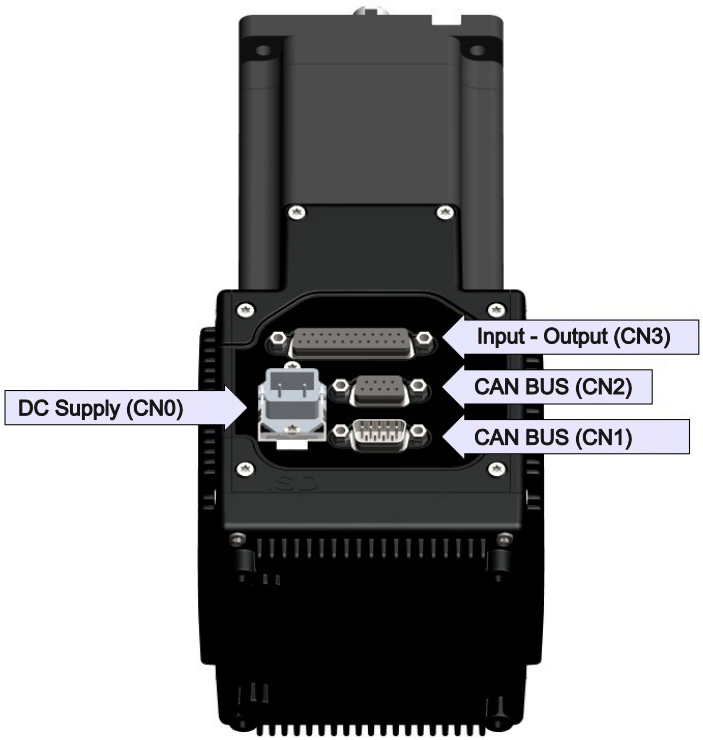
TR421702

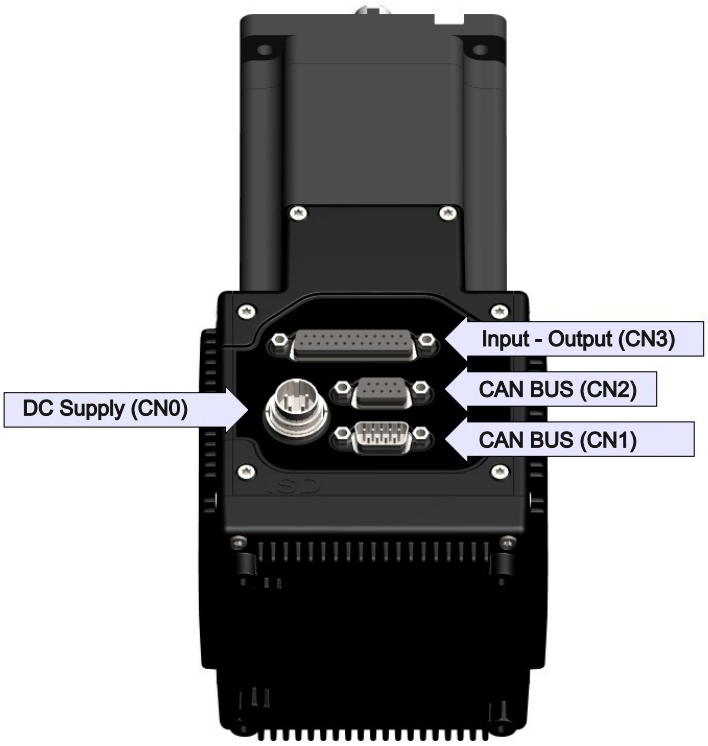
POWER SUPPLY[1]
nominal 120 Vdc
range from 65 to 130 Vdc
(ONLY DC VOLTAGE)

