

TECHNICAL REPORT 1027

Old “Blue” Pneumatic Control Panels

Kingspan Light + Air (UK & Ireland) Ltd. currently maintain electro-pneumatically controlled smoke ventilation equipment at over 2000 sites throughout the UK. Quite often we come across older type systems that were installed, in some cases, over 30 years ago. During this time there have been significant changes in Health and Safety Regulations and some of these changes concern The Electricity at Work Act, in particular the IEE 18th Edition Wiring regulations, concerning electrical installations.

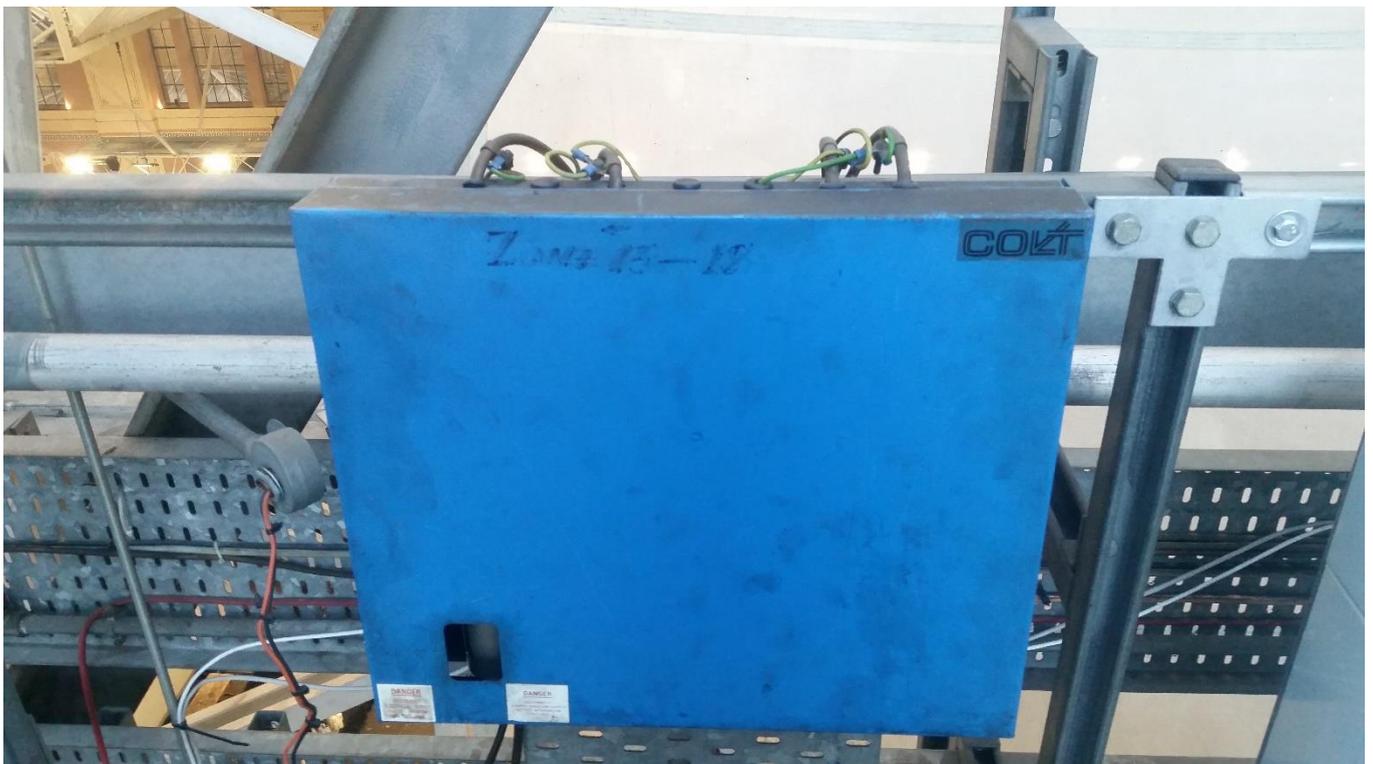


Figure 1 – Old “Blue” Vent Control Panel with cover fitted.

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We recently noted a potentially dangerous situation where vent control panels were operating at mains voltage, with no local means of isolation.



Figure 2 – Reasonably well maintained “Blue” Vent Control Panel with cover removed.

