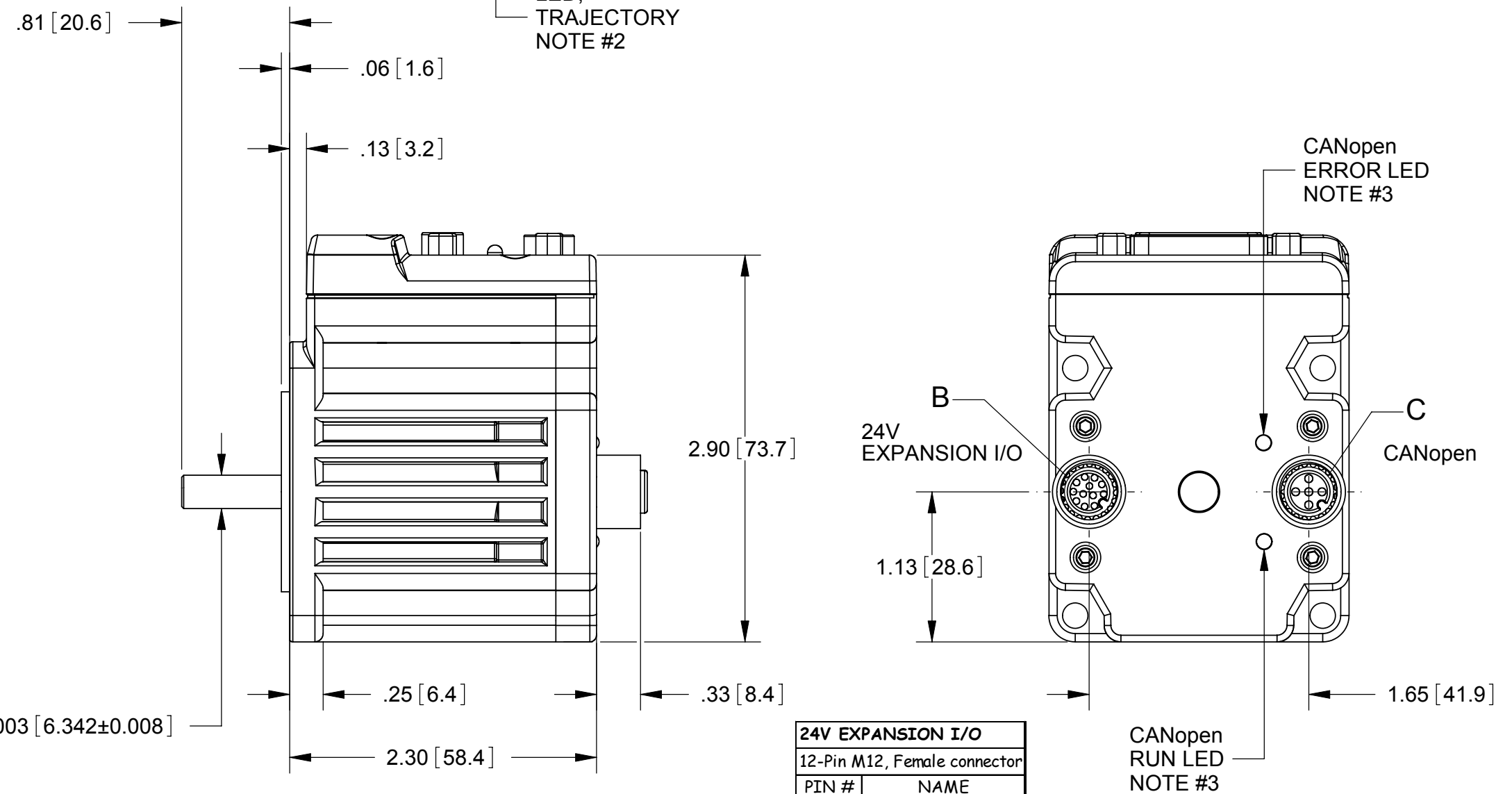
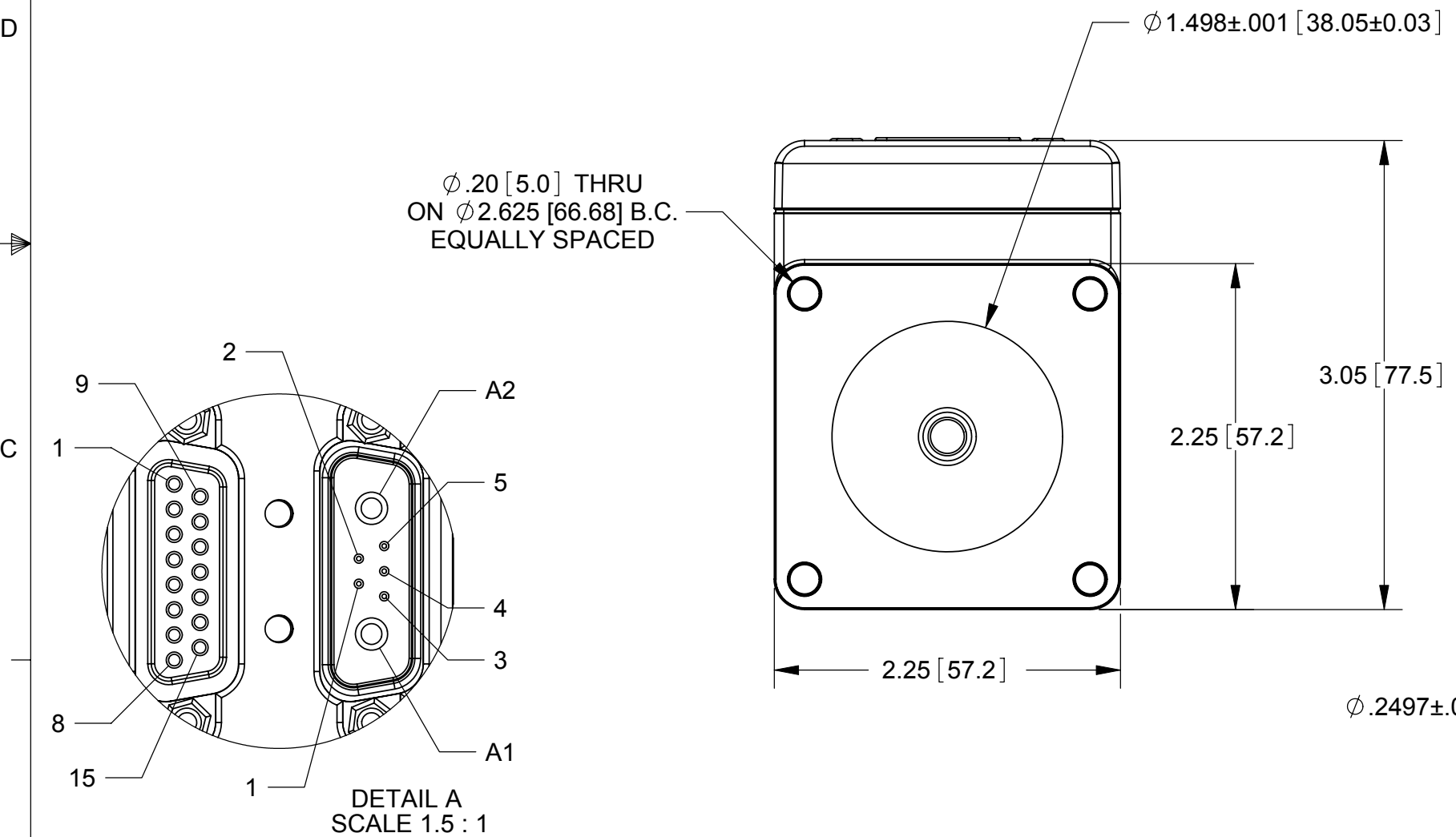
