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Elite® Pro V3 **Digital DC Drive**

Models EP2XXX-000
Models EP4XXX-000

Carotron is proud to introduce the third generation of the Elite®Pro drive series. Designated V3, it is the latest addition to the Carotron Family of high performance, reliable, and rugged DC drives for motor control. Many years of research and development by Carotron's engineering staff have culminated in a drive series that provides quality, accuracy, flexibility and user friendliness not found in any other drive in the market place. The heart of the Elite®Pro V3 is a high speed Digital Signal Processor (DSP) designed specifically for motor control applications. The resulting design is very capable of handling basic control algorithms along with advanced algorithms for system functions such as PID Dancer Controls, Center Winder Controls, Tension Controls, and Customized Control Functions to meet user requirements. The power section design for the Elite®Pro V3 follows the same conservative design practice that Carotron's customers have come to appreciate in all of our designs. We provide a regenerative and non-regenerative DC drive chassis package that is capable of full load operation in a 55°C ambient. Compare this to our competitors that design to



ambient levels of 35°C to 50°C. The drive comes standard with an 11 key, 4 line, backlit LCD display. English text and menu screens with soft-keys simplify the drive programming and eliminates the need to memorize numeric codes. The programming can be protected via a password to prevent unwanted changes of drive parameters. USB and RS-422/RS-485 interfaces allow communications to HMIs, computers, and PLCs.

Standard Features

- Regenerative and Non-regenerative models
- Armature Feedback, Tachometer Feedback (AC or DC), Encoder Feedback
- Feedback Loss protection
- Electronic Motor Overload Protection
- Digital Operator (11 keys, 4 lines)
- Shunt Field Regulator
- Fault Log
- Reprogrammable Flash Memory
- Multifunction Inputs
 - 7 Digital, 1 Frequency, 5 Analog
- Multifunction Outputs
 - 3 Relay, 2 Analog, 1 Freq/Digital
- Compatible with Carotron's free CaroLink PC software
- Communications: USB, RS422/485 (Modbus RTU)

Options

- Modbus TCP Ethernet option card (P/N C14521-000)
- RS232 option card (P/N C14279-001)

Specifications

A.C. Input Voltage Range

- 3 phase, 230-460 VAC \pm 10%, 50/60 Hz \pm 2 Hz
- 1 phase, 115 VAC \pm 10%, 50/60 Hz \pm 2 Hz, 5A

A.C. Line Field Supply - 1 Phase (Optional)

- 230-460 VAC \pm 10%, 50/60 Hz \pm 2 Hz

Armature Output

- 0-240VDC @ 230 VAC input
- 0-415VDC @ 380 VAC input
- 0-500VDC @ 460 VAC input

Field Output

- Voltage
 - 0-200VDC @ 230 VAC input
 - 0-330VDC @ 380 VAC input
 - 0-400VDC @ 460 VAC input
- Current
 - EPx020-000 thru EPx060-000: 8A max
 - EPx075-000 thru EPx150-000: 10A max
 - EPx200-000 thru EPx700-000: 12A max

Power Supplies

- +24V (TB1-1): 50mA
- +12V (TB1-17): 100mA
- +10V (TB1-16): 50mA
- -10V (TB1-46): 50mA

Digital Inputs (Qty: 7)

- Sink Mode
 - V_{ih} =20.0 VDC max
 - V_{il} =0.0 VDC min to 17.0 VDC max
- Source Mode
 - V_{ih} =8.0 VDC min to 30.0 VDC max
 - V_{il} =5.0 VDC max

Analog Inputs (Qty: 5)

- Voltage Mode
 - Max Input: \pm 10 VDC
 - Input Impedance: 1M Ω
- Current Mode
 - Max Input: \pm 20 mADC
 - Input Impedance: 250 Ω
- Resolution: 12 bit

Tachometer Feedback Input

- Max Input: \pm 200 V (AC or DC)

Encoder Feedback Input

- Frequency: 200kHz max
- Uni-directional (single channel) or Quadrature
- Single ended or differential
- Voltage: 12 VDC max

Frequency Input

- Frequency: 40kHz max, square wave
- Voltage: 12 VDC max
 - V_{il} =0.0 VDC to 1.5 VDC max
 - V_{ih} =2.5 VDC min to 12.0 VDC max

