VIKING®

TECHNICAL DATA

FIRECYCLE® III DETECTOR/PLFA-FPL CABLE

1. PRODUCT NAME

Firecycle® III Detector Cable

- Available since 1997.

2. MANUFACTURED FOR

THE VIKING CORPORATION
210 N. Industrial Park Road
Hastings MI 49058 U.S.A.
Telephone: (269) 945-9501
(877) 384-5464
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3. PRODUCT DESCRIPTION

Firecycle® III Detector Cable is an industrial, high temperature, fire resistant Detector Cable designed for use in abusive environments. When properly installed in conduit, Firecycle® III Detector Cable meets the requirements for use as the electrical conductor in the Firecycle® III detection systems.

4. TECHNICAL DATA

UL LISTED: Power Limited Fire Protection Signaling Cable

MATERIALS

Conductor: See Table 1

Nominal resistance (single conductor): Per 1000 ft. (304.8 m) at 68 °F (20 °C) - See Table 1

Insulation: Silicone Rubber

Jacket: Thermoplastic zero halogen for use in steel conduit.

Note: Cable may be shipped with or without aluminum/polyester laminated tape shielding and/or drain wire. Shielding and/or drain wire does not affect approvals or operation of the cable.

Flame Temperature Rating: 1,742 °F (950 °C) direct flame for three hours.

Nominal (maximum) Cable Diameter: See Table 1

Approximate (maximum) weight: See Table 1

MODEL B DETECTOR ACCESSORIES

Porcelain wire nuts
Viking part number 04631A.

Firecycle® III detector box assembly.
Viking part number 04629A.

Aluminum and rubber straight watertight connector, Viking part number 04016A (For connecting aluminum clad Firecycle Cable to detector box. See splicing instructions, paragraph 10-B).

5. FEATURES

a. Fire resistant.

Part Number	No. of Conductors	AWG Size	Nominal Cable Diameter		Weight		Nominal Resistance Ohm/1000 ft
			Inches	MM	Lbs. / ft.	Kg / m	
09954	2	16	0.35	8,9	62.8 / 1000	28,5 / 305	4.1
11988	2	18	0.33	8,4	53.5 / 1000	24,3 / 305	6.5

Table 1

b. Non-toxic: No toxic or noxious fumes are emitted during a fire.
c. Will not propagate a flame.
d. Small size and light weight.
e. Can be cut to length in field.
f. Cable may be spliced, but all splices must be made in conduit box.

6. AVAILABILITY AND SERVICE

Firecycle® III Detector Cable is available through a network of domestic and international distributors. See the Yellow Pages of the telephone directory for the closest distributor (listed under "Sprinklers-Automatic-Fire") or contact The Viking Corporation directly.

7. GUARANTEES

For details of warranty, refer to Viking's current list price schedule or contact Viking directly.

8. MAINTENANCE

No maintenance is required except for annual testing of entire circuit.

9. INSTALLATION (Refer to Figure A)

1. The Firecycle® III detection circuit must:

a. Originate from the appropriate contact in the Firecycle® III Control Panel.
b. Connect all Firecycle® III Detectors in series. A two-conductor cable is required.
c. Terminate at the appropriate contact in the Firecycle® III Control Panel.
d. Comply with all applicable federal, state, and local codes and requirements.
e. The maximum circuit resistance must be less than 200 Ohms. Quantity of detectors and cable length determine wire size.

2. Firecycle® III Detectors must be located and installed according to instructions provided in Viking Technical Data for Model B or C-OH Detector.

a. Firecycle® III Detector Cable must be installed in steel conduit. Firecycle® III Detector boxes are equipped with ½" (15 mm) NPT threaded conduit connections.

3. Firecycle® III Detector Cable must be installed in steel conduit. When pulling Firecycle® III Detector Cable through conduit:

a. The pulling radius should be at least ten times the cable diameter.
b. The minimum training radius should be six times the cable diameter.
c. The maximum sidewall pressure should be 300 pounds per ft. of bend.
d. The maximum pulling tension allowed for a straight run is 41 pounds.
   1) Calculation is for a single two-conductor cable.
   2) Pulling tension applies when using pulling eyes.
e. Minimum installing temperature is 14 °F (-10 °C).
f. Use of non-liquid pulling lubricant, such as mica dust, is recommended.
g. The raceway must be clean, dry, free of rough edges. Use suitable bushings, and/or dropouts, as well as strain relief and cable ties (or other support) where appropriate.
h. Firecycle® III Detector Cable must be handled carefully.
i. Comply with applicable federal, state, and local codes.

4. To connect Firecycle® III Detectors in series: Refer to Figure A.

Firecycle® III Detectors must be connected in series into a continuous circuit of Firecycle® III Cable that originates and terminates at the Firecycle III Panel. After the cable has been pulled through the detector boxes, connect Firecycle® III Detectors to the cable.

Note: Units of measure in parentheses may be approximations.

Form No. F_051497

Replaces page 419 d-e dated April 1, 1999. (Added information regarding Firecycle Model C Detector and 18 AWG Cable).

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a. The detector probe must be threaded into the detector box cover. Follow instructions provided on Viking Technical Data describing Firecycle® III Model B or C-OH Detectors.
b. With the cover and probe assembly removed from the detector box, cut the Firecycle® III Detector Cable to allow connection of Firecycle® III Detector in series.
c. Slit and strip away enough cable jacket and shield (if present) to expose conductors.
d. Clip and remove drain wire (if present).
e. Strip approximately ½" (13 mm) of insulation from the ends of each conductor.
F. For Model B Detector use one porcelain wire connector (two provided with detector) to connect the ends of the two Firecycle® III Detector Cable conductors entering the detector box with either one of the two conductors from the detector probe.
For Model C Detector connect to provided terminal as described.
g. Use the remaining porcelain wire connector to connect the two ends of the Firecycle® III Detector Cable continuing out of the detector box with the unused conductor from the detector probe.
h. Install the detector box cover, with probe, onto the detector box, replacing and tightening all screws.
i. Repeat steps 4-a, through 4-h to connect each Firecycle® III Detector in series.

