

Uniblitz® VS14

14mm Uni-Stable Optical Shutter



Overview

The Uniblitz VS14 has been designed to provide accurate, repeatable exposures for a wide variety of applications. The VS series shutters have been successfully field tested in microscopy, video imaging, PMT protection, and photographic applications worldwide. The VS14 is available in a housed or un-housed configuration for OEM applications (or simply where spatial limitations are a consideration). Uni-stable shutter devices, like the VS14, require power to hold the blades in the open state (though the device can be custom-configured for "normally open" operation).

Need Support? Please [visit our website](http://www.uniblitz.com) or email us at info@uniblitz.com.

Tel: 585-385-5930 | Toll-Free: 800-828-6972 | Fax: 585-385-6004 | 803 Linden Ave. Rochester, NY 14625

Updated 12/16 | Datasheet Version 5.1 | ©2016 Vincent Associates

Key Features

- 14mm aperture
- Uni-stable operation
- Slim, small form-factor
- **RoHS Compliant**
- Transfer time on opening:
1.5 milliseconds
- Total opening time:
3.5 milliseconds
- Configured for the **VCM-D1**
Shutter Driver

Product Options

VS14 ② ③ ④ ⑤ ⑥ - ⑦ - ⑧

Ex: VS14S2ZM0-EC-21

① Shutter Series:

- **VS14**

② Driver Compatibility:

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

③ Housing:

- **1:** Un-Housed
- **2:** #2 Housing

④ Blade Coating: ¹

- **T:** Low Energy (Teflon®)
- **ZM:** High Energy (AlMgF2) ²

⑤ Electronic Sync:

- **0:** Omitted
- **1:** Included

⑥ Connector:

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

⑦ Encapsulated Coil:

- **EC:** Included
- Leave blank if not required

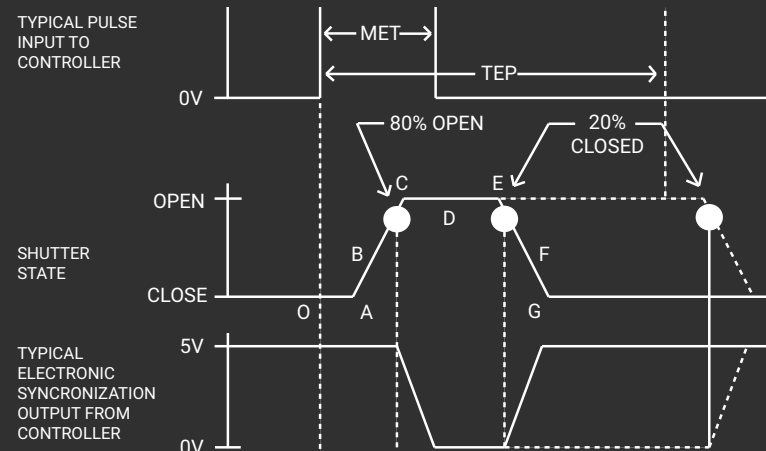
⑧ Mount: (#2 housing only)

- **21:** Zeiss Axiovert
- **24:** Olympus BX/IX
- **27:** Nikon
- **105:** C-Mount (Male)
- **106:** C-Mount (Female)
- Leave blank if not required

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

² Input side only; Teflon® coating is on opposite side to protect shutter blade surface. Light source must be input to the reflective side only.

Shutter Timing



VS14 (w/ VCM-D1 driver and Teflon® coated blades) Time (msec.)

O - A	Delay time on opening after current applied	2.0
A - C	Transfer time on opening	1.5
O - C	Total opening time	3.5
C - E	Min. dwell time with min. input pulse	2.0
B - F	Min. equivalent exp. time	4.5
E - G	Transfer time on closing	3.0
A - G	Total window time	6.5
MET	Min. exposure time	4.0
TEP	Typical exposure pulse	>6.5

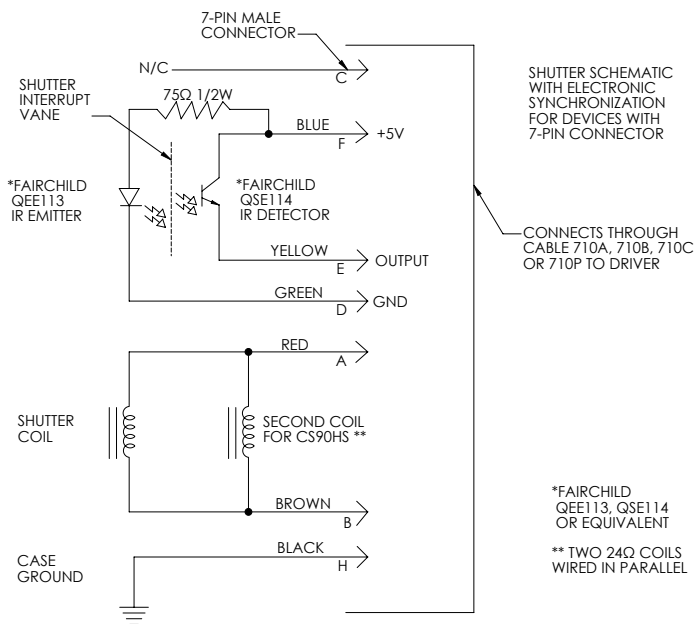
Technical Specifications

Coil Resistance	Voltage to Open	Hold Voltage (Nominal) ¹
12 Ω	+65 VDC	+5 VDC

¹ Voltage level required across actuator coil when being held in the open position.

