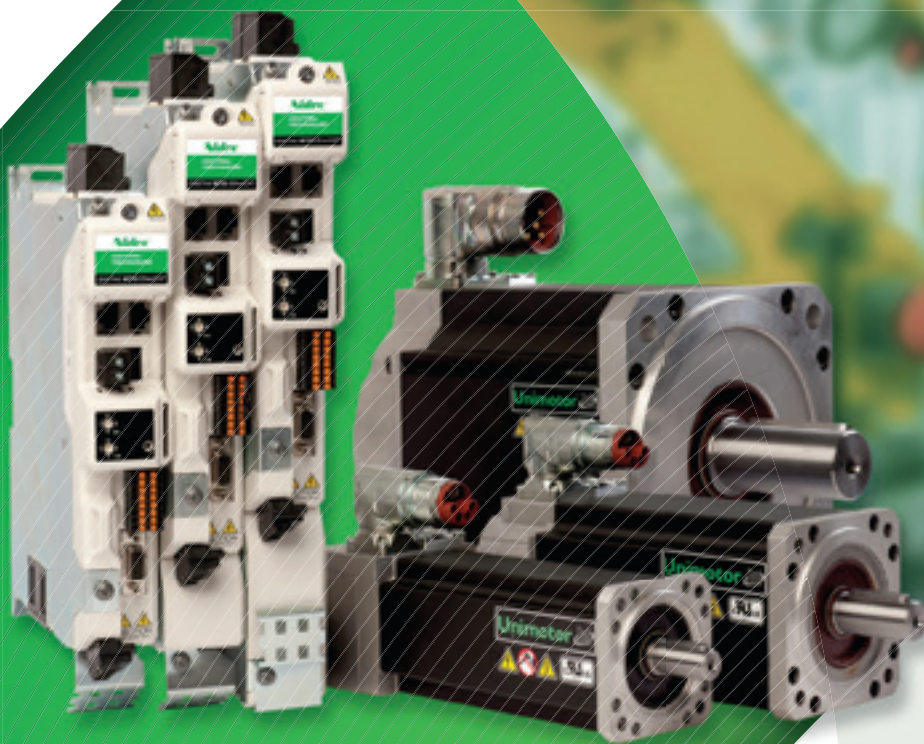


**CONTROLTM
TECHNIQUES**

DIGITAX HD

SERVO DRIVE SERIES



0.7 - 51 Nm, 300% overload
(6.2 - 451 lb-in, 300% overload)
1.5 - 16 A, 300% overload
200 V | 400 V
0.25 - 7.5 kW (0.6 - 9.8 hp)

Minimum size,
maximum performance

Nidec
All for dreams

Servo solutions for continuous and pulse duty applications

Control Techniques' servo solutions provide ultimate performance and flexibility for machinery manufacturers with a wide range of servo drives and motors.

Digitax HD

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



Unidrive M700

Unidrive M700, with high performance and an extensive power range, is the ideal option for continuous duty applications, where precise, continuous torque delivery is required.

Unimotor

Unimotor is a comprehensive family of high performance AC brushless servo motors. With a wide torque and speed range, and a broad selection of feedback options, Unimotor offers the perfect match for Digitax HD and Unidrive M700 to meet any application requirement.

Drive and Motor Compatibility



Digitax HD

0.25 kW - 7.5 kW
(0.6 hp - 9.8 hp)
200 V | 400 V



Unidrive M700

0.75 kW - 2.8 MW
(1 hp - 4,200 hp)
200 V | 400 V | 575 V | 690 V

300% OVERLOAD

200% OVERLOAD



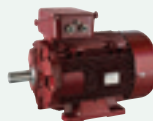
Pulse Duty Servo Range - Unimotor HD
(Optimized with the Control Techniques pulse duty drive)



Continuous Duty Servo Range - Unimotor FM
(Optimized with the Control Techniques continuous duty drive)



