Uniblitz® FS6

6mm Uni-Stable Laser Shutter

Overview

The Uniblitz FS series shutters are designed and optimized to operate directly from +5VDC and do not require a separate driver. Removing the +5VDC (0VDC) closes these shutters. A simple control circuit can be used to operate these shutter devices from a TTL trigger pulse. This control can be also accomplished with our new **VLM1 TTL control interface module**, which is now available.

This low-cost innovation provides the reliability of Uniblitz shutters (typical lifetime >1 million cycles) at a single operating voltage.

Key Features

- 6mm aperture
- Default closed operation
- **RoHS Compliant**
- Transfer time on opening: 3.3 milliseconds
- Transfer time on closing: 6.0 milliseconds

Specifications

Electrical Specifications

Coil resistance	12 OHMS
Voltage to Open	+5 VDC at 425 mA
Hold Voltage	+5 VDC

Mechanical Specifications

Weight Unhoused	25.7 g
Weight Half-Housed	59.5 g
Weight Housed	94.5 g
Operating Temp.	-40 - +65 C
Max. Opening Bounce	15%
Max. Closing Bounce	5%
Max. Freq. of Operation [1]	50 Hz
Number of Shutter Blades	1

[1] (Continuous/Burst) Continuous frequency rating specified at shutter's minimum exposure time (MET).

VINCENT ASSOCIATES

Need Support? Please visit our website or email us at **info@uniblitz.com**.
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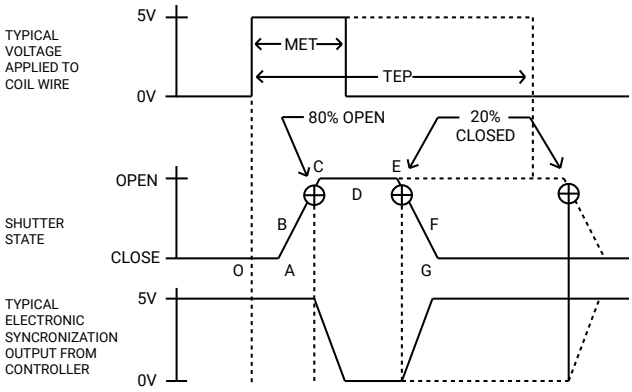
Uniblitz® FS6

Shutter Timing Data



[1] *Under no circumstances should any type of lubricant be applied to the shutter blade area. Lubricating the shutter blades will likely slow the shutter down and may eventually render it inoperable.*

FS6 (w/ 5VDC and "T" blades) [1]		Time (msec.)
O - A	Delay time on opening after current applied	5.2
A - C	Transfer time on opening	3.3
O - C	Total opening time	8.5
C - E	Min. dwell time with min. input pulse	3.7
B - F	Min. eqivalent exp. time	8.4
D - E	Delay time on closing after current removed	2.2
E - G	Transfer time on closing	6.0
A - G	Total window time	13.0
MET	Min. exposure time	10.0
TEP	Typical exposure pulse	12.0

Product Options

FS6 ❷❸❹❺❻ - ❼ Ex: FS6S2Z0L-EC

❶ Shutter Series:

FS6: Normally Closed

FSR6: Normally Open

❷ Voltage:

S: Standard 5 VDC

❸ Housing: [2]

1: Un-Housed

2: Half-Housed

3: Fully-Housed

❹ Blades: [3]

T: Low Energy (Teflon®)

ZM: Laser Energy (AlMgF2)[4]

Z: Laser Energy (AlSiO) [4]

❺ Electronic Sync:

0: Omitted

1: Included

❻ Connector:

L: 18" Flying Leads

❼ Encapsulated Coil:

EC: Included [5]

