Translation

CNC-STEP GmbH & Co. KG

Installation
Enclosure with door contact switch

For High-Z-Series

Software: KinetiC-NC with CncPOD and 2 LPT-ports (V1.56)

https://www.cnc-step.com

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Enclosure with door contact switch

Short description

Underframes and enclosures, we offer in different versions. Also, special solutions on customer request are gladly implemented by us. There is an optional door contact switch for enclosures with hinged doors. These prevent the machine from operating when the doors are open. Intervention during operation is not possible.

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1 INSTALLATION

The enclosure is already delivered completely assembled.

If the machine is on a workbench, there must be enough space to support the enclosure.

The enclosure is not connected to the machine as standard and stands loosely above the machine.

On request, fixing brackets are available for firmly connecting the enclosure to the machine.

There are also suitable bases for machine and enclosure. (Ideal solution)

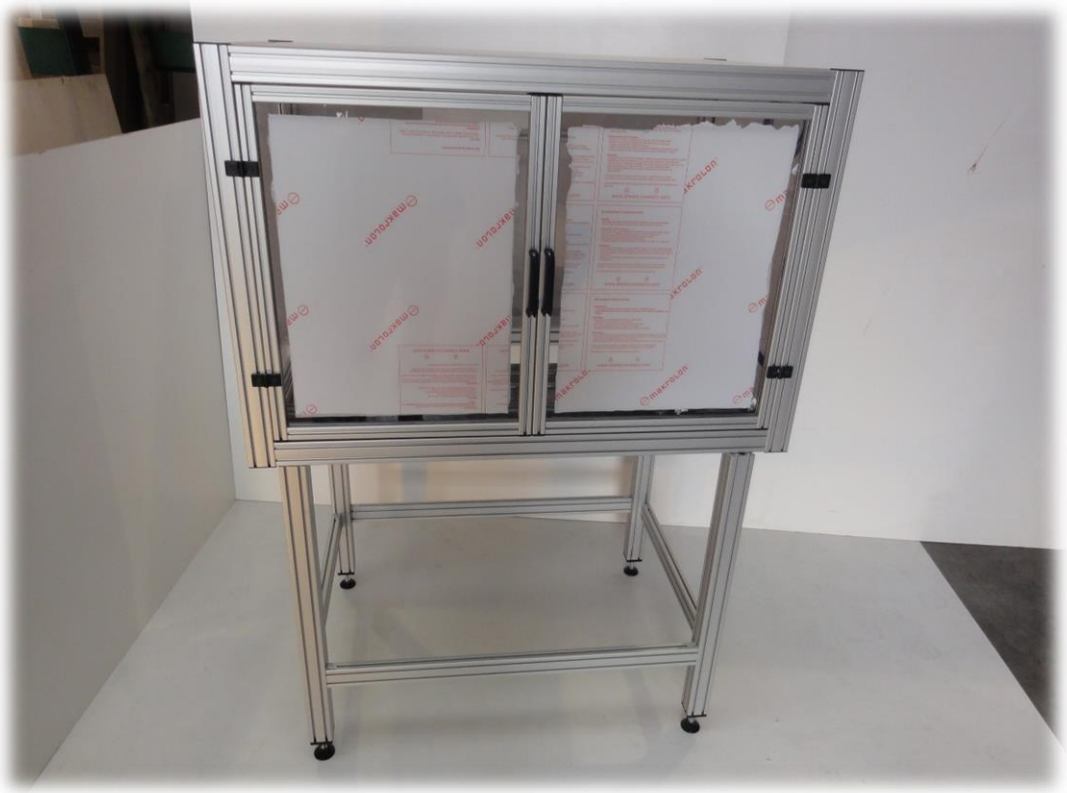


Fig.: Combination of enclosure and underframe

1.1 Door contact switch (optional)

On request, the enclosure can also be supplied with door contact switches. These prevent the operation of the system with the doors open. The machine stops controlled after opening the doors and can only be moved again after closing the doors.

2 CONNECTION POSSIBILITIES DOOR CONTACTS

There are many possibilities to connect optional accessories with Neutrik plug (Mini-XLR) such as tool length probe, 3D-pushbutton, start button or door contact switch (on safety enclosures and protective fences) to the machine or to additional hardware.
The corresponding signal pin must be assigned in the software for this purpose.

2.1 XLR-connection directly to the machine

The three machine types High-Z, T-Rex and RaptorX-SL each have an XLR connector (Neutrik)

This input is requested via PIN15 on the LPT1 port.

Attention:

However, this PIN is also required for homing the optional 4th axis (rotary axis, tangential knife, etc.).

