Uniblitz® CS90

90mm Uni-Stable Optical Shutter

Overview

The Uniblitz CS90 has been designed to provide accurate, repeatable exposures for a wide variety of applications such as telescopy and aerospace. The slim form-factor provides a very large 90mm aperture that can be inserted into a 7.00 inch diameter housing. The CS90 is available in a housed or an un-housed configuration for OEM applications (or simply where spatial limitations are a consideration).

Uni-stable shutter devices, like the CS90, require power to hold the blades in the open state.

Key Features

- Large 90mm aperture
- Uni-stable operation
- 6-bladed design
- Slim form-factor
- **RoHS Compliant**
- Transfer time on opening:

  46.0 milliseconds
- Total opening time:

  66.0 milliseconds
- Configured for the **VCM-D1 Shutter Driver**

Need Support? Please **visit our website** or email us at **info@uniblitz.com**.

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Updated 5/16 | Datasheet Version 5.1 |

Product Options

CS90H ❷ ❸ ❹ ❺ ❻ - ❼ - ❽ Ex: CS90HS3T0-EC-103

❶ Shutter Series:
- **CS90H**

❷ Driver Compatibility:
- **S:** Use with VCM-D1 (Std.)
- **E:** Use with D880C or VED24

❸ Housing:
- **1:** Un-Housed
- **3:** #3 Housing

❹ Blade Coating: [1]
- **T:** Low Energy (Teflon®)

❺ Electronic Sync:
- **0:** Omitted
- **1:** Included

❻ Connector:
- **L:** 18" flying leads *(Un-housed only)*
- Leave blank for 7-pin Wire Pro connector

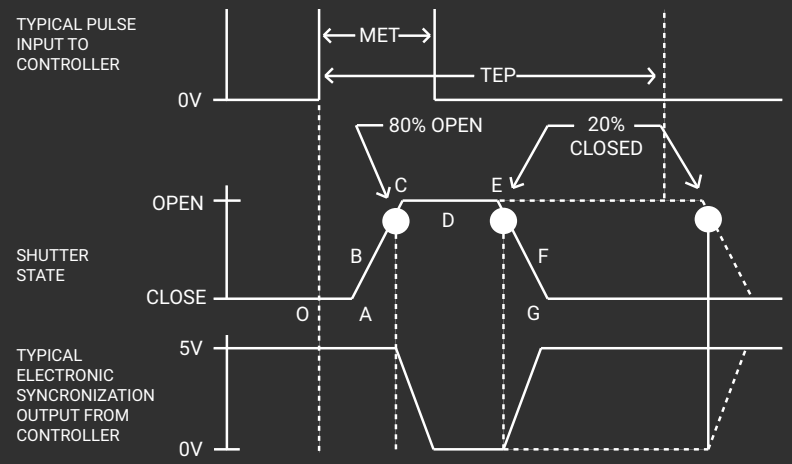
❼ Encapsulated Coil:
- **EC:** Included [2]
- Leave blank if not required

❽ Mount: *(#3 housing only)*
- **103:** Mounting ring
- Leave blank if not required

[1] *Other blade coating options may be available by special order.*

[2] *With this option, the CS90's two (2) coils will be encapsulated.*

Shutter Timing



CS90 (w/ Uniblitz driver and Teflon® coated blades)		Time (msec.)
O - A	Delay time on opening after current applied	18.0
A - C	Transfer time on opening	48.0
O - C	Total opening time	66.0
C - E	Min. dwell time with min. input pulse	11.0
B - F	Min. equivalent exp. time	64.0
E - G	Transfer time on closing	57.0
A - G	Total window time	116.0
MET	Min. exposure time	70.0
TEP	Typical exposure pulse	>100.0

Technical Specifications

Actuator	Coil Resistance	Voltage to Open	Hold Voltage (Nominal) [1]
Primary	24 Ω	+70 VDC	+7 VDC / +5 VDC [2]
Secondary	24 Ω	+70 VDC	+7 VDC / +5 VDC [2]

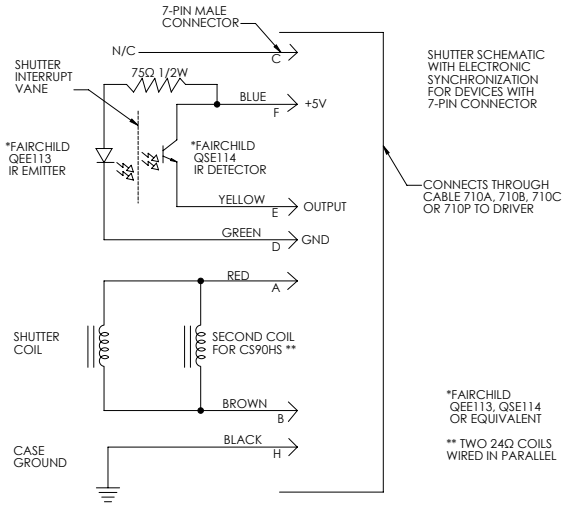
[1] *Voltage level required across actuator coil when held in the open position.*

