Cable choosing guide

LA0024-1.2

How to choose the right cables for your integrated JVL motor

1 Introduction

We at JVL A/S offer a very wide range of integrated motors, and with an even wider range of options. This requires an equally wide range of cables, which means that it does require a minimum of knowledge when choosing the right cables for your specific motor.
This document is being made to help you with that.
Soon, our online Product Part Number Builder (PPNB https://ppnb.jvl.dk/) will be able to assist you much better in the choosing of correct cables.

2 Revisions

Ver.	Changes	Date	Init
1.0	Release of first version	2025-05-14	AW
1.1	Created as LA type document in official JVL template	2025-06-12	AW
1.2	Corrected Q5 daisy chain cables, RS485 connection and contents	2025-09-22	AW

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4 Default parts for communication/setup

Offer these parts for communication/setup - all customers that purchase MAC motor®, MIS ServoStep™ or SMC controller should have 1 set:

4.1 MAC motors in general:

- RS232-USB2.0-1
- RS232-M12-1-5-8

4.2 For MAC motors with MAC00-Ex41:

- RS232-USB2.0-1
- RS232-M12-1-5-17

Optional alternative, using junction box for serial connection while customers IO's are connected:

- RS232-USB2.0-1
- RS232-M12-1-5-8
- PA0190

4.3 For MAC motors with MAC00-B42 or MAC00-R4:

- RS232-USB2.0-1
- RS232-M12-1-5-5

4.4 MIS motors and SMC66/85 controllers in general:

- RS485-USB-M12M5M8M17

Optional junction box for serial connection while customers IO's are connected:

- PA0190

4.5 Always offer:

- MACTALK_USB

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5 Default cables to offer

Standard lengths are 5 and 20 meter, but for some cables we offer 0.3, 1, 2 and 10 meter as well, and in rare cases other special lengths. By choosing the most standard, the price for these will be lower.
Length: WI1000-M12F5T05N 05 defines the length and is in this case 5 meter.
Orientation: Standard orientation is straight connectors and are suggested as well.

5.1 MIS with Ethernet:

Power and Ethernet cables:

- WI1000-M12F5T05N
- WI1046-M12M4T05TRJ45

Optional daisy-chain Ethernet cable for connection between the motors:

- WI1046-M12M4TM4T02T

Optional IO cable:

- WI1009-M12M17T05N

5.2 MIS with CANOpen (P6):

Power and CAN cables:

- WI1000-M12F5T05N
- WI1006-M12M5S05T

Optional daisy-chain CANOpen cable for connection between the motors:

- WI1006-M12M5TM5T01N

Optional IO cable:

- WI1009-M12M17T05N

5.3 MIS for IO (Q5):

Power cable:

- WI1000-M12F5T05N

Optional IO, RS485, RS422 cable all-in-one:

- WI1009-M12M17T05N

Optional IO, RS485 cable:

- WI1000-M12M8T05N

Optional RS485 cable:

- WI1000-M12M5T05N

Optional daisy-chain RS485 cable for connection between the motors:

- WI1005-M12M8TM5T05N

5.4 MAC with Ethernet:

Control power (and motor power for MiniMAC) and Ethernet cables:

- WI1000-M12F5T05N
- WI1046-M12M4T05TRJ45

Optional daisy-chain Ethernet cable for connection between the motors:

- WI1046-M12M4TM4T02T

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Optional IO cable:

- WI1000-M12M8T05N - for MAC00-Ex4
- WI1009-M12M17T05N - for MAC00-Ex41

5.5 Power cables MAC400..4500

Part#	Supported motors	Connector	Supply	Notes
WP0005	MAC400 + MAC800..1200 with M16	M16	115/230VAC	For MAC800..1200: see manual for 115VAC use.
WP0405	MAC400 + MAC800..1200 with M16	M16	230VAC	
WP0102	MAC400	M16	PD+DC bus	
WP0505	MAC402	M16	12-48VDC	
WP3405	MAC1500..4500	M23	400VAC (230VAC)	Designed for 3x400VAC but can be used with 1x230
WP4105	MAC1500..4500	M23	PD+DC bus	

6 Other cables

6.1 STO:

WI1010-M08M4T05P	Straight	4 pin for all MIS and modern MAC motor®
WI1010-M08M4V05P	Angle	4 pin for all MIS and modern MAC motor®
WI1010-M08M4STO	Disable plug	Only used for testing (Not included with motor)

6.2 Brake (external):

WI1000-M8F4A05N	Open end	
WI1013-M12M17TF4T.4N	M12 to M8	For MIS only
WI1013-M12M17TF4TXAA	M12 to M8 + 2 meter open end IO 1-3	For MIS only

6.3 Caps for unused connectors:

IP protection caps for unused connectors.
For MAC modules in general, 2 pcs. WI1000-M12FCAP1 are included.
For all motors in general, no caps are included.

CAP for female M12 connectors (e.g.for 8/17 pin IO and Ethernet in MIS and MAC00-Ex):

- WI1000-M12FCAP1

CAP for male M12 connectors (e.g. for SSI):

- WI1000-M12MCAP1

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