

Photo Cell Flame Detector

Part Numbers: 5963001, 5963002, 5963003, 5963004, 5963005, & 5963006

Description

The Beckett Flame Detector (cad cell) is a photoconductive flame detector used with Beckett Control Model 7505 and Honeywell Models R4166, R4184, R7184, R8182, R8184, R8185, R8404, and R8991. It consists of a plug-in, light-sensitive cell and a socket which is wired to the control's cad cell input terminals. The detector is installed inside the housing of the burner where the cell has a direct line of sight to the flame.

The photocell flame detector is a light sensitive device. In the absence of light, a high resistance exists across the cad cell. In the presence of light, the cad cell resistance is low.



WARNING

Professional Service Required



Incorrect installation or misuse of this detector could result in severe personal injury, death, or substantial property damage from heavy smoke, explosion or fire.

Please read and understand the manual supplied with the burner. This detector must be installed, adjusted and put into operation only by a qualified individual or service agency that is:

- Licensed or certified to install and provide technical service to oil heating systems.
- Experienced with all applicable codes, standards and ordinances.
- Responsible for the correct installation and commission of this equipment.
- Skilled in the adjustment of oil burners using combustion test instruments.

The installation must strictly comply with all applicable codes, authorities having jurisdiction and the latest revision of the National Fire Protection Association Standard for the installation of Oil-burning Equipment, NFPA 31 (or CSA B139 and B140 in Canada).

Regulation by these authorities take precedence over the general instructions provided in this installation manual.

Installation

- Mount the cad cell as specified by the burner or equipment manufacturer. See appropriate burner and appliance manuals and instructions.
- Insure that the cad cell has a clear view of the flame.
- Insure that ambient light does not reach the cad cell.

Wiring



WARNING

Electrical Shock Hazard

Electrical shock can cause severe personal injury or death.

- Disconnect **ALL** electrical power to the appliance/burner circuit before installing or servicing this product.
- Perform all wiring in compliance with the National Electrical Code ANSI/NFPA 70 (Canada CSA C22.1).

- Make sure all appliance wiring complies with all local codes and ordinances.
- Referring to your burner manual, make all connections, including photo cell leads, to the terminals on the underside of the control.

Service and Replacement

Under normal operating conditions, the photo cell flame detector will not require cleaning. If a badly adjusted burner causes a heavy accumulation of dirt and soot on the cell surface, carefully wipe the cell surface to restore full view of the oil flame.

More Information On Back ►

Beckett

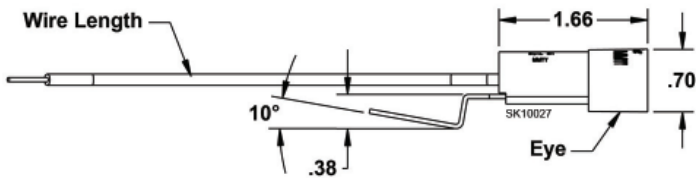
USA: R.W. Beckett Corporation • P.O. Box 1289 • Elyria, Ohio 44036
Canada: R.W. Beckett Canada, Ltd. • Unit #3, 430 Laird Road • Guelph, Ontario N1G 3X7
www.beckettcorp.com

Specifications

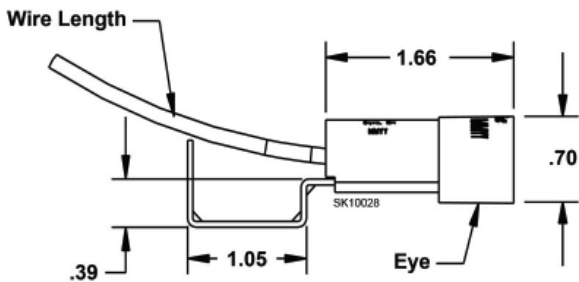
Beckett Model No.	Type	Wire Length
5963001	A	14.00" ± 0.5"
5963002	A	54.00" ± 0.5"
5963003	B	14.00" ± 0.5"
5963004	A	12.00" ± 0.5"
5963005	A	6.00" ± 0.5"
5963006	A	18.00" ± 0.5"

- Ambient temperature at the cad cell location should not exceed 140°F (60°C).

Cad Cell Type A



Cad Cell Type B



Cross Reference Chart

Beckett Model No.	Beckett Eye	Honeywell Model
5963001	596101	C554A 1687
5963002	596101	C554A 1893
5963003	596101	C554A 1844
5963004	596101	C554A 1919
5963005	596101	C554A 1935
5963006	596101	C554A 1943

Cad Cell Resistance Measurement:

For Beckett 7505 controls equipped with GeniSys Display Module, part 52067U, the cad cell resistance can be selected and read on the LCD screen.

Also, the GeniSys Contractor Tool, part 52082U, can be used for this purpose.

If these are not available, the resistance can be measured with a meter in the conventional way.

Flame Detection Range
Normal = 0 to 1600 ohms
Limited = 1600 ohms to lockout

To check the cell operation with an ohmmeter, perform the following:

1. Remove the cad cell leads.
2. Shortly after the burner starts, place a temporary jumper between the cad cell terminals.
3. Connect an ohmmeter across the cad cell lead wires. Resistance should be less than 1600 ohms.
4. Stop the burner and remove the temporary jumper.
5. With the burner off, check the dark cell resistance across the cad cell lead wires. Resistance should be greater than 20,000 ohms.
6. Reconnect the cad cell lead wires.

Safe Start Check

1. Place a jumper across the cad cell terminals.
2. Refer to the steps for "Starting the System" and have the system call for heat.
3. Burner must not start. On the GeniSys 7505 and the Honeywell R7184, verify that the green LED is on continuously and that the control remains in Standby mode.
4. End the call for heat and remove the cad cell jumper.