EMERSON
Industrial Automation

AC & DC Drives, Servos and Drive Systems

Product Overview

0.25kW to 1.9MW
100V, 200V, 400V, 575V, 690V

CONTROL TECHNIQUES
www.controltechniques.com

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Control Techniques' drives offering a unique set of benefits

Control Techniques, a division of Emerson, brings a unique set of benefits to OEMs, system integrators and end-users alike.

1 High quality design and manufacture

Control Techniques uses advanced modelling and simulation methods together with comprehensive type testing to achieve premium quality and reliability of design. Products are manufactured using high quality materials and components, ensuring the robustness and performance of your drive over a long and productive life.

2 Maximum motor performance

Control Techniques' Unidrive, Mentor, Commander and Digitax brands are synonymous with motor performance and we have an established reputation for unbeatable closed loop and servo drive technology. Our Rotor Flux Control (RFC) function gives near closed loop performance with open loop AC motor installations.

3 Easy to use

Control Techniques' products are designed to be easy to fit, connect and configure. Autotune functions take the time and complexity out of tuning to give great performance with minimal effort. Easy to use software tools provide a friendly and functional user interface for configuration, troubleshooting and backing up of drive settings.

4 Onboard intelligence

Control Techniques' drives feature integrated programmable controllers. By eliminating control loop delays, onboard intelligence can significantly increase the overall system performance and often allows the removal of external programmable logic and motion controllers, reducing costs and panel space.

5 Twenty four - seven

Our fieldbus connectivity options allow the drives to integrate seamlessly with virtually any new or existing automation system. Ethernet allows remote drive access for configuration, monitoring and troubleshooting across the globe 24/7.

6 Optimum power-to-size ratio

Control Techniques' products are among the most compact on the market. Extensive use of advanced plastic materials reduce the size and weight whilst increasing mechanical strength.

7 All around the world, just around the corner

Control Techniques is a global player with manufacturing and Engineering and Design (E&D) facilities in Europe, America and Asia. Our Drive and Application Centres in 53 locations in 31 countries offer local technical sales, service and design expertise. Many also offer a comprehensive system design, build and commissioning service. A network of distributors covers a further 35 countries.

8 Engineers like to talk to engineers

Our global network of Drive Centres and highly skilled Distributors gives us a deep insight into the requirements of a wide range of drive applications and industries. Market research has shown that customers choose Control Techniques because they have confidence in our ability to provide solutions where product performance and quality support are most highly valued.

The flexible drives range for every application

Commander SK General purpose AC drive	100 / 120V 1 Phase 200 / 240V 1 Phase 200 / 240V 3 Phase 380 / 480V 3 Phase 500 / 575V 3 Phase 500 / 690V 3 Phase	0.25kW - 1.1kW 0.25kW - 3kW 1.1kW - 45kW 0.37kW - 132kW 2.2kW - 110kW 15kW - 132kW	**Page 4**
Unidrive SP panel mounting High performance AC and servo drive	200 / 240V 1 Phase 200 / 240V 3 Phase 380 / 480V 3 Phase 500 / 575V 3 Phase 500 / 690V 3 Phase	0.37kW - 1.5kW 0.37kW - 30kW 0.37kW - 132kW 2.2kW - 110kW 15kW - 132kW	**Page 6**
Unidrive SP Free Standing Higher power performance AC drive	380 / 480V 3 Phase 500 / 690V 3 Phase	90kW - 675kW 90kW - 630kW	**Page 8**
Unidrive SP Modular High power modular AC drive	200 / 240V 3 Phase 380 / 480V 3 Phase 500 / 590V 3 Phase 500 / 690V 3 Phase	45kW - 950kW 90kW - 1.9MW 90kW - 1.9MW 90kW - 1.9MW	**Page 9**
Mentor MP High performance DC drive	400 / 575 / 690V	25A - 7400A	**Page 10**
Digitax ST Intelligent, compact and dynamic servo drive	200 / 400V 3 Phase	0.72Nm - 19.3Nm (57.7Nm Peak)	**Page 12**
Affinity Dedicated HVAC/R drive for building automation and refrigeration	200 / 240V 3 Phase 380 / 480V 3 Phase 500 / 575V 3 Phase 500 / 690V 3 Phase	1.1kW - 45kW 1.1kW - 132kW 3.0kW - 110kW 18.5kW - 132kW	**Page14**
Digistart Soft starters for 3 phase induction motors	200 / 400 / 575 / 690V 3 Phase	7.5kW - 800kW (18A - 1600A)	**Page 16**
SLM technology servo drives Precision servo amplifiers			**Page 18**
Unimotor fm Performance AC brushless servo motor	0.72Nm - 136Nm (408Nm Peak)		**Page 19**
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Commander SK

0.25kW – 132kW (0.33hp - 200hp)
100V / 200V / 400V / 575V / 690V

General purpose AC drive

Overview

Commander SK is simple to use, compact and offers great value. It has excellent open loop performance, optional onboard PLC functionality and click-in modules for I/O, Ethernet and Fieldbus communications. Commander SK allows you to do much more than you would ever expect with a general purpose drive.

Applications

Commander SK is ideal for a wide range of applications, including:

- Machinery automation
- Pumps
- Fans
- Conveying
- Mixing
- Chemical dosing
- Centrifuges
- Door and barrier opening systems
- Food and beverage applications

In these applications energy efficiency and productivity improvements often result in a rapid return on project investments.

