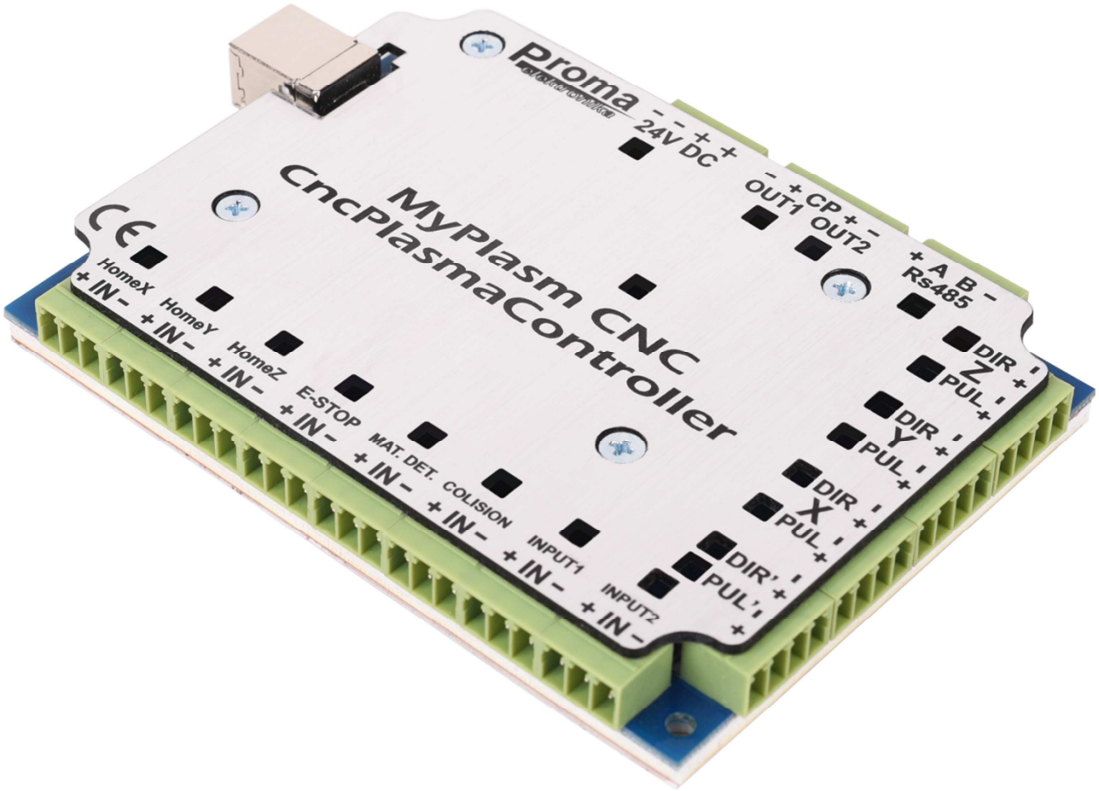
MyPlasm CNC System

Installation Manual



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Before installation, one should become familiar with this installation manual. Non-compliance with information included in the manual can be a threat to life and health, as well as to lead to damages of equipment. System should be connected by a qualified person.

