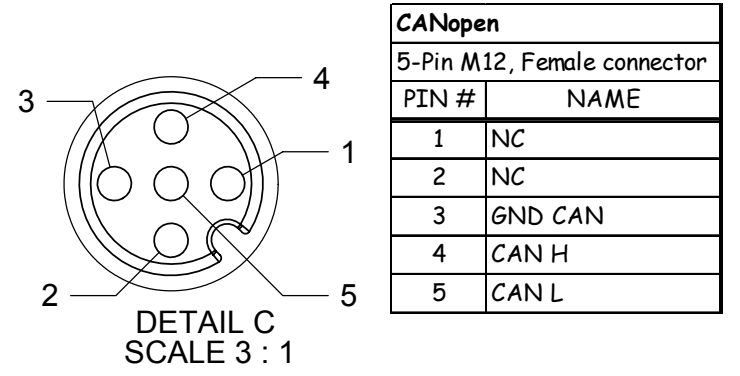
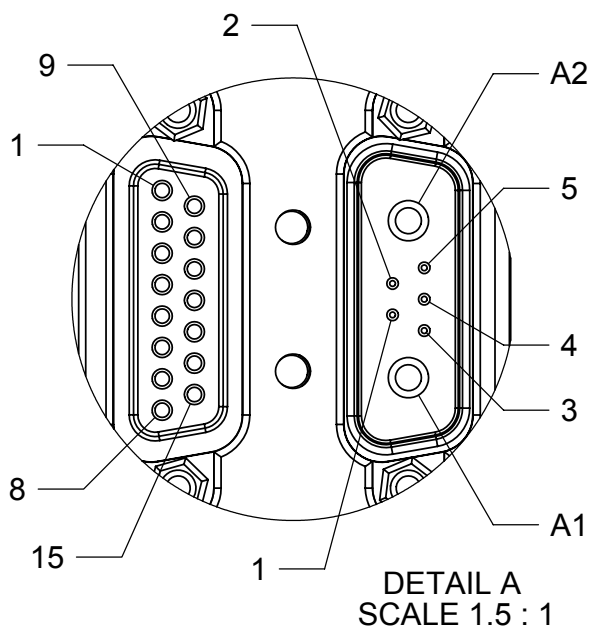
