



Pulse-Campbell Channel

Wide-range nucleonic monitoring system

Features

- Complete measurement system
- Flux monitoring range 10 nv to 10¹¹nv
- Designed specifically for safety critical reactor protection duties
- Conservative analogue design
- Long in-service history across all UK nuclear power plants
- Modular industrial designs allow reconfiguration for varied form factors in demanding power plant environments
- Matching test equipment and through life support available

A part of Ultra Electronics Flux Instrumentation range, this monitoring channel has been designed to enhance and simplify reactor nucleonic control and instrumentation systems. The combination of a low power pulse mode with the wide range Campbell mode creates a complete measurement channel that is compact and reduces reactor penetrations.

The pulse-Campbell channel is made up of a wide range neutron flux detector with integral mineral insulated colaminax cable that connects to a remote pre-amplifier. This feeds the main pulse-Campbell measurement channel via appropriate superscreened cables and connectors.

The channel is designed to monitor and display neutron flux over a wide range from 5 counts per second to 5x10⁹ with an automated change from pulse mode to Campbell mode at a pre-determined level. This operating range allows a single channel to replace separate low and intermediate power flux instruments.

As with all the Ultra Electronics flux instrument range, the channel is configurable and can be supplied in a number of optional variants including high temperature detectors, waterproof detectors, and mechanically ruggedized versions.

Pulse-Campbell Channel

Pulse-Campbell Channel Specifications

High Temperature Variant

Detector

Model Number:	F226
Length, Width:	261 mm, 24 mm
MI Cable:	Colaminax
Max Temp:	550 °C
Max Pressure:	650 PSI
Neutron Range:	0 to 10^{11} nv
Expected Lifetime:	10^{19} nvt or 10 years at 550 °C

Integrated Cables

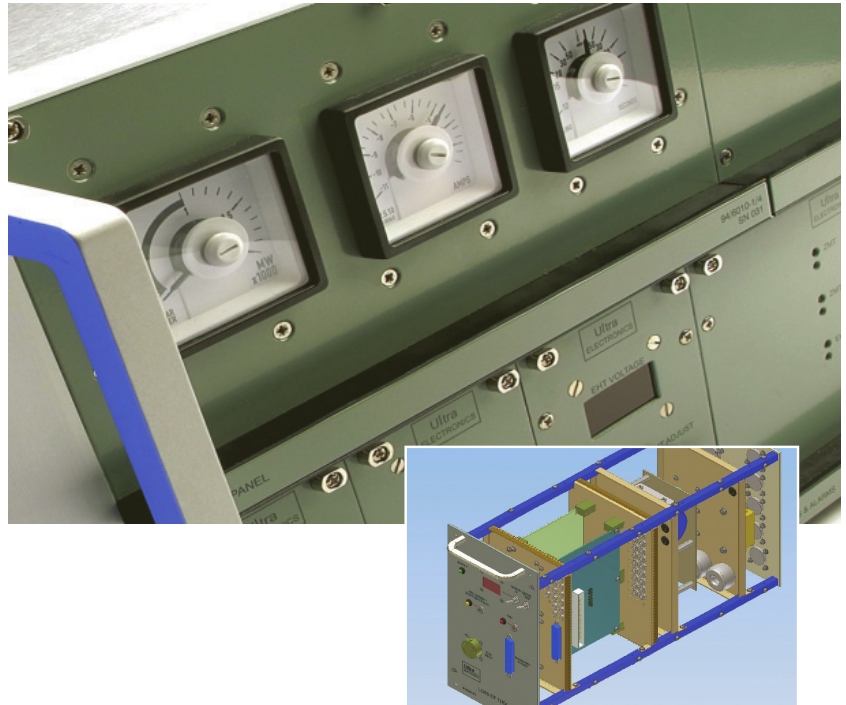
Number and Geometry:	1x Colaminax MI Cable
Impedance:	33 ohms
Cold End Termination (CET):	HNS
Length:	Up to 20 meters

Signal Cables

CET to Pre-amplifier:	MM17/33
Pre-amplifier to Electronic:	MM15/50

Flux Instrumentation

Preamplifier:	95-4936-1/4
Class:	Current / Fast
Gain:	45 db
Main Rack:	95-4935-1/4
Pulse-Mode Range:	100 nv to 10^6 nv
Campbell-Mode Range:	10^5 nv 10^{11} nv



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