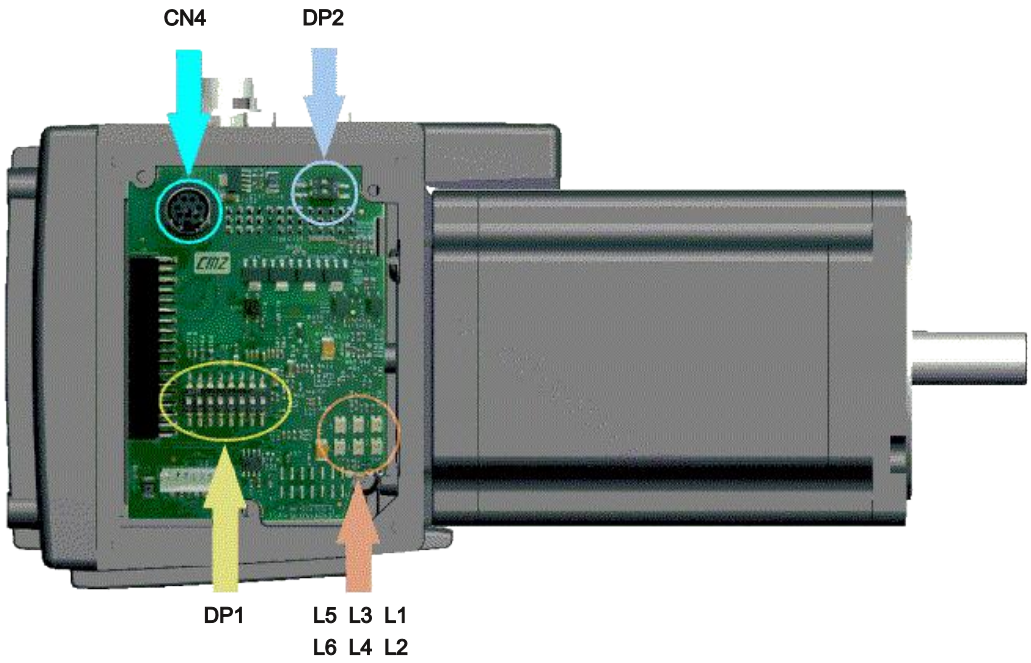
CONTROL SUPPLY[1]
nominal 24 Vdc
range from 20 to 130 Vdc

MOTOR CURRENT OUTPUT
Maximum current internally set
(depends on motor)

D-SUB connectors version





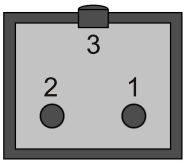


1 From HW revision ≥ 14

CONNECTORS:

CN0 ⟶ DC Supply
CN1 ⟶ CAN bus
CN2 ⟶ CAN bus
CN3 ⟶ Digital Input/Output - RS232
CN4 ⟶ RS232 serial port (for debug and configuration) - *available also in CN3*

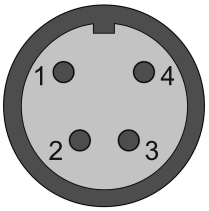
CN0: DC supply (3 pins)



STASEI 2
ST series, Belden

CN0 Pin	Signal	Description
1	+HV (dc)	DC Power/Control Supply
2	GND	GND Power/Control Supply
3	PE	Protection Earth

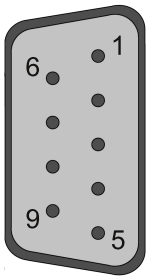
CN0: DC supply (4 pins)



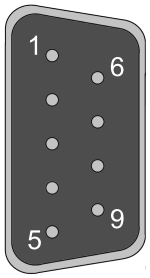
M16, 4 pins
Male, Circular

CN0 Pin	Signal	Description
1	+VPOW	DC Power Supply
2	GND	GND Power/Control Supply
3	PE	Protection Earth
4	+VLOG	DC Control Supply
Chassis	PE	Protection Earth (shield)

