

FIRE PUMP CONTROL WIRING



DOES THE CONTROL CIRCUIT WIRING FOR A FIRE PUMP REQUIRE FIRE PROTECTION?

Yes. National Electrical Code (NFPA 70, 2014 Edition) Section 695.14 (A) (Control Circuit Failures) gives direction as to the importance of control circuits.

"695.14(A) Control Circuit Failures. External control circuits that extend outside the fire pump room shall be arranged so that failure of any external circuit (open or short circuit) shall not prevent the operation of a pump(s).... shall not prevent the controller(s) from starting the fire pump(s) due to causes other than these external control circuits. All control conductors within the fire pump room that are not fault tolerant shall be protected against physical damage."

Section 695.14(F) states:

"695.14(F) Generator Control Wiring Methods. Control conductors installed between the fire pump power transfer switch and the standby generator supplying the fire pump during normal power loss shall be kept entirely independent of all other wiring. They shall be protected to resist potential damage by fire or structural failure. They shall be permitted to be routed through a building(s) using one of the following methods: (1) Be encased in a minimum 50 mm (2 in.) of concrete. (2) Be protected by a fire-rated assembly listed to achieve a minimum fire rating of 2 hours and dedicated to the fire pump circuits. (2) Be a listed electrical circuit protective system with a minimum 2-hour fire rating. The installation shall comply with any restrictions provided in the listing of the electrical circuit protective system used."

In summary, the NEC allows embedding conductors in 50 mm (2 in) of concrete, or allows wiring to be "...within enclosed construction dedicated to the fire pump circuits and having a minimum 2-hour fire resistance rating..." or 2-hour Electrical Circuit Protective Systems.

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