

# MDX+

## MDX+40/MDX+60/MDX+80 Quick Setup Guide

### Requirements

To begin, make sure you have the following equipment:

- A 24-60 VDC power supply
- A PC running Windows Vista/Windows 7 / Windows 8 / Windows 10 (32-bit or 64-bit) system
- A small flat-blade screwdriver for motor power cable connection
- One USB mini-B communication cable, Cable type: 2620-150
- One I/O cable
- For RS485, CANopen bus applications, a communication cable is required
- For the application of EtherCAT, a CAT5e network cable is required

### Step 1 Installing the software

- a) Download the Luna software.
- b) Install the Luna on your PC.
- c) Connector the drive to PC with USB mini-B cable.

### Step 2 Connecting the Power Supply

a) Connect the drive to the DC power supply

Power	Symbol	Description	Function	Input specs
Main	V+	Main Power +	Supplying power to the motor power and control sections	24~60VDC
	V-	Main Power -		
AUX	AUX+	Auxiliary power +	Auxiliary power is required for the following two applications: a) When the main power is cut off, the DSP part of the drive needs to work normally b) Use a motor with a brake, supplying power to the brake.	24VDC ± 10%
	AUX-	Auxiliary power -		

Note:

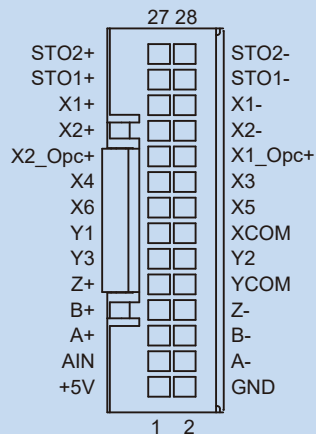
- 1) Please avoid connecting the power "+" and "-" in reverse, as it will damage the motor.
- 2) Please power on the motor after all the wirings on the motor are completed.

b) Ensure a proper earth ground connection to the drive's chassis.

## Step 3 I/O and Communication Cable

- Connecting input/output signals (I/O)

### IP20-Type (MDXR6、MDXR8)



IP20 Type (MDXR6、MDXR8)

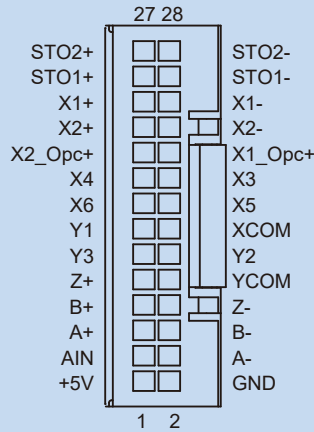
Pin	Signal	Color	Function	Pin	Signal	Color	Function
1	+5V	Blue/White	USER_5V Power +	2	GND	Blue/Black	Digital Ground
3	AIN	Green/White	Analog Input	4	AOUT-	Green/Black	Encoder Outout A-
5	AOUT+	Blue	Encoder Outout A+	6	BOUT-	Purple	Encoder Outout B-
7	BOUT+	Yellow	Encoder Outout B+	8	ZOUT-	Green	Encoder Outout Z-
9	ZOUT+	Orange	Encoder Outout Z+	10	YCOM	Red	Digital Output COM Port
11	Y3	White	Digital Output Y3	12	Y2	Black	Digital Output Y2
13	Y1	Brown/White	Digital Output Y1	14	XCOM	Brown/Black	Digital Input COM Port
15	X6	Gray/White	Digital Input X6	16	X5	Gray/Black	Digital Input X5
17	X4	Brown	Digital Input X4	18	X3	Gray	Digital Input X3
19	X2_Opc+	Pink/Red	Pull-up for open collector X2	20	X1_Opc+	Yellow/Green	Pull-up for open collector X1
21	X2+	Purple/White	Digital Input X2+	22	X2-	Purple/Black	Digital Input X2-
23	X1+	Yellow/White	Digital Input X1+	24	X1-	Yellow/Black	Digital Input X1-
25	STO1+	Orange/White	STO1+	26	STO1-	Orange/Black	STO1-
27	STO2+	Red/White	STO2+	28	STO2-	Red/Black	STO2-