5. To connect the Firecycle® III Detector Cable to the appropriate contacts in the Firecycle® III Control Panel, refer to Viking Technical Data describing the Firecycle® III Control Panel.

10. SPLICING PROCEDURE

10-A. To splice Firecycle® III Detector Cable:

1. A junction box is required. Use either option a or b below.
   a. For Model B Detector use a detector box assembly (part number 04629A) with a ½" (15 mm) metal pipe plug (not included) installed in the ½" (15 mm) NPT threaded detector probe connection or,
   b. A steel electrical junction box with ½" (15 mm) NPT connections.
   c. For Model C-OH System install a standard octagonal approved electrical box and conduit.
2. Porcelain wire connectors are required. Use Viking part number 04631A.

Note: Firecycle® III Detector Cable must be installed in steel conduit threaded into the ½" NPT connections of the junction box used.

3. With the cover removed from junction box used, pull the ends of the two Firecycle® III Detector Cables to be spliced, into the open junction box.
4. Slit and strip away enough cable jacket and shield (if present) to expose conductors.
5. Clip and remove drain wire (if present).
6. Strip approximately ½" (13 mm) of insulation from the ends of each conductor.
7. Use the porcelain wire connectors to connect the wire leads of the detector probe to the Firecycle® III Cable conductors as shown in Figure A and described in steps “a” through “d” below.
   a. Twist the pair of Firecycle® III cable wires entering the junction box together with one of the wire leads from the detector probe.
   b. Secure the twisted wire connection by installing a porcelain wire connector.
   c. Twist the pair of Firecycle® III cable wires exiting the junction box together with the remaining (unused) wire lead from the detector probe.
   d. Secure the twisted wire connection by installing a porcelain wire connector.
8. Install the junction box cover, tightening all cover screws.
9. Verify that the Firecycle® III detection circuit complies with INSTALLATION paragraph 9 above.

10-B. To Splice Firecycle® III Detector Cable to existing aluminum sheathed Firecycle® III Detector Cable.

1. A detector box is required. Use either option a or b below.
   a. Use a detector box assembly (part number 04629A) with a ½" (15 mm) metal pipe plug (not included) installed in the ½" (15 mm) NPT threaded detector probe connection or,
   b. Make the connection inside the detector box of a Model B Firecycle® III Detector with probe.
2. Porcelain wire connectors are required. Use Viking part number 04631A (two are included with Model B Firecycle® III Detectors or may be ordered separately).
3. Refer to instructions provided in this technical data for splicing Firecycle® III Detector Cable and/or making connections to a Firecycle® III Detector probe.
4. Refer to instructions provided on Viking technical data describing aluminum sheathed Firecycle® III cable to connect Firecycle® III cable to detector box assembly and/or Firecycle® III detector probe.
5. Install the detector box cover and tighten all cover screws.
6. Verify that the Firecycle® III detection circuit complies with INSTALLATION paragraph 9 above.

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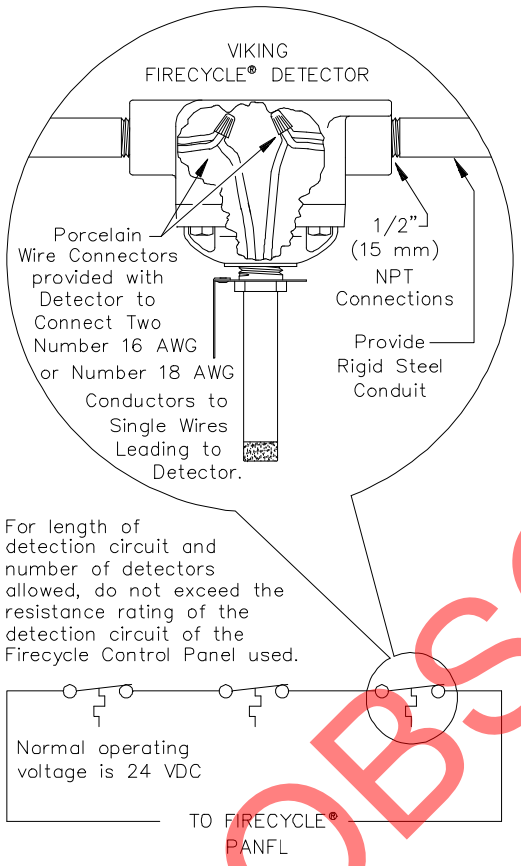

Figure A
Model B Detector Wiring Diagram

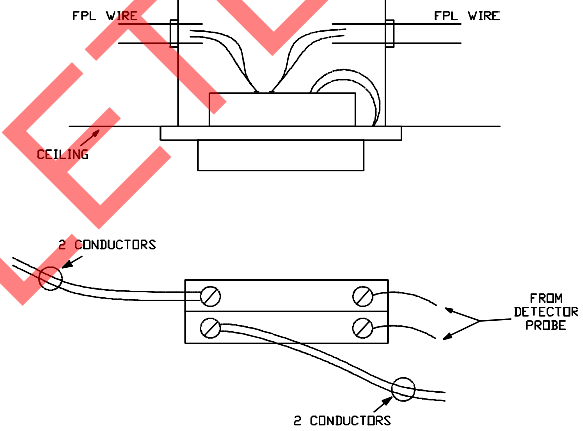

Figure B
Model C-OH Detector Wiring Diagram

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