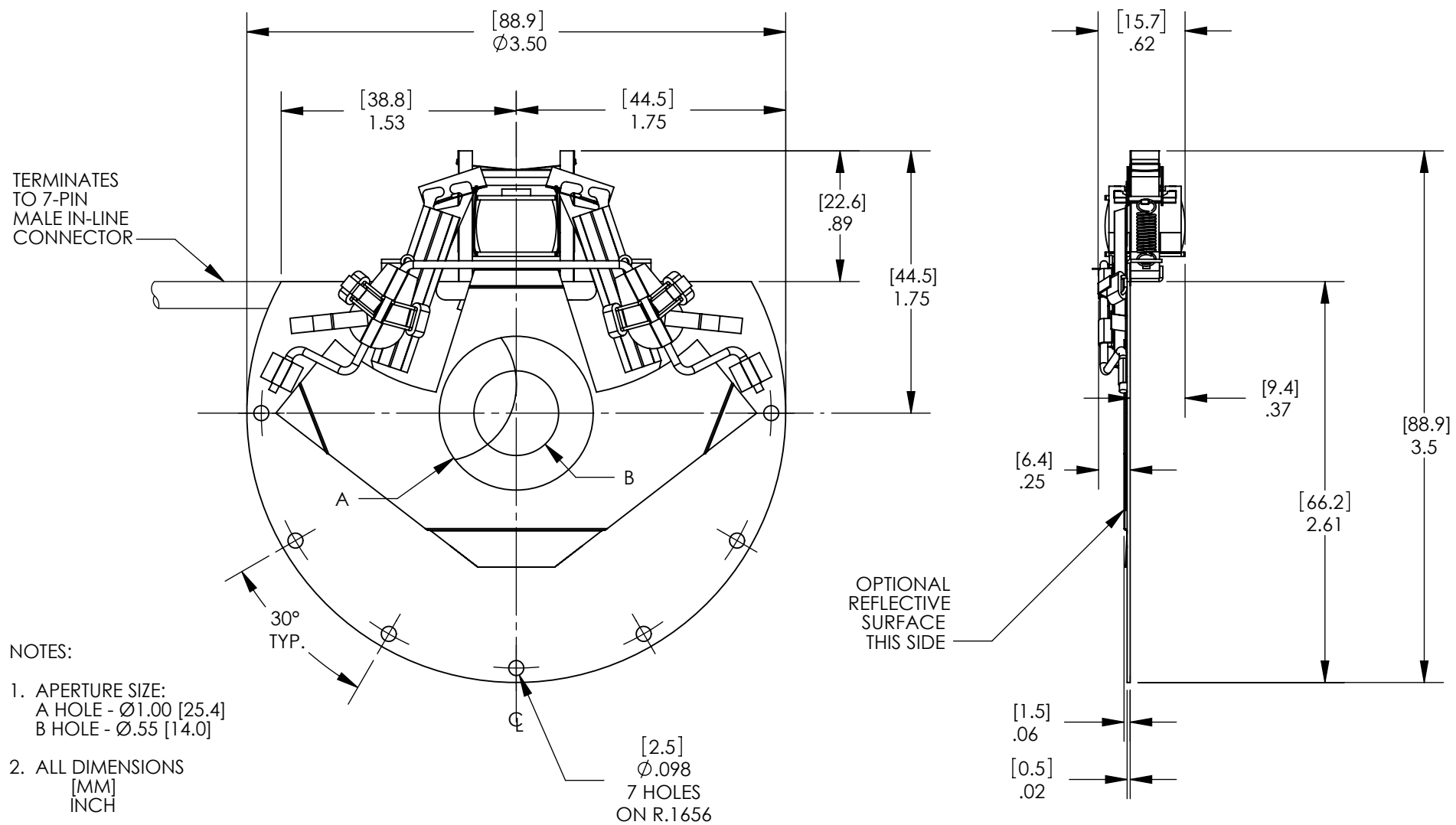
² (Continuous/Burst) Continuous frequency rating specified at shutter's minimum exposure pulse. Burst frequency rating specified for four (4) seconds maximum with one (1) minute minimum between bursts.

Series	Weight (Unhoused)	Weight (Housed)	Operating Temp.	Max. Opening Bounce	Max. Closing Bounce	Max. Freq. of Operation ²	Number of Shutter Blades
VS14	2.05 oz (0.06 kg)	10.22 oz (0.29 kg)	0 - 80 °C	15%	5%	10 Hz / 40 Hz	2



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 VS14, 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 VS14



Technical drawing showing a cross-section of a mechanical assembly. The drawing includes dimensions in inches and millimeters, and labels for various components and surfaces.

Dimensions (inches in brackets, millimeters in plain text):

