

GCnC *SERVO CONTROL*



Acorn[®]



Acorn Modular Control

2024

New for 2024

GCnC Control is proud to introduce a new, easy to connect and setup modular CNC controller for retrofit upgrades and new systems utilizing the Centroid Acorn controller designed for Teknic ClearPath DC servos.

If you are planning a new system or looking to upgrade your existing system and wish to take advantage of all the benefits of Teknic's ClearPath servos, this modular controller is built for you.

Whether you have a lathe, mill router table or a special purpose CNC machine, upgrading it to ClearPath servos will add smooth quiet power far beyond what a stepper motor can deliver for a price not much more than a closed loop stepper based system will cost.

Built with ATC in mind, our 14 pin connector allows CNC Depot or AVID ATC (or standard) spindle modules to seamlessly connect and utilize all of that OEM's features.

Start with a standard spindle now and upgrade to ATC later

Features:

Includes Lenovo CNC-PC, Centroid "Pro" License & Setup

Compatible with most brands of stepper-based CNC machines

C86ACCP interface for multiple motor connection options

Up to 4 axis (5 motor) control (2 on X or Y, Z, plus Rotary)

Plug connections to CNC Depot or AVID standard or ATC Spindles

Logic, Speed & Fault VFD Harness for most VFD brands

PWM (Jtech Engraving Type) Laser connections

Fixed or Portable Tool Measure Devices

Supports powered (24v) Probes with detect signal

1 or 2 Teknic Power Supplies

Independent Gantry Autosquare

Door Mounted Loadbreak Power Switch

IO connections via aircraft style connectors (AVID compatible)

Supports NO or NC homing sensors or switches

Up to 4 Air Solenoids can be controlled via software

Router Logic (on/off) remote Switch

Multiple ClearPath power wire connection options

Remote Control Modules for Vacuum, Dust Collection, etc.

Ala Carte option pricing, pay for only what you need

Notes:

- 1) Some features are optional at additional cost
- 2) Not all feature combinations are compatible due to IO limitations

