PRODUCTS IN THIS RANGE

DIGITAX HD SERIES | DIGITAX SF | UNIMOTOR HD

Applications:

- Printing
- Packaging Machines
- Textiles
- Robotics
- Extruders

DIGITAX HD

MINIMUM SIZE, MAXIMUM PERFORMANCE

0.7 Nm - 51 Nm with 153 Nm peak 1.5 A – 16 A with 48 A peak

200 V | 400 V | 0.25 kW - 7.5 kW

Servo Drive Series

Digitax HD brings ultimate performance to high dynamic applications, where high peak torque is required for fast acceleration.

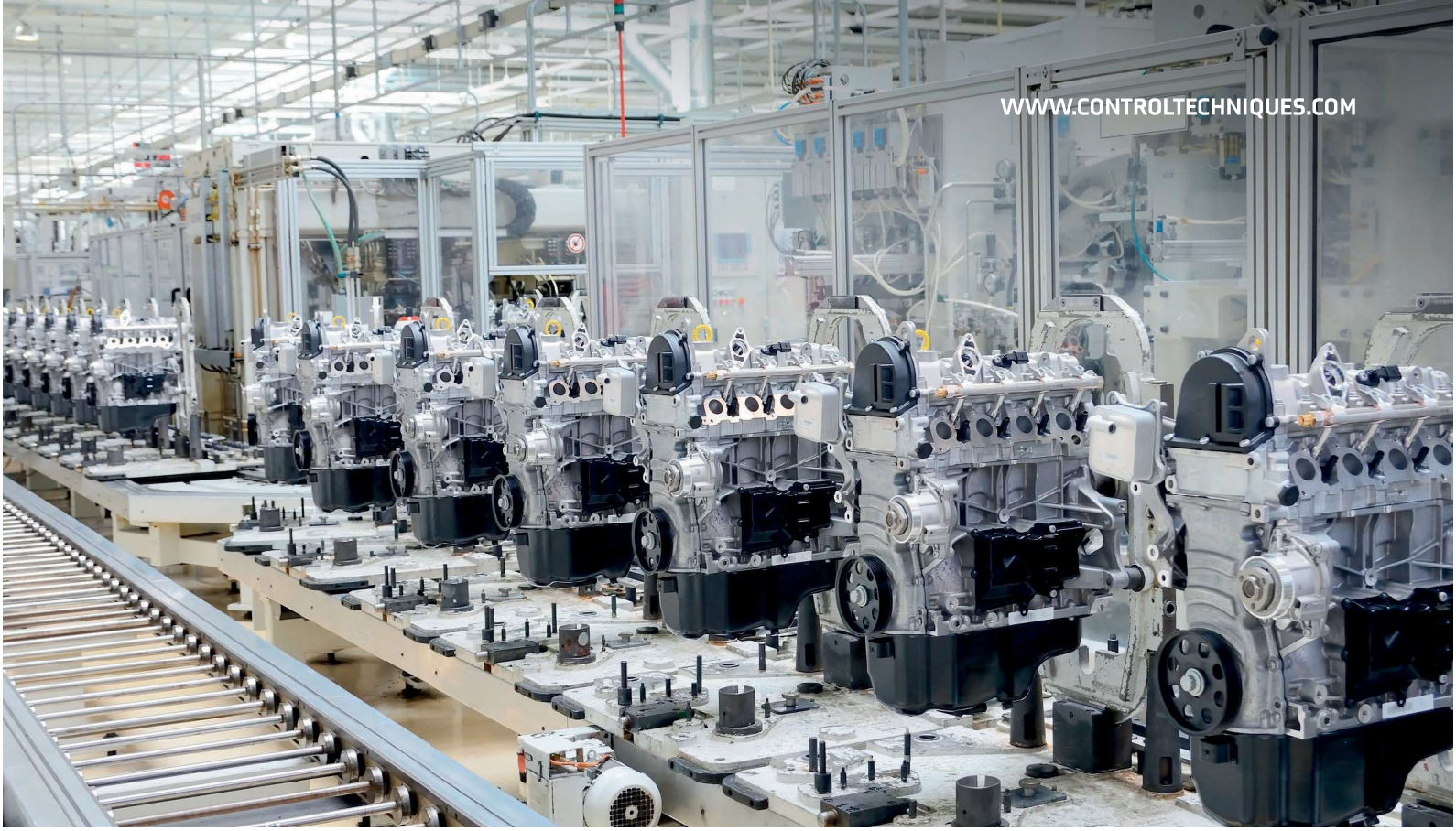
Optimised for high-dynamic applications, Digitax HD provides the flexibility of both standalone and modular configurations. The drive offers full servo control plus open loop permanent magnet motor and induction motor control across three functionality levels: EtherCAT, EtherNet and the flexible Base servo drive.

DIGITAX HD:
Application Flexibility

Three functional variants and support for all common industrial field-buses guarantee flexible adaptation to any automation architecture.

Digital printing:
Label and packaging print machines

Textile:
Knitting machines



DIGITAX HD
M750 EtherNet

EtherNet/IP Modbus PROFINET

DIGITAX HD
M751 Base

Modbus

DIGITAX HD
M753 EtherCAT

EtherCAT

DIGITAX HD

RAPID INSTALLATION, DYNAMIC MOTION

Rapid installation and commissioning from standalone to a modular servo system

- Single AC input, 24 V and communication links, and common DC bus.
- DIN rail alignment, single cable technology and easy access pluggable connectors.
- Fast programming and commissioning PC tools.

Boost throughput with high dynamic motion control

Digitax HD brings maximum throughput and production quality to your machines.

i. 300% peak current performance pulse-duty overload.
ii. Optimised control loops for high dynamic performance.
iii. Up to 16 kHz switching frequency.
iv. Advanced bi-quad filters for suppression of mechanical resonances.

Reduce cost by maximising cabinet space

- Drive width of only 40mm for increased packing density within the cabinet.
- Reduce cabinet height with UltraFlow™ technology which dissipates heat directly outside of the cabinet.
- Install Digitax HD in a cabinet just 200mm deep.

DIGITAX SF

LOW POWERED PRECISION SOLUTION

0.05 kW - 2 kW | 200 V

Servo solutions for continuous and pulse duty applications.

