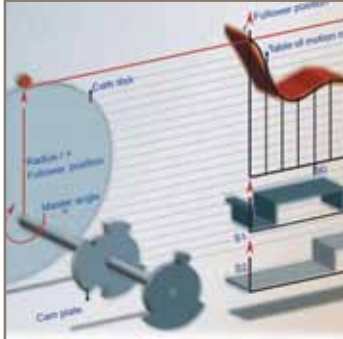


aerospace  
 climate control  
 electromechanical  
 filtration  
 fluid & gas handling  
 hydraulics  
 pneumatics  
 process control  
 sealing & shielding



# Compax3 Series

Compact, Intelligent, Powerful  
 Industrial Servo Drives & Drive/Controllers



ENGINEERING YOUR SUCCESS.

# Compax3 Series Servo Drives & Drive/Controllers



With its high performance and modular design, the Compax3 family of industrial servo drives and drive/controllers offers a new level of servo performance and flexibility. The modular structure of the Compax3 family allows options such as intelligent motion controllers, communication interfaces and industry standard motor feedback. In addition, numerous expansion options can be added to the standard product in order to optimize the capabilities required for today's demanding servo applications. The family is offered in two variations: standalone (C3S and C3H) and a DC bussed multi-axis version (C3M).

## Compax3 Common Features:

- Available in both 120/240 VAC and 480 VAC input versions
- Integrated safety: Compliant to EN954-1 Category 3 safety
- Current output from 2.5 A (rms) continuous to 155 A (rms) continuous
- Flexible communication options including: **ETHERNET Powerlink, EtherCAT, DeviceNet, CANopen, Profibus, TCP/IP, RS-232 (3-wire), or RS-485 (2- or 4-wire)**
- Easy-to-use wizards-based configuration and programming via **C3 ServoManager™** software package
- Flexible feedback options including: resolver, incremental encoder, Heidenhain Endat 2.1 (single/multi-turn), Stegmann Hiperface™ (single/multi-turn), SinCos® high-resolution, hall-only
- Internal regeneration circuitry; external resistor connections for additional power dissipation
- Full diagnostic, tuning and 4-channel oscilloscope tools provided in the standard **C3 ServoManager™** software
- Software input simulation
- Auto-load identification (auto-tuning)
- CE (EMC & LVD), UL and cUL recognized

SinCos® and Hiperface™ are trademarks of Sick-Stegmann, Inc.

## Single-axis Compax3 S and Compax3 H

For maximum application solving capability, the Compax3 is offered in two single-axis families, low power and high power. Low power applications include semiconductor, solar, packaging, printing, welding, test and measurement, and medical. High power applications include hydraulic application replacement, injection molding, and printing and converting. Each family shares a common control interface so virtually every feature is familiar between the two families.

### C3S Low-Medium Power

- **Direct mains operation**
- **Integrated mains filtering**
- **STO (Safe Torque Off)**
- **SS1 (Safe Stop 1)**
- **1Ø 230/240 VAC (1.0 kVA to 2.5 kVA)**
- **3Ø 230/240 VAC (4.0 kVA to 6.0 kVA)**
- **3Ø 400/480 VAC (1.25 kVA to 25.0 kVA)**

### C3H High Power

- **Direct mains operation**
- **Integrated mains filtering**
- **3Ø 400/480 VAC (35 kVA to 109 kVA)**



## Multi-axis Compax3 M

To maximize cost savings, the Compax3 is offered in a multi-axis variant, the C3M. The C3M drives take advantage of a common power supply and share a braking resistor, capacitance and a mains filter. In addition to the benefits of the overall Compax3 family, the multi-axis C3M offers the smallest footprint for multi-axis installations. All the drives are programmable and configurable via a common programming interface over USB.

### C3M Multi-axis Features

- **Commons mains module**
- **Common mains filtering**
- **Common braking resistor**
- **Common capacitor bank**
- **Centralized programming interface (USB)**
- **Compliant to EN954-1 Category 3 safety**
  - **STO (Safe Torque Off)**
  - **SS1 (Safe Stop 1)**



# Compax3 Family Control Overview

Four levels of control to meet your drive requirements:

## T10: Step/Direction and Analog Command Input

- Base servo drive
- $\pm 10$  V analog
- Step and direction
- Torque/velocity control
- Position control
- Encoder tracking

## T11: Servo Positioning Drive/Controller

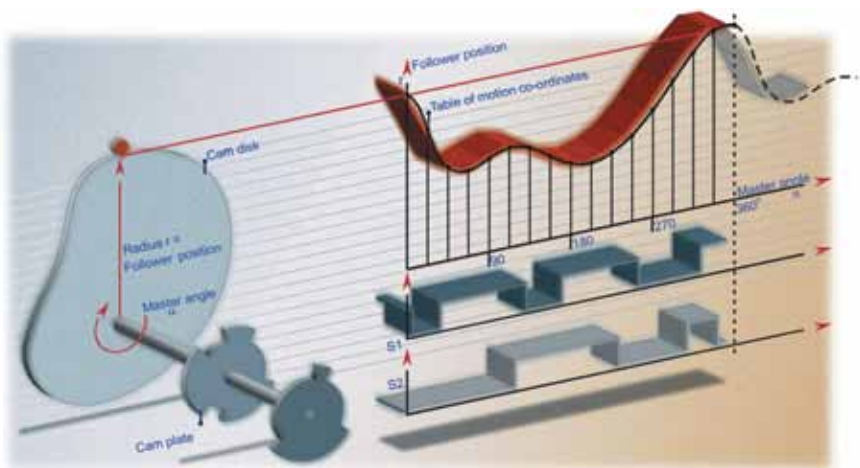
- Servo positioning drive
- Fast, easy setup - No code to learn
- Up to 31 stored profiles
- Profile select via digital inputs
- Multi-profile sequences
- Multiple homing routines
- PLC maintains all motion control execution, conditional, and math tasks
- Requires external logic to make all control decisions

## T30: Programmable Drive/Controller

- Positioning with function modules according to PLCopen
- Fully programmable, IEC61131-3 controller
- Parker motion function blocks
- Simple to complex motion
- Access to all internal data/status registers (i.e., current, velocity)
- Make motion-related decisions based on values and conditions
- Stand-alone or PLC controlled
- Fully programmable and expandable I/O
- IEC61131-3 programming flexibility
- Complex motion

## T40: Advanced Programmable Drive/Controller

- All T30 programming capabilities
- PLUS:**
- Electronic cam control
  - Superimpose motion
  - Electronic gearing
  - Position capture



Electronic cam control, available on the T40, is ideal for printing and packaging applications.

## Industry Standard Communications (T11, T30, T40)

RS232/RS485

ETHERNET  
POWERLINK

TCP/IP

CANopen

DeviceNet

EtherCAT  
Technology Group

PROFINET

The support of all common communication interfaces is an essential feature of open systems. Among these are Profibus, CANopen, DeviceNet as well as the modern Ethernet based EtherCAT and Powerlink interfaces. The open OPC communication standard simplifies system integration considerably. For dynamic, multi-axis synchronized applications, a real-time drive bus is available for all Compax3 family drives.

