

VS14 14mm Uni-Stable Shutter Specifications

Features

- The **UNIBLITZ**[®] VS14 has been designed to give accurate, repeatable exposures for a wide variety of applications.
- The VS shutters have been successfully field tested in microscopy, video imaging, PMT protection, and photographic applications worldwide.
- Laser energy ratings up to 10W/mm² with "Z" or "ZM" shutter blade coating options.
- Exposure repetition rates from DC - 40Hz.
- Electronic synchronization system available.
- Housed and un-housed versions available.
- Can be equipped with the "R3" High Temperature Option.
- Available in a normally-open configuration.



Fig. 1 VS14 14mm Uni-stable Shutter

Timing

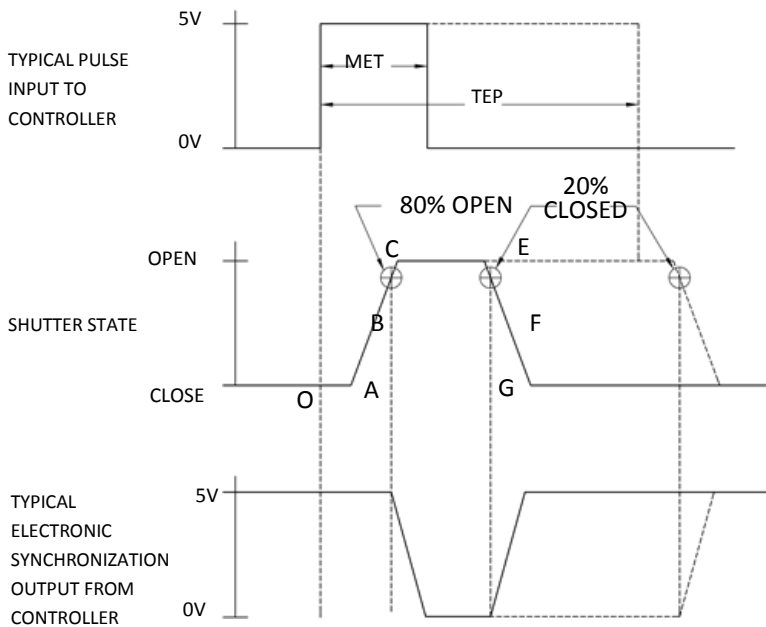


Fig. 2

¹Typical timing values (msec.) using UNIBLITZ[®] drive equipment and measured with UNIBLITZ[®] shutters equipped with standard black Teflon[®] coated shutter blades.

	VS14	Time (msec.) ¹
O-A:	Delay time on opening after current is 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

Electrical

COIL RESISTANCE	PULSE VOLTAGE TO OPEN	HOLD VOLTAGE ¹ (NOMINAL)
12 OHMS	+65 VDC	+5 VDC

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

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. **No connection to the designated synchronization pins when no electronic sync. is selected.**