Case Features



16 Gauge Powder Coated Steel Case with removable door and dual latches

40 Amp (or greater) loadbreak door safety switch

Air/Hydraulic Punched Case Openings

Mounting bracket kit included

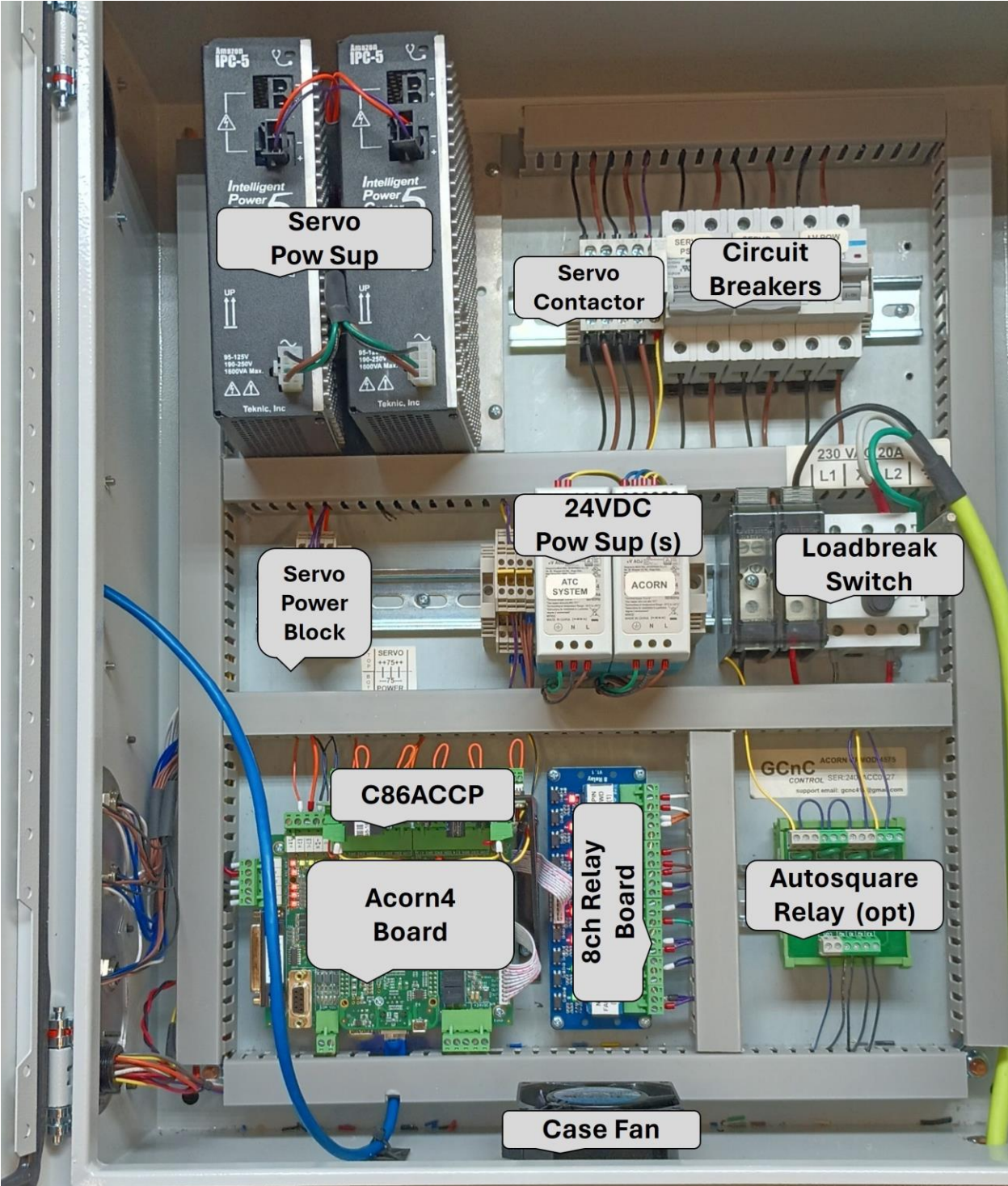


Gasketed Wire Entry with Wire Retainer

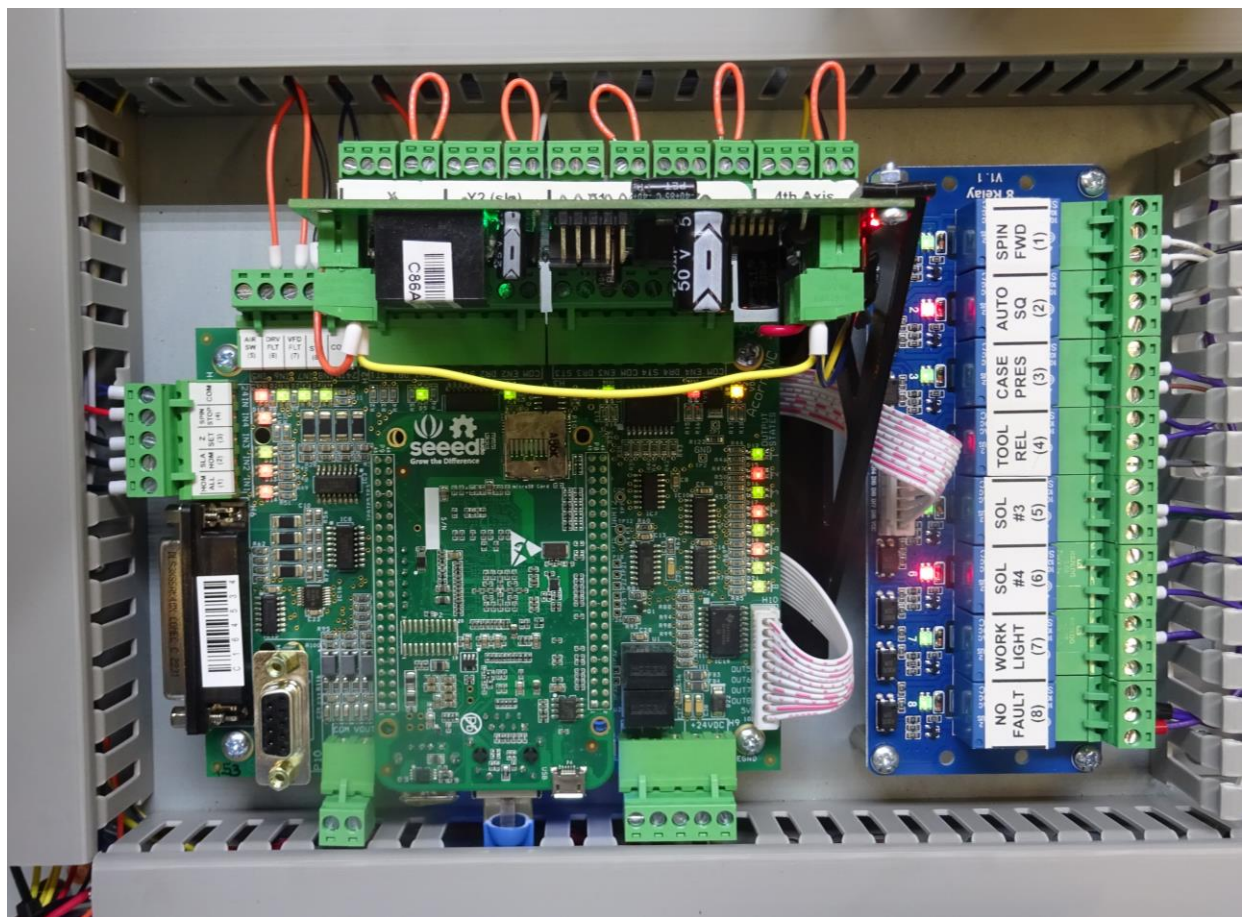
Modular IO Panel



