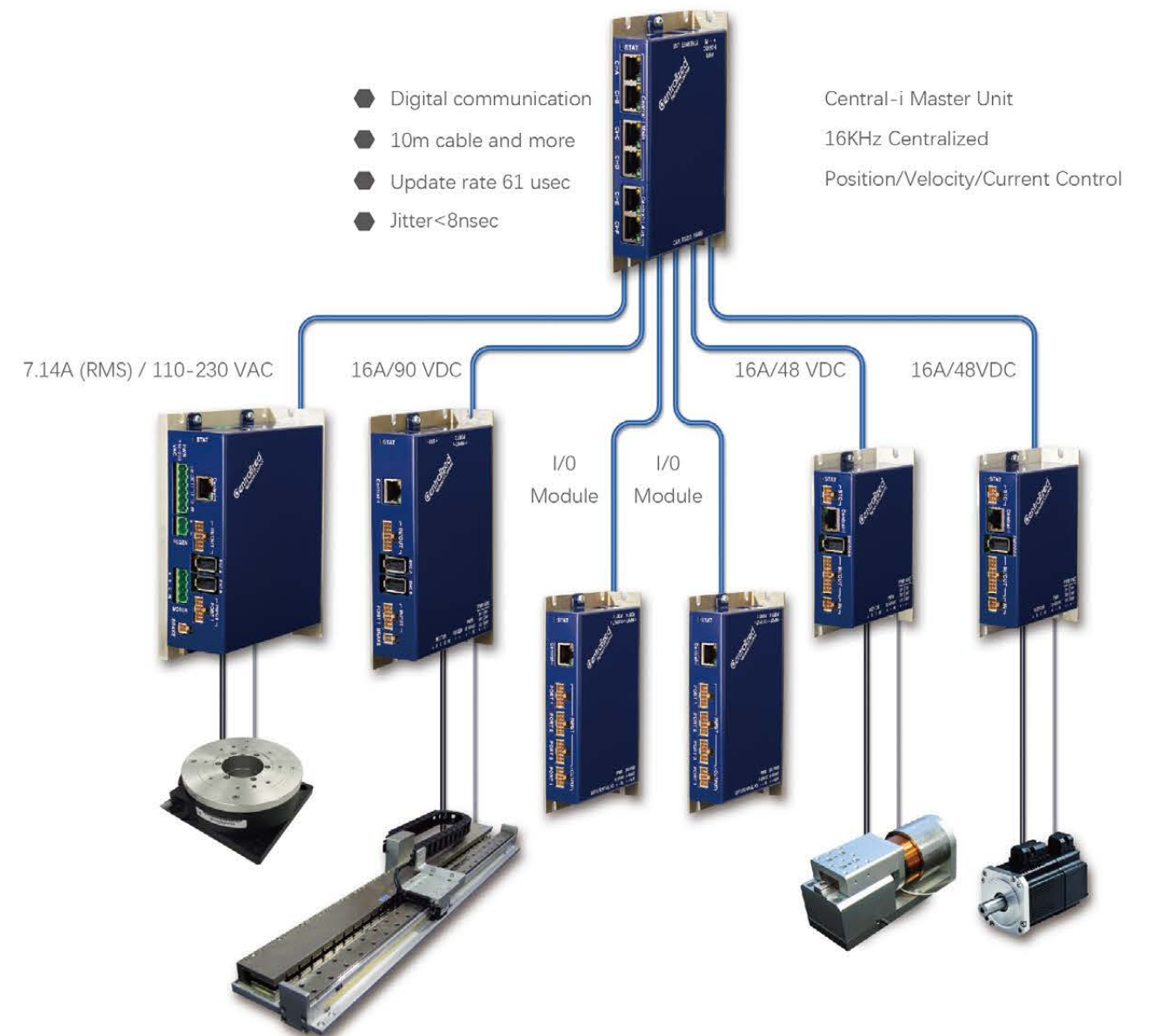




Centralized Network Control

Central- i Topology



Central-i (patent pending) is an innovative control system topology. Using Central-i, all the trajectories and control loops are performed by a central, intelligent powerful master unit. The master controller communicates with simple, low cost remote devices. The communication is fully synchronized down to 61 micro-seconds within 8 nano-seconds jitter. The master has all the system information at any time.