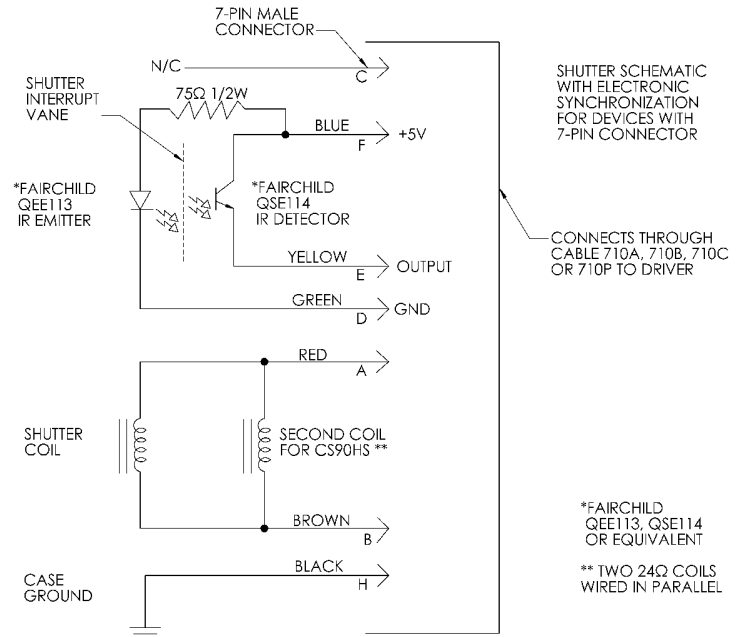


Fig. 3

Mechanical

SERIES	WEIGHT UNCASSED	WEIGHT CASSED	OPERATING TEMP. (DEGREES)	MAX. OPENING BOUNCE	MAX. CLOSING BOUNCE	MAX. FREQUENCY OF OPERATION ²	NUMBER OF SHUTTER BLADES
VS14	2.05 oz (.06 kg)	10.22 oz (.29 Kg)	0-80 °C	15%	5%	10 Hz / 40 Hz	2

² (CONT/BURST) CONTinuous frequency rating specified at shutter's minimum exposure pulse. BURST frequency rating specified for (4) four seconds maximum with (1) one minute minimum between bursts. Frequency measurements are taken in free air, 25°C ambient, actuator coil equipped with heat sink. For additional information on maximum sustained frequencies obtainable, please contact one of our technical representatives.

Housing Options

Un-housed Style

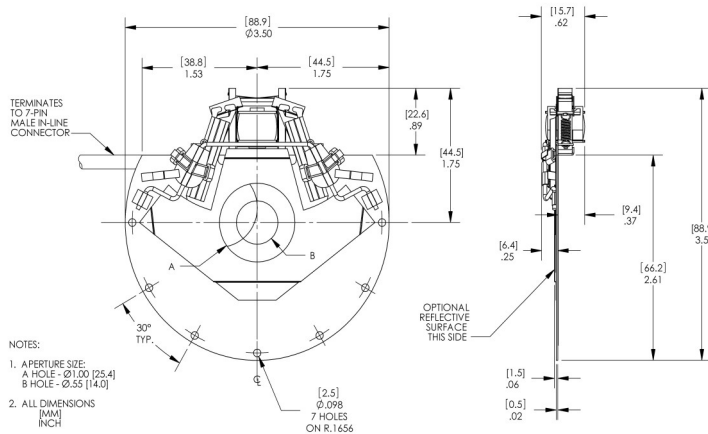


Fig. 4

Housed Style

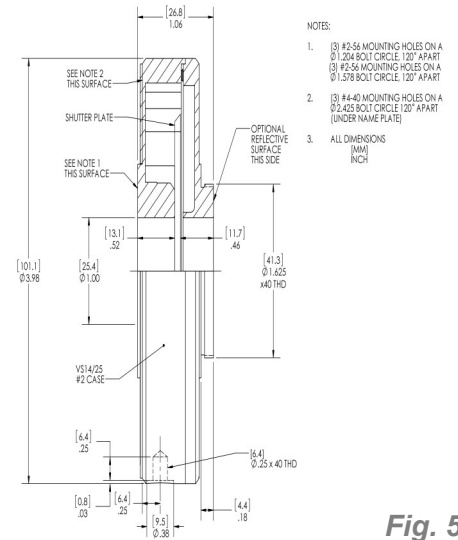


Fig. 5

Drawings of the device in its normally open configuration are available under the 'Downloads' tab on our website.

Housing/Connector Layout

Fig. 6 illustrates the 7-pin connector and 1/4-20 threaded hole layout for the VS14/25 series #2 case style.