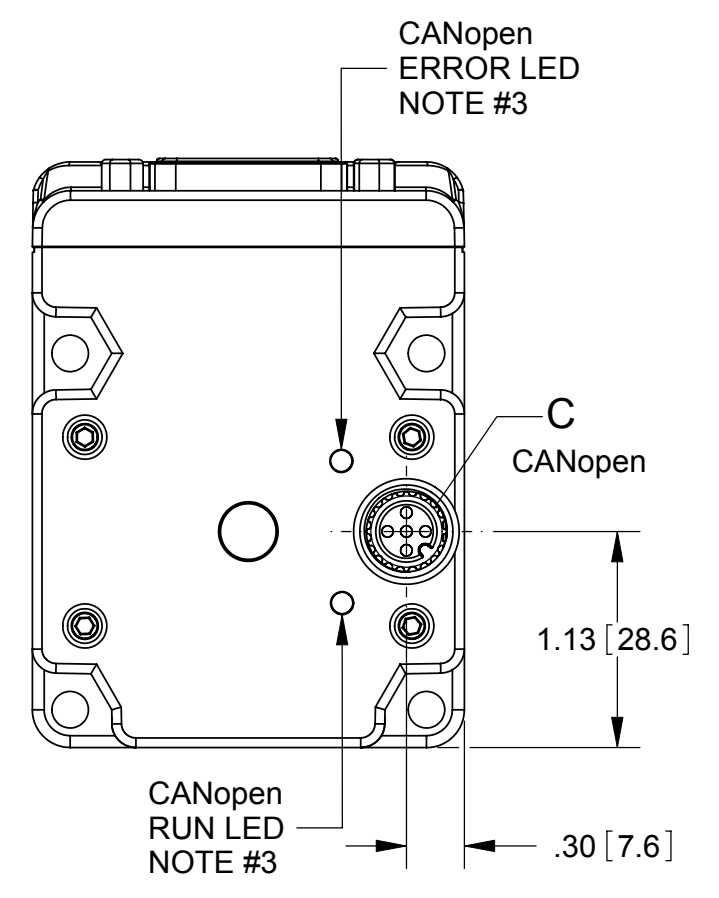
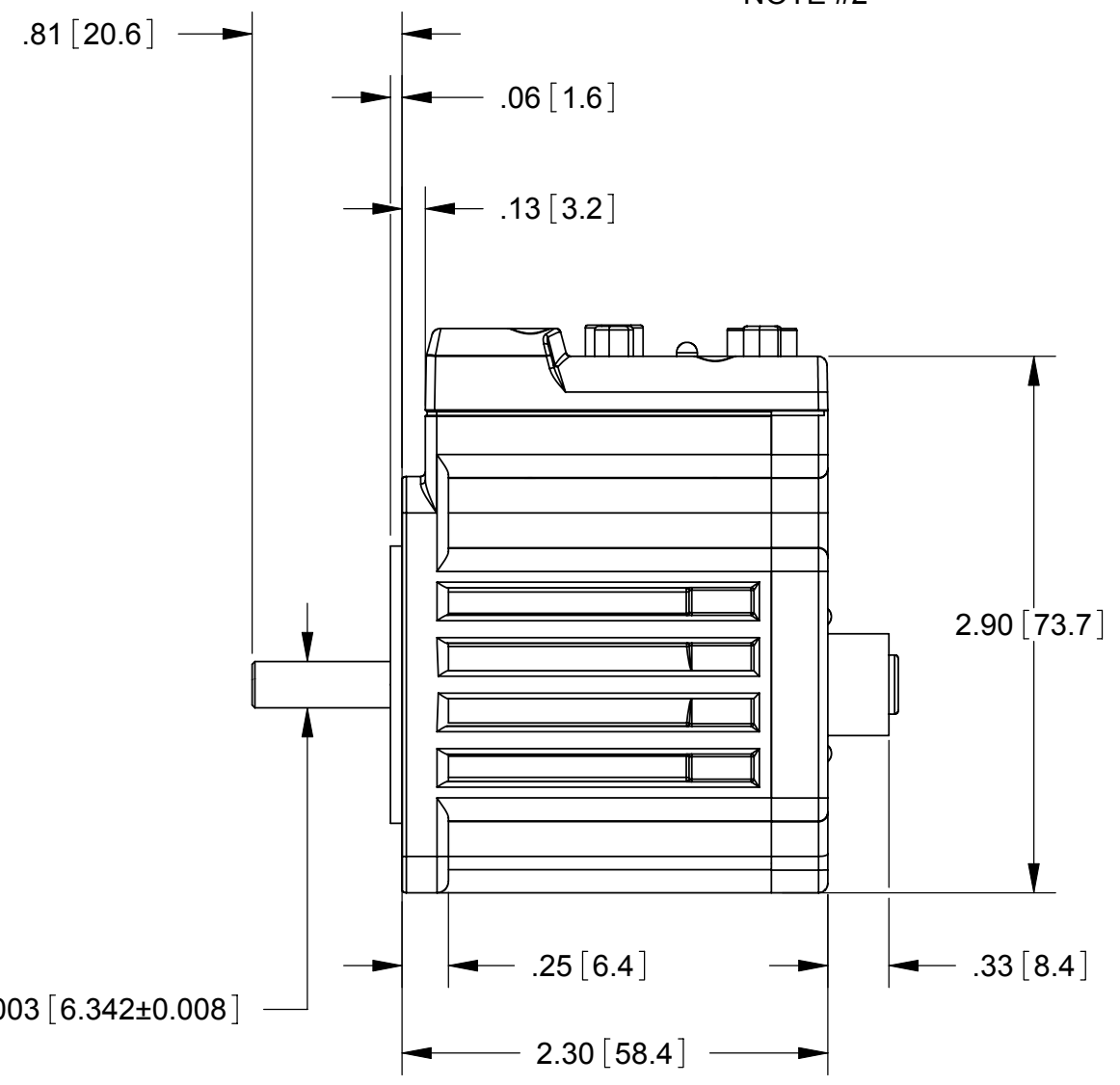
