

Measuring sound pressure levels with the B&K 2610

Calibration Workshop 2021

Stephan Töpken, 04.10.2021

B&K Measuring amplifier 2610

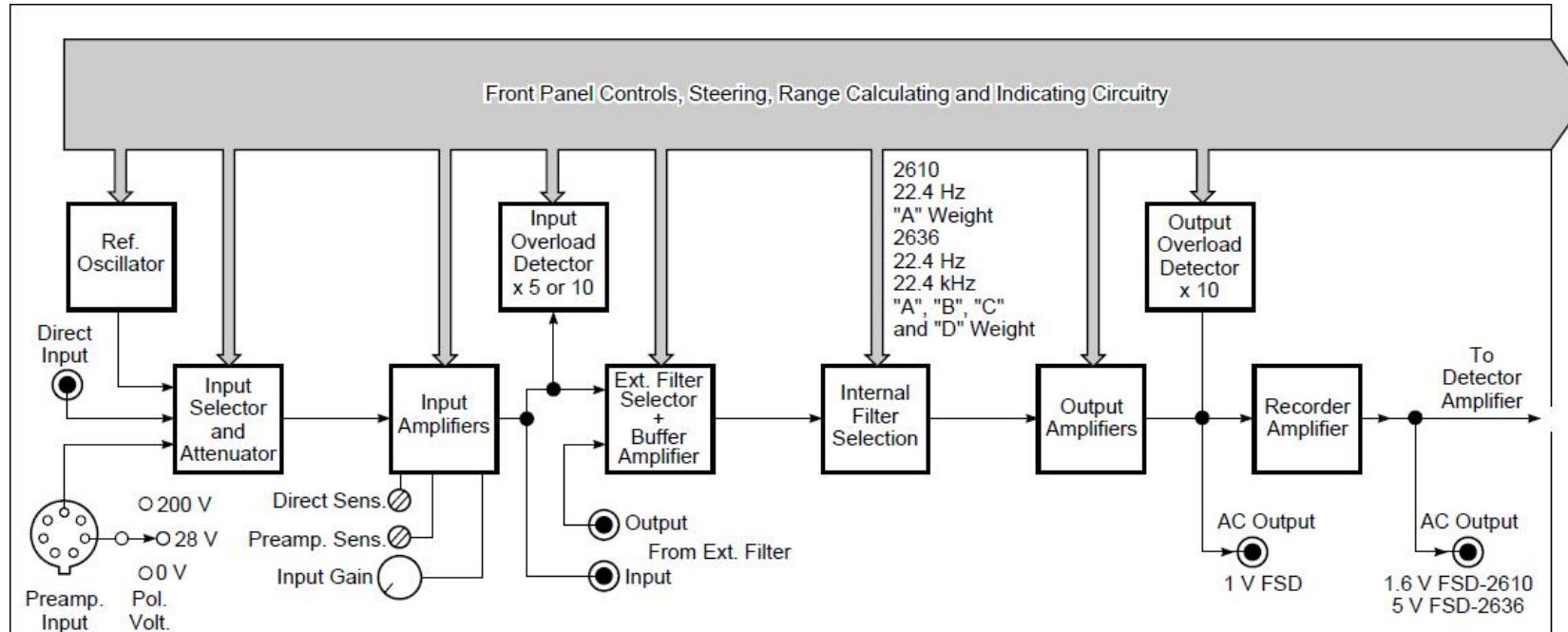
Sections:

- Inputs
- Amplification
- Filters
- Detector
- Outputs/Meters
- Level settings



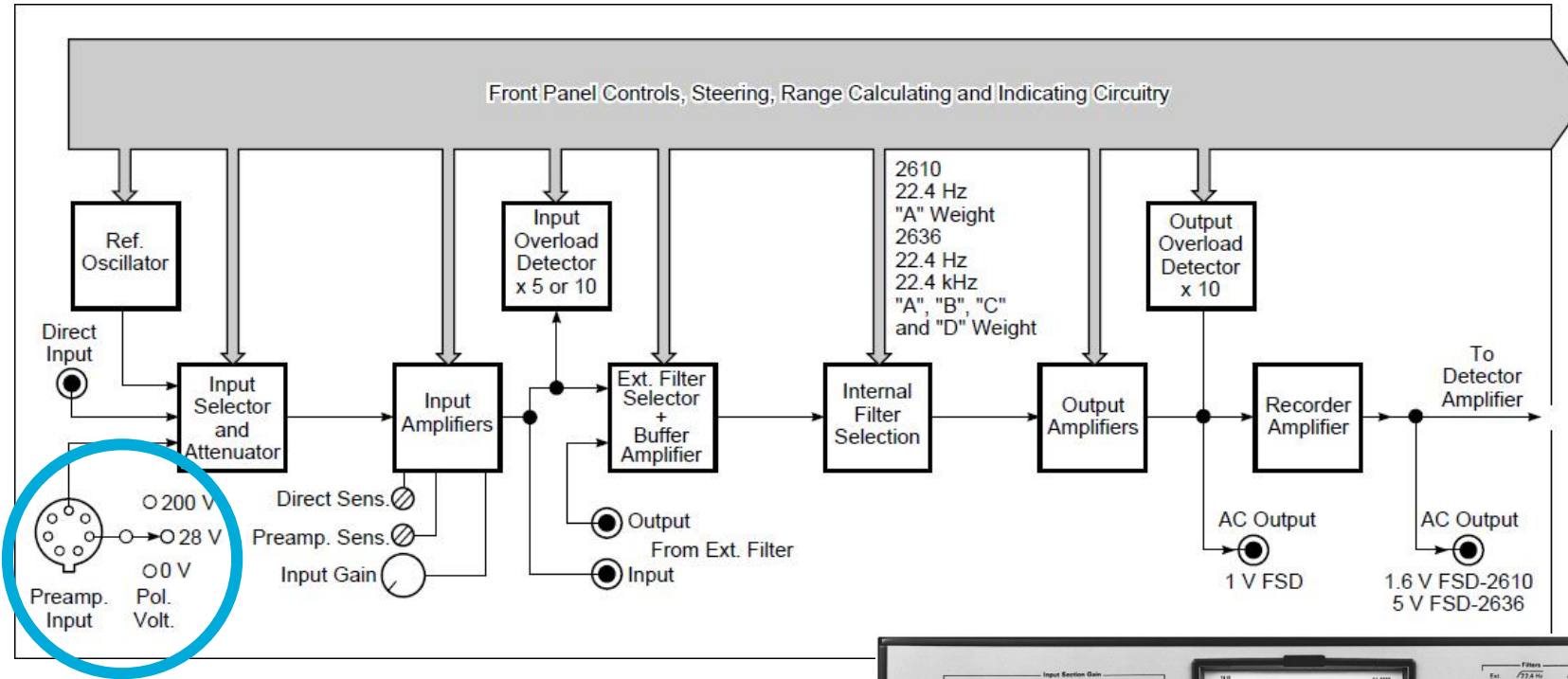
2610

Sections - Input



2610

Sections - Inputs



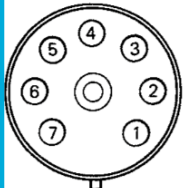
Polarization Voltage:

- Typically 200 Volts
- Sensitivity depends on polarization



2610

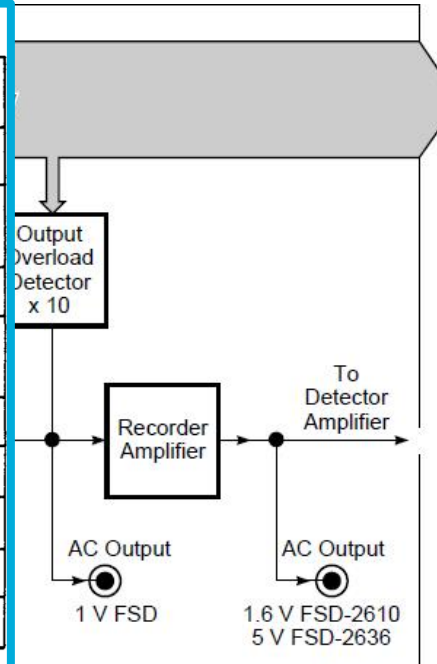
Sections - Inputs



Connection of pin no.	Preamplifier Type		
	2633	2619	2627
1	Ground	Heater ground	Heater and signal ground
2	200 V DC	200 V DC	200 V DC
3	Not connected	Ground	Microphone Thread
4	Signal	Signal	Signal
5	120 V DC	120 V DC	120 V DC
6	Not connected	28 V DC	Not connected
7	Not connected	Heater 12 V DC	Heater 12 V DC
casing	Outer Screen	Outer Screen	Outer Screen

740770/2

Table 8.1. Pin designations. External view of matching socket JJ 0703 or JJ 0704

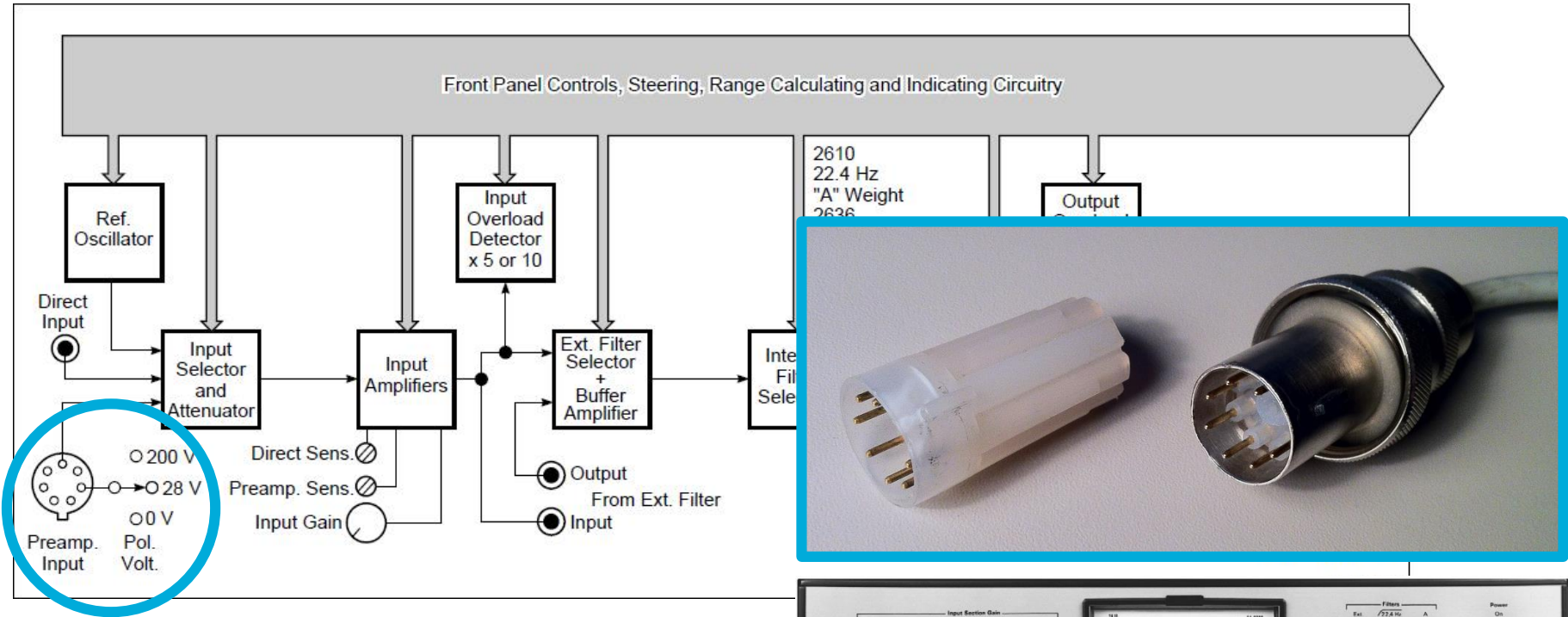


Polarization Voltage:

- Typically 200 Volts
- Sensitivity depends on polarization



Sections - Inputs



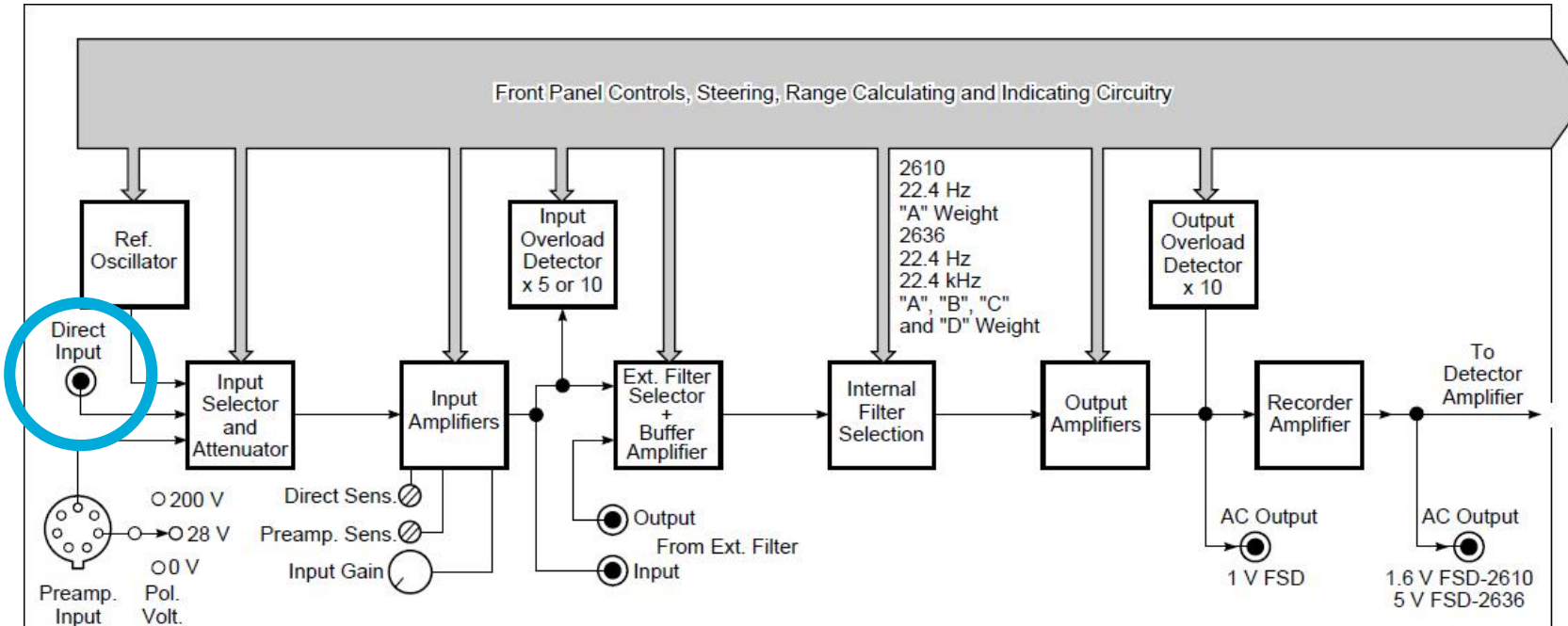
Polarization Voltage:

- Typically 200 Volts
- Sensitivity depends on polarization

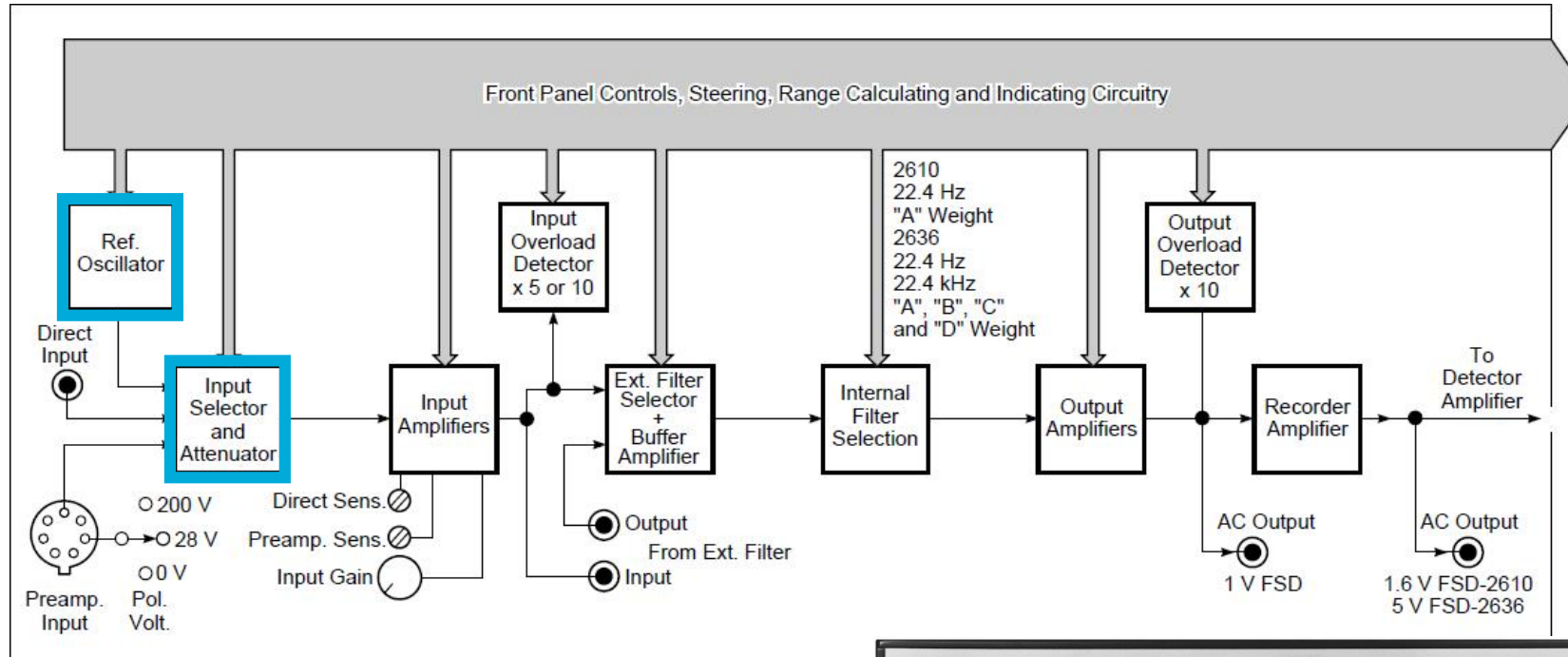


2610

Sections - Inputs



Sections – Input selector

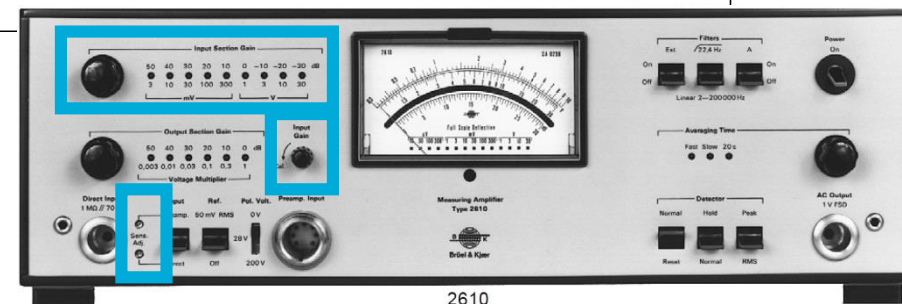
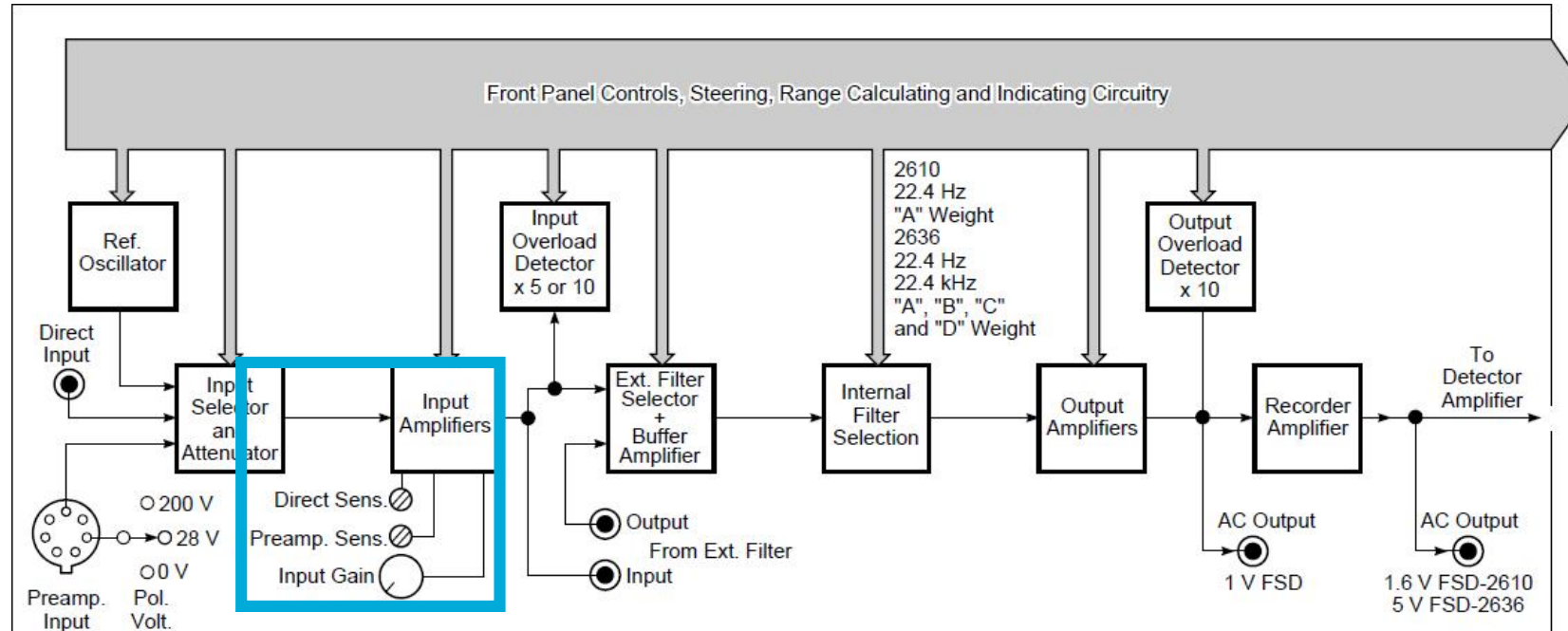