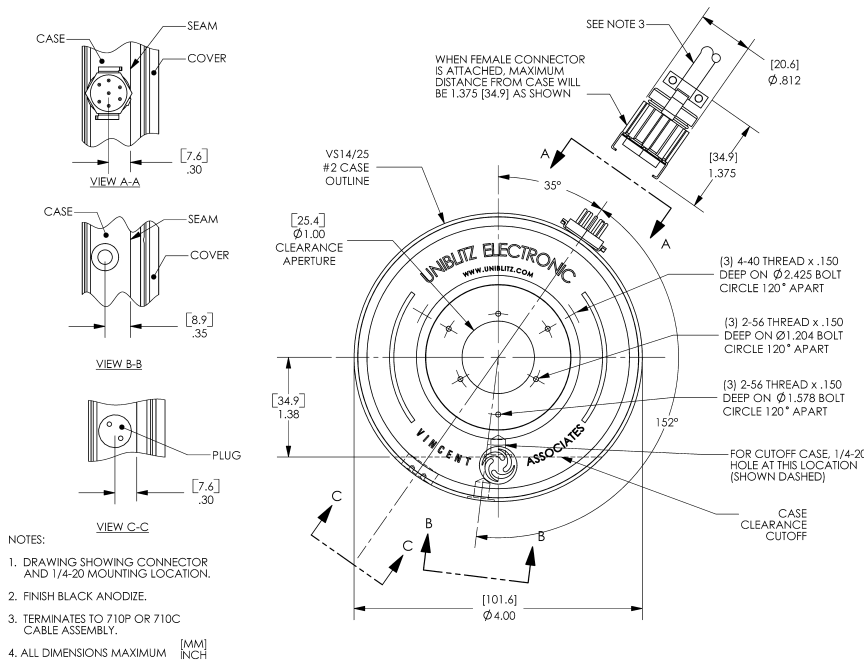


Fig. 6

Optical Blade Finish

SHUTTER SERIES	ULTRAVIOLET .3-.4µm (microns)		VISIBLE .4-.75µm (microns)		INFRARED .75-10.6µm (microns)	
	(Z) AISiO	(ZM) AlMgF ₂	(Z) AISiO	(ZM) AlMgF ₂	(Z) AISiO	(ZM) AlMgF ₂
VS14	N/A	5 W/mm ²	10 W/mm ²	5 W/mm ²	10 W/mm ²	5 W/mm ²

Blade Samples are available upon request.

For reflectance graph, please visit <http://www.uniblitz.com/optical-shutters-comparison-chart.aspx>

Product Options

Part Number: **VS14S**          

Example Part Number:
VS14S2ZM0R3-HS-EC-NL-100

<p>1 Aperture Size\Type: VS14S: 14mm (Normally Closed) VS14E: 14mm (For use with D880C Driver) VSR14S: 14mm (Normally open)⁴ VSR14E: 14mm (Normally open, for use with D880C Driver)⁴</p>	<p>2 Housing: 1: Un-housed 2: #2 Housing</p> <p>4 Electronic Sync: 0: Omit Sync. 1: Electronic Sync. Included</p>	<p>3 Blade Finish:³ T: Teflon® Coated S.S. Blades ZM: AlMgF₂ Coated BeCu Blades¹ Z: AISiO Coated BeCu Blades¹</p>
<p>5 18" Flying Leads: L: 18 Inch Flying Leads Included² <ul style="list-style-type: none"> ▪ For un-housed devices only ▪ Leave blank if not required </p>	<p>6 High Temp Mod: R3: High Temp. Modification² <ul style="list-style-type: none"> ▪ Leave blank if not required </p>	<p>7 Heat Sink: HS: Actuator coil heat sink² <ul style="list-style-type: none"> ▪ Leave blank if not required ▪ Optional for an un-housed device ▪ Included with #2 Housing—no designation required </p>
<p>8 Encapsulated Coil EC: Encapsulated Coil Included² (For use with vacuum) <ul style="list-style-type: none"> ▪ Leave blank if not required </p>	<p>9 RoHS Compliant Version: NL: RoHS Compliant² <ul style="list-style-type: none"> ▪ Leave blank if not required </p>	
<p>10 Mounting Options (by type, #2 Housing Required): <ul style="list-style-type: none"> • Leave blank if not required • 17: VS14/25 F-C Video Adapter • 21: Zeiss Axiovert Type • 22: Nikon SBX Type • 23: Olympus BH/IMT Type • 24: Olympus BX/IX Type • 26: Leica Type • 27: Nikon Type • 28: Olympus IX Transmitted Type • 29: Nikon TE Type • 30: Leica DM/DMIR/DMIRB Type • 31: Nikon Confocal Type • 32: Nikon 80i Type • 100: Mounting Ring • 105: C-Mount Adapter (Male) • 106: C-Mount Adapter (Female) • 110: T-Mount Adapter </p>		

¹ Input side only, Teflon® coating is on opposite side. Intended to protect the shutter blade surface, light source must be input to the reflective side only.

² Please visit our website for more information regarding this option.

³ Other blade options are available through special order.

⁴ If #2 Housing is selected, modification to housing is required.

For information regarding applicable intellectual property, please visit www.uniblitz.com/company-info/patents.

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