Leave blank if not required

[2] *Various mounting methods available depending on housing option.*

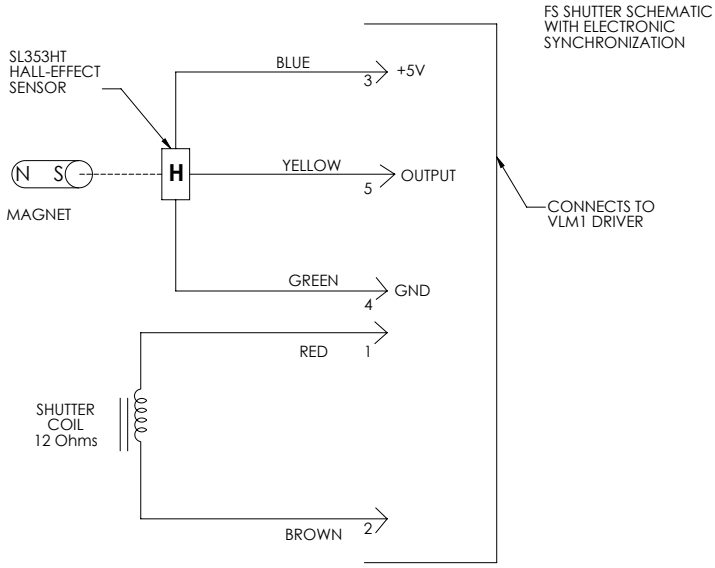
[3] *Other blade coating options may be available by special order.*

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

[5] *Vacuum compatibility up to 10E-10 Torr.*

Electronic Sync.

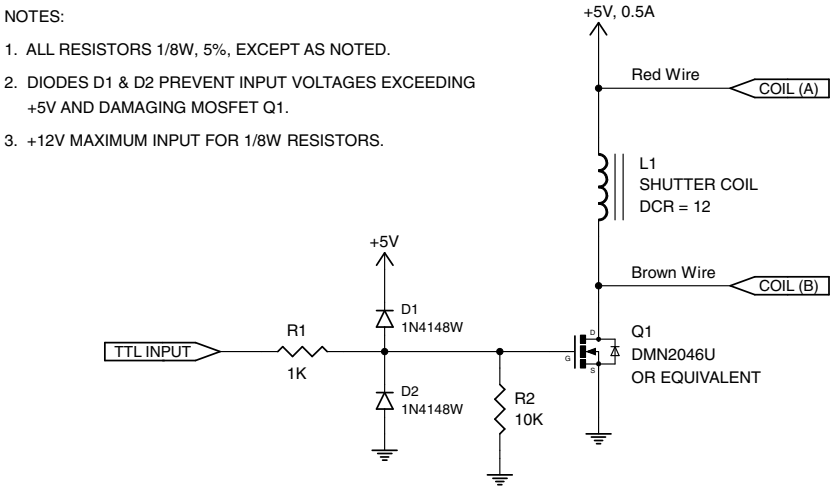
The synchronization system for FS shutter devices incorporates a small magnet mounted to the driving mechanism and a Hall effect sensor. When the device achieves approximately 80% of full open, the magnet causes the Hall effect sensor to change state, producing a signal to indicate that the shutter has switched to the active state. Shown to the left is the FS series shutter schematic which incorporates the electronic synchronization system. There is no connection to the designated synchronization pins when an electronic sync. is not selected.