Benefits

- Ultra-compact modules, resulting from advanced thermal design, state-of-the-art power technologies and the use of advanced plastic materials
- Optimised for both heavy duty and fan and pump applications
- Can be easily integrated within an automation system using Control Techniques' click-in fieldbus option modules including Profibus, DeviceNet and CanOpen
- Ethernet connectivity allows global drive access for monitoring, configuring and troubleshooting
- Optional SmartStick allows the drive configuration to be stored and replicated; ideal as a parameter back-up and for mass/batch production applications

- Optional LogicStick adds program memory for onboard PLC functionality, adding intelligence to the drive. This can remove the need for external PLCs and reduces size and costs
- Easy to use remote mountable keypad with IP66 protection
- Operation with global power supplies – 100V, 200V, 400V, 575V and 690V
- The built in EMC filter is suitable for most applications and can be easily switched in or out of circuit. When more arduous EMC standards must be met, such as for residential environments, compact footprint mounting filters are available
- The drive has an RS485 serial port as standard and is supplied with software and documentation CD for easy configuration and monitoring
- Low power drives (≤1.5kW) may be mounted on DIN rail for quick and easy installation
- The drive has an integrated keypad with all the parameters you need for typical applications printed on the front of the drive
- Worldwide product expertise and support
- Worldwide certifications including CE and cULus

For more information please refer to the Commander SK brochure

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Energy Saving Technology

Unidrive SP Panel Mounting

0.37kW – 132kW
200V / 400V / 575V / 690V

Unidrive SP size 0

High performance AC and servo drive

Overview

Unidrive SP is the market leader in intelligent drives; the Panel Mounting version is a standard drive module for system integration and standalone applications. It is extremely flexible, with five modes of operation:

- Open loop V/Hz AC drive
- Open loop Vector AC drive
- Closed loop Vector AC drive
- AC servo amplifier for rotary and linear motors
- Regenerative (Active) power supply

Three click-in option module slots allow you to select the level of intelligence, connectivity and I/O you need, to uniquely customised the drive to your application.

Applications

Due to the inherent high performance and flexibility of Unidrive SP, potential areas for its application are limitless.

The drive's intelligence and dynamic response allow it to be applied in the most demanding applications while the compact dimensions make it ideal in new and retrofit energy saving installations. Typical applications include:

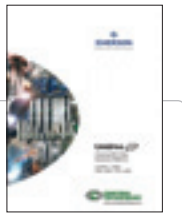
- High speed machines
- Crane and hoist
- Lift and elevator controls
- Pulp and paper machines
- Energy saving with fans and pumps
- Textile machines
- Materials handling systems
- Printing

- Converting
- Plastics and rubber extrusion processing machines
- Metal production and processing
- Marine applications

Benefits

- Universal drive and option module flexibility future-proofs your investment. It also means you only fit the features you need, reducing costs, removing complexity and increasing spares availability
- The same control philosophy and set-up through the whole drive range reduces the learning curve
- Unidrive SP can be easily configured to operate in a regenerative, active front end with power factor control mode - eliminating harmonics and returning excess braking energy to the supply, further reducing your energy costs
- Scalable intelligence reduces the required cabinet size and increases system performance, especially with high speed machines and motion applications
- Unidrive SP can easily be integrated in an automation system using one or more click-in fieldbus option modules. Profibus, DeviceNet, Ethernet/IP, CanOpen, SERCOS, LonWorks and Interbus are fully supported and certified
- Rotor Flux Control (RFC), a standard feature on Unidrive SP, is a step forward in open loop motor control resulting in enhanced performance with no feedback device
- Compact design and reduced weight are achieved through advanced thermal design, the use of low loss IGBTs and advanced plastic materials
- Internationally recognised Safe Torque Off feature reduces system costs in machine safety designs
- Ethernet connectivity allows global drive access for monitoring, configuring and troubleshooting
- Product performance and reliability has been proven in hundreds of thousands of applications
- Operation with global power supplies - 200V, 400V, 575V and 690V
- For servo applications, our Unimotor fm motor provides a matched servo motor/drive solution
- Worldwide product expertise and support
- Worldwide certifications including CE and cULus

For more information please refer to the Unidrive SP brochure



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Unidrive SP Free Standing cabinet drive

90kW – 675kW
400V / 575V / 690V
IP21 / IP23

Higher power performance AC drive

Overview

The Unidrive SP Free Standing drives range offers the same advanced feature set as the panel mount drives but in a pre-engineered convenient package, which can be easily connected to industry standard cabinets. The drives offer industry leading power / size ratios.

Applications

The Unidrive SP Free Standing drives are suitable for higher power applications in both commercial and industrial installations. Typical applications include:

- Energy saving with higher power fans and pumps
- Metal production and processing
- Conveying and handling of bulk materials
- Pulp and paper processing
- Marine applications

Benefits

The Unidrive SP Free Standing drives enjoy the same advantages as our panel mount drives with the following additional benefits:

- Standard AC in / AC out pre-engineered solution reduces design time, lowers project risk and allows you to focus on getting the application engineering right
- Compact cabinet reduces the space requirement, especially important in retrofit applications: 355kW = 400mm wide & 675kW = 800mm wide
- Industry standard form factor and colour allows the cabinets to integrate with new and existing cabinets
- Optional Incomer and empty System Shell cabinets allow you to integrate your power and control equipment alongside the drive
- Available with and without braking transistors to optimise costs for your application
- IP21 and optional IP23 enclosures enable more compact cabinet dimensions

For more information
please refer to the
Unidrive SP Free Standing brochure

Unidrive SP Modular

45kW – 1.9MW
200V / 400V / 575V / 690V

Modular high power performance AC drive

Overview

The Unidrive SP Modular drives range offers the same advanced feature set as our panel mount drives but with additional power system flexibility. The drives may be arranged to provide a common DC bus system with or without an active front end (regenerative, 4 quadrant operation). Very high current motors may be controlled using a multi-drive modular arrangement.

Applications

The Unidrive SP Modular drives are suitable for applications in both commercial and industrial applications where power scheme flexibility and regenerative energy saving provides an operational advantage.

