71GF-P2.0
 (STX PN PINrSF3F71GF-00)
Mating Connector:
 Spring – not available

AC Input
P4: JST J300 | 16 AWG

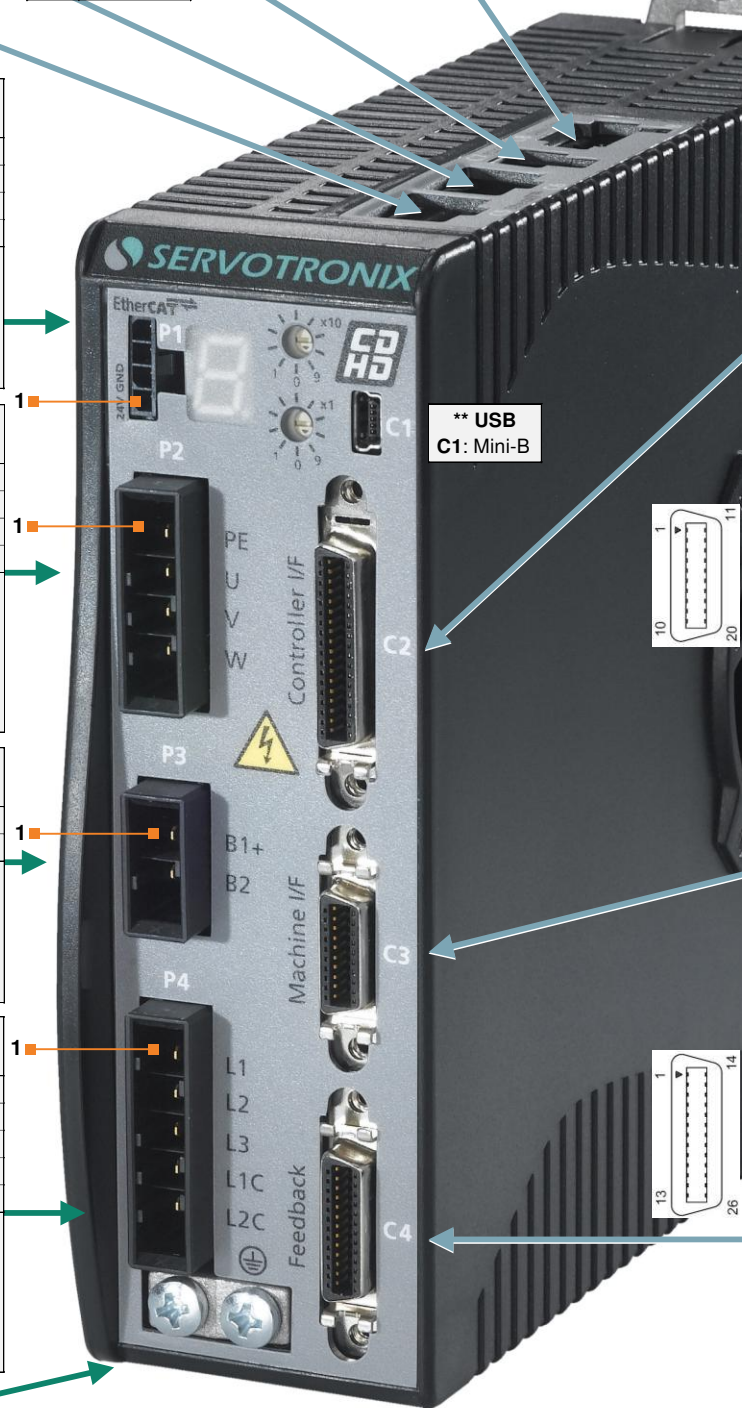
1	L1	AC Phase 1
2	L2	AC Phase 2
3	L3	AC Phase 3
4	L1C	Logic AC Phase 1
5	L2C	Logic AC Phase 2

Mating Connector:
 Crimp Housing – PN F32FSS-05V-KX
 (STX PN CONr10000005-03)
 Contacts – PN SF3F-71GF-P2.0
 (STX PN PINrSF3F71GF-00)
Mating Connector:
 Spring – PN 05JFAT-SBXGF-I
 (STX PN CONr10000005-04)

Functional Ground
PE: Terminal M4
 M4 ring or spade terminal

*	See ordering options
**	AF and EC models only
***	EC models only
STX	Servotronic
Highlighted PN	Supplied with CDHD

Crimping tool	Molex 0638190000 (P1) or equivalent
Crimping tool	YRF-1070 (P2, P3, P4)
Extraction tool	EJ-JFAJ3
Key for spring connector	J-FAT-OT
4/40 insert threads on C2, C3, C4	



Machine I/F
C3: MDR 20 Plug | 24-28 AWG

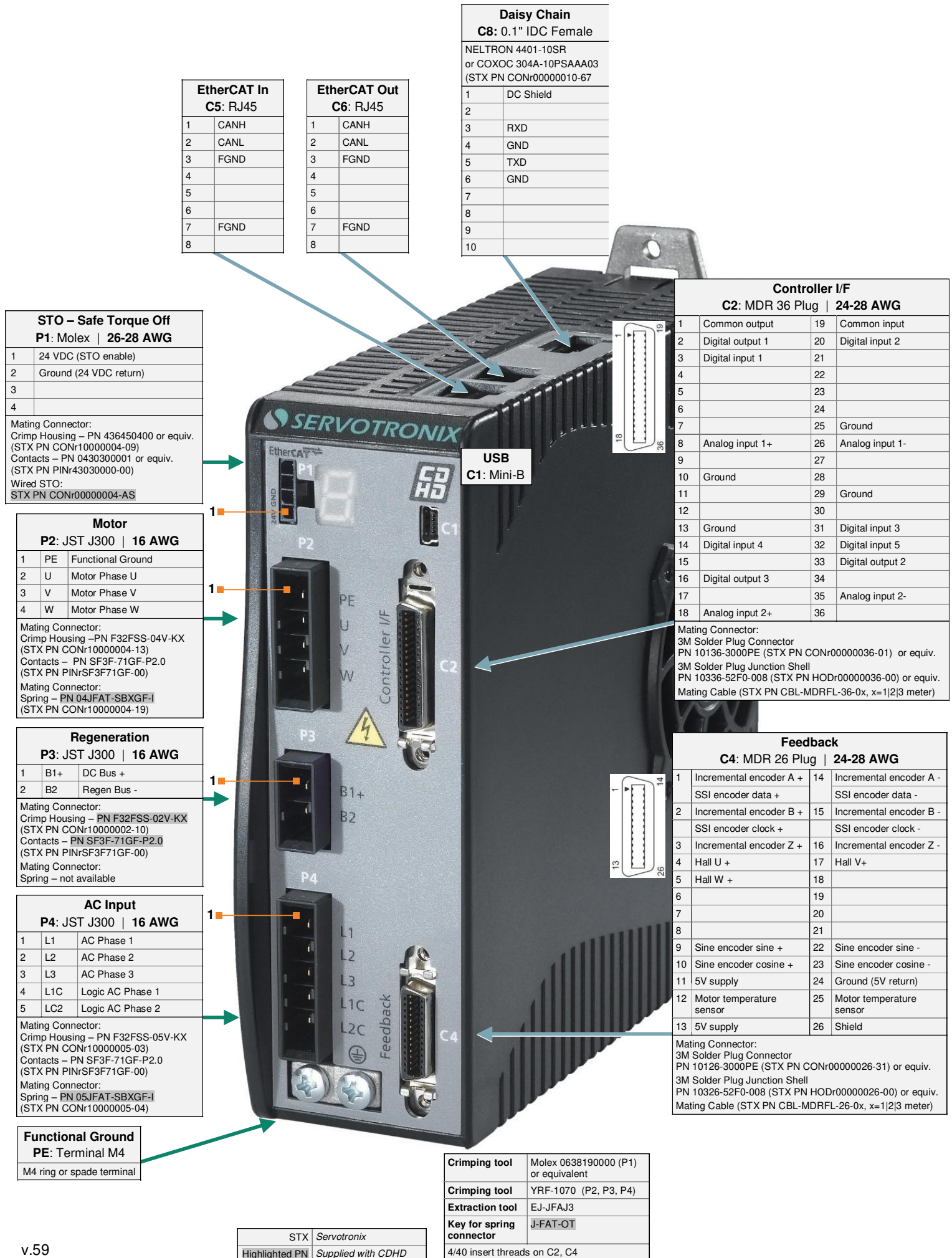
1	Secondary encoder A+	11	Secondary encoder A-
2	Pulse input +	12	Pulse input -
3	Secondary encoder B+	13	Secondary encoder B-
4	Direction input+	14	Direction input-
5	Secondary encoder Z+	15	Secondary encoder Z-
6	Secondary encoder SV	16	Secondary encoder ground
7	Digital input 7	17	Digital input 8
8	Digital input 9	18	Digital input 10
9	Digital input 11	19	Digital output 4
10	Digital output 5	20	Digital output 6
11	24 VDC	21	24 VDC return
12	*** Common input	22	*** Common output
13	Fault relay 1	23	Fault relay 2

Mating Connector:
 3M Solder Plug Connector
 PN 10120-3000PE (STX PN CONr00000020-38) or equiv.
 3M Solder Plug Junction Shell
 PN 10320-52F0-008 (STX PN HODr00000020-00) or equiv.
 Mating Cable (STX PN CBL-MDRFL-20-0x, x=1|2|3 meter)

Feedback
C4: MDR 26 Plug | 24-28 AWG

1	Incremental encoder A +	14	Incremental encoder A -
2	SSI encoder data +	15	SSI encoder data -
3	Incremental encoder B +	16	Incremental encoder B -
4	SSI encoder clock +	17	SSI encoder clock -
5	Incremental encoder Z +	18	Incremental encoder Z -
6	Hall U +	19	Hall V+
7	Hall W +	20	** 8V supply
8	Resolver sine +	21	Resolver sine -
9	Resolver cosine +	22	Resolver cosine -
10	Resolver reference +	23	Resolver reference -
11	Sine encoder sine +	24	Sine encoder sine -
12	Sine encoder cosine +	25	Sine encoder cosine -
13	5V supply	26	Ground (5V/8V return)
14	Motor temperature sensor		
15	5V supply		
16	Shield		

Mating Connector:
 3M Solder Plug Connector
 PN 10126-3000PE (STX PN CONr00000026-31) or equiv.
 3M Solder Plug Junction Shell
 PN 10326-52F0-008 (STX PN HODr00000026-00) or equiv.
 Mating Cable (STX PN CBL-MDRFL-26-0x, x=1|2|3 meter)