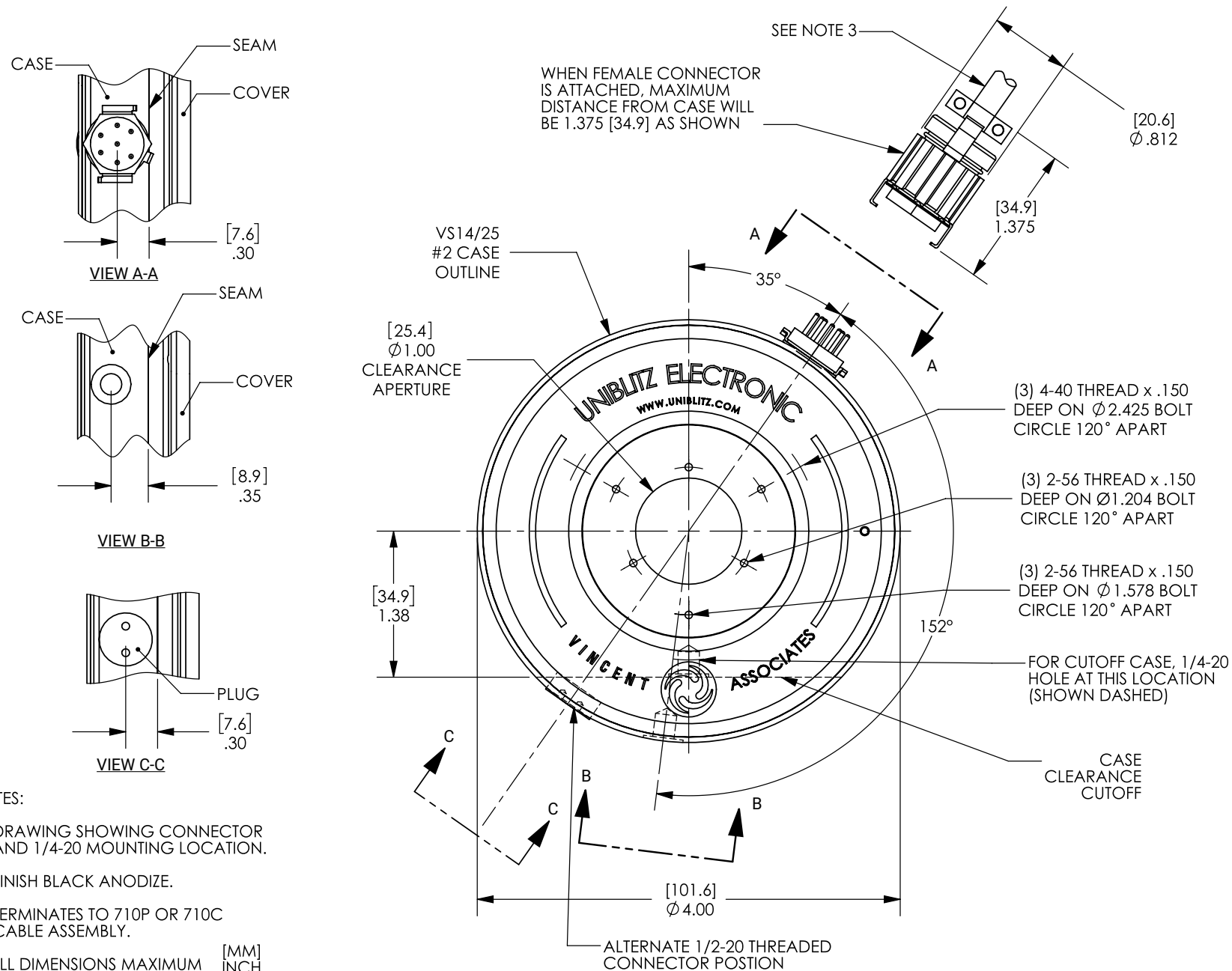
- Top horizontal dimension: [26.8] 1.06
- Left vertical dimension: [101.1] Ø 3.98
- Inner vertical dimension: [25.4] Ø 1.00
- Horizontal dimension between internal features: [13.1] .52
- Horizontal dimension between internal features: [11.7] .46
- Right vertical dimension: [41.3] Ø 1.625 x40 THD
- Bottom left vertical dimension: [6.4] .25
- Bottom left horizontal dimension: [0.8] .03
- Bottom left horizontal dimension: [6.4] .25
- Bottom center horizontal dimension: [9.5] Ø .38
- Bottom right horizontal dimension: [4.4] .18
- Bottom right vertical dimension: [6.4] Ø .25 x 40 THD

Labels and Notes:

- SEE NOTE 2 THIS SURFACE
- SHUTTER PLATE
- SEE NOTE 1 THIS SURFACE
- OPTIONAL REFLECTIVE SURFACE THIS SIDE
- VS14/25 #2 CASE

1. (3) #2-56 MOUNTING HOLES ON A
Ø 1.204 BOLT CIRCLE, 120° APART
(3) #2-56 MOUNTING HOLES ON A
Ø 1.578 BOLT CIRCLE, 120° APART
2. (3) #4-40 MOUNTING HOLES ON A
Ø 2.425 BOLT CIRCLE 120° APART
(UNDER NAME PLATE)
3. ALL DIMENSIONS
[MM]
INCH

Technical Drawings - VS14 Connector Layout



NOTES:

1. DRAWING SHOWING CONNECTOR AND 1/4-20 MOUNTING LOCATION.
2. FINISH BLACK ANODIZE.
3. TERMINATES TO 710P OR 710C CABLE ASSEMBLY.
4. ALL DIMENSIONS MAXIMUM

[MM]
INCH

Uniblitz® VS25

25mm Uni-Stable Optical Shutter



Overview

The Uniblitz VS25 has been designed to provide accurate, repeatable exposures for a wide variety of applications. The VS series shutters have been successfully field tested in microscopy, video imaging, PMT protection, and photographic applications worldwide. The VS25 is available in a housed or un-housed configuration for OEM applications (or simply where spatial limitations are a consideration). Uni-stable shutter devices, like the VS25, require power to hold the blades in the open state (though the device can be custom-configured for "normally open" operation).

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Updated 3/19 | Datasheet Version 5.2 | ©2019 Vincent Associates

Key Features

- 25mm aperture
- Uni-stable operation
- Slim, small form-factor
- **RoHS Compliant**
- Transfer time on opening:
3.0 milliseconds
- Total opening time:
6.0 milliseconds
- Configured for the **VCM-D1**
Shutter Driver

Product Options

VS25 2 3 4 5 6 - 7 - 8

Ex: VS25S2ZM0-EC-21

1 Shutter Series:

- **VS25**

2 Driver Compatibility:

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

3 Housing:

- **1:** Un-Housed
- **2:** #2 Housing

4 Blade Coating: ¹

- **T:** Low Energy (Teflon®)
- **ZM:** High Energy (AlMgF2) ²

5 Electronic Sync:

- **0:** Omitted
- **1:** Included

6 Connector:

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

7 Encapsulated Coil:

- **EC:** Included
- Leave blank if not required

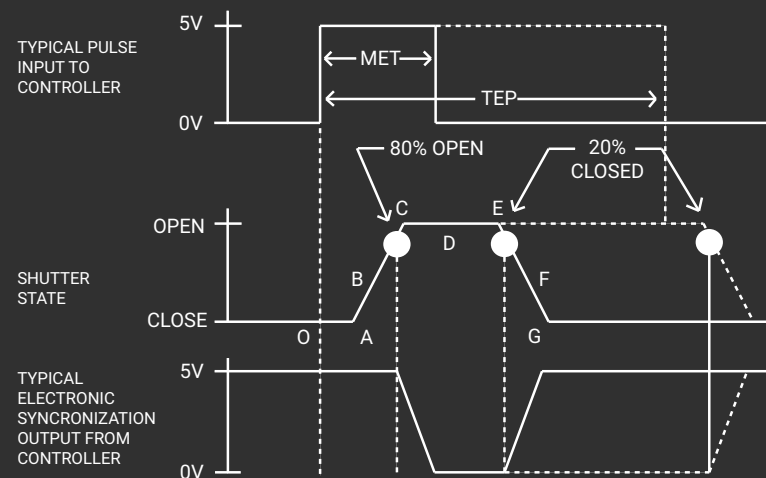
8 Mount: (#2 housing only)

- **21:** Zeiss Axiovert
- **24:** Olympus BX/IX
- **27:** Nikon
- **105:** C-Mount (Male)
- **106:** C-Mount (Female)
- Leave blank if not required

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

² Input side only; Teflon® coating is on opposite side to protect shutter blade surface. Light source must be input to the reflective side only.

