

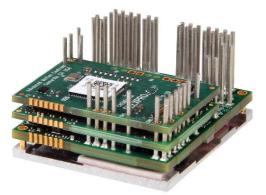
# FE100-50-EM

FlexPro<sup>®</sup> Series **Product Status:** Active

# SPECIFICATIONS

Current Peak
Current Continuous
DC Supply Voltage
Network Communication

100 A 50 A 20 – 90 VDC CANopen



The **FE100-50-EM** is a FlexPro<sup>®</sup> series servo drive with IMPACT<sup>™</sup> architecture.

The **FE100-50-EM** offers full tuning control of all servo loops and is designed to drive brushed and brushless servo motors, and closed loop stepper motors. The drive accepts a variety of external command signals, or can use the built-in Motion Engine, an internal motion controller used with Sequencing and Indexing commands. Programmable digital and analog I/O are included to enhance interfacing with external controllers and devices.

The **FE100-50-EM** features an EtherCAT<sup>®</sup> interface for network communication using CANopen over EtherCAT (CoE) and USB connectivity for drive configuration and setup. All drive and motor parameters are stored in non-volatile memory.

IMPACT<sup>TM</sup> (Integrated Motion Platform And Control Technology combines exceptional processing capability and highcurrent components to create powerful, compact, feature-loaded servo solutions. IMPACT<sup>TM</sup> is used in all FlexPro<sup>®</sup> drives and is available in custom products as well.

#### **FEATURES**

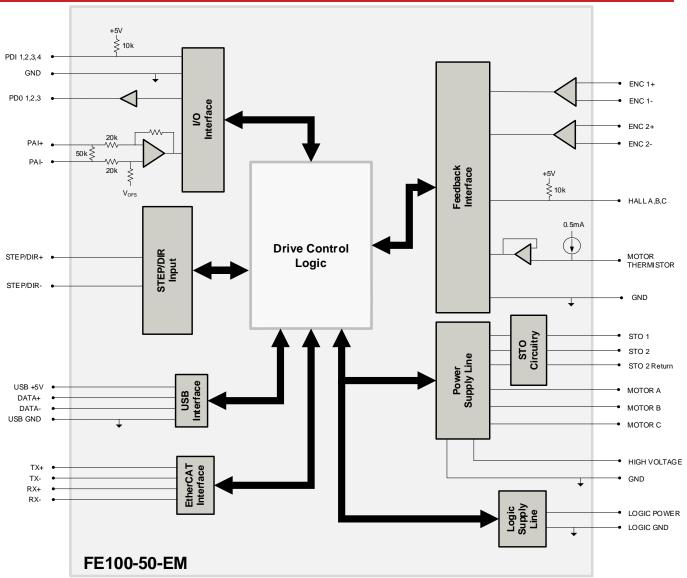
- CoE Based on DSP-402 Device Profile for Drives and Motion Control
- Synchronization using Distributed Clocks
- Position Cycle Times down to 100 µs
- Four Quadrant Regenerative Operation
- Programmable Gain Settings
- PIDF Velocity Loop

- Compact Size, High Power Density
- On-the-Fly Mode Switching
- On-the-Fly Gain Set Switching
- Dedicated Safe Torque Off (STO) Inputs
- Space Vector Modulation (SVM) Technology

Feedback Supported	Motors Supported	<ul><li>Three Phase</li><li>Single Phase</li><li>Stepper</li></ul>	Modes of Operation	<ul> <li>Profile Modes</li> <li>Cyclic Synchronous Modes</li> <li>Current</li> <li>Velocity</li> <li>Position</li> </ul>
Command Sources	Inputs / Outputs	<ul> <li>4 Programmable Digital Inputs</li> <li>3 Programmable Digital Outputs</li> <li>1 Programmable Analog Input</li> </ul>	Agency Approvals	<ul> <li>RoHS</li> <li>UL (Pending)</li> <li>CE (Pending)</li> <li>TUV Rheinland (STO) (Pending)</li> </ul>



#### **BLOCK DIAGRAM**



### INFORMATION ON APPROVALS AND COMPLIANCES



The RoHS Directive restricts the use of certain substances including lead, mercury, cadmium, hexavalent chromium and halogenated flame retardants PBB and PBDE in electronic equipment.