Typical Control Circuit

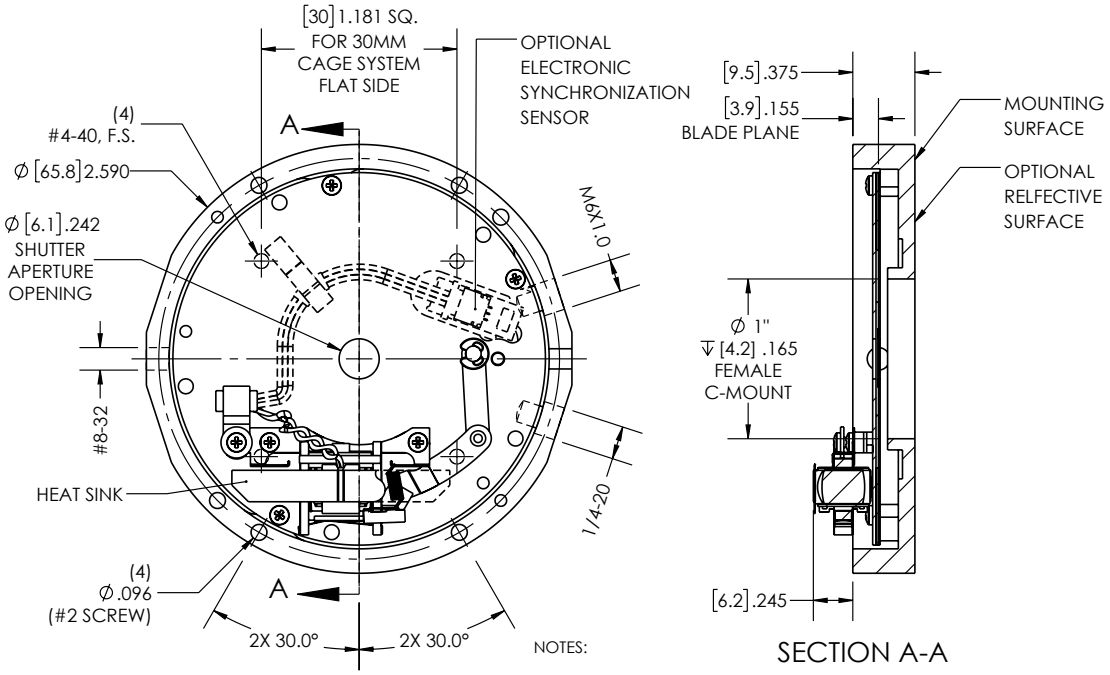
This simple control circuit to the right can be used to operate the shutter device from a TTL trigger pulse.[1] This control can also be accomplished with the **VLM1 interface module.**

[1] Note that the shutter will not operate directly from a TTL signal.