Typical applications include:

- Energy saving with very high power fans and pumps
- Grid tie inverter for renewable energy systems
- Metal production and processing
- Large cranes
- Automotive testing such as car, engine and gearbox dynamometers

- Web control and winding
- Conveying and processing of bulk materials
- Pulp and paper processing
- Marine applications

Benefits

Unidrive SP Modular drives enjoy the same advantages as the panel mount drives with the following additional benefits:

- Higher power motors are controlled using Unidrive SP modules connected in parallel. This is an economic and compact solution that simplifies installation and improves servicability
- Allows you to use a DC bus system to recycle energy between simultaneously braking and motoring drives such as in a winder / unwinder configuration
- Minimise harmonics with 12, 18 and 24 pulse operation to allow you to meet and exceed stringent supply regulations
- Eliminate harmonics using an active front end

For more information please refer to the Unidrive SPM brochure

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Mentor MP

25A to 7400A
400V / 575V / 690V
Two or four quadrant operation

High performance DC drive

Overview

Mentor MP is Control Techniques' new DC drive and integrates the control platform from the world's leading intelligent AC drive, Unidrive SP. This makes Mentor MP the most advanced DC drive available, giving optimum performance and flexible system interfacing capability.

Applications

Our extensive expertise across a wide range of industries mean that we are the ideal partner for DC solutions.

Typical applications for Mentor MP include:

- Metals
- Printing
- Material handling
- Rubber and plastic
- Pulp and paper
- Crane and hoist
- Mining
- Elevator and escalator
- Active front end for DC Bus connected AC Drive systems

Benefits

- Mentor MP allows DC motor performance to be optimised, enhance system reliability and interface digitally with modern control equipment using Ethernet and Fieldbus networks
- Mentor MP inherits the world beating control platform and software tools from Control Techniques AC drive

range, so you retain the flexibility of changing to an AC drive system in the future if your application requirements evolve

- Every Mentor MP has a motor field controller integrated as standard up to 10A and the FXMP25 option extends this to 25A. For older motors, with very low field voltages and field currents greater than 25A, the Mentor MP itself has a field mode, allowing it to be implemented as a field controller with no additional components
- Mentor MP is fully RoHS compliant and worldwide certifications include CE and cULus

- Mentor MP allows the drive system designer to embed automation and motion control within the drive, eliminating communication delays that reduce performance while CTNet, our high performance drive-to-drive network, links the different parts of the system
- Mentor MP is quick and easy to set-up. The drives may be configured using a removable keypad, Smartcard or the supplied PC commissioning software that guides the user through the configuration process
- Mentor MP is an ideal retro-fit choice with features to ensure it can integrate easily with your existing DC motor, power supply, application equipment and communication networks. Mentor MP brings new performance and new possibilities to your application
- Mentor MP has been designed so existing Mentor II customers can easily migrate to the new platform. All power terminal locations and mounting points have been retained and software tools have been developed to assist transfer of drive parameters and programs

Control Techniques has a patent pending to protect one unique aspect of the Mentor MP design. Galvanic isolation between power and control is a standard feature in AC drives and, in the case of failure, protects the control circuits and connected equipment from high voltage on the power circuit.

Mentor MP uses a novel technology to achieve Galvanic Isolation without compromising performance or reliability.

For more information please refer to the Mentor MP brochure

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Digitax ST

0.72Nm to 19.3Nm (57.7Nm Peak)
200V / 400V

Intelligent, compact and dynamic servo drives range

Overview

Meeting the demands of modern lean manufacturing environments requires smaller more flexible machinery. Digitax ST is the first ever drive designed to help machine designers and system integrators meet these challenges, the ultimate compact servo drive with an unmatched depth of flexible integration features.

Digitax ST is optimised for servo applications requiring high peak torque (300%), dynamic response, ease of use and flexible integration features. Four product variants ensure that the drive's personality perfectly matches your servo applications.

Digitax ST – Base

Optimised for centralised control, to operate with motion controllers, motion PLCs and Industrial PC based motion systems using a wide range of digital or analogue interface technologies.

Applications include: Packaging, pick and place, glue depositing, x y cutting tables.

Digitax ST – Indexer

Designed for simple stand alone positioning applications using an onboard position controller. Fieldbus, Ethernet and I/O enable connectivity to other automation components.

Applications include: Indexing tables, fast conveyor positioning, cut-to-length machines, punching.

Digitax ST – EZ Motion

This drive offers a stand alone solution for many common indexing and synchronised motion applications. This is achieved using a unique PC programming interface that guides the user through the drive's I/O and motion configuration.

Applications include: Indexing table, pick and place, packaging machines, dancer arm loop control.

Digitax ST – Plus

Features a full functionality motion controller, optimised for high performance machine cells requiring drive-to-drive networking and precision synchronisation. The motion and communications are configured within a flexible IEC61131-3 software development environment using PLCopen function blocks. Fieldbus, Ethernet and I/O connectivity enable interfacing with other automation components and Intellectual Property protection ensures that your valuable knowledge remains secure.

Applications include: Printing, packaging, synchronising conveyors, flying shear, rotary knife.

Benefits

- Three motion programming options allow you to choose the style you prefer, either CTSoft index motion, IEC61131-3 environment with PLCopen functions or PowerTools Pro, with drag and drop functionality and a BASIC-like programming language
- Servo and fieldbus option modules are independently certified for conformity with open standards to ensure interoperability
- Innovative mechanical design, such as the mounting arrangements enabling the bottom of the drive to be quickly clipped on to standard DIN rail and the cable management system features rigid mounting and grounding brackets, minimising the installation time
- Digitax ST can be easily configured using the removable keypad, Smartcard or the supplied commissioning software to guide the user through the configuration process

- The Unimotor fm servo motor series provides a matched motor solution and selected models enable the motor dimensions to be stored onboard the encoder as an 'electronic nameplate', further reducing commissioning time
- Standard Control Techniques' click-in option modules mean the drive can be customised to your needs at the point of installation without specialist tools and gives the flexibility to customise the functionality at a future time
- Digitax ST is an extremely compact servo drive that can be mounted side-by-side with other drives or components without lost space
- Digitax ST offers reliability and the performance to increase dynamic speed, repeatability and accuracy while also reducing the size and cost
- Digitax ST is fully RoHS compliant and worldwide certifications include CE and cULus

For more information please refer to the Digitax ST brochure

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Energy Saving Technology

Affinity

1.1kW to 132kW (1.5hp to 200hp)
200V / 400V / 575V / 690V
IP20 (NEMA 1) and IP54 (NEMA 12)

Dedicated HVAC/R drive for building automation and refrigeration

Overview

Affinity is Control Techniques' dedicated HVAC/R drive, designed specifically to meet the needs of consultants, contractors and owners of commercial buildings. A comprehensive product line incorporates special drive functionality and accessories to simply and efficiently solve your HVAC/R applications.