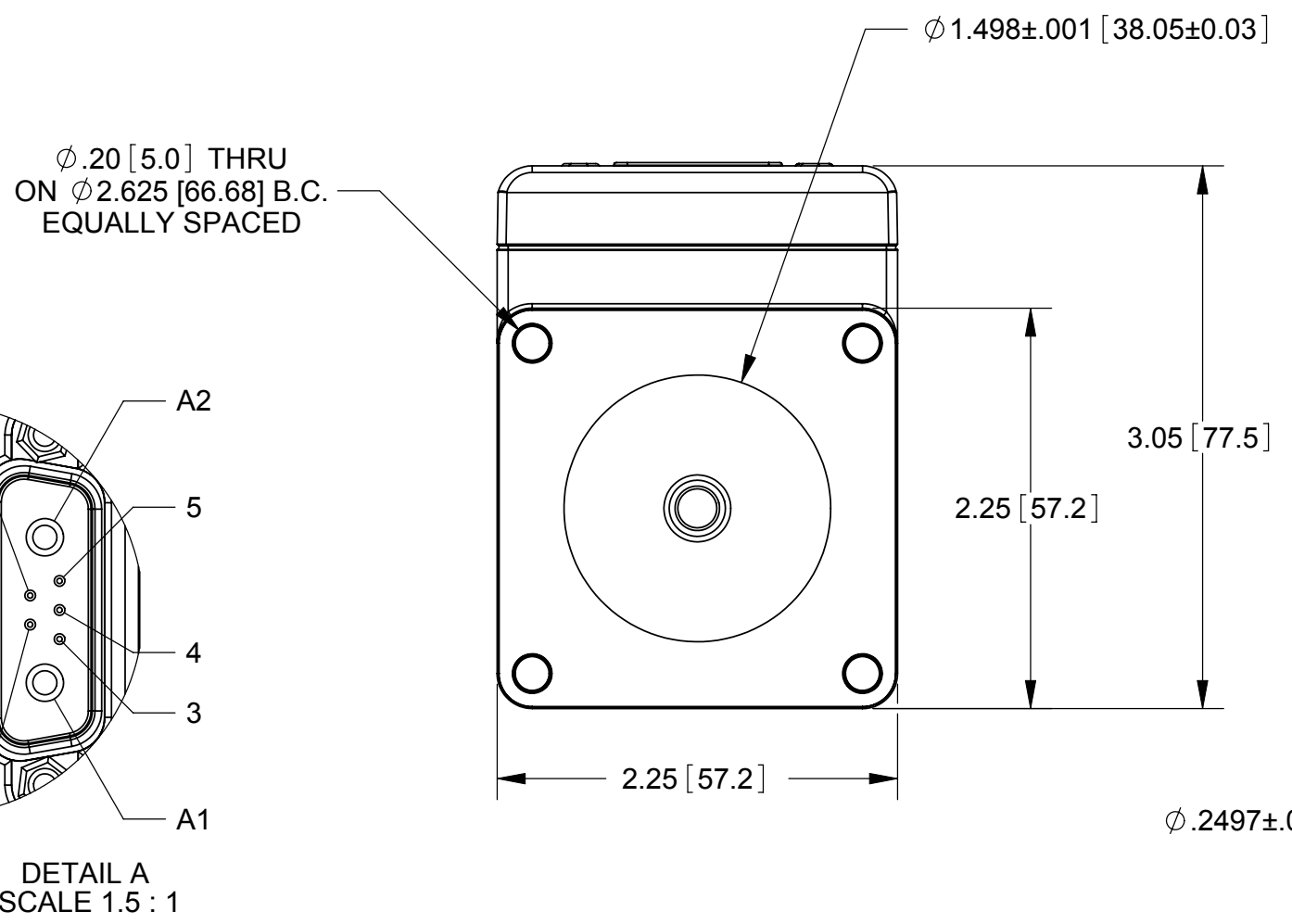