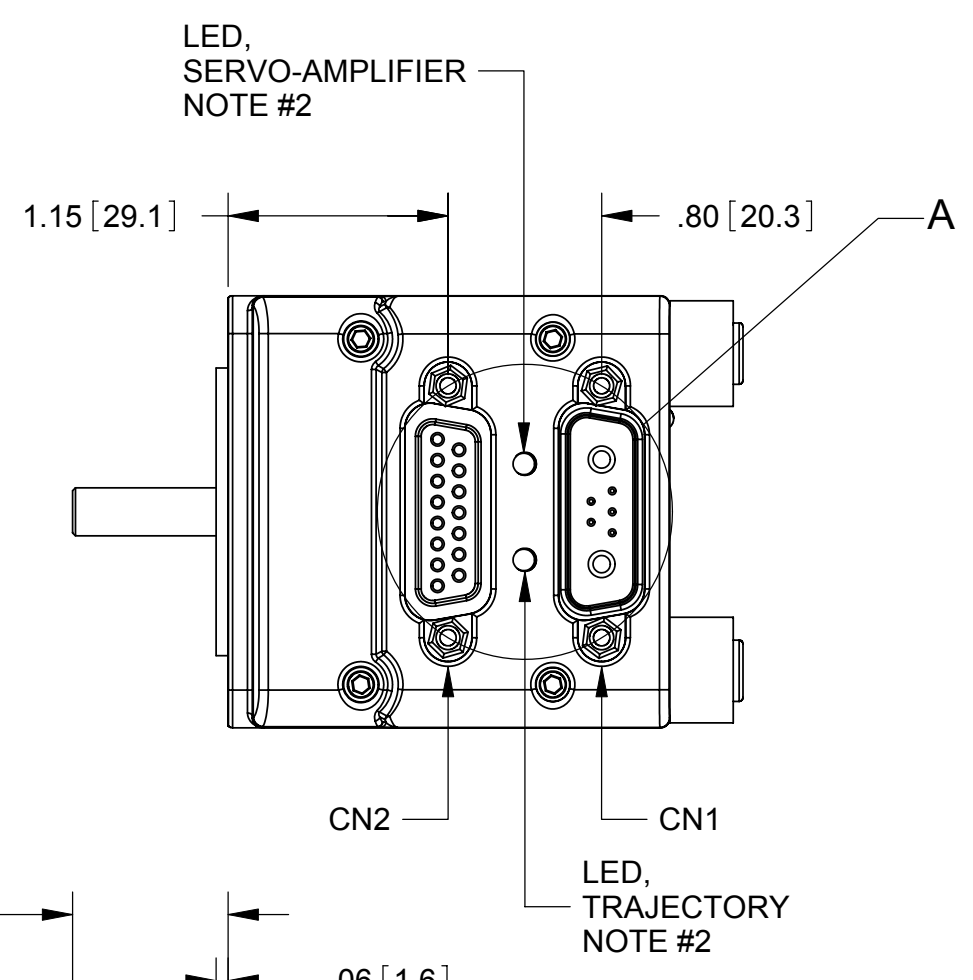
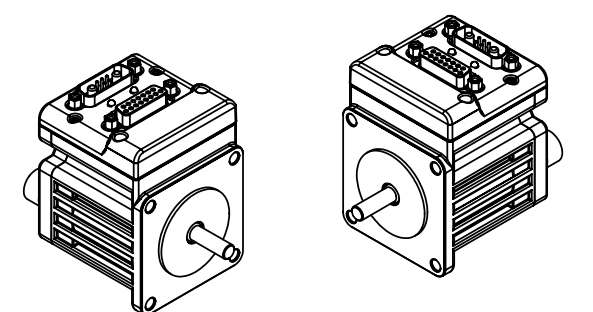


