UMI Universal Multichannel Instrument

Industrial, Laboratories, Process, R&D

Key Features

- Compatible with all of Fabry-Pérot FISO's ST connectorized fiber optic sensors
- 4 or 8 channels
- ±5 V Analog Output
- RS-232 and USB communication ports
- Up to 20 Hz sampling rate
- Large VFD Display

The UMI is a tabletop, fiber optic signal conditioner especially designed to work with all of Fabry-Pérot FISO's fiber optic sensors. It is a general-purpose instrument ideally suited to perform multi-point temperature, pressure, strain stress, force, refractive index and displacement measurements in a myriad of industrial and R&D applications in hostile environments.

Applications

- Microwave food processing
- Packaging design
- Thermotherapy applications
- NMR / MRI environments
- Automotive
- Aerospace
- High temperature
- Multi-purpose laboratory applications
- *In-situ* process monitoring
- Civil engineering
- New material research
- Hazardous environments

Description

The UMI conditioner is designed to perform accurate multi-channel temperature, pressure, strain stress, force, refractive index, and displacement measurements. Thanks to its unique, patented technology, the UMI conditioner is capable of measuring the absolute cavity length of FISO's Fabry-Pérot fiber optic sensors with astonishing accuracy, providing highly accurate and reliable measurements. The UMI has a 0.01% full-scale resolution and a 0.025% full-scale precision. FISO's fiber optic sensors offer complete immunity to RF / EMI and microwave radiations with high temperature operating capability, intrinsic safety, and non-invasive use.

The UMI comes in a 4 or 8 channels version. All optical input channels are easily accessible through the unit's front panel. The system scans all the channels in use sequentially with a switching time of 0.15 seconds. It reads each discrete channel at a 20 Hz sampling rate. Data is stored in the internal memory buffer for later retrieval or sent directly to any analog input signal reading device through the ±5 V adjustable analog output available for each channel on the back panel.

A unique gauge factor assigned to each sensor allows the UMI conditioner to recognize automatically the sensor type and calibration, reducing test setup time. The UMI conditioner has a non-volatile memory buffer that can store up to 50 000 data points. Data logging sequences, duration, and other acquisition and data management parameters are easily programmable using the front-panel interface, through remote control commands or, even more easily, thanks to its accompanying software, *FISO Commander*.

NOVA METRIX

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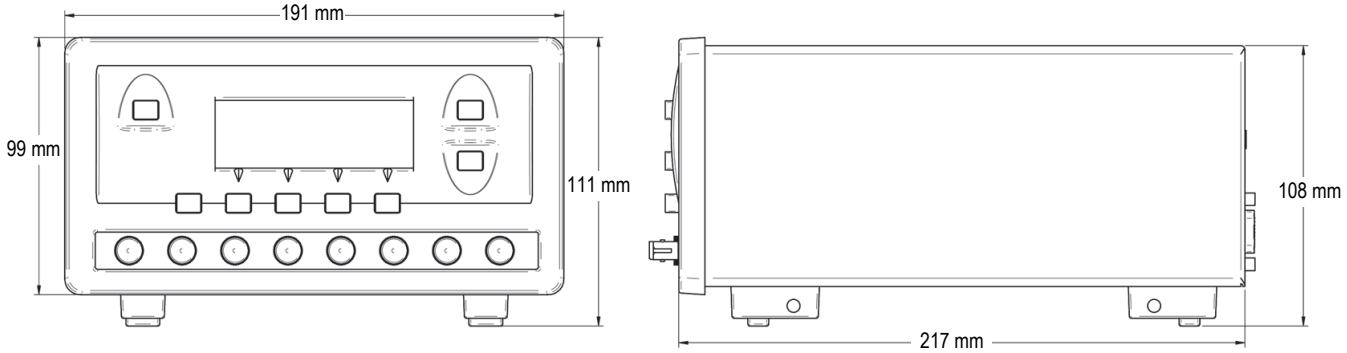
Dimensions



Specifications

Channels	4 or 8	**Analog outputs**	±5 V software adjustable in scale and offset
Sampling rate	20 Hz	**Communication**	RS-232; USB
Switching time	150 ms	**Upgradeability**	Flash ROM firmware
Averaging	1 to 500 samples	**Lamp life**[1]	40 000 hours of continuous use
Precision	0.025% of full scale	**Weight**	2.2 kg
Resolution	0.01% of full scale	**Dimensions (W × D × H)**	191 × 217 × 111 mm
Dynamic range	15 000 : 1	**Power requirements**	10 to 20 Volts DC (5 Watts) (wallmount adapter included)
Data logging	50 000 data points		
Display	4 lines by 20 characters Vacuum Fluorescent Display	**Operating temperature**	−20°C to 40°C

1. Lamp is replaceable

Ordering information

UMI-4: 4-channel fiber optic signal conditioner; 20 Hz sampling rate; 150 ms switching time between each channel; precision of 0.025% of FS, resolution of 0.01% of FS, dynamic range of 15 000:1; built-in 50 000 points datalogging; RS-232 and USB communication port; ± 5 Volts output; 1/2 DIN enclosure; AC/DC adapter included.

UMI-8: 8-channel fiber optic signal conditioner; 20 Hz sampling rate; 150 ms switching time between channel; precision of 0.025% of FS; resolution of 0.01% of FS; dynamic range of 15 000:1; built-in 50 000 points datalogging; RS-232 communication ports and USB; ± 5 Volts output; 1/2 DIN enclosure; AC/DC adapter included.

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