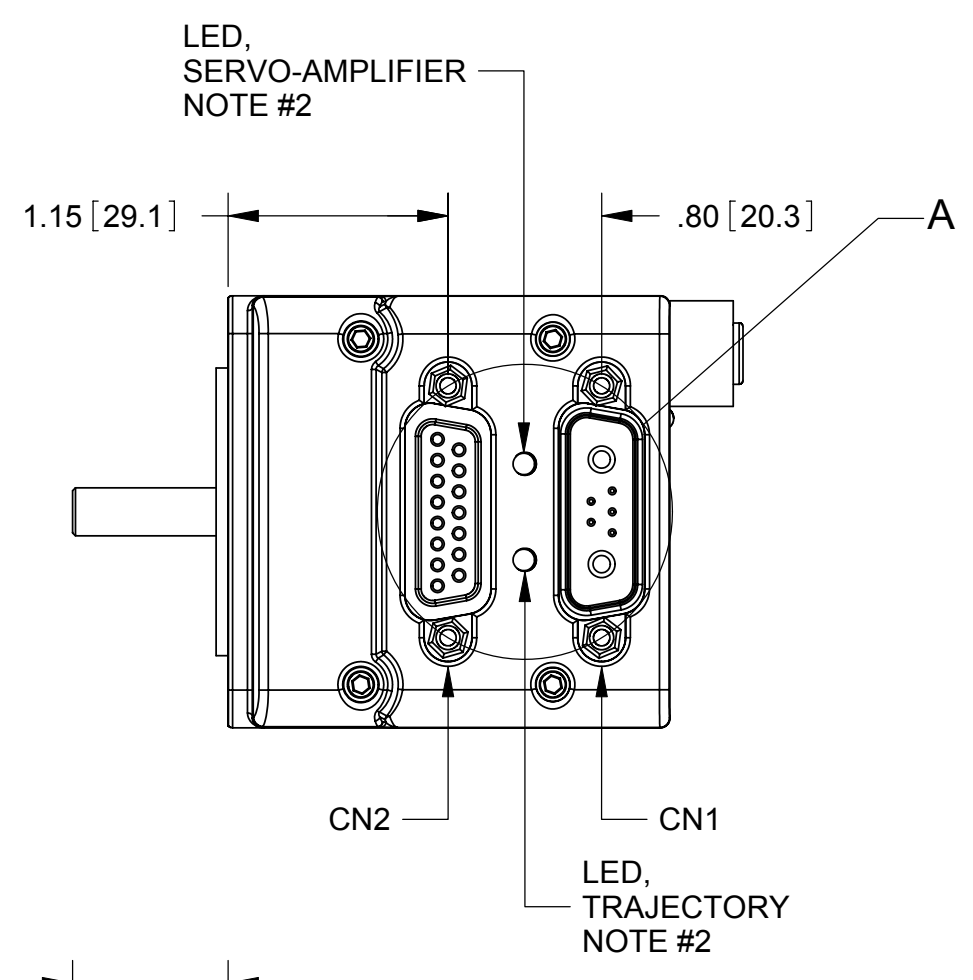
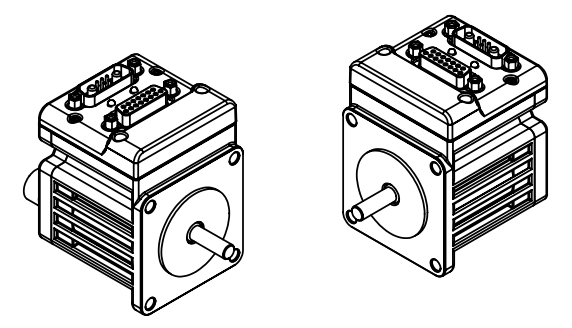


