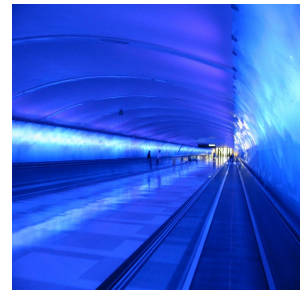




Applications

- ◆ **Strain measurements** for structures requiring hundreds or thousands of fiber-optic sensors.
- ◆ **Large sensing applications** requiring 8 to 16 optical fibers.



Description

The **Micron Optics sm040 Channel Multiplexer** adds sensor and optical-fiber-connection capacity to the si425-500 Optical Sensor Interrogator.

There are two basic types of **sm040**. First is the switch-type (sm040-416 and -408). Robust optical switches can be programmed to alternate between multiple banks of sensors. This boosts capacity of the si425-500 Optical Sensor Interrogator to up to 16 fibers and more than 2000 sensors.

The second type of **sm040 Channel Multiplexer** is the coupler-type (sm040-016 and -008). Coupler-type extensions provide a tidy way to connect up to four optical fibers to a single optical channel on the si425-500 Optical Sensor Interrogator. For many applications this can greatly simplify fiber routing and sensor installation.

Micron Optics supplies a LabVIEW™ utility example that provides the user a path to customize the use of the additional channels provided by the switch-type extension. No special software is needed for the coupler-type **sm040**.

Where are Micron Optics Instruments Deployed?

- ◆ **Civil Structures/Civionics** (bridges, dams, tunnels, buildings)
- ◆ **Energy** (wind turbines, pipelines, nuclear reactors)
- ◆ **Aerospace Vehicles** (composite structures, wind tunnels, dynamic tests)
- ◆ **Oil & Gas** (well & reservoir management, platform structural health monitoring)
- ◆ **Marine Vessels** (hull, mast, rudder, submarine pressure tests)
- ◆ **Transportation** (railways, roadways)
- ◆ **Homeland Security** (perimeter intrusion, shipping container integrity)
- ◆ **Research** (medical devices, military armor, chemical sensing)

Specifications sm040-416 sm040-408 sm040-016 sm040-008

Optical					
a	Number of Optical Channels	4 In / 16 Out	4 In / 8 Out	4 In / 16 Out	4 In / 8 Out
	Wavelength Range	Same as Host Instrument			
b,c	Scan Frequency	62.5 Hz	125 Hz	250 Hz	250 Hz
	Typical Sensor Spacing	Same as Host Instrument			
	Optical Connectors	FC/APC			
Mechanical					
	Dimensions	45 mm x 432 mm x 330 mm			
	Weight	3.6 kg (8 lbs.)	3.6 kg (8 lbs.)	3.6 kg (8 lbs.)	3.6 kg (8 lbs.)
Environmental					
	Operating Temperature	0 to 50°C			
Electrical					
	Input Voltage	100VAC to 240VAC	N/A	N/A	
	Interfaces	Ethernet to host si425-500	N/A	N/A	
	Protocols	Supplied with MOI's si425-500 Software			
Data Management					
	Remote Software	Included			
	LabView Source Code	Included			

Notes:

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- a sm040-416 and sm040-408 compatible only w ith the si425-500
- b sm040-416 uses 4 1x4 optical sw itches (250 Hz maximum scan rate divided by 4 = 62.5 Hz)
- c sm040-408 uses 4 1x2 optical sw itches (250 Hz maximum scan rate divided by 2 = 125 Hz)

sm040-416 (16-Channel Switch Extension)

Expands optical channel I/O from Micron Optics' si425-500 instrument to 16 channels for sensor arrays. Product pricing includes all necessary jumpers, standard 100/220VAC or 5VDC operation, control software and Ethernet command set providing access through LabVIEW™.

sm040-408 (8-Channel Switch Extension)

Expands optical channel I/O from Micron Optics' si425-500 instrument to 8 channels for sensor arrays. Product pricing includes all necessary jumpers, standard 100/220VAC or 5VDC operation, control software and Ethernet command set providing access through LabVIEW™.

sm040-016 (16-Channel Coupler Extension)

Contains four 1x4 couplers to accommodate connection of up to four fibers to each optical input channel from Micron Optics' si425-500 instrument. All fibers are scanned simultaneously. This type of configuration provides no net gain of wavelength range or sensor capacity; it is solely intended to provide more fiber connection options.

sm040-008 (8-Channel Coupler Extension)

Contains four 1x2 couplers to accommodate connection of up to two fibers to each optical input channel from Micron Optics' si425-500 instrument. All fibers are scanned simultaneously. This type of configuration provides no net gain of wavelength range or sensor capacity; it is solely intended to provide more fiber connection options.