This control panel is shown with the cover removed, which is only held in place by 2 or 4 machine screws located on the sides of the panel. The control panel does not meet any current IP protection against dust and water ingress codes as are “modern” control panels. Once the cover is removed, the mains terminals are exposed and are not shielded in any way. The only way in which to safely work on this control panel is to isolate the 240V mains supply elsewhere. If a local switched fuse spur has been installed, then this is not an issue, as the panel could be isolated locally. However, our experience tells us that very rarely are such local isolating switches installed.

These control panels are, as was the custom many years ago, usually fed directly from a distribution board, which is not always identifiable and might not even be in the same room as the panel. These distribution boards are often of an older type, with BS88 cartridge fuses and no RCD protection. The possibility here is that a service or maintenance engineer may take the risk of working on the panel when it is live, with significant potential for electric shock injury.

The panel in figure 2, above, shows a reasonably well-maintained panel, but the panel in figure 3, below, encountered recently when Kingspan Light + Air Ltd took over the service contract at an older site, shows a far more dangerous example.

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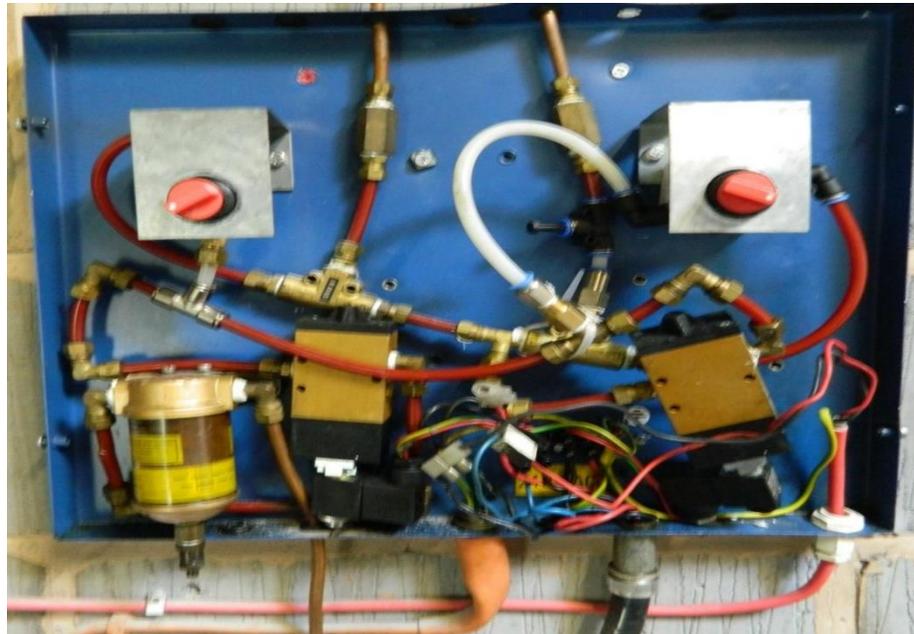


Figure 3 – Poorly maintained “Blue” Vent Control Panel with cover removed.

The potential for electric shock injury, if the panel is not isolated before working on it, is vastly increased with lack of previous maintenance. Further dangers on the panels above are the lack of pipework from the exhaust ports of the solenoid valves, and the tangle of cables and connectors untidily set out close to them. When compressed air is exhausted from the solenoid valves, there can often be small amounts of moisture released as a fine mist. This mist could condense on live terminals, possibly causing a short circuit to the control panel, valves or pipework. This could also potentially lead to a serious electric shock for anyone who touches it.

As a specialist Smoke Ventilation Installation and Service Provider, Kingspan Light + Air (UK & Ireland) Ltd. have a duty of care to our engineers and our clients; to point out that these panels are potentially dangerous and an “accident waiting to happen”.

Kingspan Light + Air (UK & Ireland) Ltd. suggest that as a minimum requirement, in order to protect people working on, or in close proximity to, these panels, and to conform with current legislation, that a local means of isolating these panels be fitted adjacent to the panel and that the electrical supplies feeding them are suitably protected and earthed.

This would suffice if the panel is maintained as in figure 1, with the inclusion of pipework from the solenoid valve exhaust ports. However, we must advise that these panels are now obsolete and dangerous, even with a local means of isolation. They should be condemned as dangerous and be replaced with a panel that conforms to current design standards and health and safety guidelines.

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