AQUAworx by INFILTRATOR

External Disconnect Switches as an Alternative to Circuit Breakers

Technical Data Sheet

Circuit breakers are primarily designed to protect the electrical circuits from damage caused by power overloads or power short circuits. They are not designed to protect system components against lightning events or voltage surges. Due to the short length of this type of event, a fuse or varistor are better designed for this application.

Article 409 of the U.S. National Electric Code (NEC) is a standard for safe installation of electrical wiring and equipment for safe-guarding of persons and property from hazardous use of electricity. In keeping with this purpose, the power supply to an Aquaworx IPC Panel should be turned off when the panel is being serviced or repaired. Our interpretation of the code further tells us that the power disconnect should be located external to the pump controller.

SPECIFICATIONS

The external disconnect shall be located between the supply load-center (distribution panel) and the Aquaworx IPC Panel. It shall be installed outdoors, within hands-reach of the IPC Panel.

Aquaworx recommends the following external disconnect switch:

- Galvanized Steel Enclosure (8”H x 5”W x 3”D minimum)
- NEMA 3R Rated
- UL Listed
- Single Phase
- Eaton DPB222R or equal

NOTE: Infiltrator recommends that an external disconnect switch be installed in series with the control panel, so that the technician can safely disconnect power before beginning work on the panel.

ADVANTAGES OF AN EXTERNAL DISCONNECT

A safer alternative to an internal circuit breaker

The external disconnect attaches outside the IPC Panel allowing power to be shut off without entering the enclosure. When the disconnect switch is turned to the OFF position, there is no live power coming into the IPC enclosure. This eliminates the danger of working internal to the panel where arc-flash occurrences can be hazardous to the person or property.

Adding circuit breakers is redundant, adds unnecessary costs

All Aquaworx pump control panels require at least two dedicated 20 amp circuits with breakers from main distribution or sub-panel. If a 20 amp circuit breaker is both mounted internal to the control panel and in the main distribution, then the circuit breaker in the main distribution panel will trip first because of additional loading between the panel and main power supply.

Circuit breakers are not intended to be used as power On/Off switches

If circuit breakers are used to disconnect power, then the breaker must be rated as a disconnect. Otherwise the breaker can weaken and will not serve well as a circuit breaker. Observations of competitive control panels using circuit breakers have shown they are not typically rated to serve as disconnects.

INFILTRATOR® water technologies

4 Business Park Road | P.O. Box 768 | Old Saybrook, CT 06475 | 860-577-7000 | Fax 860-577-7001
1-800-221-4436 | **www.infiltratorwater.com**

R27 0613ISI

Contact Infiltrator Water Technologies’ Services Department for assistance at 1-800-221-4436