



# Mentor MP

**High Performance DC Drive**

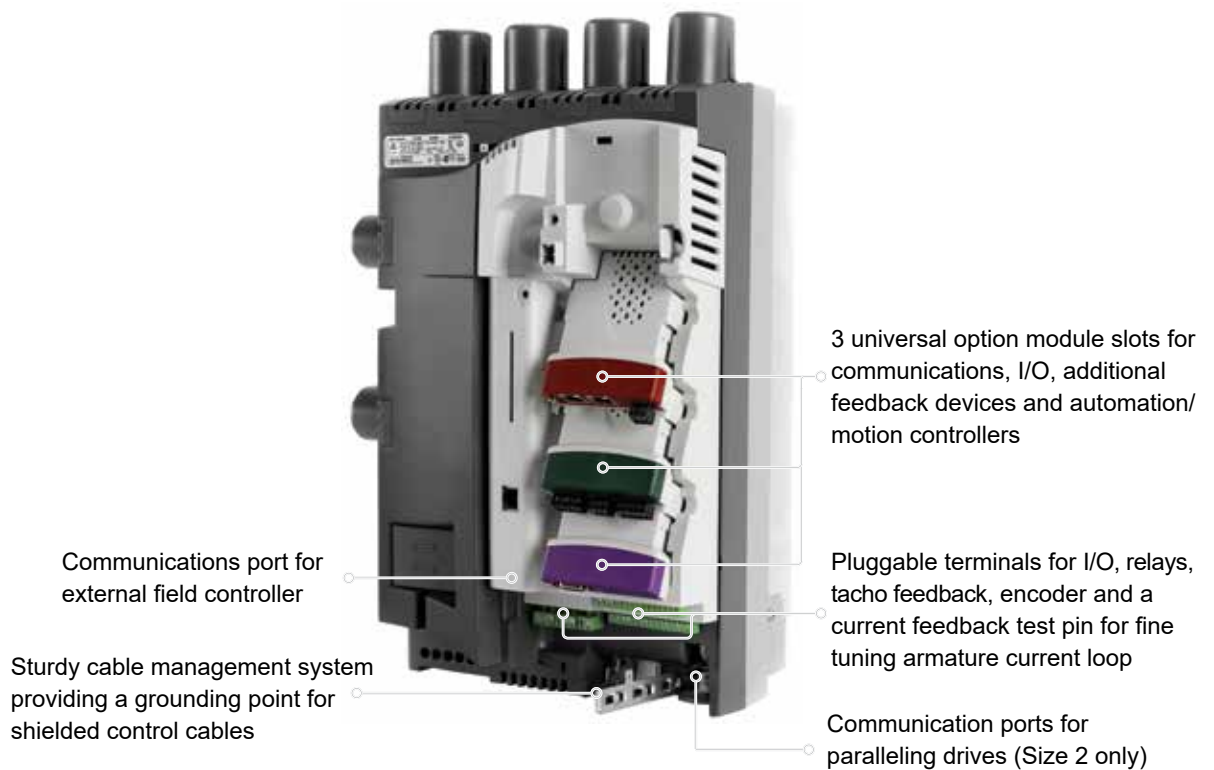
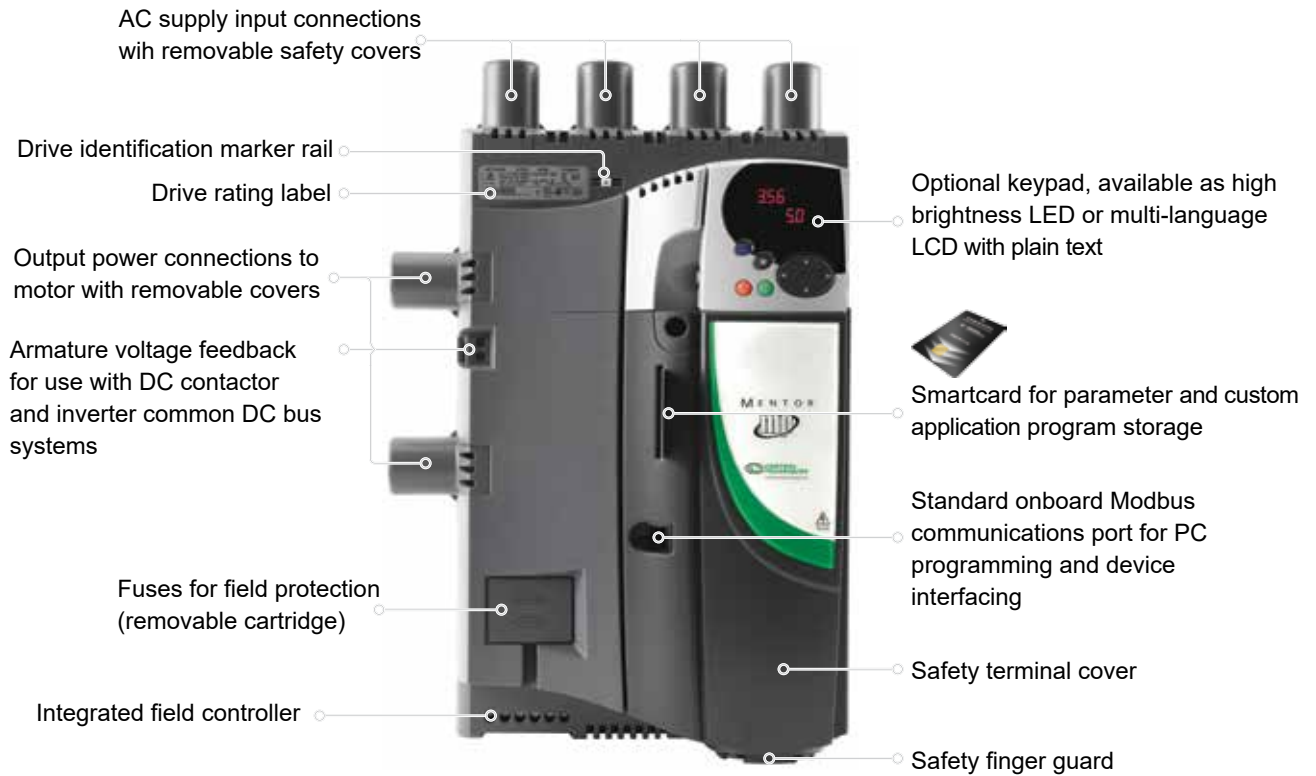
25 A to 7030 A, 400 V / 575 V / 690 V  
Two or four quadrant operation