<b>Digital I/O</b>	The digital I/Os can be optionally extended by 12 I/Os using the M12 option	
<b>Profibus</b>	DP Versions:	DPV0 / DPV1
	Baud rate:	Up to 12 MHz
	Profibus ID:	C320
<b>CANopen</b>	Baud rate [kBit/s]:	20 – 1000
	Service data object:	SDO1
	Process data object:	PDO1 – PDO4
<b>DeviceNet</b>	I/O Data:	Up to 32 bytes
	Baud rate [kBit/s]:	125 to 500
	Participants:	up to 63 slaves
<b>TCP/IP</b>	Baud rate:	100 Mbits
	Port:	44822
	IP Address:	192.168.100.1
<b>Powerlink</b>	Baud rate:	100 Mbits (Fast Ethernet)
	Cycle time:	1 ms
<b>EtherCAT</b>	Baud rate:	100 Mbits (Fast Ethernet)
	Cycle time:	1 ms

## IEC61131-3 Programming Environment (T30, T40)

IEC61131-3 is a manufacturer-independent programming environment for industrial automation devices. This programming interface brings tremendous flexibility to the user as well as worldwide recognition and support. The IEC61131-3 programmer may choose from five standard languages, both graphical and text-based, in order to develop the code for their application. Thus, users can program their device in the language or languages they are most comfortable with.

The graphical languages include:

- **Ladder diagram (LD)**
- **Function block diagram (FBD)**
- **Continuous function chart (CFC)**

The text-based languages include:

- **Structured text (ST)**
- **Instruction list (IL)**

An environment is also available for structuring program flow:

- **Sequential function chart (SFC)**

The standard IEC61131-3 programming language has gone beyond establishing itself in PLC systems in the last few years. Today it is also frequently used for PCs, SCADA systems and also motion control systems. The intelligent drive/controller versions of the Compax3 family use the IEC61131-3 interface to give users new levels of flexibility and power when developing their application.

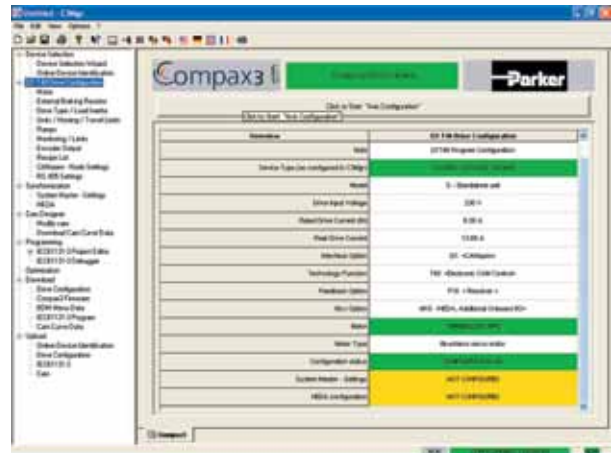
### IEC61131-3 Features

- **Five programming languages to choose from for ease of use**
- **Worldwide support for programming languages**
- **Program portability**
- **Multiple languages may be combined within a single project**
- **Minimal training and support effort**
- **Portability from one application project to another project**
- **IEC programming editor built into the standard C3 Servo-Manager™ software**

# Compax3 Software

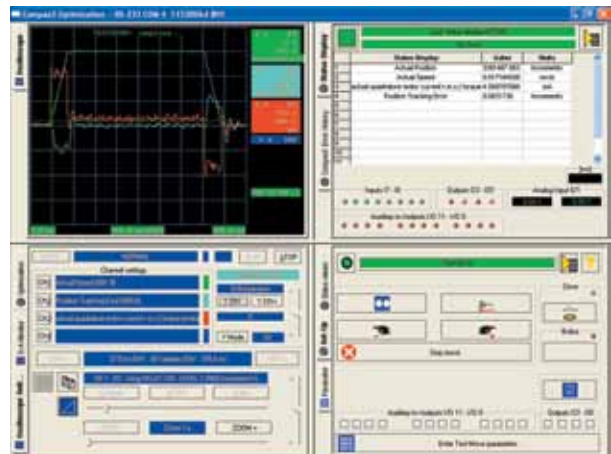
## C3 ServoManager™ Development Software

- User-friendly, wizard-based drive configuration tool with navigation tree
- Powerful online help system – accessible in any screen
- MotorManager allows quick configuration of motors – automatically configures commutation settings
- Multilingual support: English, German or French at the click of a button
- C3 Profile Viewer – helps quantify S-curve acceleration



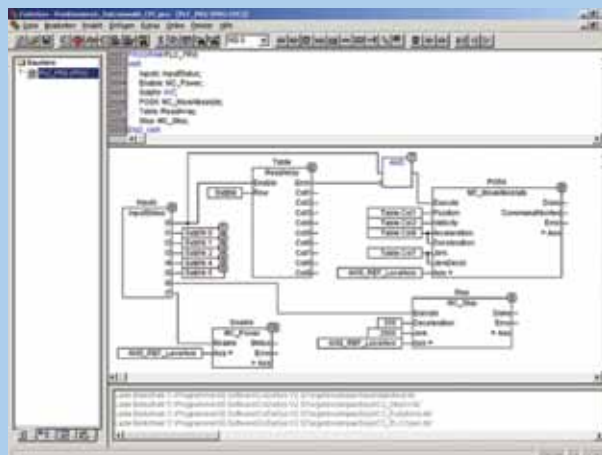
## C3 Optimization Tool

- Powerful system diagnostic and troubleshooting tool
- Numerical and graphical status displays
- Error display with fault history
- Four-channel oscilloscope with ASCII and CSV export capability
- Commissioning feature allows motor jogging, preset moves, homing, drive enable and more
- Launched directly from within the C3 ServoManager™ development software
- Auto-tuning
- Input simulation



## IEC61131-3 Project Development Editor

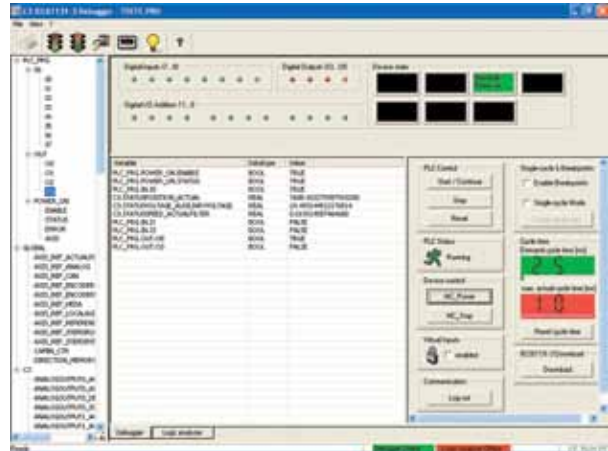
(IEC61131-3 programming environment for Compax3 T30 and T40)



- Graphics editor for LD, CFC, SFC and FBD; text editor for IL and ST
- Syntax coloring, multi-level undo/redo and context sensitive help
- Library management for creating, accessing and selecting IEC function libraries
- Launched directly from within the C3 ServoManager™ development software

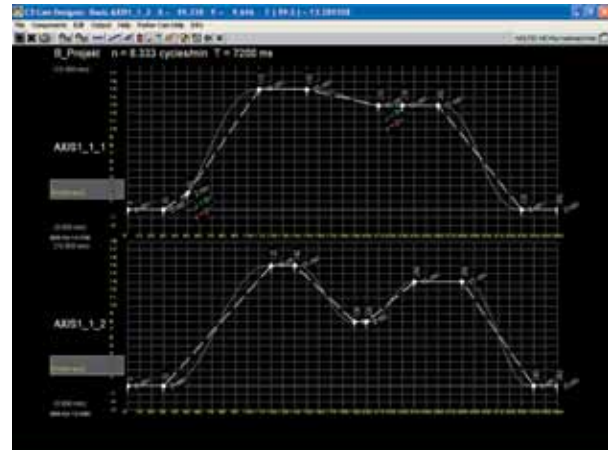
## IEC Debugger

- Diagnostic tool specifically tailored for monitoring IEC program execution
- All object variables within the IEC program can be viewed and modified online
- Debugger and Logic analyzer screens
- Input-forcing within the IEC program
- Launched directly from within the C3 ServoManager™ development software