| REV. | DESCRIPTION | ZONE | ECO | DATE | APPROVED |
|------|-----------------|------|-----|------------|----------|
| 1 | DRAWING RELEASE | | | 04/29/2009 | M. TRAN |

- NOTES:
- DRAWING APPLIES TO THE FOLLOWING SMARTMOTOR WITH PART NUMBERS:
SM23165D-C-AD1 SM23165D-DE-C-AD1
SM23165DT-C-AD1 SM23165DT-DE-C-AD1
 - 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 |
|-------|-------------|
| 1 | 24V I/O #1 |
| 2 | 24V I/O #2 |
| 3 | 24V I/O #3 |
| 4 | 24V I/O #4 |
| 5 | 24V I/O #5 |
| 6 | 24V I/O #6 |
| 7 | 24V I/O #7 |
| 8 | 24V I/O #8 |
| 9 | 24V I/O #9 |
| 10 | 24V I/O #10 |
| 11 | 24V PWR IN |
| 12 | GND (I/O) |

| PIN # | NAME |
|-------|---------|
| 1 | NC |
| 2 | NC |
| 3 | GND CAN |
| 4 | CAN H |
| 5 | CAN L |

| 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 | | | |
| 15 | POWER | POWER | | | |

For -DE Option, Pin 15 is Controller power (20V to 48V) and Pin 14 is PWR GND. *PIN 15 is not connected to A1.

| 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: ALUMINUM HOUSING FINISH: BLACK ANODIZED HOUSING

DRAWN: M. TRAN DATE: 4/23/2009 ENGR: M. TRAN DATE: 4/23/2009

INCH THIRD ANGLE PROJECTION UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE INCHES AND TOLERANCES ARE: DECIMALS: .XXX ± .005 .XX ± .01 ANGLES: .XX ± 0.25° .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

TITLE: **SM23165D-C-AD1 SERIES**

SIZE: C DWG NO: SM23165D-C-AD1 DO NOT SCALE DRAWING SCALE: 1:1 SHEET: 1 OF 1