**Note:**

- 1) X1+/X1-: Accept 5V single-ended or differential pulse signal, minimum pulse width 0.25  $\mu$  s, maximum pulse frequency 2MHz
- 2) X2+/X2-: Accept 5V single-ended or differential pulse signal, minimum pulse width 0.25  $\mu$  s, maximum pulse frequency 2MHz
- 3) X1\_Opc+/X1-: Accept 24VDC signal, minimum pulse width 1  $\mu$  s, maximum pulse frequency 500KHz, (input signal valid limit: >16V, input signal invalid limit: <8V, fuzzy area: 8V  $\leq$  fuzzy area  $\leq$  16V)
- 4) X2\_Opc+/X2-: Accept 24VDC signal, minimum pulse width 1  $\mu$  s, maximum pulse frequency 500KHz, (input signal valid limit: >16V, input signal invalid limit: <8V, fuzzy area: 8V  $\leq$  fuzzy area  $\leq$  16V)
- 5) X3/X4/X5/X6 - XCOM, accept NPN or PNP connection, that is, XCOM can be connected to 0V or 24V, (input signal valid limit: >16V, input signal invalid limit: <8V, fuzzy area: 8V < fuzzy area < 16V)
- 6) Y1/Y2/Y3 - YCOM, accept NPN or PNP connection, that is, YCOM can be connected to 0V or 24V
- 7) AIN: -10V ~ 10V, resolution 12bit
- 8) USER\_5V power output maximum current is 100mA
- 9) The color of the connection wire marked in the above table refers to the 1116-XXX harness with shielding

● Connecting input/output signals (I/O)

IP20- Type (MDXR4)

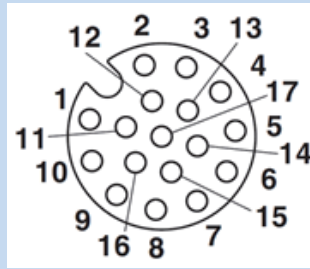


IP20 Type (MDXR4)							
Pin	Signal	Color	Function	Pin	Signal	Color	Function
1	+5V	White	USER_5V Power +	2	GND	Black	Digital Ground
3	AIN	Pink/Red	Analog Input	4	AOUT-	Red/Black	Encoder Outout A-
5	AOUT+	Red/White	Encoder Outout A+	6	BOOUT-	Orange/Black	Encoder Outout B-
7	BOOUT+	Orange/White	Encoder Outout B+	8	ZOUT-	Yellow/Black	Encoder Outout Z-
9	ZOUT+	Yellow/White	Encoder Outout Z+	10	YCOM	Gray	Digital Output COM Port
11	Y3	Brown	Digital Output Y3	12	Y2	Orange	Digital Output Y2
13	Y1	Red	Digital Output Y1	14	XCOM	Yellow/Green	Digital Input COM Port
15	X6	Yellow	Digital Input X6	16	X5	Green	Digital Input X5
17	X4	Blue	Digital Input X4	18	X3	Purple	Digital Input X3
19	X2_Opc+	Purple/White	Pull-up for open collector X2	20	X1_Opc+	Purple/Black	Pull-up for open collector X1
21	X2+	Gray/White	Digital Input X2+	22	X2-	Gray/Black	Digital Input X2-
23	X1+	Brown/White	Digital Input X1+	24	X1-	Brown/Black	Digital Input X1-
25	STO1+	Green/White	STO1+	26	STO1-	Green/Black	STO1-
27	STO2+	Blue/White	STO2+	28	STO2-	Blue/Black	STO2-

Note:

- 1) X1+/X1-: Accept 5V single-ended or differential pulse signal, minimum pulse width 0.25  $\mu$  s, maximum pulse frequency 2MHz
- 2) X2+/X2-: Accept 5V single-ended or differential pulse signal, minimum pulse width 0.25  $\mu$  s, maximum pulse frequency 2MHz
- 3) X1\_Opc+/X1-: Accept 24VDC signal, minimum pulse width 1  $\mu$  s, maximum pulse frequency 500KHz, (input signal valid limit: >16V, input signal invalid limit: <8V, fuzzy area:  $8V \leq$  fuzzy area  $\leq$  16V)
- 4) X2\_Opc+/X2-: Accept 24VDC signal, minimum pulse width 1  $\mu$  s, maximum pulse frequency 500KHz, (input signal valid limit: >16V, input signal invalid limit: <8V, fuzzy area:  $8V \leq$  fuzzy area  $\leq$  16V)
- 5) X3/X4/X5/X6 - XCOM, accept NPN or PNP connection, that is, XCOM can be connected to 0V or 24V, (input signal valid limit: >16V, input signal invalid limit: <8V, fuzzy area:  $8V <$  fuzzy area  $<$  16V)
- 6) Y1/Y2/Y3 - YCOM, accept NPN or PNP connection, that is, YCOM can be connected to 0V or 24V
- 7) AIN: -10V ~ 10V, resolution 12bit
- 8) USER\_5V power output maximum current is 100mA