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CTROMATE





	Electric	al Specifications
Description	Units	Value
DC Supply Input Range	VDC	20 – 90
DC Supply Undervoltage	VDC	15
DC Supply Overvoltage	VDC	100
Logic Supply Input Range (required)	VDC	10 – 55
Safe Torque Off Voltage (Default)	VDC	5
Minimum Required External Bus Capacitance	μF	270
Maximum Peak Current Output <sup>1</sup>	A (Arms)	100 (70.7)
Maximum Continuous Current Output <sup>2</sup>	A (Arms)	50 (50)
Efficiency at Rated Power	%	99
Maximum Continuous Output Power	W	4455
Maximum Power Dissipation at Rated Power	W	45
Minimum Load Inductance (line-to-line) <sup>3</sup>	μH	250
Switching Frequency	kHz	20
Maximum Output PWM Duty Cycle	%	83
	Contro	l Specifications
Description	Units	Value
Communication Interfaces <sup>4</sup>	-	EtherCAT® (USB for configuration)
Command Sources	_	±10 V Analog, Over the Network, Sequencing, Indexing, Jogging, Step
		& Direction, Encoder Following
Feedback Supported	_	Absolute Encoder (BiSS C-Mode), Hall Sensors, Incremental Encoder,
· · ·		Auxiliary Incremental Encoder, ±10 VDC Position, Tachometer (±10V)
Commutation Methods	-	Sinusoidal, Trapezoidal
Modes of Operation	-	Profile Modes, Cyclic Synchronous Modes, Current, Velocity, Position
Motors Supported <sup>5</sup>	-	Three Phase (Brushless Servo), Single Phase (Brushed Servo, Voice Coil, Inductive Load), Stepper (2- or 3-Phase Closed Loop)
Hardware Protection	-	40+ Configurable Functions, Over Current, Over Temperature (Drive & Motor), Over Voltage, Short Circuit (Phase-Phase & Phase-Ground), Under Voltage
Programmable Digital Inputs/Outputs	-	4/3
Programmable Analog Inputs/Outputs	-	1/0
Primary I/O Logic Level	-	5 VDC, not isolated
Current Loop Sample Time	μS	50
Velocity Loop Sample Time	μS	100
Position Loop Sample Time	μs	100
Maximum Encoder Frequency	MHz	20 (5 pre-quadrature)
		cal Specifications
Description	Units	Value
Size	mm (in)	43.2 x 38.1 x 17.0 (1.70 x 1.50 x 0.7)
Weight	g (oz)	45.4 (1.6)
Ambient Operating Temperature Range <sup>6</sup>	°C (°F)	0 - 65 (32 - 149)
Storage Temperature Range	°C (°F)	-40 - 85 (-40 - 185)
Relative Humidity	-	0-95%, non-condensing
Form Factor	-	PCB Mounted
P1 SIGNAL CONNECTOR	-	80-pin 0.4mm spaced connector
TERMINAL PINS	-	51x Terminal Pins

Capable of supplying drive rated peak current for 2 seconds with 10 second foldback to continuous value. Longer times are possible with lower current limits.
 Continuous Arms value attainable when RMS Charge-Based Limiting is used.
 Lower inductance is acceptable for bus voltages well below maximum. Use external inductance to meet requirements.

4. EtherCAT® is a registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.
5. Maximum motor speed for stepper motors is 600 RPM. Consult the hardware installation manual for 2-phase stepper wiring configuration.
6. Additional cooling and/or heatsink may be required to achieve rated performance.

