

Installation Guide - ZX5 Electrical

This guide is to be used for all of the electrical connections when installing a ZX5 machine.

Contents

Electrical Connections:

Module A (Machining Centre Infeed Table)

Main Power In:

Connections between Module A and Module B:

HDMI connection for Module A console:

Earth Bonding:

Module B (Machining Centre)

Main Network Supply:

External Connections:

Earth Bonding:

Module C (Machining Centre Outfeed Table)

Module C far end connections:

Module D (Transfer Table)

Module E (Sawing Centre Infeed Table)

Saw end basket cables:

Extraction end basket cables:

Module F (Sawing Centre)

Cabinet rear connections:

Module G (Sawing Centre Outfeed Table)

Connections from Module F rear trunking:

Earth bonding:

Misc

Comments



...This guide is intended to be used after the mechanical installation of the machine has been completed.

Electrical Connections:

Module A (Machining Centre Infeed Table)

Main Power In:

Module A is where the factory mains supply comes into the machine. A cable is supplied on the machine and this needs to be terminated appropriately according to the termination method given in the customer factory.



...The mains power should be the last connection made to minimise electrical risk.

Connections between Module A and Module B:

There will be 3 cables coming from the Machining Centre module that need to be connected to Module A. The cables are as follows:

- CBA-B - 25Core x 1.5mm YY cable with a 25way male ILME plug attachment. This cable plugs into the rear of the Module A electrical cabinet in the 25way ILME socket.
- ENAB - 7.0m yellow network cable. This cable goes through the bottom brush strip and into the rear of the Module A electrical cabinet. The cable plugs into the top RJ45 port in the Beckhoff IPC unit.
- ECAB - 7.0m green network cable. This cable goes through the bottom brush strip and into the rear of the Module A electrical cabinet. The cable plugs into the bottom RJ45 port on MC1A (EK1100 Beckhoff bus coupler slice).

HDMI connection for Module A console:

There will also be a HDMI cable coiled up on Module A that needs to be run to the Module F electrical cabinet. The HDMI cable needs to be run through the Machining Centre, down the Transfer basket tray and into the bottom brush of the Module F electrical cabinet. The HDMI cable then plugs into the HDMI port in the front end PC.

Earth Bonding:

An earth bond will be loose that needs connecting to the Machining Centre frame. The connecting point will have an 'Earth' sticker as reference.

Module B (Machining Centre)

*The electrical cabinet attached to Module B is hinged and will need to be opened up. This should already have been done to be able to mechanically install the machine.

Main Network Supply:

Module B is where the network from the factory comes into the machine. A network cable with an RJ45 plug will need to be supplied by the customer and this will need to be connected into the top port of the yellow ethernet switch inside the Module B electrical cabinet.

External Connections:

Module B cabinet will be completely wired but it will have a number of cables coming out of the back that need to be connected to external devices. The connections that need to be made are as follows:

- CBX - Servo cable for X axis. Plugs into CBX1 behind Module B electrical cabinet.
- CBSX - Servo cable for SX axis. Runs from Module B electrical cabinet, across the Transfer basket and plugs into CBSX1 on Module E basket tray.
- CBSR - Servo cable for SR axis. Runs from Module B electrical cabinet, across the Transfer basket and plugs into CBSR1 behind Module F electrical cabinet.
- CB20C - Power cable for the etherCAT boxes on the back end. Runs from behind Module B electrical cabinet, into Module C basket tray and plugs into FB01C etherCAT box.
- EC01C - Network cable for the etherCAT boxes on the back end. Runs from behind Module B electrical cabinet, into Module C basket tray and plugs into FB01C etherCAT box (green ports).
- CB40C - Safety cable for Transfer gate. Runs from behind Module B electrical cabinet, half way across Transfer basket tray and across to the hinge switch on the gate between the Machining Centre and Sawing Centre.
- CB01C - Crank motor power cable for Module C crank. Plugs into CB01C1 behind Module B electrical cabinet.
- CB02C - Crank motor power cable for Module D crank. Plugs into CB02C1 behind Module B electrical cabinet.
- CB43C - Safety cable for back end ESTOP and safety gates. Plugs into CB44C behind Module B electrical cabinet.
- CB47C - Safety cable for middle ESTOP on Module C. Plugs into CB48C behind Module B electrical cabinet.
- CB02E - Crank motor power cable for Module E crank. Runs from behind Module B electrical cabinet, across the Transfer basket and plugs into CB02E1 at the end of Module E frame work.
- ENBF - 7.0m yellow network cable. Runs from the back of the Module B electrical cabinet, across the Transfer basket tray and into the bottom brush strip of Module F electrical cabinet. Inside the cabinet, the RJ45 plugs into the yellow ethernet switch.
- ECBF - 7.0m green network cable. Runs from the back of Module B electrical cabinet, across the Transfer basket tray and into the bottom brush strip of Module F electrical cabinet. Inside the cabinet, the RJ45 plugs into the top RJ45 port on MC1F (EK1100 Beckhoff bus coupler slice).
- PoEBF - 7.0m red network cable. Runs from the back of the Module B electrical cabinet, across the Transfer basket tray and into the