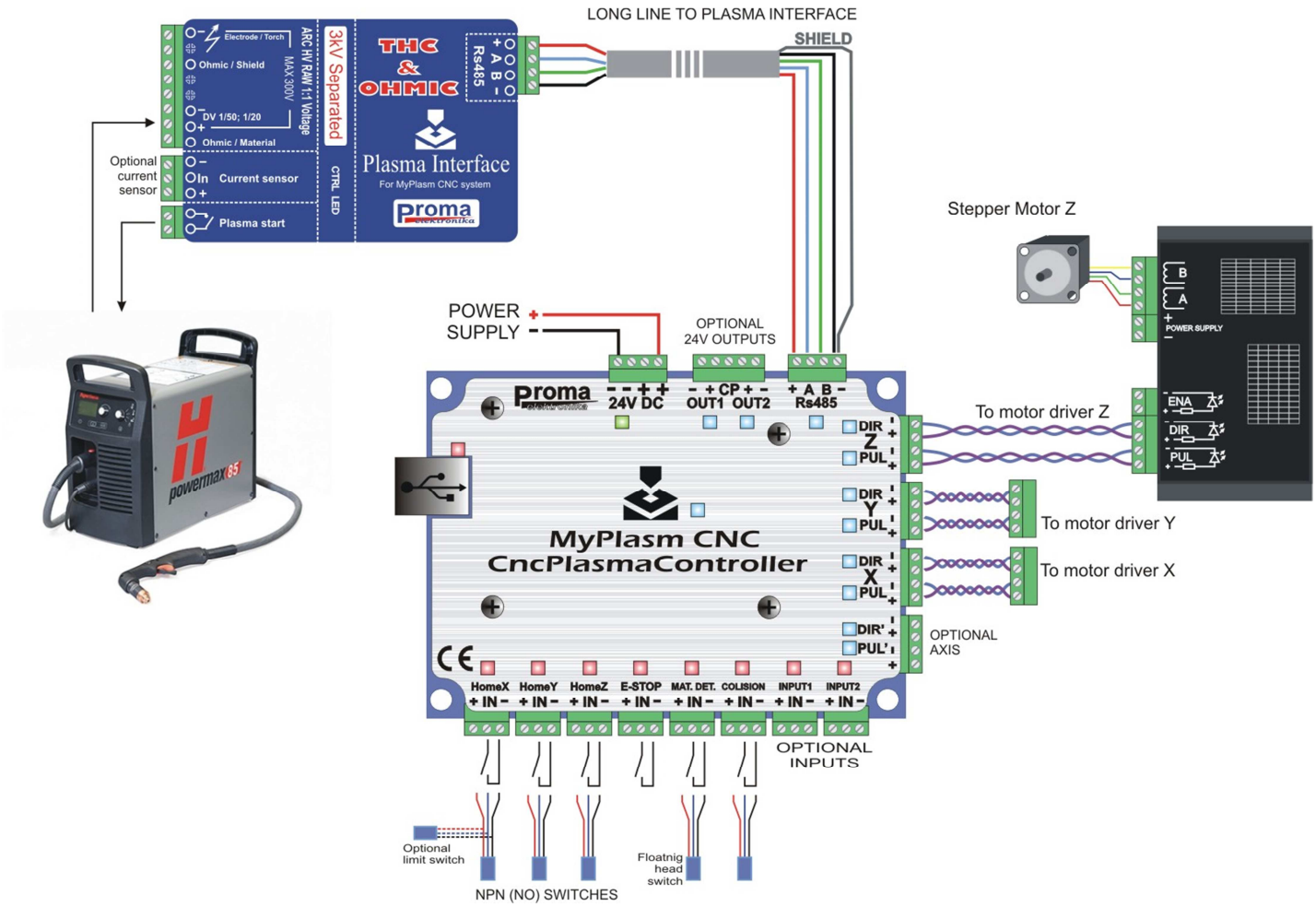
General description:

MyPlasm CNC was developed especially for the needs of controlling plasma CNC cutting machine. The plasma interface as well as opto-isolated mainboard was designed in a way enabling an elimination of all hardware and software interferences, thanks to which the system is resistant to any HF / HV interferences generated by plasma sources.

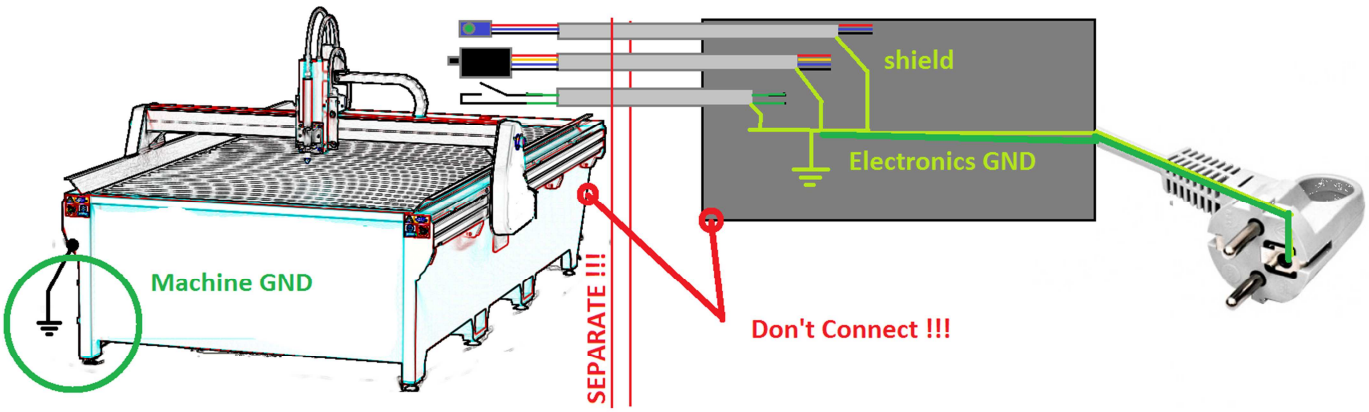
Basic System data (Controller and Interface)

Parameter		**Test / lab**
Power supply	24V DC	7-35 V DC
Power consumption	700mA (0,7 A)	50-600mA
Type of Step / Dir output	Common +5V	-
Current of Step / Dir output	50mA	100mA
Type of controller input	4kΩ subsequenced to +24V	-
Type of controller output	NPN 500mA	1000mA
USB interface	Opto-isolated 3kV	3kV
Arc voltage division	1:1, 1:20, 1:50	-
Sensitivity of OHMIC touch system	100kΩ	150kΩ
Resistance to HF / HV interferences	10kV / 500kHz	12kV
Maximal measurement voltage 1:1	300V DC	1000V DC
Dimensions of controller	120 x 100 x 17 [mm]	-
Dimensions of Plasma Interface	80 x 60 x 25 [mm]	-

General connection scheme.



