

# PRODUCT DATASHEET

## UMI Universal Multichannel Instrument



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

The UMI conditioner is designed to perform accurate multi-channel temperature, pressure, strain, 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-Perot 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 and microwave radiation with high temperature operating capability, intrinsic safety, and non-invasive use.

The UMI comes in a 4-channel or in an 8-channel 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 can also read on a 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  $\pm 5$  V adjustable analog output available for each channel on the back panel of the UMI unit.

A seven-digit 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, FISOCOMMANDER. Moreover, its Flash ROM allows firmware upgrades.

### Key Features

- 4 or 8 channels
- $\pm 5$  V Analog output
- RS-232 and USB communication ports
- Up to 20 Hz sampling rate
- Large VFD Display
- Compatible with all of FISO's fiber optic sensors

### Applications

- Microwave food processing
- Microwave packaging design
- Thermotherapy applications
- NMR
- Automotive
- Aerospace
- High temperature displacement measurement
- Multi-purpose laboratory applications
- In-situ process monitoring
- Civil engineering
- New material research
- Hazardous environments

## Specifications

<b>Number of channels</b>	4 or 8
<b>Sampling rate</b>	20 Hz
<b>Switching time</b>	150 ms
<b>Averaging</b>	1 to 500 samples
<b>Precision</b>	0.025% of full scale
<b>Resolution</b>	0.01% of full scale
<b>Dynamic range</b>	15 000 : 1
<b>Display</b>	4 lines by 20 characters Vacuum Fluorescent Display
<b>Data logging</b>	50 000 data points
<b>Analog outputs</b>	±5 V software adjustable in scale and offset
<b>Communication</b>	RS-232; USB
<b>Upgradeability</b>	Flash ROM firmware
<b>Lamp life<sup>1</sup></b>	40 000 hours of continuous use
<b>Weight</b>	2.2 kg (4.9 lb)
<b>Dimensions (W × D × H)</b>	191 × 217 × 99 mm (7.2 × 8.5 × 3.9 in)
<b>Power requirements</b>	10 to 20 Volts (5 Watts)
<b>Operating temperature</b>	-20°C to 40°C (-4°F to 104°F)

1. Lamp is replaceable.

## UMI Dimensions

