

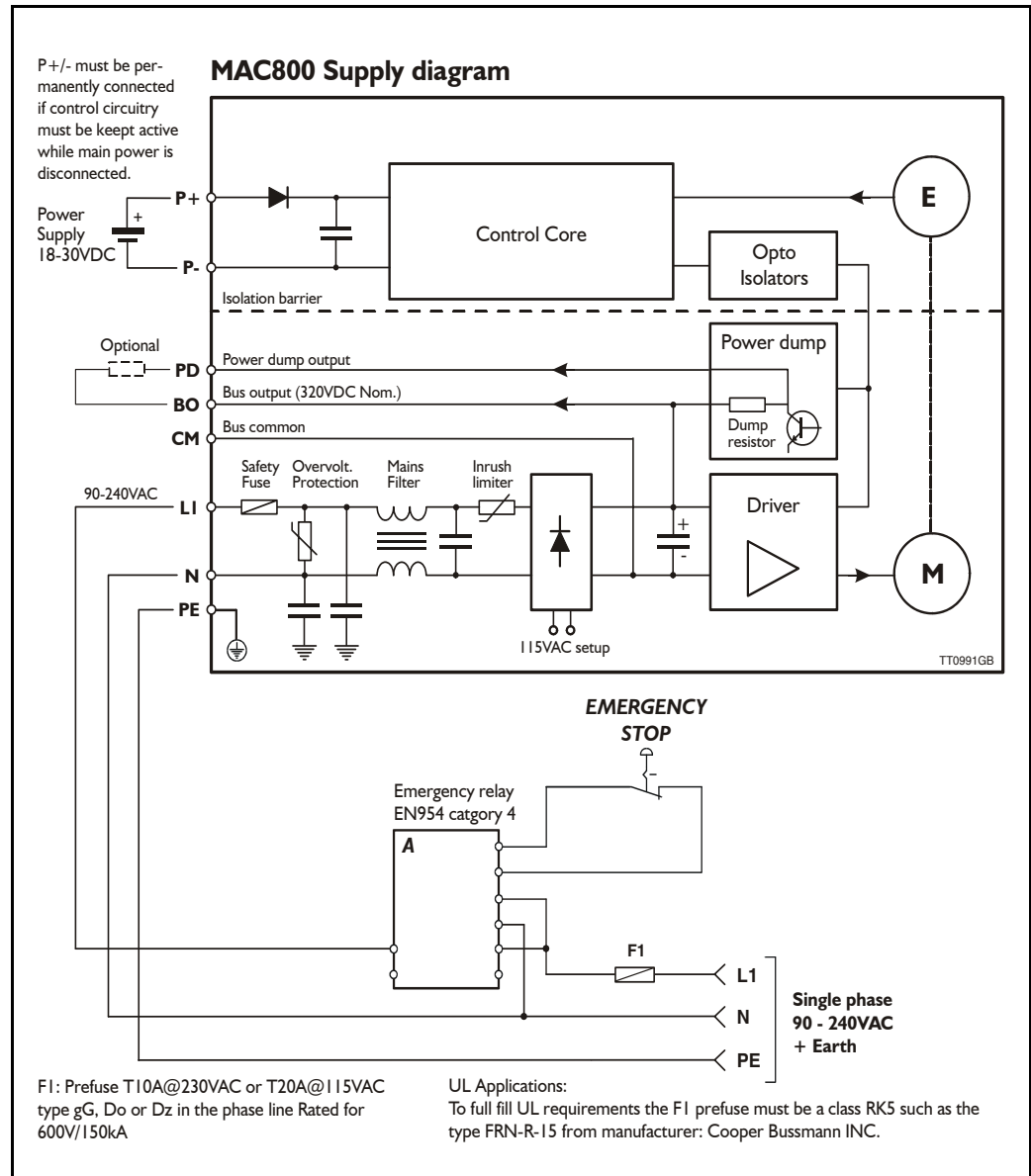
3.2

Power Supply

Only MAC800

3.2.4 Power supply circuitry (only MAC800)

The MAC800 supply is splitted into 2 individual circuits with fully galvanically isolation in between. The control circuitry needs a voltage in the range 18 to 30VDC and the power circuitry must be applied with 90 to 240VAC. Having 2 independant supply circuits offer the feature that the the supply voltage for the power circuitry (90-240VAC) can be removed for safety reasons while the control circuitry can keep on operating and thereby keep the position counter updated and keep other vital functions active such as communication.



The circuit above is shown with a emergency relay which can be avoided if the application do not require this safety feature.

The internal power dump is ment to cover 90% of all applications but if the error message "overvoltage" is monitored an external power dump resistor must be connected between the terminals PD and BO.

