

# Digitax HD

## Servo series specification

		M753 EtherCAT	M751 Base	M750 EtherNet	M751 + MCI210
Performance	Update Rates	Current Loop Update: 62 µs			
		Speed Loop Update: 250 µs			
		Position Loop Update: 250 µs			
	Overload	*Closed-loop Overload: Maximum closed loop peak current for 0.25 s (from cold: 300 % for 8 s or 200 % for 60 s)			
*Open-loop Overload: Maximum open loop peak current for 8 s (from cold: 150 % for 100 s)					
	Max Output Frequency	550 Hz (RFC-A and RFC-S) 599 Hz (Open Loop)			
	Switching Frequency	Configurable range: 2, 3, 4, 6, 8, 12, 16 kHz			
		Default: 8kHz			
Ultraflow™ Technology	Adjustable Venting	Top venting or rear venting (with optional kit)			
	Intelligent Fan Control	Temperature controlled fan operation with user adjustable speed limit			
	Managed Internal Airflow	Managed airflow for maximum ingress protection			
Onboard Intelligence	Motion	Advanced Motion Controller			MCI210
		Parameterised motion			Programmable motion
		1.5 Axes			Up to 5 Axes
		Positioning digital lock control			Positioning digital lock control camming
	PLC	Onboard PLC			Onboard Machine Controller
		IEC61131-3 programming (IL, LD, FBD, SFC, ST, CFC)			
Control	Motor Control Modes	V/F, Open loop vector, Rotor flux control-Asynchronous for induction motors (Sensorless or with feedback 'Closed Loop'), Rotor flux control-Synchronous (Sensorless or with feedback 'Closed Loop')			
	Control Modes	Position control, speed control, torque control			
	Control Features	Stationary autotune for permanent magnet motors Advanced bi-quad filters for suppression of mechanical resonances			
Interface	Onboard Communications	2-port EtherCAT switch	2-port RS485	2-port EtherNet switch	2-port RS 485 2-port EtherNet switch
	Fieldbus	EtherCAT	Modbus RTU	Modbus RTU, Modbus TCP/IP, EtherNet/IP, PROFINET RT	Modbus RTU, Modbus TCP/IP, EtherNet/IP
	Real Time Motion	EtherCAT (CoE)	None	RTMoE	RTMoE
	Analog I/O	1 Analog Input ± 10V, 12 bits (11 bits + sign)			
	Digital I/O	2 DI, 2 DO (100 mA), 1 motor brake output (1 A, max 1.3 A)			
	Pulse Train Input	Frequency/Direction 5 V differential, 500 kHz			
	Encoder Feedback	2 x Encoder input and 1 simulated encoder output			
	Supported Encoders	Resolver, Quadrature, AB Servo, SinCos, EnDat (2.1/2.2), SSI, BiSS, Hiperface			
	Safety	2 x Safe Torque Off (STO) via terminal, PLe, SIL3			
Commissioning	Interface	EtherNet over EtherCAT (EoE)	RS485	EtherNet	RS485 / EtherNet
	Commissioning Tool	Connect			
	Motion Programming Tool	-	Machine Control Studio		
General	Mechanical Attributes	Removable cable screen clamp			
		User replaceable fan(s)			
		Conformal coating			
	Backup	SD Card			
		Electronic motor nameplate parameter storage (HIPERFACE, Endat 2.2)			
	Braking	Braking resistor: external / drive mountable			
		Braking chopper: integrated			
	Multi-axis	Busbars for common DC bus and earthing			
Quick Links for 24 V distribution					
Display	Yes	Optional	Yes	Optional	

RFC-S: Rotor Flux Control for Synchronous (permanent magnet brushless) motors  
RFC-A: Rotor Flux Control for Asynchronous (induction) motors