Applications

- Compressors
- Air handling units
- Fans
- Condensers
- Chillers
- Heat exchangers

Benefits

- Affinity allows you to minimise wasted energy throughout your buildings by optimising the pump or fan speed to match the environmental conditions. This helps to reduce your energy costs and your carbon footprint.
- Affinity is available in 6 frame sizes with both IP20 (NEMA 1) and IP54 (NEMA 12) models.
- Fire Mode for building occupant safety
- Two independent PID controllers can, for example, control dampers or valve actuators to eliminate external equipment
- Free software tools for
  – Energy saving calculations
  – Carbon dioxide saving calculations
  – Harmonic analysis
  – Commissioning and monitoring
- Onboard controller with real-time clock, ideal for reducing costs and improving performance in standalone applications and OEM solutions

- Sleep / wake mode automatically switches off a fan or pump when demand drops below a threshold for a certain time
- Motor pre-heat to prevent condensation
- Low load detection to sense mechanical problems such as a broken drive belt
- All Affinity models have integrated reactors to control supply harmonics. This saves space and cabling costs
- High switching frequency up to 16kHz for quiet motor operation

- The standard Smartcard data storage device provides specific macros for simplifying set-up of common HVAC/R applications and easy back up and copying of drive configuration
- Affinity has all the communications capability you need. Protocols integrated as standard include, BACnet, Metasys N2, and Modbus RTU. Click-in option modules allow specialised communication such as LonWorks and Ethernet to be used.
- Worldwide certifications including CE and cULus

For more information please refer to the Affinity brochure

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Digistart

7.5 to 800kW (18 to 1600A)
200V, 400V, 575V, 690V

Soft starters for 3 phase induction motors

Overview

Digistart is Control Techniques' flexible soft starter range for motor control and protection in constant speed applications.

The Digistart range combines advanced control features with simple installation and commissioning. Digistart forms an integral part of our comprehensive product range which covers all of your motor control needs.

Applications

Digistart can be used in a wide range of industries and applications including:

- Pumps
- Compressors
- Fans
- Material handling
- Machinery automation
- Mining and aggregate
- Forestry

Benefits

Soft starters are a simple and economic method of controlling AC motors for fixed speed applications. Traditional methods of starting motors such as direct-on-line (DOL) or star-delta result in increased machine wear through rapid acceleration and very high peak currents. Soft starters solve this problem through controlling the acceleration and deceleration phases of operation.

Control Techniques' Digistart family offers two levels of functionality to meet all your soft starter requirements.

Digistart CS

Digistart CS is a compact soft starter for motors up to 110kW (200A). The Digistart CS offers comprehensive motor protection features and is quickly commissioned using simple rotary switches.

Digistart IS

Digistart IS is an intelligent soft starter offering many advanced features for motors up to 800kW (1600A). These features include 'Adaptive control' which provides an unprecedented level of acceleration and deceleration control, and an intuitive plain language display for configuration, monitoring and diagnostics.

Digistart is fully RoHS compliant and worldwide certifications include CE and cULus

For more information please refer to the Digistart brochure

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SLM technology servo drives

Precision servo amplifiers

Overview

SLM (Speed Loop Motor) Technology forms the basis for Control Techniques' range of precision servo amplifiers, based on a digital high-speed communication system that links the controller, motor and amplifier. The feedback resolution provides over 8 million counts per revolution and the speed, current and position loops are updated every 125µs to provide optimum performance. The amplifier range consists of three drive types:

- M'Ax provides a single high performance SLM servo axis for motors of up to 20Nm
- MultiAx integrates three high performance SLM servo axes in one module for servo motors of up to 23Nm
- Unidrive SP utilises a Control Techniques' click-in SLM option module to provide a single high performance SLM servo axis for use with higher power and higher speed motors

Applications

SLM Technology has been applied in a wide range of applications where high-fidelity motor performance is a requirement. Typical applications include:

- Machine tool application
- High-speed printing
- Precision packaging
- Woodworking machinery
- Robotics

Benefits

- The high speed SLM digital link requires only 4 wire traffic between the motion controller, motor and amplifier greatly reducing the number of connections and increasing system reliability
- High resolution encoder and the fast digital link allow the system to operate with higher gains than would usually be possible. This greatly increases the dynamic response of the system
- SLM servo technology utilises an SLM encoder, to reduce the effect of noise. The analogue signals are converted to a digital position value using onboard motor processing which greatly improves feedback quality and increases positioning accuracy
- A wide range of third party motion and CNC controllers are available for connection to SLM amplifiers and motors
- Motor data is stored digitally during the manufacturing process within the motor's SLM encoder. This removes the need to input motor information, simplifies tuning and removes the need to re-configure the system if the motor is changed
- Compact design reduces the cabinet space required

For more information please refer to the M'Ax brochure and MultiAx brochure

Unimotor fm

0.72Nm - 136Nm
408Nm Peak

High performance AC brushless servo motor

Overview

Unimotor fm is a high performance brushless AC servo motor range matched for use with Unidrive SP. 'fm' stands for flexible motor, designed to accommodate a wide range of applications. The motors are available in seven frame sizes with various mounting arrangements, motor lengths and a wide range of feedback options.