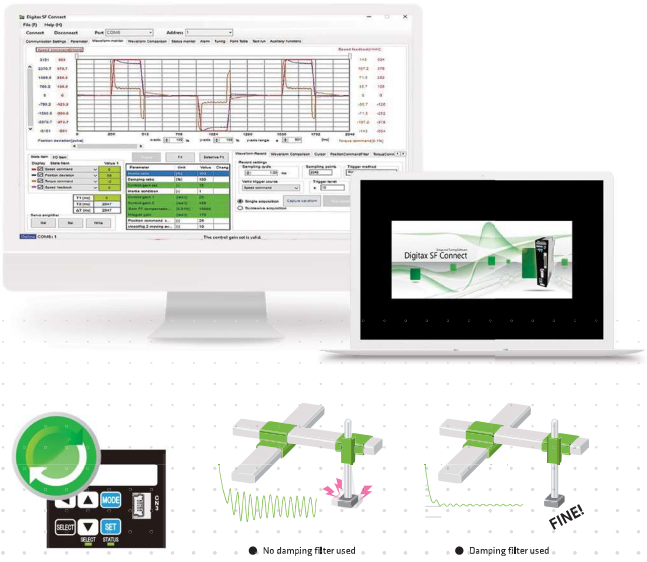
Digitax SF responds to the needs of customers requiring low powered precision servo solutions, with a dedicated servo range from 50W to 2 kW. With 17-bit resolution, robust magnetic encoder technology and pulse train or analog control interface, Digitax SF offers a cost effective servo solution, without compromising on performance.

Multiple motor inertia levels are available, covering a wide range of applications, from semiconductor manufacturing to textile, packaging machines, robotics, extruders, metering and other applications requiring speed, precision and accuracy.

Digitax SF Connect

Digitax SF Connect is a user-friendly PC tool with a familiar Windows interface and intuitive graphical tools for easy parameter setting, tuning and diagnostics. Ease of machine start-up is further facilitated through a positioning table and test run features.

Straightforward to setup and tune, Digitax SF offers high servo performance at the click of a button. For demanding applications, a rich selection of filters to dampen mechanical resonances and suppress tip vibration can be easily configured within Digitax SF Connect with the aid of FFT frequency analysis.



- Versatile analog or pulse train interface, offering easy integration with any PLC or motion controller.
- Digitax SF can also operate standalone using the on-board 16-point positioning table.
- Built-in keypad with 6 digit 7-segment status display for easy startup, parameter setting, and tuning.
- PC-USB interface for parameter settings, tuning, and status display in the dedicated software Digitax SF Connect.

- Magnetic encoder technology.
  i. Robust in harsh environments.
  ii. Ultra-low energy consumption for reduced maintenance.
  iii. Standardised flange sizes.
  iv. IP 65 or 67 motors.

FREE DOWNLOAD

Drive Set-up

Quickly find everything you need for quick and easy installation of your drives.
Visit: www.drive-setup.com

FREE DOWNLOAD

Diagnostic Tool

Quickly solve any error codes that the drive may show. Download:
controltechniques.com/mobile-applications

Get it from Microsoft | Download on the App Store | GET IT ON Google Play

*For Microsoft users, please note that this mobile app operates with Windows 10 only.

UNIMOTOR HD

HIGH DYNAMIC PERFORMANCE

The Ultimate Motor and Drive Combination

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

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

Unimotor hd

High Dynamic AC Brushless Servo Motor

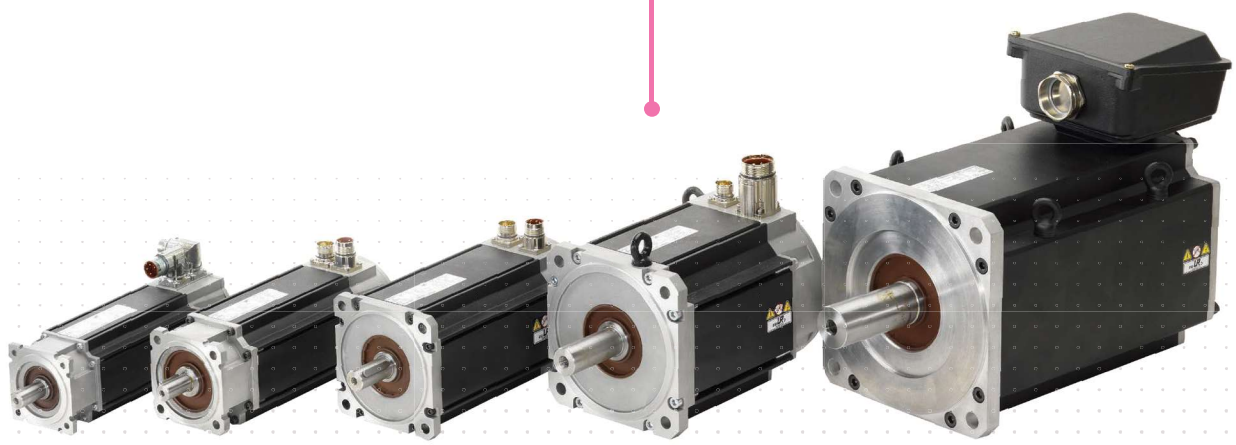
055 to 190 Frames | 0.72 Nm to 85 Nm (255 Nm Peak)

Unimotor hd is Control Techniques' high dynamic brushless AC servo motor range, designed for operation with Unidrive M, Digitax HD servo drives. Designed for high dynamic applications requiring hard accelerations and decelerations.

Features:

Unimotor hd are suitable for a wide range of industrial applications, due to their extensive range of features:

- Torque range: from 0.72 Nm to 85 Nm.
- High torque to inertia ration for high dynamic performance.
- Compact but powerful.
- High energy dissipation parking brakes.
- IP65 conformance; sealed against water spray and dust when mounted & connected.
- Segmented stator design.
- World class performance.
- Supported by rigorous testing for performance and reliability.
- Winding voltages for inverter supply of 400 V & 220 V.
- Rated speeds from 1,000 to 6,000 rpm.
- Larger shafts to increase torsional rigidity.
- Thermal protection by PTC thermistor/optional KTY84.130 sensor.



