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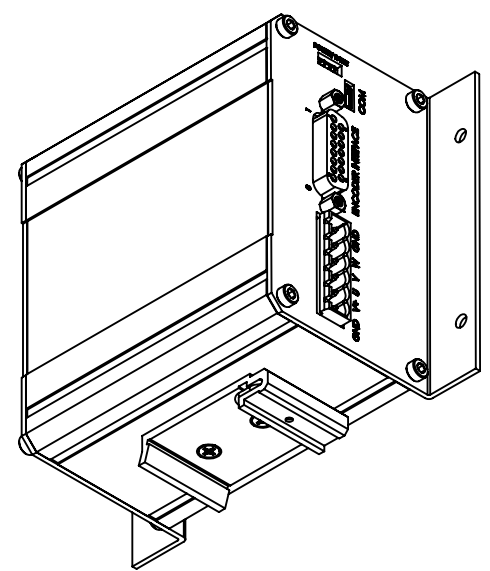
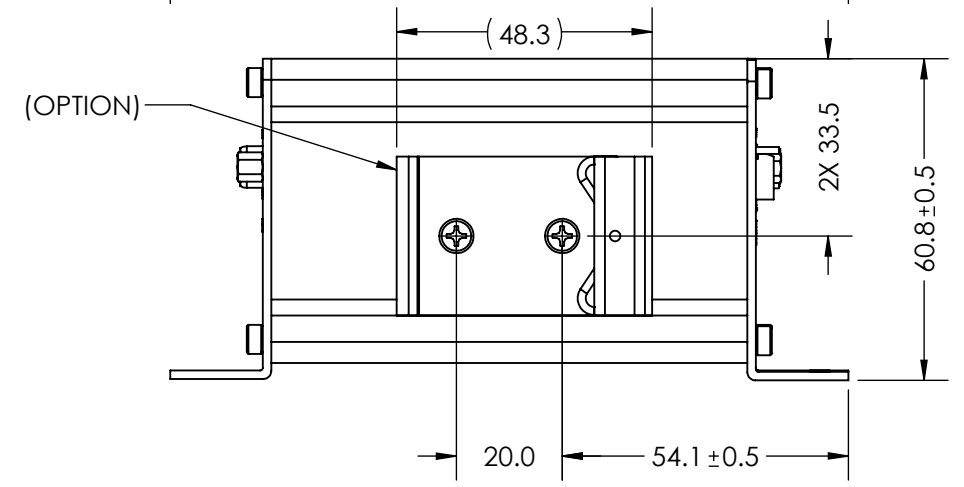
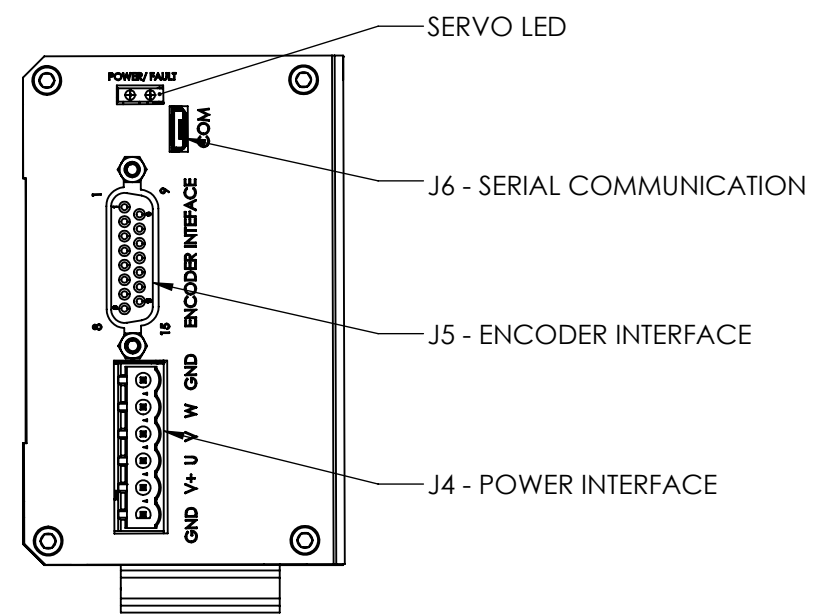
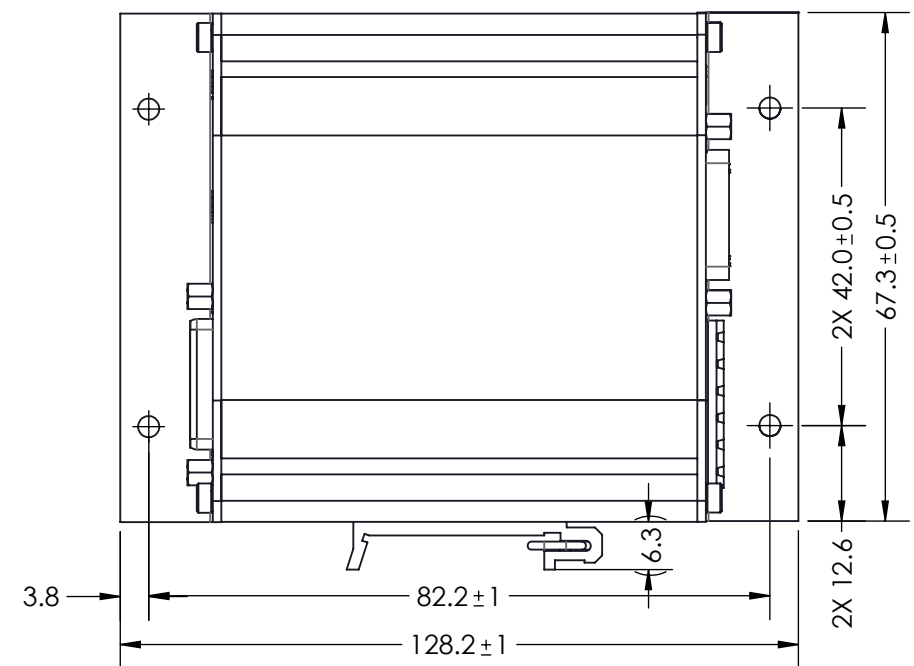
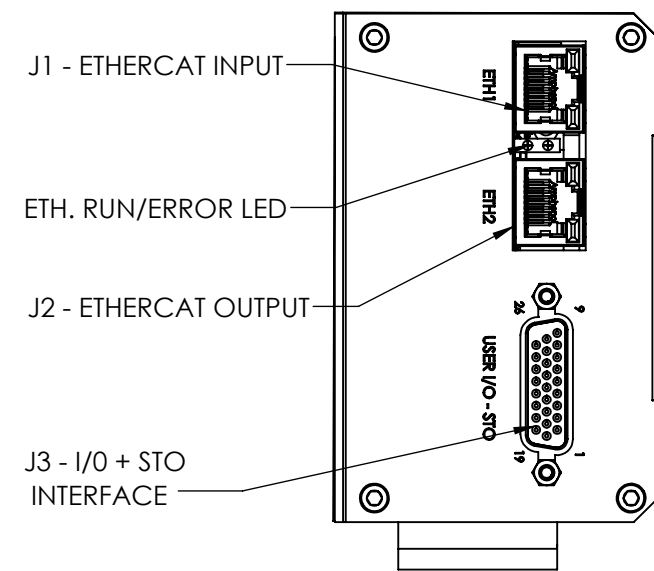
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NOTES (UNLESS OTHERWISE SPECIFIED)