Induction



High efficiency motors

Actual size



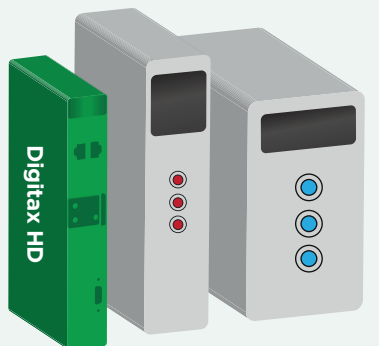
Minimum size servo solutions

Reduce cost and maximize floor space

Minimal footprint and exceptional power density make Digitax HD one of the **smallest servo drives** on the market today. This means that you can build the most compact cabinets possible.

The market's narrowest servo drive

- Digitax HD is just 40mm (1.6 in) wide
- 25 drives, up to 16A per drive, can fit in just 1 meter (40 in) of cabinet space



40mm (1.6 in) Typical competitors



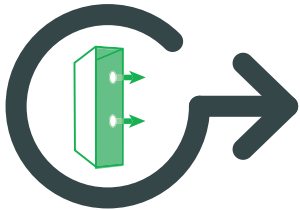
Drive dimensions

Dimensions	Frame 1		Frame 2		Frame 3	
	in	mm	in	mm	in	mm
Width	1.57	40	1.57	40	1.57	40
Depth	6.85	174	6.85	174	6.85	174
Height	9.17	233	11.0	278	12.9	328
Nominal current @ 400 V	4.2 A		10.5 A		12.9 A	
Peak current @ 400 V	12.6 A		31.5 A		48 A	

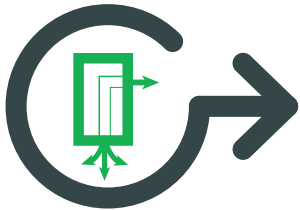


Just 40 mm (1.6 in)

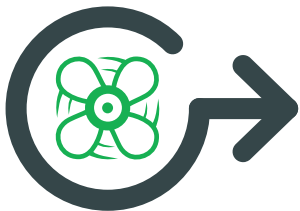
Further reduce cabinet size with Ultraflow™ thermal management



Reduce cabinet height by directly stacking rows of drives. Control Techniques' patented Ultraflow™ technology expels heat directly outside of the cabinet through the rear of the drive* and removes heat build-up in the cabinet.



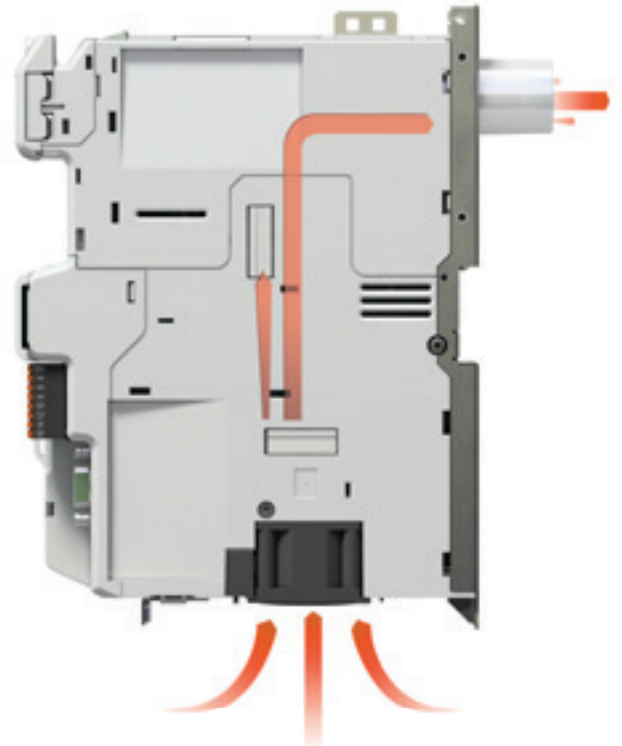
Ultraflow™'s guided internal airflow prevents ingress on drive circuits and, combined with conformal coating, minimizes contamination risk.