STO – Safe Torque Off
P1: Molex | 26-28 AWG

1	24 VDC (STO enable)
2	Ground (24 VDC return)
3	
4	

Mating Connector:
 Crimp Housing – PN 436450400 or equiv.
 (STX PN CONr10000004-09)
 Contacts – PN 0430300001 or equiv.
 (STX PN PINr43030000-00)

Wired STO:
 STX PN CONr00000004-AS

Motor
P2: JST J300 | 16 AWG

1	PE	Functional Ground
2	U	Motor Phase U
3	V	Motor Phase V
4	W	Motor Phase W

Mating Connector:
 Crimp Housing – PN F32FSS-04V-KX
 (STX PN CONr10000004-13)
 Contacts – PN SF3F-71GF-P2.0
 (STX PN PINrSF3F71GF-00)

Mating Connector:
 Spring – PN 04JFAT-SBXGF-I
 (STX PN CONr10000004-19)

Regeneration
P3: JST J300 | 16 AWG

1	B1+	DC Bus +
2	B2	Regen Bus -

Mating Connector:
 Crimp Housing – PN F32FSS-02V-KX
 (STX PN CONr10000002-10)
 Contacts – PN SF3F-71GF-P2.0
 (STX PN PINrSF3F71GF-00)

Mating Connector:
 Spring – not available

AC Input
P4: JST J300 | 16 AWG

1	L1	AC Phase 1
2	L2	AC Phase 2
3	L3	AC Phase 3
4	L1C	Logic AC Phase 1
5	LC2	Logic AC Phase 2

Mating Connector:
 Crimp Housing – PN F32FSS-05V-KX
 (STX PN CONr10000005-03)
 Contacts – PN SF3F-71GF-P2.0
 (STX PN PINrSF3F71GF-00)

Mating Connector:
 Spring – PN 05JFAT-SBXGF-I
 (STX PN CONr10000005-04)

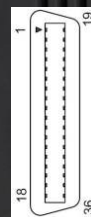
Functional Ground
PE: Terminal M4

M4 ring or spade terminal

RS232
C7: 4p4c

1	RX
2	GND ISO
3	TX
4	

For C2 pin descriptions, refer to
 the master controller documentation


Motor Brake Control
C3: Molex | 26-28 AWG

1	Motor Brake (+)
2	Motor Brake (-)
3	Not connected

Mating Connector:
 Crimp Housing – PN 43645-0300 or equivalent
 (STX PN CONr10000003-08)
 Contacts – PN 0430300001 or equivalent
 (STX PN PINr43030000-00)

Motor Brake DC 24V Input
C4: Molex | 26-28 AWG

1	DC +24V
2	DC -24V (return)

Mating Connector:
 Crimp Housing – PN 43645-0200 or equivalent
 (STX PN CONr10000002-03)
 Contacts – PN 0430300001 or equivalent
 (STX PN PINr43030000-00)

Crimping tool	Molex 0638190000 (P1, C3, C4) or equivalent
Crimping tool	YRF-1070 (P2, P3, P4)
Extraction tool	EJ-JFAJ3
Key for spring connector	J-FAT-OT

STX	Servotronics
Highlighted PN	Supplied with CDHD

*** EtherCAT In**
C5: RJ45

*** EtherCAT Out**
C6: RJ45

OR
*** CAN In**
C5: RJ45

OR
*** CAN Out**
C6: RJ45

1	CANH
2	CANL
3	FGND
4	
5	
6	
7	FGND
8	

1	CANH
2	CANL
3	FGND
4	
5	
6	
7	FGND
8	

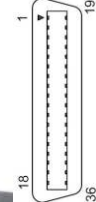
RS232
C7: 4p4c

1	RX
2	GND ISO
3	TX
4	

Daisy Chain
C8: 0.1" IDC Female

NELTRON 4401-10SR
 or COXOC 304A-10PSAA03
 (STX PN CONr00000010-67)

1	DC Shield
2	
3	RXD
4	GND
5	TXD
6	GND
7	
8	
9	
10	



Controller I/F
C2: MDR 36 Plug | 24-28 AWG

1	24 VDC return *** Common output	19	24 VDC *** Common input
2	Digital output 1	20	Digital input 2
3	Digital input 1	21	
4	Equivalent encoder output A-	22	Equivalent encoder output A+
5	Equivalent encoder output B-	23	Equivalent encoder output B+
6	Equivalent encoder output Z-	24	Equivalent encoder output Z+
7		25	Ground
8	Analog input 1+	26	Analog input 1-
9	Direction input+ Secondary encoder B+	27	Direction input- Secondary encoder B-
10	Ground	28	Pulse input+ Secondary encoder A+
11	Pulse input- Secondary encoder A-	29	Ground
12		30	
13	Ground	31	Digital input 3
14	Digital input 4	32	Digital input 5
15	Digital input 6	33	Digital output 2
16	Digital output 3	34	
17		35	* Analog input 2-
18	* Analog input 2+	36	Analog output

Mating Connector:
 3M Solder Plug Connector
 PN 10136-3000PE (STX PN CONr00000036-01) or equiv.
 3M Solder Plug Junction Shell
 PN 10336-52F0-008 (STX PN HODr00000036-00) or equiv.
 Mating Cable (STX PN CBL-MDRFL-36-0x, x=1|2|3 meter)

Machine I/F
C3: MDR 20 Plug | 24-28 AWG

1	Secondary encoder A+ Pulse input +	11	Secondary encoder A- Pulse input -
2	Secondary encoder B+ Direction input+	12	Secondary encoder B- Direction input-
3	Secondary encoder Z+ Secondary encoder 5V	13	Secondary encoder Z- Secondary encoder ground
4	Digital input 7	14	Digital input 8
5	Digital input 9	15	Digital input 10
6	Digital input 11	16	Digital output 4
7	Digital output 5	17	Digital output 6
8	24 VDC	18	Digital output 2
9	*** Common input	19	24 VDC return *** Common output
10	Fault relay 1	20	Fault relay 2

Mating Connector:
 3M Solder Plug Connector
 PN 10120-3000PE (STX PN CONr00000020-38) or equiv.
 3M Solder Plug Junction Shell
 PN 10320-52F0-008 (STX PN HODr00000020-00) or equiv.
 Mating Cable (STX PN CBL-MDRFL-20-0x, x=1|2|3 meter)

Feedback
C4: MDR 26 Plug | 24-28 AWG

1	Incremental encoder A + SSI encoder data +	14	Incremental encoder A - SSI encoder data -
2	Incremental encoder B + SSI encoder clock +	15	Incremental encoder B - SSI encoder clock -
3	Incremental encoder Z +	16	Incremental encoder Z -
4	Hall U +	17	Hall V+
5	Hall W +	18	** 8V supply
6	Resolver sine +	19	Resolver sine -
7	Resolver cosine +	20	Resolver cosine -
8	Resolver reference +	21	Resolver reference -
9	Sine encoder sine +	22	Sine encoder sine -
10	Sine encoder cosine +	23	Sine encoder cosine -
11	5V supply	24	Ground (5V/8V return)
12	Motor temperature sensor	25	Motor temperature sensor
13	5V supply	26	Shield

Mating Connector:
 3M Solder Plug Connector
 PN 10126-3000PE (STX PN CONr00000026-31) or equiv.
 3M Solder Plug Junction Shell
 PN 10326-52F0-008 (STX PN HODr00000026-00) or equiv.
 Mating Cable (STX PN CBL-MDRFL-26-0x, x=1|2|3 meter)

STO – Safe Torque Off
P1: Molex | 26-28 AWG

1	24 VDC (STO enable)
2	Ground (24 VDC return)
3	
4	

Mating Connector:
 Crimp Housing – PN 436450400 or equiv.
 (STX PN CONr10000004-09)
 Contacts – PN 0430300001 or equiv.
 (STX PN PINr43030000-00)
 Wired STO:
 STX PN CONr00000004-AS

Motor
P2: JST J400 | 14 AWG

1	PE	Functional Ground
2	U	Motor Phase U
3	V	Motor Phase V
4	W	Motor Phase W

Mating Connector:
 Crimp Housing – PN J43FSS-04V-KX
 (STX PN CONr10000004-18)
 Contacts – PN SJ4F-71GF-M3.0
 (STX PN CRPrSJ4F71GF-00)

Regeneration
P3: JST J400 | 14 AWG

1	B1+	DC Bus +
2	B2	Regen Bus -

Mating Connector:
 Crimp Housing – PN J42FSS-02V-KX
 (STX PN CONr10000002-14)
 Contacts – PN SJ4F-71GF-M3.0
 (STX PN CRPrSJ4F71GF-00)

Main AC Input
P4: JST J400 | 14 AWG

1	L1	AC Phase 1
2	L2	AC Phase 2
3	L3	AC Phase 3

Mating Connector:
 Crimp Housing – PN J43FSS-03V-KX
 (STX PN CONr10000003-19)
 Contacts – PN SJ4F-71GF-M3.0
 (STX PN CRPrSJ4F71GF-00)

Logic Power AC Input
P5: JST J300 | 16 AWG

1	L1C	AC Phase 1
2	L2C	AC Phase 2

Mating Connector:
 Crimp Housing – PN F32FSS-02V-KX
 (STX PN CONr10000002-10)
 Contacts – PN SF3F-71GF-P2.0
 (STX PN PINrSF3F71GF-00)

Functional Ground
PE: Terminal M4
 M4 ring or spade terminal

*	See ordering options
**	AF and EC models only
***	EC models only
STX	Servotronic
Highlighted PN	Supplied with CDHD

Crimping tool	Molex 0638190000 (P1) or equivalent
Crimping tool	YRF-1130 (P2, P3, P4) YRF-1070 (P5)
Extraction tool	EJ-JFAJ4 (P2, P3, P4) EJ-JFAJ3 (P5)
	4/40 insert threads on C2, C3, C4

EtherCAT In C5: RJ45	
1	CANH
2	CANL
3	FGND
4	
5	
6	
7	FGND
8	

EtherCAT Out C6: RJ45	
1	CANH
2	CANL
3	FGND
4	
5	
6	
7	FGND
8	

Daisy Chain C8: 0.1" IDC Female	
NELTRON 4401-10SR or COXOC 304A-10PSAAA03 (STX PN CONr00000010-67)	
1	DC Shield
2	
3	RXD
4	GND
5	TXD
6	GND
7	
8	
9	
10	