Relay Outputs (Qty: 3)

Form-C contact:

- 2 A @ 115 VAC (resistive)
- 2 A @ 60 VDC (resistive)

Armature Pilot Relay Output

- 30 A @ 120 VAC (resistive)
- 30 A @ 28 VDC (resistive)

Analog Outputs (Qty: 2)

- \pm 10 VDC max, 20mADC max
- Resolution: 12 bit + sign

Frequency/Digital Output

- Frequency: 10kHz max, square wave
- Sink current: 100mA max
- Voltage: 30VDC max

Speed Regulation

- Armature Feedback: \pm 1%
- Tachometer Feedback: \pm 0.01%
- Encoder Feedback: \pm 0.01% (w/ 1024 min ppr)

Torque Regulation

- \pm 1% of Range Selected

Speed Range

- 100:1 typical when using tachometer or encoder feedback. May be less depending upon motor characteristics

Temperature Range

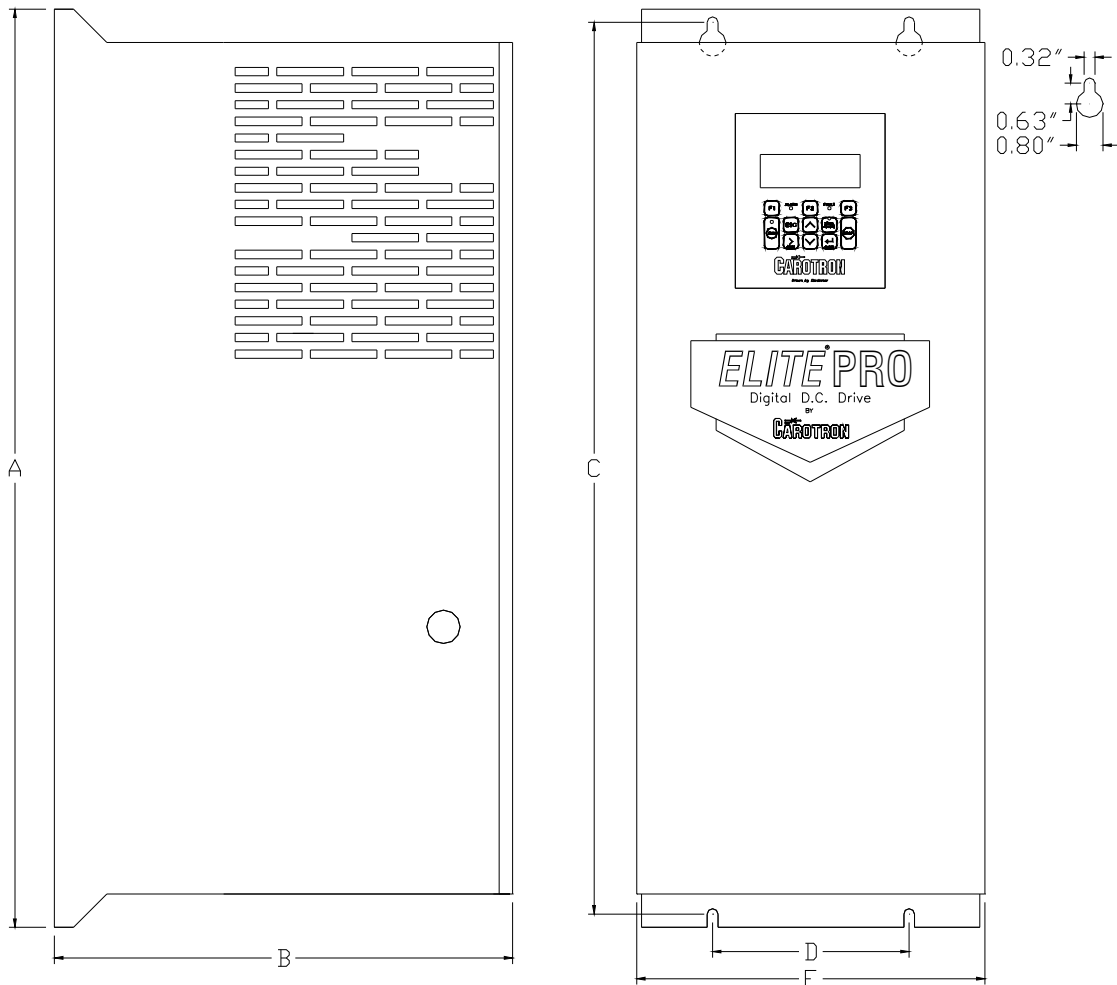
- Chassis: 0-55°C
- Enclosed: 0-40°C

Model Ratings

Model*	HP @ 240VDC	HP @ 500VDC	Continuous Amps	Peak Amps	Package
EPx020-000	10	20	36	54	S
EPx040-000	20	40	71	107	S