REV.	DESCRIPTION	ZONE	ECO	DATE	APPROVED
1	DRAWING RELEASE			04/29/2009	M. TRAN

- NOTES:
- DRAWING APPLIES TO THE FOLLOWING SMARTMOTOR WITH PART NUMBERS:  
 SM23165D-C    SM23165D-DE-C  
 SM23165DT-C    SM23165DT-DE-C
  - LED, SERVO-AMPLIFIER:
    - CLEAR = CONTROLLER POWER NOT AVAILABLE
    - RED = FAULT
    - FLASH GREEN = DRIVE (AMPLIFIER) IS OFF
    - GREEN = DRIVE (AMPLIFIER) IS ON
  - LED, TRAJECTORY
    - CLEAR = NOT IN CONTROLLED TRAJECTORY (DEFAULT STATE)
    - GREEN = IN CONTROLLED TRAJECTORY (CLOSE LOOP MOTION)
  - CANopen ERROR LED (RED)
    - CLEAR = NO ERROR
    - SINGLE FLASH = WARNING, COMMUNICATION ERROR COUNT LIMIT REACHED
    - DOUBLE FLASH = GUARD OR HEART BEAT ERROR
  - CANopen RUN LED (GREEN)
    - SINGLE FLASH = DEVICE IS IN STOPPED STATE
    - BLINKING = PREOPERATIONAL STATE
    - SOLID = OPERATIONAL STATE
  - FOR -DE OPTION, DRIVE POWER AND CONTROLLER POWER ARE ON SEPARATE PINS. MUST PROVIDE POWER TO CONTROLLER AND DRIVE POWER TO OPERATE. SEE TABLE CN2 BELOW FOR PIN ASSIGNMENT.
  - DIMENSIONS IN [ ] ARE mm.
  - RECOMMENDED BOLTING SCREW SIZE TO BE 10-32 OR M5x0.8.



PIN #	NAME	FUNCTIONS			
		Default Function	Secondary Function	Digital I/O	Analog Input (10bit Res)
1	I/O A	External Encoder A Input	Step Input	5V TTL	0 to 5V
2	I/O B	External Encoder B Input	Direction Input	5V TTL	0 to 5V
3	I/O C	Positive Limit Input		5V TTL	0 to 5V
4	I/O D	Negative Limit Input		5V TTL	0 to 5V
5	I/O E		RS485 A (+)	5V TTL	0 to 5V
6	I/O F		RS485 B (-)	5V TTL	0 to 5V
7	I/O G	G-Synchronization	RS485-ISO Adaptor Flow Control	5V TTL	0 to 5V
8	ENC A OUT	Encoder A Output			
9	ENC B OUT	Encoder B Output			
10	RS232 Tx	RS232 Transmit			
11	RS232 Rx	RS232 Receive			
12	+5Vdc OUT	+5Vdc Output			
13	GND	Signal GND			
14	POWER GND	POWER GND	For -DE Option, Pin 15 is Control power (20V to 48V) and Pin 14 is PWR GND. *PIN 15 is not connected to A1.		
15	POWER	POWER			

CN1: 7PIN COMBO D-Sub Male Connector

PIN #	NAME	FUNCTIONS	Ties to CN2, PIN #
1	I/O G	G-Synchronization	7
2	+5V dc OUT	+5Vdc Output	12
3	RS232 Tx	RS232 Transmit	10
4	RS232 Rx	RS232 Received	11
5	GND	Signal GND	13
A1	DRIVE PWR	Drive Power (20 - 48Vdc)	15^
A2	POWER GND	POWER GND	14

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MATERIAL <b>ALUMINUM HOUSING</b>	FINISH <b>BLACK ANODIZED HOUSING</b>	DRAWN <b>M. TRAN</b>	DATE <b>4/23/2009</b>
<b>INCH</b>		ENGR <b>M. TRAN</b>	DATE <b>4/23/2009</b>

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE INCHES AND TOLERANCES ARE:  
 DECIMALS: .XXX ± .005    ANGLES: .XX ± 0.25°  
 .XX ± .01                    .X ± 0.5°

INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M - 1994.  
 ALL DIMENSIONS, TOLERANCES AND ROUGHNESS APPLY AFTER FINISHING, WHEN APPLICABLE.  
 NO BURRS ALLOWED, BREAK SHARP EDGES .01 MAX.

**Animatics Corporation**

**SM23165D-C SERIES**

TITLE: SM23165D-C

SIZE: C    DWG NO: SM23165D-C

DO NOT SCALE DRAWING    SCALE: 1:1    SHEET: 1 OF 1