Applications

Unimotor fm is suitable for applications where precision motion and/or dynamic control is required. Typical applications include:

- High speed machinery
- Flying shear and rotary knife applications
- Pick and place
- Materials handling
- Printing
- Textile machinery

Benefits

- Unimotor fm easily adapts to accept all popular feedback devices. As standard an incremental encoder is fitted as this offers an optimum balance of cost and performance. SinCos can be selected for increased resolution. Resolver feedback is also available for increased reliability in extreme environments
- High peak torque performance allows smaller motors to be used where the RMS value is low but the maximum torque is high
- The Unimotor fm fan blown motor option combines the motor and fan box in one complete assembled package. This has been designed to give greater performance across the torque range, giving increased application performance with higher rms values achievable.
- A wide selection of ready made cables are available for quick and easy connection to Control Techniques drives
- High inertia versions are available to allow the motor inertia to be more closely matched to the load inertia for increased performance and stability
- IP65 environmental protection is standard and ATEX protection available as an option
- Motor brakes integrated within the motor are available as an option with a choice of parking brake or high energy dissipation brake
- Flexibility of the Unimotor fm range ensures the best fit for your application. As well as the various physical sizes and feedback devices available, options extend to the type of connectors fitted

For more information please refer to the Unimotor fm brochure

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Industrial Automation

Unimotor hd

0.72Nm - 16Nm
48Nm Peak

Compact servo motor for demanding applications

Overview

Unimotor hd is Control Techniques' new high dynamic servo motor range, designed for maximum torque density. This brushless AC servo motor range provides an exceptionally compact, low inertia solution for applications where very high torque is required during rapid acceleration and deceleration profiles.

When used with Digitax ST, this combination is designed for high torque output in dynamic applications.

Applications

Typical applications for this product include:

- Packaging (e.g. horizontal form fill and seal)
- Food and beverage (e.g. depositing confectionary centres or CAMming and synchronisation)
- Wire bending (complex spring making or CAMming and indexing)

Benefits

Unimotor hd has been developed by a dedicated team using our design process that prioritises product innovation, performance and reliability. This enables new ideas to be quickly evaluated, prototyped and tested using a suite of in-house development and modelling software tools.

Control Techniques drive and motor combinations provide an optimised system in terms of ratings, performance, cost and ease of use.

Unimotor hd motors fitted with high resolution SinCos or Absolute encoders are pre-loaded with the motor "electronic nameplate" data during the manufacturing process. This data can be read by Control Techniques' servo drives and used to automatically optimise the drive settings. This feature simplifies commissioning and maintenance, ensures consistent performance and saves time.

Performance enhancing design features include:

- High torque to inertia ratio for high dynamic performance
- High energy dissipation brakes
- IP65 conformance: sealed against water spray and dust when mounted and connected
- Segmented stator design
- Larger shafts to increase torsional rigidity

For more information please refer to the Unimotor hd flyer

Drive Centre services

Drive systems

Control Techniques provide the level of service you need to supplement your in-house engineering resources, from consultation, design support through to supply of turnkey drive systems.

Control Techniques offer:

- Industry leading applications engineering experience
- In-house system design and management
- Comprehensive software development and engineering support
- Panel-building, installation and project commissioning
- First class service and support
- Worldwide network of Drive Centres for ongoing support of overseas contracts

Consultation and support

If you choose to design your own drive systems, our customer support and design engineers have an enormous amount of practical experience in solving a wide range of applications in many different industries. They are able to provide high quality consultation services to help you in designing your drive system, from hardware selection and installation through to software support

Turnkey projects

Control Techniques are able to offer a complete drive system design, build and commissioning service. An engineer will be assigned to the project who has the appropriate industrial experience. You can feel confident in a Control Techniques solution, with regular reviews during the design process and stringent testing prior to delivery.

Installation, commissioning and after sales support

Control Techniques' engineers will arrange installation and commissioning of your system as required. This isn't the end of the story but the beginning of our relationship; when you need support, we'll be there. Control Techniques' after-sales service is second to none.

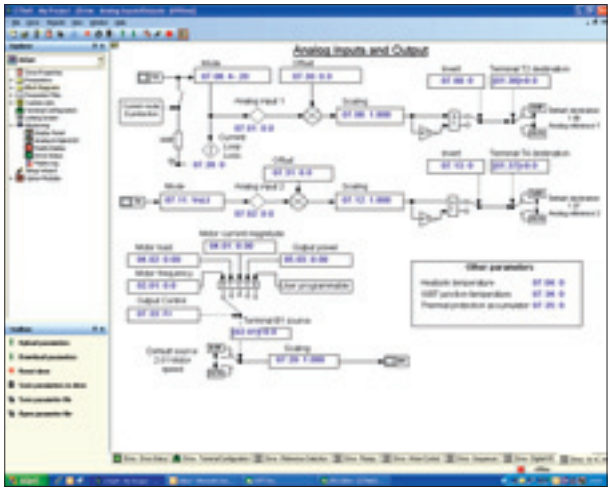
Training

Control Techniques offers a full range of training courses. These can be tailor made for your specific application and held on site, or you can enrol your designers, programmers and maintenance staff on our regular courses at our Training Centres. Courses give insight into practical applications, making full use of the flexibility and versatility of our drives to maximise productivity. See www.controltechniques.com/academy for details.

Intelligence, communication and software

Unlock the potential

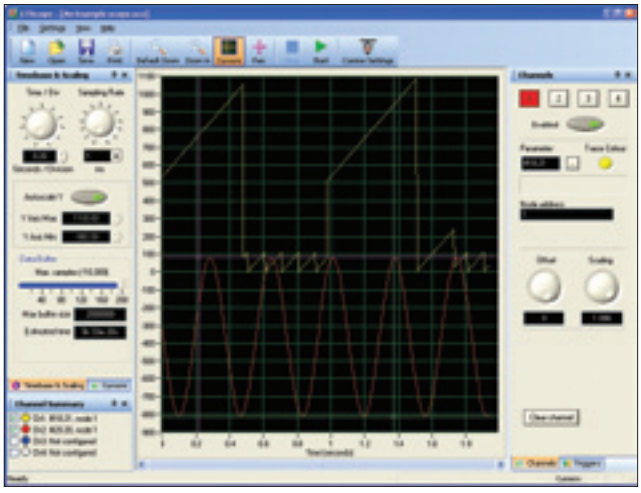
Control Techniques' drive configuration tools make it easy to access the drive's feature set. They allow you to optimise the drive tuning, back-up the configuration set and troubleshoot more quickly. All of the software tools including SyPT use the same communication component allowing them to run simultaneously using, Ethernet, CTNet, RS485 or USB communications.