[2] *Dual hold voltage system included in* ***VCM-D1 Driver***

[3] *Actuators wired in parallel. Combined DCR is 12 Ω*

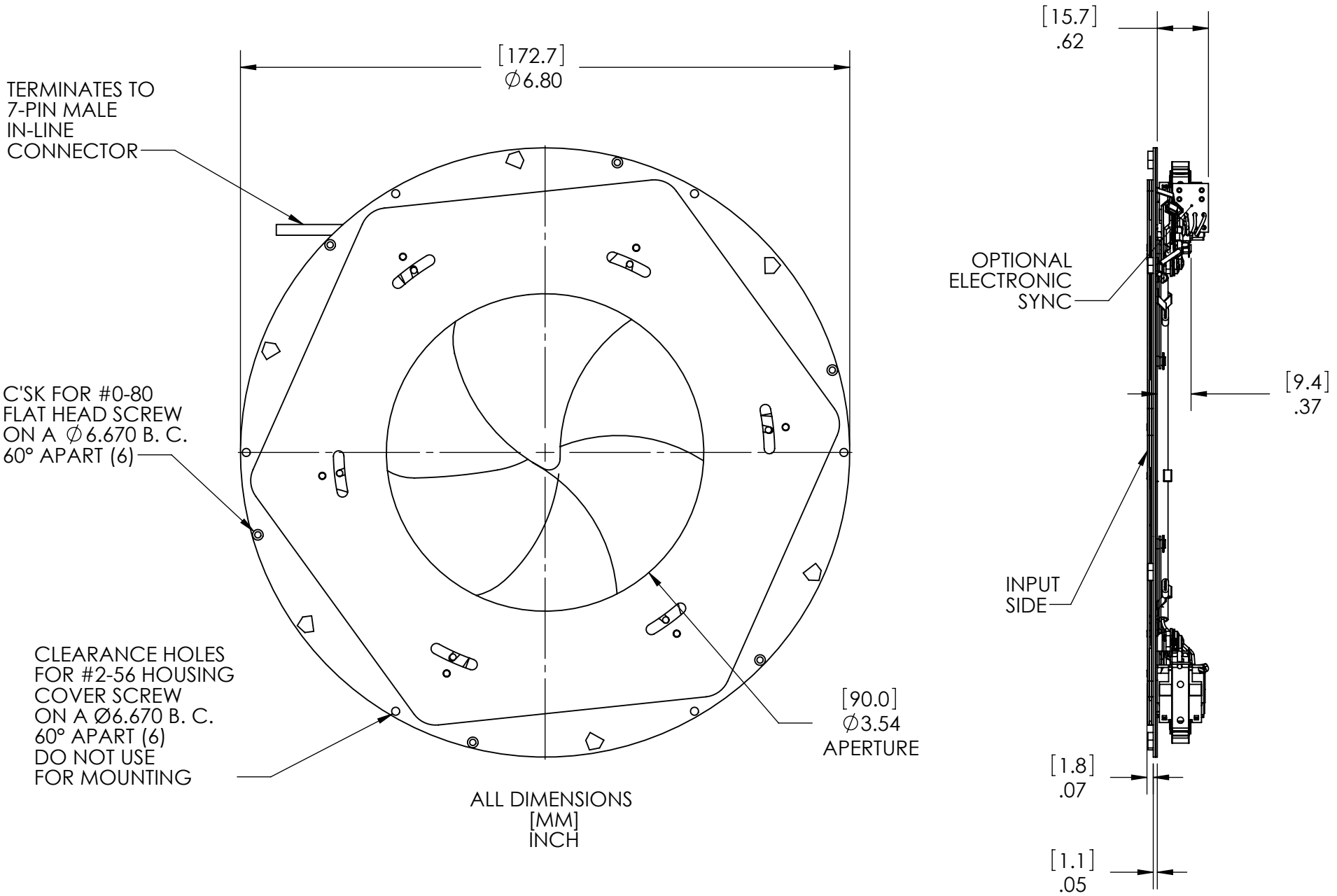
[4] *(Continuous/Burst) Continuous frequency rating specified at shutter's minimum exposure pulse. Burst frequency rating specified for four (4) seconds maximum with one (1) minute minimum between bursts.*

