

A complete range of assemblies is available for PHOTONIS PMTs:

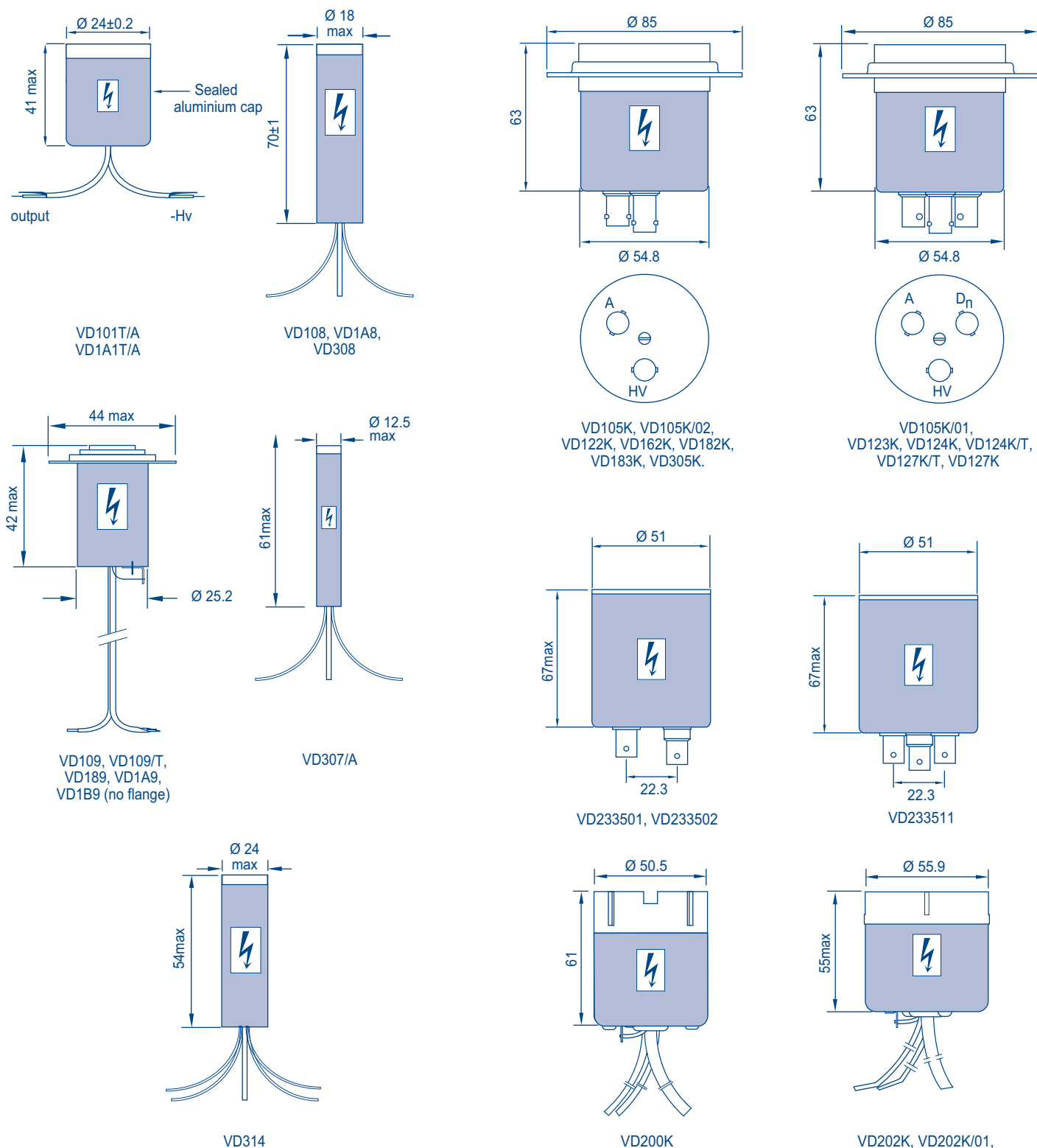
- compact voltage dividers (VD family),
- voltage divider and shield assemblies for very fast tubes (S563 family),
- customised voltage dividers supplied attached to the tubes and well adapted to large quantities (XA family),
- photon sensing (XS family) or photon counting (XD family) integrated modules including power supply ($\pm 12V$) and more.

Though those products fulfill most user's requirements, PHOTONIS also designs customised products.

Please contact your local PHOTONIS representative.