CTSoft

CTSoft is the main configuration tool for Control Techniques' drives, it allows you to:

- Use the configuration wizard to commission your drive
- Save, load and download drive configuration settings
- Visualise the configuration using live, animated logic diagrams
- Modify the configuration from within an intuitive, user friendly environment
- Program the Digitax ST Indexer product with a dedicated indexer tool



CTScope

CTScope is a full featured software oscilloscope for viewing and analysing changing values within drive. The time base can be set to give high speed capture for tuning or intermittent capture for longer term trends. The user interface is based on a traditional oscilloscope, making it familiar and friendly to every engineer across the globe.

For evaluation of CTSoft and CTScope, download the full versions from www.controltechniques.com

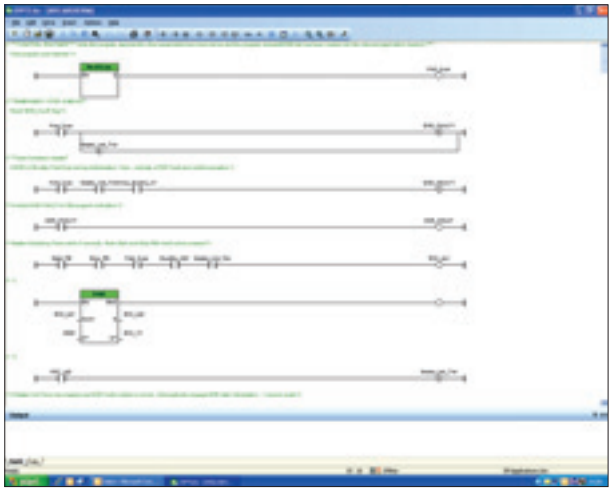
FREE Software

CTOPCserver

CTOPCServer is an OPC compliant server which allows PCs to communicate with Control Techniques' drives. The server supports communication using Ethernet, CTNet, RS485 and USB. OPC is a standard interface on SCADA packages and is widely supported within Microsoft® products. The server is supplied free of charge and may be downloaded from www.controltechniques.com.

Intelligence drives your productivity

Control Techniques' AC and DC drives have high intelligence capability; this means they can be programmed using industry standard languages such as ladder, function block and structured text. The programming environment is called SyPT meaning System Programming Tool:

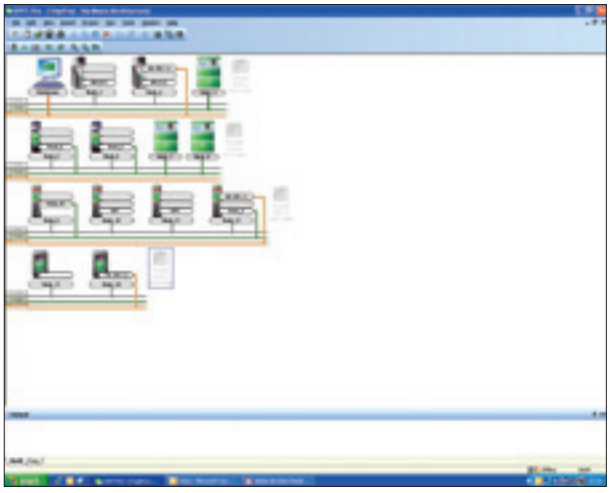


SyPTLite

An easy-to-use ladder logic program editor, suitable for simple drive applications, SyPTLite is ideal for controlling basic logic and sequencing within Commander SK and Unidrive SP products.

The software is supplied free of charge. For evaluation, download the full version from www.syptlite.com

FREE Software



SyPTPro

SyPTPro is a full featured automation development environment that can be used for developing solutions for single or multiple drive applications. The programming environment fully supports three industry standard languages: Function Block, Ladder and Structured Text. Motion control is configured using the new PLCopen motion language, supporting up to 1.5 axes. CTNet, a high-speed, deterministic drive-to-drive network links the drives, SCADA and I/O together to form an intelligent networked system, SyPTPro manages both the programming and communications.