DC DRIVES

MENTOR MP

PRODUCTS IN THIS RANGE

MENTOR MP

Key Benefits:

- Designed for easy set-up and commissioning
- Drive intelligence and system integration
- Machine communications flexibility
- Greater motor field
- Enhanced system design control
- Fast set-up, configuration and monitoring

MENTOR MP

LEADING DIGITAL DRIVE TECHNOLOGY

25A to 7400A Two or four quadrant operation (regenerative)

24V - 480V | 500V - 575V | 500V - 690V

The ultimate DC drive; Mentor MP is Control Techniques' fifth generation DC drive and integrates the control platform from the world's leading intelligent AC drive technology.

This makes Mentor MP the most advanced DC drive available, giving optimum performance and flexible system interfacing capability. This drive allows you to maximise motor performance, enhance system reliability and interface digitally with modern control equipment using Ethernet and fieldbus networks. The drive is designed for easy retrofitting from Mentor II and for high power configuration.

Output power connections to motor with removable covers

Armature voltage feedback for use with DC contactor and inverter common DC bus systems

Fuses for field protection (removable cartridge)

Communications port for external field controller

AC supply input connections with removable safety covers

Drive identification marker rail

Drive rating label

Optional keypad, available as high brightness LED or multi-language LCD with plain text

Smartcard for parameter and custom application program storages

Communication ports for paralleling drives (Size 2 only)

Standard onboard Modbus communications port for PC programming and device interfacing

Pluggable terminals for I/O, relays, tacho feedback, encoder and a current feedback test pin for fine tuning armature current loop

Safety terminal cover

Safety finger guard

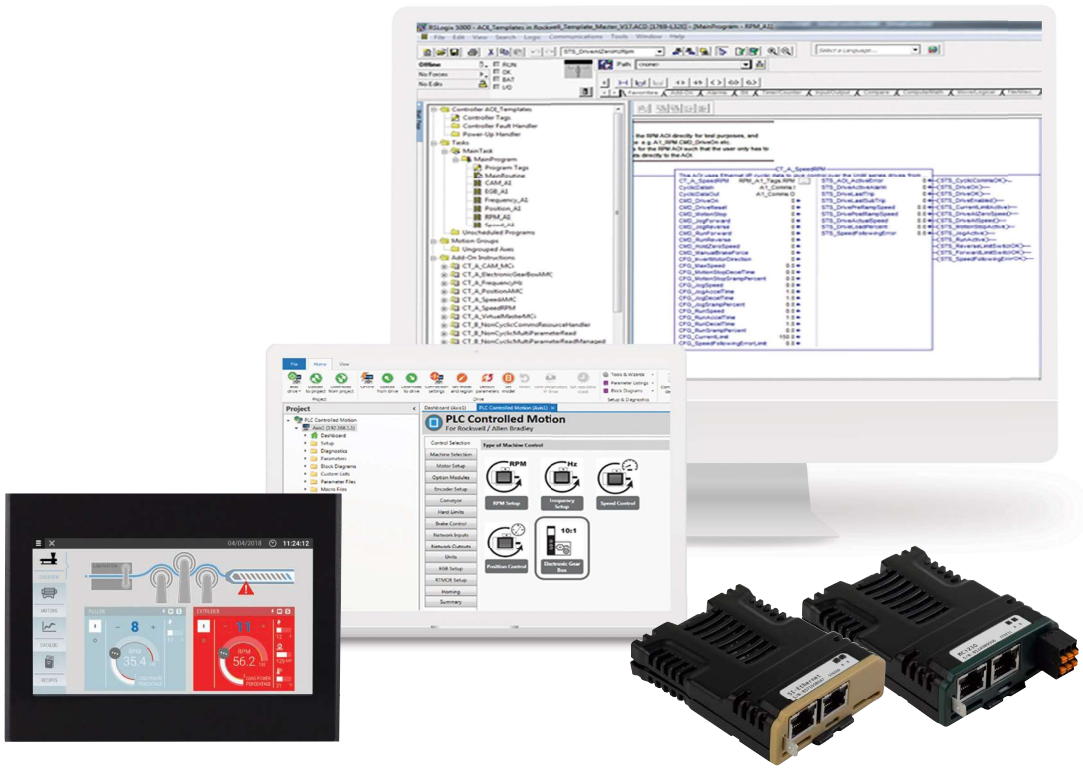
Sturdy cable management system providing a grounding point for shielded control cables

Integrated field controller

INDUSTRIAL CONTROL

PRODUCTS IN THIS RANGE

PLC CONTROLLED MOTION | MCH040, MCH070, MCHMOBILE | REMOTE I/O | MCe MACHINE CONTROLLER | MCz INDUSTRIAL PC | INTEGRATION MODULES



PLC CONTROLLED MOTION

INTEGRATION MADE EASY

FOR MAJOR PLC's

PLC Controlled Motion greatly simplifies the integration of Control Techniques drives into major systems.

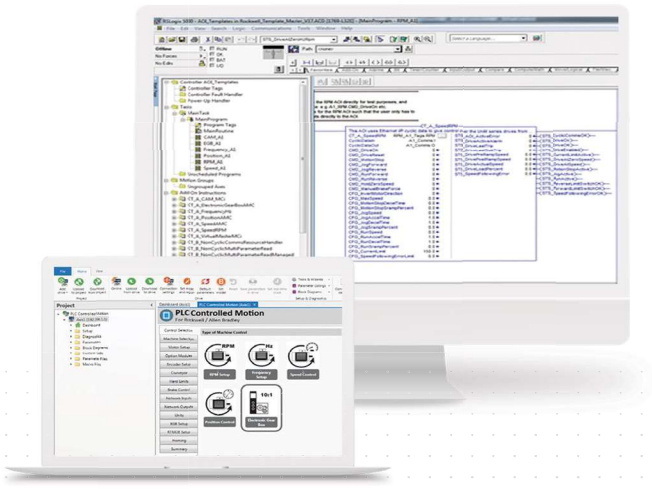
Composed of two parts, a function block for the PLC and a guided setup within the Connect PC tool, the process of creating the PLC control logic and configuring the powerful onboard motion capabilities of the drive is greatly simplified.