Check if the internal reference oscillator (50 mV) is turned off



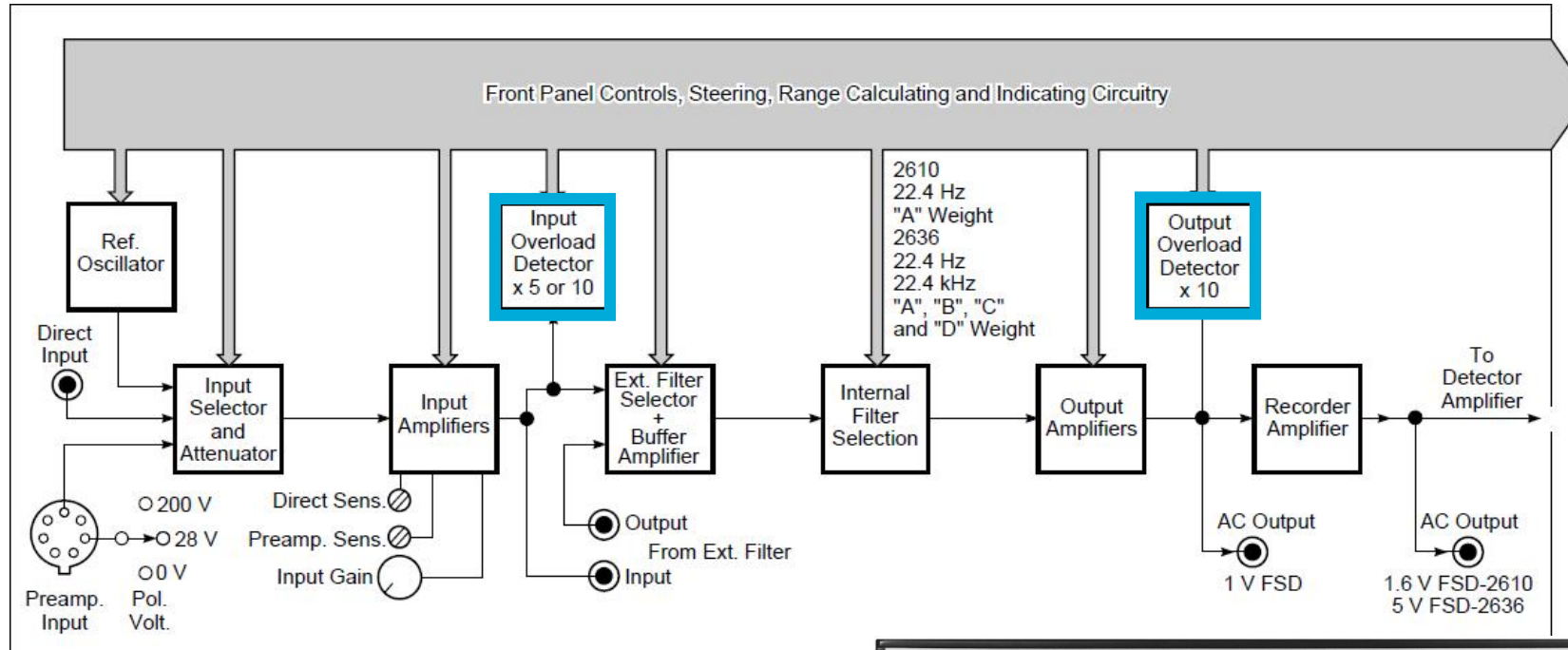
2610

Sections – Input amplifier



2610

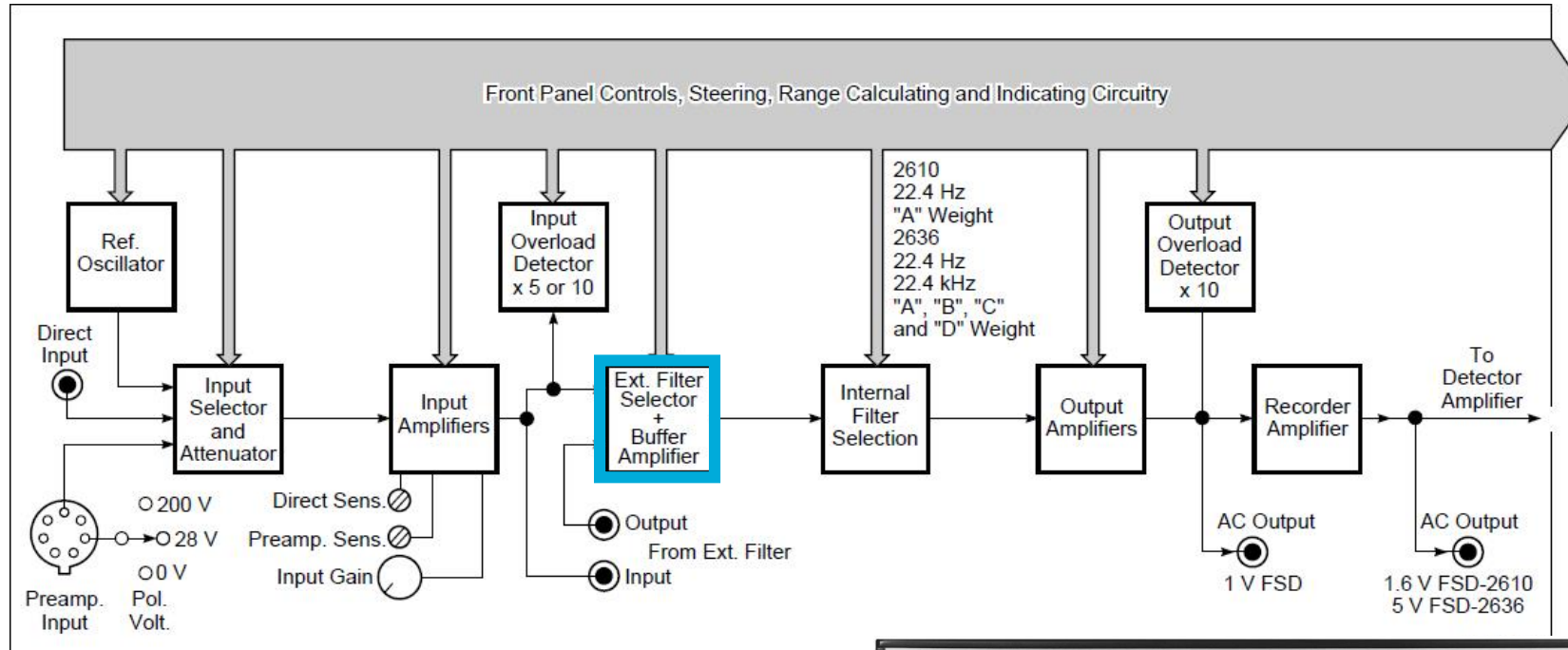
Sections – Overload detector