An intelligently controlled fan optimizes fan lifetime and minimizes acoustic noise, while contributing to the maximum thermal cooling by Ultraflow™.



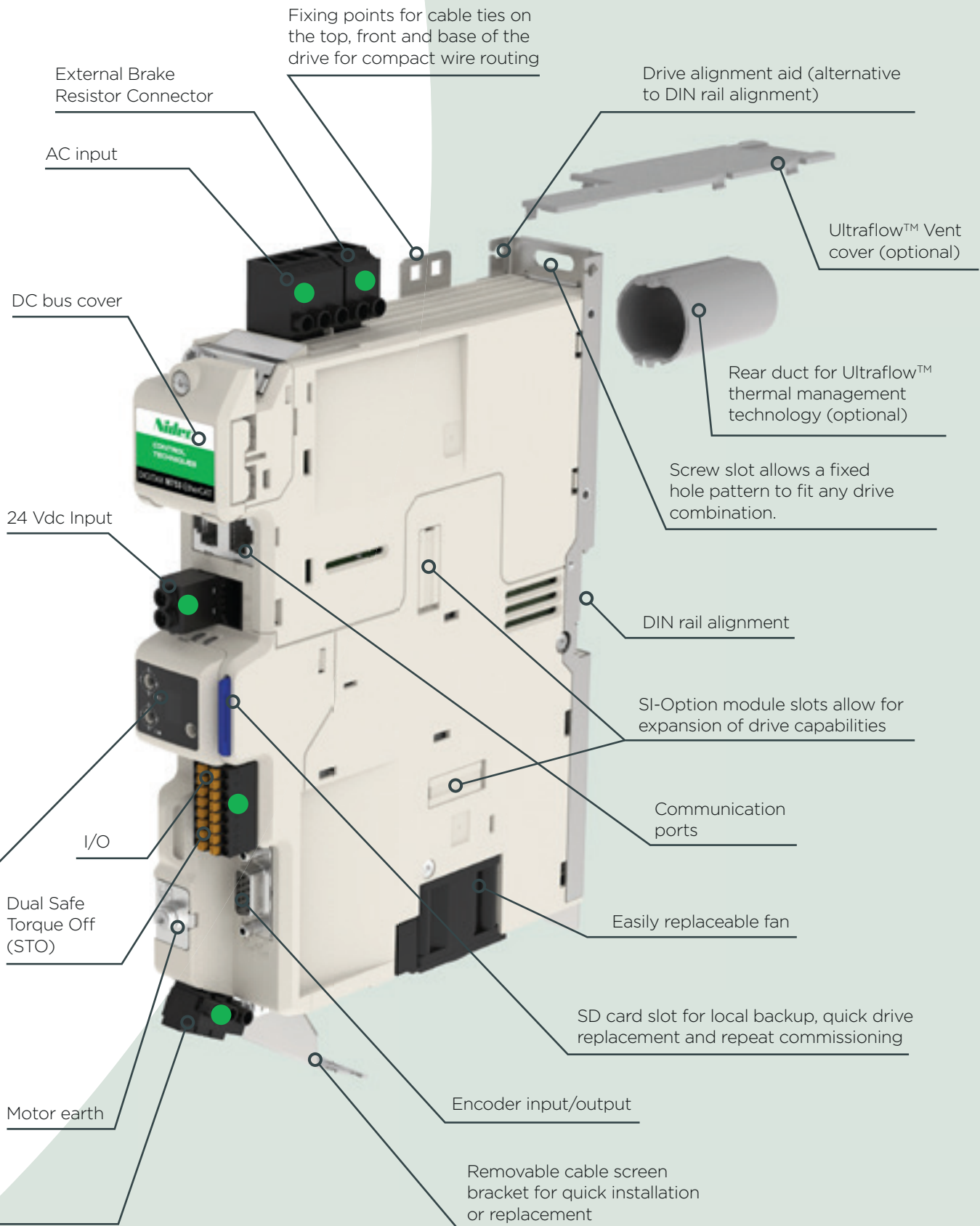
Ultraflow™ requires only a 32 mm (1.25 in) hole in the cabinet meaning rapid, trouble-free installation**



Ultraflow™ is a registered Trademark of Control Techniques

* Drive heat dissipation can also be achieved via vents on top of the drive, as standard.