\* The stated percentages apply only to three phase continuous current

# Drive ratings

200 V Single Phase	Frame Size	Frame Size 01			Frame Size 02		Frame Size 03		
	W x D x H mm (in)	40 x 174 x 233 (1.57 x 6.85 x 9.17)			40 x 174 x 278 (1.57 x 6.85 x 10.94)		40 x 174 x 328 (1.57 x 6.85 x 12.91)		
	Line Supply	Single Phase AC 200 V...240 V (± 10%) @ 45...66 Hz							
	M75X-...	01200022	01200040	01200065	02200090	02200120	03200160		
	Output Servo								
	Rated Current (A)	1.1	2.2	3.5	5.6	7.5	10.8		
	Max Peak Current (A)	6.6	12	19.5	27	36	48		
	Output AC Induction								
	Max Continuous Current (A)	1.1	2.2	3.5	5.6	7.5	10.8		
	Open Loop Peak Current (A)	3.3	6	9.8	13.5	18	24		
	Closed Loop Peak Current (A)	6.6	12	19.5	27	36	48		
	Motor Power at 230 V (kW)	0.18	0.37	0.75	1.1	1.5	2.2		
	Motor Power at 230 V (hp)	0.25	0.5	1.0	1.5	2.0	3.0		
Overload									
Closed-loop Overload	Maximum closed loop peak current for 0.25 s								
Open-loop Overload	Maximum open loop peak current for 8 s								
200 V Three Phase	Frame Size	Frame Size 01			Frame Size 02		Frame Size 03		
	W x D x H mm (in)	40 x 174 x 233 (1.57 x 6.85 x 9.17)			40 x 174 x 278 (1.57 x 6.85 x 10.94)		40 x 174 x 328 (1.57 x 6.85 x 12.91)		
	Line supply	Three Phase AC 200 V...240 V (± 10%) @ 45...66 Hz							
	M75X-...	01200022	01200040	01200065	02200090	02200120	03200160		
	Input								
	Max Power (kW)	4			5.3		10*		
	Output Servo								
	Rated Current (A)	2.2	4	6.5	9	12	16		
	Max Peak Current (A)	6.6	12	19.5	27	36	48		
	Output AC Induction								
	Max Continuous Current (A)	2.2	4	6.5	9	12	16		
	Open Loop Peak Current (A)	3.3	6	9.8	13.5	18	24		
	Closed Loop Peak Current (A)	6.6	12	19.5	27	36	48		
Motor Power at 230 V (kW)	0.37	0.75	1.1	2.2	2.2	4.0			
Motor Power at 230 V (hp)	0.5	1.0	1.5	2.0	3.0	5.0			
Overload									
Closed-loop Overload	300 % for 0.25 s or 200 % for 4 s								
Open-loop Overload	150 % for 8 s								
400 V Three Phase	Frame Size	Frame Size 01			Frame Size 02		Frame Size 03		
	W x D x H mm (in)	40 x 174 x 233 (1.57 x 6.85 x 9.17)			40 x 174 x 278 (1.57 x 6.85 x 10.94)		40 x 174 x 328 (1.57 x 6.85 x 12.91)		
	Line Supply	Three Phase AC 380 V...480 V (± 10%) @ 45...66 Hz							
	M75X-...	01400015	01400030	01400042	02400060	02400080	02400105	03400135	03400160
	Input								
	Max Power (kW)	6.5			8.7		10/13*		
	Output Servo								
	Rated Current (A)	1.5	3	4.2	6	8	10.5	13.5	16
	Max Peak Current (A)	4.5	9	12.6	18	24	31.5	40.5	48
	Output AC Induction								
	Max Continuous Current (A)	1.5	3	4.2	6	8	10.5	13.5	16
	Open Loop Peak Current (A)	2.3	4.5	6.3	9	12	15.8	20.3	24
	Closed Loop Peak Current (A)	4.5	9	12.6	18	24	31.5	40.5	48
Motor Power at 400 V (kW)	0.37	0.75	1.5	2.2	3.0	4.0	5.5	5.5	
Motor Power at 400 V (hp)	0.75	1.5	2.0	3.0	5.0	5.0	7.5	10.0	
Overload									
Closed-loop Overload	300 % for 0.25 s or 200 % for 4 s								
Open-loop Overload	150 % for 8 s								

\* External AC line reactor required.

# Environment, safety and electrical conformance

## Environment

IP rating: M75x drives are rated to IP20 (dry, non-conductive contamination)

UL open class

Ambient temperature -20 °C (-4 °F) to 40 °C (104 °F) as standard. Up to 55 °C (131 °F) with derating

Humidity 95 % maximum (non-condensing) at 40 °C (104 °F)

1,000 m to 3,000 m (3,300 ft to 9,900 ft) above sea level: de-rate the maximum output current from the specified figure by 1% per 100 m (330 ft) above 1,000 m (3,300 ft)

Storage temperature -40 °C (-40 °F) to 70 °C (158 °F)

Mechanical Shock Tested in accordance with IEC 60068-2-27

Random Vibration: Tested in accordance with IEC 60068-2-64

## Safety

Safe Torque Off independently assessed by TÜV to IEC 61800-5-2

SIL 3 and EN ISO 13849-1 PLe

UL 61800-5-1 (Electrical Safety)