EPx060-000	30	60	107	161	S
EPx075-000	40	75	140	210	M
EPx100-000	50	100	174	261	M
EPx125-000	60	125	206	309	M
EPx150-000	75	150	256	384	M
EPx200-000	100	200	340	510	L
EPx250-000	125	250	425	638	L
EPx300-000	150	300	510	765	L
EPx400-000	200	400	688	1032	L
EPx500-000	250	500	850	1275	XL
EPx600-000	300	600	1020	1530	XL
EPx700-000	350	700	1185	1748	XL

*x=4 for Regen models, x=2 for Non-regen models

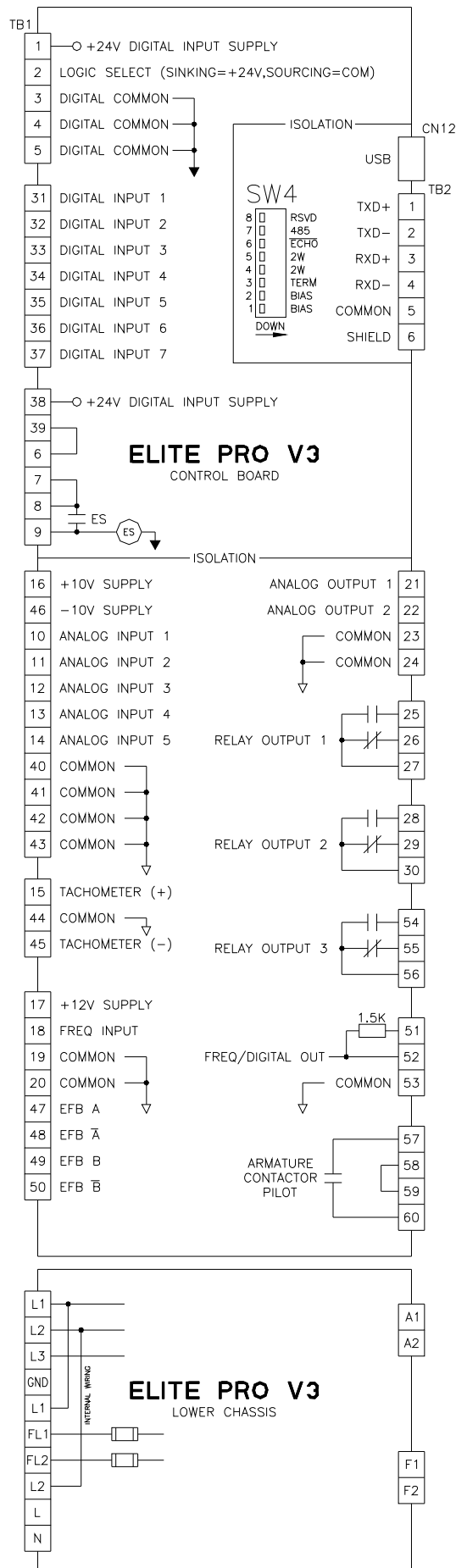
Dimensions



Package	A	B	C	D	E
S	15.38	8.5	14.26	9	10.4
M	22	10.68	21	8.75	10.75
L	27.6	13.75	26.8	5.9	10.45
XL	32.7	17.07	31.9	10.95	15.46

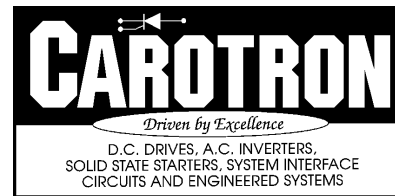
All dimensions are in inches

Connections



Elite Pro V3 Digital DC Drive Model EP2XXX-000 (non-regen) Model EP4XXX-000 (regen)

View or download the complete Elite Pro V3
Instruction Manual (MAN1063-00) from
www.carotron.com



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