



Congratulations with your MAC motor®

Quick Start

Follow this guide for fast and correct setup.

Power Supply for AC supplied motors – important!

MAC motor®s for AC supply, requires “AC power” and “DC control voltage” supply.

(A) DC control voltage – M12 cable

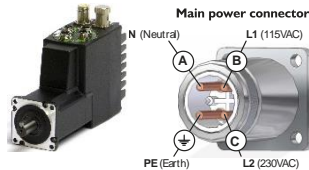
- Connect: Brown + White → Main Power (P+)
- Connect: Black → Control Voltage In (CVI)
- Connect: Blue + Grey → Main supply Ground (GND)

NB! Control Voltage In = 24 VDC (range: 8...28 VDC).
Use JVL cable Item No.: W11000-M12F5W05N or W11000-M12F5T05N.

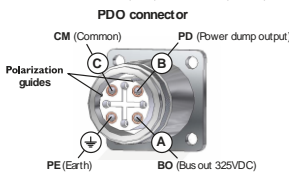


(B) AC supply voltage – MAC400...MAC4500

MAC400: AC supply range 90...240 VAC. Cable Item No.: WP00xx or WP04xx (xx: length in m).



Input supply cable type: WP0002, WP0005, WP0020



Power dump / DC output cable type: WP0102, WP0105, WP0120



Input supply cable type: WP0402, WP0405, WP0420

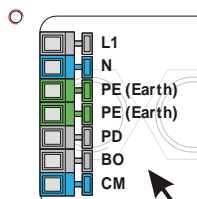
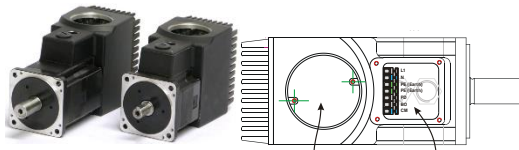


OBS. Make sure that any unused wires are isolated and stay unconnected

Prefuses: see User Manual section § 3.2.10 + 3.2.22 + 3.2.26 + 3.2.32

MAC800...MAC1200: AC supply range 90...240 VAC.

NB. Using 115 VAC a Solder Jumper is required - see User Manual section 3.2.25





MAC1500...MAC4500: AC supply range 3 x 400...480 VAC.



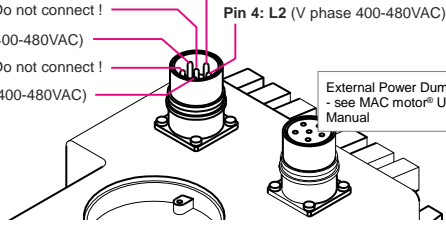
CAUTION - Risk of electric shock. Disconnect all power and wait 5 min. before servicing

- Pin 6: **Not in use** - Do not connect !
- Pin 2: L1 (U phase 400-480VAC)
- Pin 1: **Not in use** - Do not connect !
- Pin 5: L3 (W phase 400-480VAC)

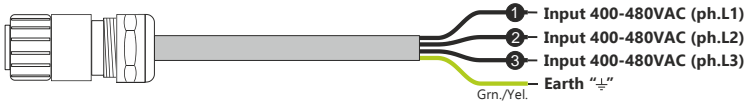
Pin 4: PE (Earth)

Pin 4: L2 (V phase 400-480VAC)

External Power Dump - see MAC motor® User Manual



Input supply cable type: WP3405



Motor Supply for DC supplied motors – important!

The motor requires “power” and “control voltage” supply. If you use 24 VDC for both supplies you can use a single power supply. Otherwise you will need two separate supplies.

(A) MAC050...MAC141 – M12 cable (only one cable)



- Connect: Brown + White → Power (P+)
- Connect: Black → Control Voltage (CVI)
- Connect: Blue + Grey → Ground (GND)



NB! Control Voltage In = 24 VDC (range: 8...28 VDC).

Use JVL cable Item No.: WI1000-M12F5W05N or WI1000-M12F5T05N.

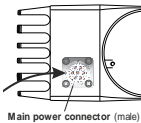
Prefuse: MAC050 = T4A / MAC095 = T6.3A / MAC140-141 = T10A slow blow
See User Manual section § 3.2.3

(B) MAC402 – M16 and M12 cables

Two cables are needed. For control voltage – see above for (A) MAC050...MAC141.

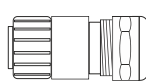
M16 main supply:

Input supply cable type: WP0502, WP0505, WP0520

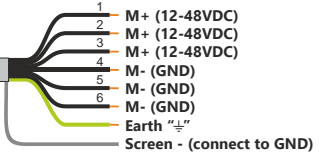


Main power connector (m16)

Type A - Present type

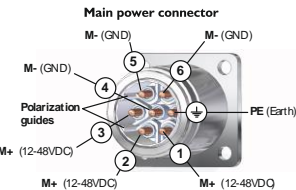
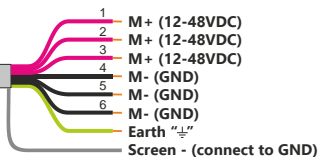
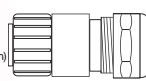


MAC402 Prefuse: 30A slow blow – or – 30A class D circuit breaker



Main power connector

Type B - Newer type



CAUTION - Risk of electric shock. Disconnect all power and wait 5 min. before servicing

Motor DC Supply and Speed - Maximum speed of the motors depend on the DC supply voltage.