Series	Weight (Unhoused)	Weight (Housed)	Operating Temp.	Max. Opening Bounce	Max. Closing Bounce	Max. Freq. of Operation [4]	Number of Shutter Blades
CS90	11.40 oz (0.32 kg)	24.10 oz (0.68 kg)	0 - 80 °C	15%	5%	1 Hz / 3 Hz	6

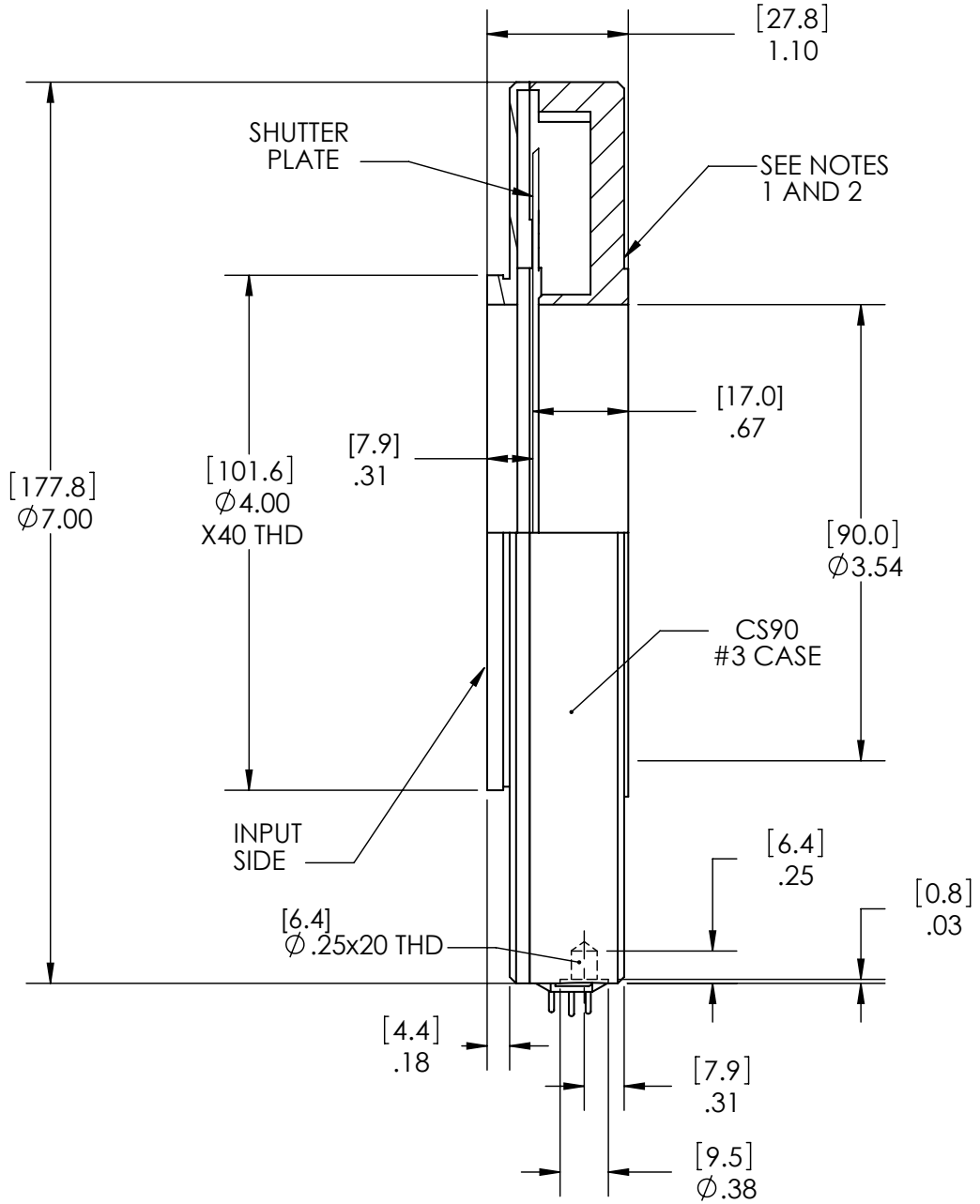


The electronic synchronization system provides a feedback signal (through the driver utilized) after the shutter transfers to the open state. The system incorporates an infrared emitting diode, an infrared sensitive detecting transistor, and an interrupting vane. The vane is attached to the shutter so as to block the light path between the emitter and detector in the closed position. When the shutter transfers to the 80% open position, the vane is removed from the infrared light path, allowing the emitter to switch the detector to the active state. For the CS90, this system uses a similar activation flag attached to the mechanism, which triggers a reflective emitter/detector device. **No connection to the designated synchronization pins when no electronic sync. is selected.**