CN1-CN2: CAN bus



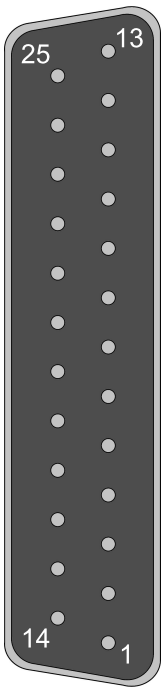
CN1
D-SUB, 9 pins
Male



CN2
D-SUB, 9 pins
Female

CN1,2 Pin	Signal	Description
1	NC	Not connected
2	BUS-L	CAN Low
3	GND_COM	CAN Ground
4	NC	Not connected
5	SHIELD	Shield
6	GND_COM	CAN Ground
7	BUS-H	CAN High
8	NC	Not connected
9	NC	Not connected
Chassis	PE	Protection Earth (shield)

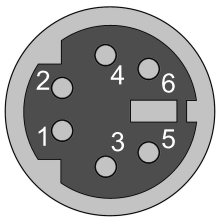
CN3: Input/output



D-SUB, 25 pins
Female

CN3 Pin	Signal	Description
1	In5-	Differential Digital Input 5 - [only for Line driver/+5V input]
2	In4-	Differential Digital Input 4 - [only for Line driver/+5V input]
3	In5-	Differential Digital Input 5 - [only for 24 V input]
4	NC	Not connected
5	RX232	RX RS232
6	TX232	TX RS232
7	NC	Not connected
8	IN6 +	Digital input 6 (+)
9	+24V	24 V Supply (for Output)
10	IN/OUT1	Digital Input/Output 1
11	IN2	Digital Input 2
12	OUT2[2]	Digital Output 2
13	AN_IN +	Analog Input (+)
14	In5+	Differential Digital Input 5 +
15	In4+	Differential Digital Input 4 +
16	In4-	Differential Digital Input 4 - [only for 24 V input]
17	NC	Not connected
18	GND_COM	Ground RS232
19	NC	Not connected
20	Reserved[3]	Reserved (do not use)
21	GND_24V	Ground of 24 V Supply (for Input and Output)
22	IN3	Digital Input 3
23	IN/OUT0	Digital Input/Output 0
24	OUT3[2]	Digital Output 3
25	AN_IN -	Analog Input (-)
Chassis	PE	Protection Earth