STO – Safe Torque Off P1: Molex 26-28 AWG	
1	24 VDC (STO enable)
2	Ground (24 VDC return)
3	
4	
Mating Connector: Crimp Housing – PN 436450400 or equiv. (STX PN CONr10000004-09) Contacts – PN 0430300001 or equiv. (STX PN PINr43030000-00) Wired STO: STX PN CONr00000004-AS	

Motor P2: JST J400 14 AWG	
1	PE Functional Ground
2	U Motor Phase U
3	V Motor Phase V
4	W Motor Phase W
Mating Connector: Crimp Housing – PN J43FSS-04V-KX (STX PN CONr10000004-18) Contacts – PN SJ4F-71GF-M3.0 (STX PN CRPrSJ4F71GF-00)	

Regeneration P3: JST J400 14 AWG	
1	B1+ DC Bus +
2	B2 Regen Bus -
Mating Connector: Crimp Housing – PN J42FSC-02V-KX (STX PN CONr10000002-14) Contacts – PN SJ4F-71GF-M3.0 (STX PN CRPrSJ4F71GF-00)	

Main AC Input P4: JST J400 14 AWG	
1	L1 AC Phase 1
2	L2 AC Phase 2
3	L3 AC Phase 3
Mating Connector: Crimp Housing – PN J43FSS-03V-KX (STX PN CONr10000003-19) Contacts – PN SJ4F-71GF-M3.0 (STX PN CRPrSJ4F71GF-00)	

Logic Power AC Input P5: JST J300 16 AWG	
1	L1C AC Phase 1
2	L2C AC Phase 2
Mating Connector: Crimp Housing – PN F32FSS-02V-KX (STX PN CONr10000002-10) Contacts – PN SF3F-71GF-P2.0 (STX PN PINrSF3F71GF-00)	

Functional Ground PE: Terminal M4	
M4 ring or spade terminal	

Controller I/F C2: MDR 36 Plug 24-28 AWG			
1	Common output	19	Common input
2	Digital output 1	20	Digital input 2
3	Digital input 1	21	
4		22	
5		23	
6		24	
7		25	Ground
8	Analog input 1+	26	Analog input 1-
9		27	
10	Ground	28	
11		29	Ground
12		30	
13	Ground	31	Digital input 3
14	Digital input 4	32	Digital input 5
15		33	Digital output 2
16	Digital output 3	34	
17		35	Analog input 2-
18	Analog input 2+	36	
Mating Connector: 3M Solder Plug Connector PN 10136-3000PE (STX PN CONr00000036-01) or equiv. 3M Solder Plug Junction Shell PN 10336-52F0-008 (STX PN HODr00000036-00) or equiv. Mating Cable (STX PN CBL-MDRFL-36-0x, x=1 2 3 meter)			

Feedback C4: MDR 26 Plug 24-28 AWG			
1	Incremental encoder A +	14	Incremental encoder A -
	SSI encoder data +		SSI encoder data -
2	Incremental encoder B +	15	Incremental encoder B -
	SSI encoder clock +		SSI encoder clock -
3	Incremental encoder Z +	16	Incremental encoder Z -
4	Hall U +	17	Hall V+
5	Hall W +	18	
6		19	
7		20	
8		21	
9	Sine encoder sine +	22	Sine encoder sine -
10	Sine encoder cosine +	23	Sine encoder cosine -
11	5V supply	24	Ground (5V return)
12	Motor temperature sensor	25	Motor temperature sensor
13	5V supply	26	Shield
Mating Connector: 3M Solder Plug Connector PN 10126-3000PE (STX PN CONr00000026-31) or equiv. 3M Solder Plug Junction Shell PN 10326-52F0-008 (STX PN HODr00000026-00) or equiv. Mating Cable (STX PN CBL-MDRFL-26-0x, x=1 2 3 meter)			

Crimping tool	Molex 0638190000 (P1) or equivalent
Crimping tool	YRF-1130 (P2, P3, P4) YRF-1070 (P5)
Extraction tool	EJ-JFAJ4 (P2, P3, P4) EJ-JFAJ3 (P5)
4/40 insert threads on C2, C4	

STX	Servotronics
Highlighted PN	Supplied with CDHD

STO – Safe Torque Off	
P1: Molex 26-28 AWG	
1	24 VDC (STO enable)
2	Ground (24 VDC return)
3	
4	
Mating Connector: Crimp Housing – PN 436450400 or equiv. (STX PN CONr10000004-09) Contacts – PN 0430300001 or equiv. (STX PN PINr43030000-00)	
Wired STO: STX PN CONr00000004-AS	

Motor	
P2: JST J400 14 AWG	
1	PE Functional Ground
2	U Motor Phase U
3	V Motor Phase V
4	W Motor Phase W
Mating Connector: Crimp Housing – PN J43FSS-04V-KX (STX PN CONr10000004-18) Contacts – PN SJ4F-71GF-M3.0 (STX PN CRPrSJ4F71GF-00)	

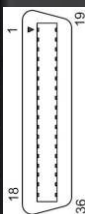
Regeneration	
P3: JST J400 14 AWG	
1	B1+ DC Bus +
2	B2 Regen Bus -
Mating Connector: Crimp Housing – PN J42FSC-02V-KX (STX PN CONr10000002-14) Contacts – PN SJ4F-71GF-M3.0 (STX PN CRPrSJ4F71GF-00)	

Main AC Input	
P4: JST J400 14 AWG	
1	L1 AC Phase 1
2	L2 AC Phase 2
3	L3 AC Phase 3
Mating Connector: Crimp Housing – PN J43FSS-03V-KX (STX PN CONr10000003-19) Contacts – PN SJ4F-71GF-M3.0 (STX PN CRPrSJ4F71GF-00)	

Logic Power AC Input	
P5: JST J300 16 AWG	
1	L1C AC Phase 1
2	L2C AC Phase 2
Mating Connector: Crimp Housing – PN F32FSS-02V-KX (STX PN CONr10000002-10) Contacts – PN SF3F-71GF-P2.0 (STX PN PINrSF3F71GF-00)	

RS232	
C7: 4p4c	
1	RX
2	GND ISO
3	TX
4	

For C2 pin descriptions, refer to the master controller documentation



Motor Brake Control	
C3: Molex 26-28 AWG	
1	Motor Brake (+)
2	Motor Brake (-)
3	Not connected
Mating Connector: Crimp Housing – PN 43645-0300 or equivalent (STX PN CONr10000003-08) Contacts – PN 0430300001 or equivalent (STX PN PINr43030000-00)	

Motor Brake DC 24V Input	
C4: Molex 26-28 AWG	
1	DC +24V
2	DC -24V (return)
Mating Connector: Crimp Housing – PN 43645-0200 or equivalent (STX PN CONr10000002-03) Contacts – PN 0430300001 or equivalent (STX PN PINr43030000-00)	

Functional Ground
PE: Terminal M4
 M4 ring or spade terminal

Crimping tool	Molex 0638190000 (P1, C3, C4) or equivalent
Crimping tool	YRF-1130 (P2, P3, P4) YRF-1070 (P5)
Extraction tool	EJ-JFAJ4 (P2, P3, P4) EJ-JFAJ3 (P5)

STX	Servotronics
Highlighted PN	Supplied with CDHD

* **EtherCAT In**
C5: RJ45

* **EtherCAT Out**
C6: RJ45

OR

OR

* **CAN In**
C5: RJ45

* **CAN Out**
C6: RJ45

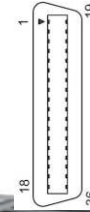
1	CANH
2	CANL
3	FGND
4	
5	
6	
7	FGND
8	

1	CANH
2	CANL
3	FGND
4	
5	
6	
7	FGND
8	

RS232
C7: 4p4c

1	RX
2	GND ISO
3	TX
4	

Daisy Chain	
C8: 0.1" IDC Female	
NELTRON 4401-10SR or COXOC 304A-10PSAA03 (STX PN CONr00000010-67)	
1	DC Shield
2	
3	RXD
4	GND
5	TXD
6	GND
7	
8	
9	
10	



Controller I/F			
C2: MDR 36 Plug 24-28 AWG			
1	24 VDC return	19	24 VDC
	*** Common output		*** Common input
2	Digital output 1	20	Digital input 2
3	Digital input 1	21	
4	Equivalent encoder output A-	22	Equivalent encoder output A+
5	Equivalent encoder output B-	23	Equivalent encoder output B+
6	Equivalent encoder output Z-	24	Equivalent encoder output Z+
7		25	Ground
8	Analog input 1+	26	Analog input 1-
9	Direction input+ Secondary encoder B+	27	Direction input- Secondary encoder B-
10	Ground	28	Pulse input+ Secondary encoder A+
11	Pulse input- Secondary encoder A-	29	Ground
12		30	
13	Ground	31	Digital input 3
14	Digital input 4	32	Digital input 5
15	Digital input 6	33	Digital output 2
16	Digital output 3	34	
17		35	* Analog input 2-
18	* Analog input 2+	36	Analog output

Mating Connector:
3M Solder Plug Connector
PN 10136-3000PE (STX PN CONr00000036-01) or equiv.
3M Solder Plug Junction Shell
PN 10336-52F0-008 (STX PN HODr00000036-00) or equiv.
Mating Cable (STX PN CBL-MDRFL-36-0x, x=1|2|3 meter)

Machine I/F			
C3: MDR 20 Plug 24-28 AWG			
1	Secondary encoder A+ Pulse input +	11	Secondary encoder A- Pulse input -
2	Secondary encoder B+ Direction input+	12	Secondary encoder B- Direction input-
3	Secondary encoder Z+ Direction input+	13	Secondary encoder Z- Direction input-
4	Secondary encoder 5V	14	Secondary encoder ground
5	Digital input 7	15	Digital input 8
6	Digital input 9	16	Digital input 10
7	Digital input 11	17	Digital output 4
8	Digital output 5	18	Digital output 6
9	24 VDC	19	24 VDC return
	*** Common input		*** Common output
10	Fault relay 1	20	Fault relay 2

Mating Connector:
3M Solder Plug Connector
PN 10120-3000PE (STX PN CONr00000020-38) or equiv.
3M Solder Plug Junction Shell
PN 10320-52F0-008 (STX PN HODr00000020-00) or equiv.
Mating Cable (STX PN CBL-MDRFL-20-0x, x=1|2|3 meter)