- Auto Tune
- CNC and blending motions
- System Identification
- Error mapping: 1D, 2D and 3D
- Frequency Domain Analysis
- 16KHz Control Cycle
- Multi axes motions
- Vibrations suppression

Central-i Product Family

Central-i Master – MAS01

- Multi-Axes Centralized Motion Controller
- 16kHz position, velocity and current loop
- PIV + Bi-Quad Filters + FeedForward
- Ethernet, USB, CAN,RS232 and RS485 communication



Central-i DC Amplifier – AMP01/AMP02

- Up to 90VDC, 16A peak, PWM output
- Support Brushed/Brushless/Stepper, Linear & Rotary motors
- Built-in I/Os, Safety Inputs



Central-i AC Amplifier – AMP50

- 110~230VAC, 7.14A (RMS), PWM output
- Support Brushed/Brushless, Linear & Rotary motors
- Built-in I/Os, Safety Inputs



Central-i Peripheral Devices

- IOC01 – 16 Digital Input, 8 Digital Output, 2 Analog Input, 2 Analog Output
- IOC02 – 32 Digital Input, 16 Digital Output, 2 Analog Input, 2 Analog Output
- ADP01, ADP02 - 3rd party driver adapter, +/-10V command

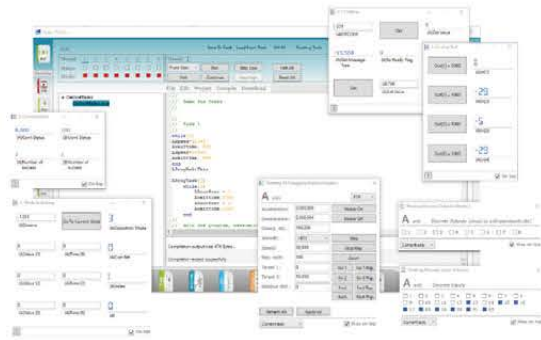
Control Features

| | |
|-----------------------|---|
| Communication | Ethernet, USB, CAN Bus, RS-232, RS-485 |
| Motor types | DC Brush/Brushless, Stepper (open/closed loop) Rotary/Linear |
| Sampling rate | 61µsec (16KHz), position, velocity and current loops |
| Motions | PTP (+ repetitive), Jog, Master/Slave, ECAM, Joystick. FIFO, Multi axes, CNC (+blending) |
| Control filters | PIV control with 2 bi-quad filters Auto adapt to inertia changes True Gantry Vibration suppression |
| Gain scheduling | 5 sets, 10 methods |
| Frequency domain | Identification Auto Tune, basic and expert (shaping to requirements) Model and simulation |
| Encoder types | Incremental SIN/COS Absolute |
| Feedback functions | Capture Event (fixed gap and by table) Error mapping (1D, 2D and 3D), huge table size 1/T |
| I/Os | Isolated Programmable functionalities NPN or PNP for inputs (groups of 4) Sink/ Source 500mA outputs, programmable per output Analog I/Os, programmable interface |
| Safety Protections | STO High errors Short High speed Disconnected encoder High current Motor Stuck |
| Limit Protections | Continuous current limit - i2t Position software low/high limits Position hardware limits |
| User program (script) | Up to 8 threads |