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### **PIN FUNCTIONS**

			P1 – Signal	Connector			
Pin	Name	Description / Notes	I/O	Pin	Name	Description / Notes	I/O
1	GROUND	Ground	GND	2	GROUND	Ground	GND
3	PAI-1+	Differential Programmable Analog Input or		4	DATA+ USB	USB Data Channel	I/O
5	PAI-1-	Reference Signal Input (12-bit Resolution)	1	6	DATA- USB		I/O
7	THERMISTOR	Motor Thermal Protection.	1	8	GROUND	Ground	GND
9	GROUND	Ground	GND	10	SCLA	I <sup>2</sup> C Data Signals for Addressing, Network	0
11		Differential Data Line for Absolute Encoders	1/0	10	4 4 03	Error LED, and Bridge Status LED. See	1/0
11	ENC 1 DATA+ / A+	(BiSS: SLO+/-) or Differential Incremental	1/0	12	SDAA	Hardware Manual for more info.	1/0
13	ENC 1 DATA- / A-	Encoder A.	1/0	14	HALL A		1
15	ENC 1 CLK+ / B+	Differential Clock Line for Absolute Encoders (BiSS: MA+/-) or Differential	I/O	16	HALL B	Single-ended Commutation Sensor Inputs	1
17	ENC 1 CLK- / B-	Incremental Encoder B.	I/O	18	HALL C		1
19	GROUND	Ground	GND	20	GROUND	Ground	GND
21	ENC 1 REF+ / I+	Differential Reference Mark for Absolute	1	22	ENC 2 A+		1
23	ENC 1 REF- / I-	Encoders (Leave open for BiSS) or Differential Incremental Encoder Index.	1	24	ENC 2 A-	Differential Incremental Encoder A.	1
25	RESERVED	Reserved. Do not connect.	-	26	ENC 2 B+		
25	RESERVED	Reserved. Do not connect.	-	26	ENC 2 B-	<ul> <li>Differential Incremental Encoder B.</li> </ul>	
	RESERVED				ENC 2 I+		
29	PDI-1	Reserved. Do not connect.	-	30		Differential Incremental Encoder Index.	
31 33	PDI-1 PDI-2	Programmable Digital Input Programmable Digital Input		32	ENC 2 I- PDO-1	Programmable Digital Output (TTL/8mA)	0
	PDI-2 PDI-3				PDO-1 PDO-2		0
35		Programmable Digital Input		36		Programmable Digital Output (TTL/8mA)	
37	PDI-4	Programmable Digital Input	· ·	38	PDO-3	Programmable Digital Output (TTL/8mA)	0
39	GROUND	Ground	GND	40	GROUND	Ground	GND
41	TX-IN	Transmit Line IN (100 Base TX)		42	TX- OUT	Transmit Line OUT (100 Base TX)	0
43	TX+ IN		1	44	TX+ OUT		0
45	RX- IN	Receive Line IN (100 Base TX)		46	RX- OUT	Receive Line OUT (100 Base TX)	0
47	RX+IN	, ,		48	RX+ OUT	· · · · ·	0
49	+3V BIAS IN	+3V Supply for Transformer/Magnetics Bias	0	50	+3V BIAS OUT	+3V Supply for Transformer/Magnetics Bias	0
51	LINK/ACT IN	Link and Activity Indicator for IN port. Function based on protocol specification. See Hardware Information below.	1/0	52	LINK/ACT OUT	Link and Activity Indicator for OUT port. Function based on protocol specification. See Hardware Information below.	I/O
53	STATUS	Run State Indicator for Network. Function based on protocol specification. See Hardware Information below.	1/0	54	RESERVED	Reserved. Do not connect.	-
55	RESERVED	Reserved. Do not connect.	-	56	RESERVED	Reserved. Do not connect.	
57	RESERVED	Reserved. Do not connect.	<u> </u>	58	RESERVED	Reserved. Do not connect.	-
59	GROUND	Ground	GND	60	GROUND	Ground	GND
61	RESERVED	Reserved. Do not connect.	-	62	RESERVED	Reserved. Do not connect.	
63	RESERVED	Reserved. Do not connect.	-	64	RESERVED	Reserved. Do not connect.	-
65	RESERVED	Reserved. Do not connect.		66	RESERVED	Reserved. Do not connect.	-
67	RESERVED	Reserved. Do not connect.		68	STEP	Step Input.	-
69	RESERVED	Reserved. Do not connect.	-	70	DIR	Direction Input.	
71	RESERVED	Reserved. Do not connect.	-	70	RESERVED	Reserved. Do not connect.	
	1	+5VDC unprotected supply					
73	+5V	(See Note 1)	0	74	RESERVED	Reserved. Do not connect.	-
75	+5V USER	+5VDC User Supply for feedback and local	0	76	+3V3 OUT	+3.3VDC Supply Output for local logic	0
77	+5V USER	logic (See Note 1)	0	78	+3V3 OUT	signals (100 mA max)	0
79	GROUND	Ground	GND	80	GROUND	Ground	GND
Со	nnector Information	80-pin, 0.4mm spaced connector		• •	+3V3 OUT +3V3 OUT GROUND 80	78 — 4 DAT.	
Mati	ng Connector Details	PANASONIC: P/N AXT380224	•				
۸ In	Mating Connector Included with Drive	No	• :: ** (********************************	2 0 1	GROUND 79 +5V USER +5V USER	77 3 PAI	1+

Notes

Total current through pins P1-73/75/77 should not exceed 300mA, while no single pin should be loaded more than 150mA.