## C3 Cam Designer

- Graphical electronic cam creation tool for Compax3 T40 applications
- Wide selection of curve interpolation types
- Real-time generation of displacement diagrams
- Launched directly from within the C3 ServoManager™ development software



## Motion Block Libraries

(for Compax3 T30 and T40)

Parker makes IEC61131-3 programming for the Compax3 even easier by providing motion-specific function block libraries, which are included with every Compax3 T30 and T40 product. These function block libraries allow users to insert pre-defined motion functions into their IEC project by selecting the desired function from a pull-down table, thus eliminating the need

to program these functions manually. These libraries consist of function blocks created by both Parker and PLCopen™, a product- and company-independent organization that plays a significant role in supporting the IEC61131-3 programming language, (see pages 5-6 for more on IEC61131-3 programming). Some examples of the available Compax3 function modules include:

- Absolute motion
- Incremental (relative) motion
- Continuous motion
- Superimposed motion
- Homing
- Drive enable
- Stop motion
- Drive status / error clearing
- Ratio following
- Electronic cam selection
- Interchangeable force-position control block
- P.I.D. block (i.e., temp control)
- And dozens more!

# Compax3 T10

## Basic Drive

The Compax3 T10 technology level is a compact industrial digital servo drive available in 16 power levels producing up to 155 A (rms) continuous current and covering a broad range of input voltages. The T10 is the base Compax3 drive model and is designed for use with an external motion controller in centralized motion control systems.

Compax3 T10 drives are well-suited for combining with Parker's ACR motion controller products and together create a formidable multi-axis servo system. Parker also offers pre-made analog command cables for quick and efficient connectivity between any T10 drive and ACR or 6K controller.

The Compax3 T10 accepts both  $\pm 10$  V analog command signals and step-and-direction command signals for operating as a torque, velocity or position control drive.

Compax3 products are easily configurable via RS232/485 using Parker's C3 ServoManager™ software running on a PC or by utilizing the optional BDM keypad interface module. Using the C3 ServoManager™ software could not be easier. All setup is accomplished via intuitive drive configuration wizards and basic application information. Commissioning is even faster with the addition of software input simulation and autotuning.



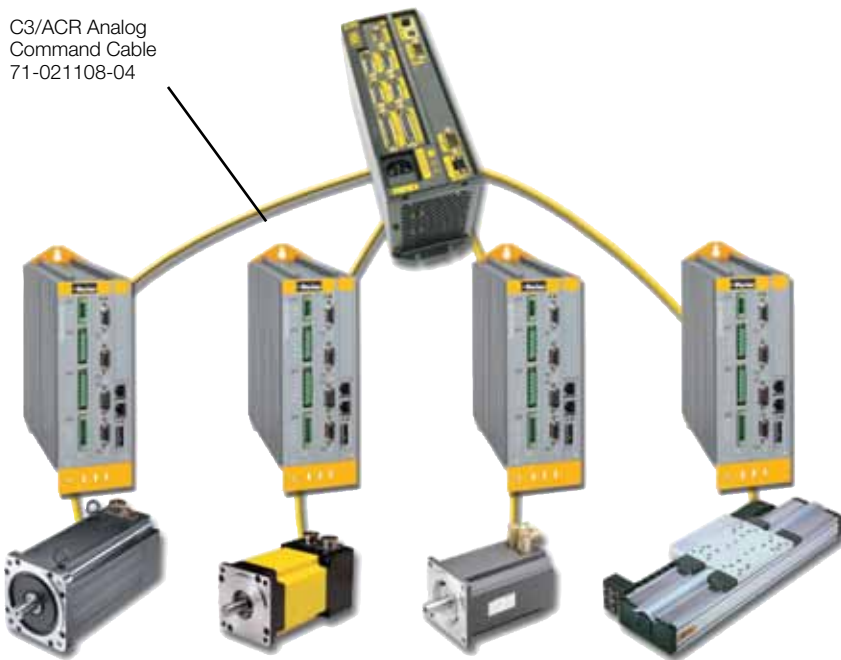
### Compax3 T10 Features

- 120 – 480 VAC power input range
- Continuous current output from 2.5 A (rms) to 155 A (rms)
- Resolver, encoder or high-resolution SinCos® Hiperface™ and Endat 2.1 feedback
- $\pm 10$ V analog command signals
- 5V/24V step-and-direction command signals
- Torque, velocity or position control modes
- Encoder tracking capability
- CE (EMC & LVD), UL and cUL

### Compax3 T10 Accessories

See pages 16-17 for compatible Compax3 accessories.

C3/ACR Analog Command Cable  
71-021108-04



Parker's ACR9000 multi-axis controller coordinated with four Compax3 T10 drives using  $\pm 10$ VDC command voltage



# Compax3 T11

## Servo Positioning Drive

The Compax3 T11 technology level integrates simple position control capabilities into the standard Compax3 drive. The I11 T11 is a basic positioning drive capable of retaining up to 31 motion profiles in memory. Individual motion profiles are assigned a binary input mask and are triggered when the appropriate input pattern is set or via internal control bit manipulation from the optional communication interfaces. Acceleration, deceleration, target speed, and target position are all user-configurable for each profile by entering values into a software table.

For more diverse applications, the Compax3 I12 T11 offers all the capabilities of the I11 T11, but also includes functionality such as electronic gearing and registration-based moves – all selectable via onboard I/O or serial interface (RS232/RS485).

Compax3 products are easily configurable via RS232/485 using Parker's C3 ServoManager™ PC software. All setup is accomplished via intuitive drive configuration wizards and basic application information. Commissioning is even faster with the addition of software input simulation and auto-tuning. If desired, customers can also copy existing T11 configuration files to/from other T11 units – without the need for a PC – using the optional BDM01/01 keypad interface module.

Although the Compax3 T11 uses standard resolver feedback, it can also be equipped with quadrature encoder or high-resolution Stegmann or SinCos® Hiperface™ encoders with multi-turn absolute feedback capability. The latest addition has Endat 2.1 support.



### Available with ETHERNET Powerlink

- Use in conjunction with ACR9040 as motion bus
- Use with other EPL master units

### Compax3 I11 T11 Features

- 120 – 480 VAC power input range
- Continuous current output from 2.5 A (rms) to 155 A (rms)
- Resolver, encoder, high-resolution SinCos® or Stegmann Absolute rotary encoder feedback (single- or multi-turn) or Heidenhain Endat 2.1
- SSI encoder as a source for gearing, cam shapes and external position measurement
- Up to 31 move profiles storable in non-volatile flash memory
- Homing and jogging functionality
- Absolute or relative positioning via 8 digital inputs, 4 digital outputs
- Software travel limits
- Adjustable jerk (S-curve) limitation

- “Dynamic positioning” – allows the changing of target position while a move is in progress
- Optional communication interfaces (CANopen, Profibus DP, DeviceNet, ETHERNET Powerlink, EtherCAT, TCP/IP)
- CE (EMC & LVD), UL and cUL

### Compax3 I12 T11 Features

All I11 T11 capabilities

#### PLUS:

- Electronic gearing (following)
- Registration input (800 ns position-capture speed)
- Continuous velocity, registration-based moves
- 16 digital inputs, 8 digital outputs
- Hardware end-of-travel limit support
- Programmable pattern outputs
- Requires M12 option

### Compax3 T11 Accessories

See pages 16-17 for compatible Compax3 accessories.