Thus, this socket cannot be used in combination with a 4th axis or only to a limited extent!

2.1.1 High-Z-Series

XLR1 - LPT1/PIN15

Fig.: XLR connection High-Z

2.1.2 T-Rex-Series

XLR1 - LPT1/PIN15

Fig.: XLR connector T-Rex

2.1.3 RaptorX-SL-Series

XLR1 - LPT1/PIN15

Fig.: XLR connector Raptor

2.2 XLR connectors on the CncPOD-3XLR (KinetiC-NC)

The KinetiC-NC software is always delivered with the hardware CncPOD.

There is the CncPOD in two versions:

Art.-Nr.:	**3201 0001**	KinetiC-NC control software **without XLR (Standard)**
Art.-Nr.:	3201 0002	KinetiC-NC Control software 3XLR With 3 XLR-connections (Neutrik)

CncPOD - Connections front side

XLR1 - LPT2/PIN10

XLR2 - LPT2/PIN15

XLR3 - LPT2/PIN11

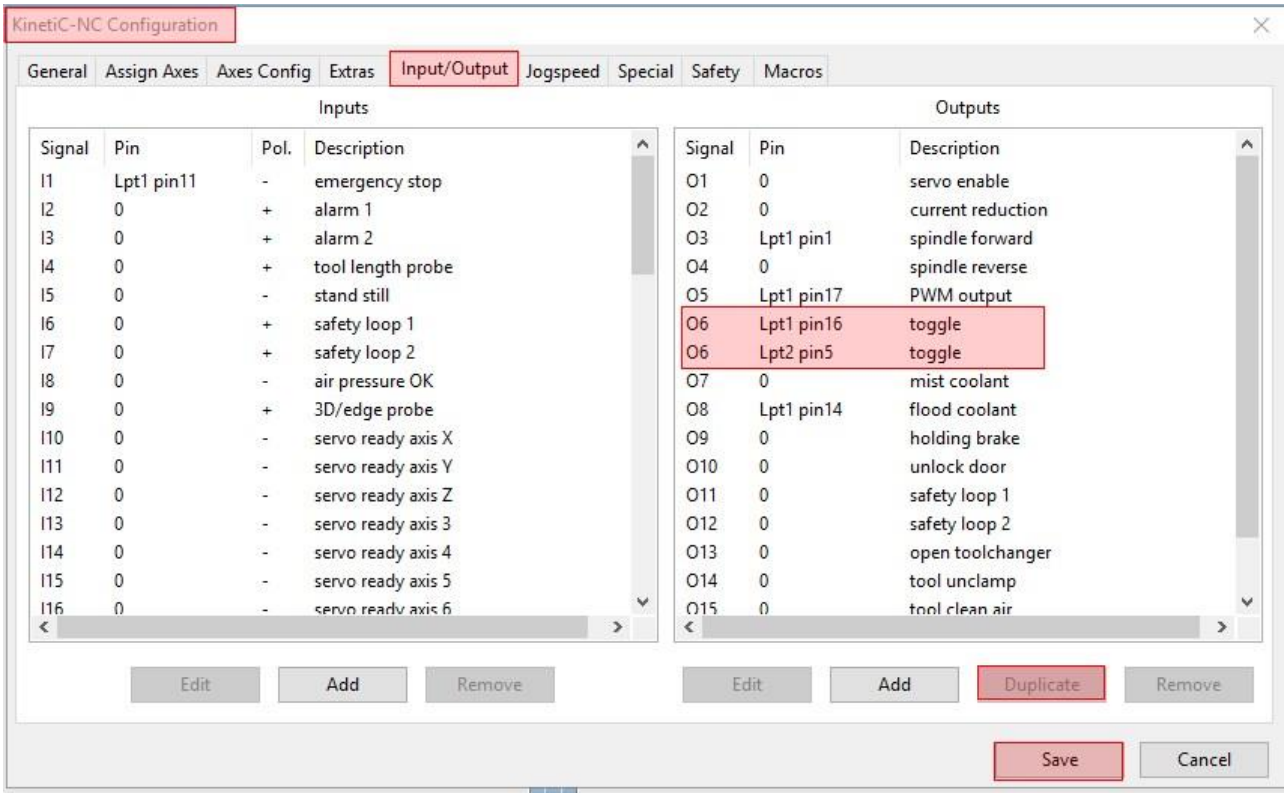
CncPOD 3XLR - Rear connections

2.2.1 Setup KinetiC-NC for CncPOD 3XLR

This version of the CncPOD requires a special configuration in the KinetiC-NC software.

