



***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.

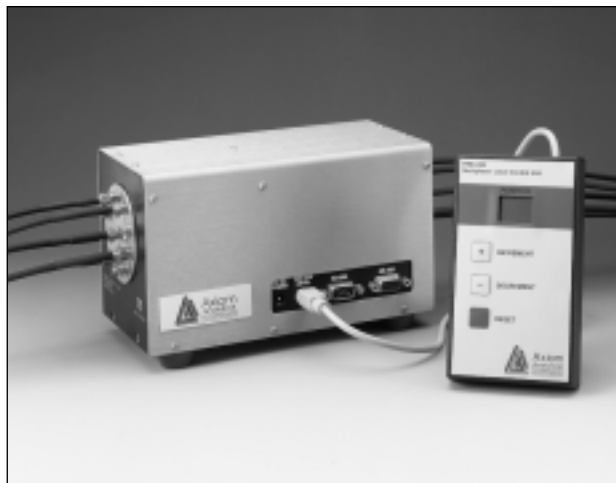
***Easy Upgrades***

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

# FMX SERIES

## FIBER-OPTIC MULTIPLEXERS



***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

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 Axiom 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 <sup>-1</sup>                |
| 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 |