

SAFETY BULLETIN

Ref Document No.	SB26001	Issue No.	1
Subject	Camera System Short-Circuit Protection		
Release Date	18 th February 2026		

Purpose – To advise PPK Electrics camera/display owners and operators of a potential safety issue with the camera power circuit.

Applicability – All PPK Electrics display and camera systems installed prior to February 2026.

Background

The cameras are supplied power from a DC/DC converter in the display. This circuit does not latch in the event of a short circuit or overload fault. This may present a risk of fire or explosion.

The display/camera system is typically supplied with power from a flameproof alternator. The display utilises a switching power supply which powers the remote camera(s). This power supply provides galvanic isolation from the alternator circuit. The short circuit protection is thus provided by the DC/DC converter rather than the alternator.

Investigations/Findings

The converter limits output current to ≤ 1 Amp in the event of a short circuit condition on the output of the power supply. However, when a continuous short circuit is present the power supply does not stay open (i.e. latch off). In terms of risk evaluation, it should be noted that the:

- Circuits are Extra Low Voltage (12 Volts)
- Current is ≤ 1 Amp.
- Cables are terminated inside flameproof enclosures and should be installed as per relevant technical standards for underground coal mines.
- There are no other circuits present on the cabling.
- The cable should be installed in a location that is protected, adequately harnessed, supported, and separate from other circuits, energy sources, fuels, crush points and rotating machinery.
- The cabling used is significantly over-rated in terms of current carrying capacity.

Recommendations

It is recommended that fusing be installed on the camera power lines. Refer to circuit diagram in the appendix. The fuse characteristic should be suitably rated to ensure it opens in the event of an overload or short circuit. Typical camera load current is <70mA.

Please contact PPKME to arrange for supply of suitable fuses (kit P/N: HA116-658-24-1). This will be made available free of charge to existing customers.

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Appendix

CIRCUIT DIAGRAM

Showing upgraded short-circuit protection