Shutter Timing



VS25 (w/ VCM-D1 driver and Teflon® coated blades) Time (msec.)

O - A	Delay time on opening after current applied	3.0
A - C	Transfer time on opening	3.0
O - C	Total opening time	6.0
C - E	Min. dwell time with min. input pulse	2.0
B - F	Min. equivalent exp. time	6.0
E - G	Transfer time on closing	5.0
A - G	Total window time	10.0
MET	Min. exposure time	6.0
TEP	Typical exposure pulse	>8.0

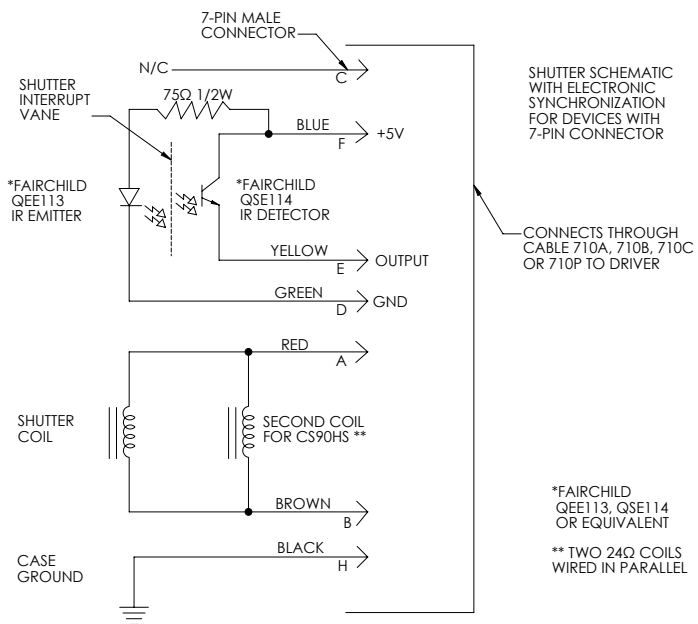
Technical Specifications

Coil Resistance	Voltage to Open	Hold Voltage (Nominal) ¹
12 Ω	+65 VDC	+5 VDC

¹ Voltage level required across actuator coil when being held in the open position.

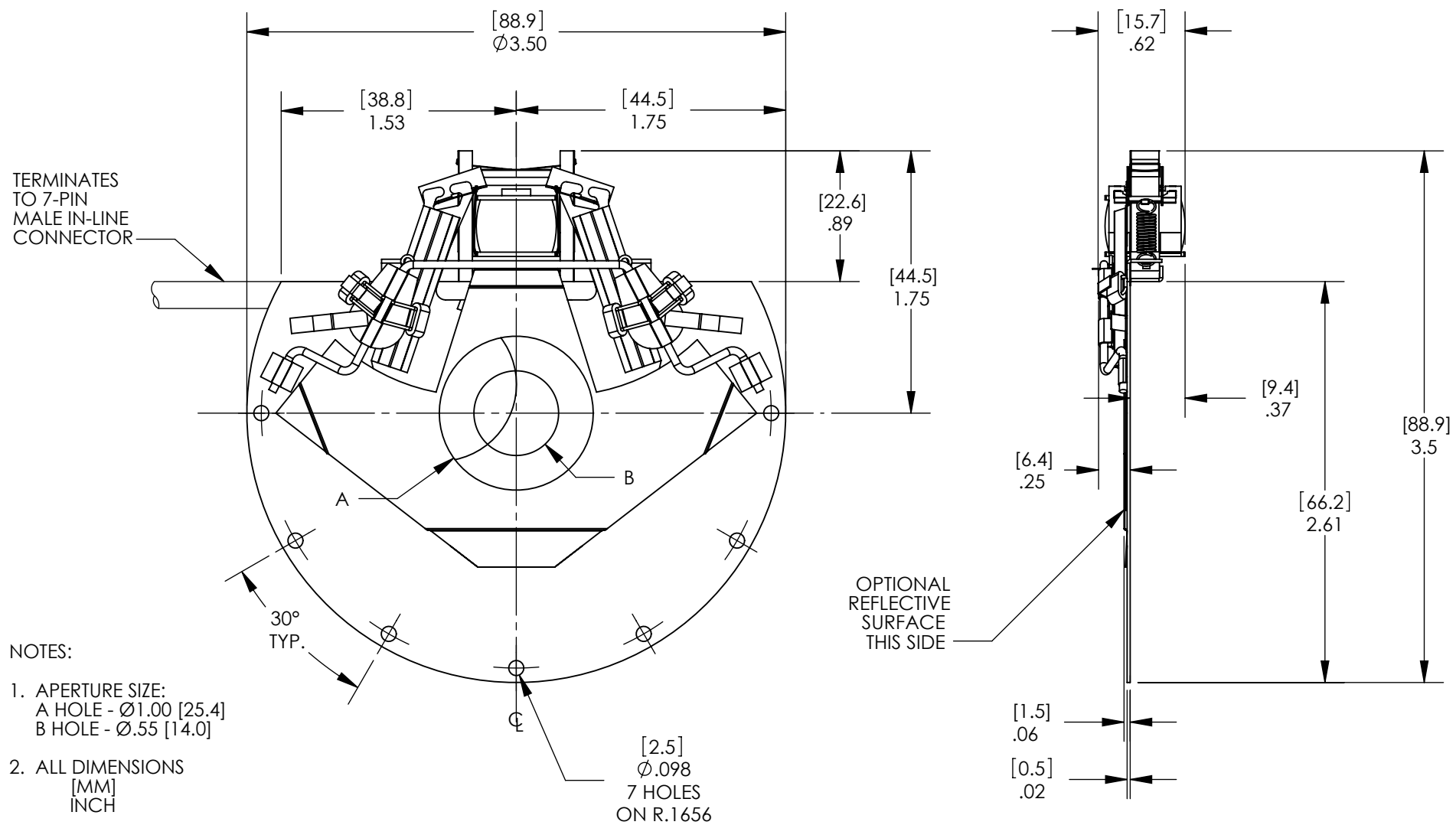
² (Continuous/Burst) Continuous frequency rating specified at shutter's minimum exposure pulse. Burst frequency rating specified for four (4) seconds maximum with one (1) minute minimum between bursts.

