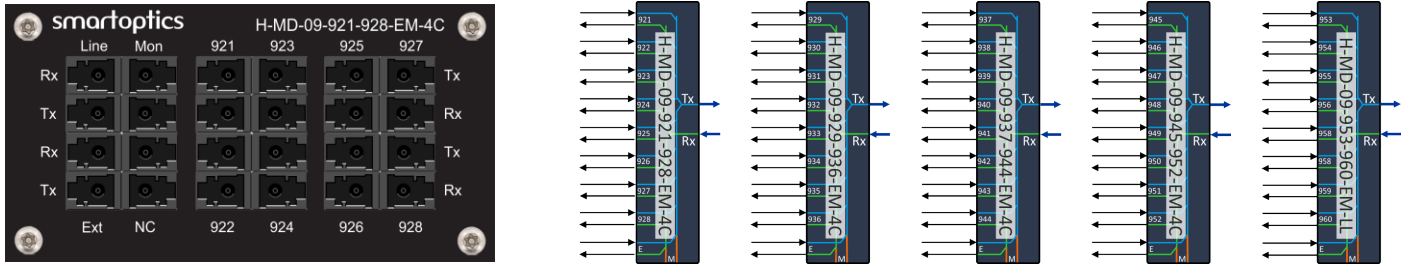


# H-MD-09-xxx-yyy-EM-4C

8-channel 16QAM supporting DWDM Mux/Demux with Extension and Monitor ports



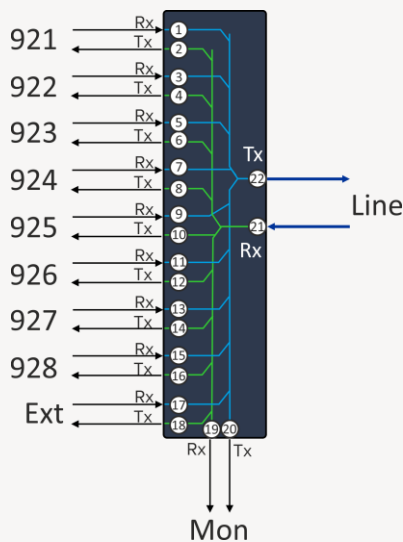
## OVERVIEW

The H-MD-09-xxx-yyy-EM-4C filters are a range of low-loss, passive 8-channel DWDM protocol transparent Mux/Demux units. The channel passbands are wide enough to support all protocols up to and including 400Gbps 16QAM wavelengths. They operate with 100GHz spacing and have a low-loss Extension port so that additional channels can be seamlessly added to increase capacity. The Extension port is extremely wide, covering 1264 -1630nm which opens for a wide variety of combinations of LANWDM, CWDM, DWDM and OTDR solutions over the same infrastructure.

The H H-MD-09-xxx-yyy-EM-4C filters have two Monitor ports that tap off 1% of the transmitted and received line signal. This provides the ability to monitor the channel power levels via a connected Optical Channel Monitoring (OCM) device or an optical spectrum analyzer.

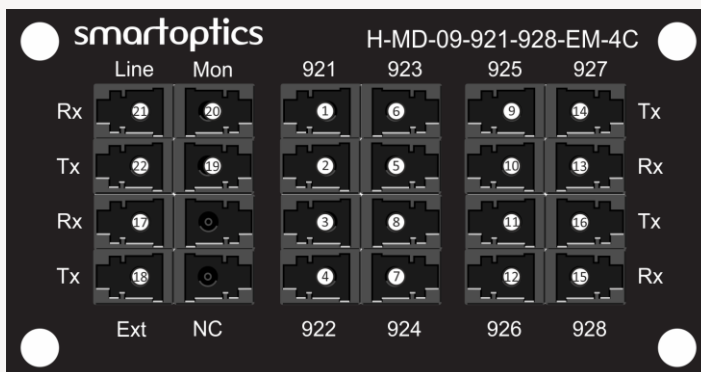
The H-MD-09-xxx-yyy-EM-4C filters support the industrial temperature (I-temp) range of -40°C to +85°C (-40°F to +185°F) which gives an extended application range into sites without temperature control.

## FUNCTIONAL OVERVIEW AND PORT DESCRIPTION



Client and Line signals entering the filter is denoted "Rx".  
Client and Line signals exiting the filter is denoted "Tx".

