



Servo Solutions for Continuous and Pulse Duty Applications

Servo drives, servo motors and geared servo motors

Digitax ST | Unidrive M700 | Unimotor fm
Unimotor hd | Dynabloc fm | Dynabloc hd



CONTROL TECHNIQUES™
LEROY-SOMER™

Nidec
All for dreams



Digitax ST is available in five variants:

- **EtherCAT** - Built-in EtherCAT connectivity
- **Plus** - With on-board APC motion controller
- **EZ Motion** - Easy-to-use motion programming
- **Indexer** - Point-to-point positioning functionality
- **Base** - Digital or analog control



Drive features	EtherCAT	Plus	EZ Motion	Indexer	Base
Two option module slots	✓	✓	✓	✓	✓
Digital and analog I/O	✓	✓	✓	✓	✓
Smartcard	✓	✓	✓	✓	✓
High speed freeze input	✓	✓	✓	✓	✓
Safe Torque Off	✓	✓	✓	✓	✓
DC bus paralleling	✓	✓	✓	✓	✓
CTSoft and CTScope commissioning software	✓	✓		✓	✓
Removable keypad (optional)	✓	✓	✓	✓	✓
RS485 PC programming port	✓	✓	✓	✓	✓
Intellectual property protection		✓		✓	
CTSoft programming		✓		✓	
Program multi-tasking		✓	✓		
PowerTools Pro programming			✓		
SyPT Pro programming with PLCopen		✓			
Drive-to-drive networking		✓			

Servo drives: Unidrive M700 - continuous duty

Unidrive M700

0.7 Nm – 136 Nm (408 Nm peak)

Unidrive M700 is an AC and servo drive optimized for continuous duty.

Unidrive M700 offers class leading servo and induction motor performance with onboard real-time Ethernet. The drive provides high performance motor control to satisfy the requirements of machine builders and high performance industrial applications.

Benefits:

Maximize throughput with superior motor control

- High bandwidth motor control algorithm for open and closed-loop induction, permanent magnet and servo motors
- Flexible speed and position feedback interface supports a wide range of feedback technologies from robust resolvers to high resolution encoders
 - Up to three encoder channels simultaneously e.g. 1 feedback encoder, 1 reference encoder and 1 simulated output
 - Quadrature, SinCos (including absolute), SSI, EnDat (up to 4 Mb with EnDat 2.2 and 100 m of cable as line compensation is supported) and resolvers
 - Simulated encoder output can provide position reference for CAMs, digital lock and electronic gearbox applications



Optimize system performance with onboard Advanced Motion Controller

- M700 incorporates an Advanced Motion Controller capable of controlling 1.5 axis. The motion functions are carried out 'on the drive' so that system performance is maximized.

Design flexible centralized and decentralized control systems

- MCI modules can be added to execute larger programs for advanced system control capability
- Machine Control Studio is an industry standard IEC61131-3 programming environment for efficient system design and configuration
- Integrated dual port Ethernet switch provides simple connectivity using standard connections
- Onboard real-time Ethernet (IEEE 1588 V2) uses RTMoE (Real Time Motion over Ethernet) to provide fast communication and accurate axis synchronization
- Three 'SI' ports are available to fit additional fieldbus, position feedback and I/O options

Flexible machine design with options modules

Unidrive M700 can be tailored for a wide variety of demanding servo and induction applications. The drive has three option slots for System Integration modules, giving maximum flexibility

- Machine control: MCI200, MCI210, SI-Applications Plus
- Communications: SI-Ethernet, SI-PROFINET RT, SI-EtherCAT, SI-CANopen, SI-PROFIBUS, SI-DeviceNet
- Safety: SI-Safety
- Additional I/O: SI-I/O
- Feedback: SI-Encoder, SI-Universal Encoder

Conform to safety standards, maximize uptime and reduce costs by integrating directly with safety systems

- M700 has an integrated Safe Torque Off input and can accommodate an SI-Safety module for safe motion functions



Unidrive M700 variants: M701 and M702

Unidrive M701

Unidrive M701 has 2 x RS485 ports onboard instead of Ethernet. Parameter sets can be ported to Unidrive M using a smartcard or Unidrive M connect. Unidrive M701 is a direct upgrade for Unidrive SP users.

Unidrive M702 – Enhanced Safety

Unidrive M702 has an additional STO input for applications that require onboard Ethernet and dual STO to comply with SIL 3 PL_e.

Feature	M700	M701	M702
Open loop v/Hz	✓	✓	✓
Open loop (RFC-A)	✓	✓	✓
Closed loop vector	✓	✓	✓
Active Front End regeneration capability	✓	✓	✓
Servo	✓	✓	✓
Sensorless open loop permanent magnet	✓	✓	✓
DC bus paralleling	✓	✓	✓
Analog inputs/outputs	3/2	3/2	0/0
Digital inputs/ outputs/ bidirectional inputs/ outputs	4/1/3	4/1/3	3/3/0
Relay output	1	1	1
Safe Torque Off	1	1	2
Ethernet	Onboard	SI Option	Onboard

Servo Motors and gears: Unimotor hd and Dynabloc hd - pulse duty

Unimotor hd – high dynamic servo motor for pulse duty applications

0.72 Nm to 85.0 Nm (255.0 Nm peak)

Unimotor hd is a high dynamic brushless AC servo motor range designed for use in pulse duty applications where rapid acceleration and deceleration is required.

