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NOTES (UNLESS OTHERWISE SPECIFIED)
 1. CONTROLLER TYPE: TWO AXIS.
 2. 3-PHASE BRUSHLESS, DC BRUSHED, DC LINEAR ACTUATOR.
 3. (SEE ATTACHED SHEET FOR SPECIFICATION)
 4. DIN RAIL MOUNT OPTION: YES

REVISIONS				
REV	ECR	DESCRIPTION	DATE	APPROVED
A	7158	INITIAL RELEASE	3/25/2020	VH
B	7549	UPDATED TEMPERATURE AND DIN RAIL MOUNT	4/26/2021	VH

B

J2 USER I/O+STO

PIN	FUNCTION
1	GPI1
2	GPI2
3	GPI3
4	GPI4
5	GPL_COM
6	GPO1
7	GPO2
8	GPO3
9	GPO4
10	GPO_COM
11	+5V
12	STO2
13	STO1
14	STO_FB
15	STO_COM

J4 ANALOG I/O

PIN	FUNCTION
1	AN_IN3
2	AN_OUT1
3	AN_OUT2
4	AN_IN1+
5	AN_IN2+
6	AN_IN4
7	GND
8	GND
9	AN_IN1-
10	AN_IN2-
11	AN_IN5
12	+5V
13	+5V
14	GND
15	GND