**CONTROL TECHNIQUES™**

***Nidec***  
All for dreams

## Mentor MP DC drive features



# Easy set-up of enhanced control and monitoring systems

## Greater motor field control

- Built in field controller as standard
  - Gives excellent field control for the majority of DC motors
  - Reduces the need for external components

## Enhanced field control with FXMP25

- The FXMP25 may be controlled digitally by using a standard RJ45 connection, allowing set-up by standard drive parameters
- The FXMP25 can also function in standalone mode using its integrated keypad and display

## Enhanced system design

- The heatsink cooling fans are intelligently controlled and only run when required, thus increasing reliability and reducing maintenance
- Eighteen different option modules allow customisation of the drive, including fieldbus, Ethernet, I/O, extra feedback devices and motion controllers
- The drive system designer is able to embed automation and motion control within the drive, eliminating communications delays that reduce performance

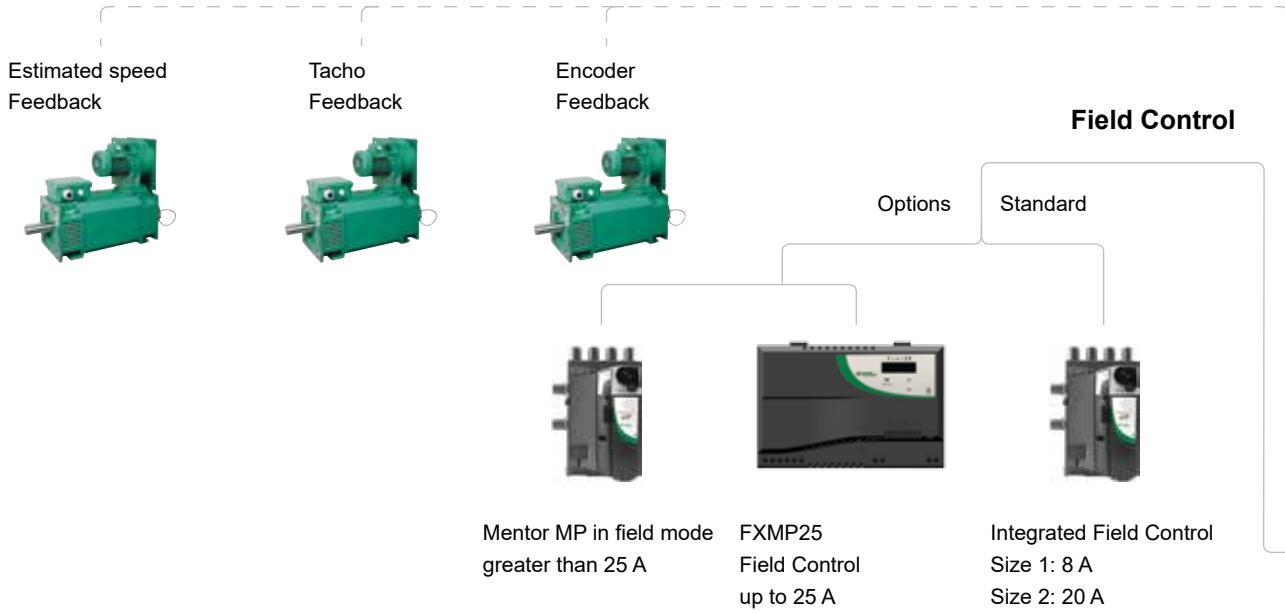
## Fast set-up, configuration and monitoring

- Quick and easy to set-up
- Can be configured using optional removable keypads
- Advanced autotune features help you get the best performance from your machine