Feedback			
C4: MDR 26 Plug 24-28 AWG			
1	Incremental encoder A + SSI encoder data +	14	Incremental encoder A - SSI encoder data -
2	Incremental encoder B + SSI encoder clock +	15	Incremental encoder B - SSI encoder clock -
3	Incremental encoder Z +	16	Incremental encoder Z -
4	Hall U +	17	Hall V +
5	Hall W +	18	** 8V supply
6	Resolver sine +	19	Resolver sine -
7	Resolver cosine +	20	Resolver cosine -
8	Resolver reference +	21	Resolver reference -
9	Sine encoder sine +	22	Sine encoder sine -
10	Sine encoder cosine +	23	Sine encoder cosine -
11	5V supply	24	Ground (5V/8V return)
12	Motor temperature sensor	25	Motor temperature sensor
13	5V supply	26	Shield

Mating Connector:
3M Solder Plug Connector
PN 10126-3000PE (STX PN CONr00000026-31) or equiv.
3M Solder Plug Junction Shell
PN 10326-52F0-008 (STX PN HODr00000026-00) or equiv.
Mating Cable (STX PN CBL-MDRFL-26-0x, x=1|2|3 meter)

STO – Safe Torque Off
P1: Molex | 26-28 AWG

1	24 VDC (STO enable)
2	Ground (24 VDC return)
3	
4	

Mating Connector:
Crimp Housing – PN 436450400 or equiv.
(STX PN CONr10000004-09)
Contacts – PN 0430300001 or equiv.
(STX PN PINr43030000-00)
Wired STO:
STX PN CONr00000004-AS

Logic Power AC Input
P2: Phoenix | 16 AWG

1	L1C	AC Phase 1
2	L2C	AC Phase 2

Mating Connector:
PN FK 2.5/2-STF-5.08 (1873207)
(STX PN CONr10000002-25)

Main AC Input
P3: Phoenix | 12-13 AWG

1	L1	AC Phase 1
2	L2	AC Phase 2
3	L3	AC Phase 3

Mating Connector:
PN SPC 5/3-STCL-7.62 (1718494)
(STX PN CONr10000003-21)

Motor
P4: Phoenix | 10-11 AWG

1	PE	Functional Ground
2	U	Motor Phase U
3	V	Motor Phase V
4	W	Motor Phase W

Mating Connector:
PN SPC 5/4-STCL-7.62 (1718504)
(STX PN CONr10000004-26)

Regeneration
P5: Phoenix | 14 AWG

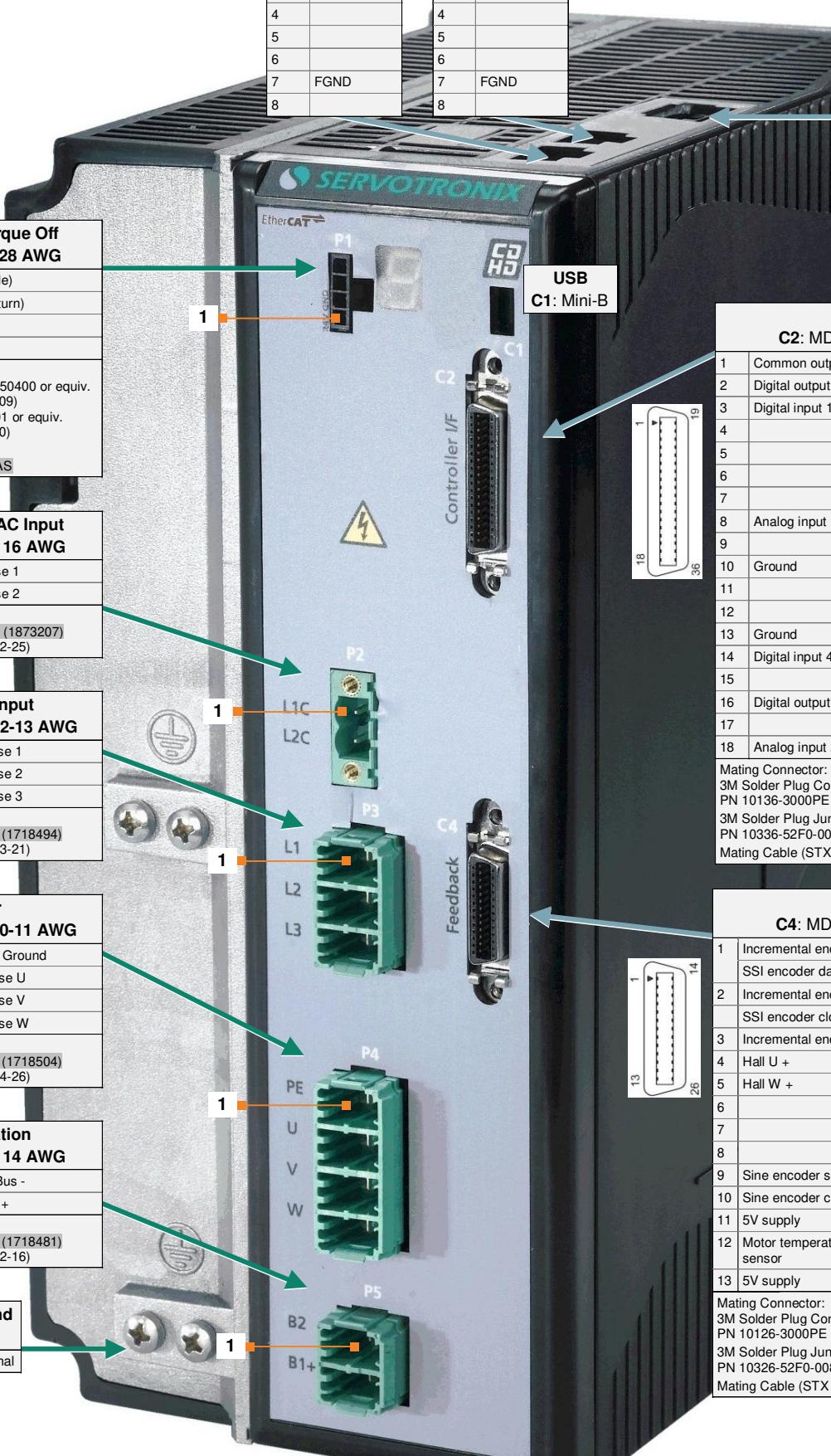
1	B2	Regen Bus -
2	B1+	DC Bus +

Mating Connector:
PN SPC 5/2-STCL-7.62 (1718481)
(STX PN CONr10000002-16)

Functional Ground
PE: Terminal M4

M4 ring or spade terminal

Crimping tool | Molex 0638190000 (P1) or equivalent
4/40 insert threads on C2, C3, C4



EtherCAT In
C5: RJ45

1	CANH
2	CANL
3	FGND
4	
5	
6	
7	FGND
8	

EtherCAT Out
C6: RJ45

1	CANH
2	CANL
3	FGND
4	
5	
6	
7	FGND
8	

Daisy Chain
C8: 0.1" IDC Female
 NELTRON 4401-10SR
 or COXOC 304A-10PSAAA03
 (STX PN CONr00000010-67)

1	DC Shield
2	
3	RXD
4	GND
5	TXD
6	GND
7	
8	
9	
10	

STO – Safe Torque Off
P1: Molex | 26-28 AWG

1	24 VDC (STO enable)
2	Ground (24 VDC return)
3	
4	

Mating Connector:
 Crimp Housing – PN 436450400 or equiv.
 (STX PN CONr10000004-09)
 Contacts – PN 0430300001 or equiv.
 (STX PN PINr43030000-00)
 Wired STO:
 STX PN CONr00000004-AS

Logic Power AC Input
P2: Phoenix | 16 AWG

1	L1C	AC Phase 1
2	L2C	AC Phase 2

Mating Connector:
 PN FK 2.5/2-STF-5.08 (1873207)
 (STX PN CONr10000002-25)

Main AC Input
P3: Phoenix | 12-13 AWG

1	L1	AC Phase 1
2	L2	AC Phase 2
3	L3	AC Phase 3

Mating Connector:
 PN SPC 5/3-STCL-7.62 (1718494)
 (STX PN CONr10000003-21)

Motor
P4: Phoenix | 10-11 AWG

1	PE	Functional Ground
2	U	Motor Phase U
3	V	Motor Phase V
4	W	Motor Phase W

Mating Connector:
 PN SPC 5/4-STCL-7.62 (1718504)
 (STX PN CONr10000004-26)

Regeneration
P5: Phoenix | 14 AWG

1	B2	Regen Bus -
2	B1+	DC Bus +

Mating Connector:
 PN SPC 5/2-STCL-7.62 (1718481)
 (STX PN CONr10000002-16)

Functional Ground
PE: Terminal M4
 M4 ring or spade terminal

USB
C1: Mini-B

Controller I/F
C2: MDR 36 Plug | 24-28 AWG

1	Common output	19	Common input
2	Digital output 1	20	Digital input 2
3	Digital input 1	21	
4		22	
5		23	
6		24	
7		25	Ground
8	Analog input 1+	26	Analog input 1-
9		27	
10	Ground	28	
11		29	Ground
12		30	
13	Ground	31	Digital input 3
14	Digital input 4	32	Digital input 5
15		33	Digital output 2
16	Digital output 3	34	
17		35	Analog input 2-
18	Analog input 2+	36	

Mating Connector:
 3M Solder Plug Connector
 PN 10136-3000PE (STX PN CONr00000036-01) or equiv.
 3M Solder Plug Junction Shell
 PN 10336-52F0-008 (STX PN HODr00000036-00) or equiv.
 Mating Cable (STX PN CBL-MDRFL-36-0x, x=1|2|3 meter)