The PIN5 of the LPT2 must be permanently energized (HIGH signal).

To do this, the output O6 - Toogle signal must be "duplicated" to LPT2 PIN5!



The outputs are switched off / reset after an emergency stop or after the inputs and outputs have been configured.

With this configuration, besides the Toogle signal, the PIN5 / LPT2 will be automatically re-enabled immediately to continue monitoring inputs or alarms on the LPT2.

2.3 XLR Connections of the Mechatron HF spindles

All HF spindle systems from Mechatron have 2 or 3 XLR connectors (Neutrik)

2.3.1 Cabinets without pneumatics

Switch Cabinet HFS(AC)-6508-24

XLR1 - LPT2/PIN10 active Low

XLR2 - LPT2/PIN15 active low

Switch Cabinet HFS(AC)-8022-24

XLR1 - LPT2/PIN10 active Low

XLR2 - LPT2/PIN15 active Low

XLR3 - LPT2/PIN11 active Low

2.3.2 Cabinets with pneumatics

Switch Cabinet ATC-8022-42

XLR1 - LPT2/PIN10 active Low

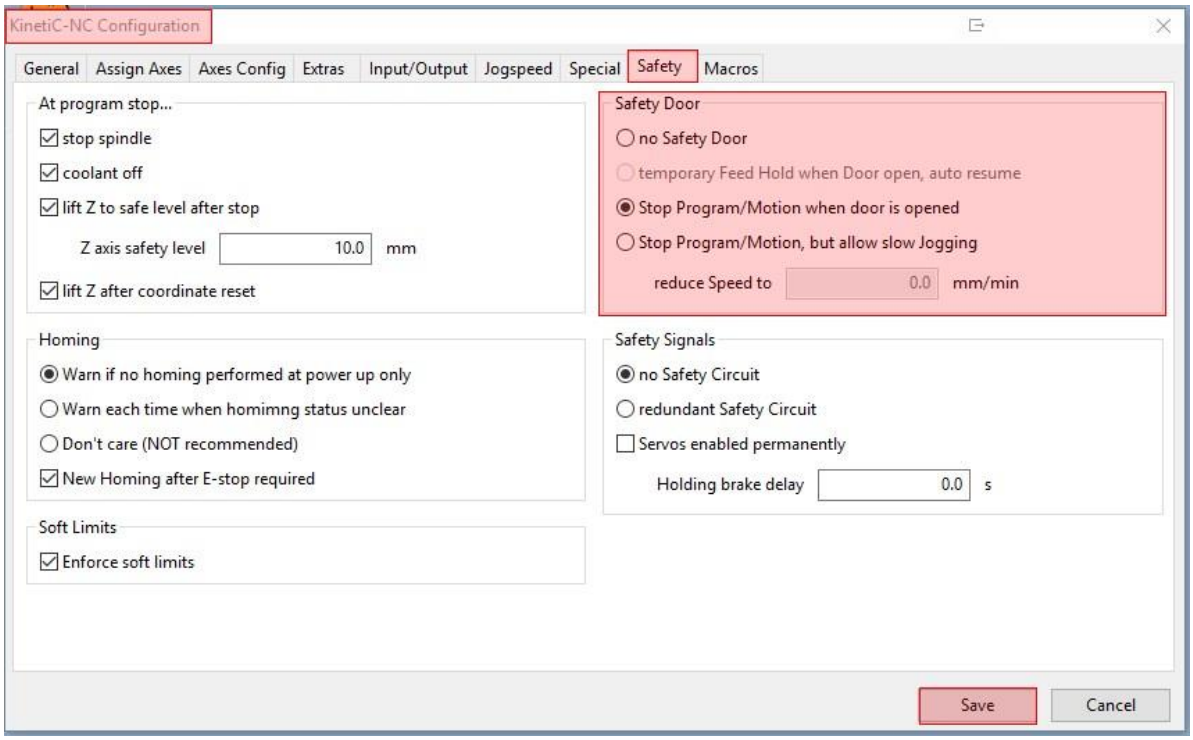
XLR2 - LPT2/PIN15 active Low

XLR3 - LPT2/PIN11 active Low

3 SETUP OF THE KINETIC-NC SOFTWARE

3.1 Activation of the safety door

The function for the safety doors / door contacts must be enabled in the software.



To do this, open the KinetiC-NC configuration and go to the "Safety" tab.

In the "Safety door" area, the desired entry must be selected.

There are three options:

1. **No safety door**
   The machine does not respond to the opening of the door (not recommended).