Download an evaluation version from www.syptpro.com

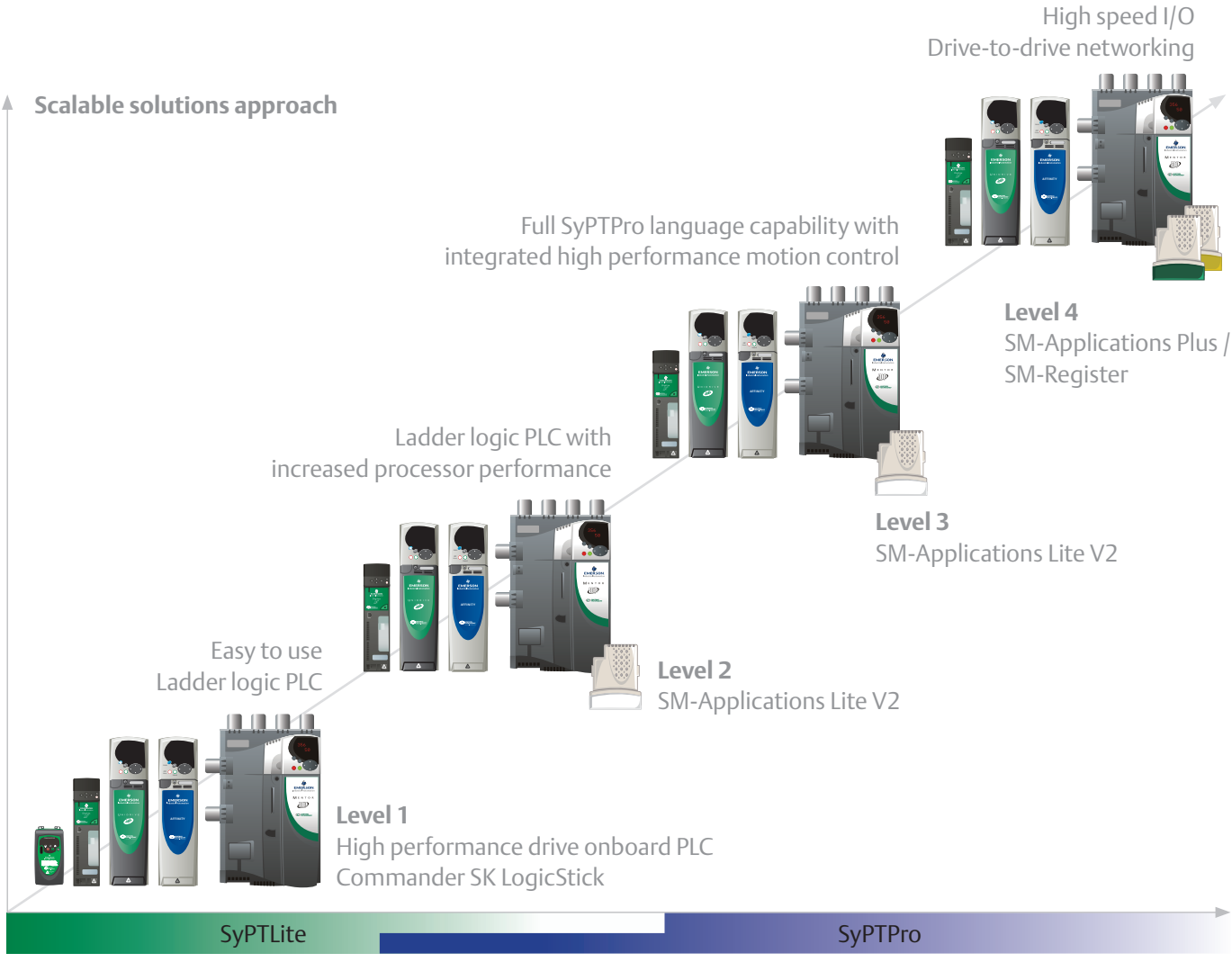
For more information please refer to the SyPTPro brochure

Solutions Modules (SM)

Integrate, automate, communicate

Control Techniques' drives support a wide range of click-in Solutions Modules that allow them to integrate seamlessly with existing automation systems and other vendor supplied equipment. These include communications, I/O, feedback devices and onboard PLCs. Control Techniques' high performance drives use a high speed parallel bus between the drive and Solutions Modules which removes delays, improving the drive's reaction time. Communications interfaces are independently certified for conformance with the relevant standards to ensure performance and interoperability.

Control Techniques is the market leader in intelligent drives. Optional SM-Applications modules add a high performance automation controller that is integrated within the drive's footprint. It is capable of providing real time control in dynamic applications such as motion and elevator controls, and can be networked for applications such as printing, process lines and production machines. The following diagram illustrates the different levels of intelligence that can be integrated within Control Techniques drives.



Applications with PLC or Motion functionality


SM-Applications Lite V2


SM-Applications Plus


SM-EZMotion


SM-Register

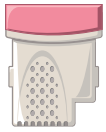
Communications


SM-EtherCAT


SM-LON

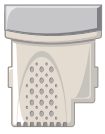

SM-Profibus-DP


SM-Interbus


SM-CAN


SM-DeviceNet


SM-Ethernet


SM-CANopen


SM-SERCOS

Feedback


SM-Resolver


SM-Universal Encoder Plus


SM-Encoder Plus


SM-Encoder Output Plus


SM-SLM

Extra Input/Output


SM-I/O 32
SM-I/O Plus


SM-I/O Lite


SM-I/O Timer


SM-I/O 120V


SM-I/O PELV


SM-I/O 24V Protected

Compatibility

	Unidrive SP	Commander SK	Affinity	Mentor MP	Digitax ST
SM-Applications Lite V2	✔		✔	✔	*
SM-Applications Plus	✔		✔	✔	*
SM-EZMotion	✔				*
SM-Register	✔		✔	✔	✔
SM-EtherCAT	✔	✔	✔	✔	✔
SM-LON	✔	✔	✔		✔
SM-Profibus-DP	✔	✔	✔	✔	✔
SM-Interbus	✔	✔	✔	✔	✔
SM-CAN	✔		✔		✔
SM-DeviceNet	✔	✔	✔	✔	✔
SM-Ethernet	✔	✔	✔	✔	✔
SM-CANopen	✔	✔	✔	✔	✔
SM-SERCOS	✔		✔		✔
SM-Resolver	✔				✔
SM-Universal Encoder Plus	✔			✔	✔
SM-Encoder Plus	✔			✔	✔
SM-Encoder Output Plus	✔			✔	✔
SM-SLM	✔				✔
SM I/O 32	✔	✔	✔	✔	✔
SM I/O Plus	✔		✔	✔	✔
SM-I/O Lite	✔	✔	✔	✔	✔
SM-I/O Timer	✔	✔		✔	✔
SM-I/O 120V	✔	✔	✔	✔	✔
SM-I/O PELV	✔	✔	✔	✔	✔
SM-I/O 24V Protected	✔	✔	✔	✔	✔

*Refer to the Digitax ST brochure for full details

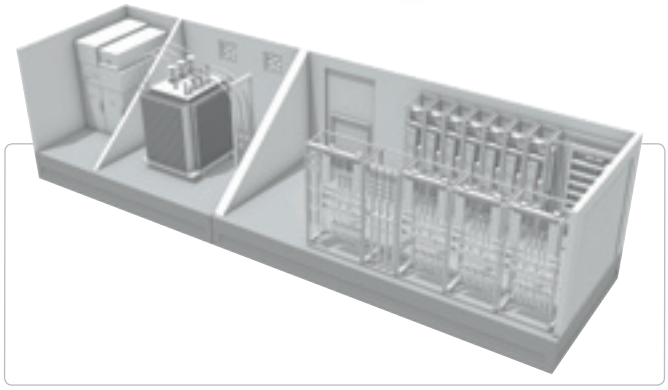
Renewable energy solutions

Control Techniques are technology and service leaders for high efficiency power conversion and control solutions for renewable energy schemes. These include photovoltaic, wind, tidal and wave based power generation.