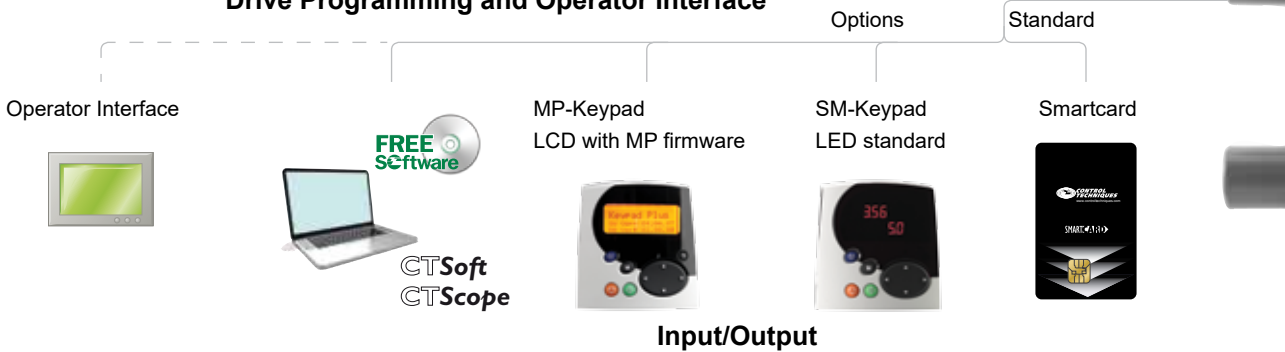


# Mentor MP - Unparalleled integration flexibility

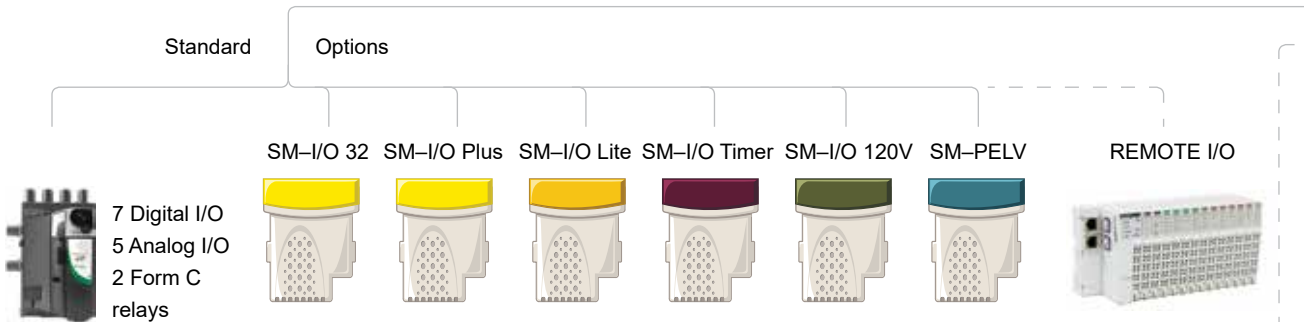
## Control Mode



## Drive Programming and Operator Interface

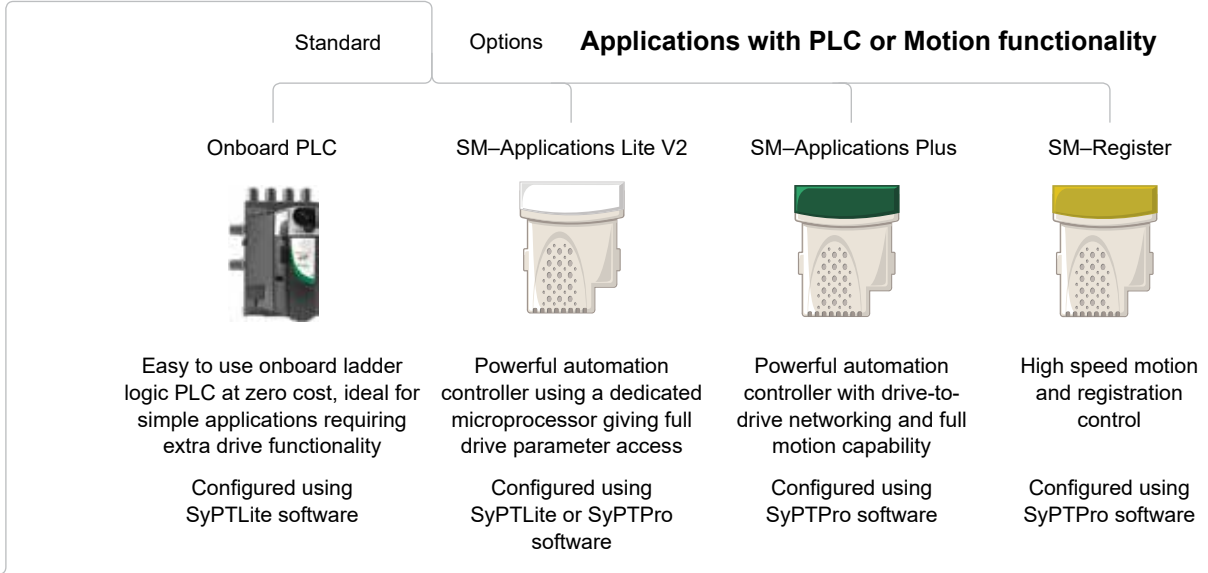


## Input/Output

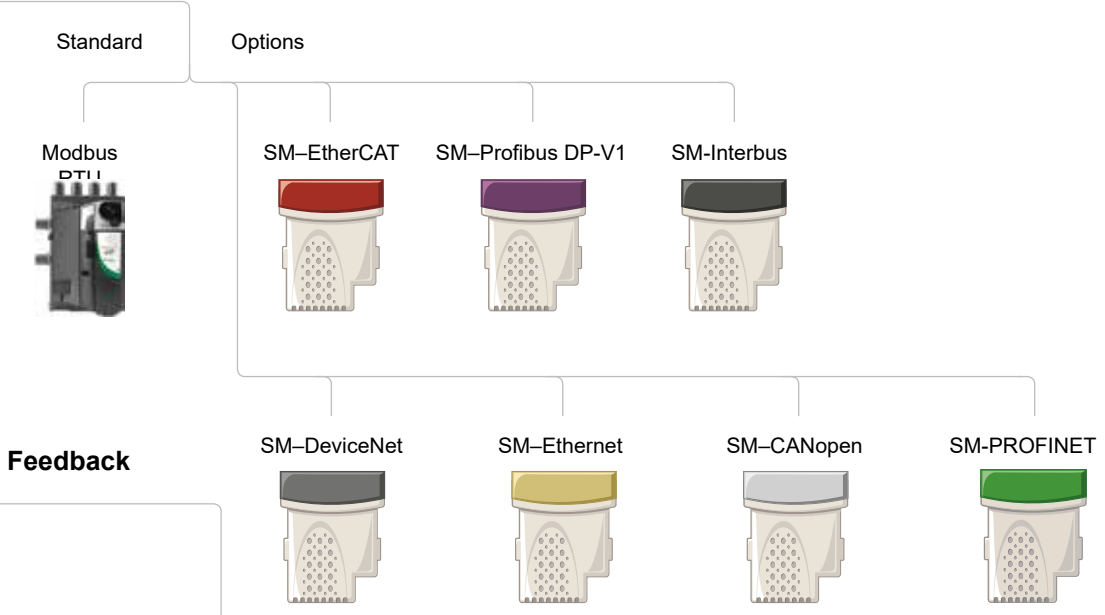


## Centralized PLC/Motion Control

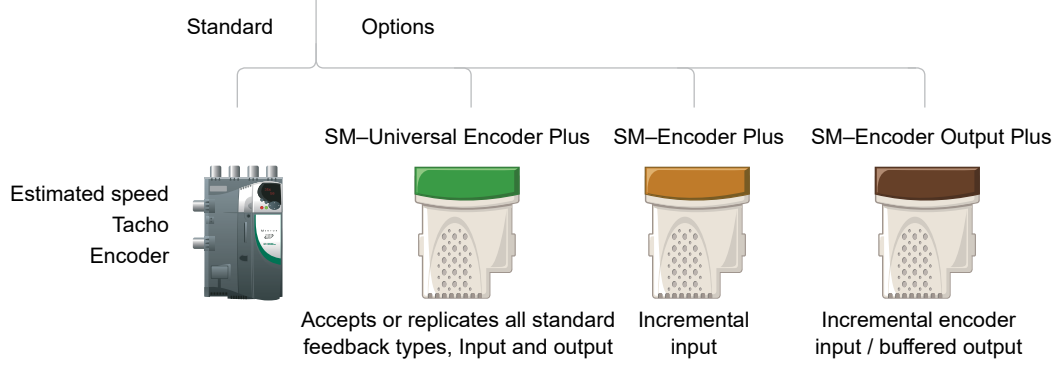




**Communications**



**Feedback**





# Mentor MP drive intelligence and system integration

## Program inbuilt controller with SyPTLite

- Mentor MP has an inbuilt programmable controller. It is