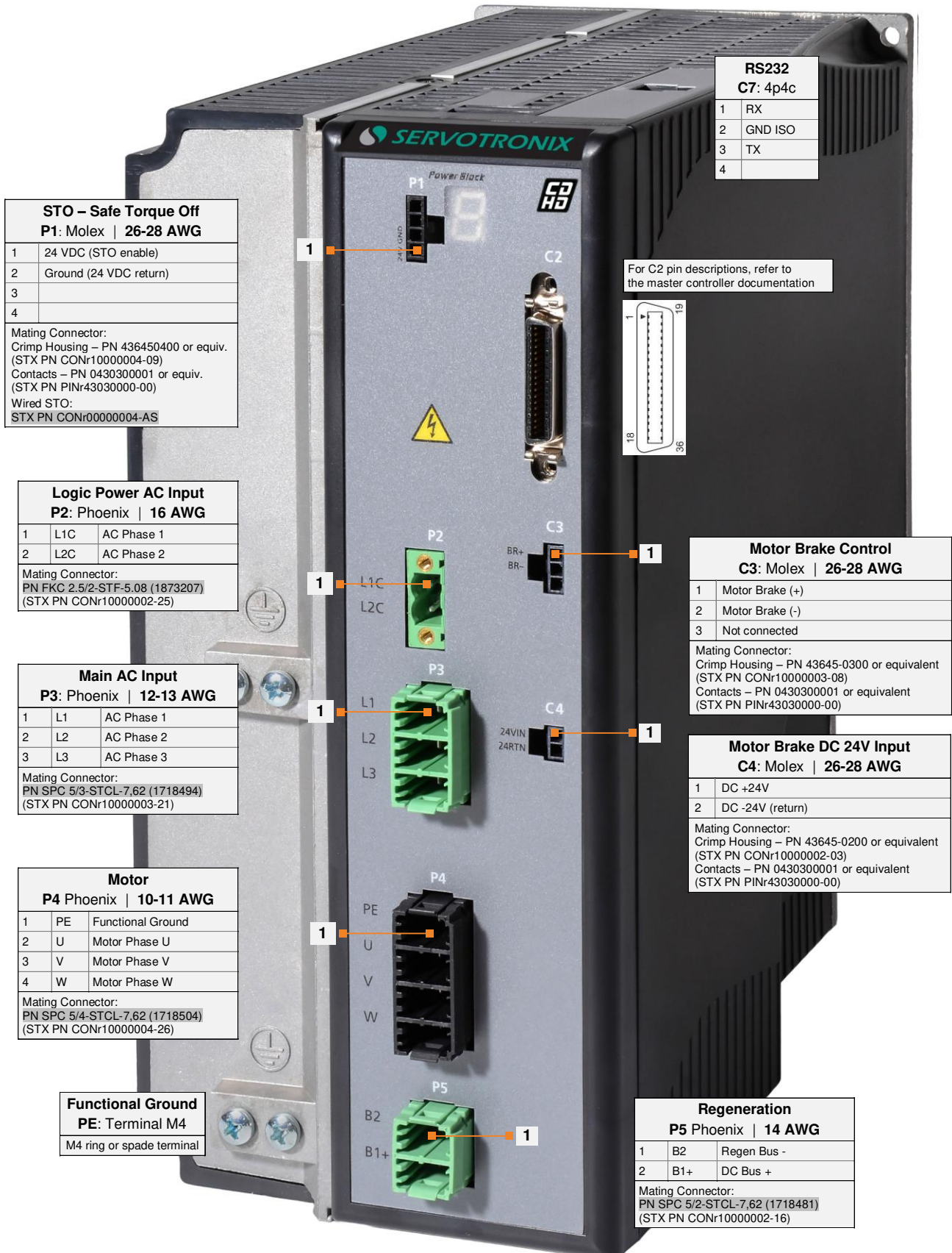
Feedback
C4: MDR 26 Plug | 24-28 AWG

1	Incremental encoder A +	14	Incremental encoder A -
	SSI encoder data +		SSI encoder data -
2	Incremental encoder B +	15	Incremental encoder B -
	SSI encoder clock +		SSI encoder clock -
3	Incremental encoder Z +	16	Incremental encoder Z -
4	Hall U +	17	Hall V +
5	Hall W +	18	
6		19	
7		20	
8		21	
9	Sine encoder sine +	22	Sine encoder sine -
10	Sine encoder cosine +	23	Sine encoder cosine -
11	5V supply	24	Ground (5V return)
12	Motor temperature sensor	25	Motor temperature sensor
13	5V supply	26	Shield

Mating Connector:
 3M Solder Plug Connector
 PN 10126-3000PE (STX PN CONr00000026-31) or equiv.
 3M Solder Plug Junction Shell
 PN 10326-52F0-008 (STX PN HODr00000026-00) or equiv.
 Mating Cable (STX PN CBL-MDRFL-26-0x, x=1|2|3 meter)

STX	Servotronic
Highlighted PN	Supplied with CDHD

Crimping tool	Molex 0638190000 (P1) or equivalent
4/40 insert threads on C2, C4	



*** EtherCAT In**
C5: RJ45

*** EtherCAT Out**
C6: RJ45

*** CAN In**
C5: RJ45

*** CAN Out**
C6: RJ45

1	CANH
2	CANL
3	FGND
4	
5	
6	
7	FGND
8	

1	CANH
2	CANL
3	FGND
4	
5	
6	
7	FGND
8	

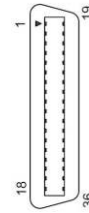
RS232
C7: 4p4c

1	RX
2	GND ISO
3	TX
4	

Daisy Chain
C8: 0.1" IDC Female

NELTRON 4401-10SR
 or COXOC 304A-10PSAA03
 (STX PN CONr00000010-67)

1	DC Shield
2	
3	RXD
4	GND
5	TXD
6	GND
7	
8	
9	
10	



Controller I/F
C2: MDR 36 Plug | 24-28 AWG

1	24 VDC return	19	24 VDC
2	*** Common output	20	*** Common input
3	Digital output 1	21	Digital input 2
4	Digital input 1	22	Equivalent encoder output A+
5	Equivalent encoder output A-	23	Equivalent encoder output B+
6	Equivalent encoder output B-	24	Equivalent encoder output Z+
7	Equivalent encoder output Z-	25	Ground
8	Analog input 1+	26	Analog input 1-
9	Direction input+ Secondary encoder B+	27	Direction input- Secondary encoder B-
10	Ground	28	Pulse input+ Secondary encoder A+
11	Pulse input- Secondary encoder A-	29	Ground
12		30	
13	Ground	31	Digital input 3
14	Digital input 4	32	Digital input 5
15	Digital input 6	33	Digital output 2
16	Digital output 3	34	
17		35	* Analog input 2-
18	* Analog input 2+	36	Analog output

Mating Connector:
 3M Solder Plug Connector
 PN 10136-3000PE (STX PN CONr00000036-01) or equiv.
 3M Solder Plug Junction Shell
 PN 10336-52F0-008 (STX PN HODr00000036-00) or equiv.
 Mating Cable (STX PN CBL-MDRFL-36-0x, x=1|2|3 meter)

STO – Safe Torque Off
P1: Molex | 26-28 AWG

1	24 VDC (STO enable)
2	Ground (24 VDC return)
3	
4	

Mating Connector:
 Crimp Housing – PN 436450400 or equiv.
 (STX PN CONr10000004-09)
 Contacts – PN 0430300001 or equiv.
 (STX PN PINr43030000-00)
 Wired STO:
 STX PN CONr00000004-AS

Logic Power 24V Input
P2: Molex | 26-28 AWG

1	24 VDC (logic in)
2	Ground (24 VDC return)

Mating Connector:
 Crimp Housing – PN 436450200 or equiv.
 (STX PN CONr10000002-03)
 Contacts – PN 0430300001 or equiv.
 (STX PN PINr43030000-00)

AC Input and Regeneration
P3: Phoenix | 12-14 AWG

1	L1	AC Phase 1
2	L2	AC Phase 2
3	L3	AC Phase 3
4	B1+	DC Bus +
5	B2	Regen Bus -
6	B3-	DC Bus -

Mating Connector:
 PN SPC 5/6-STCL-7,62 (1718520)
 (STX PN CONr00000006-78)

Brake
P4: Phoenix | 14-17 AWG

1	BR+	Motor Brake +
2	BR-	Motor Brake -

Mating Connector:
 PN SPC 5/2-STCL-7,62 (1718481)
 (STX PN CONr10000002-16)

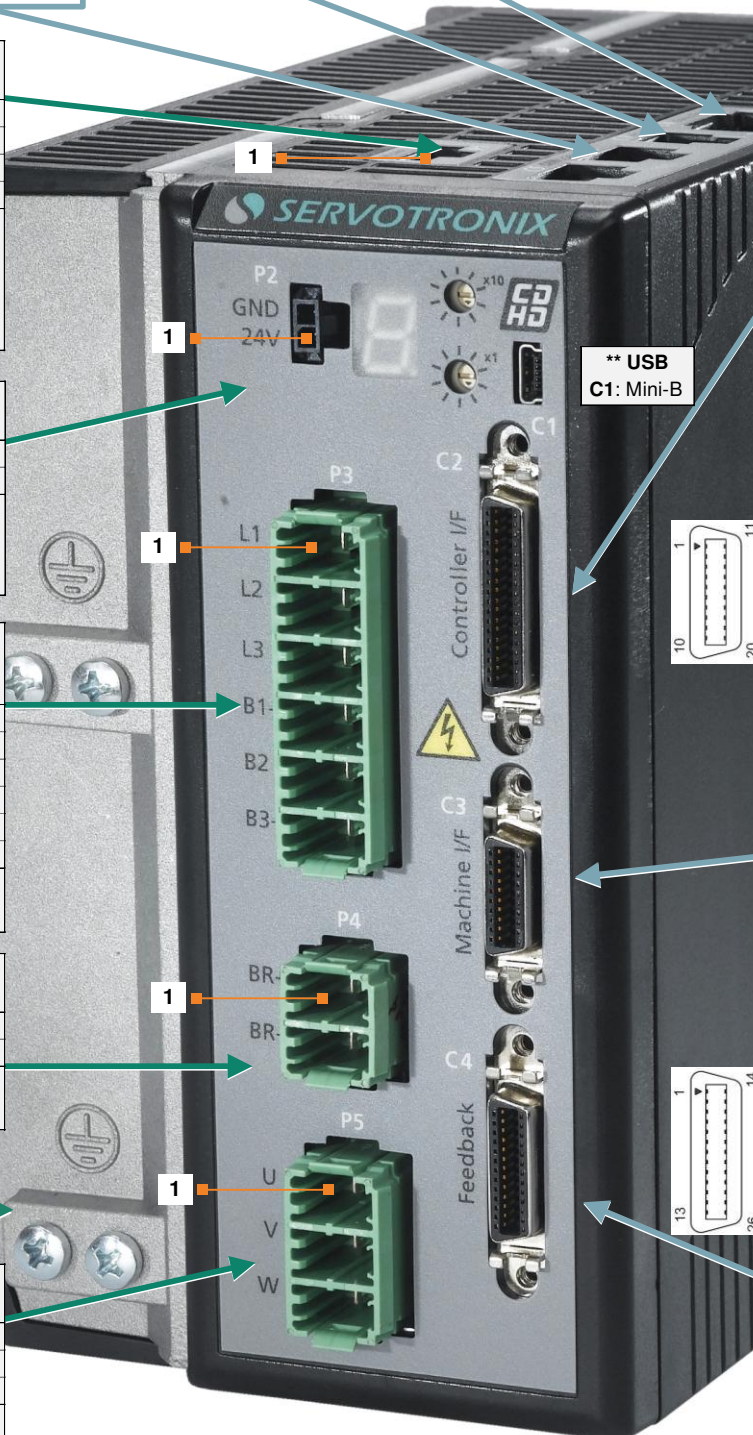
Functional Ground
PE: Terminal M4

M4 ring or spade terminal

Motor
P5: Phoenix | 12-14 AWG

1	U	Motor Phase U
2	V	Motor Phase V
3	W	Motor Phase W

Mating Connector:
 PN SPC 5/3-STCL-7,62 (1718494)
 (STX PN CONr10000003-21)