Electronic Component Features

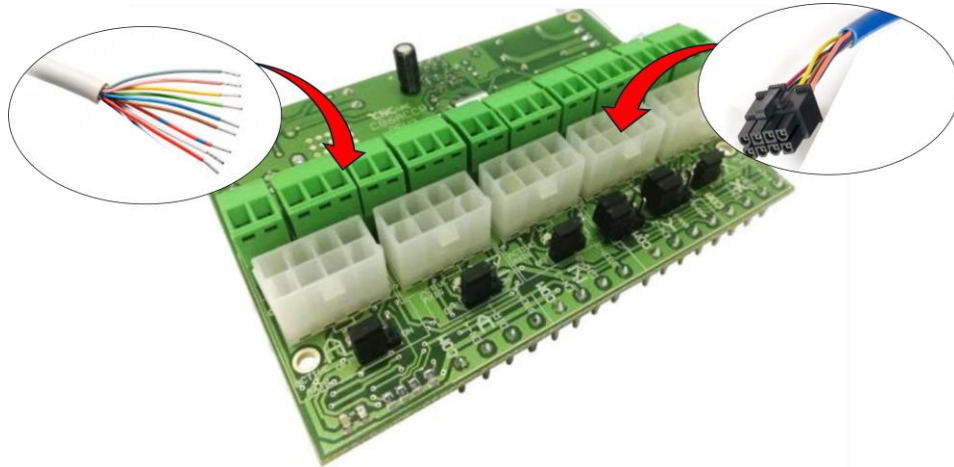


- Laser cut 16ga galvanized backplanes
- Quality components
- Wire Duct organization
- Wire ferrules on all connections
- All components protected by circuit breakers
- C86ACCP Support Bracket
- Case fan provides 4 air changes per hour
- IO Connections labeled (see below)



