

# Neutron flux detectors power range

## Key features

- Startup to full power coverage
- Operating temperature 550°C
- 10 years operation
- Seismically tested
- Market leading mineral insulated cable
- On-load testing and support

## Overview

Curtiss-Wright 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, our collaborative approach to programmes and delivery will ensure you receive the systems you need, when you need them.

# Specifications

Type	Boron or uranium coated
Thermal neutron flux	$2.5 \times 10^2$ nv to $2.5 \times 10^{10}$ nv (DC and Campbell), $5 \times 10^1$ to $5 \times 10^5$ nv (Pulse)
Neutron sensitivity	$1 \times 10^{-14}$ to $3.5 \times 10^{-14}$ A/nv (DC), 0.01 to 0.1 cps/nv (Pulse), $1.5 \times 10^{-28}$ to $3.0 \times 10^{-27}$ A <sup>2</sup> /Hz/nv (Campbell)
Operating gamma flux	Up to $5 \times 10^5$ R/hr
Operating voltage DC	300 - 600V
Linearity	+/- 1% of flux
Response time	50ms (after 20% change in thermal neutron flux)
Material	Heat resistant austenitic stainless steel, titanium, nickel alloys, copper, alumina insulators
Cable	Up to 60 feet triaxial alumina or magnesia mineral insulated
Diameter	1 to 3 inches
Length	Typically 6 to 60 inches
External pressure	Up to 1000psi
Operation temp.	550° Celsius
Cable termination	Bulkhead penetrators with TNC/HN type connectors
Lifetime	$10^{19}$ nvt

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## About Curtiss-Wright

Curtiss-Wright Round Rock and Wimborne have worked with nuclear and industrial customers for over 60 years. We support customers across the world from facilities located in the US and UK. Our solutions are embedded in strategic national infrastructure and our people are active partners in customer programs that are focused on delivering advanced future nuclear and industrial capabilities.

Curtiss-Wright Corporation (NYSE: CW) is a global integrated business that provides highly engineered products, solutions and services mainly to Aerospace & Defense markets, as well as critical technologies in demanding commercial power, process and industrial markets. We leverage a workforce of approximately 8,600 highly skilled employees who develop, design and build what we believe are the best engineered solutions to the markets we serve. Building on the heritage of Glenn Curtiss and the Wright brothers, Curtiss-Wright has a long tradition of providing innovative solutions through trusted customer relationships.