2. **Stop program/motion when door is opened**
   The machine stops controlled when the door is opened and moves the Z-axis out of the material to the set safety height (e.g. Z = 3.0 mm)

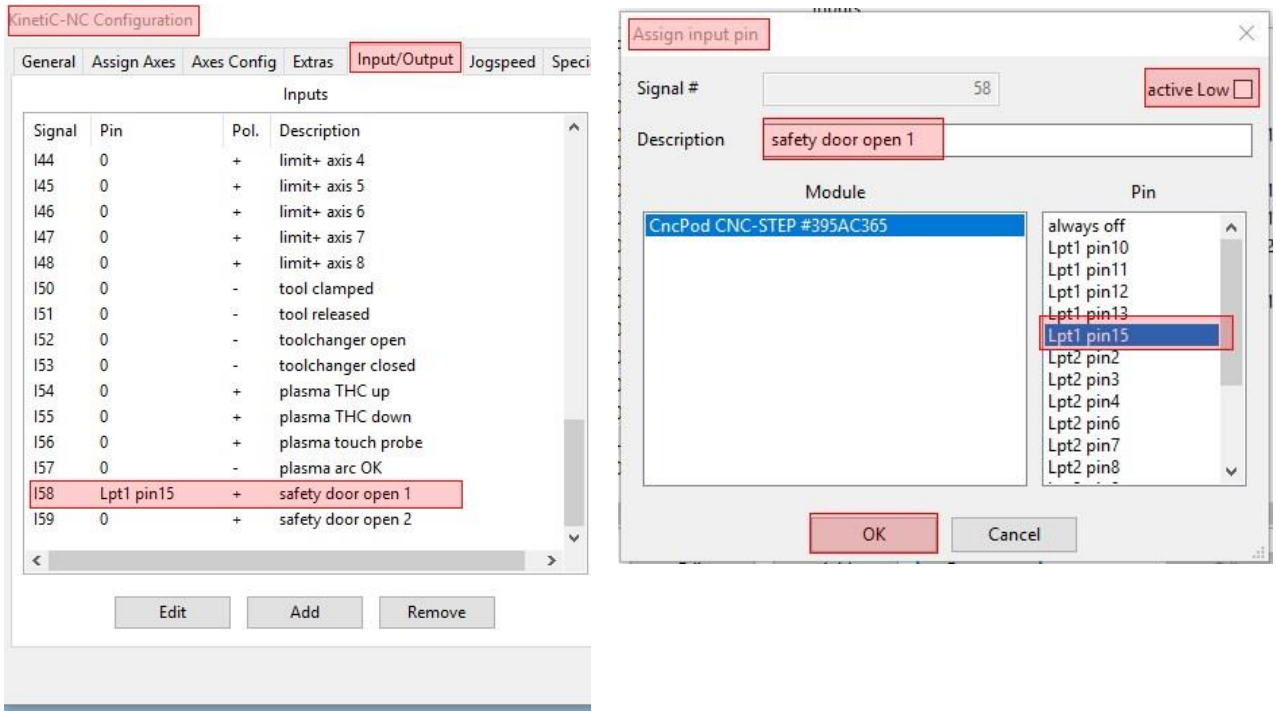
   The machine cannot be moved with the door open and no outputs (for example spindle, cooling, etc.) can be switched. The milling program cannot be started with the door open.

3. **Stop program/motion, but allow slow jogging**

   Same as option 2, but with the doors open the axes of the machine can be moved at the set, reduced feedrate (max 2,000 mm / min).

3.2 PIN assignment for the door contacts of the enclosure

The input pin of the selected connector (see chapter 2) must be assigned accordingly in the configuration of the software.



To do this, open the KinetiC-NC configuration and go to the "Input/Output" tab.

The signal input "I58 - safety door open 1" can now be marked and changed.

In the window "Assign input pin" the correct PIN of the selected connection (for example LPT1 - PIN15) has to be selected (see chapter 2).

Pay attention to the correct inversion (active Low).

The description of the entrance can also be adapted (for example in "Enclosure - Doors open")

3.3 Functional test

After setting up, the function of the door contacts should be checked. Go to the program tab "Diagnostics". There is now the enclosure at the entrances listed with a box. (Display as entered, for example, "enclosure ...") In the normal state (inactivated), no check mark may be displayed. When opening the doors, the check mark should be visible. If it is exactly the opposite, the entry must be changed to "low-active". This inverts the signal. If nothing changes, the door contact is not connected properly.

3.3.1 Display when the enclosure is open

The software displays the following icon with the doors open in the status area of the software.

4 MAINTENANCE MODE

Under certain circumstances, it is necessary to be able to drive the axes of the machine even with the doors open, or outputs e.g. for function tests or maintenance.