** Frames 2 and 3 require 2 x 32mm (1.5 in) holes



● Easy access pluggable connectors

M750 EtherNet (multiprotocol)

Network drive for centralized and decentralized motion application



Digitax M750 EtherNet

Onboard multiprotocol EtherNet, supporting Real Time Motion over EtherNet (RTMoE), EtherNet/IP, Modbus TCP/IP and PROFINET RT

Onboard advanced motion controller for 1.5 axis motion control

EtherNet webpages hosted onboard the M750 EtherNet drive

Reduced downtime with machine safety

- Integrated Dual Safe Torque Off
- Meets SIL3 and PLe

RTMoE

Digitax HD's standard EtherNet supports RTMoE (Real-Time Motion over EtherNet) which provides synchronized communication between drives using the Precision Time Protocol as defined by IEEE1588 V2:

Distributed clocks are used to automatically synchronize the position, speed and current loops across all drives

High speed network synchronization of less than 1 μ s jitter (typically <200 ns) and 1 ms cycle time for synchronous cyclic data

Advanced Motion Controller onboard

Advanced 1.5 axes motion controller, key features include:

- 250 μ s cycle time
- Motion profile generator
- Electronic gearbox
- Interpolated cam
- Homing functions
- High speed position freeze



Machine controllers

MCI200 & MCI210

Second processor for PLC programs and multi-axis control

MCI200 and MCI210 modules add a powerful processor to Digitax HD. They extend the drives system and machine control capability to run application programs up to four times faster than a standard PLC.

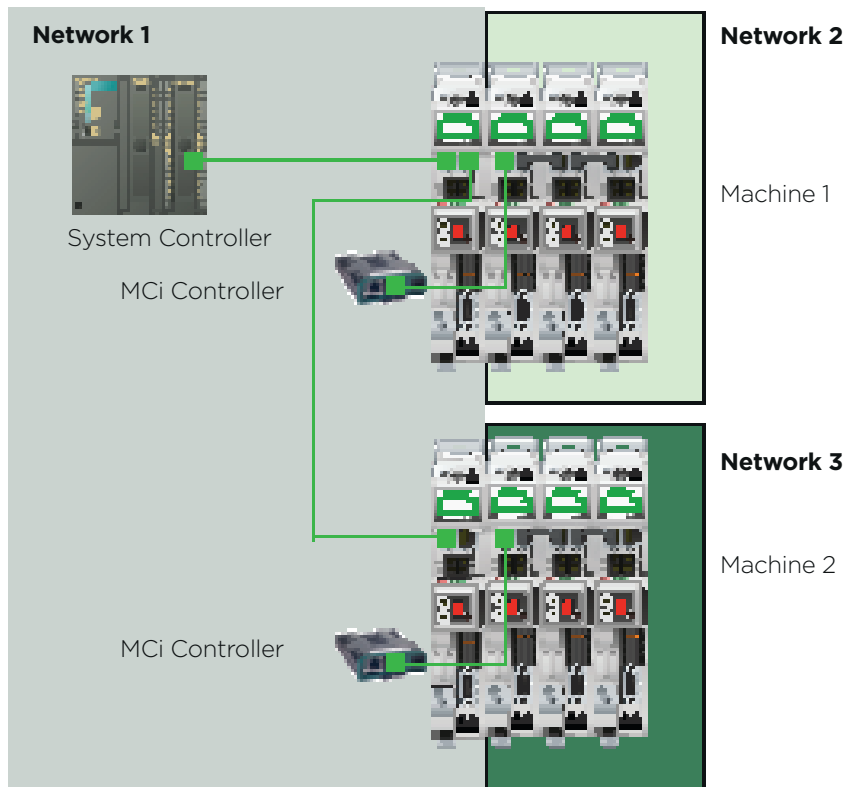
Programs are fast and easy to develop thanks to the user-friendly Machine Control Studio software which uses industry standard IEC 61131-3 programming languages.