Application Benefits

Utilising the high-performance Advanced Motion Controller (AMC) inside the drive not only yields significant performance benefits but gives the possibility to create complex and high performance motion without the need to use very powerful PLCs.

All common control & commissioning parameters can be adjusted from the PLC reducing the need to leave the programming environment.

Ladder logic is used extensively in the implementation to ease understanding and facilitate debugging of the application logic. A level of customisation is also possible by the application developer should the function blocks provided not quite meet the needs of the application.



Installation and Configuration

A single installation will load all the function blocks and documentation required, as well as example projects to get the application up and running as quickly as possible.

Also included, is a library of utility function blocks that may be used to further reduce application development time.

PLC Controlled Motion fully configures the Ethernet/IP links thus reducing setup time and leaving more time to focus on the application development.

Motion Configuration

Five function blocks provide functionality to support applications across the motion spectrum.

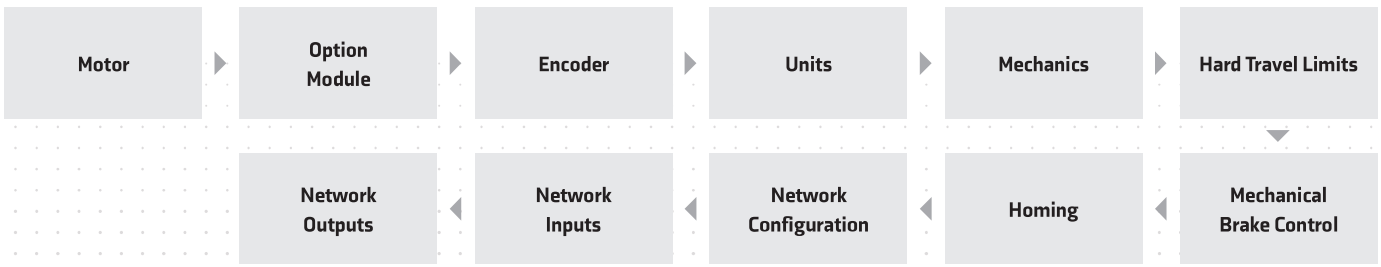
1. **Frequency Setup**
2. **RPM Setup**
3. **Speed Control**
4. **Position Control**
5. **Electronic Gear Box**

Motion Configuration

Entering the machine mechanics allows the use of user selectable units across the application; removing the burden of scaling calculations.

1. **Standard Gearbox Ratio**
2. **Belt and Pulley**
3. **Ball Screw Linear Slide**
4. **Rack and Pinion**
5. **Conveyor**
6. **Warm Drive**
7. **User Defined Rotary Ratio**

Guided steps for easy application configuration:



MCH040, MCH070, MCHMOBILE

POWERFUL, FLEXIBLE AND EASY TO USE

HMI PANELS & SOFTWARE

The MCh040 & MCh070 panels and MChMobile Software have been designed for the easy development of HMI applications including factory and building automation.

MCh040 features a bright 4.3" TFT widescreen (16:9) display and MCh070 features a bright 7" TFT widescreen (16:9) display with a fully dimmable LED backlight.

	MCh040	MCh070
System Resources		
Display - Colors	4.3" TFT 16:9 - 64K	7" TFT 16:9 - 64K
Resolution	480x272	800x480, WVGA
Brightness	200 Cd/m^2 typ.	200 Cd/m^2 typ.
Dimming	Yes	Yes
Touchscreen	Resistive	Resistive
CPU	ARM Cortex-A8 - 300 MHz	ARM Cortex-A8 - 1 GHz
Operating System	Linux 3.12	Linux 3.12
Flash	2 GB	4 GB
RAM	256 MB	512 MB
Real Time Clock, RTC Back-up, Buzzer	Yes	Yes
Interface		
Ethernet port	1 (port 0 - 10/100)	1 (port 0 - 10/100)
USB port	1 (Host v. 2.0, max. 500 mA)	1 (Host v. 2.0, max. 500 mA)
Serial port 1	1 (RS-232, RS-485, RS-422, software configurable)	1 (RS-232, RS-485, RS-422, software configurable)

- Full vector graphic support. Native support of SVG graphic objects, transparency and alpha blending.
- Multi-language applications with TrueType fonts. Easily create, install and maintain applications in multiple languages to meet global requirements.
- Rich set of state-of-the-art HMI features: data acquisition and logging, trend presentation, alarm handling, scheduler and timed actions (daily and weekly schedulers, exception dates), recipes, security and user management, e-mail and RSS feeds.
- Remote monitoring and control with Client-Server functionality.
- Powerful scripting language for automating HMI applications. Efficient script debugger improves productivity in application development.
- Screen object dynamics: control visibility and transparency, move, resize and rotate any object on screen. Change properties of basic and complex objects.
- Off-line and on-line simulation.
- Wide selection of communication drivers available to communicate with our drives with multiple-driver communication capability.
- Data display in numerical, text, bargraph, analogue gauges and image formats.

Standard Modbus

- Modbus RTU
- Modbus RTU server
- Modbus TCP
- Modbus TCP server

CT Modbus

- CT Modbus TCP

Others

- OPC UA Clien
- Ethernet/IP CIP
- A-B DF1
- A-B DH485
- A-B ENET

- Rich gallery of objects and symbols.

REMOTE I/O & ETHERCAT I/O

PROCESS CONTROL APPLICATIONS

I/O Modules enable process control without PLC

Process control applications often use a PLC system to manage the process, using I/O to communicate with sensors attached to the machines involved.

Now, a series of I/O modules is available for Control Techniques' drives. They are designed to enable applications of moderate complexity to be managed without the need for a PLC system, but directly using the drive itself. The first two products are an EtherCAT Remote I/O module, and a RTMoE or Modbus TCP Remote I/O module. Additional products may be added to the series in due course, according to demand.

