Connection system

NLI080Q/X linear motors with CANOPEN and MODBUS RTU - DOUBLE CONNECTOR

NLi080Q/X is equipped with double connectors Hirose HR10A-10P-12S, the cable DA00002011 from motor and the PLC has the following configuration on the D-SUB 15 male connector.

CONNECTOR CLOSE TO LED POSITION

PIN	SIGNAL	DESCRIPTION	FUNCTION
1	NC	NC	
2	CAN_H	CAN HIGH	
3	GND	Ground	
4	+24VDC	Power	
5	+24VDC	Power	
6	GND	Ground	
7	GND	Ground	
8	CAN_H	CAN HIGH	
9	CAN_RES	TERMINATION RESISTANCE	
10	DIG_OUT_0	Digital output 0 (24V logic,PNP)	Motor running
11	DIG_OUT_1	Digital output 1 (24V logic, PNP)	Motor fault
12	CAN_L	CAN LOW	

In order to have the termination on the node, please make a jumper between CAN_RES andf CAN_L (Pin 9 and Pin 11)

CONNECTOR ON THE OPPOSITE SIDE

PIN	SIGNAL	DESCRIPTION	FUNCTION
1	RS485_B	Modbus B	
2	RS485_A	Modbus A	
3	GND	Ground	
4	+24VDC	Power	
5	+24VDC	Power	
6	GND	Ground	
7	GND	Ground	
8	DIG_IN0	Digital Input 0 (24V logic)	Enable / Homing

9	DIG_IN1	Digital Input 1 (24V logic)	Motion trigger
10	CAN_H	CAN HIGH	
11	CAN_L	CAN LOW	
12	NC	NC	

NLI080Q/X linear motors with MODBUS RTU only - SINGLE CONNECTOR

NLi080Q/X is equipped with single connector Hirose HR10A-10P-12S, the cable DA00002011 from motor and the PLC has the following configuration on the D-SUB 15 male connector.

D-SUB 15 Pinout	SIGNAL	DESCRIPTION	FUNCTION
1	RS485_B	Modbus B	
2	RS485_A	Modbus A	
3	GND	Ground	
4	+24VDC	Power	
5	+24VDC	Power	
6	GND	Ground	
7	GND	Ground	
8	DIG_IN_0	Digital Input 0 (24V logic)	Enable / Homing
9	DIG_IN_1	Digital Input 1 (24V logic)	Motion trigger
10	DIG_OUT_0	Digital output 0 (24V logic, PNP)	Motor running
11	DIG_OUT_1	Digital output 1 (24V logic, PNP)	Motor fault
12	DIG_OUT_2	Digital output 2 (24V logic, PNP)	Programmable

The programmable output have the following options: In Position, Homing in progress, Overtemp fault, sin/cos fault, I2T fault, Master sync, gripper command. This is programmable with NiLAB Starter software.

Pinout HIROSE Connector on motor side

PIN	SIGNAL	DESCRIPTION	FUNCTION
9	DIG_OUT_2	Digital output 2 (24V logic, PNP)	Programmable
8	GND	Ground	
7	+24VDC	Power supply	
6	+24VDC	Power supply	
5	GND	Ground	
4	DIG_IN_0	Digital Input 0	Enable / Homing
3	DIG_IN_1	Digital Input 1	Motion trigger
2	DIG_OUT_0	Digital output 0 (24V logic PNP)	Motor running
1	DIG_OUT_1	Digital output 1 (24V logic, PNP)	Motor fault
10	RS485_TX	Modbus	
11	RS485_RX	Modbus	
12	GND	Ground	

NLi120Q/X linear motors with MODBUS RTU only

Nli120Q/X is equipped with two M12 connectors: power female DA00022011 flying leads and signal male DA00012011.

The power cable terminates with two wire: RED (+24VDC), BLACK (GROUND).