For this work, you can switch to the so-called maintenance mode.
This mode is only available as long as the security doors are open.

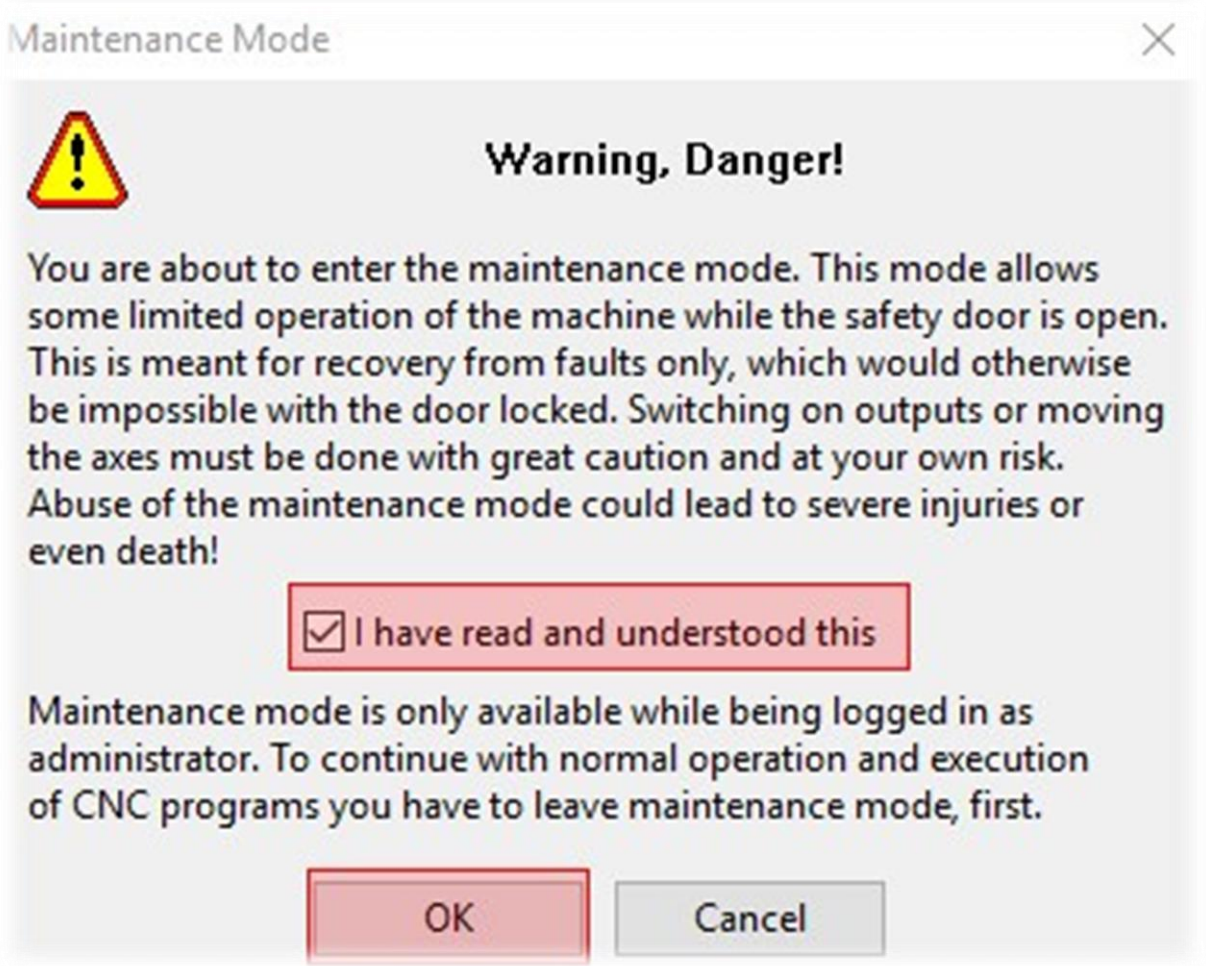
The maintenance mode can be activated in the "Setup" tab under Functions.

The maintenance mode can only be activated by a user with admin rights (foreman, master, machine setter).

Registered standard users receive this information!

4.1 Safety notice

The employee with the necessary rights can switch on the maintenance mode after confirming the warning.



After closing the safety doors, the software automatically quits the maintenance mode.

5 CUSTOMER SERVICE

For technical information please contact our customer service:

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If you have any questions, please contact our customer service by e-mail or telephone. We are happy to help.

Numerous suggestions and information can also be found on our website:

https://www.cnc-step.com