- 1. CONTROLLER TYPE: SINGLE AXIS
- 2. 3-PHASE BRUSHLESS, DC BRUSHED, LINEAR VOICE COIL
- 3. (SEE 2ND SHEET FOR SPECIFICATIONS)
- 4. DIN RAIL MOUNT IS OPTIONAL FOR CUSTOMER'S USES

REVISIONS				
REV	ECR	DESCRIPTION	DATE	APPROVED
A	7380	INITIAL RELEASE	11/2/2020	V.H.



J4 POWER CONNECTOR	
PIN No	FUNCTION
1	GND
2	+24/48V
3	MOTOR+/U
4	MOTOR-/V
5	W
6	GND

J5 DB-15S PIN OUT	
PIN No	FUNCTION
1	PH. A+
2	PH. I+
3	PH. B+
4	+5 Vdc
5	+5 Vdc
6	+5 Vdc
7	NC
8	NC
9	PH. A -
10	PH. I -
11	PH. B -
12	GND
13	GND
14	NC
15	NC

J3 DB-26S PIN OUT	
PIN No	FUNCTION
1	GPI_COM
2	GPO_COM
3	GPI2
4	GPI0
5	GND
6	STO_FB
7	AN_OUT0
8	GPO2
9	GPO0
10	STO2
11	STO1
12	GPI3
13	GPI1
14	GND
15	NC
16	AN_OUT1
17	GPO3
18	GPO1
19	+5V
20	+5V
21	+5V
22	+5V
23	GND
24	AN_IN0+
25	AN_IN0-
26	STO_COMMON