configured using SyPTLite, an easy to use ladder logic program editor, suitable for replacing relay logic or a micro PLC for simple drive control applications

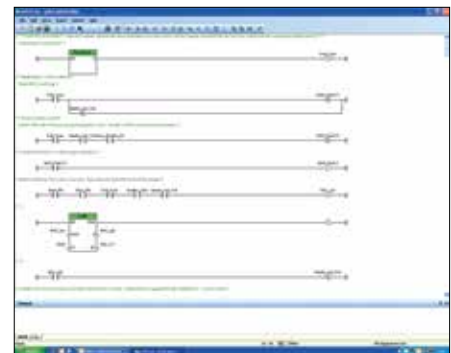
## Develop tailored solutions for applications modules with SyPTPro

- SyPTPro is a fully featured automation development environment that can be used for developing tailored 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 multiple axes

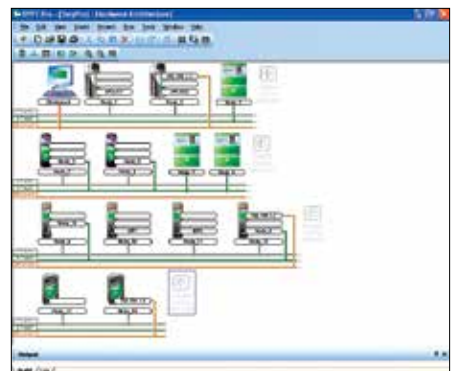
## Create an intelligent networked system with CNet

- CNet, a high-speed, deterministic drive-to-drive network links the drives, SCADA and I/O together to form an intelligent networked system, with SyPTPro managing both the programming and communications

SyPTLite



SyPTPro





## High performance automation

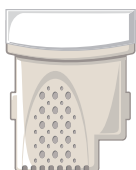
Control Techniques' SM-Applications option modules contain a separate high performance microprocessor enabling the execution of application programs. This leaves the drive's own processor to give the best possible motor performance.

The SM-Application modules include the SM-Application Plus and the SM-Application Lite V2 variants.