# Compax3 T30

## IEC61131-3 Drive/Controller

The Compax3 T30 technology level is a compact industrial digital servo drive/controller with fully programmable IEC61131-3 motion controller capability. The IEC61131-3 programming environment offers the ultimate in programming flexibility and power.

Compax3 T30 users may choose to develop their application code from any of six graphical, ladder or text-based IEC programming formats. Users have the freedom to develop their application in whichever programming style they are most comfortable; or, if desired, they may use any combination of these languages within the same application project. The motion capabilities of the Compax3 T30 are easily available to the user via PLCopen standard function blocks as well as more complex motion function blocks supplied by Parker Hannifin. Optional communication interfaces allow simple and effective data exchange to higher-level systems.

The Compax3 is easily configurable via RS232/485 or TCP/IP using Parker's C3 ServoManager™ software running on a PC or by downloading an existing configuration file from another T30 unit via the optional BDM01/01 keypad interface module. Using the C3 ServoManager software could not be easier. Commissioning is even faster with the addition of software input simulation and auto-tuning. All setup is accomplished via intuitive drive configuration wizards and basic application information.



Although the Compax3 T30 uses standard resolver feedback, it can also be equipped with quadrature encoder, high-resolution Stegmann or SinCos® Hiperface™ encoder with single- or multi-turn absolute feedback capability or Heidenhain Endat 2.1.

### Compax3 T30 Features

- 120 – 480 VAC power input range
- Continuous current output from 2.5 A (rms) to 155 A (rms)
- Resolver, encoder, high-resolution SinCos® or Stegmann Absolute rotary encoder feedback (single- or multi-turn) or Heidenhain Endat 2.1
- SSI encoder as a source for gearing, cam shapes and external position measurement
- Fully programmable IEC61131-3 single-axis drive/controller
- PLCopen and Parker motion function blocks
- 6 programming formats to choose from – CFC, LD, FBD, SFC, ST and IL

- Program memory – more than 5000 instruction lines
- High-level motion capability and machine control capability in one package
- 8 digital inputs/4 digital outputs
- Registration input (800 ns position-capture speed)
- Optional expansion I/O – additional 12 digital I/O points configurable for inputs or outputs, remote I/O with CANopen
- Optional communication interfaces (CANopen, Profibus DP, DeviceNet, ETHERNET Powerlink, EtherCAT, TCP/IP)
- CE (EMC & LVD), UL and cUL

### Compax3 T30 Accessories

See pages 16-17 for compatible Compax3 accessories.

# Compax3 T40

## IEC61131-3 Drive/Controller with Electronic Camming

The Compax3 T40 technology level is a compact industrial digital servo drive with fully programmable IEC61131-3 motion controller and advanced electronic camming and gearing capabilities. The Compax3 T40 represents the ultimate in programming flexibility and power within the Compax3 drive family. In addition to all of the programming capabilities of the Compax3 T30, the T40 includes electronic gearing and cam control capabilities, position capture and programmable limit switch (PLS) functionality. Electronic cams are created graphically using the powerful, wizard-based Cam Designer tool built into the C3 ServoManager™ software package. The motion capabilities of the Compax3 T40 are easily available to the user via PLCopen standard function blocks as well as more complex motion function blocks supplied by Parker Hannifin. Optional communication interfaces allow simple and effective data exchange to higher-level systems. The Compax3 is easily configurable via RS232/485 or TCP/IP using Parker's C3 ServoManager™ software running on a PC or by downloading an existing configuration file from another T40 unit via the optional BDM keypad interface module. All setup is accomplished via intuitive drive configuration wizards and basic information of the application. Commissioning is even faster with the addition of software input simulation and auto-tuning.



### Compax3 T40 Features

- 120 – 480 VAC power input range
- Continuous current output from 2.5 A (rms) to 155 A (rms)
- Resolver, encoder, high-resolution SinCos® or Stegmann Absolute rotary encoder feedback (single- or multi-turn) or Heidenhain Endat 2.1
- SSI encoder as a source for gearing, cam shapes and external position measurement
- Fully programmable IEC61131-3 single-axis drive/controller
- Virtual master
- 6 programming formats to choose from – CFC, LD, FBD, SFC, ST and IL
- Electronic camming, electronic gearing functionality
- Wide selection of master sources supported
- Registration input (800 ns capture speed)
- Programmable limit switches (PLS)
- Optional expansion I/O – 12 digital I/O points configurable as inputs or outputs, remote I/O with CANopen
- Optional communication interfaces (CANopen, Profibus DP, DeviceNet, ETHERNET Powerlink, EtherCAT, TCP/IP)
- CE (EMC & LVD), UL and cUL

### Compax3 T40 Accessories

See pages 16-17 for compatible Compax3 accessories.

# Compax3 Specifications

## Common Specifications

<b>Performance</b>	<b>Torque Loop</b>	62.5 micro seconds
	<b>Velocity Loop</b>	125 micro seconds
	<b>Position Loop</b>	125 micro seconds
<b>Command Inputs (T10 only)</b>	<b>Velocity &amp; Torque Mode</b>	14 bit, ±10 VDC analog
	<b>Position Mode</b>	Step & Direction; 5V or 24 V level (300 kHz input frequency); differential signal
<b>Onboard Digital Inputs</b>	<b>Type</b>	Sinking type, 24 V nom. @ 10 mA, high = 9-32 V, low <8 V
	<b>Functions:</b> <b>Ixx T10 (4 dedicated)</b> <b>Ixx T11 (8 dedicated)</b>	Drive stage enable, control input enable, reset, motor brake open/close Motion interrupt, Start, Drive Stage enable + 5 motion profile select inputs (or 4 inputs with a home input)
	<b>Ixx T30 <sup>(1)</sup></b> <b>Ixx T40 <sup>(1)</sup></b>	User definable via IEC61131-3 programming environment User definable via IEC61131-3 programming environment
	<b>Analog Inputs (T11, T30, T40)</b>	Two (dedicated); 14 bit
<b>Onboard Digital Outputs</b>	<b>Type</b>	Sourcing type, rated for 24 V @ 100 mA, short-circuit protected
	<b>Functions:</b> <b>Ixx T10 (4 dedicated)</b> <b>Ixx T11 (4 dedicated)</b> <b>Ixx T30 <sup>(2)</sup></b> <b>Ixx T40 <sup>(2)</sup></b>	No fault, drive enabled, in position window, at zero point No fault, position reached, power stage active, at zero point User definable via IEC61131-3 programming environment User definable via IEC61131-3 programming environment
	<b>Encoder</b>	Programmable up to 16,384 ppr (pre-quadrature)
	<b>Relay</b>	Normally closed, dry contact (switching current: 10-300 mA, switching voltage [AC/DC]: 100 mV-60 V)
	<b>Analog Outputs (T11, T30, T40)</b>	Two (dedicated); 8 bit; software configurable as monitor outputs
<b>Communications</b>	<b>Type</b>	RS232 (3-wire) on RS485 (2- or 4-wire); 8-bit word length, 1 stop bit, no parity
	<b>Baud Rate</b>	Fixed at 115.8 Kbaud for RS232; adjustable for RS485
	<b>Multi-drop (RS485)</b>	Up to 255 nodes
	<b>Profibus <sup>(3)</sup></b>	DPV0 supported; selectable Baud rate, 12 Mbd maximum transmission speed
	<b>CANopen <sup>(3)</sup></b>	DCiA, DS102 supported; selectable Baud rate, 1 Mbd maximum transmission speed
	<b>DeviceNet <sup>(3)</sup></b>	Polled, C05/cyclic I/O and bit strobe; 500 kBit/second max speed
	<b>Ethernet <sup>(3)</sup></b>	100 Mbit TCP/IP
	<b>ETHERNET Powerlink <sup>(3)</sup></b> <b>ETHERCAT <sup>(3)</sup></b>	100 Mbits , < 1us jitter, 1 ms cycle timeation
<b>Environmental</b>	<b>Temperature</b>	Still air: 33-113°F (0-45°C); moving air: 33-122°F (0-50°C)
	<b>Humidity</b>	0-75%, non-condensing
	<b>IP Class</b>	IP 20
<b>Protection</b>	<b>Short Circuit</b>	Phase-to-phase, phase-to-ground
	<b>Brownout</b>	Below 70 VDC
	<b>Over Voltage</b>	Will shut down when power dissipation capacity is exceeded
	<b>Over Temperature</b>	Motor 330°F (170°C), Drive 221°F (105°C)
	<b>I<sup>2</sup>t</b>	Error generated if peak current > 3 seconds
	<b>Safety Isolation</b>	VDE0160
<b>Standards</b>	UL, cUL, CE (EMC), CE (LVD)	