J6 RS232 COM

PIN	FUNCTION
1	+5V
2	TX
3	RX
4	N/C
5	GND
6	RESERVED
7	RESERVED
8	RESERVED
9	RESERVED

J9 I/O EXPANSION

PIN	FUNCTION
1	RX-
2	TX-
3	RX+
4	TX+
5	CLK+
6	CLK-

J1 POWER SUPPLY

PIN	FUNCTION
1	POWER SUPP V+
2	POWER SUPP V-

J3 MOTOR 2

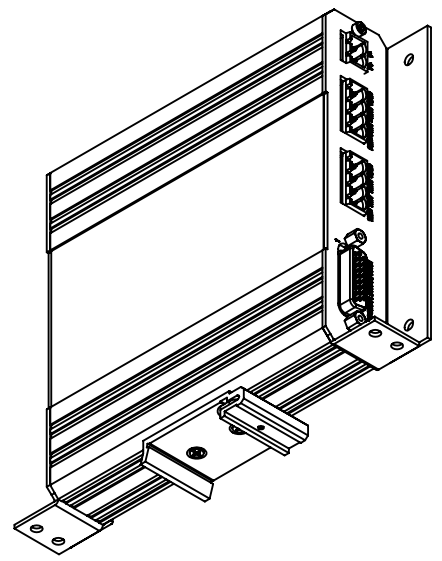
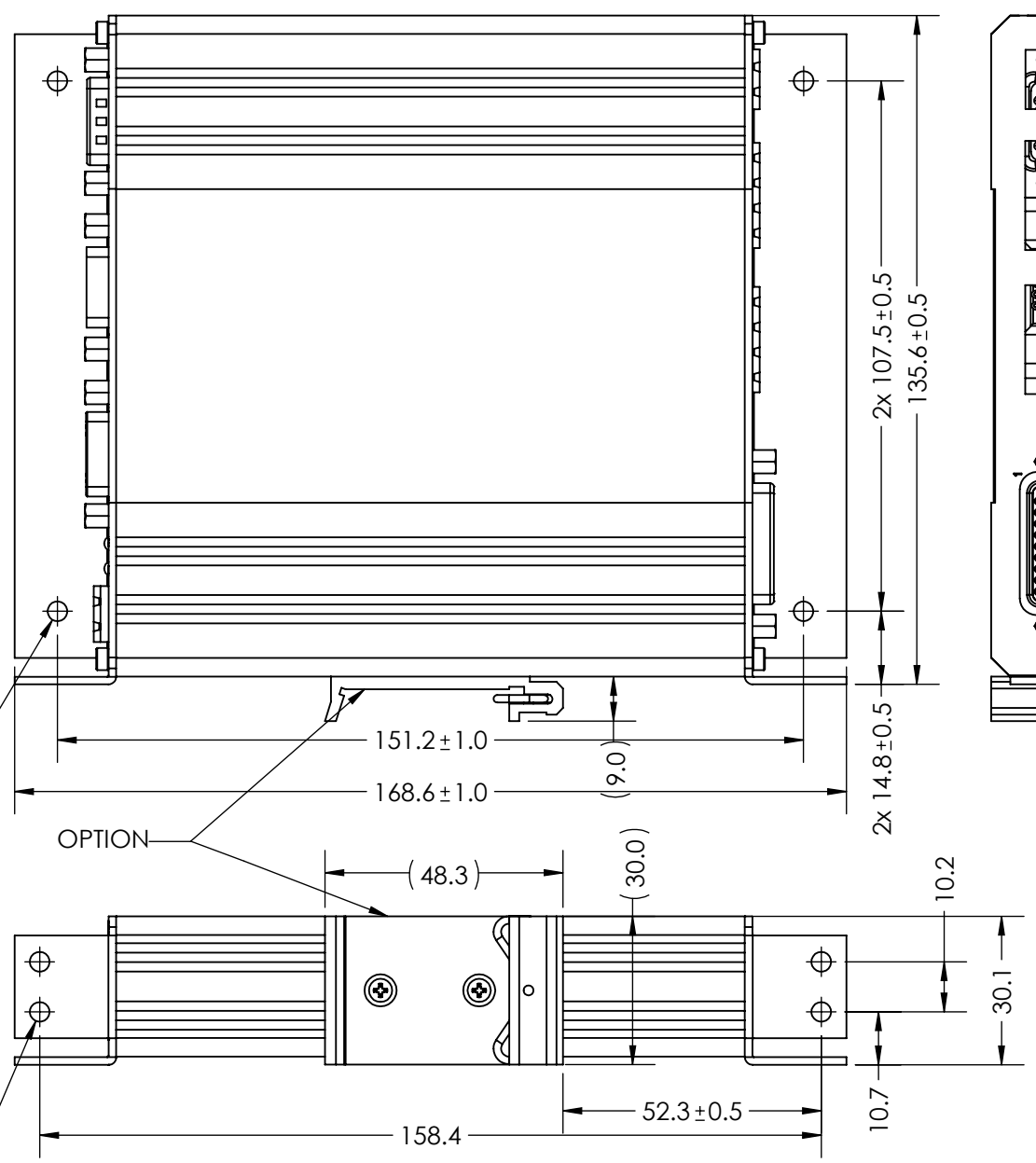
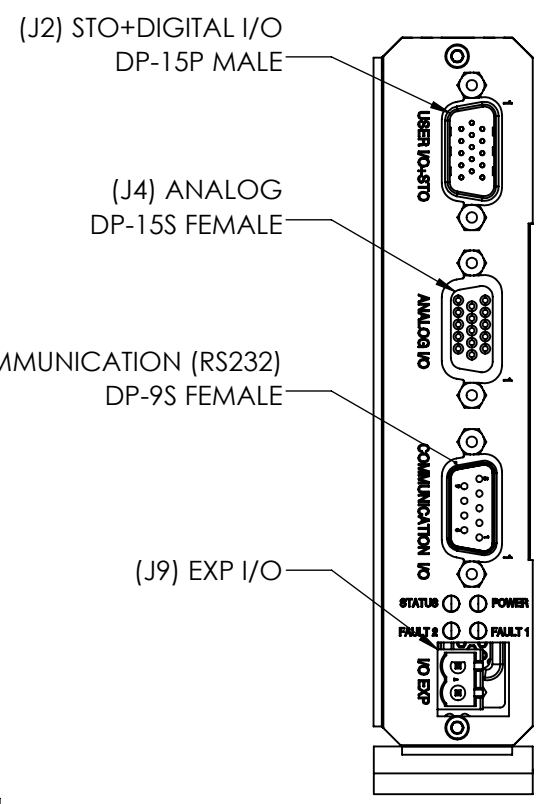
PIN	FUNCTION
1	2MU
2	2MV
3	2MW
4	GND