MCI programs can access and manage the drive embedded Advanced Motion Controller, providing perfectly synchronized multi-axis machine performance.

- Two EtherNet ports with an internal switch
- Support for standard EtherNet protocols
- RTMoE for synchronized cyclic data at 250 µs
- Modbus TCP/IP master
- Machine control over two segregated EtherNet networks enables greater flexibility in machine design
- Extended fast I/O (3 x digital inputs, 1 x digital output, 1 x digital I/O)



Segregated network control



M751 Base

Base drive for configuration flexibility



Digitax M751 flexibility

Two option slots for functionality extension and customization – refer to page 21 for the comprehensive option module list

Built-in Modbus RTU over RS485 communications

Onboard Advanced Motion Controller for 1.5 axis motion control

Analog and pulse/direction control for centralized motion

Reduced downtime with machine safety

- Integrated Dual Safe Torque Off
- Meets SIL3 and PLe

Advanced Motion Controller onboard

Advanced 1.5 axes motion controller, key features include:

- 250 μ s cycle time
- Motion profile generator
- Electronic gearbox
- Interpolated cam
- Homing functions
- High speed position freeze

M753 EtherCAT

EtherCAT drive for centralized motion control applications

Digitax M753 EtherCAT

Digitax M753 features an integrated 2-port EtherCAT switch for easy integration in centralized motion control applications

EoE (EtherNet over EtherCAT) support allows PC tool connection for commissioning and monitoring over the EtherCAT network

The station alias can be dynamically assigned by the EtherCAT master, or hardwired with the two rotary switches built into the display

An optional RS485 adaptor is available, providing a back-up PC tool connection in case of network failure

High performance with flexibility

Operate with any automation product via EtherCAT

- Operate with motion controllers, motion PLCs and Industrial PCs via built-in EtherCAT
- Dual 100Mbps EtherCAT interfaces for use with in-line topologies
- Non-cyclic data communication using the CoE mailbox

Flexibility for all applications achieved through full access to drive functions

- CANopen over EtherCAT (CoE) including:
 - > CIA-402 profile
 - > Cyclic sync position mode
 - > Interpolated position mode
 - > Velocity mode
 - > Profile torque mode
 - > SDO access to all profile objects and drive parameters

Reduced downtime with machine safety

- Integrated Dual Safe Torque Off
- Meets SIL3 and PLe



EtherCAT®

SIL3 PLe
Safety Integrity Level



Option module flexibility

Our innovative design means you only increase drive size when option modules are used, therefore **achieving significant space saving** in the overall configuration.



Adding the option mounting kit **only adds an additional 22 mm (0.86 in) width**, providing a maximum drive width of 62 mm (2.44 in).

Option modules

Digitax HD supports a range of communications, I/O, feedback and machine control option modules.



Feedback

SI-Universal Encoder

Encoder input and output interface supporting Quadrature, SinCos, EnDat and SSI encoders.



SI-Encoder

Quadrature encoder input interface module.



I/O

SI-I/O

Extended I/O interface module to increase the number of analog and digital I/O points on the drive.



