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UMI-8 Signal Conditioner for Fiber Optic Transducers

Manufacturer's Information

Manufacturer: FISO Technologies Inc.
500, Av. St-Jean-Baptiste Bureau 195
Quebec, Canada, G2E 5R9
(418) 688-8065

Serial Number: 03U4.2033
Manufacturer's Designation: UMI Signal Conditioner
Number of Units: 1
Location: Concrete Lab

Description

Purpose:

- Capable of multi-channel readings of fiber optic sensors measuring; pressure, displacement, strain, and load.
- Capable of making readings independent of any external noise.
- Can store up to fifty thousand data points within its internal memory.
- Serves as a quick and easy measurement output device for the fiber optic transducers.

Special Information
Safety Precautions:
Fiber Optic Signal Conditioner UMI_Special.doc

Specifications

Fiber Optic Signal Conditioner UMI_Spec.doc

Diagnostic:

Purpose: To check the performance of the conditioner as well as the transducers plugged into the conditioner.

Procedure:
Follow the steps below to reach the diagnostic menu:

ESC/MENU → SYST → DIAG

By following the chart below you can evaluate your system:

Diagnostic:	**Defective**	**Poor**	**Normal**

Light	< .4 V	.4-1.0V	>1.0V
Signal	< .3 V	.3-1.5V	>1.5V

Memory 0-100% of Memory in Use

If found defective, test a different channel to see if defective element is conditioner or the sensor.

* If found that conditioner is defective contact FISO technical support.

Operating Procedures:

Fiber Optic Signal Conditioner_operate.doc

Manufacturer's websites:

FISO Home Page: http://www.fiso.com/english/index.php
UMI-8 Documentation: http://www.fiso.com/pdf.php?id=39

Fiber Optic Signal Conditioner

Specifications

Sampling Rate:	20Hz
Switching Time:	50ms
Averaging:	1 to 500 samples
Precision:	.025% of full scale
Resolution:	.01% of full scale
Operating Mode:	Direct (front panel) or through RS-232
Data Logging:	50,000 samples
Analog Outputs:	± 10 Volts
Light Life Expectancy:	40,000 hours of continuous use
Weight:	2 kg
Power Requirements:	10 to 14 volts
Operating Temperature:	-20 to 40 degrees Celsius

Fiber Optic Signal Conditioner

Special Information:

- The Conditioner can only be used with FISO fiber optic sensors.
- Only eight sensors can be monitored at one time.

Safety Precautions:

- Use only wall plug-in power supply delivered with the UMI and verify that voltage indicated on the power supply are compatible with AC voltage and frequency delivered.
- Do not operate in wet/damp areas.
- Be sure the Conditioner is unplugged when attaching analog outputs located on the back panel of the UMI
- Do not force connectors into or out of the conditioner, they are easily broken.

Fiber Optic Signal Conditioner

Operating Procedures:

Guides user through multiple general uses of the UMI signal conditioner, consult UMI Signal Conditioner user manual for more extensive information.

1. **Cleaning gages and UMI connectors**
   To be done on a regular basis at least once a week, or with new sensors.
   1.1 Locate and retrieve the yellow tear dropped shaped FISO fiber optic connector cleaner and swab sticks.
   1.2 Pull and tear off a layer from the fiber optic connector cleaner, to ensure a clean surface.
   1.3 Remove safety cap from the sensor and rub in a figure eight motion on the exposed cloth.
   1.4 Take a swab stick and poor a few drops of isopropanol on it
   1.5 Smoothly insert the swab in the internal connector of the conditioner and rotate.
2. **Inserting the sensor into the conditioner**
   2.1 Line up the notch on the sensor with the hole on the UMI conditioner
   2.2 Smoothly insert the gage, do not force into place.
   2.3 After inserted push the metal sleeve up and rotate into place, the gage should now be firmly inserted into the UMI conditioner.
3. **Adding a gage factor to the conditioner**
   To be done every time a new gage is added
   3.1 Hit the F3/ADD button on the front panel.
   3.2 Enter in the gage number located next the connector.
   3.3 Hit button indicated by ENTR on the front panel.
4. **Configuring a gage factor**
   To be done when switching channel or adding gages to the conditioner
   4.1 Hit the F2/SELECT button on the front panel
   4.2 Move to channel sensor was added to
   4.3 Hit F2/SELECT until the gage factor matching the sensors gage factor appears (If not available go back to step 3 and add the gage factor.)
   4.4 Hit ESC/MENU when finished
5. **Zero Adjustment**
   Not to be done with the Temperature gages
   5.1 Hit ESC/MENU on the Front panel
   5.2 Hit button corresponding to GAGE
   5.3 Hit button corresponding to CAL (calibration)
   5.4 Hit button corresponding to NULL when ready to zero your sensor.
6. **To read multiple channels at once**
   6.1 Hit button F4/SCAN on front panel, be sure to turn off all channels not in use by configuring them to off.
7. **To change rate of scan**
   To be done when wanting to slow down or speed up acquisition rate

7.1 Hit ESC/MENU on the front panel
7.2 Hit button corresponding to ACQ
7.3 Then hit button indicating RATE
7.4 Change rate to desired speed then hit ENTR
7.5 Change averaging time to desired rate then hit ENTR. (This will average all data points taken in that time into one point)
7.6 To exit hit ESC/MENU

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