Overload is indicated by blinking LEDs



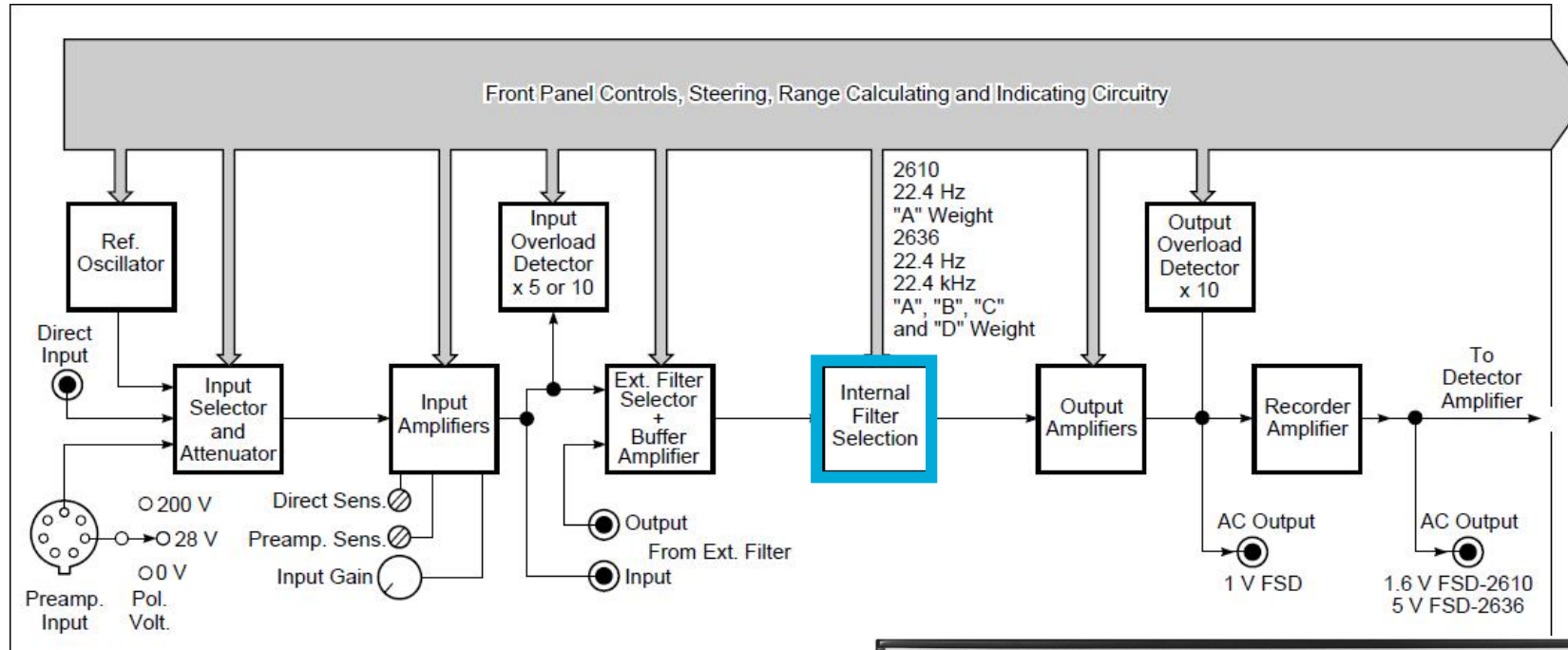
Sections – External filter loop



Check whether the loop for an external filter is selected



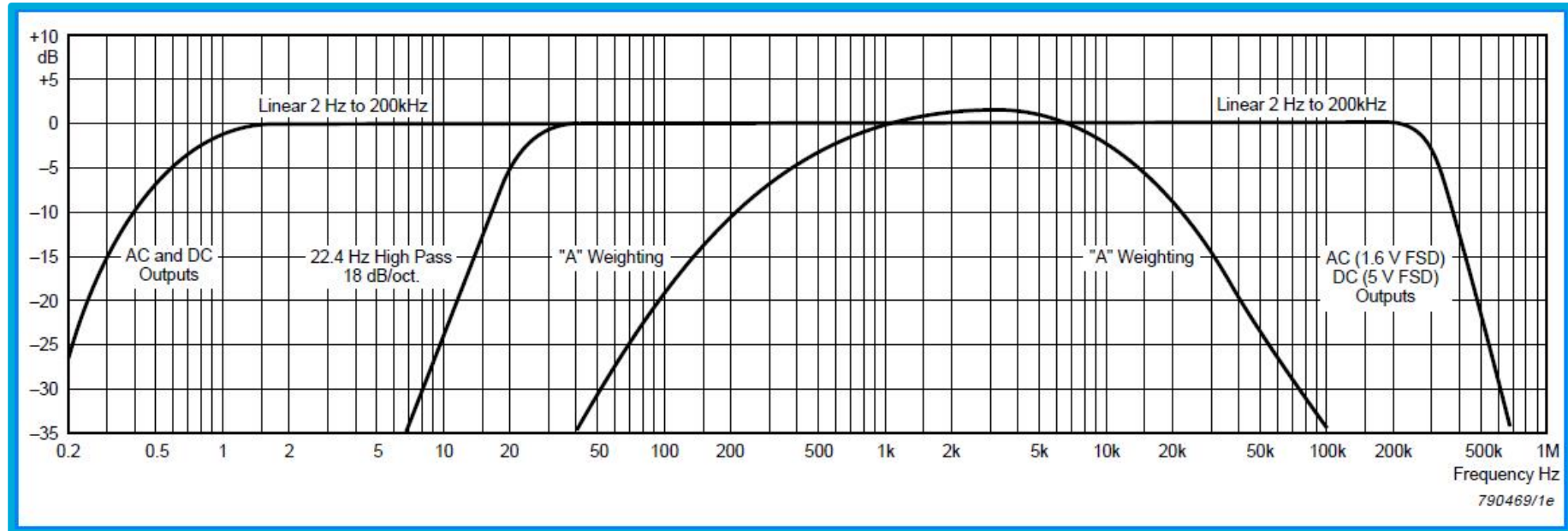