Our systems are backed by manufacturing and engineering centres globally employing over 1700 staff. Our unique inverter technology utilises cost effective, mass produced modules that are proven to give market leading reliability and efficiency.

Control Techniques SPV grid-tie inverters

Control Techniques SPV systems are a range of transformerless central inverters for photovoltaic installations from 145kWp to 1.76MWp. Each inverter is constructed using multiple standard 145kWp or 175kW modules.



Intelligent Inverter Management (IIM)

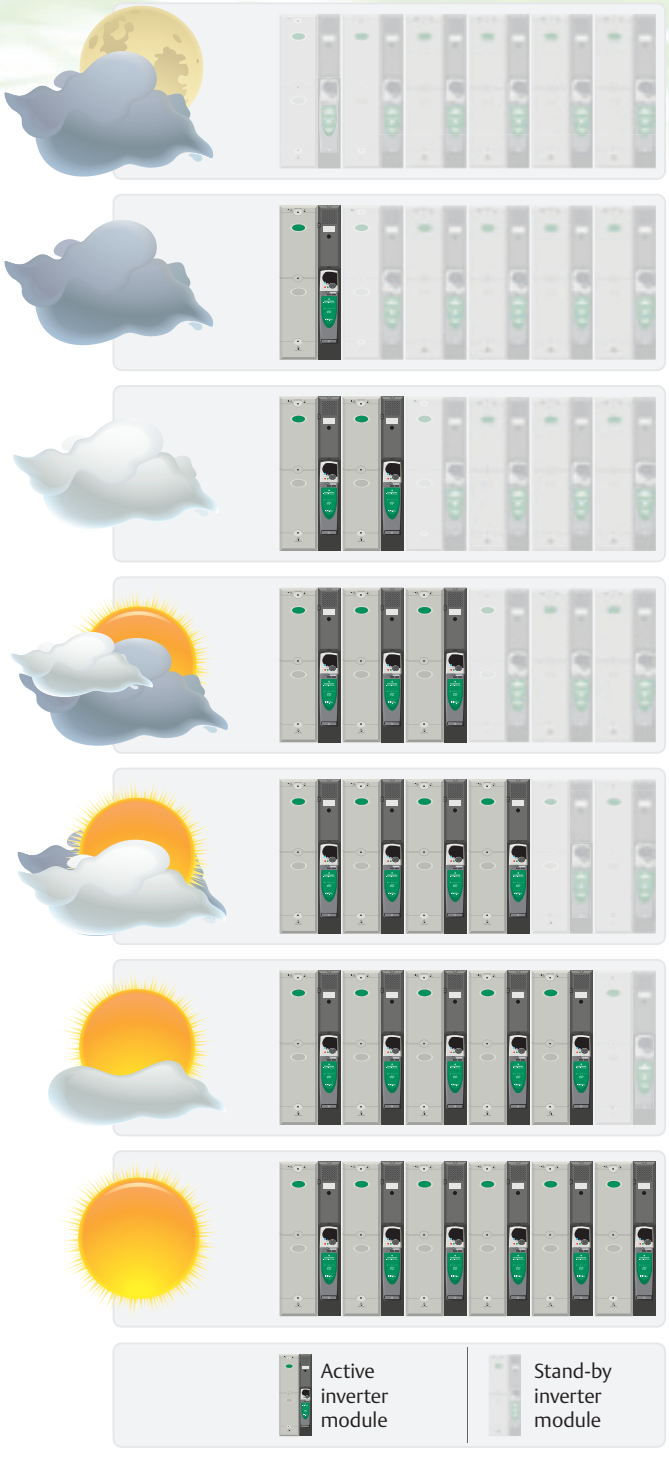
The modules are controlled by Control Techniques unique Intelligent Inverter Management (IIM) system to maximise energy yield by controlling the active and standby status of each inverter module. The active and standby sequence for each module is rotated so that duty is shared and inverter life extended. IIM has other benefits of energy efficiency and increased reliability:

Enhanced efficiency

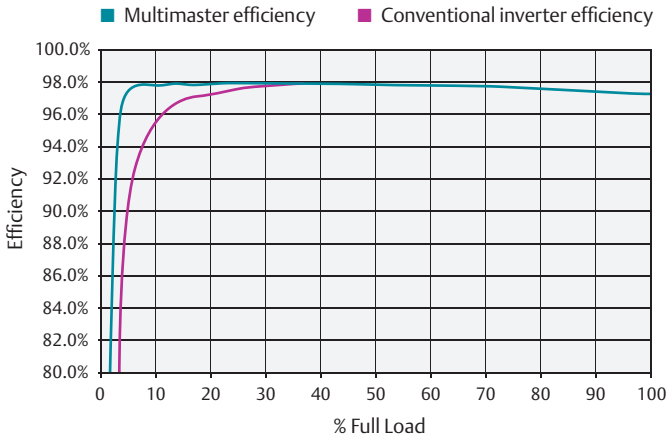
- Modularity allows the active inverter capacity to be continuously scaled to optimise energy efficiency for all conditions
- The system generates energy in lower light conditions

Enhanced availability

- In the event of any inverter module trip, the system automatically reconfigures to continue generating.
- For critical applications built-in redundancy can be incorporated within the system to maintain maximum output with a small additional investment.



The following graph demonstrates the high efficiency of the system, which remains above 96% at only 3% of full load. This compares to conventional bulk inverters where the efficiency begins to reduce severely below 20% of full load. Yield at low load is particularly important in temperate climates such as northern Europe.



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