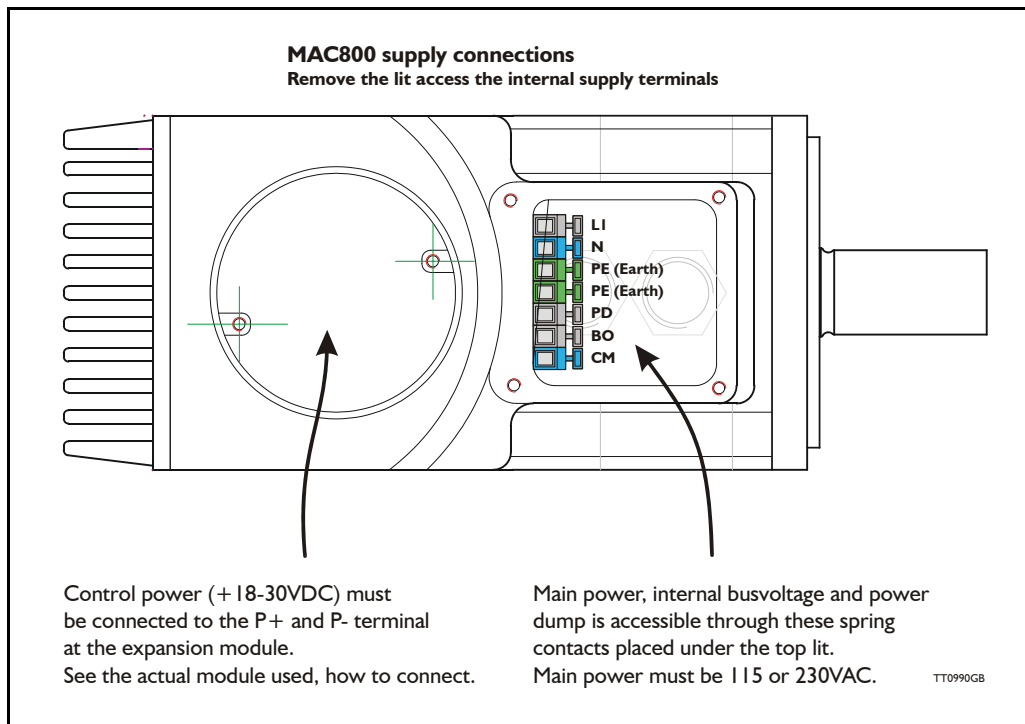
3.2

Power Supply

Only MAC800

3.2.5 How to connect the power supply (only MAC800)

The power supply for the control circuitry is connected through the expansion module at the terminals called P+ and P- or direct at the internal power supply connector. The power circuitry must be applied according to the illustration below.



Terminal descriptions:

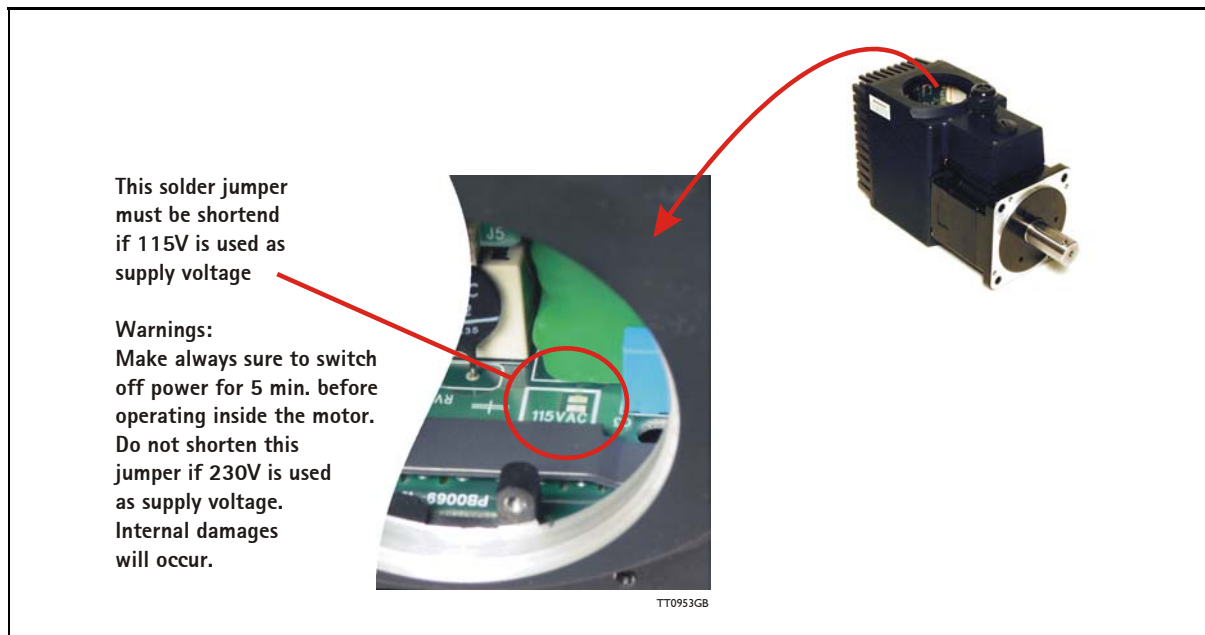
- LI 115/230VAC input (phase)
- N 115/230VAC input (neutral)
- PE Earth must be used with the 115/230VAC input
- PE Earth must be used with the DC-bus and the PD terminals
- PD Power dump output - see also *Connecting an external power dump resistor.*, page 45
- BO Bus output (nom. 325VDC)
- CM Common. Ground for the internal DC-bus.