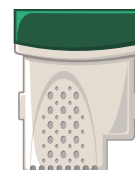
- Both modules can be used to tackle automation problems from simple start/stop sequencing with a single drive to more complex machine and motion control application
- The SM-Applications modules give you real-time access to all of the drive's parameters, plus access to data from I/O and other drives

SM-Applications Plus adds:

- Inputs/Outputs – The module has two digital inputs and two digital outputs for high-speed I/O operations such as position capture and actuator firing
- High speed serial port - The module features a serial communications port supporting a number of built-in protocols for connection to external devices such as operator interface panels. These are CT-ANSI slave, Modbus RTU in master and slave modes, Modbus ASCII in master and slave modes and 3 user modes. Both two and four wire configurations are possible.
- Drive-to-drive communications - SM-Applications Plus option modules include a high speed drive-to-drive network called CTNet. This network is optimized for intelligent drive systems offering flexible peer-to-peer communications

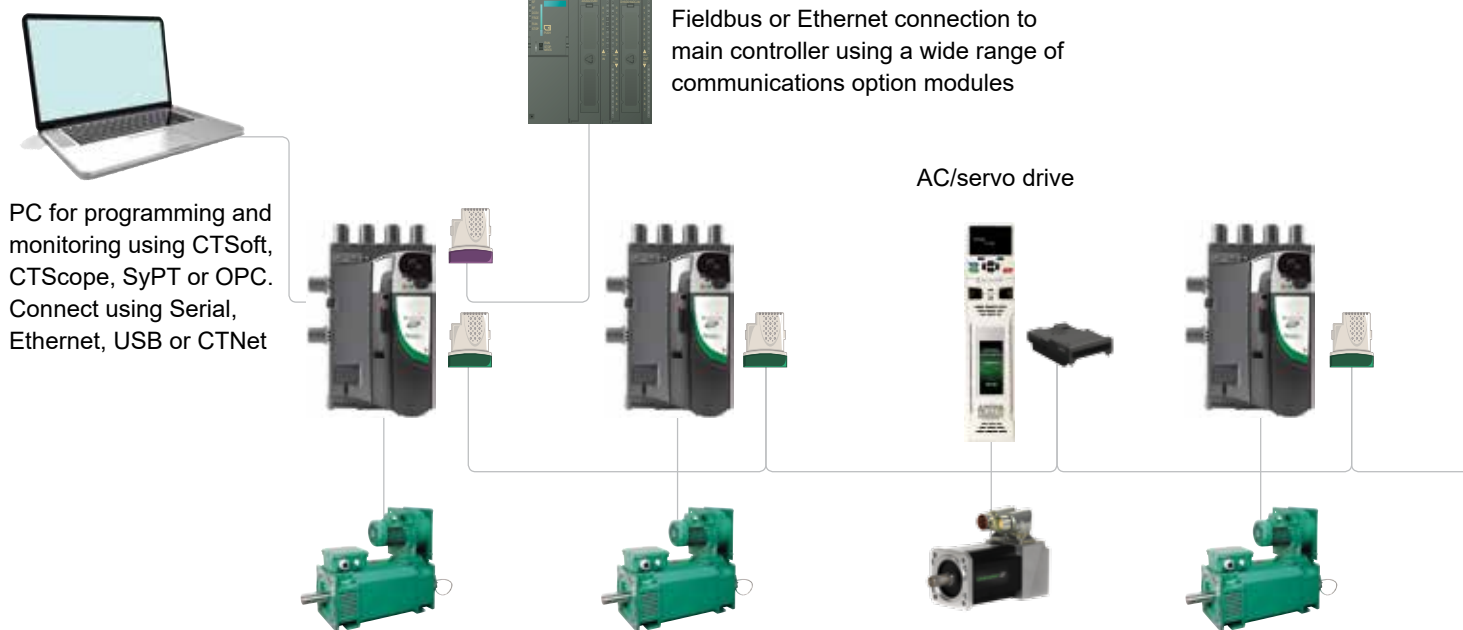


SM-Applications Lite



SM-Applications Plus

# Mentor MP machine communications flexibility





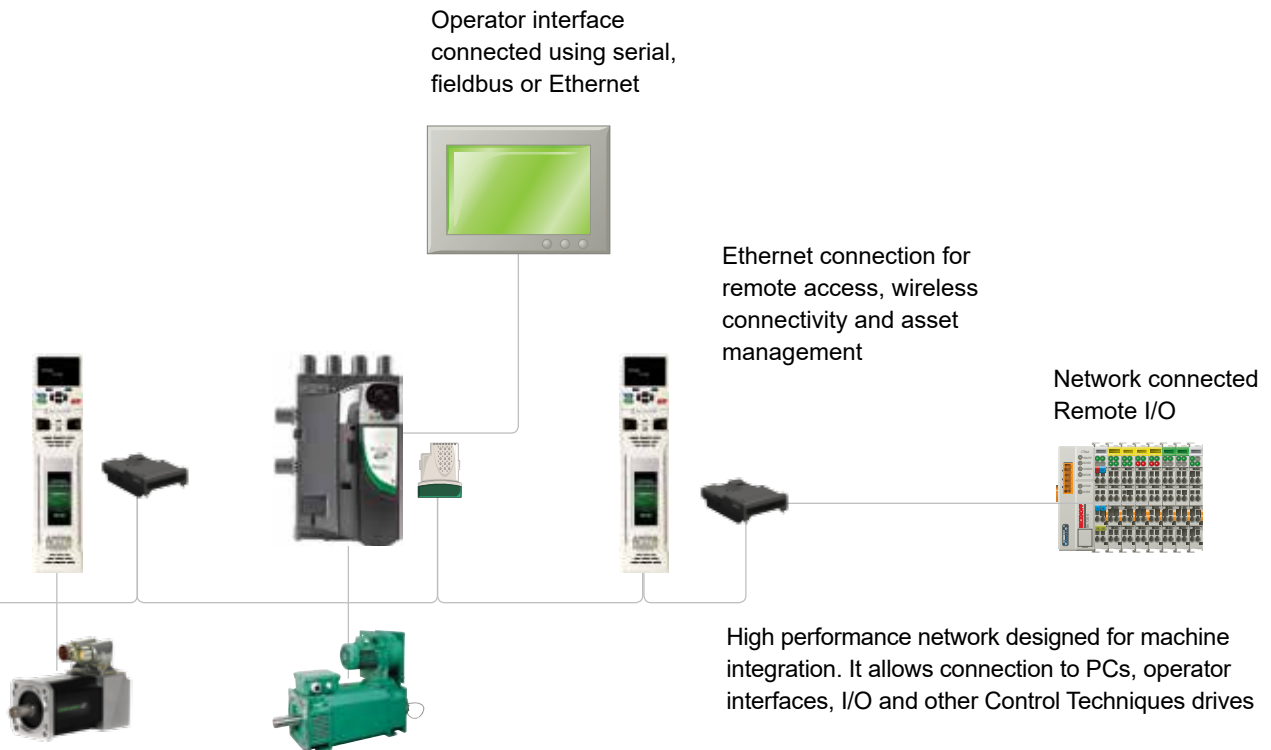
## Fieldbus communications

Option modules for all common Industrial Ethernet fieldbus networks such as Ethernet/IP and Profibus, and servo networks such as Ethercat, are available.

## Easy gateway

SM-Applications and CTNet allow machine designers to design an easy gateway into which customers are able to interface using their preferred fieldbus or Ethernet interface. This solution improves the machine performance, simplifies the problem of being able to meet customer specifications for different fieldbus communications and helps to protect your intellectual property.

	Onboard PLC	SM-Applications Lite V2	SM-Applications Plus
Intellectual property protection	✓	✓	✓
SyPTLite Programming	✓	✓	
SyPTPro Programming		✓	✓
Multi-tasking environment		✓	✓
Motion control capabilities		✓	✓
CTNet drive-to-drive network			✓
Serial port			✓
High Speed I/O			✓



# Mentor MP and DC motor solutions

## Motor and drive solutions

Control Techniques Mentor MP DC drives and Leroy-Somer DC motors offer a total solution. Both companies offer quality and technology leadership to deliver the best possible combination of motors and drives. High efficiency DC motors combined with variable speed control offers a matched energy optimized solution.

## Higher power DC motors

Control Techniques has access to several other ranges of DC motors, allowing us to cover the complete power range of Mentor MP DC drives.



