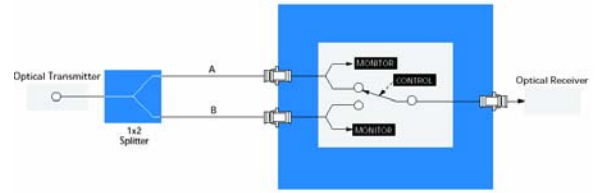


# FSW Series A/B Fiber Optic Protection Switch



- 1310, 1550 and CWDM 1470 to 1610nm band-pass
- Dual channel monitors
- Automatic switch-over from Primary to Back-up fiber link
- Automatic or manual operation
- Mounts in standard ADC VAM chassis
- 110/220VAC and 48 VDC operation
- Ideal for mission critical fiber optic circuits



## DESCRIPTION

The FSW A/B Protection Switch is a continuation of Multidyne's Fiber Optic Switch (FSW) system. The A/B switch module may be installed in any VAM system chassis and used in conjunction with your other FSW and VAM modules.

The A/B Switch module provides automatic or manual switching between two fiber lines. When a loss of optical signal is detected, it will switch to the alternate path in less than 8 msec. The switch is typically used at the receiving end to switch a transmission to a spare fiber. Upon detecting a signal loss, the switch will automatically switch to a known good fiber. The switching threshold is set at a low power level to maximize the optical power budget available in the user's network.

The dual optical monitors allow the user to know immediately if the alternate fiber has lost its optical signal. The switch is latching, so it will retain its state during a loss of electrical power. An internal microcontroller ensures that the switch does not switch to the opposite state on a power-up.

A manual switch on the front panel allows the user to force the optical switch to either the A or B position or allow it to operate automatically by monitoring the input fibers. The manual switch has a locking toggle to prevent accidental switching. All of the status indicators are also available as relay contact closures on the rear power connector.

## APPLICATIONS

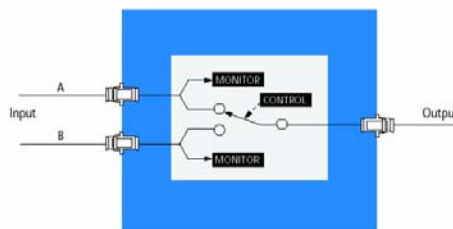


Figure 1  
A/B Protection Switch Schematic

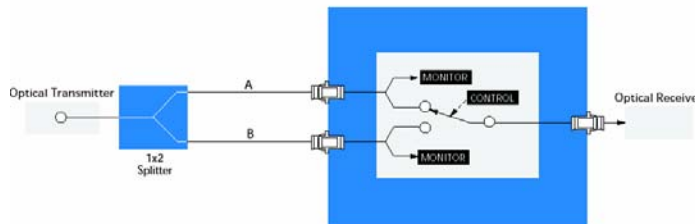


Figure 2  
Sample Application of A/B Protection Switch



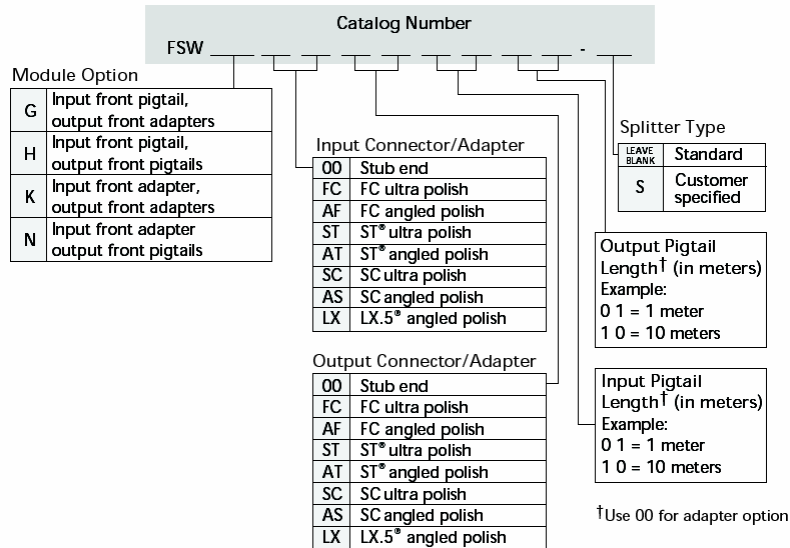
In the USA and Canada call **1-(800)-4TV-TEST**  
 191 Forest Avenue, Locust Valley, NY 11560-2132 USA  
 1-(800)-488-8378, (516)-671-7278, FAX (516)-671-3362  
**E-Mail: [sales@multidyne.com](mailto:sales@multidyne.com)**  
**Web Site: [www.multidyne.com](http://www.multidyne.com)**

# SPECIFICATIONS

<b>ELECTRICAL</b>	
Input Voltage:	-37 to -60 Vdc
Input Current	
@-37 Vdc:	30 mA maximum
@-48 Vdc:	25 mA nominal
<b>OPTICAL*</b>	
Wavelength:	1290 to 1330 nm, 1530 to 1570 nm
Insertion Loss:	1.9 dB maximum 1.4 dB typical
Return Loss (both ways):	50 dB minimum
Isolation:	-60 dB maximum
Repeatability:	±0.05 dB maximum ±0.03 dB typical
Polarization Dependent Loss (PDL):	0.3 dB maximum
Switching Speed:	8 msec maximum, 5 msec typical
Switching Lifetime:	10 million cycles
Switching Threshold:	
Loss of Signal:	-25.0 dBm ± 1.5 dB
Restoral of Signal (hysteresis):	0.6 to 1.2 dB > loss of signal
Vibration Stability:	<0.1 dB change
<b>ENVIRONMENTAL</b>	
Operating Conditions:	0°C to 50°C
Storage Conditions:	-40°C to 70°C 5% to 95% relative humidity, non-condensing
<b>AGENCY COMPLIANCE</b>	
Safety:	UL1459 / CSA 22.2 / EN60950 (CE)
EMC:	FCC Part 15 Subpart B, Class A/EN50082

Specifications subject to change without notice.

