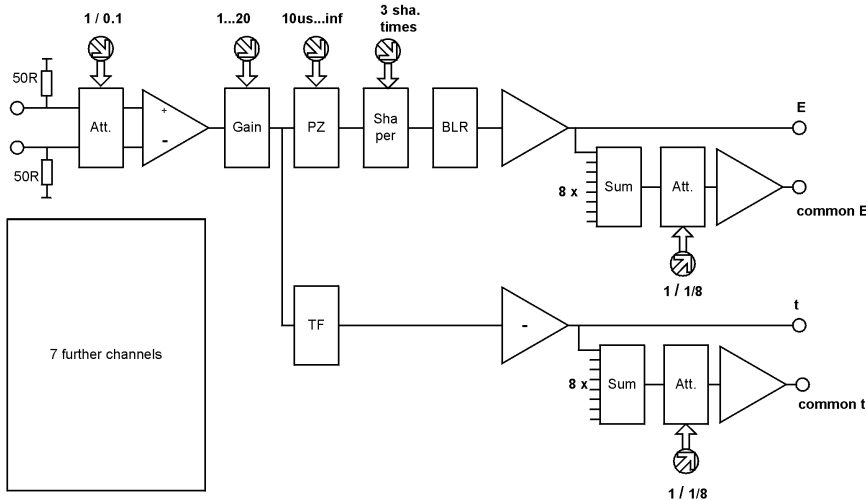


The mesytec **MDS-8** is an 8-channel spectroscopy amplifier with integrated timing filter amplifier in a 1/12 wide NIM module. It provides an adjustable gain of 1 to 150, and 3 shaping times.

### Features:

- Eight differential Lemo inputs, can be used single ended.
- Input resistance 50  $\Omega$  (= 100  $\Omega$  differential).
- 3 shaping times: 0.25, 0.5 , 1 us (sigma)
- Passive baseline restorer
- Adjustable gain and PZ compensation at front panel
- Individual outputs:
  - +10 V shaped pulse
  - -2 V timing filter output
- Common outputs:
  - sum of shaping outputs
  - sum of timing filter outputs

### Schematic:



## Technical Data

### Shaper inputs

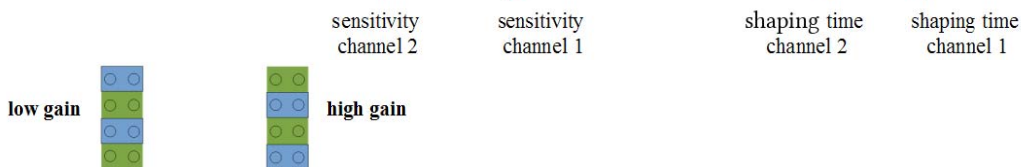
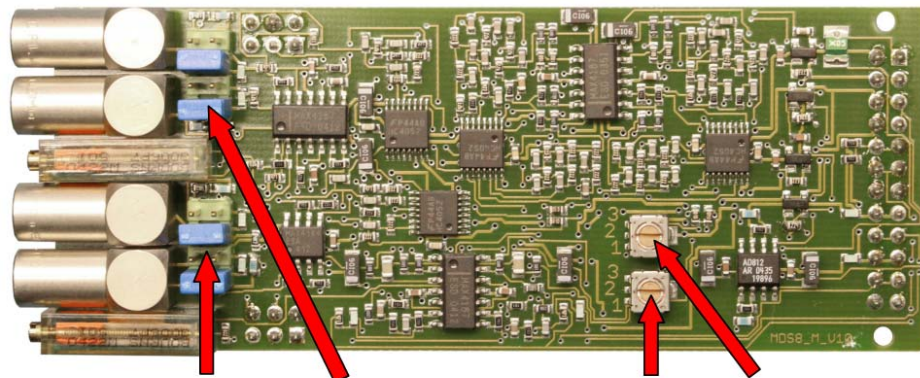
- internally terminated with 50  $\Omega$  (differential use 100  $\Omega$ )
- positive and negative input
- adjustable gain range: 0.75..150. (Factor 20 with 10 turn potentiometer plus factor 10 by sensitivity jumpers.)

### Energy outputs

for each channel:

- Shaper output amplitude: max 10 V (into 1 k $\Omega$ ).
- Shaping time switch selectable for each channel : 0.25, 0.5, 1  $\mu$ s (sigma).
- Integral nonlinearity <  $2 \cdot 10^{-4}$
- Input noise: (shaping times Sigma)  
For 0.25, 0.5, 1  $\mu$ s: 20  $\mu$ Vrms @ gain = 100
- Offset: max 3 mV.

### Servicable elements inside the module



### Timing outputs

for each channel:

- Scaled with gain setting.
- output voltage max  $-2$  V full range.
- integration time = 15 ns.
- differentiation time = 50, 80, 150 ns (at 0.25, 0.5, 1  $\mu$ s Shaping time).
- can be terminated with 50  $\Omega$ .

### Common Timing output

- sum value of all 8 timing outputs,
- max  $-4$  V output amplitude.
- Attenuator for factor of 8 is jumper selectable.
- can be terminated with 50  $\Omega$ .

### Common Energy output

- sum value of all energy outputs (only useful for same shaping time in all channels).
- max 10 V output amplitude.
- Attenuator for factor of 8 is jumper selectable.

### Pole zero adjustment

Front panel potentiometer.  
Range 10  $\mu$ s to  $\infty$

### Power consumption

+12 V +60 mA  
+6 V +50 mA  
 $-6$  V  $-110$  mA  
total power dissipation: 1.7 W