Uniblitz® FS6 Technical Drawings

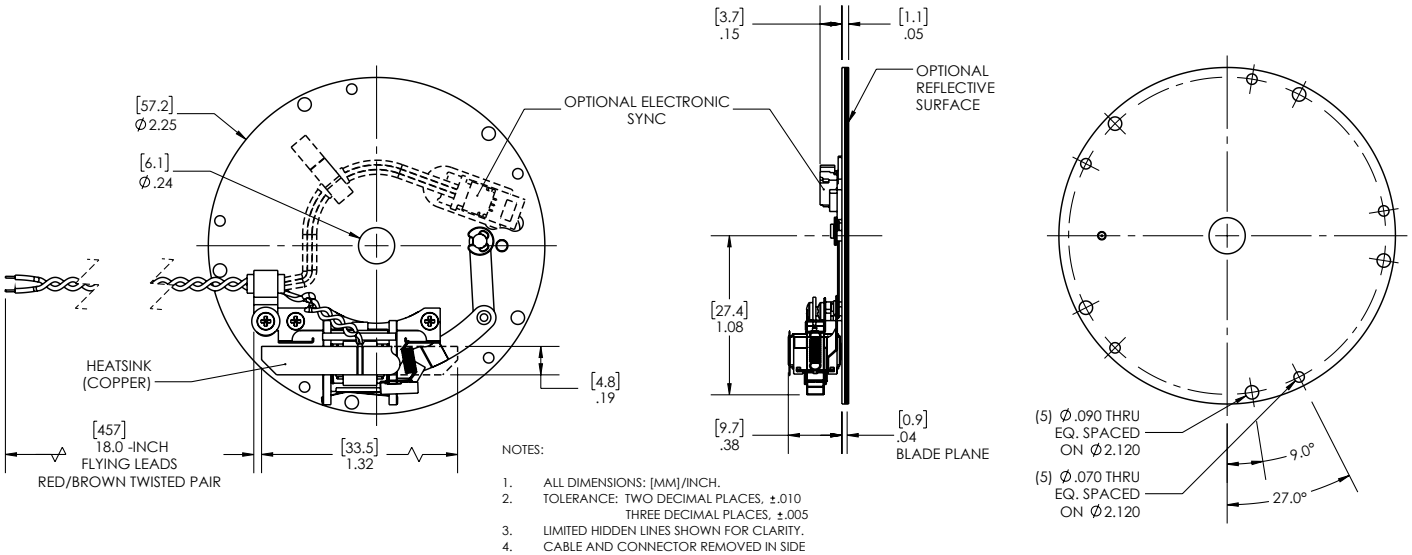
Half-Housing - FS6S2T0L



NOTES:

1. UNITS: [MM] INCH.
2. LIMITED HIDDEN LINES SHOWN FOR CLARITY.
3. LEADS WIRES REMOVED FOR CLARITY.

Un-Housed - FS6S1T0L

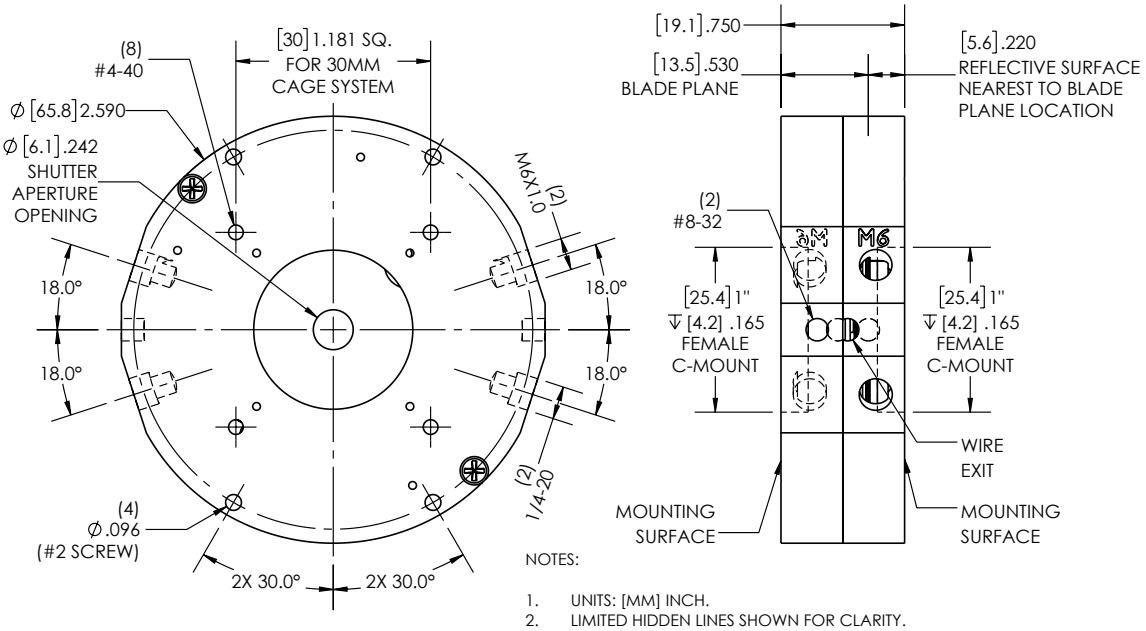


NOTES:

1. ALL DIMENSIONS: [MM]/INCH.
2. TOLERANCE: TWO DECIMAL PLACES, ±.010
   THREE DECIMAL PLACES, ±.005
3. LIMITED HIDDEN LINES SHOWN FOR CLARITY.
4. CABLE AND CONNECTOR REMOVED IN SIDE
   VIEW FOR CLARITY.

Uniblitz® FS6 Technical Drawings

Full-Housing - FS6S3T0L



NOTES:

1. UNITS: [MM] INCH.
2. LIMITED HIDDEN LINES SHOWN FOR CLARITY.
3. OPTIONAL REFLECTIVE SURFACE OPPOSITE ACTUATOR COIL SIDE.