## Electrical conformance

Electromagnetic Immunity complies with EN 61800-3 and EN 61000-6-2

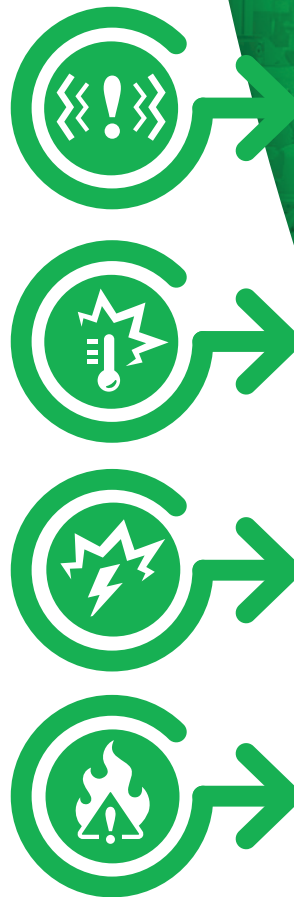
With onboard EMC filters, complies with EN 61800-3 (2nd environment)

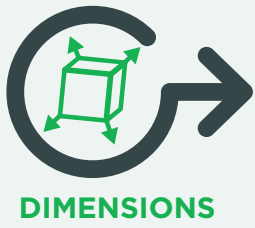
EN 61000-6-3 and EN 61000-6-4 with optional EMC filter

IEC 60146-1-1 supply conditions

IEC 61800-5-1 (Electrical Safety)