#### Drive Status LED and Node Addressing

#### SCLA (P1-10); SDAA (P1-12)

The SCLA and SDAA pins allow Drive Status LED monitoring and Node Addressing to be performed with an I<sup>2</sup>C bus I/O expander. For more information on how to utilize and configure the I/O expander into an interface board, consult the hardware installation manual.



## **TERMINAL PIN LOCATIONS**

The 51 Terminal Pins provide connection to the high power drive signals. Terminal Pins must be soldered to an interface board.

	Pin T1	Name STO-1 INPUT	Description / Notes Safe Torque Off – Input 1	I/O	TO STO 2 NUMBER 14 LOGIC PWR
			· · ·		
If       Locac rww       Update 300/r R001 (1005 V0L)       I         16       Poyres (AND)       Greund.       ON         16       Poyres (AND)       Greund.       ON         17       Poyres (AND)       Or       ON         18       Poyres (AND)       Or       ON         10       MCIOR C       O       O         11       MCIOR C       O       O         11       MCIOR C       O       O         111       MCIOR C       O       O         112       MCIOR C       O       O         113       MCIOR C       O       O         114       MCIOR C       O       O         115       MCIOR C       O       O         116       MCIOR K       O       O         118       MV       D       D       O         12       NV       D       D       O         13       MCIOR K       O       O       O         14       NV       D       D       O         16       MCIOR K       O       O       O         17       NV       D       D       O <td></td> <td></td> <td></td> <td></td> <td>T1 STO-1 INPUT - T7 GND</td>					T1 STO-1 INPUT - T7 GND
	T4	LOGIC PWR		I	
17       POVER COD       COD         18       POVER COD       COD         19       MOTOR C       COD         111       MOTOR C       COD         112       MOTOR C       COD         113       MOTOR C       COD         114       MOTOR C       COD         115       MOTOR C       COD         116       MOTOR C       COD         117       MOTOR C       COD         118       MOTOR C       COD         114       MOTOR C       COD         116       MOTOR C       COD         116       MOTOR C       COD         117       MOTOR C       COD         118       NV       NOTOR C       COD         119       NV       NOTOR C       COD         121       MOTOR C       1       NOTOR C         121       MOTOR C       1       NOTOR C       1         122       MOTOR C       1       1       1       1         123       MOTOR R       COD	T5	POWER GND	Ground		
Image: Normal Science			Gioona.		
B         Autority C         OD         OD           10         MOTOR C         Motor Phone C. Al provided Do Local         O         O           11         MOTOR C         Motor Phone C. Al provided Do Local         O         O           11         MOTOR C         Motor Phone C. Al provided Do Local         O         O           116         MOTOR C         Motor Phone C. Al provided Do Local         O         O           116         MOTOR C         Do Local         O         O         O           116         MOTOR C         Do Local         O         O         O           116         MOTOR C         Do Local         I         I         O         <			4		
111       MCTOR C         111       MCTOR C         113       MCTOR C         114       MCTOR C         115       MCTOR C         116       MCTOR C         117       MCTOR C         118       MCTOR C         119       MCTOR C         110       MCTOR C         111       MCTOR C         115       MCTOR C         116       MCTOR C         117       HV         118       HV         129       HW         121       HV         124       HV         125       HV         126       HV         127       MCTOR 8         138       MCTOR 8         139       MCTOR 8         131       MCTOR 8         132       MCTOR 8				1	
10       MOID/RAC         11       MOID/RAC         12       MOID/RAC         13       MOID/RAC         14       MOID/RAC         16       MOID/RAC         17       Namina         18       MOID/RAC         19       NV         19       NV         10       MOID/RAC         111       MOID/RAC         112       MOID/RAC         114       MOID/RAC         116       MOID/RAC         117       N/W         118       MOID/RAC         119       N/W         121       N/W         122       N/W         123       N/W         123       N/W         124       N/W         125       N/W         126       N/W         131       MOID/RA         132       MOID/RA         133       MOID/RA         134       MOID/RA         135       POWRE CNID         131       MOID/RA         132       NOID/RA         141       MOID/RA         132       NOID/RA			-		
111       MOIOR C       MOIOR Phone output prior mult       0         113       MOIOR C       0       0         114       MOIOR C       0       0         115       MOIOR C       0       0         116       MOIOR C       0       0         117       HV       0       0         118       MOIOR C       1       1         119       HV       0       0         120       HV       0       0       0         121       HV       0       0       0         122       HV       0       0       0       0         121       HV       0			-		
113       MOTOR RC       motor phase output pins must       0         114       MOTOR RC       0       0         115       MOTOR RC       0       0         116       MOTOR RC       0       0         117       HV       0       0         118       HV       1       1         119       HV       1       1         121       HV       0       0       0         123       HV       0       0       0         123       HV       0       0       0         124       HV       0       0       0       0         124       HV       0       0       0       0       0         123       MOTOR B       0			Motor Phase C. All provided		
