

NEOPTIX® OFX-2



OmniFlex-2™ Temperature Measurement System

Field-upgradeable multi-channel fiber optic temperature measurement made simple

- Available with up to 104 channels
- 19-inch rack-mountable enclosure, for a maximum of 13 OmniModules (104 channels)
- Hot swappable slide-in OmniModules
- Easy to add more channels and features later
- Intuitive operation through touch display
- 3.5 inch color touch display (320 x 240 pixels)
- 6 GB logging memory
- Ethernet interface, with web server
- Accuracy of ± 1 °C
- Acquisition as fast as 0.1 second per channel
- Voltage or current analog outputs

Product Summary

Description: Multi-channel fully upgradeable Fiber Optic Temperature Monitoring system. Field upgradeable to as many as 104 channels. Can be controlled via flexible color touch screen and powerful webserver software. The Ethernet interface allows reliable and sizzling connection to any PC or MAC computers.

Application: For general purpose temperature measurements, where immunity to electromagnetic fields is required. Ideal for transformer heat runs, medical and high voltage applications, and other demanding industrial applications.



The Neoptix OmniFlex-2 system is a fully upgradeable, multi-channel fiber optic temperature monitoring system featuring up to 104 channels. It is designed with reliability, versatility and upgradeability in mind

Flexible rack mounted enclosure

The OFX-2 system starts with a standard 3U or 6U / 19-inch rackmount chassis that can accommodate up to thirteen multi-channel fiber optic OmniModules, providing up to 104 channels per system. Multiple chassis can easily be cascaded together using a simple Ethernet router. You can easily add modules yourself – just remove the blank panel at the location where you want to add the new OmniModule and slide the module into the chassis. Fasten the module in place and the software will automatically insure full module operability.



Wide range of modules to select from

The OmniFlex system allows using various types of modules in the same chassis. These modules can easily be swapped to match the needs of specific projects in your laboratory or testing facility. Measurement rates are up to 10 Hz per channel. Two parameters should dictate how you select your OmniModules: 1) Sampling speed and 2) Number of desired channels. Two chassis sizes are available: The 3U version can accommodate 6 OmniModules, while the 6U version can be fitted with a total of 13 OmniModules.

Local color display

A color LCD display on the CPU module allows performing some basic parameter settings. This touch display is also very useful to preview probe temperature data, as the data is acquired in real time.



Powerful yet simple web server software

The powerful web based software is the perfect companion to the OmniFlex system. Indeed, it offers a seamless interface to any PC or MAC computer. It allows for displaying all channels at once, and provides a versatile logging facility to files that are directly readable by Microsoft Excel. It also includes a module configurator that allows physical configuration of OmniModules with the software, with graphic capability, and more... Cascading multiple chassis together is also very simple: just use an Ethernet switch or router to add many chassis together. Using a common wireless router would even give you Wi-Fi connectivity!



Designed to address a large variety of applications

Since its introduction in 2006, OmniFlex systems have been used in aerospace applications, R&D applications going from food packaging research to cryogenic research, to medical and demanding industrial applications, and much more; it is the perfect tool to measure temperatures when strong electrical and/or magnetic fields are present. It has also been a tool of choice for monitoring temperatures during power transformer heatrun testing.

The ideal tool for monitoring during transformer heat run tests

The OmniFlex is the ideal tool for monitoring T2 probes during temperature rise tests. It gives the user a stable and consistent system to work with. No more quick learning of a new conditioner with the danger of missing the heat run test altogether! The OmniFlex allows you to work within a known environment, with guaranteed data consistency.

Now with an isolated Ethernet interface

As the OmniFlex is mostly used as a laboratory instrument, we have upgraded its interface to Ethernet 10/100BASE-T. While making it easier to interface to modern PC computers, it offers full electrical isolation between the PC and the OmniFlex chassis. This is particularly important when working with high power devices, which could cause ground loops and large potential differences between electrical apparatus. The web server software offers fast data transfers and removes need to install any software on your PC. An optional OmniModule offers 16 analog outputs, with 0-10 V or 4-20 mA outputs.

Accessories

Temperature probes

The OmniFlex is compatible with all Neoptix fiber optic probes, the T1, T2 and TX probes. These probes can be ordered in lengths of up to 1 kilometer



Fiber optic extension cables

These cables are made with a polyurethane jacket reinforced with Kevlar threads and are designed to withstand the harshest conditions. Available in many standard lengths; custom lengths are also available from 1 meter to 1 kilometer. The temperature range is -50 °C to +85 °C. Cables should be routed into protective conduits or tracks.