Series	Weight (Unhoused)	Weight (Housed)	Operating Temp.	Max. Opening Bounce	Max. Closing Bounce	Max. Freq. of Operation ²	Number of Shutter Blades
VS25	2.05 oz (0.06 kg)	10.22 oz (0.29 kg)	0 - 80 °C	15%	5%	10 Hz / 40 Hz	2

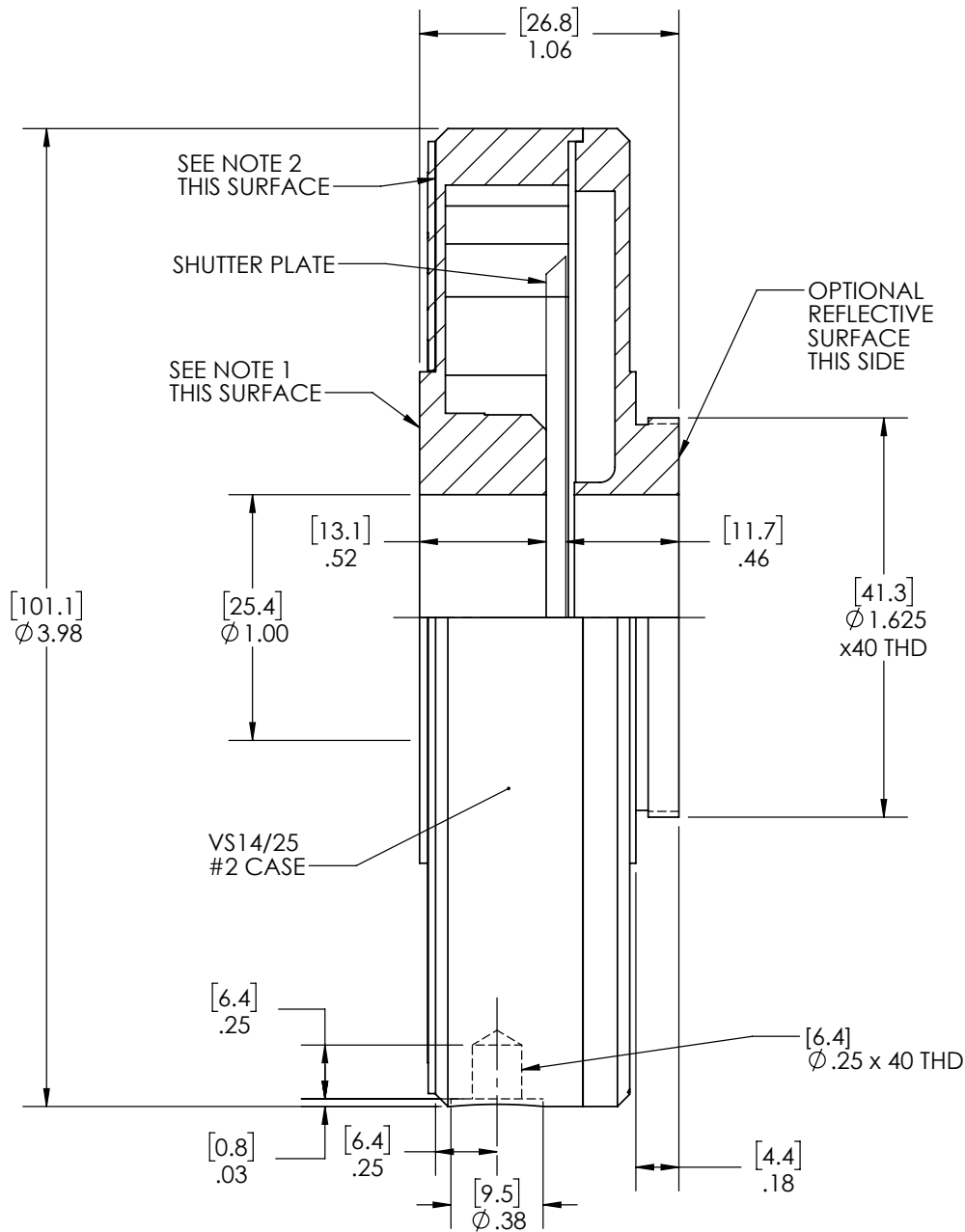


The electronic synchronization system provides a feedback signal (through the driver utilized) after the shutter transfers to the open state. The system incorporates an infrared emitting diode, an infrared sensitive detecting transistor, and an interrupting vane. The vane is attached to the shutter so 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 VS25, 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 VS25



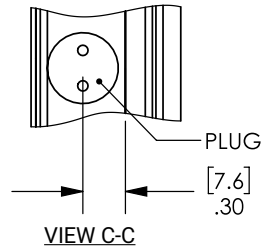
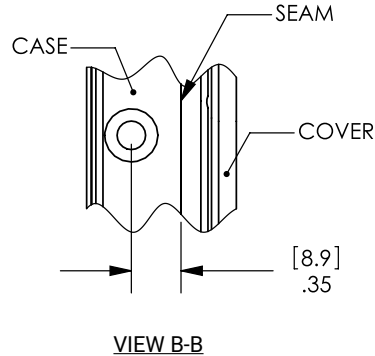
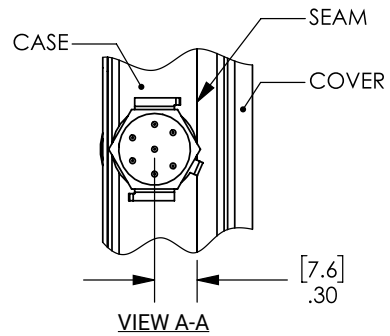
Technical Drawings - Housed VS25