J5 MOTOR 1

PIN	FUNCTION
1	1MU
2	1MV
3	1MW
4	GND

J8 ENCODER INTERFACE

PIN	FUNCTION
1	N/C
2	N/C
3	N/C
4	+5V
5	+5V
6	2A-
7	2A+
8	1A-
9	1A+
10	N/C
11	N/C
12	1HOM
13	GND
14	GND
15	2B-
16	2B+
17	1B-
18	1B+
19	2HOM
20	N/C
21	GND
22	GND
23	2I- (INDEX-)
24	2I+ (INDEX+)
25	1I- (INDEX-)
26	1I+ (INDEX+)



A

A

REF. NUMBER	VLC-25-XX
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°
 CONCETRICITY: ±0.025
 ROUNDNESS: ±0.025
 EDGE BREAKS: 0.2 MAX
 ALL DIMENSIONS AND TOLERANCES ARE FINAL

MATERIAL:	NAME	DATE
FINISH:	DWN BY	VH 04/26/2021
MACHINE FINISH:	CHK BY	TMV 04/26/2021
INTERPRET PER:	ENG APP	TMV 04/26/2021
ASME Y14.5-2009	MFG APP	
THIRD ANGLE PROJECTION	QA APP	
PROPRIETARY AND CONFIDENTIAL		
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SMAC 5807 VAN ALLEN WAY
 CARLSBAD CA, 92008
 (760) 929-7588
MOVING COIL ACTUATORS

TITLE: **CONTROLLER**

SIZE: **B** PART NO: **VLC-25-XX** REV: **B**

SCALE: 0.7:1 **DO NOT SCALE** SHEET: 1 / 2

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1. CONTROLLER TYPE: TWO AXIS.
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3. (SEE ATTACHED SHEET FOR SPECIFICATION)
4. DIN RAIL MOUNT OPTION: YES

Controller	VLC-25-13 and VLC-25-07
Description	Stand-Alone 2 Axis Servo Motor Controller / Driver
Operation	Position, Velocity, Torque
Filter Algorithm	PID
Max. Servo Loop Rate	100 μ S
Trajectory Generator	Trapezoidal, Electronic Gearing
Servo Position Feedback	Incremental Encoder with Index
Motor Type	3-Phase Brushless, DC Brushed, DC Linear Actuator
PWM Frequency	20.0 KHz
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 Inputs, 5V to 24V Max
	4x Opto-Isolated Digital Outputs, 60V, 200 mA Max
Dedicated Digital I/O	2x Opto-Isolated Coarse Home Inputs
STO (Safe Torque Off)	2x STO Opto-Isolated Digital Inputs with Common: 24V Level Input
	1x STO Opto-Isolated STO Feedback Output: 200 mA Current/ Tolerant to 60V
Analog Inputs	2x 12-Bit Pseudo-Differential Analog Inputs, 0 to +/- 10V Range
	3x 12-Bits Analog Inputs, 0V to 10V Range (0V to <10V Optional)
Analog Outputs	2x 12-Bit Analog Outputs, 0V to 10V Range (0V to 5V Optional)
LEDs	1x Power on LED
	1x Status LED
	2x Fault LEDs
Serial Interface	RS-232 Non-Isolated, 9600 Baud Default, Selectable Between 2400-460800
Supply Voltage	+8 to +48 VDC
Operating Temperature	0 - 50°C
Protections	> Reversed Power Supply Polarity
	> Driver Overtemperature
	> I ² T
	> (Excessive) Servo Position Error
Program Space	> Macro Storage: 53983 Bytes
	> Maximum Number of Macros: 256
	> Maximum Number of Program Registers: 2048

	VLC-25-13	VLC-25-07
Output (Standard) with PWM (Space-Vector_ Modulated) at 48 VDC Max	10 Arms Continuous Current	6 Arms Continuous Current
	13 Arms Peak Current	7.8 Arms Peak Current
Current Resolution	6.35 mA	2.93 mA

SMAC
MOVING COIL ACTUATORS

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TITLE:
CONTROLLER

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SIZE: **B** PART NO: **VLC-25-XX** REV: **A**
SCALE: 1:2 **DO NOT SCALE** SHEET: 2 / 2

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