10.         MOTOR R         0					
International Control         Contro         Control <thcontrol< td="" th<=""><td></td><td></td><td>be used.</td><td></td><td>MOTORA T51 — 🔘</td></thcontrol<>			be used.		MOTORA T51 — 🔘
115       MOTOR C       0         116       MOTOR C       0         117       HV       1         118       HV       1         119       HV       1         120       HV       1         121       HV       1         122       HV       1         123       HV       1         124       HV       1         125       HV       1         126       HV       1         127       HV       1         128       MOTOR 8       0         129       MOTOR 8       0         121       HV       0       0         123       HV       0       0         124       HV       0       0         127       MOTOR 8       0       0         128       MOTOR 8       0       0         129       MOTOR 8       0       0         131       MOTOR 8       0       0         132       MOTOR 8       0       0         133       POWER GND       0       0         134       POWER GND       0       <					
116       MOTOR C       O         117       HV       I         118       HV       I         119       HV       I         120       HV       I         121       HV       I         122       HV       I         123       HV       I         124       HV       I         125       HV       I         124       HV       I         125       HV       I         126       HV       I         127       MOTOR 8       I         128       HV       I       I         124       HV       I       I         125       HV       I       I         126       HV       I       I       I         126       HV       I       I       I       I       I         128       MOTOR 8       I       I       I       I       I         129       MOTOR 8       I       I       I       I       I       I       I       I       IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	T15				
117       HV       III       HV       III       IIII       IIII       IIII       IIII       IIII       IIII       IIII       IIIII       IIIIII       IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	T16	MOTOR C		0	MOTOR A 148 - 0 - 124 HV
100         110 <td>T17</td> <td>HV</td> <td></td> <td>1</td> <td></td>	T17	HV		1	
100         110 <td>T18</td> <td>HV</td> <td>]</td> <td>I</td> <td>MOTOR A T47 - 0 1 10 T27 MOTOR B</td>	T18	HV	]	I	MOTOR A T47 - 0 1 10 T27 MOTOR B
120         HV         DC Supply Input (20-90 VDC), Minimum 270 µF adamad         1           121         HV         DC Supply Input (20-90 VDC), Minimum 270 µF adamad         1           123         HV         DC Supply Input (20-90 VDC), Input adamad         1           124         HV         DC Supply Input (20-90 VDC), Input adamad         1           123         HV         DC Supply Input (20-90 VDC), Input adamad         1           124         HV         DC Supply Input (20-90 VDC), Input adamad         1           125         HV         DC Supply Input (20-90 VDC), Input adamad         1           126         HV         DC Supply Input (20-90 VDC), Input adamad         1           128         MOTOR B         0         0         0           129         MOTOR B         0         0         0         0           131         MOTOR B         0         0         0         0         0           133         MOTOR B         0	T19	HV	]	I	
121         NV         Minimum 20 µf external         1           122         HV         Copocitince e required between HV and POWER GND.         1           123         HV         1         1           124         HV         1         1           125         HV         1         1           126         HV         1         1           127         MV         1         1           128         MOTOR B         0         0           128         MOTOR B         0         0           129         MOTOR B         0         0           130         MOTOR B         0         0           131         MOTOR B         0         0           132         MOTOR B         0         0           134         MOTOR B         0         0           135         POWER GND         Ground.         Ground.         Ground.           141         POWER GND         Ground.         Ground.         Ground.           142         POWER GND         Ground.         0         0           144         MOTOR A         0         0         0         0	T20	HV		I	
122       HV       ccpocifiance required       i         123       HV       i       i         124       HV       i       i         125       HV       i       i         126       HV       i       i         127       MOTOR 8       i       i         128       MOTOR 8       i       i         129       MOTOR 8       oo       oo         131       MOTOR 8       oo       oo         132       MOTOR 8       oo       oo         133       MOTOR 8       oo       oo         134       MOTOR 8       oo       oo         135       POWER GND       i       oo         141       POWER GND       Ground.       GND         142       POWER GND       GND       GND         141       POWER GND       GND       GND         142       POWER GND       GND       Oo         143       MOTOR A       oo       oo         144       MOTOR A       oo       oo         145       MOTOR A       oo       oo         146       MOTOR A       oo       oo	T21	HV		I	MOTORA T46 — T34 MOTOR B