Motor	Main Supply	Max. Speed
MAC050...140	12 VDC	1000 RPM
	24 VDC	2000 RPM
	48 VDC	4000 RPM
MAC141	12 VDC	675 RPM
	24 VDC	1350 RPM
	48 VDC	2700 RPM

Motor	Main Supply	Max. Speed
MAC402	12 VDC	1500 RPM
	24 VDC	3000 RPM
	48 VDC	3000 RPM



DC Main supply – M16 cable: it is very important to ensure that the connector of the M16 cable is fully connected!



A good idea is to turn the lock on the connector anti-clockwise until you hear a small “CLICK”, and then to turn the connector clockwise and tighten firmly.

Take a good look from the sides to see that the connector is straight and that there is no gap between the cable connector and the motor connector.

Main power supply cable Item No.

WP05xx (0° straight) or **WP06xx** (90° angled), where xx = length in meter: 02 / 05 / 20.

Managing Return Energy at 48 VDC

NB. If 48 VDC supply is not a rechargeable battery, add item No. PSU00-PD1 and power dump resistor type RP0001 = 33 Ω 50W (or RP0000 = 22 Ω 50W).



Size and Type of your Motor DC Supply

Use JVL's range of motor power supplies if you want your motor to be CE compliant —and to avoid problems and be up-and-running easy and quickly.

Switch-mode power supplies have two disadvantages when it comes to motor supply: (1) they cannot handle return energy from a braking motor [see PSU00-PD1 below] and (2) they have a hard and precise current limit.

JVL therefore offers special switch-mode Motor supplies.

MAC050: use min. 2A supply. PSU24-075 or PSU48-240 recommended.

MAC095: PSU24-240 or PSU48-240 recommended.

MAC140...141: PSU24-240 recommended. PSU48-240 might not be strong enough in all cases.

For max. power use PSU48-1000-01.

JVL Motor DC Supply Overview

PSU24-075 – 24 VDC, 3.2 A, 75 W – for MAC050

PSU24-240 – 24 VDC, 10 A, 240 W (built-in 4400 µF extra capacitance) – for MAC095...141

PSU48-240 – 48 VDC, 5 A, 240 W (built-in 4400 µF extra capacitance) – for MAC050...095. Might not be strong enough for MAC140...141 in all cases.

PSU48-1000-01 – 48 VDC, 21 A, 1000 W, 90-264 VAC – for 1 or 2 pcs MAC140...141.

PSU00-PD1 – Power Dump unit for 48 VDC with large capacitor and power dump resistor circuit for braking large inertias. Use with PSU48-... or 48V Battery.

For extra power dumping capability, use **RP0001** (33 Ω 50W) or **RP0000** (22 Ω 50W) resistors.

Link to our home page: www.jvl.dk

Link to Download (User Manuals or CAD drawings etc):

<https://www.jvl.dk/list/310/downloads>

Link to User Manuals:

<https://www.jvl.dk/files/pdf-1/user%20manuals/lb0047gb.pdf> (MAC motor®)

<https://www.jvl.dk/files/pdf-1/user%20manuals/lb0056gb.pdf> (Ethernet)



Serial Communications

All MAC motor[®] have built-in RS232 serial communications interface. Some module types also have RS485 interface.
Ethernet equipped motors only have RS232 interface: MAC00-Ex4 have an 8-pin M12 connector.
Module types MAC00-Ex41 have their RS232 interface in a 17-pin M12 connector and thus require the Item No. PA0190 + RS232-M12-1-5-8.

To ensure successful connection from the beginning please use these items:

- MacTalk[®] software, request Item No.: MACTALK_USB
- RS232-USB2.0-1 – USB to RS232 converter (PCs without RS232 port)
- Depending on your actual module use one of these RS232 cables
RS232-M12-1-5-5 – M12, 5-pin
RS232-M12-1-5-8 – M12, 8-pin
- Module types MAC00-Ex41 use:
PA0190 + RS232-M12-1-5-8
- Ensure PC and PSU (supply) have same Ground connection

1. Turn DC power off and double-check power supply connections
2. Connect RS232 serial cables (and the RS232-USB2.0-1 converter)
3. Install MacTalk[®] on your PC and start it
4. Turn DC power ON
5. Wait for MacTalk[®] to connect to your motor (bottom status line turns green)



Ethernet Communications

If you have a MAC motor[®] (or ServoStep[™]) equipped with industrial Ethernet then you can quickly determine the default IP address: **192.168.0.XX**
XX refers to the last 2 digits in the MAC-ID which is printed on the label.
Example: If the MAC-ID has the value 00:50:C2:D0:C9:14, then the default IP address is set to: 192.168.0.20 (since 14 is Hexadecimal = 20 decimal).

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