bottom brush strip of the Module F electrical cabinet. Inside the cabinet, the RJ45 plugs into the RJ45 socket-socket connector which has a grey network cable in the other side. This connects the Sawing Centre camera, to the PoE network hub in the Module B electrical cabinet.

- CBB-F - 25Core x 1.5mm YY cable with a 25way female ILME plug attachment. This cable plugs into the rear of the Module F electrical cabinet in the 25way ILME plug.

Earth Bonding:

2 earth bonds will be coming out of the Module B electrical cabinet, 1 of them needs to be attached to the frame work on Module C and the other runs from behind the back of the Module B electrical cabinet, across the Transfer bracket and connect to the Module E frame work. All fixing points will be marked with an 'Earth' sticker.

Module C (Machining Centre Outfeed Table)

*Most of the cables from the basket at the Machining Centre end will already have been connected from the Module B steps above. Cables CB23C and EC04C will be the only ones left and they need to run from the end of the Module C basket, into the Transfer basket and plug into FB04C (Flapper Paddle) box.

Module C far end connections:

- CB44C - Safety cable for back end ESTOP and safety gates. Plugs into CB45C in the far corner of the machine.
- CBX330 - Supply cable for OBEAM sensor at the far end of machine. Plugs into CBX330B in the far corner of the machine.

*Hinge cables CB41C and CB42C will need to be run from the back end buffer beam box to the hinges on the rear end safety gates.

*The far end and middle ESTOPS will need to fixed to the Maytec post/ Fencing panel respectively. Fixings will be provided.

Module D (Transfer Table)

All connections related to Module D will be referenced from the other modules.

Module E (Sawing Centre Infeed Table)

Saw end basket cables:

The cables coming out of the end of the basket at the saw end connect as follows:

- CB40E - Safety cable for Module E middle ESTOP. This plugs into CB41E which is coming out of the trunking on the rear of the Module F electrical cabinet.
- CB44E - Safety cable for Module E end ESTOP. This plugs into CB45E which is coming out of the trunking on the rear of the Module F electrical cabinet.
- CB03F1 - Supply cable for the extraction motor. This plugs into cable CB03F which is fixed to the back of the Module F electrical cabinet.
- CB24C - Power cable for the etherCAT boxes on Module E. Cable needs to be run into the Transfer basket and plug into the 'Out' port on FB04C (Flapper Paddle) box.
- EC05C - Network cable for the etherCAT boxes on Module E. Cable needs to be run into the Transfer basket and plug into the 'Out' green port on FB04C (Flapper Paddle) box.

Extraction end basket cables:

- CB03F1 - Supply cable for extraction motor. This cable needs to run along the rear buffer beam and then across to the plug connection attached to the extraction unit.

*The far end and middle ESTOPS will need to fixed to the Maytec post/ Fencing panel respectively. Fixings will be provided.

Module F (Sawing Centre)

*Most connections into the Sawing Centre have been done at this stage.

Cabinet rear connections:

- CB02F1 - Supply cable for the conveyor motor. Plugs into CB02F which is mounted on the rear of the Module F electrical cabinet.

Module G (Sawing Centre Outfeed Table)

Connections from Module F rear trunking:

- CBX134 - Plugs into CBX134A
- CBX135 - Plugs into CBX135A
- CBX189 - Plugs into CBX189A
- CBX190 - Plugs into CBX190A
- CBY87 - Plugs into 2way valve bank on Module G frame
- CBY94 - Plugs into CBY94A
- CBY95 - Plugs into 2way valve bank on Module G frame

Earth bonding:

An earth bond will be left loose between Module F and Module G. The earth bond needs to be fixed and the fixing point will be referenced with an 'earth' sticker.

*The printer network and power cables will be wrapped in with the Module F console cables. When printer is fitted, cables can be connected.

Misc

Once all connections have been made, the terminals around the machine should be checked for tightness. Most terminals are now 'screwless' but the ones that are not have the potential to come loose during transportation and should be checked.

The machine will be sent with the guard switches set to 'Unlock'. Before the machine can be run, these switches will need to be locked.

Check all estops are pulled out.