

# ULTRA.

## Intermediate range neutron flux detectors

Reliable detectors  
designed for a long  
operating life



Maintaining the safety of nuclear facilities and  
maximising the lifetime value they deliver

## Intermediate range neutron flux detectors

### Key features

- Thermal neutron flux  $2.5 \times 10^2$  nv to  $2.5 \times 10^{10}$  nv
- +/-1% linearity with flux
- Operating temperature 135° Celsius
- 10 year operation
- Seismically tested
- Market leading mineral Insulated cable
- On-load testing and support

### Overview

Ultra Energy designs and manufactures a wide range of Neutron Flux Detectors (NFDs) for reactor safety systems, including those designed for equivalent 'fit form function' replacement of existing NFDs connected directly to your protection systems.

Our highly experienced design and technical specialists are based in our centre of manufacturing excellence for NFDs located within our principle site in the United Kingdom. This centre also provides single-site gamma and neutron generator testing, significantly reducing time to test, manufacture and deliver. Our design and manufacture capability are proven in the most difficult of environments, with our detectors having been operational in reactor cores for decades.

Whether it's supplying standard products or working together on updating a design to meet your needs, Ultra's collaborative approach to programmes and delivery will ensure you receive the systems you need, when you need them.

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## Specifications

<b>Type</b>	Boron coated
<b>Thermal neutron flux</b>	$2.5 \times 10^2$ nv to $2.5 \times 10^{10}$ nv
<b>Neutron sensitivity</b>	$7.6 \times 10^{-14}$ A/nv
<b>Operating gamma flux</b>	10 R/hr to $5 \times 10^5$ R/hr
<b>Operating voltage DC</b>	400 - 600V
<b>Linearity</b>	+/- 1% of flux
<b>Response time</b>	50ms (after 20% change in thermal neutron flux)
<b>Material</b>	Aluminium
<b>Cable</b>	Triaxial alumina mineral insulated
<b>Diameter</b>	Maximum 6 inches
<b>Length</b>	Up to 3 feet



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## About Ultra Energy

Organisations working with nuclear technologies have a responsibility to safeguard people, the environment and infrastructure. We provide solutions that give our customers complete, long-term protection and control of safety critical systems, while helping them increase the net value derived from nuclear facilities over their total lifespan.

Part of Ultra Group, Ultra Energy has worked with nuclear customers for over 60 years. We're embedded in strategic national infrastructure and helping organisations develop future nuclear applications. We support continuous operation of nuclear sites with protection and control solutions that monitor and manage factors such as radiation, neutrons, temperature and pressure within safety critical systems.

## United Kingdom

Innovation House  
Lancaster Road  
Ferndown Industrial Estate  
Wimborne  
Dorset BH21 7SQ  
UK

Tel: +44 (0) 1202 850 450

## United States of America

707 Jeffrey Way  
Round Rock  
Texas 78680-0300  
USA

Tel: +1 512-434-2800

## For more information

Web: [ultraelectronicsenergy.com](http://ultraelectronicsenergy.com)  
Email: [info@ultra-ncs.com](mailto:info@ultra-ncs.com)