## IP65-Type (MDXT4、MDXT6、MDXT8)



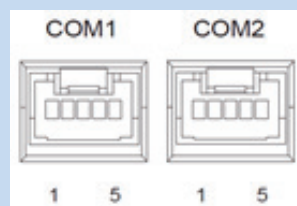
IP65 Type (MDXT4、MDXT6、MDXT8)							
Pin	Signal	Color	Function	Pin	Signal	Color	Function
1	X1+	Brown	Digital Input X1+	2	X1-	Blue	Digital Input X1-
3	X2+	White	Digital Input X2+	4	X2-	Green	Digital Input X2-
5	X3	Pink/Red	Digital Input X3	6	X4	Yellow	Digital Input X4
7	XCOM	Black	Digital Input COM Port	8	5V	Gray	USER_5V Power +
9	GND	Red	Digital Ground	10	AIN	Purple	Analog Input
11	Y1	Gray/Pink	Digital Output Y1	12	Y2	Red/Bblue	Digital Output Y2
13	YCOM	White/Green	Digital Output COM Port	14	STO1+	Brown/Green	STO1+
15	STO1-	White/Yellow	STO1-	16	STO2+	Yellow/Brown	STO2+
17	STO2-	White/Gray	STO2-				

### Note:

- 1) X1+/X1-: Accept 24V pulse signal, minimum pulse width 1  $\mu$  s, maximum pulse frequency 500KHz
- 2) X2+/X2-: Accept 24V pulse signal, minimum pulse width 1  $\mu$  s, maximum pulse frequency 500KHz
- 3) X3/X4 - XCOM, accept NPN or PNP connection, that is, XCOM can be connected to 0V or 24V, (input signal valid limit: >16V, input signal invalid limit: <8V, fuzzy area: 8V< fuzzy area <16V)
- 4) Y1/Y2 - YCOM, accept NPN or PNP connection, that is, YCOM can be connected to 0V or 24V
- 5) AIN: -10V ~ 10V, resolution 12bit
- 6) USER\_5V power output maximum current is 100mA

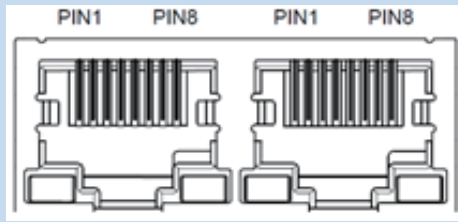
## ● Communication Cable

### IP20-RC Type (MDXR4、MDXR6、MDXR8)



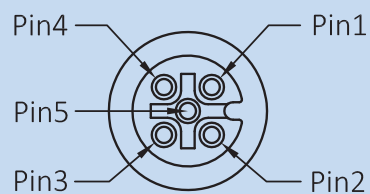
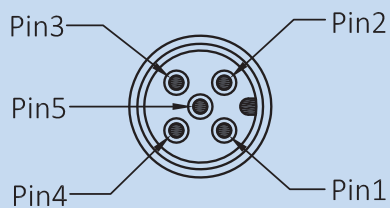
COM1/2 Pin	Signal
1	RS485+
2	RS485-
3	CAN_H
4	CAN_L
5	GND