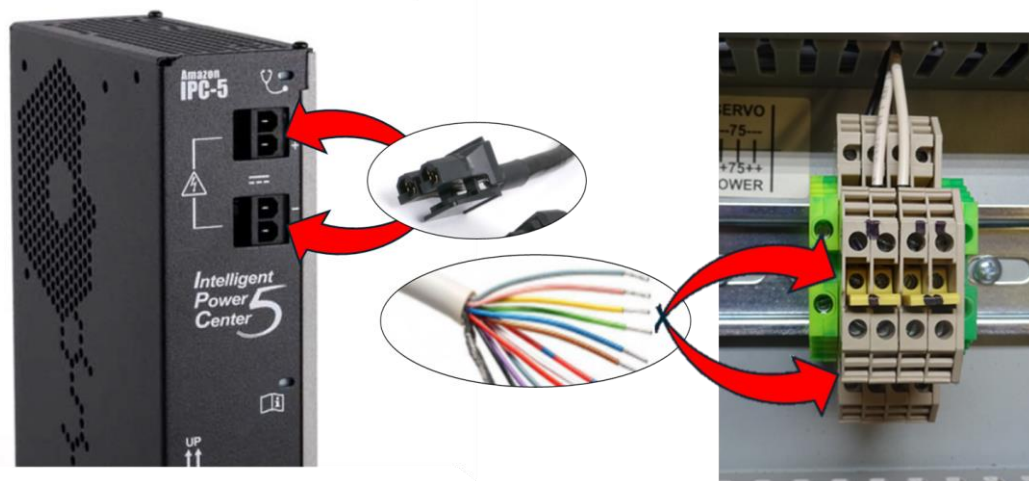
ClearPath Motor Connection Options

Control Cables:



ClearPath control cable can be connected to the C86ACCP interface board by installing user cut lengths into (green) terminal blocks, or by plugging Molex MiniFit Jr plugs into the onboard Molex sockets.

Power Cables:



Teknic Power Cables can be connected by plugging the OEM Sabre connectors into the power supplies directly or by user cut wires into provided terminal blocks.

Input/Output/Accessory Panel

Connections:



M12 Axial connectors for X, Y, Z & Slave Homing Sensors or switches

M12 Axial connectors for Tool Measure Device and Estop

14 Pin connector for Spindle and/or ATC Spindle

Compatible with all AVID Spindle Modules

Compatible with all CNC Depot Spindle Modules

Compatible with all GCnC Spindle Kits

Lenovo CNC-PC



Lenovo CNC-PC Specs:

Intel i5 processor

16GB RAM, 256GB SSD Hard Drive

WIFI & Bluetooth, 6 USB ports, 1 LAN Port

2 Display Ports & 1 HDMI Port, Mic & Headphone Port

Latest version Centroid CNC12 software installed (Mill, Router, Lathe)

Centroid Pro License included (Mill, Router, Lathe)

System is setup, tested and burned in for a minimum of 72 hours

*User provided Monitor, Keyboard and Mouse

Accessories:

ESTOP Switches:



Remote Estop



Remote Estop & Reset Button

Estop:

- Comes with ~10' cable and M12 Connector
- Direct plug to IO panel

Estop & Reset Button:

- Comes with ~10' cable and M12 Connector
- Direct plug to IO panel
- Adds additional level of safety by adding a physical, rather than electronic, break into the estop safety circuit
- Cable extensions available

Note: System must have a normally closed estop or estop jumper installed in the estop plug to operate

Tool Measure Switch:



Fixed Tool Measure Switch

- Comes with 6.5' cable & M12 Plug
- Direct plug to IO Panel
- ~0.030" spring loaded travel to activate
- Optional overtravel contacts can be used
- Extension Cables available

Cable Accessories:



M12 Extension Cables



Proximity (Homing) Sensors

M12 Extension Cables:

- Male to Female configuration
- Available in 1, 2, 3, 5,7 and 10 meter lengths (3, 6,10,16 and 31 ft)
- Available with straight or 90 degree ends

Proximity Sensors and Cables:

- Available in 8mm & 12mm diameters
- Normally Open or Closed configuration
- Mounting Blocks & Brackets available