More accessories

Contact Neoptix to get information about the latest options and fiber optic accessories, such as optical feedthroughs, tank wall plates, junction and NEMA boxes, and so forth.



Specifications	Model name	OmniFlex-2 (OFX2)
	Number of channels per chassis	Up to 48 channels for the 3U chassis (or up to 24 direct channels) Up to 104 channels for the 6U chassis (or up to 52 direct channels)
	Number of modules per chassis	Up to 6 OmniModules for the 3U chassis Up to 13 OmniModules for the 6U chassis Note: If used, the analog output module will occupy one module space
	Data logging	6 GB memory, in Excel compatible files
	Upgradability	Slide-in OmniModules are hot swappable, and recognized automatically by the software.
Communication and I/O	Operating Mode	Built-in web server (based on Linux technology) Chassis includes 3.5 inch color touch display (QVGA, 320 x 240 pixels) for system configuration
	Communication (hardware)	Ethernet 10/100BASE-T (RJ45 connector) RS-485 isolated serial port, 5-position screw terminal block USB-2 type A
	Analog outputs	Requires optional OFX2-AOUT module (see next page) 0-10 V or 4-20 mA outputs (software selectable) Programmable span and zero, for each channel
Mechanical and Environmental	Operating temperature	-20 to +60 °C, 5-90% humidity, non-condensing
	Storage temperature	-30 to +80 °C, 5-90% humidity, non-condensing
	Light source	Light source lifespan and optimal system performance superior to 300 years of continuous use. No degradation of total system accuracy over light source lifespan
	Form factor	19 inch rack 3U or 6 U, rack-mountable
	Connectors	Optical: Standard ST connectors Ethernet: RJ45 Serial port and analog outputs: 3.81 mm pitch screw connectors USB: Type A
	Dimensions	3U chassis: Width: 483 (19 in) Depth: 170 Height: 180 mm 6U chassis: Width: 483 (19 in) Depth: 170 Height: 360 mm Weight: 3 to 8 kg, depending on the number of installed modules
Compliance	Dimensions	IEC 61000-4-2 ESD / IEC 61000-4-3 Radiated RFI IEC 61000-4-4 Burst / IEC 61000-4-5 Surge IEC 61000-4-6 Induced (Conducted) RFI / IEC 61000-4-11 Voltage dip FCC 47 CFR Part 15, Sub B ICES-003 Issue 4, Feb 2004
Power	Requirements	20 to 28 VDC (24 nominal). 2.5 A universal medical grade power supply included (input 100 to 240 VAC, 47-63 Hz)
	Consumption	Chassis 3U: Maximum 40 watts with all OmniModules installed Chassis 6U: Maximum 60 watts with all OmniModules installed
Other	Probe compatibility	Compatible with all Qualitrol / Neoptix GaAs fiber optic temperature probes
	Probe signal optimization	System has built-in Neoptix WTune™ probe optimization algorithm
Ordering Code	Chassis and CPU module	To order an operational system, it is required to order a chassis, a CPU module and OmniModules (see below) Chassis: OFX2-CHA3U or OFX2-CHA6U CPU module: OFX2-CPU
	OmniModules	OFX2-04, OFX2-08, OFX2-4D and OFX2-AOUT (see next page)



Available slide-in OmniModules:



Ordering code	OFX2-04	OFX2-08	OFX2-4D	OFX2-AOUT
Number of channels	4	8	4	
Sampling method	Multiplexing	Multiplexing	Direct	
Sampling Rate	250 milliseconds per channel		10 Hz per channel	1 Hz per channel
Display	Chassis touch color LCD			
Analog output	None	None	None	16 outputs 0-10 V and 4-20 mA Software selectable
Probe compatibility	All Neoptix probes			
Measuring range	-80 to + 300 °C			
Communication and I/O				
Operating Mode	Through Neoptix OmniFlex chassis			
Mechanical and Environmental				
Operating temperature	Same as chassis			
Storage temperature	Same as chassis			
Dimensions	Width: 51 mm; Height: 133 mm; Length: 165 mm			
Weight	450 gr	500 gr	750 gr	425 gr
Power				
Power requirement	20 to 28 VDC through chassis (nominal: 24 VDC)			
Consumption	2 watts	3 watts	5 watts	6 watts (max)

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