<sup>(1)</sup> 8 programmable, 12 additional I/O points available as an option

<sup>(2)</sup> 4 programmable, 12 additional I/O points available as an option

<sup>(3)</sup> Applicable only to models supporting this option

Compax3 SXXX V2 Specifications		S025 V2	S063 V2	S100 V2	S150 V2
Drive Input Power	Voltage	80 – 253 VAC	80 – 253 VAC	80 – 253 VAC	80 – 253 VAC
	Phase	1Ø	1Ø	3Ø	3Ø
	Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
	24 VDC Logic Power (Req'd)	24 VDC ±15%	24 VDC ±15%	24 VDC ±15%	24 VDC ±15%
Drive Output Power	PWM (selectable)	16/32 kHz	16/32 kHz	16/32 kHz	8/16/32 kHz
	Continuous Current (RMS)	2.5 Amps	6.3 Amps	10 Amps	15 Amps
	Peak Current (RMS)	5 Amps	12.6 Amps	20 Amps	30 Amps
	Commutation	Sinusoidal	Sinusoidal	Sinusoidal	Sinusoidal
Internal Regeneration Capacities/Storable Energy		560 µF / 15Ws	1120 µF / 30Ws	780 µF / 21Ws	1,170 µF / 31Ws

Compax3 SXXX V4 Specifications		S038 V4	S075 V4	S150 V4	S300 V4
Drive Input Power	Voltage	80 – 525 VAC	80 – 525 VAC	80 – 525 VAC	80 – 525 VAC
	Phase	3Ø	3Ø	3Ø	3Ø
	Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
	24 VDC Logic Power (Req'd)	24 VDC ±15%	24 VDC ±15%	24 VDC ±15%	24 VDC ±15%
Drive Output Power	PWM (selectable)	16/32 kHz	16/32 kHz	8/16/32 kHz	8/16/32 kHz
	Continuous Current (RMS)	3.8 Amps	7.5 Amps	15 Amps	30 Amps
	Peak Current (RMS)	7.5 Amps	15 Amps	30 Amps	60 Amps
	Commutation	Sinusoidal	Sinusoidal	Sinusoidal	Sinusoidal
Internal Regeneration Capacities/Storable Energy		235 µF / 37Ws	470 µF / 75Ws	690 µF / 110Ws	1,100 µF / 176Ws

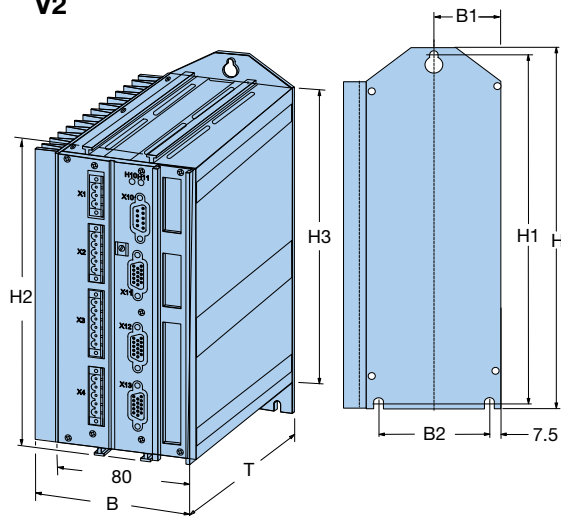
Compax3 H Specifications		H050 V4	H090 V4	H125 V4	H155 V4
Drive Input Power	Voltage	350 – 528 VAC	350 – 528 VAC	350 – 528 VAC	350 – 528 VAC
	Phase	3Ø	3Ø	3Ø	3Ø
	Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
	24 VDC Logic Power (Req'd)	24 VDC ±15%	24 VDC ±15%	24 VDC ±15%	24 VDC ±15%
Drive Output Power	PWM	8 kHz	8 kHz	8 kHz	8 kHz
	Cont. Current (RMS)	50 Amps @ 400 VAC	90 Amps @ 400 VAC	125 Amps @ 400 VAC	155 Amps @ 400 VAC
	Peak Current (RMS)	75 Amps for 5 sec	135 Amps for 5 sec	187.5 Amps for 5 sec	232.5 Amps for 5 sec
	Commutation	Sinusoidal	Sinusoidal	Sinusoidal	Sinusoidal
Internal Regeneration Capacities/Storable Energy		2600 µF / 602Ws	3150 µF / 729Ws	5000 µF / 1158Ws	5000 µF / 1158Ws

Compax3 M Specifications		Power Supply Units			Axis Units		
		MP10 D6	MP20 D6	M050 D6	M100 D6	M150 D6	M300 D6
Drive Input Power	Voltage	240 – 480 VAC	240 – 480 VAC	680 VAC	680 VAC	680 VAC	680 VAC
	Phase	3Ø	3Ø	DC Bus	DC Bus	DC Bus	DC Bus
	Frequency	50/60 Hz	50/60 Hz	–	–	–	–
	24 VDC Logic Power (Req'd)	24 VDC	24 VDC	Bussed 24 VDC	Bussed 24 VDC	Bussed 24 VDC	Bussed 24 VDC
Drive Output Power	PWM	–	–	8/16/32 kHz	8/16/32 kHz	8/16/32 kHz	8/16/32 kHz
	Continuous Current*	15 Amps	30 Amps	4 Amps	8 Amps	12.5 Amps	24 Amps
	Peak Current*	30 Amps	60 Amps	8 Amps	16 Amps	25 Amps	48 Amps
	Commutation	–	–	Sinusoidal	Sinusoidal	Sinusoidal	Sinusoidal
Internal Regeneration Capacities/Storable Energy		–	–	110 µF / 10Ws @ 480 Volts	220 µF / 21Ws @ 480 Volts	220 µF / 21Ws @ 480 Volts	440 µF / 42Ws @ 480 Volts