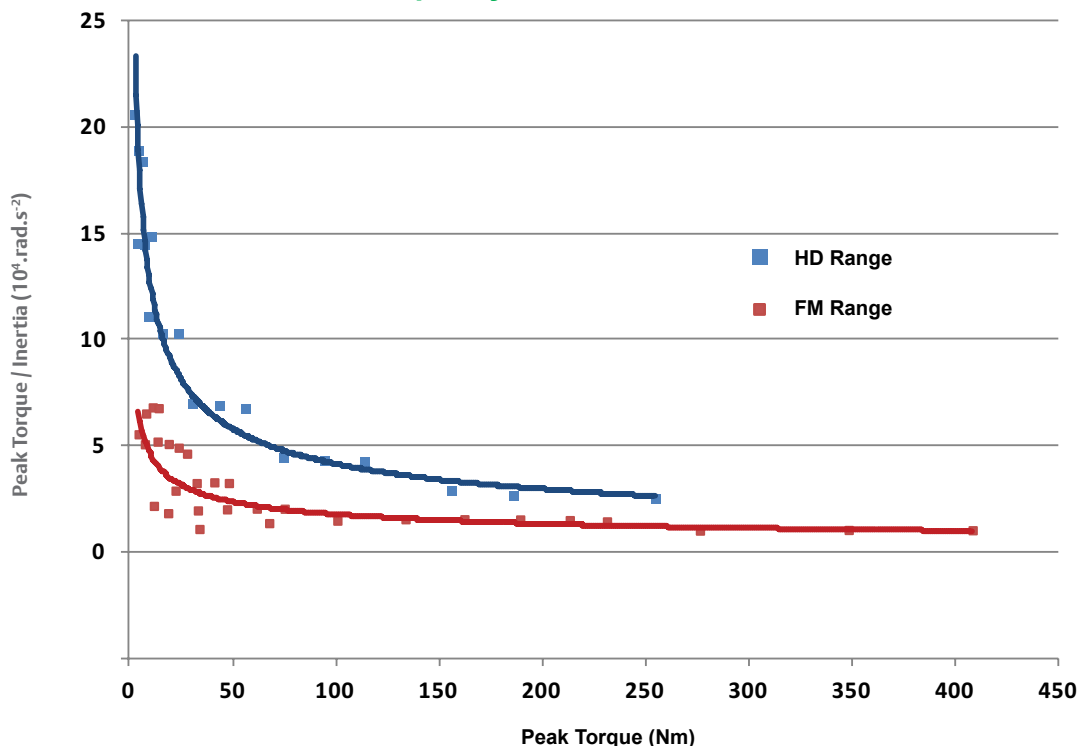
High power to weight ratio

Unimotor hd has a high power to weight ratio, meaning that it can be easily integrated into the smallest, most demanding applications such as industrial robotics, pick & place and packaging.



The Unimotor hd family ranges from 55 mm to 190 mm

Capacity of Acceleration





Key features

- High torque to inertia ratio for high dynamic performance
- Compact but powerful
- High energy dissipation brakes
- IP65 conformance: sealed against water spray and dust when mounted and connected
- Segmented stator design for high power density and compactness
- Supported by rigorous testing for performance and reliability
- Winding to suit 400 V and 220 V
- Rated speeds include 1,000 rpm - 6,000 rpm depending on motor size
- Larger shafts to increase torsional rigidity for stiffer control and higher positioning accuracy

Dynabloc hd – geared servo hd motor

Planetary or worm gearbox with reduced backlash for high dynamical applications

There are three variants of Dynabloc hd:

- **Dynabloc hd Pje:** cost-effective geared planetary servo motor for inline applications
- **Dynabloc hd Pjr:** high performance geared planetary servo motor with high rigidity and reduced backlash, for inline applications
- **Dynabloc hd Mjd:** high precision and silent worm gearbox solution with high efficiency, for right angle applications



Servo Motors: Unimotor fm and Dynabloc fm - continuous duty



The Unimotor fm family ranges from 75 mm to 250 mm

Unimotor fm – high performance servo motor for continuous duty applications

1.2 Nm to 136 Nm (408 Nm peak)

Unimotor fm is a high performance brushless AC servo motor range designed for use in demanding continuous duty applications.

Ultimate flexibility

Unimotor fm has the option to add significant inertia. In many cases the inertia of the rotor can be doubled by adding an inertia wheel. This flexible design is ideal for inertia matching and allows the drive to be adapted to cope with a wide range of systems. It is particularly useful for high inertia loads such as printing cylinders.

Ideal for retrofit

Unimotor fm is an ideal retrofit choice for your existing servo motor application and the motor has been designed so that users of previous generation Unimotors can easily migrate. All connector interface types and mounting dimensions remain the same within the Unimotor range.

Key features

- High energy parking brakes
- Numerous connector variants, e.g. vertical, 90° low profile, 90° rotatable and hybrid box on frame size 250
- Variety of flange possibilities (IEC/NEMA)
- Various shaft diameters; keyed or plain
- IP65 conformance; sealed against water spray and dust when mounted and connected
- Additional inertia option available
- Supported by rigorous testing for performance and reliability
- Winding voltages of 400 V and 220 V
- Rated speeds include 1,000 rpm - 6,000 rpm depending on motor size



Dynabloc fm - geared servo motor for continuous duty applications

Planetary, worm, helical or parallel gearbox with high torque (up to 3,000 Nm), a rugged cast iron design and easy dismantling due to shrink disk for hollow shaft output.

There are four variants of Dynabloc fm:

- **Mub:** compact geared helical servo motor solution with parallel hollow output shaft
- **Cb:** geared helical servo motor with inline output
- **Mb:** cost effective worm geared servo motor with right angle output
- **Ot:** high efficiency bevel geared servo motor with right angle output

Other planetary gearbox solutions are available on request with the fm range.