## Leroy-Somer LSK square frame DC motors:

- 2 – 750 kW (3 – 1,000 hp)
- 50 – 6,600 Nm (82.6 – 4,867.3 lb ft)
- Frame size: 112 - 355 mm (4.4 - 14 in)
- IP23S, IP44R, IP55R, IP55 with exchangers
- S1 duty
- PTC thermistors
- IC06 forced vent cooling with standard polyester filter
- Class H insulation
- 3-phase full bridge supply
- Terminal box in any position
- Forced vent top
- Tacho type REO444
- Incremental quadrature encoders/frequency and direction encoders

## Conformance

- Humidity 95 % maximum (non condensing) at 40 °C (104 °F)
- Ambient temperature -15 °C to +40 °C (5 °F to +104 °F), 55 °C (131 °F) with derating
- Altitude: 0 to 3000 m, derate 1 % per 100 m between 1000 m and 3000 m
- Vibration: Tested in accordance with IEC 60068-2-64
- Mechanical shock tested in accordance with IEC 60068-2-29
- Storage temperature -40 °C to +70 °C (-40 °F to +158 °F)
- Electromagnetic immunity complies with EN 61800-3 and EN 61000-6-2
- Notch Immunity to IEC60146-1-1 class A
- IEC 61800-5-1 Electrical safety
- IEC 61131-2 I/O
- EN 60529 Ingress protection
- UL508C
- EN 61000-6-4 EMC - with optional EMC filters
- RoHS compliant

## Order codes

**DC Drive**  
**MP1200A4R**

**MP** - Mentor Platform

**Maximum continuous armature current**

**Supply voltage rating**  
4 = 480 V 24 V to 480 V -20 % +10 %  
5 = 575 V 500 V to 575 V-10 % +10 %  
6 = 690 V 500 V to 690 V-10 % +10 %

**R** - 4 quadrant operation  
**Blank** - 2 quadrant operation

**External Field**  
**FXMP25**

**FX** - External Field

**MP** - Mentor Platform

**25** - Maximum field current (A)



Note: At the time of ordering, please select the required interface option.

Model			Frame	Armature current (A)*	Field current (A)	Overall dimensions			Quadrants of Operation	
480V EN / IEC cULus	575V EN / IEC cULus to 600V	690V EN / IEC				Width (W)	Height (H)	Depth (D)		
MP25A4(R)	MP25A5(R)		1A	25	8	293mm (11.54in)	444mm (17.48in)	222mm (8.74in)	2 and 4	
MP45A4(R)	MP45A5(R)			45						
MP75A4(R)	MP75A5(R)			75						
MP105A4(R)	MP105A5(R)		1B	105		20	293mm (11.54in)	444mm (17.48in)	251mm (9.88in)	2 and 4
MP155A4(R)	MP155A5(R)			155						
MP210A4(R)	MP210A5(R)			210						
MP350A4(R)	MP350A5(R)	MP350A6(R)	2A	350	20		495mm (19.49in)	640mm (25.20in)	301mm (11.85in)	2 and 4
MP420A4(R)				420						
	MP470A5(R)	MP470A6(R)		470**						
MP550A4(R)				550		20	495mm (19.49in)	640mm (25.20in)	301mm (11.85in)	2 and 4
MP700A4(R)	MP700A5(R)	MP700A6(R)		700						
MP825A4(R)	MP825A5(R)	MP825A6(R)	2B	825**						
MP900A4(R)				900						
MP1200A4	MP1200A5	MP1200A6	2C	1200	20		555mm (21.85in)	1050mm (41.34in) ***	611mm (24.06in)	2
MP1850A4	MP1850A5	MP1850A6		1850						
MP1200A4R	MP1200A5R	MP1200A6R	2D	1200		20	555mm (21.85in)	1510mm (59.45in) ***	611mm (24.06in)	4
MP1850A4R	MP1850A5R	MP1850A6R		1850						

\* Current ratings are at 40°C with 150% overload for 30s. \*\*For this rating at 575V and 690V, 150% overload time is 20s at 40°C and 30s at 35°C.

\*\*\*Height including optional fit exhaust duct cover is 1252mm (49.29in) for size 2C and 1712mm (67.40in) for size 2D.

7030 A is achieved by parallel connection of Mentor MP drives

**CONTROL TECHNIQUES™**

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