Machine I/F
C3: MDR 20 Plug | 24-28 AWG

1	Secondary encoder A+ Pulse input +	11	Secondary encoder A- Pulse input -
2	Secondary encoder B+ Direction input+	12	Secondary encoder B- Direction input-
3	Secondary encoder Z+	13	Secondary encoder Z-
4	Secondary encoder 5V	14	Secondary encoder ground
5	Digital input 7	15	Digital input 8
6	Digital input 9	16	Digital input 10
7	Digital input 11	17	Digital output 4
8	Digital output 5	18	Digital output 6
9	24 VDC	19	24 VDC return
10	*** Common input	20	*** Common output
	Fault relay 1		Fault relay 2

Mating Connector:
 3M Solder Plug Connector
 PN 10120-3000PE (STX PN CONr00000020-38) or equiv.
 3M Solder Plug Junction Shell
 PN 10320-52F0-008 (STX PN HODr00000020-00) or equiv.
 Mating Cable (STX PN CBL-MDRFL-20-0x, x=1|2|3 meter)

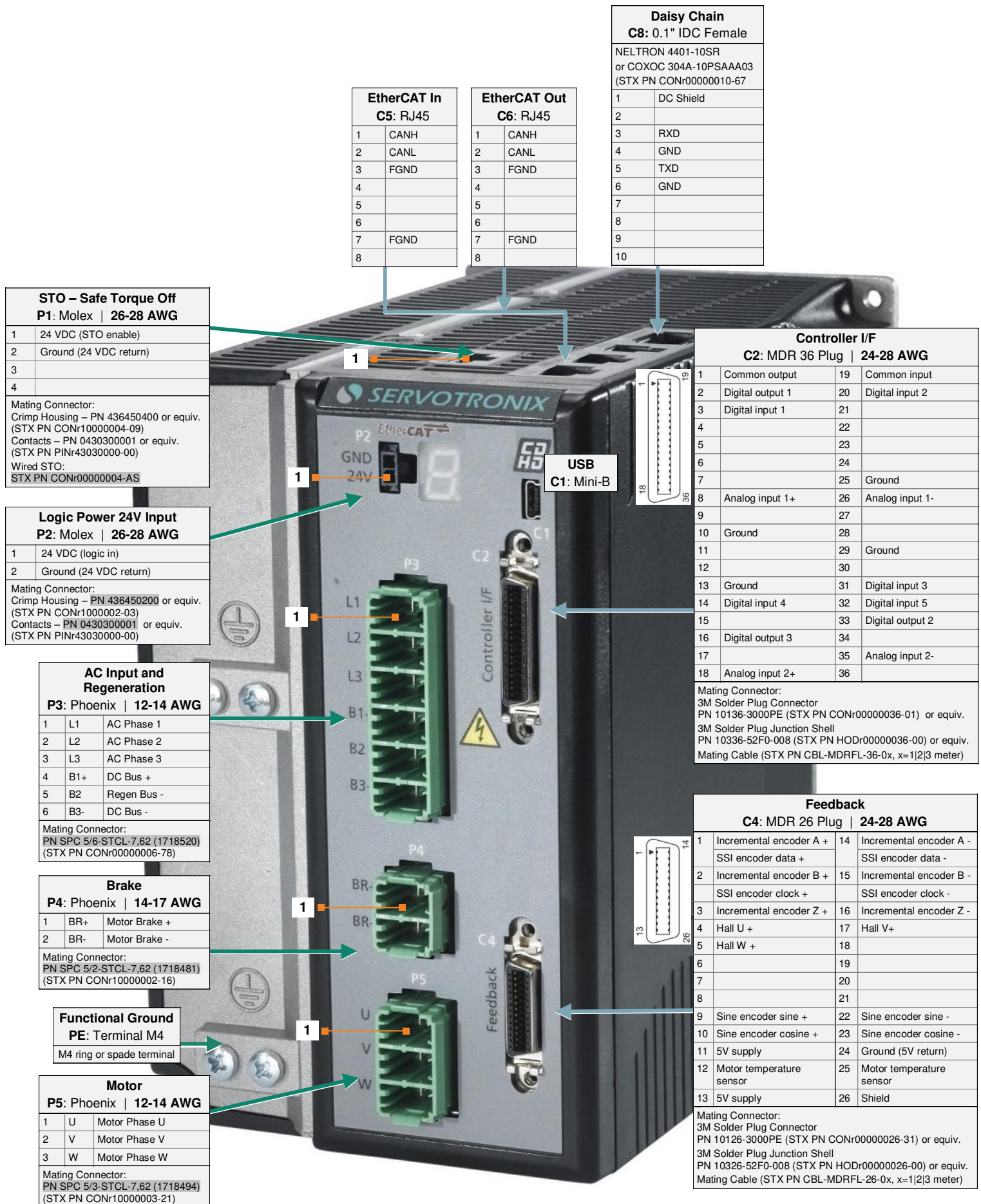
Feedback
C4: MDR 26 Plug | 24-28 AWG

1	Incremental encoder A + SSI encoder data +	14	Incremental encoder A - SSI encoder data -
2	Incremental encoder B + SSI encoder clock +	15	Incremental encoder B - SSI encoder clock -
3	Incremental encoder Z +	16	Incremental encoder Z -
4	Hall U +	17	Hall V+
5	Hall W +	18	** 8V supply
6	Resolver sine +	19	Resolver sine -
7	Resolver cosine +	20	Resolver cosine -
8	Resolver reference +	21	Resolver reference -
9	Sine encoder sine +	22	Sine encoder sine -
10	Sine encoder cosine +	23	Sine encoder cosine -
11	5V supply	24	Ground (5V/8V return)
12	Motor temperature sensor	25	Motor temperature sensor
13	5V supply	26	Shield

Mating Connector:
 3M Solder Plug Connector
 PN 10126-3000PE (STX PN CONr00000026-31) or equiv.
 3M Solder Plug Junction Shell
 PN 10326-52F0-008 (STX PN HODr00000026-00) or equiv.
 Mating Cable (STX PN CBL-MDRFL-26-0x, x=1|2|3 meter)

*	See ordering options
**	AF and EC models only
***	EC models only
STX	Servotronics
Highlighted PN	Supplied with CDHD

Crimping tool	Molex 0638190000 (P1, P2) or equivalent
4/40 insert threads on C2, C3, C4	



STO – Safe Torque Off	
P1: Molex 26-28 AWG	
1	24 VDC (STO enable)
2	Ground (24 VDC return)
3	
4	
Mating Connector: Crimp Housing – PN 436450400 or equiv. (STX PN CONr10000004-09) Contacts – PN 0430300001 or equiv. (STX PN PINr43030000-00)	
Wired STO: STX PN CONr00000004-AS	

Logic Power 24V Input	
P2: 26-28 AWG	
1	24 VDC (logic in)
2	Ground (24 VDC return)
Mating Connector Type Crimp Housing Molex PN 436450200 or equiv. (STX PN CONr10000002-03) 2x CrimpMolex PN 0430300001 or equiv. (STX PN PINr43030000-00)	

AC Input and Regeneration		
P3: Phoenix 12-14 AWG		
1	L1	AC Phase 1
2	L2	AC Phase 2
3	L3	AC Phase 3
4	B1+	DC Bus +
5	B2	Regen Bus -
6	B3-	DC Bus -
Mating Connector: PN SPC 5/6-STCL-7,62 (1718520) (STX PN CONr00000006-78)		

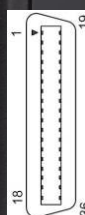
Brake		
P4: Phoenix 14-17 AWG		
1	BR+	Motor Brake +
2	BR-	Motor Brake -
Mating Connector: PN SPC 5/2-STCL-7,62 (1718481) (STX PN CONr10000002-16)		

Motor		
P5: Phoenix 12-14 AWG		
1	U	Motor Phase U
2	V	Motor Phase V
3	W	Motor Phase W
Mating Connector: PN SPC 5/3-STCL-7,62 (1718494) (STX PN CONr10000003-21)		

Functional Ground	
PE: Terminal M4	
M4 ring or spade terminal	

RS232	
C7: 4p4c	
1	RX
2	GND ISO
3	TX
4	

For C2 pin descriptions, refer to the master controller documentation



Motor Brake Control	
C3: Molex 26-28 AWG	
1	Motor Brake (+)
2	Motor Brake (-)
3	Not connected
Mating Connector: Crimp Housing – PN 43645-0300 or equivalent (STX PN CONr10000003-08) Contacts – PN 0430300001 or equivalent (STX PN PINr43030000-00)	

Motor Brake DC 24V Input	
C4: Molex 26-28 AWG	
1	DC +24V
2	DC -24V (return)
Mating Connector: Crimp Housing – PN 43645-0200 or equivalent (STX PN CONr10000002-03) Contacts – PN 0430300001 or equivalent (STX PN PINr43030000-00)	

STX	Servotronics
Highlighted PN	Supplied with CDHD

Crimping tool	Molex 0638190000 (P1, P2, C3, C4) or equivalent
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* EtherCAT In C5: RJ45		* EtherCAT Out C6: RJ45	
OR		OR	
* CAN In C5: RJ45		* CAN Out C6: RJ45	
1	CANH	1	CANH
2	CANL	2	CANL
3	FGND	3	FGND
4		4	
5		5	
6		6	
7	FGND	7	FGND
8		8	