CN4: RS232 serial port



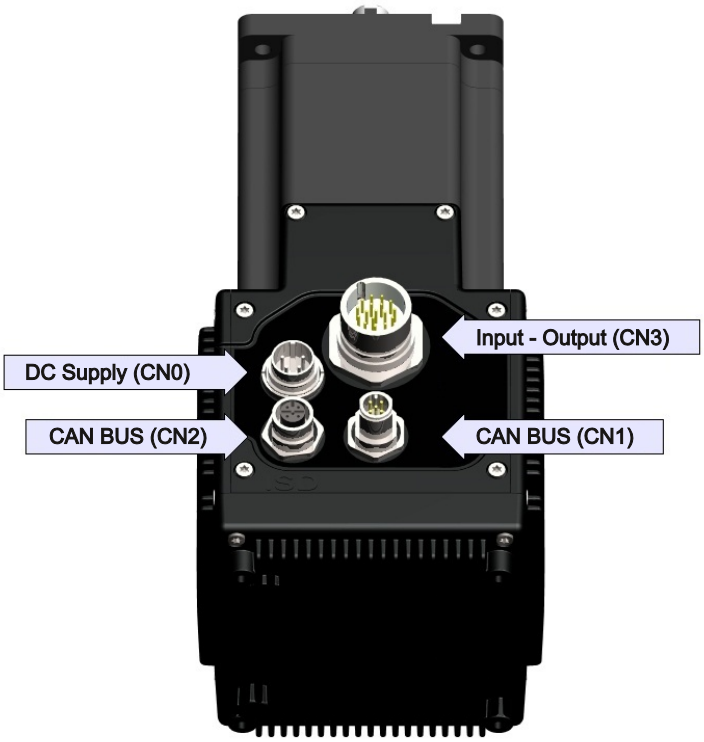
Mini-DIN, Female

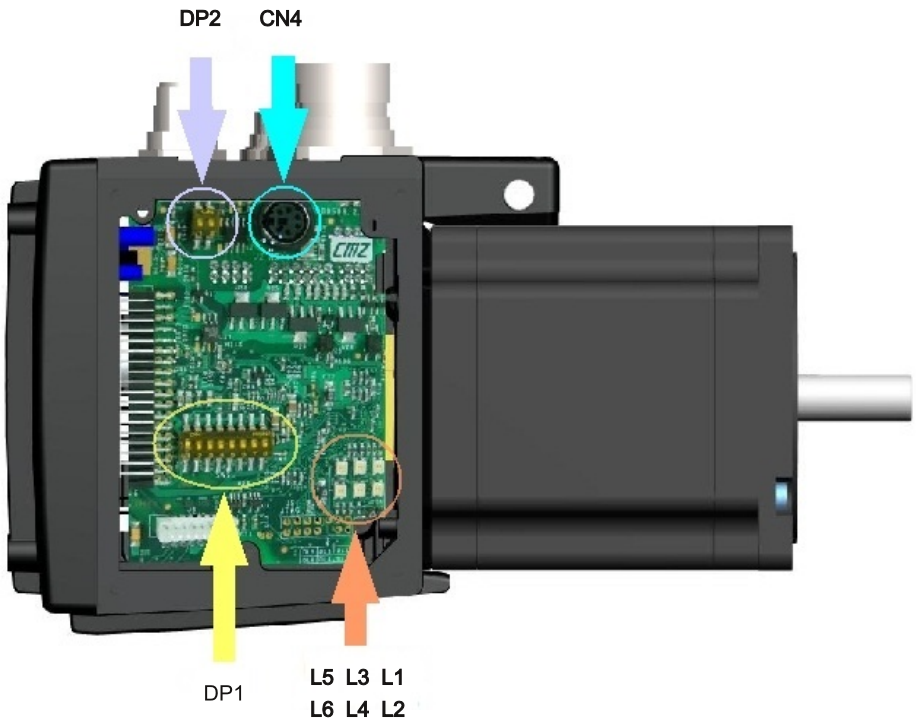
CN4 Pin	Signal	Description
1	NC	Not connected
2	TX232	TX RS232
3	GND_COM	Ground RS232
4	NC	Not connected
5	NC	Not connected
6	RX232	RX RS232
Chassis	PE	Protection Earth (shield)

2 Output available from HW REV ≥ 5

3 Wire this pin to GND_24V for HW REV ≤ 4

CIRCULAR *connectors version*

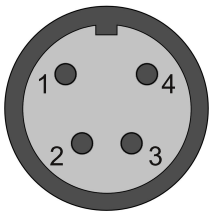




CONNECTORS:

CN0 ⟶ DC Supply
CN1 ⟶ CAN bus - RS232
CN2 ⟶ CAN bus
CN3 ⟶ Digital Input/Output
CN4 ⟶ RS232 serial port (for debug and configuration) - *available also on CN1*

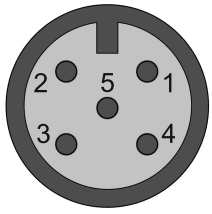
CN0: DC supply (4 pins)



M16, 4 pins
Male, Circular

CN0 Pin	Signal	Description
1	+VPOW	DC Power Supply
2	GND	GND Power/Control Supply
3	PE	Protection Earth
4	+VLOG	DC Control Supply
Chassis	PE	Protection Earth (shield)

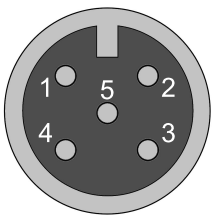
CN1: CAN bus



M12, A code
Male, Circular

CN1 Pin	Signal	Description
1	TX232	TX RS232
2	RX232	RX RS232
3	GND_COM	CAN & RS232 Ground
4	BUS-H	CAN High
5	BUS-L	CAN Low
Chassis	PE	Protection Earth