Communications

SI-EtherCAT



SI-PROFINET



SI-EtherNet*



SI-DeviceNet



SI-CANopen



SI-PROFIBUS



Applications with PLC or Motion Functionality

MCI200

Advanced machine control using industry standard IEC61131-3 programming languages



MCI210

Extended advanced machine control using industry standard IEC61131-3 programming languages and integrated EtherNet connectivity



SI-Apps Compact

Compatible module allows legacy SyPTPro application programs to be re-compiled for Digitax HD



* Support of real-time EtherNet (RTMoE), HTTP, SMTP, EtherNet/IP and Modbus TCP/IP

Digitax HD kits and accessories

Multi-axis Kit	
Description	Order code
Multi-axis Kit (standard - without SI-Option Mounting Kit fitted)	9500-1047
Multi-axis Kit (with SI-Option Mounting Kit fitted)	9500-1048



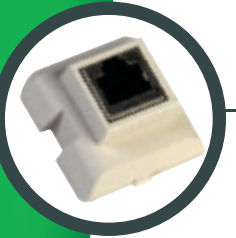
Description	Order code
External Cable Grommet Kit up to 6mm ²	3470-0145
External DC Cable Connection Kit up to 16mm ²	9500-1050



Description	Order code
USB to EIA485 Communications Converter Cable	4500-0096



Description	Order code
KI-Compact 485 Adaptor	82700000020300



Description	Order code
KI-Compact Display	82700000020400

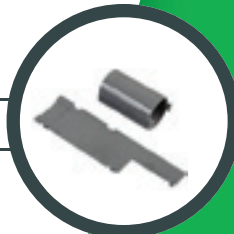


Standard cables available	
Description	Order code
Refer to pages 33 and 34	



Description	Order code
Input Line Choke	4401-0236

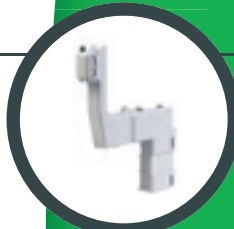
Description	Order code
Remote Keypad RTC	8240000019600



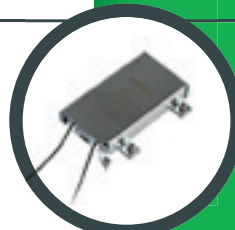
Description	Order code
Frame 1 Rear Ultraflow™ Vent Kit	3470-0158
Frame 2/3 Rear Ultraflow™ Vent Kit	3470-0181



Description	Order code
Retrofit Kit - Epsilon 202-206	3470-0185
Retrofit Kit - Epsilon 209-216	3470-0184
Retrofit Kit - Digitax ST/SPO	3470-0182
Retrofit Kit - M'Ax	3470-0183



Description	Order code
SI-Option Mounting Kit	9500-1055



Drive - Mountable Brake Resistor	
Description	Order code
Compact Brake Resistor Kit - 50 W, 70 Ω	9500-1049

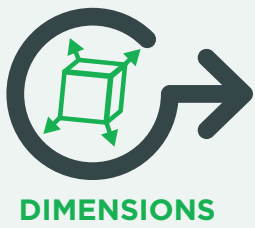


External Brake Resistor	
Description	Order code
External Brake Resistor - DBR 100 W, 20 Ω	1220-2201
External Brake Resistor - DBR 100 W, 40 Ω	1220-2401
External Brake Resistor - DBR 100 W, 80 Ω	1220-2801

Description	Order code
Fan Replacement Kit (frame 1 and 2)	9500-1053
Fan Replacement Kit (frame 3)	9500-1054