Voltage dividers

Dimensions (in mm)



Characteristics

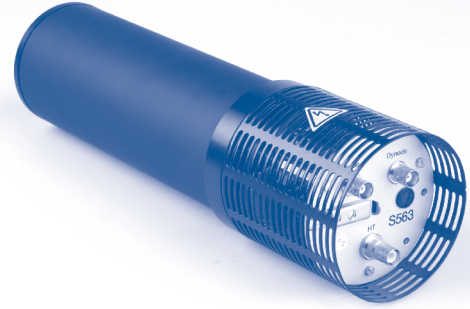
voltage divider	divider type ¹⁾	total resistance (MΩ)	I _a linearity limit ²⁾ (μA)	max. supply voltage (V)	dissipation ³⁾ (W)	main PMT types	supply ⁴⁾	output signal
for 13 mm tubes								
VD197/A	A	work in progress			XP6500, XP650F		-HV	DC/pulse
VD307/A	A	3.6	18	1 300	0.5	XP1302, XP1303, XP1308	+HV	pulse
for 19 mm tubes								
VD108	B	5.9	13	1 800	0.5	XP1911, XP1911/UV, XP1912, XP1918, XP1981	-HV	DC/pulse
VD108/A	A	4.2	18	1 800	0.8	XP1911, XP1911/UV, XP1912, XP1918, XP1981	-HV	DC/pulse
VD1A8	A	4	10	1 700	0.7	XP2802, XP2812, XP2822, XP2832, XP2882	-HV	DC/pulse
VD308	A	4.2	18	1 800	0.8	XP1911, XP1911/UV, XP1912, XP1918, XP1981	+HV	pulse
VD308/B	B	5.6	14	1 800	0.6	XP1911, XP1911/UV, XP1912, XP1918, XP1981	+HV	pulse
for 25 mm tubes								
VD101T/A	A	3.8	50	1 800	0.9	XP3100, XP3108, XP3132	-HV	DC/pulse
VD1A1T/A	A	3.9	50	1 600	0.7	XP31S2	-HV	DC/pulse
VD314	A	-	-	1 700	0.4	XP1422	+HV	pulse
for 29 mm tubes								
VD109	B	5.9	13	1 800	0.6	XP2900, XP2901, XP2972, XP2978	-HV	DC/pulse
VD109/T ⁶⁾	A	2.5	300	1 500	0.9	XP2900, XP2901, XP2972, XP2978	-HV	DC/pulse
VD189	B	5.5	13	1 800	0.6	XP2960	-HV	DC/pulse
VD1A9	A	3.9	10	1 600	0.7	XP2920, XP2930, XP2940, XP2950	-HV	DC/pulse
VD1B9	A	3	25	1 800	1.1	XP2970	-HV	DC/pulse
VD2345	-	-	-	-	-	XP83120, XP83121		
for 39 mm tubes								
VD100T/A ⁶⁾	A	work in progress			XP20A2		-HV	DC/pulse
VD200K	A	3.6	21	1 800	0.9	XP2012B, XP2013B, XP2015B, XP2017B, XP2018B, XP2042B, XP2060B, XP2072B, XP2090B	-HV (or +HV)	DC/pulse (pulse)
VD200K/B	B	5.5	13	1 800	0.6	XP2012B, XP2013B, XP2015B, XP2017B, XP2018B, XP2042B, XP2060B, XP2072B, XP2090B	-HV (or +HV)	DC/pulse (pulse)
for 51, 60, 76, 90 and 130 mm tubes (standard)								
VD202K	A	3.6	21	1 800	0.9	XP2202B, XP2203B, XP3230B, XP3232B, XP3330B, XP3332B, XP6242B, XP6342B	-HV (or +HV)	DC/pulse (pulse)
VD202K/01	A	4.2	15	1 500	0.6	XP3392B, XP3540B, XP3712B, XP3730B, XP3732B, XP5200B, XP5202B, XP5292B, XP5300B, XP5302B, XP5382B, XP5612B, XP5700B, XP6242B, XP6342B	-HV (or +HV)	DC/pulse (pulse)
VD202K/03	A	3.8	15	1 500	0.6	XP52Y2B, XP53Y2B	-HV (or +HV)	DC/pulse (pulse)
VD282K	A	3.3	20	1 500	0.7	XP3212B, XP3292B, XP3312B, XP3372B, XP3392B, XP3612B, XP3672B	-HV (or +HV)	DC/pulse (pulse)
for 51, 60, 76 and 130 mm tubes (fast and very fast)								
S563	C	1.8	56	3 000	5.0	XP2020, XP2020Q, XP2254B, XP2262B, XP2272B	-HV	DC/pulse
S563/04	C	1.9	53	3 000	4.7	XP2020UR, XP2020URQ	-HV	DC/pulse
VD105K ⁵⁾	C	2.8	40	2 700	2.6	XP4500B, XP4508B, XP4512B, XP4572B	-HV	DC/pulse
VD105K/01 ^{5) 6)}	C	2.8	250	2 700	2.7	XP4500B, XP4508B, XP4512B, XP4572B	-HV	DC/pulse
VD105K/02 ⁵⁾	C	2.6	40	2 300	2.1	XP4592B	-HV	DC/pulse
VD122K ⁵⁾	B	2.2	53	2 500	2.8	XP2260B, XP2262B, XP2272B	-HV	DC/pulse
VD123K ^{5) 6)}	C	3	300	3 000	3.1	XP4312B, XP4318B, XP4362B, XP4372B, XP4392B	-HV	DC/pulse
VD124K ⁵⁾	C	2.2	58	3 000	4.0	XP2020, XP2020Q, XP2254B	-HV	DC/pulse
VD124K/T ⁶⁾	C	2.2	400	3 000	4.0	XP2020, XP2020Q, XP2254B	-HV	DC/pulse
VD127K/T ⁶⁾	C	2.8	400	3 000	3.2	XP2020UR, XP2020URQ	-HV	DC/pulse
VD162K/B	B	1.5	70	2 200	3.2	XP2242B	-HV	DC/pulse
VD182K/C ⁶⁾	C	1.9	300	2 500	3.4	XP2282B	-HV	DC/pulse
VD183K	C	4	23	2 000	1.0	XP3462B, XP3468B	-HV	DC/pulse
VD233501	A	9.2	-	2500		XP8850, XP8852	-HV	DC/pulse
VD233502	A	9.2	-	2500	-	XP8850, XP8852	+HV	pulse
VD233511	A	9.2	-	2500		XP8850, XP8852	-HV	DC/pulse
VD305K/B ⁵⁾	C	2.8	40	2 700	2.6	XP4500B, XP4508B, XP4512B, XP4572B	+HV	pulse