Due to very significant interferences generated by plasma sources, one should follow below tips:



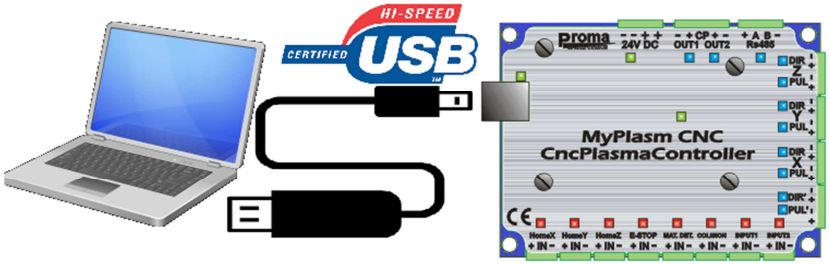
- Earthing of electrical / electronic part should not be connected to earthing of the machine construction. Electric control box should be isolated from the machine and earthed only from a supplying network.

- One should use shielded wires, and shielding should be connected only from the side of CNC controller.

- STEP / DIR signals from a controller to controllers of stepper motors should be made by pairs of twisted wires as specified in the scheme.

- signals of terminations and sensors should be fed by separate wires; it is not recommended to separate wires “on machine" e.g. in order to lead power to sensors – it can lead to increased sensibility to interferences.

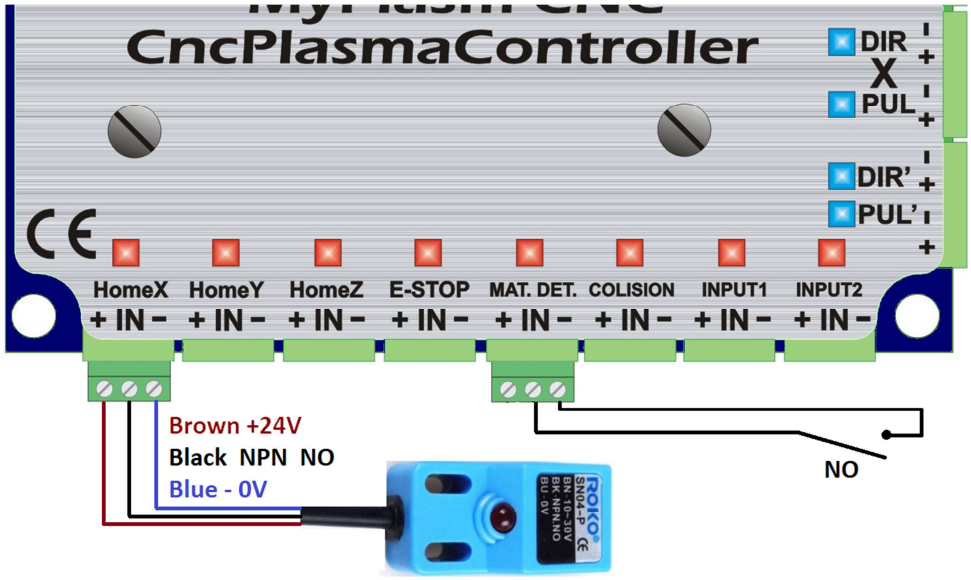
In order to connect MyPlasm CNC and Plasma Interface modules, one should use a shielded wire of the length up to 15 meters. Shielding must be connected only at the side of the MyPlasm CNC controller to Rs485 clamp.



For connection of the controller with a computer, please use only high-class USB cables!!!