Sections - Internal filter



Check whether an internal filter is selected



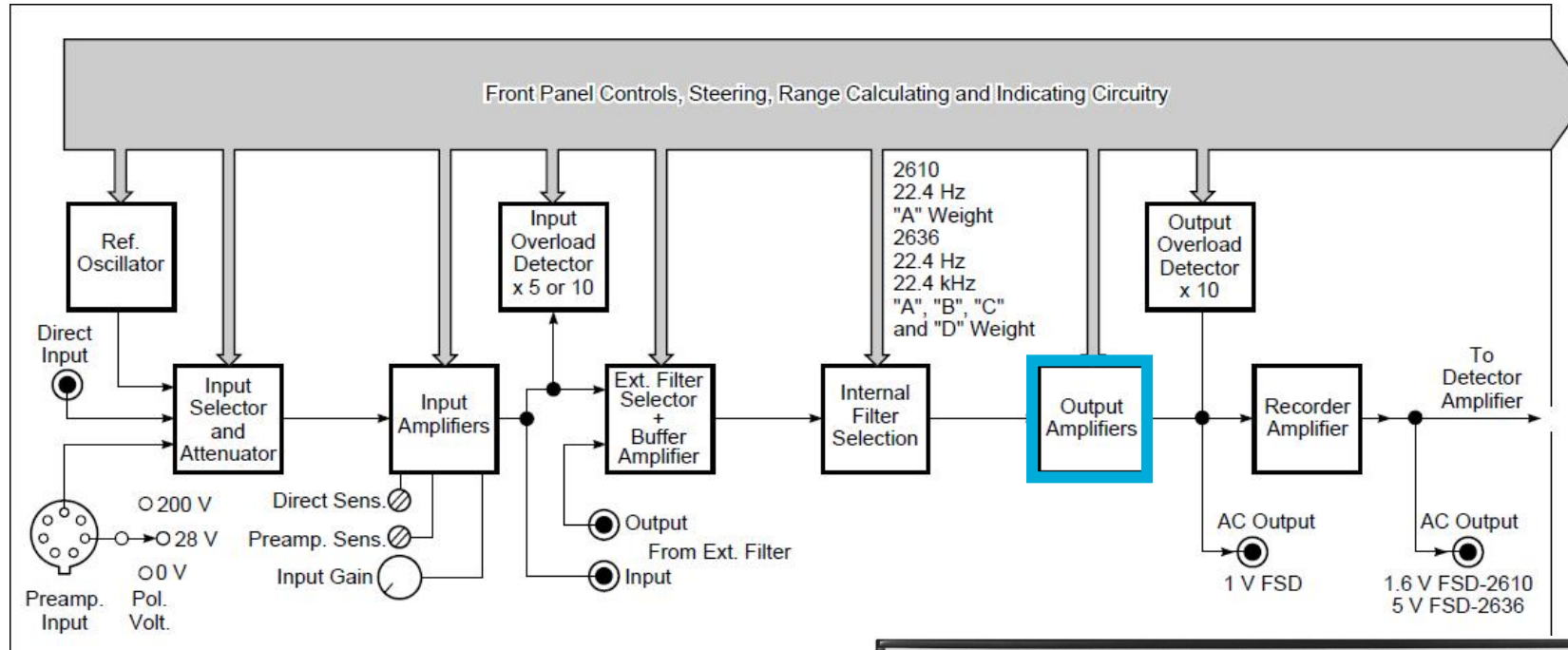
Sections – Internal filter



Check whether an internal filter is selected

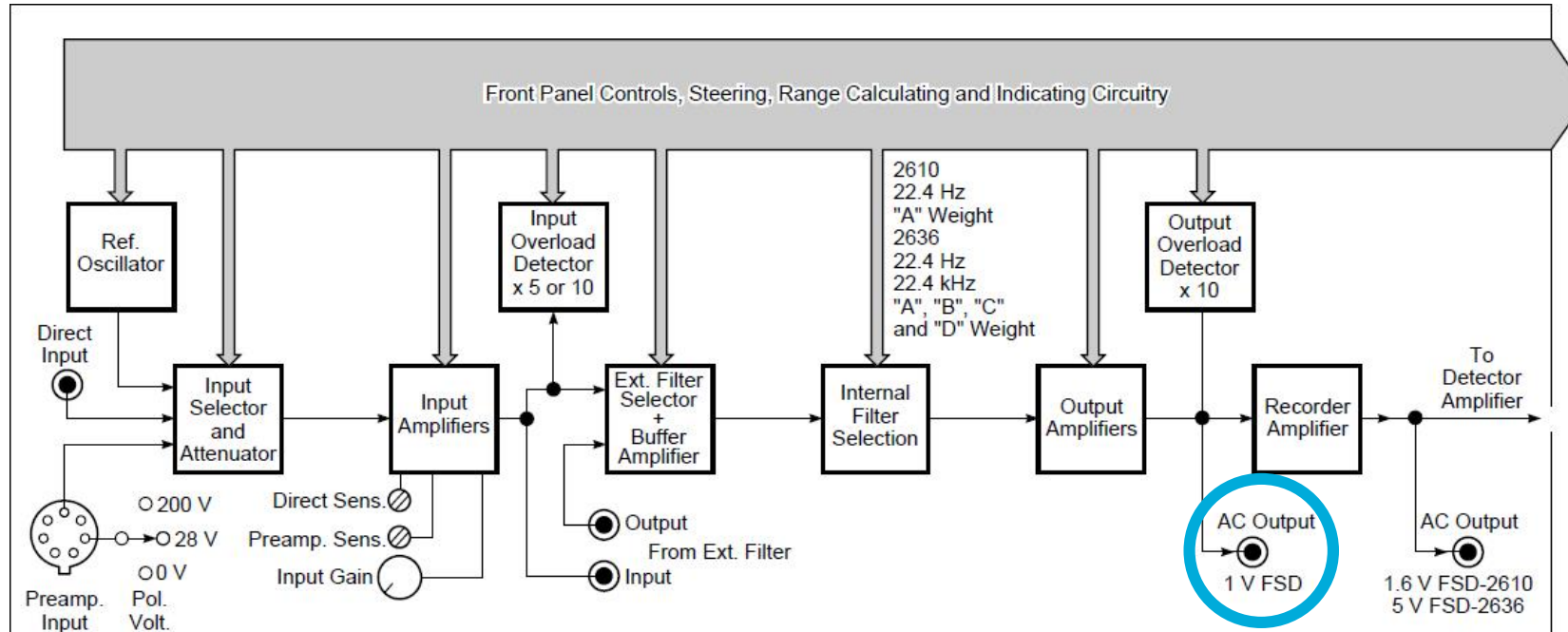