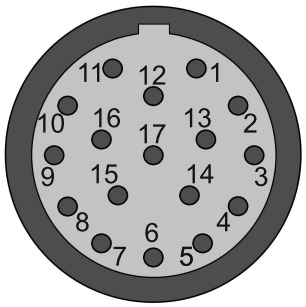
CN2: CAN bus



M12, A code
Female, Circular

CN2 Pin	Signal	Description
1	SHIELD	Shield
2	NC	Not connected
3	GND_COM	CAN Ground
4	BUS-H	CAN High
5	BUS-L	CAN Low
Chassis	PE	Protection Earth

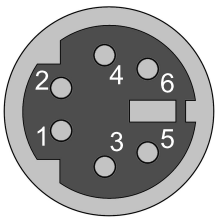
CN3: Input/output



M23, 17 pins
Male, Circular

CN3 Pin	Signal	Description
1	IN2	Digital Input 2
2	IN/OUT1	Digital Input/Output 1
3	IN3	Digital Input 3
4	+24V	24 V Supply (for Output)
5	GND_ 24V	Ground of 24 V Supply (for Input and Output)
6	OUT3	Digital Output 3
7	AN_IN-	Analog Input (-)
8	AN_IN+	Analog Input (+)
9	IN5+	Differential Digital Input 5 +
10	IN5-	Differential Digital Input 5 - [only for 24 V input]
11	IN4-	Differential Digital Input 4 - [only for 24 V input]
12	IN4-	Differential Digital Input 4 - [only for Line driver/+5V input]
13	IN/OUT0	Digital Input/Output 0
14	IN6+	Digital Input 6 (+)
15	OUT2	Digital Output 2
16	IN5-	Differential Digital Input 5 - [only for Line driver/+5V input]
17	IN4+	Differential Digital Input 4 +
Chassis	PE	Protection Earth

CN4: RS232 serial port



Mini-DIN, Female

CN4 Pin	Signal	Description
1	NC	Not connected
2	TX232	TX RS232
3	GND_COM	Ground RS232
4	NC	Not connected
5	NC	Not connected
6	RX232	RX RS232
Chassis	PE	Protection Earth (shield)

INPUT/OUTPUT FEATURES:

- ➢ 1 analog input: from -10 V to +10 V (not optoisolated)
- ➢ 3 optoisolated PNP digital inputs (24 Vdc)
- ➢ 2 optoisolated PNP digital outputs (up to 200 mA)
- ➢ 2 bidirectional optoisolated PNP digital IN/OUT
- ➢ 2 differential (+24 V or +5 V/Line driver) digital inputs (used as general purpose, encoder input or step-dir input).

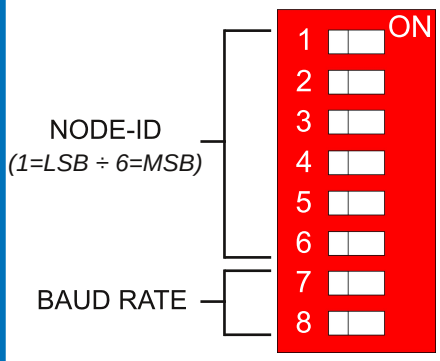
The inputs are protected against reverse polarity.
The power supply for the digital output section (24 Vdc) must be provided from outside.
The outputs are protected against short-circuit, over temperature and reverse polarity.

24V PNP DIGITAL INPUTS CHARACTERISTICS	
Max Inputs n°	7
Galvanic Isolation	Yes, with optocouplers
In/Out0, In/Out1, In2, In3, In6	
Input Type	PNP
Input Voltage	• Rated: +24 Vdc • LOW signal (physical status 0): -30 ÷ +5 Vdc • HIGH signal (physical status 1): +11 ÷ +30 Vdc
Input Current (typical) with Vin = 24 Vdc	4,8 mA
In4 and In5	
Input Type	PNP, NPN, differential, push-pull
Input Voltage (24 V)	• Rated: +24 Vdc • LOW signal (physical status 0): -30 ÷ +5 Vdc • HIGH signal (physical status 1): +16 ÷ +30 Vdc
Input Current (typical) with Vin = 24 Vdc	9,2 mA
Input Voltage (Line Driver / +5 V)	• LOW signal (physical status 0): ≤ 1,4 Vdc • HIGH signal (physical status 1): +3 ÷ +5 Vdc
Input Current (typical) with Vin = 4 Vdc	14 mA