Accessory Cables & field Wireable Connectors:



Control Accessories:



Universal Spindle Harness:

- Provides spindle speed, logic (on/off) and fault signals to most VFD's
- Plugs directly into the IO Panel
- Connection diagrams for all but the rarest of VFD's
- ~10' six wire shielded cable
- Custom Lengths available

Control Accessories:



Remote Router Control Box:

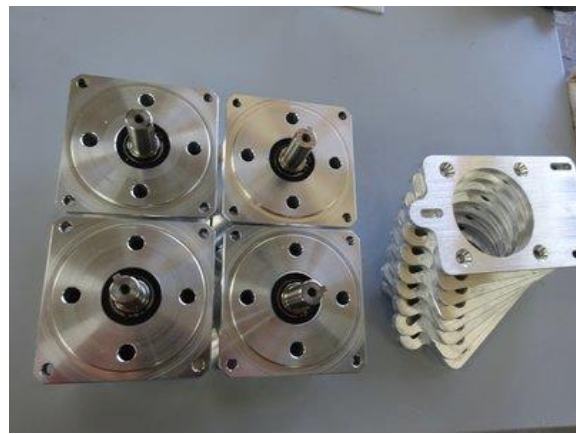
- Compatible with 110 volt routers under 15 amps only
- On/Off control only
- ~10 remote Shielded Cable
- Direct Plug into IO Panel

ShopBot Gearbox & Adapters:

We offer a full line of planetary gearboxes in 5:1 & 10:1 with bolt-up and swing plate adapters for ShopBot PRS, PRT and Buddy Models. Each setup comes with an adapter, planetary gearbox, pinion gear and is fully assembled except for the motor. Motor installation instructions are included.



PRS Plate, gearbox & Motor



Gearboxes & PRS Plates



PRT Z Plate & X-Y Swing Plates



Pinion Gears

Standard Features:

Our standard build comes with the following features:

- Fan cooled 20w x 24h x 8d powder coated gasketed steel control box
- Safety interlock loadbreak door switch
- Gasketed wire entry with retainer, cable glands
- Laser cut backplanes with tapped component mounting holes
- Lenovo CNC_PC, setup, tested with Centroid Pro license
- Mount bracket, breaker & wiring for one Teknic IPC5 power supply
- Centroid Acorn 4 axis Control board, 3 axis (XYZ) 4 motors
- Higher output (60 watt) DC power supplies (2 on ATC control)
- Spindle Speed & Logic (on/off)
- 24VDC Spindle Fan Terminals (with delay off control)
- Estop safety circuit cuts power to servos on activation
- Prewired Output relays (24V)
- C86 ACCP ClearPath connection interface board
- Circuit Breaker protection for all components
- Wire Ferrules on all connections
- All input, output and user connection terminals labeled
- All C86ACCP Teknic motor control connections labeled
- All Teknic servo power connections labeled
- Quality components throughout
- 1 year workmanship warranty

Optional Features:

The following feature can be added to customize your build:

- Avid & CNC Depot ATC Components & Circuitry
- CNC Depot Modular ATC Spindle Kits
- 2-5 HP Modular Spindle Kits
- Centroid Wireless MPG Pendant & User Macros
- Independent Gantry Autosquare
- 4th Axis Rotary
- Engraving (JTech type) Laser Connections
- 2nd IPC-5 Mount, Breaker & Wiring
- Fixed Tool Measure Switch (ATC)
- Remote Estop & Estop with Reset Button
- Relay module for NC Homing Sensors (ShopBot & others)
- 8 & 12mm proximity sensors with cables
- 8 & 12mm Cable extensions and adapters
- Custom length 12mm accessory cables
- Custom length Teknic Control Cables (6" increments)
- Custom Length Teknic Power Cables (6" increments)
- Wiring for Teknic Power Hub
- Planetary Gearboxes (5:1, 10:1) for ShopBot PRS, PRT, Buddy
- Gearbox adapter plates for ShopBot PRS, PRT, Buddy