Sections – Output amplifier



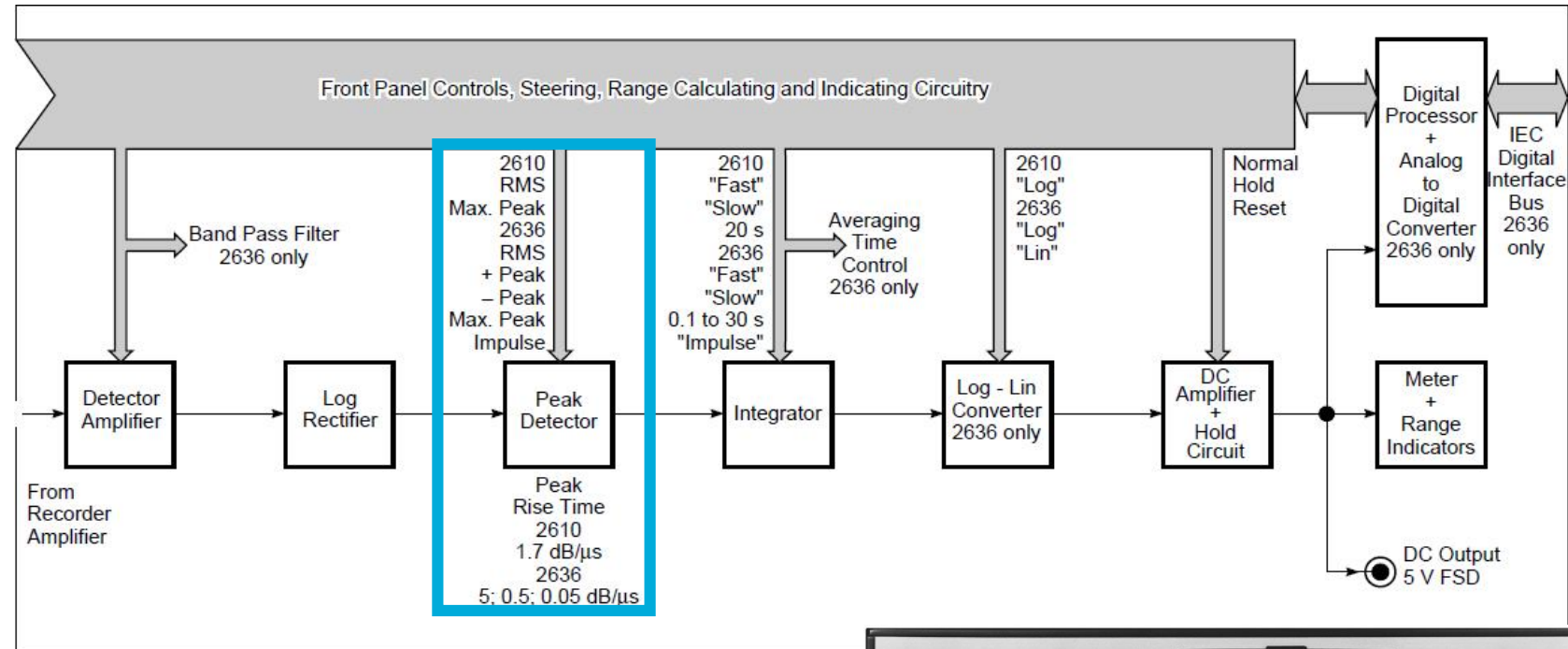
2610

Sections - Output



2610

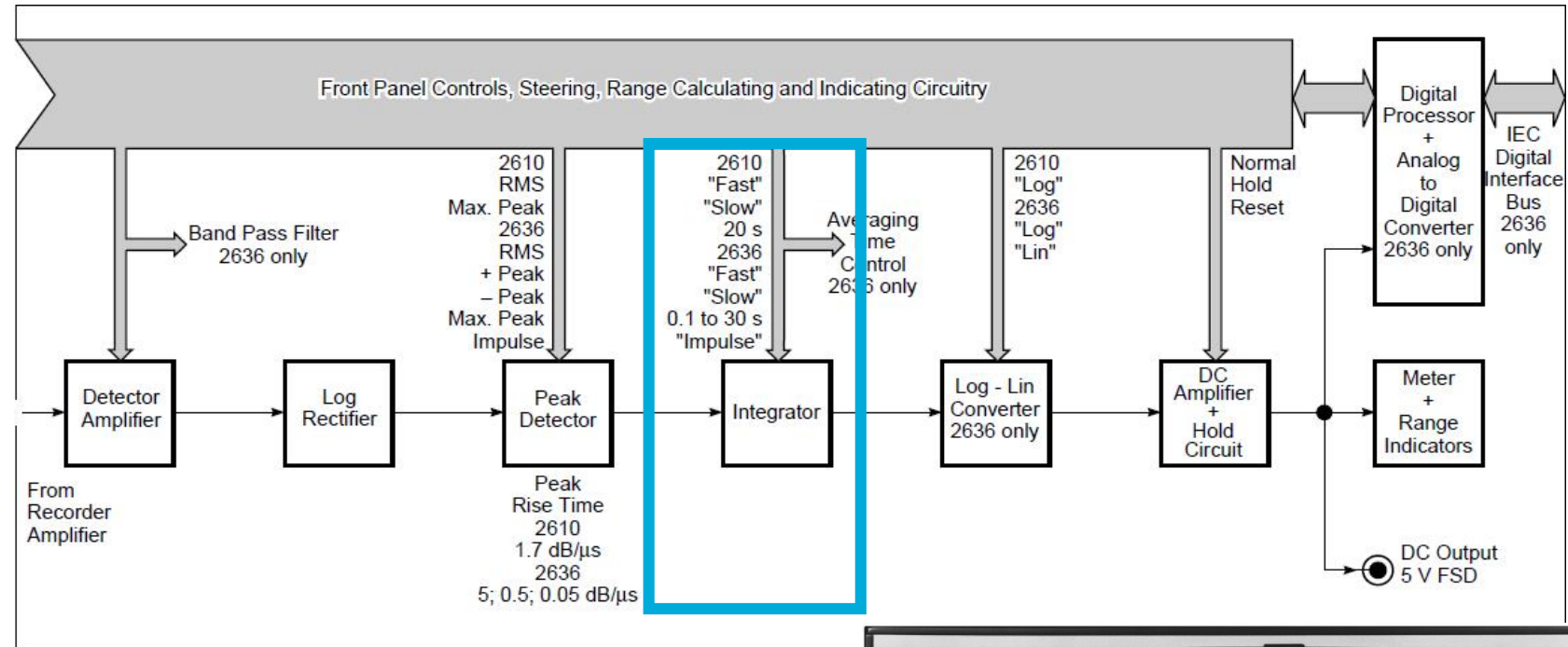
Sections – Peak detector



Peak or RMS – that's the question...



