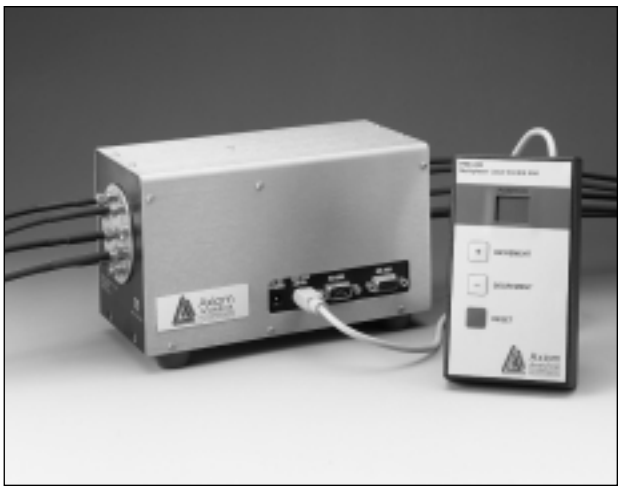
Axiom Analytical INCORPORATED

FMX SERIES

FIBER-OPTIC MULTIPLEXERS

Digitally controlled, mono and bi-directional multiplexers for remote sample interfacing.



The FMX Series multiplexers allow a single spectroscopic instrument to be switched between up to sixteen different sampling devices. Now you can monitor multiple process streams with consistent calibration or provide a single research or QC station with immediate access to multiple sampling devices.

Innovative Design

The FMX switches both the transmitted signal from the spectrometer and the signal returning to the optical detector. This bi-directional or "dual pole" capability eliminates the channel matching problems which can occur when the spectrometer output beam is spatially divided between several channels. The FMX switches channels by rotating a proprietary trapezoidal retro-reflecting prism. The prism is fabricated from a high refractive index material so as to minimize the vignetting loss which would otherwise occur with the large diameter single fibers used with NIR analysis systems.

Remote or Local Control

FMX Series multiplexers can be controlled from a remote computer via a choice of RS-232, RS-422, or RS-485 ports. System commands are provided in two forms: a custom ASCII protocol, and a subset of the OPTO-22 instruction protocol. In addition to this remote capability, an optional hand held control unit (Model FMC-020) is available. The FMC-020 Local Control Unit enables you to operate the multiplexer independent of a host computer by providing push button controls for increment, decrement, and reset functions. A two digit LED channel display on the FMC-020 is functional whether the multiplexer is operated from the local control unit or the host computer.

Easy Upgrades

Modular construction of the multiplexers provides both economy and flexibility. Two basic versions are available: the **A** version supports a maximum of 10 channels, while the **M** version uses smaller steps to accommodate up to 16 channels. Units can be purchased with any number of channel from 2 to 16 (depending on the capacity of the unit). To add channels at a later date, simply purchase the appropriate number of add-on channel modules. Field installation of channel modules is quick and easy.

The FMX family includes both the 200 Series bi-directional models and 100 Series mono-directional models. FMX-100 units can also be easily expanded up to their respective capacity, or converted to bi-directional units by adding the

Features:

- Electronic switching between up to 16 channels
- Switches both transmitted and received signals
- Excellent channel matching and high transmission
- No frequency shift between channels
- Choice of popular data processing protocols

U.S. Patent Pending

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appropriate components, including the required number of channel modules.

A Complete Line of Fiber Optic Products

Axiom's family of fiber optic products (which includes FMX Series multiplexers, FOI launch modules, FAC couplers, and FVA attenuators as well as a complete line of probes and flow cells), brings high performance, reliable fiber-optic sampling capability to virtually any spectrometer. The following interfacing products are designed for use in conjunction with FMX systems:

FOI Sample Region Interface - easily installs in any spectrometer having a focused sample region beam; both launches and receives signal; pivots about the beam axis; includes purge shrouds to isolate the beam path.

FAC Collimated Beam Interface - provides rugged and reliable transition between Axiot optical transfer modules and fiber-optic cable; internal mirror is permanently aligned; includes precision two axis fiber positioner.

FVA Variable Attenuator - can be used to balance the signal level of a reference channel with that of a sample channel to maximize a system's photometric accuracy. The FVA's performance is independent of both polarization and beam divergence; Transmission is adjustable from 0 - 40%.

We invite you to inquire further about these and other members of Axiom's fiber optic product family.

FMX Specifications

FMX SERIES MULTIPLEXERS

Number of common lines:	2 (FMX-200 Series), 1 (FMX-100 Series
Number of channels (switch positions):	Up to 16 per common line
Channel matching (amplitude):	± 10%
Channel matching (frequency):	± 0.05 cm^{-1}
Switching time:	~ 1 second between any two channels
Serial Interface ports:	RS-422, RS-232, RS-485
Command protocols:	ASCII command set; OPTO-22 subset

FMC-020 LOCAL CONTROL AND DISPLAY UNIT

Standard functions:	Increment, Decrement, Reset
Channel display:	Two digit LED

MODEL DESIGNATIONS

Mono-Directional Systems:

10 Channel Maximum = FMX-1XXA

16 Channel Maximum = FMX-1XXM

Bi-Directional Systems:

10 Channel Maximum = FMX-2XXA

16 Channel Maximum = FMX-2XXM

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