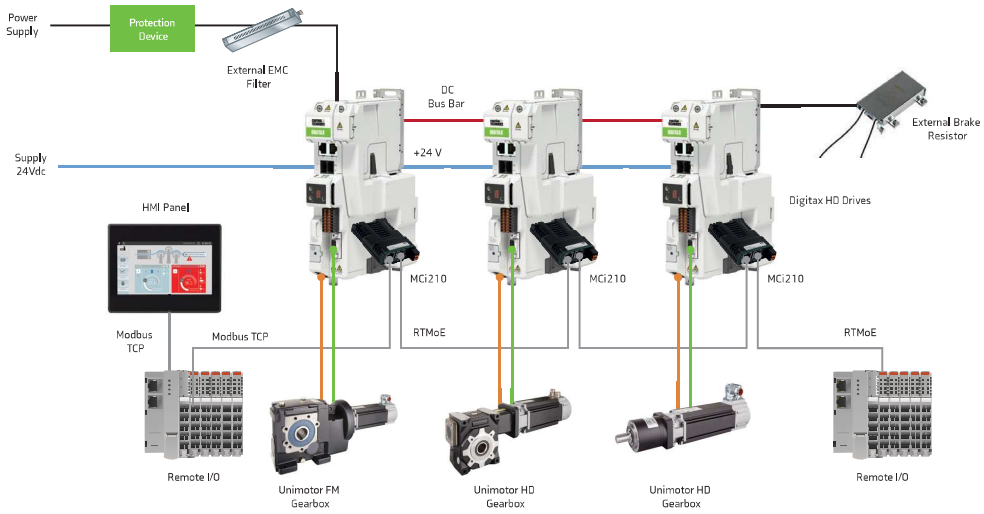
RTMoE or Modbus TCP Remote I/Os

EtherCAT Remote I/Os

RTMoE or Modbus TCP Remote I/Os - Most widely used network protocol

In this configuration, add-on RTMoE or Modbus TCP Remote I/O modules connect directly via the on-board Ethernet port of the M7XX series drives, or via the onboard Ethernet port of the MCi210 Machine Control option modules.

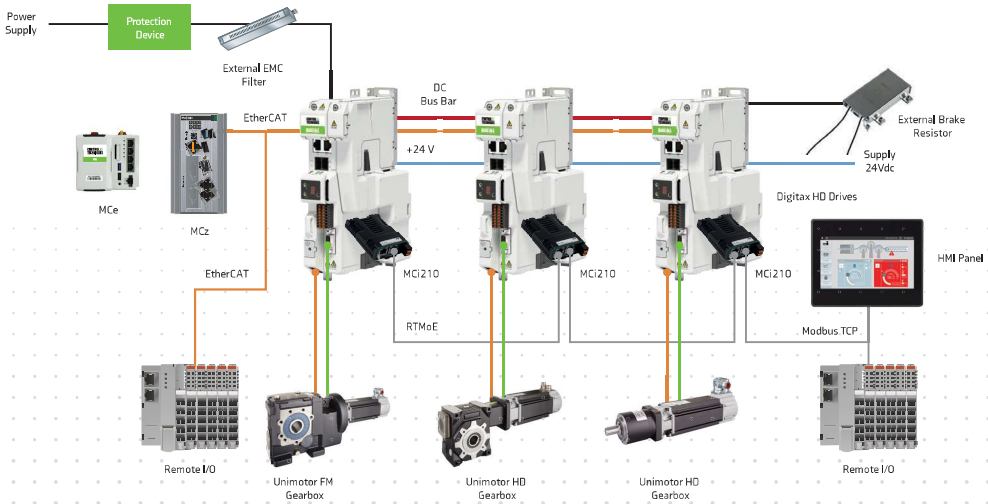
A typical configuration would include MCi2XX Machine Control option modules, Machine Control Studio software and the MCh040/MCh070 HMI Panels. All sensor inputs and outputs can be controlled, including LEDs, pushbuttons, temperature controls, machine status indicators and fluid flow sensors.



EtherCAT Remote I/Os - Easy connection of analogue and digital input & output signals

In this configuration, add-on EtherCAT Remote I/O modules connect via the on-board EtherCAT port of the MCe or MCz controllers, or through any EtherCAT port on any PLC or controller.

A typical scalable configuration would feature the EtherCAT Remote I/O module, used together with MCe or MCz controllers, MCi2XX Machine Control option modules, Machine Control Studio software and the MCh040/MCh070 HMI Panels. All sensor inputs and outputs can be controlled, including LEDs, pushbuttons, temperature controls, machine status indicators and fluid flow sensors.



MCe200

MACHINE CONTROLLER WITH HIGH PERFORMANCE MOTION FEATURES

Benefits

Fast machine development due to integration of logic, motion and visualisation

The Control Techniques solution provides an environment for programming controllers in all key programming languages with seamless support for the generation of visualisations.

Ease of use open standards

The use of standard Codesys provides ease-of-use. This package is supported by the majority of automation vendors, and most automation engineers are trained to use it.

Maximum choice for component integration due to PC based architecture

PC based architecture, including the Windows 10™ operating system, allows for the easy integration of third party components. This provides machine builders flexibility to choose best-in-class components for all applications.

Simple application integration due to standard onboard interfaces

Standard onboard interfaces including four Ethernet ports and two USB ports, mean that the Embedded Controller can be easily integrated with any application or machine.

Robustness due to rugged design

The Embedded Controller does not contain rotating fans or internal cabling, and is designed to operate in elevated temperatures. This increases reliability and reduces the need for maintenance, even in dusty environments.

MCe200

Our Embedded Controllers are stand-alone Machine Controllers with high performance Motion features that can manage every aspect of any industrial solution.

Our Embedded Controllers run on the Windows 10™ operating system and use standard Codesys V3.5 SP16 or newer, and so are fully compatible with third party software or hardware.

Hardware Specifications

- Latest generation processor Intel® Atom E3825 Dual Core 1.33 GHz
- Windows 10
- Inbuilt NVRAM
- 8GB solid state hard drive
- Multiple 1GB Ethernet ports
- Multiple USB ports
- Real time clock
- SD Card storage for application
- Fanless
- Operating temp: -20°C to 60°C

Support for multiple communication protocols:

- EtherCAT Client (PLCopen)
- Profinet Server
- Ethernet/IP Client & Server
- Modbus TCP/IP Client & Server
- OPC UA Server

Programmed via standard CODESYS V3.5 SP16 with these licences included

- Softmotion
- Web Visu

MCz201 & MCz601

Our Industrial PC Machine Controllers are general purpose computers that can manage every aspect of any industrial process, as well as a variety of wider tasks within your factory or business such as big data analysis. Our IPCs run on the Windows operating system and use standard Codesys V3.5 SP16 or newer, and so are fully compatible with third party software and hardware but have been optimized to work with other Control Techniques' products as a complete solution. The result is increased throughput for all machines.

