

## GETTING HELP

Visit the Support section of our website at [www.burk.com/support/](http://www.burk.com/support/) for troubleshooting tips, documentation and downloads. If you still need help, please contact Burk Technology Customer Support:

Phone: 978-486-3711  
Web: [www.burk.com](http://www.burk.com)  
Email: [support@burk.com](mailto:support@burk.com)

For sales assistance, please contact the sales department toll free at 800-255-8090, or email [sales@burk.com](mailto:sales@burk.com).

# AFD-1 Arc & Flame Detector

**BURK**  
TECHNOLOGY

## User Guide

The Burk Technology AFD-1 is designed to detect electrical arcs and flame that are visible to the sensor. When integrated into a remote monitoring and control system, the AFD-1 can alert personnel so that corrective action may be taken.

### IMPORTANT!

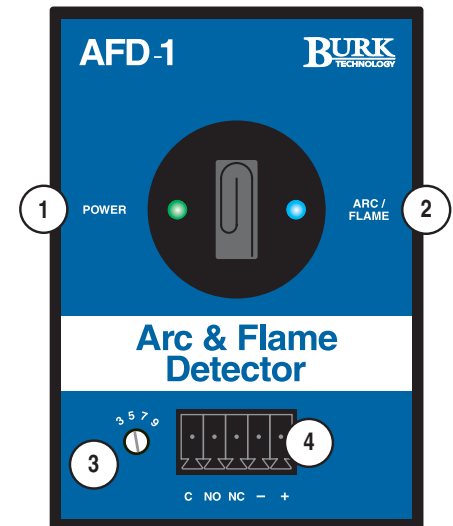
THE AFD-1 IS NOT INTENDED TO REPLACE PROPERLY INSTALLED SMOKE & FIRE DETECTION EQUIPMENT, SOUND ELECTRICAL WIRING, OR PROPER FACILITY INSPECTION AND MAINTENANCE.

## INDICATORS & CONNECTORS

A green LED (1) illuminates when the unit is powered. A blue LED (2) illuminates when an arc or flame is detected.

The white selector switch (3) is used to configure the background canceling level.

The 5-pin Phoenix connector (4) is used to apply 6VDC power to the unit and to provide a contact closure (or opening) upon detection of an arc or flame.



## INSTALLATION

An industrial strength adhesive Velcro square is provided for convenient mounting on any clean, smooth, dry surface without drilling holes. This allows mounting the unit on a wall or ceiling, in cabinets, within equipment enclosures, etc. Choose an unobstructed location that provides line of sight between the AFD-1 and the location to be monitored.

*Note: Detection range diminishes as the angle between the arc/flame and the sensor is increased.*

### AFD-1 USER GUIDE

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## CONNECTING TO EXTERNAL EQUIPMENT

Connecting an alerting device or remote monitoring equipment to the AFD-1 allows the AFD-1 to signal the equipment upon detection of arc or flame, or to signal the equipment in the event a flame is extinguished. Wiring is directed to the proper terminals on the provided push-on block, and secured into place with the built-in screws before attaching the connector to receiving pins on the AFD-1.

If you want the AFD-1 to provide positive indication upon detection of arc or flame, use the C and NO pair when wiring the AFD-1 to external equipment. The relay will activate when an arc or flame is detected. The relay will remain closed and the blue LED will illuminate for at least two seconds, or the duration of the arc or flame event, whichever is longer.

If you want the AFD-1 to provide a positive indication when a normally continuous flame (i.e. a pilot light) is extinguished, use the C and NC pair when wiring the AFD-1 to external equipment. The relay will remain open as long as a flame is present, and will close when it is extinguished. The blue LED on the AFD-1 will illuminate until the flame is no longer detected. Note that removing power from the AFD-1 while in the C/NC configuration will also trigger the alerting equipment.

## POWERING THE UNIT

The external wall adapter provides 6VDC to the AFD-1. The leads from the power adapter are pre-wired to the (+) and (-) inputs on Phoenix connector. Plug the wall adapter into a properly grounded 120VAC electrical outlet. The green power LED illuminates continuously while power is applied.

## BACKGROUND CANCELING

A background canceling feature allows the AFD-1 to ignore events such as a brief arc created when an electrical load is switched. Background canceling can be adjusted by rotating the selector switch to 3, 5, 7, or 9 with the power removed. The setting marked 3 provides the least amount of background canceling and the setting marked 9 provides the most. Reapply power after changing the switch position.

## MAINTENANCE

While the AFD-1 is virtually maintenance free, users are encouraged to check the operation of the AFD-1 periodically. Operating a butane lighter is the simplest way to verify operation. When you create a source of arc or flame for testing purposes, watch for the blue LED indicator. Depending on the level of background canceling you have configured, you may need to maintain the flame for several seconds before the LED will illuminate.

If the AFD-1 does not detect the flame, first make sure that there is clear line of sight between the sensor and the arc or flame source, and that the source is within the specified range. In addition, dust, debris, grease, etc. allowed to accumulate on the sensor lens will reduce the effectiveness of the AFD-1.

## SPECIFICATIONS

**Dimensions (LxWxD):**  
3.51" x 2.52" x 1.28"  
(8.92 cm x 6.4 cm x 3.26 cm)

**Operating Temperature:**  
0-50°C (32-122°F)

**Max Detection Range:**  
15 ft. (unobstructed line of sight)

**Relay Output:**  
Form C contacts; 1A at 120VAC; 2A at 30 VDC

**Power Supply:**  
External wall adapter (included)

## WARRANTY

Burk Technology, Inc. warrants the AFD-1 to be free of defects in materials and workmanship for a period of 24 months from the date of purchase. Equipment will be repaired or replaced at the option of Burk Technology and returned freight prepaid to the customer. Damage due to abuse or improper operation or installation of the equipment or caused by fire or flood or harsh environment is not to be covered by this warranty. Damage in shipping is not the responsibility of Burk Technology. A return authorization must be obtained before returning any equipment. Materials returned under this warranty must be shipped freight prepaid and insured in the original shipping carton or suitable substitute to Burk Technology, Inc., 7 Beaver Brook Road, Littleton, MA 01460. Repairs not covered under this warranty will be made at prevailing shop rates established by Burk Technology.

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