J2 ETHERCAT OUTPUT (RIGHT)	
PIN No	FUNCTION
1	TD2+
2	TD2-
3	RD2+
4	NC
5	NC
6	RD2-

J1 ETHERCAT INPUT (LEFT)	
PIN No	FUNCTION
1	TD1+
2	TD1-
3	RD1+
4	NC
5	NC
6	RD1-

REF. NUMBER	VLC-ETC
CONTRACT	STD

UNLESS OTHERWISE SPECIFIED  
 ALL DIMENSIONS ARE IN MM  
 BREAK EDGES AND REMOVE BURRS  
 TOLERANCES  
 X.: ±0.5 X.X: ±0.1  
 X.XX: ±0.03 ANGLE: ±0.1°  
 CONCENTRICITY: ±0.025  
 ROUNDNESS: ±0.025  
 EDGE BREAKS: 0.2 MAX  
 ALL DIMENSIONS AND TOLERANCES ARE FINAL

MATERIAL: SEE BOM

FINISH:

MACHINE FINISH: 1.6

INTERPRET PER: ASME Y14.5-2009

THIRD ANGLE PROJECTION

NAME	DATE
DWN BY VH	11/2/2020
CHK BY TW	11/2/2020
ENG APP TMV	11/2/2020
MFG APP	
QA APP	

PROPRIETARY AND CONFIDENTIAL

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5807 VAN ALLEN WAY  
 CARLSBAD CA, 92008  
 (760) 929-7588

**SMAC**  
 MOVING COIL ACTUATORS

TITLE: **CONTROLLER**

SIZE: B PART NO: **VLC-ETC** REV: **A**

SCALE: 1:1 **DO NOT SCALE** SHEET: 1 / 2

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Description	EtherCAT Servo Drive
Operation	Position, Velocity, Torque, Current, Homming, Phasing
Filter Algorithm	PID
Max. Servo Loop Rate	100 $\mu$ S
Trajectory Generator	Trapezoidal
Servo Position Feedback	Incremental Encoder with Index
Output (Standard)	PWM (Space-Vector-Modulated), 3.5 Amps Cont. and 6.5 Amps Peak at 48 VDC Max.
Motor Type	3-Phase Brushless, DC Brushed, Linear Voice Coil
PWM Frequency	20.0 KHz
Current Resolution	5.66 mA (Custom Current Resolution Can Be Made by Request)
Encoder and Index Input	Differential
Encoder Supply Voltage	5 VDC
Encoder Input Voltage	5.5 VDC Max., -0.1 VDC Min.
Encoder Count Rate	40 Million Encoder Counts per Second
Position Range	31 Bits
Velocity Range	31 Bits
Acceleration Range	31 Bits
General Purpose Digital I/O	4x Opto-Isolated Digital Input with Common (24V Level Input)
	4x Solid-State Relay Output with Common, 200 mA Current and Tolerant to 60V
STO (Safe Torque Off)	2x Opto-Isolated STO Digital Inputs (24V Level Input)
	1x Opto-Isolated STO Feedback Output, 200 mA Current and Tolerant to 60V
Analog Inputs	1x 12-Bit Differential Analog Input, 0 to +/- 10V Range
Analog Outputs	1x 12-Bit Analog Output, 0 to 10V Range
LEDs	1x EtherCAT LED: Run (Green), Error (Red)
	1x Servo Drive LED: Power On (Green), Fault (Red)
Communication	1x Serial/ UART (Micro USB Port): 9600 Baud Default, Selectable Between 2400 - 460800
	2x EtherCAT RJ-45 Ports
Supply Voltage	+8 to +48 VDC
Protections	> Reverse Polarity Connection
	> I2T
	> Overcurrent
	> Overload
	> (Excessive) Servo Position Error
Program Space	> Macro Storage: 53728 Bytes
	> Maximum Number of Macros: 512
	> Maximum Number of Program Registers: 2048

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<b>SMAC</b> MOVING COIL ACTUATORS	5807 VAN ALLEN WAY CARLSBAD CA, 92008 (760) 929-7588	
	TITLE: <b>PCBA, CONTROLLER</b>	
SIZE: <b>B</b>	PART NO: <b>35191-50</b>	REV: <b>A</b>
SCALE: 1:1 <b>DO NOT SCALE</b>		SHEET: 2 / 2

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