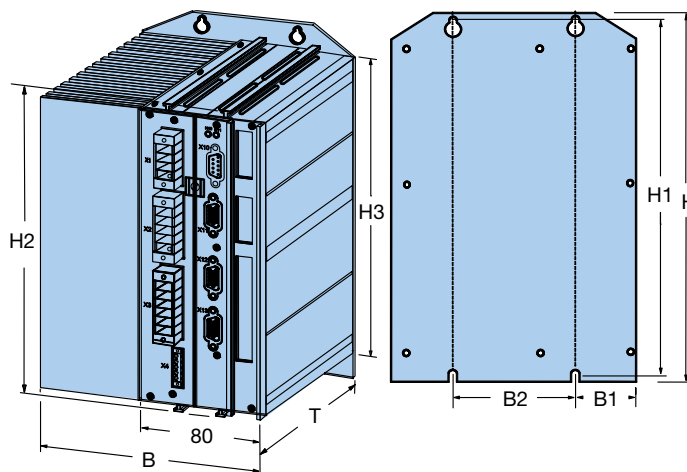
# Compax 3 Dimensions & Weight

## Compax3 S (mm)

**S025 V2, S063 V2, S100 V2, S150 V2**

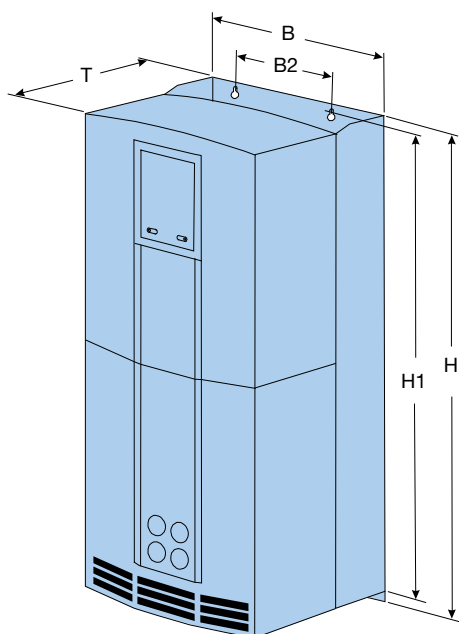


**S038 V4, S075 V4, S150 V4, S300 V4**



## Compax3 H (mm)

**H050 V4, H090 V4, H125 V4, H155 V4**

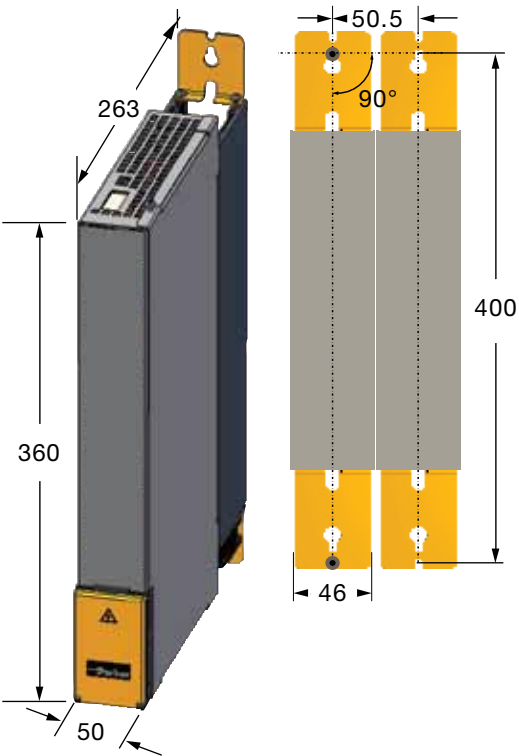


Compax3	Dimensions [mm]							Weight [kg]	
	H	B	T	H2	H3	B1	B2		H1
<b>S025V2</b>	222	84	172	203	191	40	65	210	2.0
<b>S063V2</b>	222	100	172	203	191	40	65	210	2.5
<b>S100V2</b>	279	115	172	259	248	40	65	267	4.3
<b>S150V2</b>	279	158	172	259	248	39	80	267	6.8
<b>S015V4</b>	279	84	172	259	248	40	65	267	3.1
<b>S038V4</b>	279	100	172	259	248	40	65	267	3.5
<b>S075V4</b>	279	115	172	259	248	40	65	267	4.3
<b>S150V4</b>	279	158	172	259	248	39	80	267	6.8
<b>S300V4</b>	412	175	172	391	380	47.5	80	400	10.9
<b>H050V4</b>	453	252	245	-	-	-	150	440	17.4
<b>H090V4</b>	669	257	312	-	-	-	150	630	32.5
<b>H125V4</b>	720	257	355	-	-	-	150	700	41.0
<b>H155V4</b>	720	257	355	-	-	-	150	700	41.0

# Compax3 M (mm)

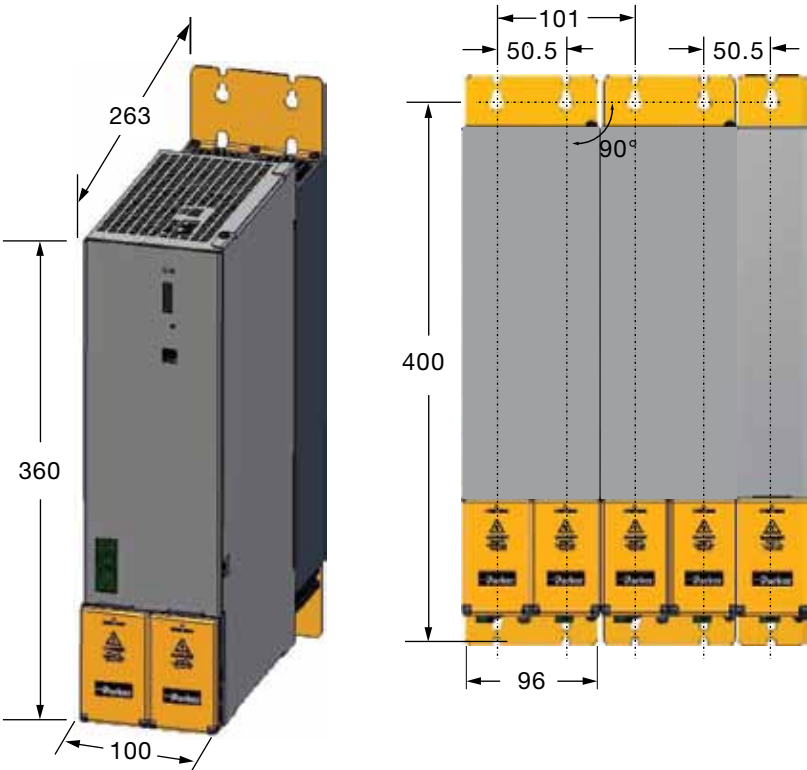
**M050 D6, M100 D6, M150 D6  
&  
MP10 D6 Power Supply**