Notes

- 1) A: iterative voltage divider which maximizes gain;
 - B: progressive voltage divider which optimizes linearity and in most cases the timing characteristics;
 - C: progressive voltage divider for certain fast tubes which provides a good compromise between A-type and B-type dividers for gain, linearity and timing characteristics.
- 2) The mentioned current is the anode current above which the linearity of the PMT is affected by more than 4%, due to the limitation of the divider circuitry; the PMT has however its own linearity, which is not included in this number; see Linearity and Voltage Dividers for more details.
- 3) at max. supply voltage.
- 4) -HV: cathode at -HV; anode grounded;
+HV: anode at +HV, cathode grounded.
- The VD200K, VD202K, and VD282K families are suitable for both +HV and -HV. They are supplied set for -HV operation. For +HV operation, remove the cap and modify the internal connections according to the instructions supplied with the base.
- 5) possible voltage adjustments with internal trimmer:
- VD105K: G1 and G2 voltages;
 - VD105K/01: G1 voltage;
 - VD105K/02: G1 voltage;
 - VD122K: D2 voltage;
 - VD123K: G voltage;
 - VD124K: G1 and D2 voltages;
 - VD305K/B: G1 and G2 voltages;
- 6) The last 3 stages are transistorized, stabilizing the dynode voltages to within 1 V at up to 100 μ A and above.

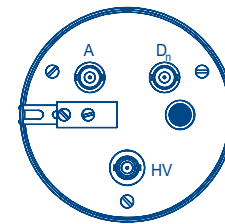
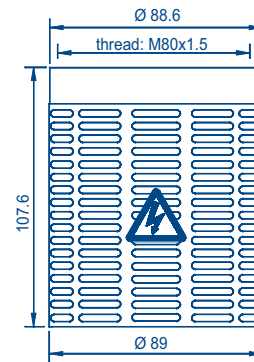
Voltage divider and shield for very fast tubes

Special assemblies including a voltage divider and an optional mu-metal shield are available for 2" fast PMTs used to detect very brief low-intensity light pulses in physics experiments using coincidence measurements, Cherenkov light studies, high-speed scintillators, and in single photoelectron counting.



	Voltage divider	+ Front shield =	Voltage divider & Front shield assembly
Fast tubes	S563	+ S5632/AV =	S5632
Ultra fast tubes	S563/04	+ S5632/AV =	S5632/04
Length (mm)	108	240	334
Diameter (mm)	90	80	90
Mass (g)	490	4000	4490

See voltage dividers characteristics (p.74).



S563, S563A, S563/04