Daisy Chain C8: 0.1" IDC Female	
NELTRON 4401-10SR or COXOC 304A-10PSAAA03 (STX PN CONr00000010-67)	
1	DC Shield
2	
3	RXD
4	GND
5	TXD
6	GND
7	
8	
9	
10	

RS232 C7: 4p4c	
1	RX
2	GND ISO
3	TX
4	

Controller I/F C2: MDR 36 Plug 24-28 AWG			
1	24 VDC return	19	24 VDC
	*** Common output		*** Common input
2	Digital output 1	20	Digital input 2
3	Digital input 1	21	
4	Equivalent encoder output A-	22	Equivalent encoder output A+
5	Equivalent encoder output B-	23	Equivalent encoder output B+
6	Equivalent encoder output Z-	24	Equivalent encoder output Z+
7		25	Ground
8	Analog input 1+	26	Analog input 1-
9	Direction input+	27	Direction input-
10	Ground	28	Pulse input+
	Secondary encoder B+		Secondary encoder A+
11	Pulse input-	29	Ground
	Secondary encoder A-		
12		30	
13	Ground	31	Digital input 3
14	Digital input 4	32	Digital input 5
15	Digital input 6	33	Digital output 2
16	Digital output 3	34	
17		35	* Analog input 2-
18	* Analog input 2+	36	Analog output

Mating Connector:
3M Solder Plug Connector
PN 10136-3000PE (STX PN CONr00000036-01) or equiv.
3M Solder Plug Junction Shell
PN 10336-52F0-008 (STX PN HODr00000036-00) or equiv.
Mating Cable (STX PN CBL-MDRFL-36-0x, x=1|2|3 meter)

STO – Safe Torque Off P1: Molex 26-28 AWG	
1	24 VDC (STO enable)
2	Ground (24 VDC return)
3	
4	

Mating Connector:
Crimp Housing – PN 436450400 or equiv.
(STX PN CONr10000004-09)
Contacts – PN 0430300001 or equiv.
(STX PN PINr43030000-00)
Wired STO:
STX PN CONr00000004-AS

Logic Power 24V Input P2: Molex 26-28 AWG	
1	24 VDC (logic in)
2	Ground (24 VDC return)

Mating Connector:
Crimp Housing – PN 436450200 or equiv.
(STX PN CONr10000002-03)
Contacts – PN 0430300001 or equiv.
(STX PN PINr43030000-00)

AC Input and Regeneration P3: Phoenix 12-14 AWG		
1	L1	AC Phase 1
2	L2	AC Phase 2
3	L3	AC Phase 3
4	B1+	DC Bus +
5	B2	Regen Bus -
6	B3-	DC Bus -

Mating Connector:
PN SPC 5/6-STCL-7,62 (1718520)
(STX PN CONr00000006-78)

Brake P4: Phoenix 14-17 AWG		
1	BR+	Motor Brake +
2	BR-	Motor Brake -

Mating Connector:
PN SPC 5/2-STCL-7,62 (1718481)
(STX PN CONr10000002-16)

Functional Ground PE: Terminal M4	
M4 ring or spade terminal	

Motor P5: Phoenix 12-14 AWG		
1	U	Motor Phase U
2	V	Motor Phase V
3	W	Motor Phase W

Mating Connector:
PN SPC 5/3-STCL-7,62 (1718494)
(STX PN CONr10000003-21)

*	See ordering options
**	AF and EC models only
***	EC models only
STX	Servotronix
Highlighted PN	Supplied with CDHD

Crimping tool	
Molex 0638190000 (P1, P2) or equivalent	
4/40 insert threads on C2, C3, C4	

Machine I/F C3: MDR 20 Plug 24-28 AWG			
1	Secondary encoder A+	11	Secondary encoder A-
	Pulse input +		Pulse input -
2	Secondary encoder B+	12	Secondary encoder B-
	Direction input+		Direction input-
3	Secondary encoder Z+	13	Secondary encoder Z-
4	Secondary encoder 5V	14	Secondary encoder ground
5	Digital input 7	15	Digital input 8
6	Digital input 9	16	Digital input 10
7	Digital input 11	17	Digital output 4
8	Digital output 5	18	Digital output 6
9	24 VDC	19	24 VDC return
	*** Common input		*** Common output
10	Fault relay 1	20	Fault relay 2

Mating Connector:
3M Solder Plug Connector
PN 10120-3000PE (STX PN CONr00000020-38) or equiv.
3M Solder Plug Junction Shell
PN 10320-52F0-008 (STX PN HODr00000020-00) or equiv.
Mating Cable (STX PN CBL-MDRFL-20-0x, x=1|2|3 meter)

Feedback C4: MDR 26 Plug 24-28 AWG			
1	Incremental encoder A +	14	Incremental encoder A -
	SSI encoder data +		SSI encoder data -
2	Incremental encoder B +	15	Incremental encoder B -
	SSI encoder clock +		SSI encoder clock -
3	Incremental encoder Z +	16	Incremental encoder Z -
4	Hall U +	17	Hall V +
5	Hall W +	18	** 8V supply
6	Resolver sine +	19	Resolver sine -
7	Resolver cosine +	20	Resolver cosine -
8	Resolver reference +	21	Resolver reference -
9	Sine encoder sine +	22	Sine encoder sine -
10	Sine encoder cosine +	23	Sine encoder cosine -
11	5V supply	24	Ground (5V/8V return)
12	Motor temperature sensor	25	Motor temperature sensor
13	5V supply	26	Shield

Mating Connector:
3M Solder Plug Connector
PN 10126-3000PE (STX PN CONr00000026-31) or equiv.
3M Solder Plug Junction Shell
PN 10326-52F0-008 (STX PN HODr00000026-00) or equiv.
Mating Cable (STX PN CBL-MDRFL-26-0x, x=1|2|3 meter)

EtherCAT In C5: RJ45		EtherCAT Out C6: RJ45	
1	CANH	1	CANH
2	CANL	2	CANL
3	FGND	3	FGND
4		4	
5		5	
6		6	
7	FGND	7	FGND
8		8	

Daisy Chain C8: 0.1" IDC Female	
NELTRON 4401-10SR or COXOC 304A-10PSAAA03 (STX PN CONr00000010-67)	
1	DC Shield
2	
3	RXD
4	GND
5	TXD
6	GND
7	
8	
9	
10	

STO – Safe Torque Off P1: Molex 26-28 AWG	
1	24 VDC (STO enable)
2	Ground (24 VDC return)
3	
4	
Mating Connector: Crimp Housing – PN 436450400 or equiv. (STX PN CONr10000004-09) Contacts – PN 0430300001 or equiv. (STX PN PINr43030000-00) Wired STO: STX PN CONr00000004-AS	

Logic Power 24V Input P2: Molex 26-28 AWG	
1	24 VDC (logic in)
2	Ground (24 VDC return)
Mating Connector: Crimp Housing – PN 436450200 or equiv. (STX PN CONr10000002-03) Contacts – PN 0430300001 or equiv. (STX PN PINr43030000-00)	

AC Input and Regeneration P3: Phoenix 12-14 AWG	
1	L1 AC Phase 1
2	L2 AC Phase 2
3	L3 AC Phase 3
4	B1+ DC Bus +
5	B2 Regen Bus -
6	B3- DC Bus -
Mating Connector: PN SPC 5/6-STCL-7,62 (1718520) (STX PN CONr00000006-78)	

Brake P4: Phoenix 14-17 AWG	
1	BR+ Motor Brake +
2	BR- Motor Brake -
Mating Connector: PN SPC 5/2-STCL-7,62 (1718481) (STX PN CONr10000002-16)	

Functional Ground PE: Terminal M4	
M4 ring or spade terminal	

Motor P5: Phoenix 12-14 AWG	
1	U Motor Phase U
2	V Motor Phase V
3	W Motor Phase W
Mating Connector: PN SPC 5/3-STCL-7,62 (1718494) (STX PN CONr10000003-21)	

USB
 C1: Mini-B

Controller I/F C2: MDR 36 Plug 24-28 AWG			
1	Common output	19	Common input
2	Digital output 1	20	Digital input 2
3	Digital input 1	21	
4		22	
5		23	
6		24	
7		25	Ground
8	Analog input 1+	26	Analog input 1-
9		27	
10	Ground	28	
11		29	Ground
12		30	
13	Ground	31	Digital input 3
14	Digital input 4	32	Digital input 5
15		33	Digital output 2
16	Digital output 3	34	
17		35	Analog input 2-
18	Analog input 2+	36	
Mating Connector: 3M Solder Plug Connector PN 10136-3000PE (STX PN CONr00000036-01) or equiv. 3M Solder Plug Junction Shell PN 10336-52F0-008 (STX PN HODr00000036-00) or equiv. Mating Cable (STX PN CBL-MDRFL-36-0x, x=1 2 3 meter)			

Feedback C4: MDR 26 Plug 24-28 AWG			
1	Incremental encoder A +	14	Incremental encoder A -
	SSI encoder data +		SSI encoder data -
2	Incremental encoder B +	15	Incremental encoder B -
	SSI encoder clock +		SSI encoder clock -
3	Incremental encoder Z +	16	Incremental encoder Z -
4	Hall U +	17	Hall V+
5	Hall W +	18	
6		19	
7		20	
8		21	
9	Sine encoder sine +	22	Sine encoder sine -
10	Sine encoder cosine +	23	Sine encoder cosine -
11	5V supply	24	Ground (5V return)
12	Motor temperature sensor	25	Motor temperature sensor
13	5V supply	26	Shield
Mating Connector: 3M Solder Plug Connector PN 10126-3000PE (STX PN CONr00000026-31) or equiv. 3M Solder Plug Junction Shell PN 10326-52F0-008 (STX PN HODr00000026-00) or equiv. Mating Cable (STX PN CBL-MDRFL-26-0x, x=1 2 3 meter)			

STX	Servotronics	Crimping tool	Molex 0638190000 (P1, P2) or equivalent
Highlighted PN	Supplied with CDHD	4/40 insert threads on C2, C4	

STO – Safe Torque Off	
P1: Molex 26-28 AWG	
1	24 VDC (STO enable)
2	Ground (24 VDC return)
3	
4	

Mating Connector:
 Crimp Housing – PN 436450400 or equiv.
 (STX PN CONr10000004-09)
 Contacts – PN 0430300001 or equiv.
 (STX PN PINr43030000-00)
 Wired STO:
 STX PN CONr00000004-AS

Logic Power 24V Input	
P2: 26-28 AWG	
1	24 VDC (logic in)
2	Ground (24 VDC return)