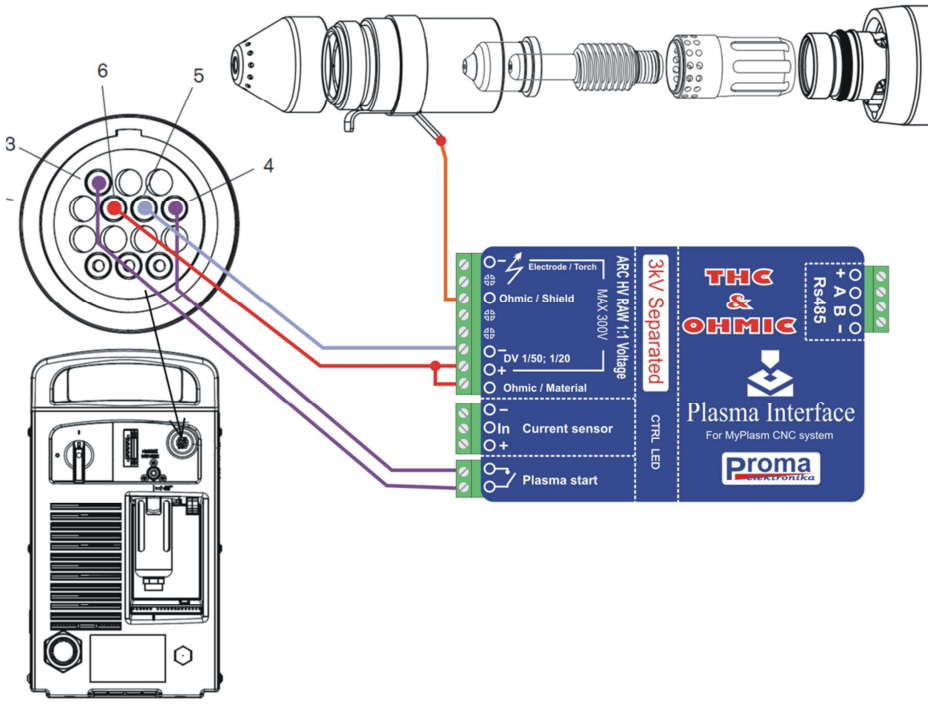
System is delivered by USB using high-class USB cables!

Exemplary connection of a mechanical termination, an induction sensor or button:



Inputs are connected to +24V at resistance of about 3.9kΩ. Activation of input is signalised by active red diode of the controller and in the application in the „Elektronika” section.

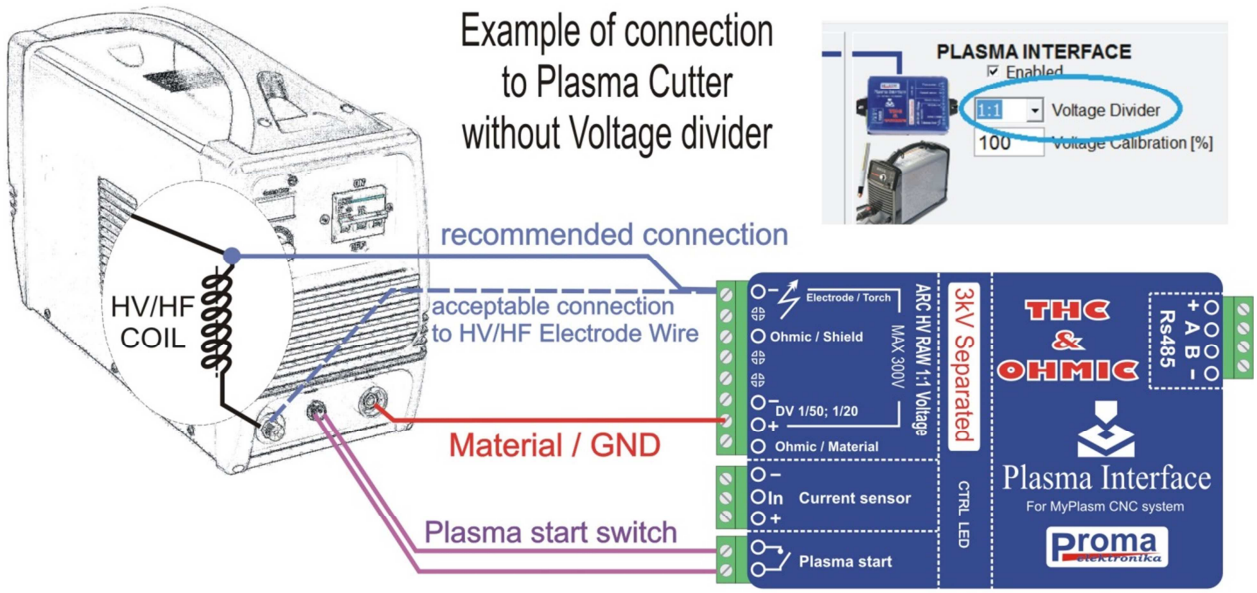
An exemplary connection with Hypertherm PowerMax cut-off machine equipped in an arc voltage divider, a CPC port, and a nozzle shield used for touch detection of material by the OHMIC SENSE module.



NOTE!!! Connection of the nozzle shield should be realised using wires of the insulation of at least of 400V!!!

A wire can have the voltage dangerous to health and life of users.

An exemplary connection with any plasma cut-off machine without an in-built voltage divider:



NOTE!!! Connections for voltage measurements should be realised using only wires of insulation of minimum 400V!!!

A wire can have the voltage dangerous to health and life of users.