There is increasing pressure on machine builders to develop new and more flexible products fast. That is why the MCz601 and MCz201 Industrial PC Machine Controllers have been designed to be quick and easy to install and commission. They have a robust, flexible and reliable design that allows for easy development and use, as well as for easy component and application integration.

Benefits

Fast machine development due to integration of logic, motion and visualisation

The Control Techniques solution provides an environment for programming controllers in all key programming languages with seamless support for the generation of visualisations.

Ease of use open standards

The use of standard Codesys provides ease-of-use. This package is supported by the majority of automation vendors, and most automation engineers are trained to use it.

Maximum choice for component integration due to PC based architecture

PC based architecture, including the Windows 10™ operating system, allows for the easy integration of third party components. This provides machine builders flexibility to choose best-in-class components for all applications.

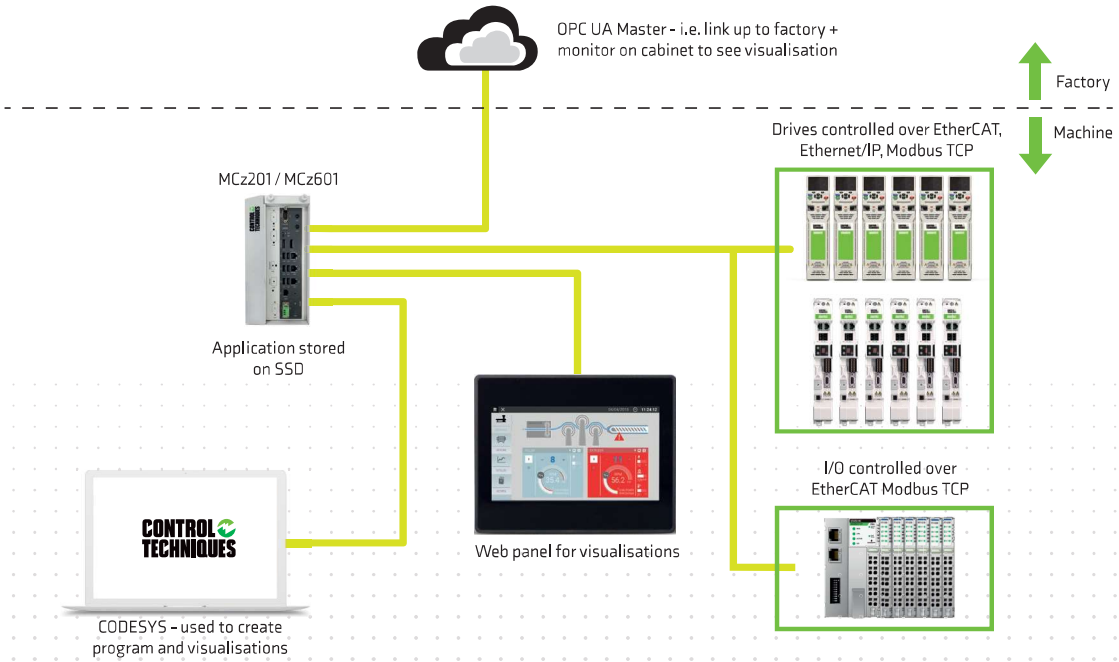
Simple application integration due to standard onboard interfaces

Standard onboard interfaces including four Ethernet ports and up to six USB ports, mean that the Industrial PC Machine Controller can be easily integrated with any application or machine.

Robustness due to rugged design

The Industrial PC Machine Controller does not contain rotating fans and is designed to operate in elevated temperatures. This increases reliability and reduces the need for maintenance, even in dusty environments.

Application example:



INTEGRATE, AUTOMATE, COMMUNICATE

Integration is at the heart of everything we do. Our modular drive expansion systems are designed to integrate into virtually any setup, no matter which communication protocol you use.

Our communication, I/O, feedback and machine control modules ensure anyone can experience the benefits of Control Techniques drives.

Communication

SI-Ethernet

SI-EtherCAT

SI-PROFINET V2

SI-CANopen

SI-PROFIBUS

SI-Encoder

SI-Interbus

SI-POWERLINK

Machine Control

SI-Applications Compact

MCi200

MCi210

PTi210 PowerTools

Feedback

SI-Encoder

SI-Universal Encoder

I/O

SI-I/O

Safety

MiS210

SI-Safety

OUR EXPERTISE

COUNT ON OUR EXPERTISE

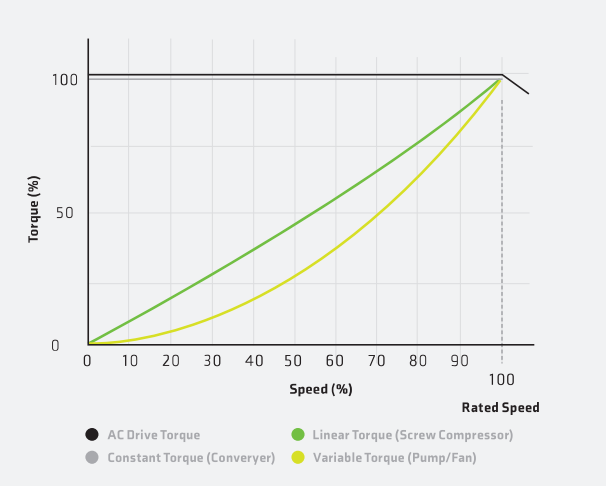
Energy Savings

How Variable Speed Drives Save Energy?

Control Techniques Variable speed drives provide effective speed control of AC motors by manipulating voltage and frequency. Controlling the speed of a motor provides users with improved process control, reduced wear on machines, increased power factor and large energy savings.