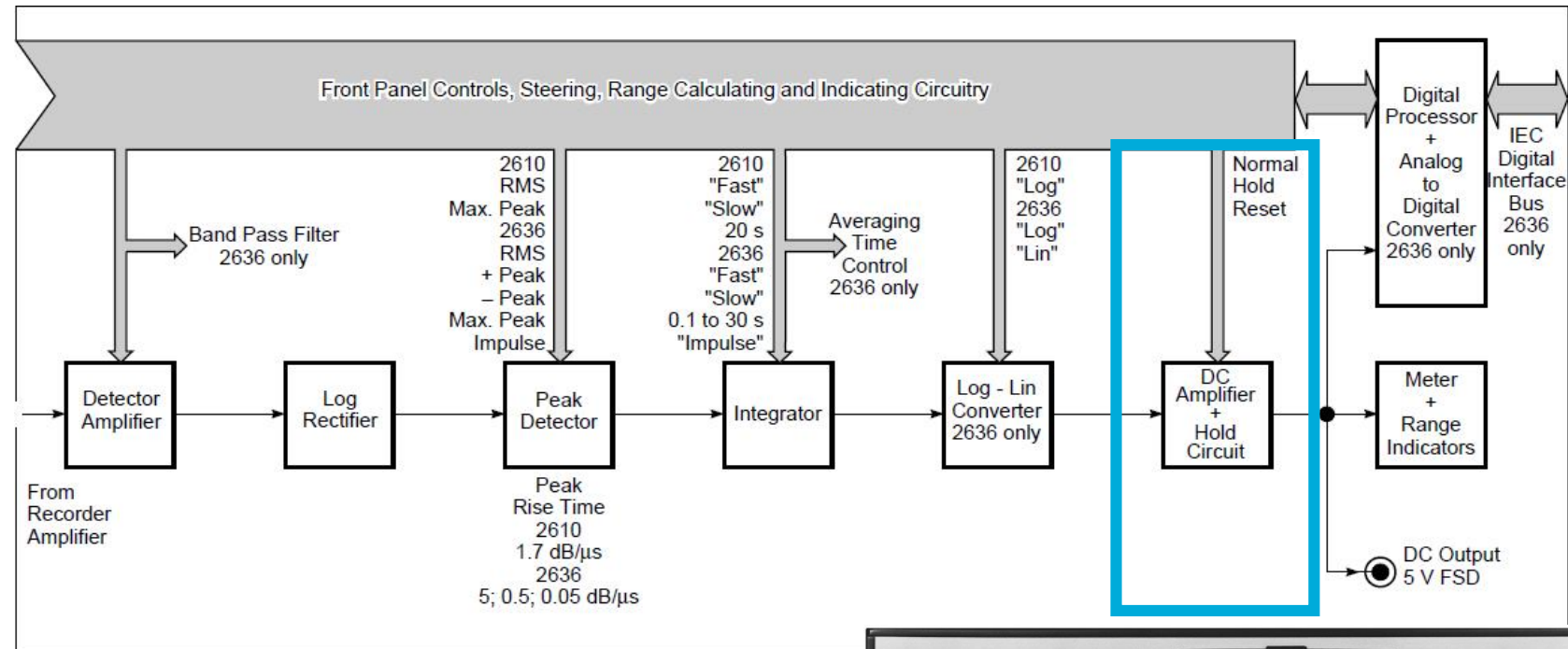
Sections - Integrator



Averaging time constant
Fast: 125 ms
Slow: 1 s



Sections – Peak hold / Reset

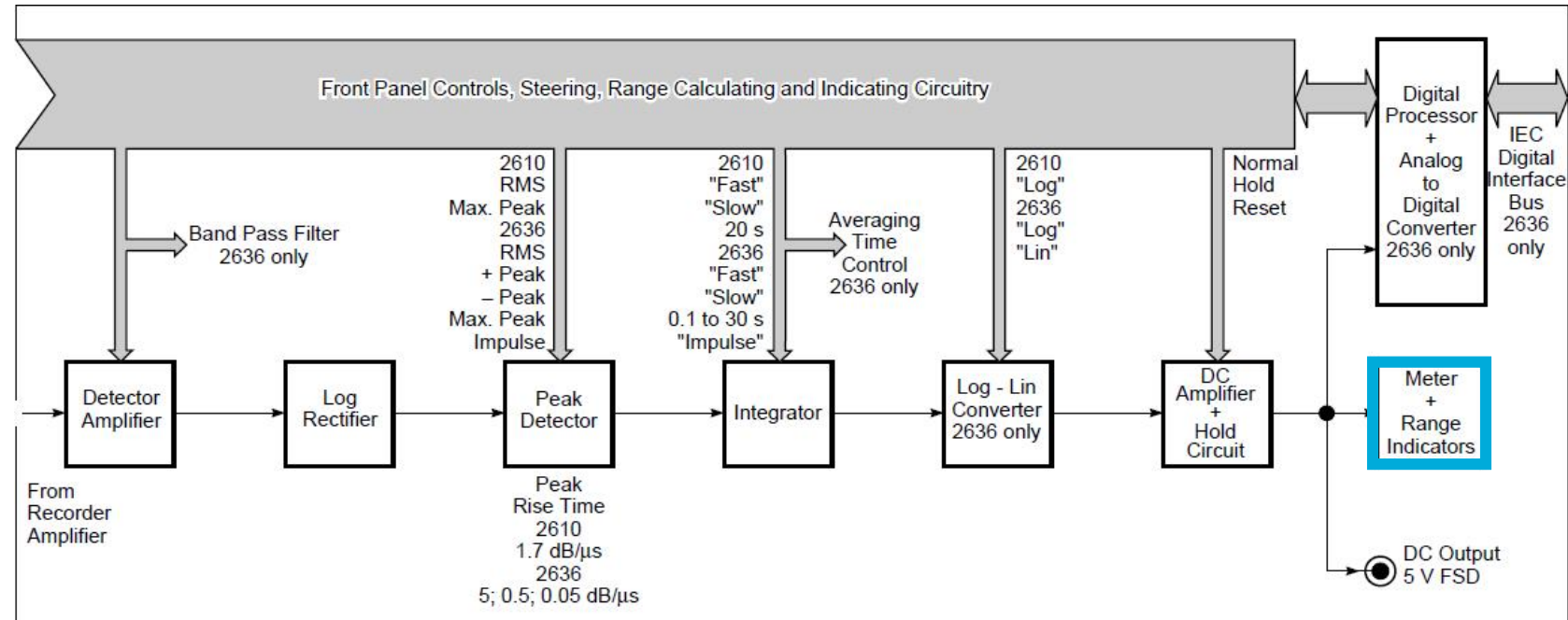


Holding the maximum value can be misleading



2610

Sections - Meter



Sections - Meter

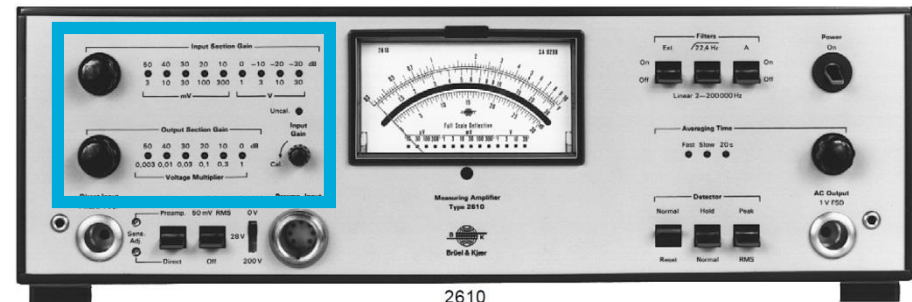


Eventually exchange the
scale for your purpose



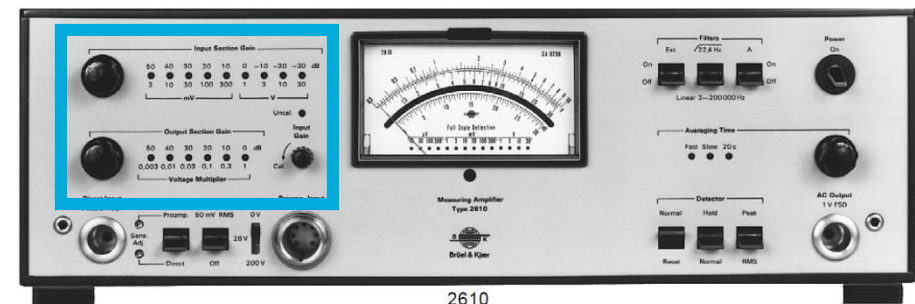
Input and output gain – Overall amplification

		Input section gain (dB)									
		-30	-20	-10	0	10	20	30	40	50	
Output section gain	0	-30	-20	-10	0	10	20	30	40	50	
	10	-20	-10	0	10	20	30	40	50	60	
	20	-10	0	10	20	30	40	50	60	70	
	30	0	10	20	30	40	50	60	70	80	
	40	10	20	30	40	50	60	70	80	90	
	50	20	30	40	50	60	70	80	90	100	



Input and output gain – Overall amplification

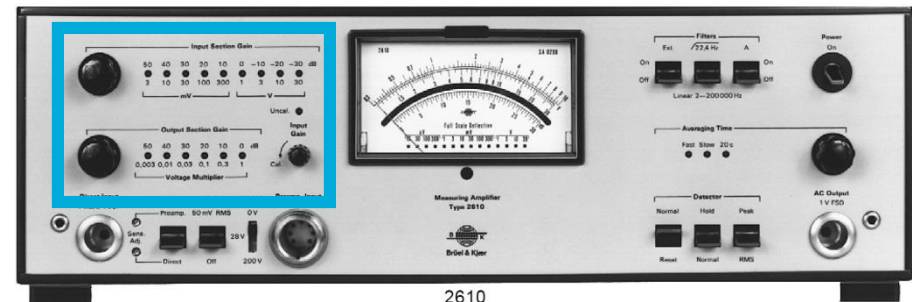
		Input section gain (dB)									
		-30	-20	-10	0	10	20	30	40	50	
Output section gain	0	-30	-20	-10	0	10	20	30	40	50	
	10	-20	-10	0	10	20	30	40	50	60	
	20	-10	0	10	20	30	40	50	60	70	
	30	0	10	20	30	40	50	60	70	80	
	40	10	20	30	40	50	60	70	80	90	
	50	20	30	40	50	60	70	80	90	100	



Input and output gain – Signal to noise ratio (RMS SNR)

		Input section gain (dB)								
		-30	-20	-10	0	10	20	30	40	50
Output section gain	0	101	100	101	100	101	100	96	87	77
	10	92	91	91	90	92	91	87	77	67
	20	82	82	82	81	82	82	77	67	57
	30	72	72	72	71	72	72	67	57	47
	40	62	62	62	61	62	62	57	47	38
	50	53	52	52	51	53	52	47	38	30

Use the additional output gain only if absolutely necessary!



B&K Measuring amplifier 2610

Sections:

- Inputs
- Amplification
- Filters
- Detector
- Outputs/Meters
- Level settings



2610

Thank you for your attention!

stephan.toepken@uol.de