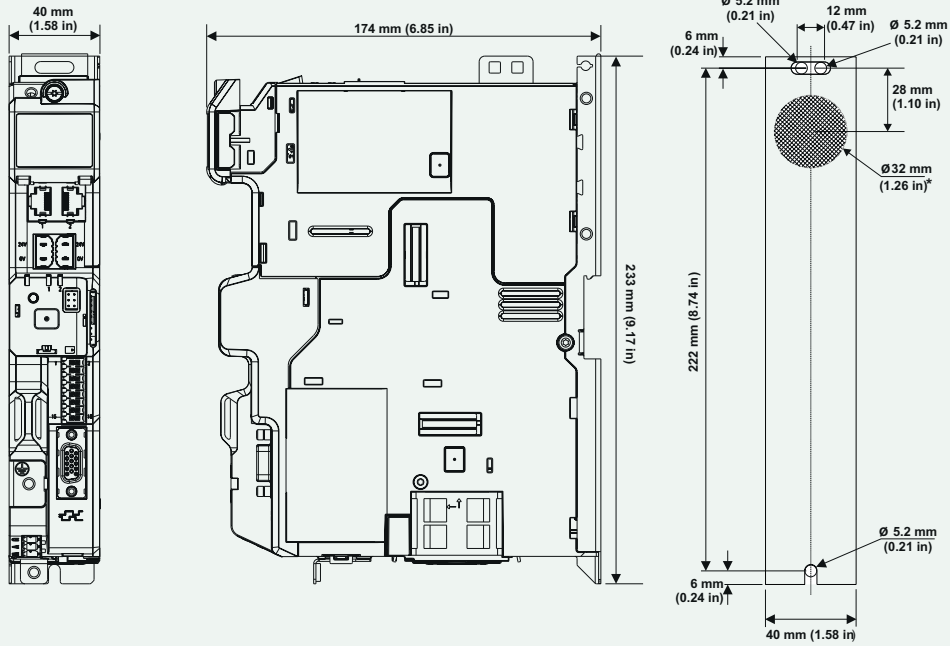
IEC 61131-2 I/O



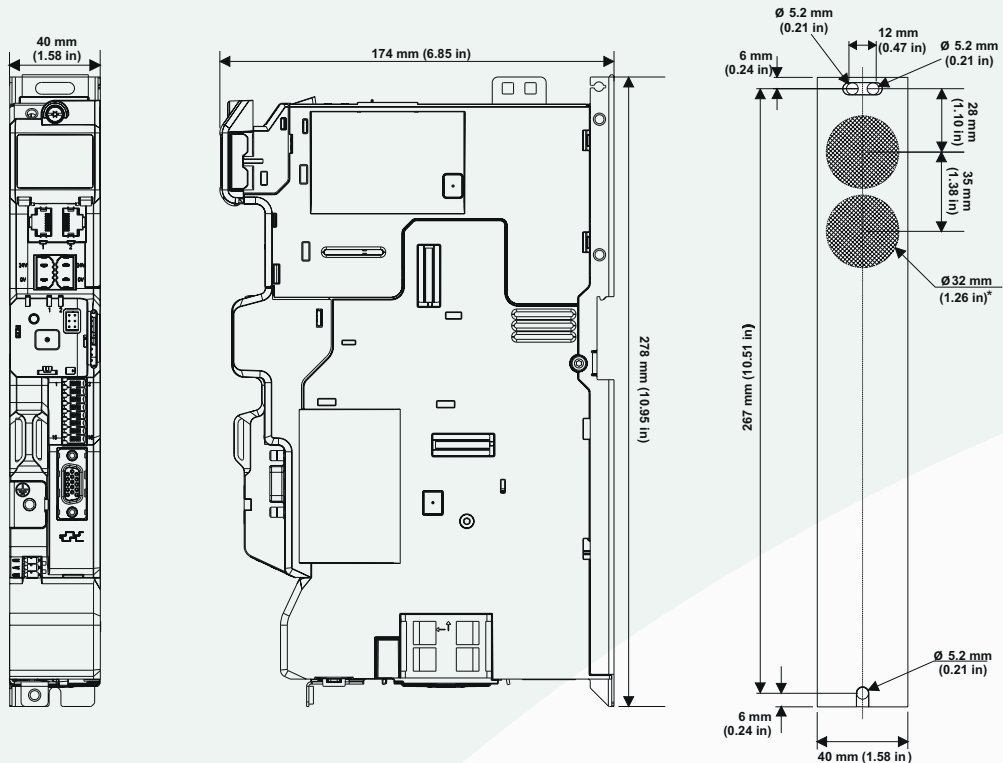


# Digitax HD & Unimotor HD dimensions

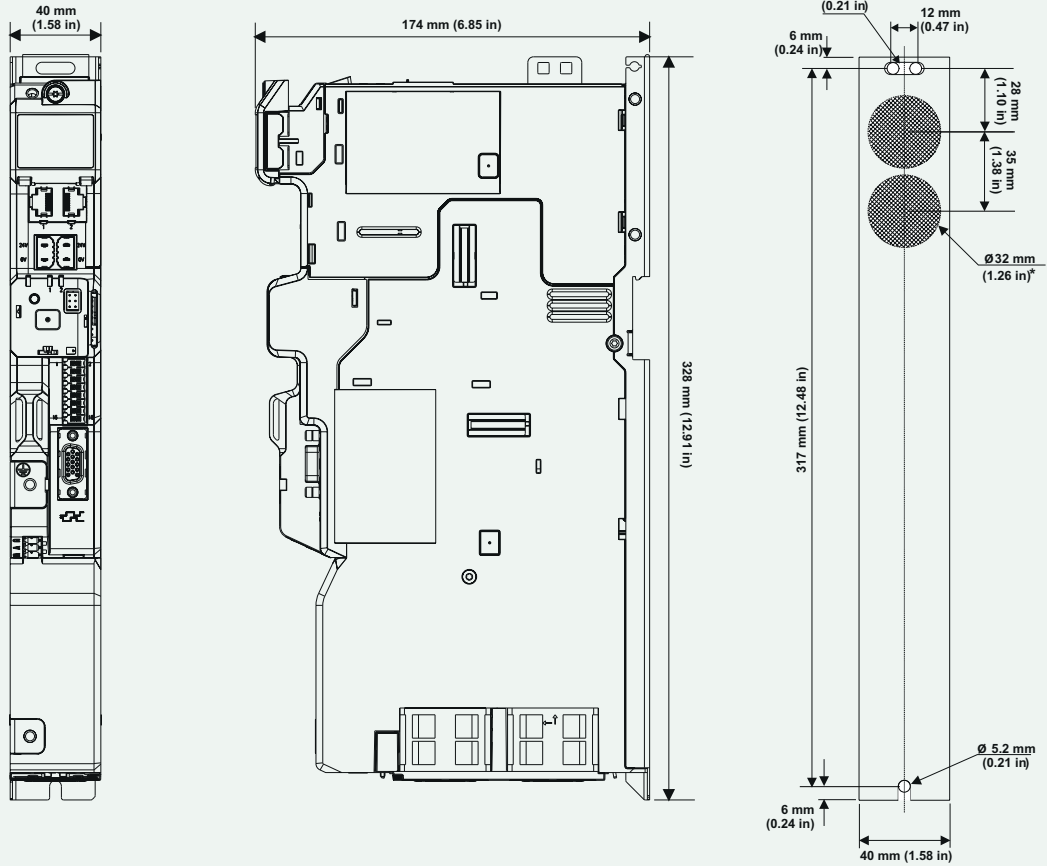
Frame 1



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.