Most applications can be grouped into the following torque categories:

- Constant torque load applications such as conveyors often require a starting torque close to the rated torque of the motor, and show only small changes as they approach rated speed.
- Linear torque load applications such as screw compressors have a more linear torque requirement that increases proportionately with speed.
- Variable torque load applications like fans and pumps have torque requirements that increase in proportion to the square of the speed and reach 100% torque just below rated speed.



The most significant energy savings can be achieved in applications with a variable torque load. The cube law relationship between speed and power means that reducing a fan's speed in a variable torque load application by 20% can achieve energy savings of 50%. Therefore, for most motion control applications, reducing motor speed is often the easiest way to get large energy savings.

Diagnostics to turn-key solutions & maintenance

Energy Audits

- Pre-diagnostics (identifying main sources).
- Energy audit (gathering information & measuring electricity consumption).
- Report (measuring, suggesting and calculating achievable yield and ROI).
- Provide turnkey, high-yield solutions.
- The Energy Savings Advisor app performs a customised analysis of motor and drive energy consumption.

Complete Offering

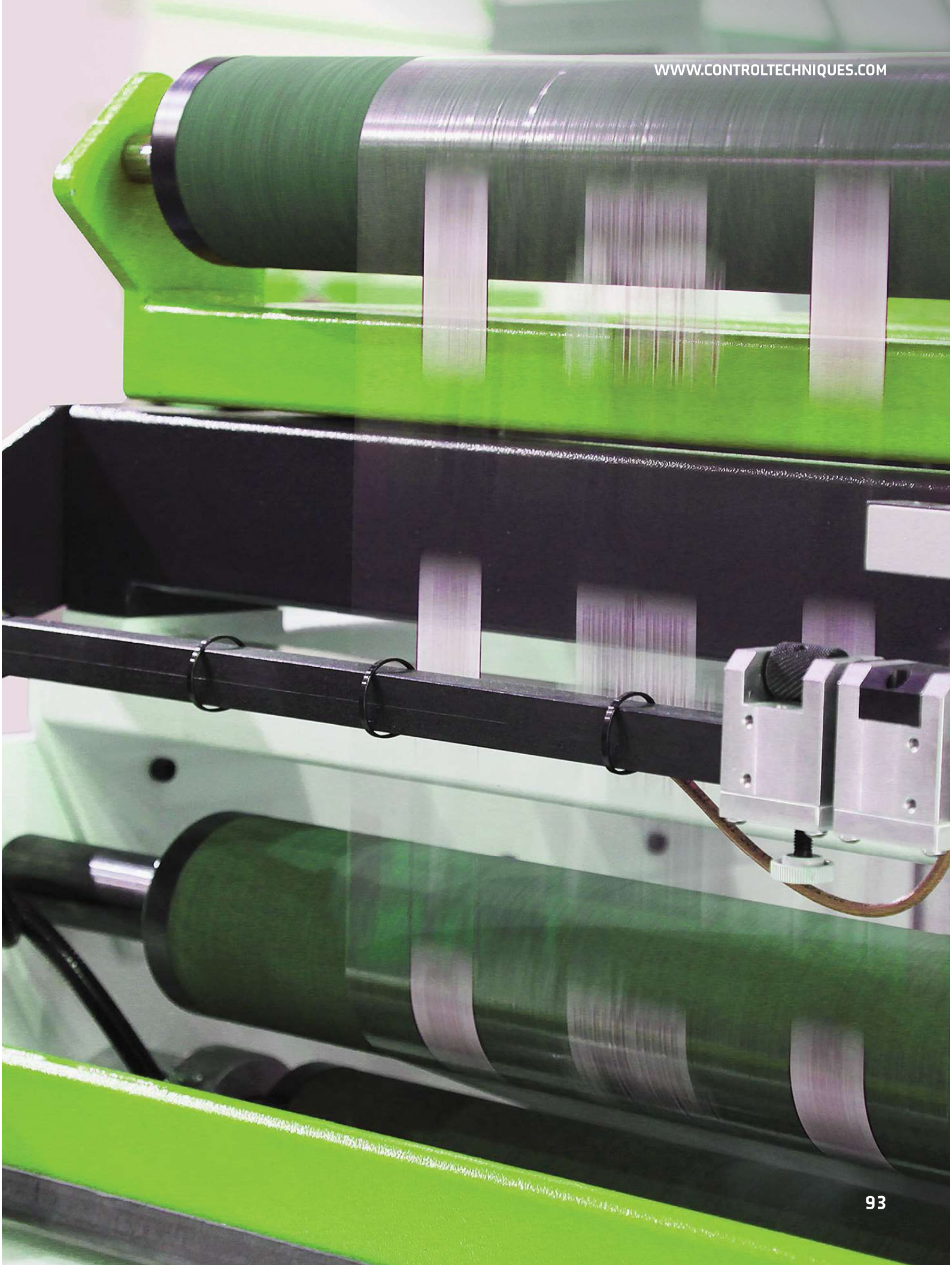
- IMfinity® high premium and super premium efficiency induction motors IE3, IE4.
- Dyneo® best-in-class efficiency (>IE4) permanent magnet motors.
- Geared motor execution for low speed, high torque applications.
- Unidrive M and Powerdrive standard and customised drives. Scalable automation solutions – from small machine automation projects up to complete automation & electrical turnkey solutions. High performance soft starter range.
- Express availability: an offer to deliver products with a guaranteed short lead time.

Installation & Commissioning

- Accredited personnel ensure reliability and safety of equipment.
- Installation in compliance with local technical regulations and safety standards.
- Onsite commissioning.
- Extended system guarantee.
- Installation and maintenance.

After Sales

- Emergency services: 24/7 telephone and web support, onsite technical assistance, express round-the-clock delivery of products or spare parts and urgent repairs.
- Assembly centers for ongoing maintenance work (replacement, retrofit and upgrades).
- Maintenance contracts. Services are optimised on a country-to-country basis, so please refer to your local sales contact for full details. Advisor app with your smartphone or tablet, simply scan the QR-code.