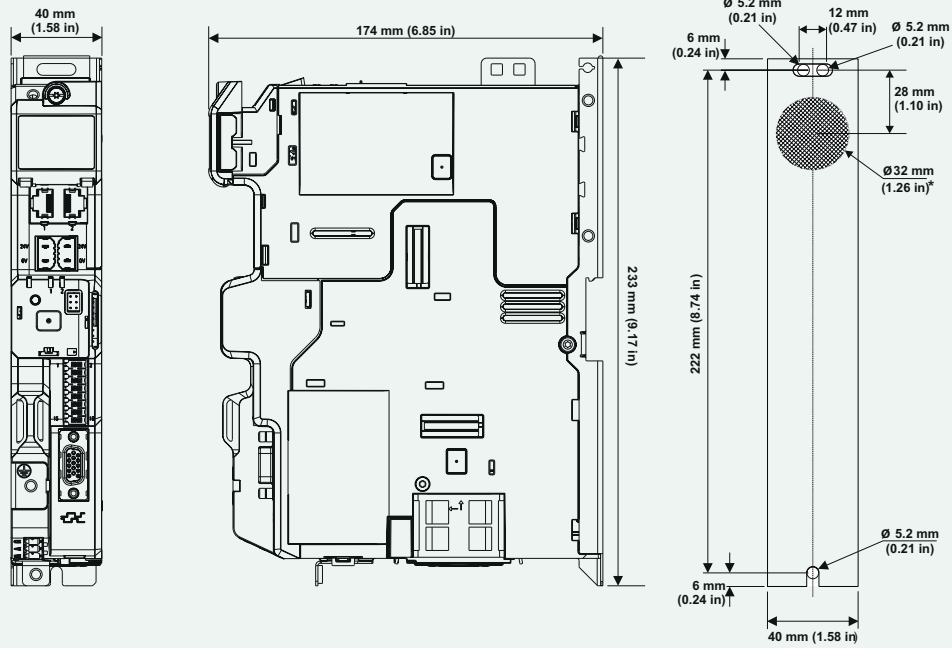


Description	Order code
Encoder breakout kit	8270000020200

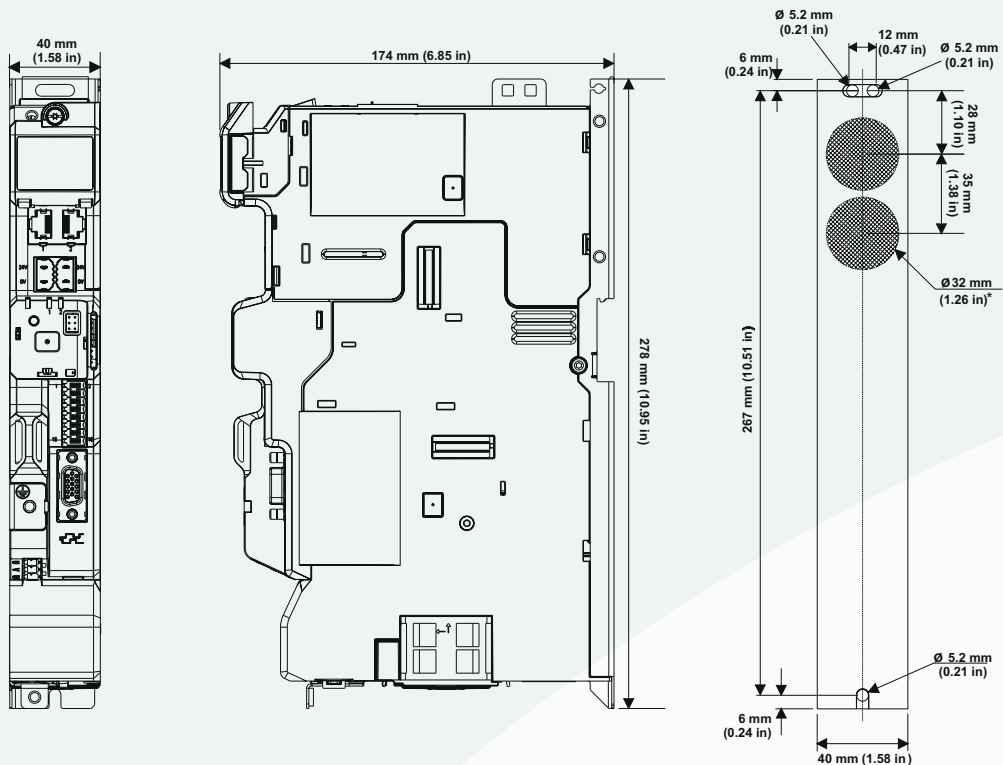


Digitax HD & Unimotor HD dimensions

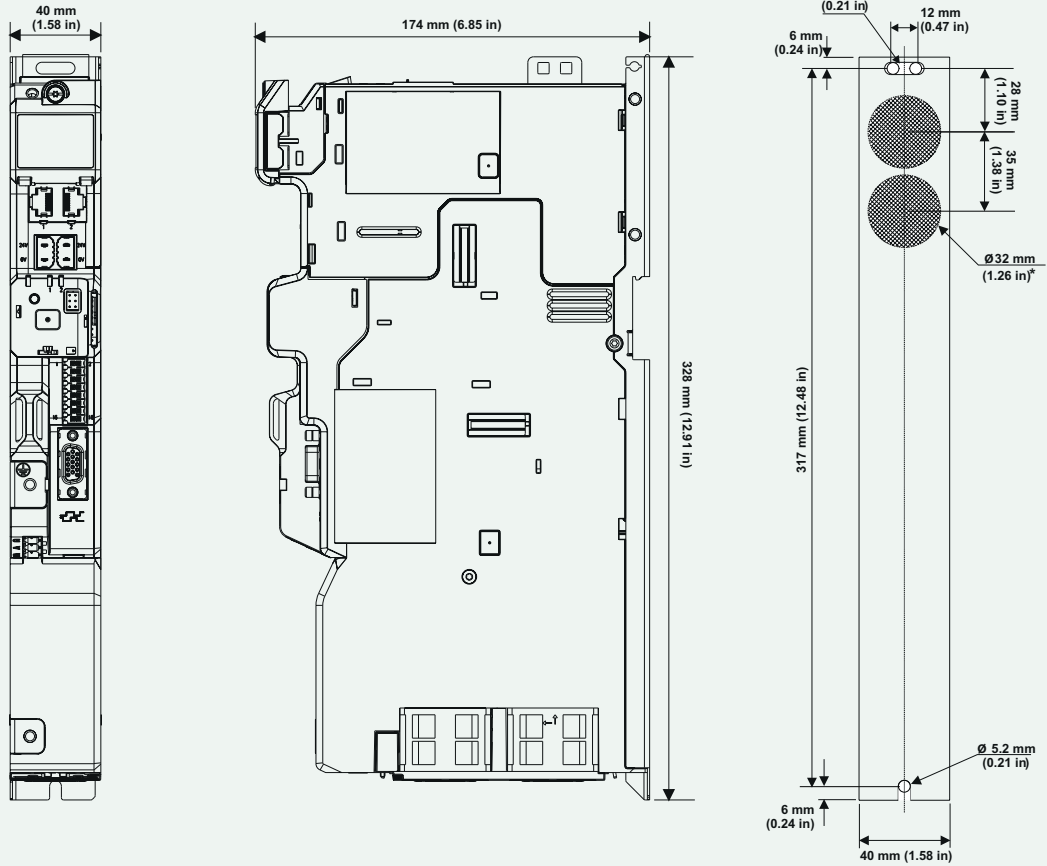
Frame 1



Frame 2



Frame 3



Notes:
 Additional space above and below the drive may be required for cable routing.
 Option module frame adds 22mm width.
 Alternative screw mounting options available. Please refer to the Installation Guide.

Connect with us at:



www.controltechniques.com

Control Techniques is your global drives specialist.

With operations in over 70 countries, we're open for business wherever you are in the world.

For more information, or to find your local drive centre representatives, visit

www.controltechniques.com



© 2018 Nidec Control Techniques Limited. The information contained in this brochure is for guidance only and does not form part of any contract. The accuracy cannot be guaranteed as Nidec Control Techniques Ltd have an ongoing process of development and reserve the right to change the specification of their products without notice.

Nidec Control Techniques Limited. Registered Office: The Gro, Newtown, Powys SY16 3BE. Registered in England and Wales. Company Reg. No. 01236886.

P.N. 0778-0502-06 05/19

Apple, the Apple logo, iPhone, and iPad are trademarks of Apple Inc., registered in the U.S. and other countries and regions. App Store is a service mark of Apple Inc.

Google Play and the Google Play logo are trademarks of Google LLC.