The monitor ports tap off 1% (18 - 22dB) of the line signal.  
The monitor port from transmitted line signal is denoted "Tx".  
The monitor port from received line signal is denoted "Rx".



The port allocation and overlay example is for H-MD-09-921-928-EM-4C. Note row dependent location of Tx and Rx ports. This is due to the usage of duplex LC connectors.

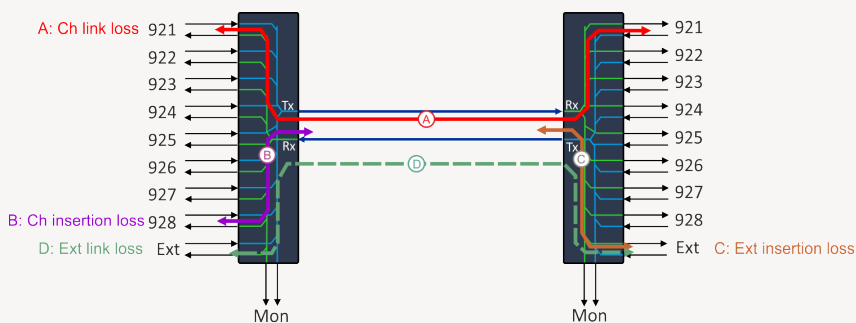
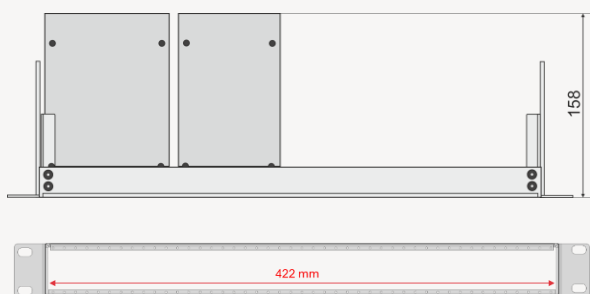
## TECHNICAL SPECIFICATIONS

Subject to change without notice.

For more information visit [smaroptics.com](http://smaroptics.com).

Parameter	C-temp Conditions	I-temp conditions <sup>1)</sup>
Channels H-MD-09-921-928-EM-4C	192.1 to 192.8 THz	←
H-MD-09-929-936-EM-4C	192.9 to 193.6 THz	←
H-MD-09-937-944-EM-4C	193.7 to 194.4 THz	←
H-MD-09-945-952-EM-4C	194.5 to 195.2 THz	←
H-MD-09-953-960-EM-4C	195.3 to 196.0 THz	←
Channel spacing	100GHz ITU G.694.1	←
Channel passband -3dB	Min 75GHz	←
Passband Ext-port	1264 - 1630nm / 183.9 to 237.2THz excl. ch passband	←
Link loss, per channel (A)	Max 4.6dB	Max 5.2dB
Insertion loss, per channel (B)	Max 3.0dB	Max 3.5dB
Insertion loss, extension port (C)	Max 0.9dB	Max 1.0dB
Link loss, extension port (D)	Max 1.8dB	Max 2.0dB
Insertion loss, monitor	18-22dB without including the mux, demux or passband loss	←
Isolation, adjacent channel	Min 28dB	←
Isolation, non-adjacent channel	Min 40dB	←
Ripple, passband	Max 0.5dB	←
Directivity	Min 45dB	←
Return loss	Min 40dB	←
Max power handling	Max 500mW	←
Operating temperature	0°C to +70 °C	-40°C to +85 °C
Storage temperature	-40°C to +85 °C	←
Connector type	LC/UPC	←
Module width	84mm	←

1) The I-temp column only shows values that differ from C-temp conditions.



## ORDER INFORMATION

The H-MD-09-xxx-yyy-EM-4C is available in 5 different versions depending on desired channel plan. The table below shows the part numbers and a short description.

Part number	Description
H-MD-09-921-928-EM-4C	8ch DWDM 400G Mux/Demux, Ext+Mon 921-928
H-MD-09-929-936-EM-4C	8ch DWDM 400G Mux/Demux, Ext+Mon 929-936
H-MD-09-937-944-EM-4C	8ch DWDM 400G Mux/Demux, Ext+Mon 937-944
H-MD-09-945-952-EM-4C	8ch DWDM 400G Mux/Demux, Ext+Mon 945-952
H-MD-09-953-960-EM-4C	8ch DWDM 400G Mux/Demux, Ext+Mon 953-960