

PMT pinouts

The usbBase, PMT-1K, PMT-3K plug-on MCA can all support many different photomultipliers and positive and negative high voltage polarity. However, a given configuration is unchangable and has to be specified at the time of purchase.

Below we list the most common pinouts and list the voltage distribution for tapered and linear voltage dividers.

Tapered voltage dividers are normally used for spectroscopy with most but the slowest inorganic scintillators.

For dim scintillators (plastic) or slow scintillators ($\text{SrI}_2(\text{Eu})$ or CdWO_4) we recommend linear voltage dividers to keep the required operating high voltage reasonably low (<1000V).

<i>Three common PMT pinouts</i>		
R6231, R6233	R1306, R1307	R878, 10-stage
P81T, N81T, P81L, N81L	P80T, N80T, P80L, N80L	P10T, N10T, P10L, N10L

Common PMT pinouts; For each pinout we show a typical PMT and the high voltage divider options.

N81T	Negative High-Voltage Divider; 8-stage PMT										
Pin No.	14	13	1	3	4	5	6	7	10	11	12
Pin Name	K	F	D1	D2	D3	D4	D5	D6	D7	D8	A
Resistor		2.2	2.2	1	1	1	1	1	1	2.2	2.2
Pin Voltage	1.0k	850	705	635	570	500	430	365	295	150	0

P81T	Positive High-Voltage Divider; 8-stage PMT										
Pin No.	14	13	1	3	4	5	6	7	10	11	12
Pin Name	K	F	D1	D2	D3	D4	D5	D6	D7	D8	A
Resistor		2.2	2.2	1	1	1	1	1	1	2.2	2.2
Pin Voltage	0	150	295	365	430	500	570	635	705	850	1.0k

N80T	Negative High-Voltage Divider; 8-stage PMT										
Pin No.	14	13	1	2	3	4	5	6	7	8	11
Pin Name	K	F	D1	D2	D3	D4	D5	D6	D7	D8	A
Resistor		2.2	2.2	1	1	1	1	1	1	2.2	2.2
Pin Voltage	1.0k	850	705	635	570	500	430	365	295	150	0

P80T	Positive High-Voltage Divider; 9-stage PMT										
Pin No.	14	13	1	2	3	4	5	6	7	8	11
Pin Name	K	F	D1	D2	D3	D4	D5	D6	D7	D8	A
Resistor		2.2	2.2	1	1	1	1	1	1	2.2	2.2
Pin Voltage	0	150	295	365	430	500	570	635	705	850	1.0k

N10T	Negative High-Voltage Divider; 10-stage PMT												
Pin No.	14	13	1	2	3	4	5	6	7	8	9	10	11
Pin Name	K	F	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	A
Resistor		2.2	2.2	1	1	1	1	1	1	1	1	2.2	2.2
Pin Voltage	1.0k	870	740	680	620	560	500	440	380	320	260	130	0

P10T	Positive High-Voltage Divider; 10-stage PMT												
Pin No.	14	13	1	2	3	4	5	6	7	8	9	10	11
Pin Name	K	F	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	A
Resistor		2.2	2.2	1	1	1	1	1	1	1	1	2.2	2.2
Pin Voltage	0	130	260	320	380	440	500	560	620	680	740	870	1.0k