## IP20-EC Type(MDXR4、MDXR6、MDXR8)



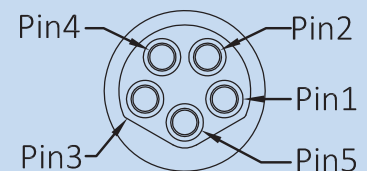
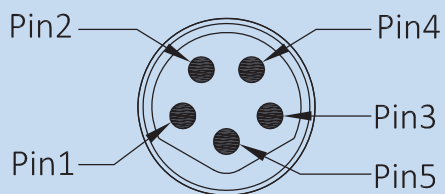
COM1/2(IN/OUT) Pin	Signal
1	TX+
2	TX-
3	RX+
4	NC
5	NC
6	RX-
7	NC
8	NC

## IP65-Type (MDXT6、MDXT8)



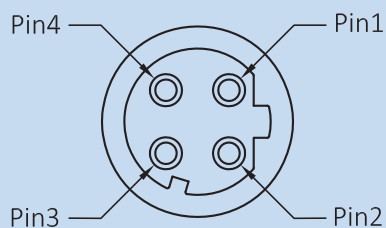
COM1/2 Pin	Signal
1	RS485+
2	RS485-
3	GND
4	CAN_H
5	CAN_L

## IP65-RC Type (MDXT4)



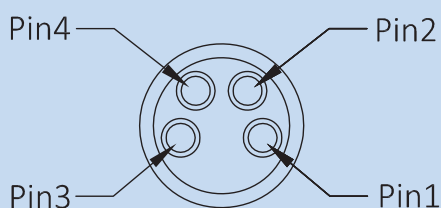
COM1/2 Pin	Signal
1	RS485+
2	RS485-
3	GND
4	CAN_H
5	CAN_L

### IP65-EC Type (MDXT6、MDXT8)



COM1/2(IN/OUT) Pin	Signal
1	TX+
2	RX+
3	TX-
4	RX-

### IP65-EC Type (MDXT4)



COM1/2(IN/OUT) Pin	Signal
1	TX+
2	RX+
3	TX-
4	RX-

## Step 4

- Run the Luna software.
- Apply power to the drive.
- The software will automatically identify the motor model and serial number.
- Use Luna software to configure control modes, I/O functions, etc., as well as simple motion simulation and status monitoring.
- Use Luna software to set PID parameters, resonance suppression parameters, smoothing filter, etc.

## Appendix: Cable Description

IP20 series model cable							
Product Cable	Description	MDXR4(RC)	MDXR4(EC)	MDXR6(RC)	MDXR6(EC)	MDXR8(RC)	MDXR8(EC)
I/O Cable	Shielded	1664-XXX	1664-XXX	1116-XXX	1116-XXX	1116-XXX	1116-XXX
	Unshielded	---	---	1101-XXX	1101-XXX	1101-XXX	1101-XXX
Power Cable	Not Provided	---	---	---	---	---	---
EC Communication Cable	Not Provided	---	---	---	---	---	---
RC Communication Cable	Standard 3M	2111-XXX	2111-XXX	2111-XXX	2111-XXX	2111-XXX	2111-XXX

**Note:** XXX stands for cable length; 100 stands for 1m; 200 stands for 2m; 300 stands for 3m; 500 stands for 5m; 1000 stands for 10m

IP65 series model cable							
Product Cable	Description	MDXT4(RC)	MDXT4(EC)	MDXT6(RC)	MDXT6(EC)	MDXT8(RC)	MDXT8(EC)
I/O Cable	Right Angle	1637-XXX	1637-XXX	1637-XXX	1637-XXX	1637-XXX	1637-XXX
	Straight	1638-XXX	1638-XXX	1638-XXX	1638-XXX	1638-XXX	1638-XXX
Power Cable	Right Angle	1636-XXX	1636-XXX	1636-XXX	1636-XXX	---	---
	Straight	1639-XXX	1639-XXX	1639-XXX	1639-XXX	1665-XXX	1665-XXX
EC Communication Cable	Right Angle	---	2664-XXX	---	2647-XXX	---	2647-XXX
	Straight	---	2663-XXX	---	2648-XXX	---	2648-XXX
	RJ45-Straight	---	2665-XXX	---	2646-XXX	---	2646-XXX
RC Communication Cable	Right Angle	2662-XXX	---	2632-XXX	---	2632-XXX	---
	Straight	2661-XXX	---	2634-XXX	---	2634-XXX	---

**Note:** XXX stands for cable length; 100 stands for 1m; 200 stands for 2m; 300 stands for 3m; 500 stands for 5m; 1000 stands for 10m

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