The signal cable terminates with with D-SUB15 male connector with this pinout:

D-SUB 15 Pinout	SIGNAL	DESCRIPTION	FUNCTION
1	RS485_B	Modbus B	
2	RS485_A	Modbus A	
3	GND	Ground	
4	NC	Not connected	
5	NC	Not connected	
6	GND	Ground	
7	GND	Ground	

8	DIG_IN_0	Digital Input 0 (24V logic)	Enable/Homing
9	DIG_IN_1	Digital Input 1 (24V logic)	Motion trigger
10	DIG_OUT_0	Digital output 0 (24V logic, PNP)	Motor running
11	DIG_OUT_1	Digital output 1 (24V logic, PNP)	Motor fault
12	DIG_OUT_2	Digital output 2 (24V logic, PNP)	Programmable

The programmable output have the following options: In Position, Homing in progress, Overtemp fault, sin/cos fault, I2T fault, Master sync, gripper command. This is programmable with NiLAB Starter software.

NLi120Q/X linear motors with CANOPEN, MODBUS RTU and single rear connector

The hybrid for NLi120Q/X M12 and D-SUB9 connector is DA012019-5M

D-SUB9 Pinout	SIGNAL	SIGNAL	WIRE COLOR
1	CAN_H	Canbus high	Brown
2	CAN_L	Canbus LOW	Green
3	MODBUS_A	Modbus A	Yellow
4	MODBUS_B	Modbus B	Grey
5	–	–	–
6	GND	Ground	Violet
7	GND	Ground	Blue
8	24V	Power	White
9	24V	Power	Red

NLi120Q/X linear motors with MODBUS RTU and CANOPEN or ANALOG INPUTS

The Can cable for NLi120Q/X (third connector M12 female) and D-SUB9 connector is DA122011

D-SUB9 Pinout	SIGNAL	CAN VERSION	ANALOG VERSION	CAN VERSION WIRE COLOR
1	NC	–	PULSE IN/OUT	-
2	CAN_L	Canbus LOW	DIR IN/OUT	White
3	CAN_GND	Canbus Ground	GND	Yellow/Green or Gray
4	NC	–	-	-
5	NC	–	ANP (0 to 10V voltage control)	-
6	NC	–	ANN (4 to 20mA current control)	-
7	CAN_H	CAN HIGH	-	Brown
8	CAN_RES	TERMINATION RESISTANCE	-	Black
9	CAN_H	CAN HIGH	-	Blue

In order to have the termination on the node, please make a jumper between CAN_RES andf CAN_L (Pin 8 and Pin 2)

M12 power connector on the motor side pinout
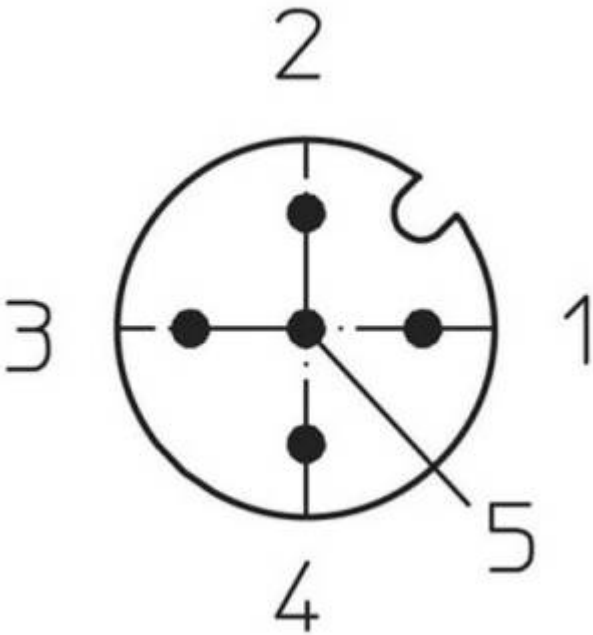
Pin	Signal	Description
1	+24VDC	24VDC power line
2	+24VDC	24VDC power line
3	GND	Ground
4	GND	Ground
5	NC	Not connected

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