# CONFIGURATION GUIDE

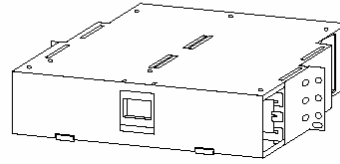


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## RACK-MOUNT CHASSIS OPTIONS:

### 3.5 Inch Chassis – 4 Single Plug-In Modules

The 3.5" chassis fits into any 19" rack mounting environment. It accommodates a maximum of plug-in modules, 4 bulkhead plates, 4 blank panels or any combination thereof. Adjustable mounting brackets are provided for 23" mounting environments.



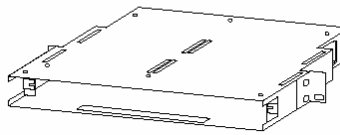
FVM-19X350

#### Ordering Information

Description	Dimensions (HxWxD)	Catalog Number*
Unloaded chassis for 19" or 23" racks	3.5" x 19" or 23" x 12" (8.89 x 48.26 or 58.26 x 30.48 cm)	FVM-19X350

### 1.75 Inch Chassis – 2 Single Plug-In Modules

The 1.75" chassis fits into any 19" rack mounting environment. It accommodates a maximum of 2 plug-in modules, 2 bulkhead plates, 2 blank panels or any combination thereof. Adjustable mounting brackets are provided for 23" mounting environments.



FVM-19X175

#### Ordering Information

Description	Dimensions (HxWxD)	Catalog Number*
Unloaded chassis for 19" or 23" racks; no front door	1.75" x 19" or 23" x 12" (4.45 x 48.26 or 58.26 x 30.48 cm)	FVM-19X175

\* This product is available in black; for this option, simply add "-BK" to the end of the catalog number.

## ORDERING INFORMATION:

	<b>Fiber Optic Accessories; WDM's, CWDM's, Add/Drop &amp; Protection Switches (SIN 58-6)</b>
CWDM-2000-18	Coarse Wave Division Multiplexer for 1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Supports up to 18 wavelengths or channels per fiber optic cable. SC connectors. Requires the NEW corning SMF-28E CWDM enhanced Singlemode Fiber. (May require -RMD, -BLANK)
CWDM-2000-16	Coarse Wave Division Multiplexer for 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Supports up to 16 wavelengths or channels per fiber optic cable. SC connectors. Requires the NEW corning SMF-28E CWDM enhanced Singlemode Fiber. (May require -RMD, -BLANK)
CWDM-2000-9	Coarse Wave Division Multiplexer for 1310, 1470, 1490, 1510, 1530, 1550, 1570, 1590 and 1610nm. Supports up to 9 wavelengths or channels per fiber optic cable. SC connectors. (May require -RMD, -BLANK)
CWDM-2000-8	Coarse Wave Division Multiplexer for 1470, 1490, 1510, 1530, 1550, 1570, 1590 and 1610nm. Supports up to 8 wavelengths or channels per fiber optic cable. SC connectors. (May require -RMD, -BLANK)
CWDM-2000-4	Coarse Wave Division Multiplexer for 1470, 1490, 1510, 1530 or 1550, 1570, 1590 and 1610nm. Supports up to 4 wavelengths or channels per fiber optic cable. SC connectors. (Specify wavelengths) (May require -RMT, -BLANK)
CWDM-1A-1D-xxxx	Coarse Wave Division Multiplexer, 1 Channel ADD & DROP for 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Unit will Drop and then Add a CWDM wavelength. SC connectors. (Specify wavelength for xxxx) (May require -RMT, -BLANK)
CWDM-2A-2D-xxxx-xxxx	Coarse Wave Division Multiplexer, 2 Channel ADD & DROP for 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Unit will Drop and then Add a CWDM wavelength. SC connectors. (Specify wavelength for xxxx) (May require -RMT, -BLANK)
CWDM-1A-xxxx	Coarse Wave Division Multiplexer, 1 Channel ADD for 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Unit will Drop and then Add a CWDM wavelength. SC connectors. (Specify wavelength for xxxx) (May require -RMT, -BLANK)
CWDM-1D-xxxx	Coarse Wave Division Multiplexer, 1 Channel DROP for 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610nm. Unit will Drop and then Add a CWDM wavelength. SC connectors. (Specify wavelength for xxxx) (May require -RMT, -BLANK)
WDM-MM-ST	Wave Division Multiplexer, 850 and 1300nm Multi-mode, ST Connectors
WDM-SM-FC	Wave Division Multiplexer, 1300 nm and 1550 nm Single Mode, FC Connectors (Optional -ST or -SC connectors)
SPLIT50/50	Optical Splitter, 50/50 Gould
SPLIT50/50CWDM	Optical Splitter, 50/50, CWDM Band
FiberSwitch-1x2	1 by 2 CWDM Fiber Switch, Singlemode, 0 - 5 VDC activation (Specify ST, FC or SC connectors) (May require -RMT, -BLANK)
-RMT	Triple Rack-mount Kit (1 kit)
-RMD	Dual Rack-mount Kit (1 kit)
-BLANK	Blank panel for rack-mounting kit
FSW-KSTST-WB	A/B Protection Switch, ST/UPC Connectors, 1470-1610 nm, CWDM, Single Mode
FVM-19X175	Chassis, 2 FSW plug-in modules 1.75in for 19in rack
ACC-110-48V-A	110 VAC to -48V DC Power Converter Desktop Style



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