DIGITAL OUTPUTS CHARACTERISTICS	
In/Out0, In/Out1, Out2, Out3	
Max Outputs n°	4
Galvanic Isolation	Yes, with optocouplers
Output Type	PNP
Output power supply	24 V ± 10%
Rated output current	200 mA

DIP SWITCH:

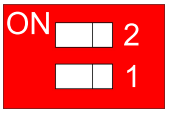
DP1 ⟶ CAN Configuration: NODE-ID [switch 1÷6] and BAUD RATE [switch 7-8]



DP1: BAUD RATE *[bit/s]*	Switch 7	Switch 8
1000000	OFF	OFF
800000*	ON	OFF
500000	OFF	ON
250000	ON	ON

* The maximum cable length at 800kbit/s is at least 50% more than bus at 1000kbit/s.

DP2 ⟶ CAN Termination



DP2: CAN *Termination*	Switch 1	Switch 2
Termination not inserted	OFF	OFF
Configuration not allowed	ON	OFF
Configuration not allowed	OFF	ON
Termination inserted	ON	ON

LED:

L1 L2 ⟶ Drive status (fault, warning, OK)
L3 L4 ⟶ I^2T and auxiliary indications
L5 L6 ⟶ BUS status

Description: *(Drive status)*	LED 1 *Green*	LED 2 *Green*
Status OK, Drive enabled	ON	ON
Status OK, Drive disabled	ON	blinking

Description: I^2T	LED 3 *Red: fault Orange: warning Green: OK*
I_actual < I_nominal	Green ON
I_actual > I_nominal (I^2T < warning level)	Orange ON
I^2T warning level reached	Orange blinking
I^2T limitation active	Red ON

Description: Weakening	LED 4 *Orange*
Weakening OFF	OFF
Weakening ON	Orange ON

Description: *(CAN warning - fault)*	LED 5 *Red*
Bus OFF	ON
Warning limit reached	1 flash
Life guard error	2 flash
Sync error	3 flash
NO error	OFF

Description: *(CAN status)*	LED 6 *Green*
Operational	ON
Pre-operational	blinking
Stopped	1 flash

Description: *(Drive fault)*	LED 1 *Red*	LED 2 *Red*
Over Voltage	ON	blinking
Over Temperature Power section	ON	1 flash
Over Temperature Control section	ON	2 flash
Under Voltage	ON	3 flash
Short Circuit	ON	ON
Parameters error	blinking	1 flash
Mode error (interpolated position)	blinking	2 flash
Communication error	blinking	3 flash
Eeprom failure	blinking	ON
Over Current	1 flash	blinking
Axis Error	1 flash	1 flash
Position following error	1 flash	2 flash
Hardware failure (temperature sensor)	1 flash	3 flash
User alarm	2 flash	blinking
Absolute encoder error	3 flash	ON

Description: *(Drive warning)*	LED 1 *Orange*	LED 2 *Orange*
Over Voltage	ON	blinking
Over Temperature Power section	ON	1 flash
Over Temperature Control section	ON	2 flash
Under Voltage	ON	3 flash
Parameters error	blinking	1 flash
Eeprom failure	blinking	ON
Communication warning	blinking	3 flash
Position following error	1 flash	2 flash
I^2T limit reached	2 flash	1 flash
I^2T warning level reached	2 flash	2 flash
Capture unit: trigger setup error	2 flash	3 flash
Capture unit A: analog level setup error	2 flash	ON
Capture unit B: analog level setup error	3 flash	1 flash
Capture unit A: trigger filter error	3 flash	2 flash
Capture unit B: trigger filter error	3 flash	3 flash
Position limit reached	3 flash	blinking

IMPORTANT:
For further information see the manual.

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