NOTES:

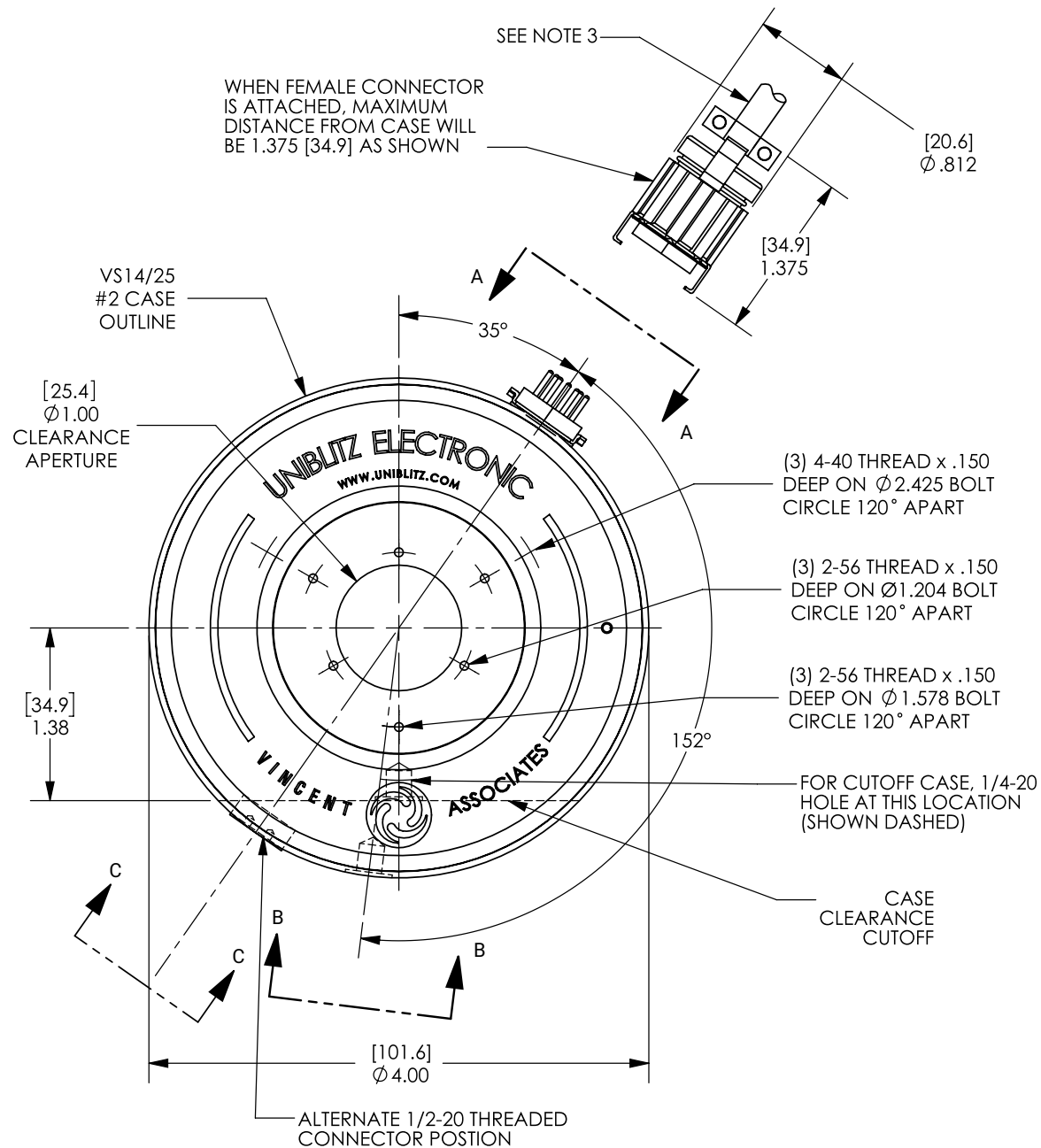
1. (3) #2-56 MOUNTING HOLES ON A Ø 1.204 BOLT CIRCLE, 120° APART
(3) #2-56 MOUNTING HOLES ON A Ø 1.578 BOLT CIRCLE, 120° APART
2. (3) #4-40 MOUNTING HOLES ON A Ø 2.425 BOLT CIRCLE 120° APART (UNDER NAME PLATE)
3. ALL DIMENSIONS
[MM]
INCH

Technical Drawings - VS25 Connector Layout



NOTES:

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



Uniblitz® VS35

35mm Uni-Stable Optical Shutter



Overview

The Uniblitz VS35 has been designed to provide accurate, repeatable exposures for a wide variety of applications. The VS series shutters have been successfully field tested in microscopy, video imaging, PMT protection, and photographic applications worldwide. The VS35 is available in a housed or un-housed configuration for OEM applications (or simply where spatial limitations are a consideration).

Uni-stable shutter devices, like the VS35, require power to hold the blades in the open state.

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Updated 3/17 | Datasheet Version 5.2 | ©2017 Vincent Associates

Key Features

- 35mm aperture
- Uni-stable operation
- Slim, small form-factor
- **RoHS Compliant**
- Transfer time on opening:
13.0 milliseconds
- Total opening time:
18.0 milliseconds
- Configured for the **VCM-D1**
Shutter Driver

Product Options

VS35 ② ③ ④ ⑤ ⑥ - ⑦ - ⑧

Ex: VS35S2ZM0-EC-21

① Shutter Series:

- **VS35**

② Driver Compatibility:

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

③ Housing:

- **1:** Un-Housed
- **2:** #2 Housing

④ Blade Coating: ¹

- **T:** Low Energy (Teflon®)
- **ZM:** High Energy (AlMgF2) ²

⑤ Electronic Sync:

- **0:** Omitted
- **1:** Included

⑥ Connector:

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

⑦ Encapsulated Coil:

- **EC:** Included
- Leave blank if not required

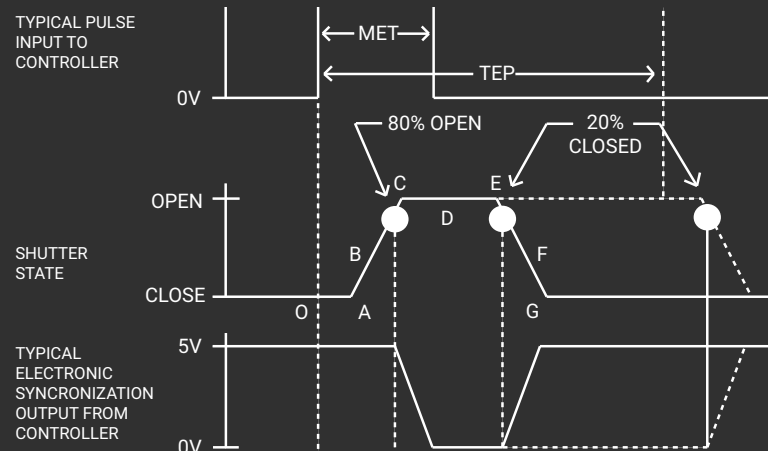
⑧ Mount: (#2 housing only)

- **21:** Zeiss Axiovert
- **24:** Olympus BX/IX
- **27:** Nikon
- **105:** C-Mount (Male)
- **106:** C-Mount (Female)
- Leave blank if not required

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

² Input side only; Teflon® coating is on opposite side to protect shutter blade surface. Light source must be input to the reflective side only.

Shutter Timing



VS35 (w/ VCM-D1 driver and Teflon® coated blades) Time (msec.)

O - A	Delay time on opening after current applied	5.0
A - C	Transfer time on opening	13.0
O - C	Total opening time	18.0
C - E	Min. dwell time with min. input pulse	5.0
B - F	Min. equivalent exp. time	20.0
E - G	Transfer time on closing	12.0
A - G	Total window time	30.0
MET	Min. exposure time	20.0
TEP	Typical exposure pulse	>23.0

Technical Specifications

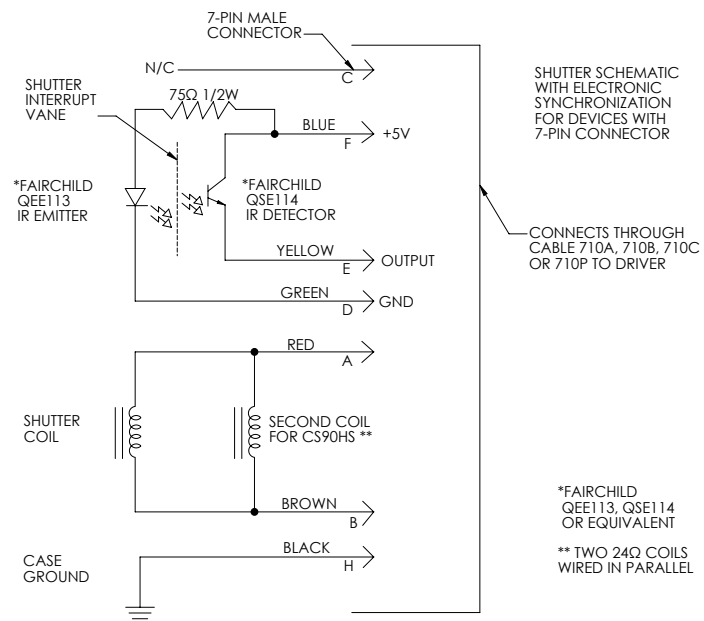
Coil Resistance	Voltage to Open	Hold Voltage (Nominal) ¹
12 Ω	+70 VDC	+7 VDC / +5 VDC ²

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

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

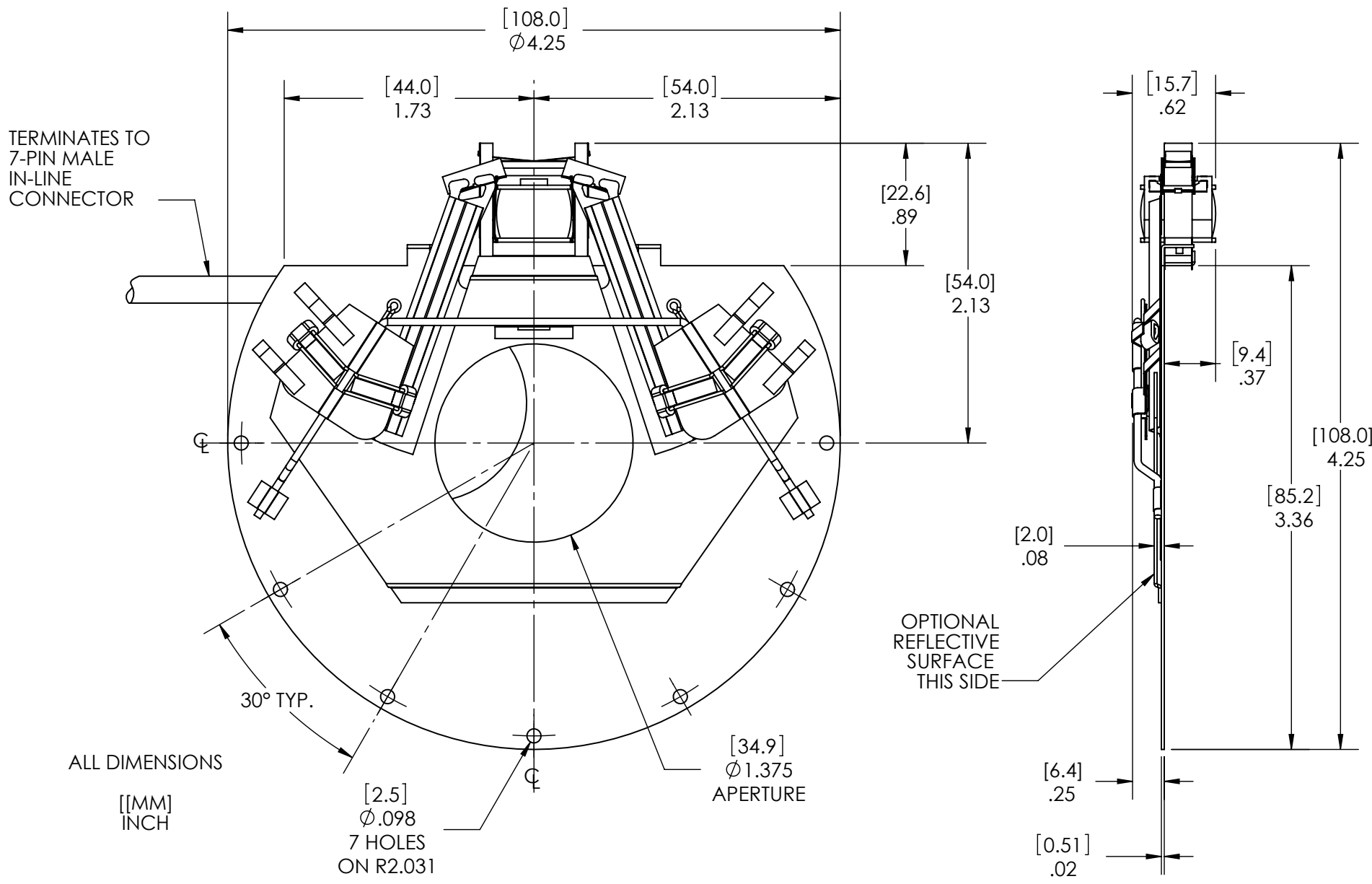
³ (Continuous/Burst) Continuous frequency rating specified at shutter's minimum exposure pulse. Burst frequency rating specified for four (4) seconds maximum with one (1) minute minimum between bursts.