controller

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Akribis PC Suite Software

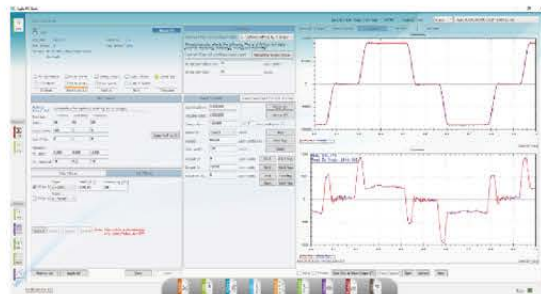
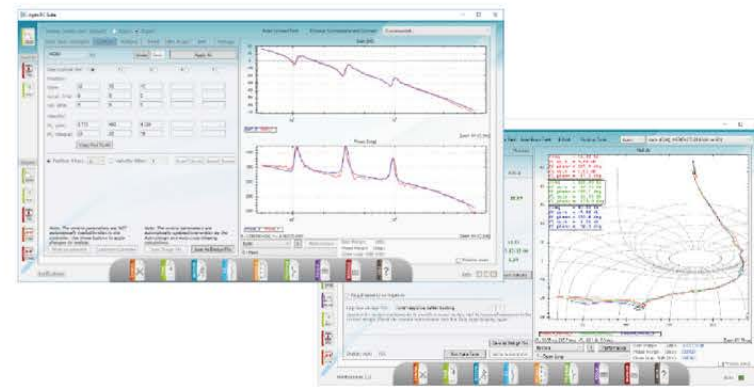


Full-Feature Software Tools

- Configuration Wizard
- Floating Window Tools
- User Configurable Panels
- I/O Configuration and Testing
- Auto and Manual Tuning
- PTP, Jog and Multi-Axis Motion
- User Program Development
- Vibration Suppression, Input Shaping

Auto-Tuning

- System identification (Fast or Sine Sweep)
- Flexible control of excitation signals
- Auto loop shaping optimization
- Automatic filter design
- Time-domain performance estimation



PIV Control Algorithm

- 16kHz position-velocity-current loop
- Velocity and acceleration feed-forward
- Flexible gain scheduling
- Velocity and position loop filters



Other Utilities

- Data Recording and Analysis
- ECAM table
- Encoder error compensation



Central-I Part Numbering

Central-I Controller With Connector Kits

| | |
|--|---------------|
| Central-I 4-axis Master Controller with connectors | Ci-MAS01 |
| Central-I DC Amplifier 01 (Bus Voltage up to 90Vdc) | Ci-AMP01-0511 |
| Central-I DC Amplifier 01 Connector Kits | Ci-AMP01-CK |
| Central-I Communication Cable STP (Shielded Twisted Pair) , 0.3m length | C-Ci-STP-0.3 |
| Central-I DC Amplifier 02 (Bus Voltage up to 48Vdc) | Ci-AMP02-0511 |
| Central-I DC Amplifier 02 Connector Kits | Ci-AMP02-CK |
| Central-I Communication Cable STP (Shielded Twisted Pair) , 0.3m length | C-Ci-STP-0.3 |
| Central-I AC Amplifier 50 (Bus Voltage up to 230Vac) | Ci-AMP50-0307 |
| Central-I AC Amplifier 50 Connector Kits | Ci-AMP50-CK |
| Central-I Communication Cable STP (Shielded Twisted Pair) , 0.3m length | C-Ci-STP-0.3 |
| Central-I IO module 01 - 16in 8Out | Ci-IOC01 |
| Central-I IO module 01 Connector Kits | Ci-IOC01-CK |
| Central-I Communication Cable STP (Shielded Twisted Pair) , 0.3m length | C-Ci-STP-0.3 |
| Central-I IO module 02 - 32in 16Out | Ci-IOC02 |
| Central-I IO module 02 Connector Kits | Ci-IOC02-CK |
| Central-I Communication Cable STP (Shielded Twisted Pair) , 0.3m length | C-Ci-STP-0.3 |
| Central-I External Driver Adapter 01 | Ci-ADP01 |
| Central-I External Driver Adapter 01 Connector Kits | Ci-ADP01-CK |
| Central-I Communication Cable STP (Shielded Twisted Pair) , 0.3m length | C-Ci-STP-0.3 |
| Central-I External Driver Adapter 02 | Ci-ADP02 |
| Central-I External Driver Adapter 02 Connector Kits | Ci-ADP02-CK |
| Central-I Communication Cable STP (Shielded Twisted Pair) , 0.3m length | C-Ci-STP-0.3 |

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