If 115VAC is used as supply voltage the MAC800 must be setup for this. See *Using 115V supply voltage (only MAC800)*, page 44.



3.2.6 MAC800 Grounding.

Make sure that the machine part where the MAC800 is mounted is properly grounded to the main part (body) of the machine in order to avoid major ground/earth current to flow through the motor and cause disturbances at other signal groups such as interface cables.



3.2.7 Using 115V supply voltage (only MAC800)

When using 115VAC as supply voltage the MAC800 will be able to operate within a limited speed range.

The efficiency and dynamic response will however not be optimal.

To optimize the performance it is recommended to solder the internal jumper shown above. By doing this the internal busvoltage will remain at nominal 325VDC when 115VAC is applied.

To check that the jumper is set properly the busvoltage shown in the MacTalk main screen must show approximately 325VDC. If the jumper is not set correct the voltage will be shown as only the half (160-170VDC).

Warning:

Important !:

Make sure that the jumper is not shorted if 230VAC is applied since this will cause fatal injury of internal components.

The MAC800 motors is default setup for 230VAC supply (jumper not shorted) when delivered.

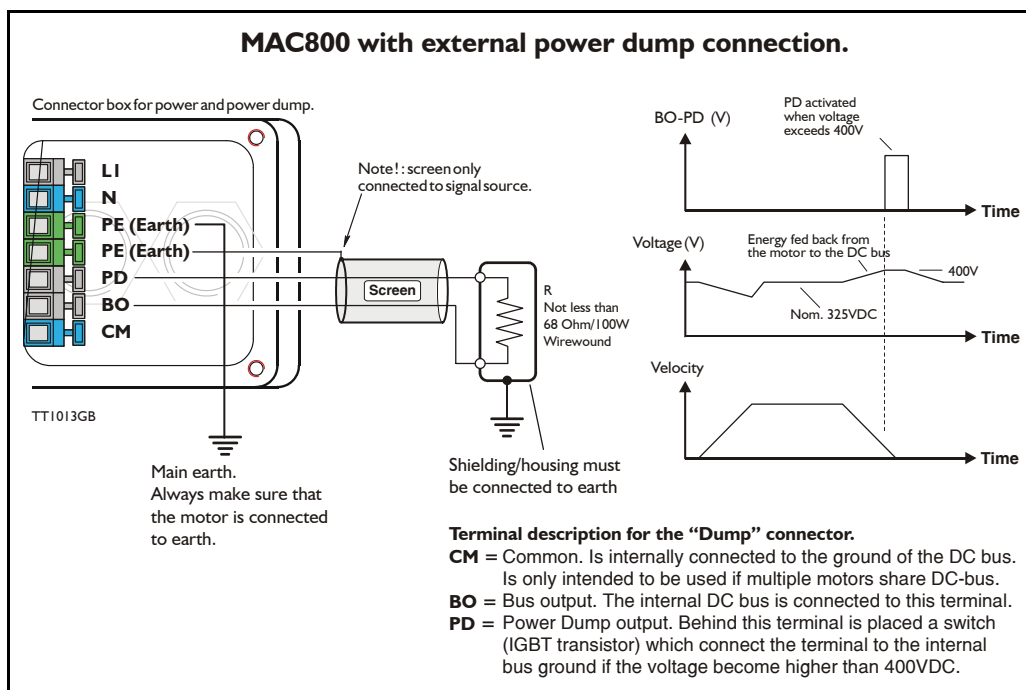


3.2.8 Prefuse when using 115V supply (only MAC800)

To full fill UL requirements the prefuse must be a class RK5 such as the type FRN-R-15 (15Amp.) from manufacturer: Cooper Bussmann INC.

See also *Power supply circuitry (only MAC800)*, page 42

3.2.9 Connecting an external power dump resistor.



The internal power dump can absorb up to 9W continuously and 2.5kW in peak which is considered as being appropriate for most applications.

However should a situation occur where the connected load inertia is too large or the deceleration too fast the internal power dump will not be able to absorb all the returned energy and will report the error message "regenerative overload".

In this situation the only possible solutions are:

1. Decrease the acceleration/deceleration parameter.
2. Lower the attached load inertia.
3. Connect an external power resistor.

The drawing above show how to connect the external power resistor. A wirewound type is recommended since it will be able to absorb higher peak power than other types of resistors.

Warnings: Make sure not to use a resistor value lower than 68 Ohm since the output can be damaged. Also avoid shortcircuit of the output.