122         HV         Delivering HV and POWER GND.         I           124         HV         I         I           125         HV         II         II           126         HV         II         II           127         MV         II         II           128         MOTOR 8         III         IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	T22	ΗV	capacitance required	1	
124         HV         I	T23	HV	between HV and POWER GND.		
123         HV         I			1		
12/2         HV         I <td></td> <td></td> <td>1</td> <td></td> <td>GND T42 GND T42</td>			1		GND T42 GND T42
Itel         Motor R B         Itel         Itel         Geo T33           128         MOTOR B         0         0         0           129         MOTOR B         0         0         0           130         MOTOR B         0         0         0           131         MOTOR B         0         0         0           132         MOTOR B         0         0         0           133         POWER GND         0         0         0           134         POWER GND         GND         GND         GND           134         POWER GND         GND         GND         GND           141         POWER GND         GND         GND         GND           143         POWER GND         GND         GND         GND           144         MOTOR A         0         0         0         0           145         MOTOR A         0         0         0         0      <			1		
T28         MOTOR B           129         MOTOR B           130         MOTOR B           131         MOTOR B           132         MOTOR B           133         MOTOR B           134         MOTOR B           133         MOTOR B           134         MOTOR B           135         POWER GND           136         POWER GND           137         POWER GND           138         POWER GND           139         POWER GND           139         POWER GND           134         MOTOR A           134         MOTOR A           134         MOTOR A           134         MOTOR A					
1.10         0           130         MOTOR B           130         MOTOR B           131         MOTOR B           132         MOTOR B           133         MOTOR B           134         MOTOR B           135         POWER GND           136         POWER GND           137         POWER GND           138         POWER GND           139         POWER GND           139         POWER GND           134         POWER GND           135         POWER GND           136         POWER GND           137         POWER GND           138         POWER GND           140         POWER GND           142         POWER GND           144         MOTOR A           145         MOTOR A           144         MOTOR A           145         MOTOR A           148         MOTOR A           148         MOTOR A           148         MOTOR A           149         MOTOR A           149         MOTOR A           149         MOTOR A           149         MOTOR A			-		•
International control in the set of the set			-		-
India         Motor A         motor phase output pins must be used.         O           131         MOTOR B         0         0           132         MOTOR B         0         0           133         MOTOR B         0         0           134         MOTOR B         0         0           134         MOTOR B         0         0           134         MOTOR B         0         0           135         POWER GND         6ND         6ND           136         POWER GND         6ND         6ND           137         POWER GND         GND         6ND           138         POWER GND         GND         GND           141         POWER GND         GND         GND           142         POWER GND         GND         GND           144         MOTOR A         0         0         0           145         MOTOR A         0         0         0         0           146         MOTOR A         0         0         0         0         0           147         MOTOR A         0         0         0         0         0         0           148			Motor Phase B. All provided		-
International construction         Declarational construction         Declarational construction           132         MOTOR B         0         0           133         MOTOR B         0         0           134         MOTOR B         0         0           135         POWER GND         0         0           136         POWER GND         GND           137         POWER GND         GND           138         POWER GND         GND           139         POWER GND         GND           140         POWER GND         GND           141         POWER GND         GND           142         POWER GND         GND           143         POWER GND         GND           144         MOTOR A         O           145         MOTOR A         O           146         MOTOR A         O           147         MOTOR A         O           148         MOTOR A         O           149         MOTOR A         O           149         MOTOR A         O           149         MOTOR A         O           150         MOTOR A         O <t< td=""><td></td><td></td><td></td><td></td><td>-</td></t<>					-