Technical Drawings - Un-housed CS90



Technical Drawings - Housed CS90

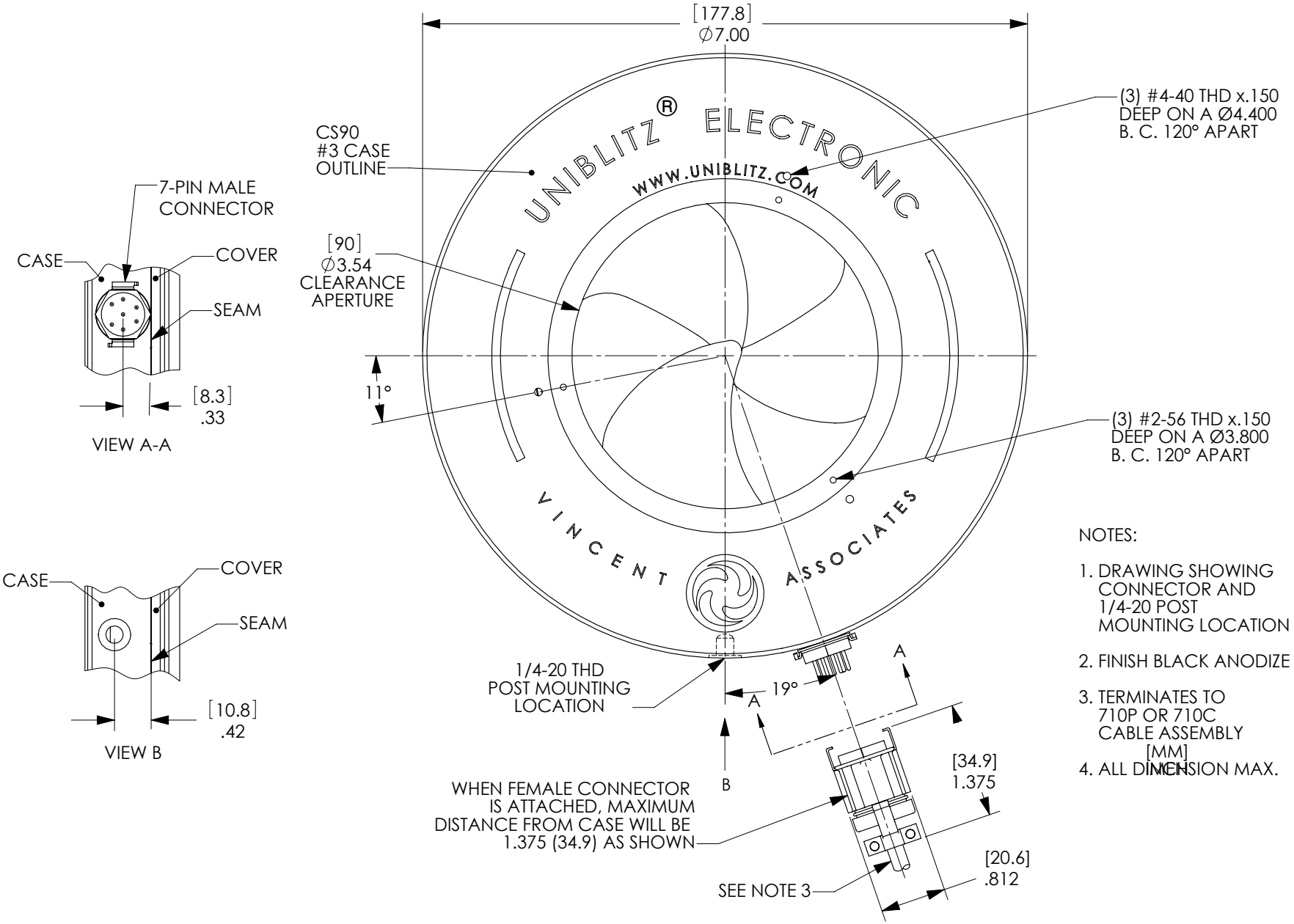


NOTES:
1. (3) #2-56 MOUNTING HOLES ON A Ø4.100 BOLT CIRCLE 120° APART

2. (3) #4-40 MOUNTING HOLES ON A Ø4.400 BOLT CIRCLE 120° APART

3. ALL DIMENSIONS
[MM]
INCH

Technical Drawings - CS90 Connector Layout



NOTES:

1. DRAWING SHOWING CONNECTOR AND 1/4-20 POST MOUNTING LOCATION
2. FINISH BLACK ANODIZE
3. TERMINATES TO 710P OR 710C CABLE ASSEMBLY
4. ALL DIMENSION [MM] IN MAX.