INTEGRATED SAFETY

THE NEW PARADIGM OF SYSTEM DESIGN

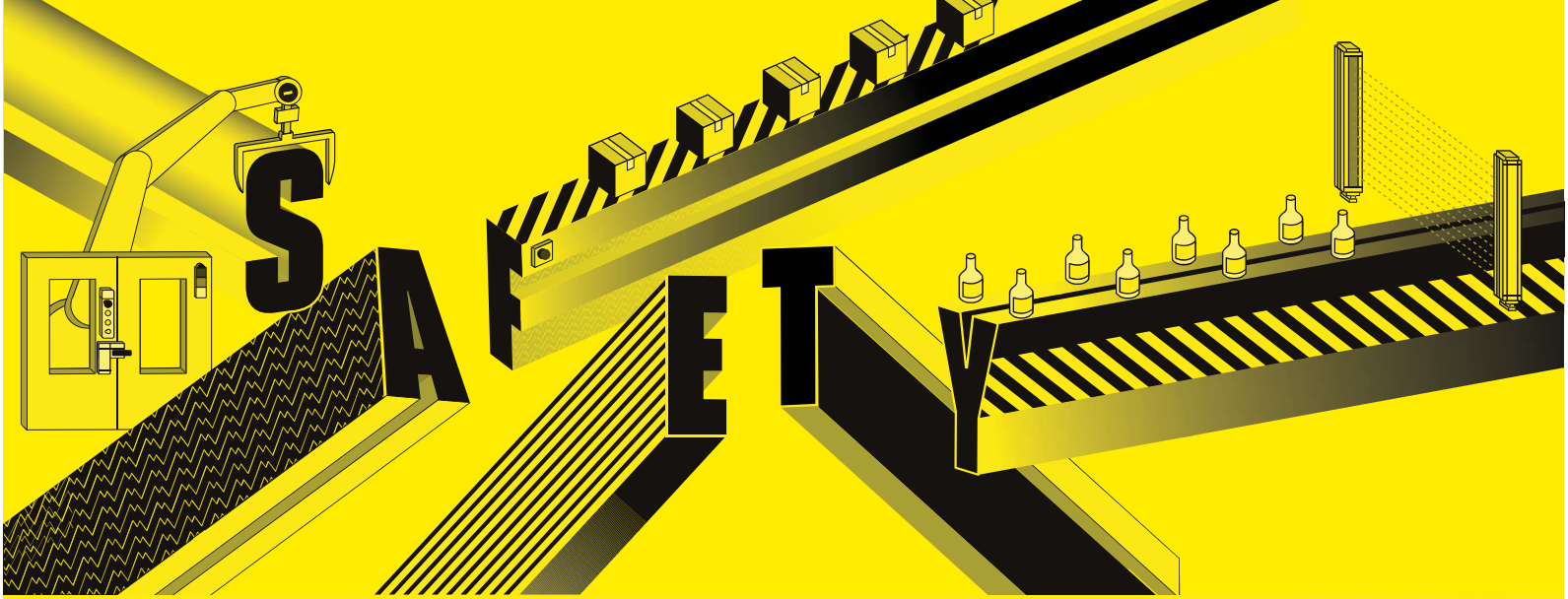
Modern industrial processes face a three-fold challenge: the constant demand for increased machine throughput, matched by a parallel need to reduce complexity and points of failure, all the while ensuring the health and safety of human operators and allowing them interaction with the running process.

Modernising system design, replacing traditional electro-mechanical safety components with the capabilities of the latest generation of variable speed drives, is the new standard across industries to increase efficiency and availability.

Unidrive and Digitax offer integrated dual Safe Torque Off (STO) inputs, certified to SIL3 / PLe, providing an elegant and more reliable solution over traditional motor contactors.

The MiS210 and MiS250 safety options extend the built-in STO with the ability to safely monitor and/or restrict the scope of motion. Supporting both wired and safety fieldbus connections, they offer maximum flexibility in the safety system architecture.

TÜVRheinland®
CERTIFIED



Simple, cost-effective & functional

The conventional approach to functional safety relies on an external safety controller, electromechanical components to disconnect the drive from the motor and often additional sensors to monitor speed or position.

Integrated safety can **dramatically reduce the cost and design time.**

Onboard STO safely switches off torque to the motor negating the need for external contactors.

The addition of an MiS210 or MiS250 Safety option enables complex safe motion monitoring directly on the drive using the existing motor encoder.

While many applications can be completely solved with a drive-based distributed architecture, when an external safety PLC is required, drive integration is easily achieved using network safety protocols.

Performance without compromises

When protecting people and equipment from hazards, timeliness is of the essence.

Integrated safety offers **faster reaction times**, thanks to the close-coupling of safety function and drive.

Support of the SafeEnDat protocol enables the use of functional safety certified encoders, with the ability to reach SIL 3 / PLe with a single motor-mounted encoder.

All of our integrated safety functions are externally certified to control category SIL 3 or PLe (Performance Level e).

Flexible safety solution

With an integrated safety solution from Control Techniques you always enjoy **maximum flexibility**, be it in the functional design or the choice of components and protocols to integrate.

The MiS210 and MiS250 options support several encoder protocols on up to 4 different channels wired to the drive or directly to the module. Onboard Motion Safety Functions support multiple instances and safe logic blocks are also available to allow implementation of complex safety chains.

Control and monitoring of the functions, as well as transfer of safe position and speed values are available over the main safety fieldbuses: CIP Safety over EtherNet/IP and FSoE over EtherCAT.


CONTROL TECHNIQUES
COMMANDER
GENERAL PURPOSE, LOW VOLTAGE AC DRIVES
DRIVE OBSESSED
CONTROL TECHNIQUES
PUMP DRIVE F600
SIMPLE, RELIABLE FLOW CONTROL
SPECIALIST DRIVE
DRIVE OBSESSED
CONTROL TECHNIQUES
CONTROL TECHNIQUES
COMMANDER S
MAKING SIMPLE APPLICATIONS, SIMPLE.
AC DRIVES, GENERAL PURPOSE
DRIVE OBSESSED
DIGITAX HD
MINIMUM SIZE, MAXIMUM PERFORMANCE
DRIVE OBSESSED
CONTROL TECHNIQUES
CONTROL TECHNIQUES
MENTOR MP
HIGH PERFORMANCE DC DRIVE
DRIVE OBSESSED
ELEVATOR
DRIVES FOR CLASS-LEADING RIDE COMFORT