No. Totol         O           133         MOTOR B           134         MOTOR B           135         POWER GND           136         POWER GND           137         POWER GND           138         POWER GND           139         POWER GND           140         POWER GND           141         POWER GND           142         POWER GND           143         POWER GND           144         MOTOR A           145         MOTOR A           146         MOTOR A           147         MOTOR A           148         MOTOR A           149         MOTOR A           149         MOTOR A           139         POWER GND           144         MOTOR A           159         MOTOR A           144         MOTOR A           145         MOTOR A           146         MOTOR A           147         MOTOR A           148         MOTOR A           149         MOTOR A           149         MOTOR A           150         MOTOR A           150         MOTOR A			be used.		-
100         0           134         MOTOR B         0           135         POWER GND         0           136         POWER GND         GND           137         POWER GND         GND           138         POWER GND         GND           139         POWER GND         GND           130         POWER GND         GND           140         POWER GND         GND           141         POWER GND         GND           142         POWER GND         GND           143         POWER GND         GND           144         MOTOR A         GND           144         MOTOR A         O           145         MOTOR A         O           146         MOTOR A         O           147         MOTOR A         O           148         MOTOR A         O           149         MOTOR A         O           149         MOTOR A         O           149         MOTOR A         O           149         MOTOR A         O           150         MOTOR A         O           150         MOTOR A         O			4		-
Its         POWER GND           135         POWER GND           136         POWER GND           137         POWER GND           138         POWER GND           139         POWER GND           139         POWER GND           140         POWER GND           141         POWER GND           142         POWER GND           143         POWER GND           144         MOTOR A           145         MOTOR A           144         MOTOR A           148         MOTOR A           149         MOTOR A <tr< td=""><td></td><td></td><td>-</td><td></td><td>-</td></tr<>			-		-
136       POWER GND         137       POWER GND         138       POWER GND         139       POWER GND         139       POWER GND         140       POWER GND         141       POWER GND         142       POWER GND         143       POWER GND         144       MOTOR A         145       MOTOR A         146       MOTOR A         148       MOTOR A         149       MOTOR A         150       MOTOR A         150       O         150       O         150       MOTOR A         150       O         0<					
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INFORMATION         INFORMATION           T38         POWER GND           T39         POWER GND           T40         POWER GND           T41         POWER GND           T42         POWER GND           T43         POWER GND           T44         MOTOR A           T45         MOTOR A           T46         MOTOR A           T47         MOTOR A           T48         MOTOR A           T48         MOTOR A           T48         MOTOR A           T49         MOTOR A           T48         MOTOR A           T49         MOTOR A      <	T36				
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Ido       POWER GND         Idi       POWER GND         Idi       POWER GND         Idi       POWER GND         Idi       MOTOR A	T38	POWER GND	_		
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T42       POWER GND         T43       POWER GND         T44       MOTOR A         T45       MOTOR A         T46       MOTOR A         T47       MOTOR A         T48       MOTOR A         T49       MOTOR A         T48       MOTOR A         T48       MOTOR A         T49       MOTOR A         T49       MOTOR A         T48       MOTOR A         T49       MOTOR A         T50       MOTOR A         T50       MOTOR A	T40	POWER GND	]	GND	
T42       POWER GND         T43       POWER GND         T44       MOTOR A         T45       MOTOR A         T46       MOTOR A         T47       MOTOR A         T48       MOTOR A         T49       MOTOR A         T48       MOTOR A         T48       MOTOR A         T48       MOTOR A         T49       MOTOR A         T48       MOTOR A         T49       MOTOR A         T50       MOTOR A         T50       MOTOR A	T41	POWER GND	]	GND	
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T45       MOTOR A         T45       MOTOR A         T46       MOTOR A         T47       MOTOR A         T48       MOTOR A         T48       MOTOR A         T49       MOTOR A         T48       MOTOR A         T48       MOTOR A         T49       MOTOR A         T48       MOTOR A         T49       MOTOR A         T48       MOTOR A         T49       MOTOR A         T50       MOTOR A	T43	POWER GND	1	GND	
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T49     MOTOR A     O     sales@electromate.com     sales@ervo2go.com       T50     MOTOR A     O     www.electromate.com     www.servo2go.com		MOTOR A			Canadian and International Sales U.S. Sales
T49     MOTOR A     O     sales@electromate.com     sales@ervo2go.com       T50     MOTOR A     O     www.electromate.com     www.servo2go.com					
T49     MOTOR A     O     sales@electromate.com     sales@ervo2go.com       T50     MOTOR A     O     www.electromate.com     www.servo2go.com			1		
T50     MOTOR A     O     www.electromate.com     www.servo2go.com			1		877-737-8698 877-378-0240
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	T51	MOTOR A	1	0	