Series	Weight (Unhoused)	Weight (Housed)	Operating Temp.	Max. Opening Bounce	Max. Closing Bounce	Max. Freq. of Operation ³	Number of Shutter Blades
VS35	2.33 oz (0.07 kg)	14.35 oz (0.41 kg)	0 - 80 °C	15%	5%	5 Hz / 20 Hz	2

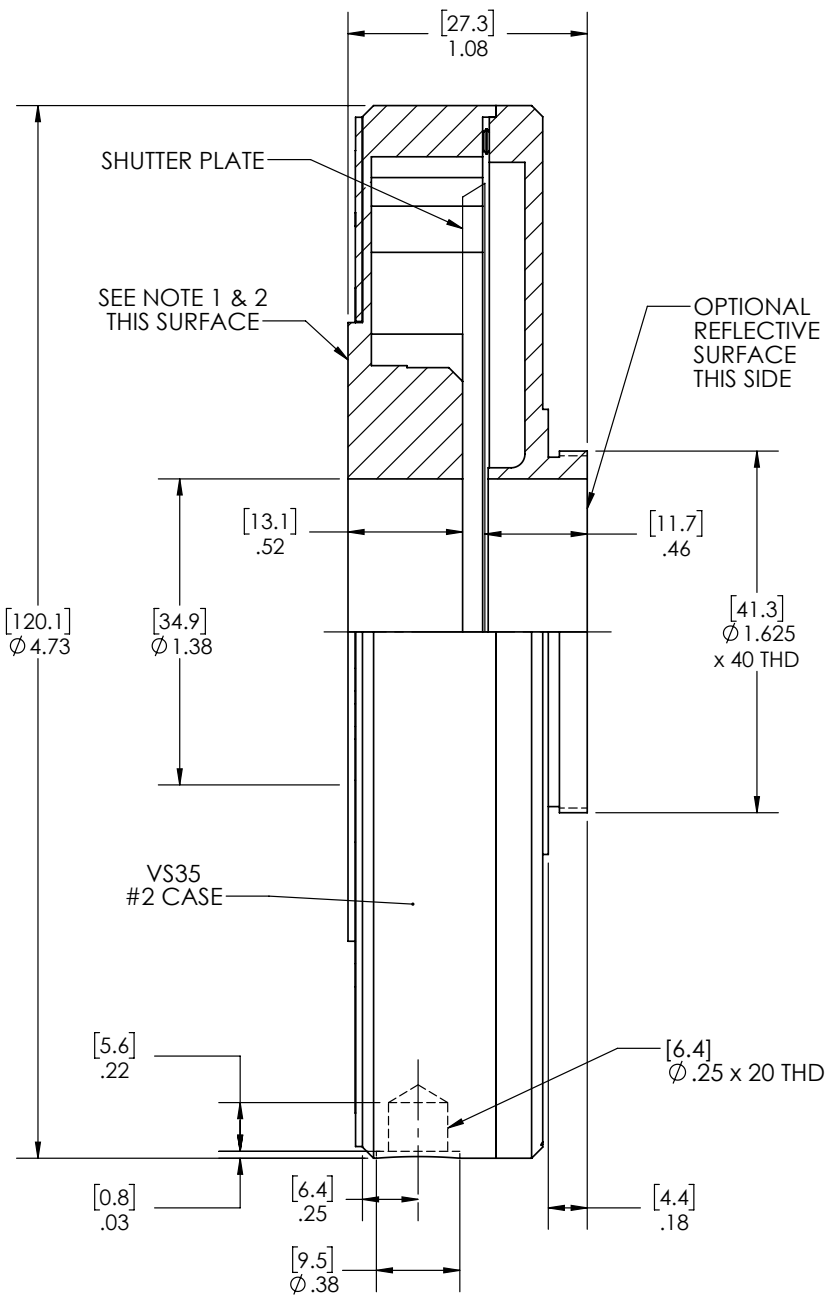


The electronic synchronization system provides a feedback signal (through the driver utilized) after the shutter transfers to the open state. The system incorporates an infrared emitting diode, an infrared sensitive detecting transistor, and an interrupting vane. The vane is attached to the shutter so 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 VS35, 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 VS35



Technical Drawings - Housed VS35



- NOTES:
1. (3) #2-56 MOUNTING HOLES ON A $\varnothing 1.578$ BOLT CIRCLE, 120° APART
 2. (3) #4-40 MOUNTING HOLES ON A $\varnothing 2.425$ BOLT CIRCLE 120° APART (UNDER NAME PLATE)
 3. ALL DIMENSIONS
[MM]
INCH

Technical Drawings - VS35 Connector Layout