Compax3	Weight [kg]
M050 D6	3.5
M100 D6	3.6
M150 D6	3.6
MP10 D6	3.95



**M300 D6  
&  
MP20 D6 Power Supply**

Compax3	Weight [kg]
M300 D6	5.25
MP20 D6	6.3



# Compax3 Accessories

	Part Number	Product Description
<b>Power Supply (required for C3M only)</b>	C3MP10D6USBM00NA	10kW power supply for Compax3M axis units; 240/480 3-phase
	C3MP20D6USBM00NA <sup>(1)</sup>	20kW power supply for Compax3M axis units; 240/480 3-phase
<b>Breakout Modules</b>	VM15-PM	15-pin breakout module and 2' cable to Compax3 feedback or analog encoder
	VM15-PF	15-pin breakout module and 2' cable to Compax3 digital I/O
	VM15-PM-05	15-pin breakout module and 5' cable to Compax3 feedback or analog encoder
	VM15-PF-05	15-pin breakout module and 5' cable to Compax3 digital I/O 15-pin breakout module and 5' cable to Compax3 digital I/O
	VM15-PM-10	15-pin breakout module and 10' cable to Compax3 feedback or analog encoder
	VM15-PF-10	15-pin breakout module and 10' cable to Compax3 digital I/O
<b>Connector Kits</b>	ZBH02/01	Replacement connector kit for Compax3 S025 V2, S063 V2 products
	ZBH02/02	Replacement connector kit for Compax3 S038 V4, S075 V4, S150 V4 products
	ZBH02/03	Replacement connector kit for Compax3 S300 V4 products
	ZBH04/01	Replacement connector kit for Compax3 M050D6, M100D6, M150D6
	ZBH04/02	Replacement connector kit for Compax3 M300D6
	ZBH04/03	Replacement connector kit for Compax3 MP10D6 and MP20D6 (power supply)
<b>Communication Cable</b>	SSK1/02	8' cable, RS232 serial communication cable (PC to Compax3)
	SSK32/20	Communications dongle for C3Hxxx; one unit ships with drive - replacement only
	VBK17/01	X10 to X10 jumper - replacement only for C3H
<b>Braking Resistors</b>	BRM08/01	Braking resistor for Compax3 S025, S038 units (60 W continuous, 250 W peak)
	BRM05/01	Braking resistor for Compax3 S063, S075 units (180 W continuous, 2300 W peak)
	BRM05/02	Braking resistor for Compax3 S150 unit (570 W continuous, 6900 W peak)
	BRM04/01	Braking resistor for Compax3 S300 units (570 W continuous, 6900 W peak)
	BRM04/02	Braking resistor for Compax3 S300 units (740 W continuous, 8900 W peak)
	BRM04/03	Braking resistor for Compax3 S300, MP20D6 units (1500 W continuous, 18000 W peak)
	BRM09/01	Braking resistor for Compax3 S100 units (570 W continuous, 6900 W peak)
	BRM10/01	Braking resistor for Compax3 S150V4 unit (570 W continuous, 6900 W peak)
	BRM11/01	Braking resistor for Compax3 H0xx units (3500 W continuous, 19.3 kW peak)
	BRM12/01	Braking resistor for Compax3 H1xx units (4500 W continuous, 24.8 kW peak)
	BRM13/01	Braking resistor for Compax3 MP10D6 (500 W cont)
	BRM14/01	Braking resistor for Compax3 MP20D6 (500 W cont, two 15ohm in series)
<b>EMC Accessories</b>	MDR01/04	Compax3 motor output filter (rated up to 6.3 A continuous current motors)
	MDR01/01	Compax3 motor output filter (rated up to 16 A continuous current motors)
	MDR01/02	Compax3 motor output filter (rated up to 30 A continuous current motors)
	NFI01/01	Mains Filter <sup>(1)</sup> for Compax3 S025, S063 units
	NFI01/02	Mains Filter <sup>(1)</sup> for Compax3 S038, S075, S150 units
	NFI01/03	Mains Filter <sup>(1)</sup> for Compax3 S300 units
	NFI02/01	Mains Filter <sup>(1)</sup> for Compax3, 50A
	NFI02/02	Mains Filter <sup>(1)</sup> for Compax3, 90A
	NFI02/03	Mains Filter <sup>(1)</sup> for Compax3, 125A & 155A
	NFI03/01	Mains Filter <sup>(1)</sup> for Compax3, 25A for C3MP10D6 power supply
	NFI03/02	Mains Filter <sup>(1)</sup> for Compax3, 25A for C3MP20D6 power supply
<b>Communication Accessories</b>	71-017635-01	5' Ethernet crossover cable
	71-028656-xx <sup>(2)</sup>	Shielded ETHERNET Powerlink cable (from ACR to Compax3/Aries)
	BUS08/01	Profibus cable connector with integral bus terminal switch (plug only)
	BUS10/01	CANopen cable connector with integral bus terminal switch (plug only)
<b>Compax3 I10 T10 Drive Command Cables</b>	71-021108-xx <sup>(2)</sup>	Compax3 I10 T10 drive-to-ACR analog command cable (torque, velocity mode only)

<sup>(1)</sup> For Class A (EMC) compliance for commercial or residential applications where motor cable lengths exceed 33 feet (10 m).

<sup>(2)</sup> xx denotes cable length in feet; available in 4' and 10' lengths.



## BDM01/01 Compax3 Diagnostic Interface Module

The BDM01/01 is a palm-sized, transportable diagnostic module that can be used to transmit drive configuration data to/from multiple Compax3 units, without the need for using a PC. BDM01/01 features include:



- **Upload/download transfer of drive configuration files to other Compax3 units\***
- **Online display of drive, error status**
- **Online modification of drive parameters, such as error reset, jogging, motor brake open/close, tuning gains, etc.\*\***
- **Plugs into RS232 port; hot-swappable**
- **Multi-language capable – English, German, French**
- **Modification of up to 15 user-defined program variables when used with Compax3 T30 or T40 units**

\* Identical control level

\*\* Features depend on control level

## Compax3 Feedback Cables

Feedback cables are compatible with:

- **BE 23, 34 (BE 23 with resolver and encoder only)**
- **M Series 105 - 205**
- **MaxPlus 72 - 190**
- **MaxPlusPlus (MPP)**
- **NeoMetric/J Series 34, 70, 92**
- **SMN 60 - 142**

Description	Part Number*
<b>Resolver</b>	F-2B1-xx
<b>SinCos/Stegman/Hiperface</b>	F-2B1-xx
<b>Encoder</b>	F-2C1-xx

\* -xx denotes cable length in feet; motor power and feedback cables available in standard lengths of 10, 25 and 50 feet (other lengths also available).

## Compax3 Power Cables

Description	Compatibility	Part Number
<b>240 VAC (&lt;6 A<sub>RMS</sub>)</b>	<ul style="list-style-type: none"> <li>• BE 23</li> <li>• MaxPlusPlus (MPP)</li> <li>• NeoMetric/J Series</li> </ul>	P-1A1-xx
<b>240/480 VAC (&lt;20 A<sub>RMS</sub>)</b>	<ul style="list-style-type: none"> <li>• BE 34</li> <li>• M Series</li> <li>• MaxPlus</li> <li>• MaxPlusPlus (MPP)</li> <li>• NeoMetric/J Series</li> <li>• SMN Series</li> </ul>	P-3B1-xx
<b>240/480 VAC (20A &lt; I &lt; 30 A<sub>RMS</sub>)</b>	<ul style="list-style-type: none"> <li>• M Series</li> <li>• MaxPlusPlus (MPP)</li> </ul>	P-4B1-xx
<b>240/480 VAC (20A &lt; I &lt; 30 A<sub>RMS</sub>)</b>	<ul style="list-style-type: none"> <li>• M Series</li> <li>• MaxPlus</li> <li>• MaxPlusPlus (MPP)</li> </ul>	P-4B2-xx
<b>240/480 VAC (30 A &lt; I &lt; 50 A<sub>RMS</sub>)</b>	<ul style="list-style-type: none"> <li>• M Series</li> <li>• MaxPlus</li> <li>• MaxPlusPlus (MPP)</li> </ul>	P-6B2-xx
<b>&gt;50 A<sub>RMS</sub></b>		Contact Factory

-xx denotes cable length in feet; motor power and feedback cables available in standard lengths of 10, 25 and 50 feet (other lengths also available).