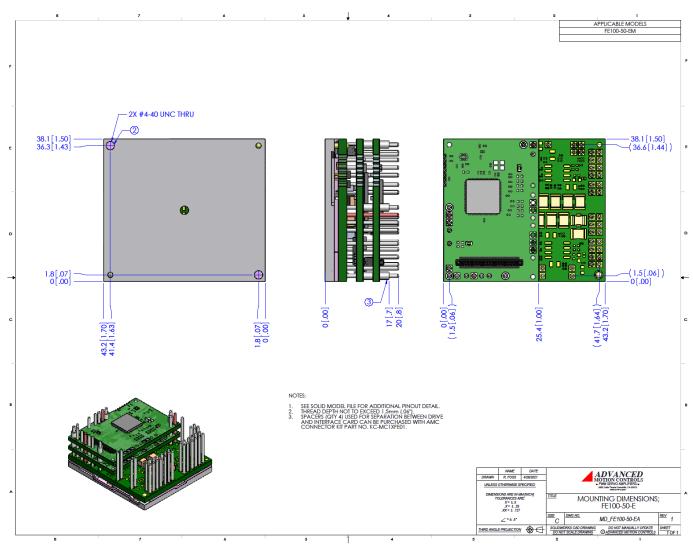
### **Terminal Pin Details**

Safe Torque Off (STO) Inputs

The Safe Torque Off (STO) inputs are dedicated +5VDC sinking single-ended inputs. For applications not using STO functionality, disabling of the STO feature is required for proper drive operation. STO may be disabled by following the STO Disable wiring instructions as given in the hardware installation manual. Consult the hardware installation manual for more information.



# MOUNTING DIMENSIONS



# Sold & Serviced By:

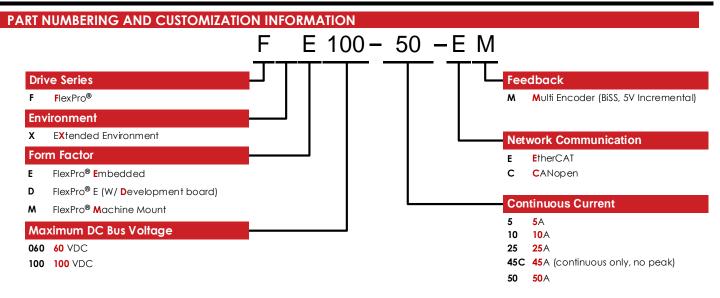


sales@electromate.com www.electromate.com



Release Date: 5/4/2021





ADVANCED Motion Controls also has the capability to promptly develop and deliver specified products for OEMs with volume requests. Our Applications and Engineering Departments will work closely with your design team through all stages of development in order to provide the best servo drive solution for your system. Equipped with on-site manufacturing for quick-turn customs capabilities, ADVANCED Motion Controls utilizes our years of engineering and manufacturing expertise to decrease your costs and time-to-market while increasing system quality and reliability.

Optimized Footprint	Tailored Project File
Private Label Software	Silkscreen Branding
OEM Specified Connectors	Optimized Base Plate
No Outer Case	Increased Current Limits
Increased Current Resolution	Increased Voltage Range
Increased Temperature Range	Conformal Coating
Custom Control Interface	Multi-Axis Configurations
Integrated System I/O	A Reduced Profile Size and Weight

#### **Available Accessories**

ADVANCED Motion Controls offers a variety of accessories designed to facilitate drive integration into a servo system. Visit <u>www.a-m-c.com</u> to see which accessories will assist with your application design and implementation.

#### **Development Board**

The FE100-50-EM is offered in a pre-soldered development board assembly to provide easy connections to motor, power, and signal functions. The development board assembly can be ordered as model number **FD100-50-EM**.



All specifications in this document are subject to change without written notice. Actual product may differ from pictures provided in this document.