Mating Connector Type **Crimp**
 Housing Molex PN 436450200 or equiv.
 (STX PN CONr10000002-03)
 2x CrimpMolex PN 0430300001 or equiv.
 (STX PN PINr43030000-00)

AC Input and Regeneration		
P3: Phoenix 12-14 AWG		
1	L1	AC Phase 1
2	L2	AC Phase 2
3	L3	AC Phase 3
4	B1+	DC Bus +
5	B2	Regen Bus -
6	B3-	DC Bus -

Mating Connector:
 PN SPC 5/6-STCL-7,62 (1718520)
 (STX PN CONr00000006-78)

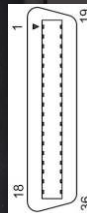
Brake		
P4: Phoenix 14-17 AWG		
1	BR+	Motor Brake +
2	BR-	Motor Brake -

Mating Connector
 PN SPC 5/2-STCL-7,62 (1718481)
 (STX PN CONr10000002-16)

Functional Ground	
PE: Terminal M4	
M4 ring or spade terminal	

RS232	
C7: 4p4c	
1	RX
2	GND ISO
3	TX
4	

For C2 pin descriptions, refer to the master controller documentation



Motor Brake Control	
C3: Molex 26-28 AWG	
1	Motor Brake (+)
2	Motor Brake (-)
3	Not connected

Mating Connector:
 Crimp Housing – PN 43645-0300 or equivalent
 (STX PN CONr10000003-08)
 Contacts – PN 0430300001 or equivalent
 (STX PN PINr43030000-00)

Motor Brake DC 24V Input	
C4: Molex 26-28 AWG	
1	DC +24V
2	DC -24V (return)

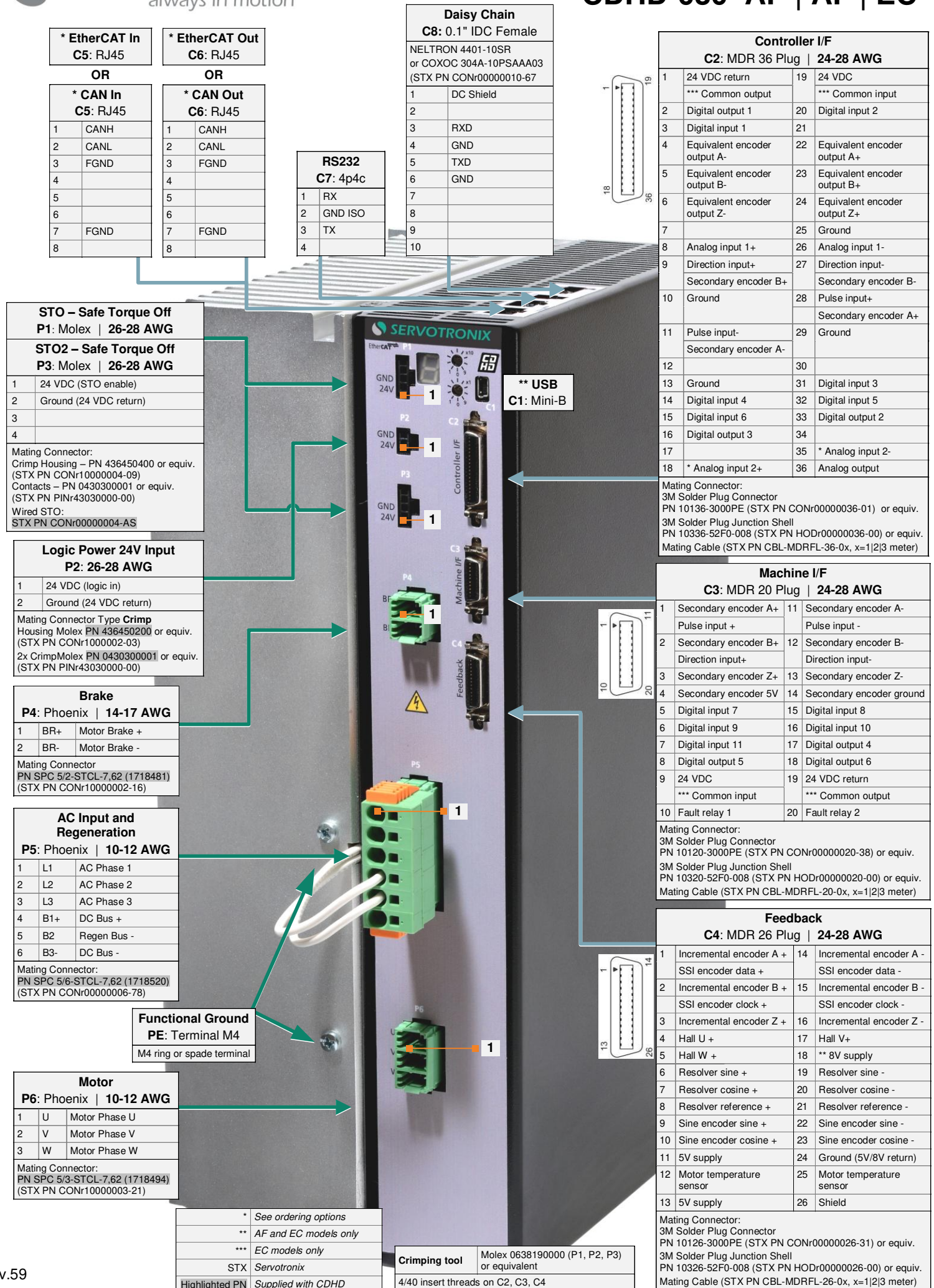
Mating Connector:
 Crimp Housing – PN 43645-0200 or equivalent
 (STX PN CONr10000002-03)
 Contacts – PN 0430300001 or equivalent
 (STX PN PINr43030000-00)

Motor		
P5: Phoenix 12-14 AWG		
1	U	Motor Phase U
2	V	Motor Phase V
3	W	Motor Phase W

Mating Connector
 PN SPC 5/3-STCL-7,62 (1718494)
 (STX PN CONr10000003-21)

STX	Servotronic
Highlighted PN	Supplied with CDHD

Crimping tool	Molex 0638190000 (P1, P2, C3, C4) or equivalent
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EtherCAT In C5: RJ45	
1	CANH
2	CANL
3	FGND
4	
5	
6	
7	FGND
8	

EtherCAT Out C6: RJ45	
1	CANH
2	CANL
3	FGND
4	
5	
6	
7	FGND
8	

Daisy Chain C8: 0.1" IDC Female	
NELTRON 4401-10SR or COXOC 304A-10PSAAA03 (STX PN CONr00000010-67)	
1	DC Shield
2	
3	RXD
4	GND
5	TXD
6	GND
7	
8	
9	
10	

STO – Safe Torque Off P1: Molex 26-28 AWG	
1	24 VDC (STO enable)
2	Ground (24 VDC return)
3	
4	
Mating Connector: Crimp Housing – PN 436450400 or equiv. (STX PN CONr10000004-09) Contacts – PN 0430300001 or equiv. (STX PN PINr43030000-00) Wired STO: STX PN CONr00000004-AS	

Logic Power 24V Input P2: 26-28 AWG	
1	24 VDC (logic in)
2	Ground (24 VDC return)
Mating Connector Type Crimp Housing Molex PN 436450200 or equiv. (STX PN CONr10000002-03) 2x CrimpMolex PN 0430300001 or equiv. (STX PN PINr43030000-00)	

Brake P4: Phoenix 14-17 AWG	
1	BR+ Motor Brake +
2	BR- Motor Brake -
Mating Connector PN SPC 5/2-STCL-7,62 (1718481) (STX PN CONr10000002-16)	

AC Input and Regeneration P5: Phoenix 10-12 AWG	
1	L1 AC Phase 1
2	L2 AC Phase 2
3	L3 AC Phase 3
4	B1+ DC Bus +
5	B2 Regen Bus -
6	B3- DC Bus -
Mating Connector: PN SPC 5/6-STCL-7,62 (1718520) (STX PN CONr00000006-78)	

Functional Ground PE: Terminal M4	
M4 ring or spade terminal	

Motor P6: Phoenix 10-12 AWG	
1	U Motor Phase U
2	V Motor Phase V
3	W Motor Phase W
Mating Connector: PN SPC 5/3-STCL-7,62 (1718494) (STX PN CONr10000003-21)	

USB
C1: Mini-B

Controller I/F C2: MDR 36 Plug 24-28 AWG			
1	Common output	19	Common input
2	Digital output 1	20	Digital input 2
3	Digital input 1	21	
4		22	
5		23	
6		24	
7		25	Ground
8	Analog input 1+	26	Analog input 1-
9		27	
10	Ground	28	
11		29	Ground
12		30	
13	Ground	31	Digital input 3
14	Digital input 4	32	Digital input 5
15		33	Digital output 2
16	Digital output 3	34	
17		35	Analog input 2-
18	Analog input 2+	36	
Mating Connector: 3M Solder Plug Connector PN 10136-3000PE (STX PN CONr00000036-01) or equiv. 3M Solder Plug Junction Shell PN 10336-52F0-008 (STX PN HODr00000036-00) or equiv. Mating Cable (STX PN CBL-MDRFL-36-0x, x=1 2 3 meter)			

Feedback C4: MDR 26 Plug 24-28 AWG			
1	Incremental encoder A +	14	Incremental encoder A -
	SSI encoder data +		SSI encoder data -
2	Incremental encoder B +	15	Incremental encoder B -
	SSI encoder clock +		SSI encoder clock -
3	Incremental encoder Z +	16	Incremental encoder Z -
4	Hall U +	17	Hall V+
5	Hall W +	18	
6		19	
7		20	
8		21	
9	Sine encoder sine +	22	Sine encoder sine -
10	Sine encoder cosine +	23	Sine encoder cosine -
11	5V supply	24	Ground (5V return)
12	Motor temperature sensor	25	Motor temperature sensor
13	5V supply	26	Shield
Mating Connector: 3M Solder Plug Connector PN 10126-3000PE (STX PN CONr00000026-31) or equiv. 3M Solder Plug Junction Shell PN 10326-52F0-008 (STX PN HODr00000026-00) or equiv. Mating Cable (STX PN CBL-MDRFL-26-0x, x=1 2 3 meter)			

STX	Servotronics
Highlighted PN	Supplied with CDHD

Crimping tool	
Molex 0638190000 (P1, P2, P3) or equivalent	
4/40 insert threads on C2, C4	