# Compax3 Ordering Information

Fill in an order code from each of the numbered fields to create a complete model order code.

## Order Example:

①	②	③	④
<b>S025 V2</b>	<b>F10</b>	<b>I10T10</b>	<b>M00</b>

### ① Series

<b>S025 V2</b>	2.5 A (rms) / 120 - 240 VAC, 1Ø
<b>S063 V2</b>	6.3 A (rms) / 120 - 240 VAC, 1Ø
<b>S100 V2</b>	10 A (rms) / 120 - 240 VAC, 3Ø
<b>S150 V2</b>	15 A (rms) / 120 - 240 VAC, 3Ø
<b>S038 V4</b>	3.8 A (rms) / 208 - 480 VAC, 3Ø
<b>S075 V4</b>	7.5 A (rms) / 208 - 480 VAC, 3Ø
<b>S150 V4</b>	15 A (rms) / 208 - 480 VAC, 3Ø
<b>S300 V4</b>	30 A (rms) / 208 - 480 VAC, 3Ø
<b>H050 V4</b>	50 A (rms) / 400 - 480 VAC, 3Ø
<b>H090 V4</b>	90 A (rms) / 400 - 480 VAC, 3Ø
<b>H125 V4</b>	125 A (rms) / 400 - 480 VAC, 3Ø
<b>H155 V4</b>	155 A (rms) / 400 - 480 VAC, 3Ø
<b>M050 D6*</b>	4 A (rms) / 208 - 480 VAC 3f
<b>M010 D6*</b>	*8 A (rms) / 208 - 480 VAC 3f
<b>M150 D6*</b>	12.5 A (rms) / 208 - 480 VAC 3f
<b>M300 D6*</b>	24 A (rms) / 208 - 480 VAC 3f

### ② Feedback

<b>F10</b>	Standard resolver feedback support, Resolver position resolution: 19 bit; repeatability: $\pm 0.005^\circ$
<b>F11</b>	SinCos® position resolution: 21 bit; SinCos® (Hiperface™) high-resolution encoder support; absolute accuracy: $\pm 0.002^\circ$ ; Stegmann
<b>F12</b>	Quadrature rotary/linear encoder, sine-cosine linear, distance-coded encoder feedback support Resolution, accuracy: dependent upon specification of encoder used; Endat 2.1 compatible feedback

### ③ Control Options\*\*

<b>I10 T10</b>	Drive only
<b>I11 T11</b>	Basic positioning via digital inputs (requires M00)
<b>I11 T30</b>	IEC with digital I/O
<b>I11 T40</b>	IEC Cam control w/ digital I/O
<b>I12 T11</b>	Advanced positioning via inputs and RS232/485 (requires M12)
<b>I20 T11</b>	Positioning via Profibus DP
<b>I20 T30</b>	IEC with Profibus DP
<b>I20 T40</b>	IEC Cam control w/ Profibus DP
<b>I21 T11</b>	Positioning via CANopen
<b>I21 T30</b>	IEC with CANopen
<b>I21 T40</b>	IEC Cam control w/ CANopen
<b>I22 T11</b>	Positioning via DeviceNet
<b>I22 T30</b>	IEC with DeviceNet
<b>I22 T40</b>	IEC Cam control w/ DeviceNet
<b>I30 T11</b>	Positioning/Interpolation via EPL (includes TCP/IP)***
<b>I30 T30</b>	IEC with EPL (includes TCP/IP)***
<b>I30 T40</b>	IEC Cam control w/EPL (includes TCP/IP)***
<b>I31 T11</b>	Positioning via EtherCAT
<b>I31 T30</b>	IEC with EtherCAT
<b>I31 T40</b>	IEC Cam control with EtherCAT

### ④ Additional Options

<b>M00</b>	No options
<b>M12</b>	Additional onboard I/O only (available on I12 T11, IxxT30 and IxxT40 units)

\* Requires power supply, see page 16 to order by part numbers.

\*\* Communication Control Options:

**I20** Profibus - DPV0 (slave) Transmission speed: up to 12Mbd Available on T11, T30, T40 units

**I21** CANopen - DS402 (slave) Transmission speed: selectable (up to 1Mbd) Available on T11, T30, T40 units

**I22** DeviceNet slave available on T11, T30 and T40 units Transmission speed: 125, 250, 500 kBits/second

**I30** ETHERNET Powerlink: Use I30 T11 with ACR9030/9040

**I31** EtherCAT requires an external EtherCAT master provided by user

\*\*\* The I30 option includes both EPL communication for fieldbus and TCP/IP for configuration via C3 ServoManager.

# Other Related Parker Products

## HMI Solutions

Parker offers HMI products with drivers specifically for the Compax3 product range. The InteractX and Interact Xpress HMI software and hardware pairs perfectly with the C3 to replace simple push buttons or to provide sophisticated networking, multimedia and data logging.



## Rotary and Linear Motors

Parker offers a complete line of motor products meeting a broad range of application needs. Parker rotary stepper and servo motors offer unparalleled performance, torque ranging from 1.2 to 4000 in-lbs and complete customizing capabilities. For higher torque requirements, Parker's Stealth gearheads are the perfect solution. Parker linear motors offer industry-leading solutions for both ironcore and ironless technologies.



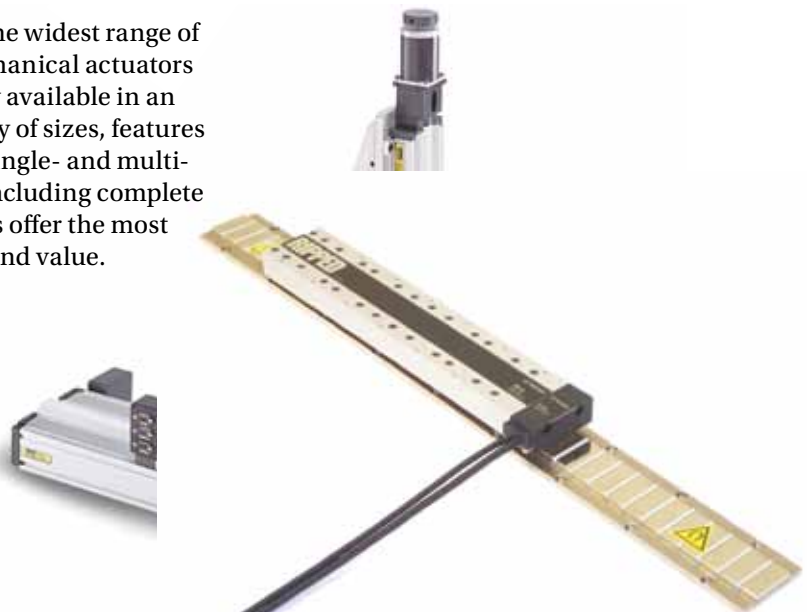
## PIO

The modular Parker I/O System (PIO) is a convenient and flexible product for connecting digital and analog inputs / outputs - modular extensions. The PIO communicates with the controller via CANopen. A wide variety of digital and analog modules are available.



## Positioning Tables

Parker offers the widest range of precision mechanical actuators in the industry available in an unrivaled array of sizes, features and options. Single- and multi-axis systems including complete gantry systems offer the most performance and value.



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