

# PHILIPS



## TRANSMITTING VALVES

- *Air cooled*
- *Forced air cooled*
- *Water cooled*
- *Rectifying valves*

# SURVEY OF THE T

## Modulation Valves

Type	Filament voltage	Filament current	Maximum anode voltage	Maximum screen-grid voltage	Maximum anode dissipation	Maximum screen-grid dissipation	Maximum cathode current	Maximum diameter	Maximum length	Adjustment $\lambda \approx 15$ m	Anode voltage	Anode current	D.C. grid voltage (approx.)	Peak A.C. grid voltage (approx.)	Driving power <sup>1)</sup>	Modulation power (modulation depth 100%)	Output
	V	A	V	V	W	W	mA	mm	mm		V	mA	V	V	W	W	W
MC 1/50	10.0	1.1	1000	—	75	—	175	51	183.5	L.F. class A ampl.	1000	77	— 80	80	0	—	22
										L.F. class B ampl. <sup>1)</sup>	1000	312	—100	180	3	—	196
										Telegr. class C <sup>3)</sup>	1000	157	—260	360	4.5	—	97
										Telegr. class B <sup>3)</sup>	1000	102	—105	110	5	—	29
										An. mod. class C <sup>3)</sup>	1000	125	—240	330	3.8	63	80
MC 1/60	4.0	3.3	1000	—	75	—	200	51	200	L.F. class A ampl.	1000	77.5	—64	64	0	—	22.3
										L.F. class B ampl. <sup>1)</sup>	1000	312	—80	140	3.7	—	204
MA 12/15	21.5	79	12000	—	15000	—	—	226	811	L.F. class A ampl.	10600	1160	— 475	475	0	—	2700
										L.F. class B ampl. <sup>1)</sup>	12000	5340	— 700	1600	900	—	42000
										Telegr. class C	12000	2500	—1000	2200	825	—	20000
										Teleph. class B	12000	1500	— 700	780	250	—	4500
										An. mod. class C	10000	1400	—1350	2600	1300	7	9500

## Triodes

Type	Filament voltage	Filament current	Maximum anode voltage	Maximum screen-grid voltage	Maximum anode dissipation	Maximum screen-grid dissipation	Maximum cathode current	Maximum diameter	Maximum length	Adjustment $\lambda \approx 15$ m	Anode voltage	Anode current	D.C. grid voltage (approx.)	Peak A.C. grid voltage (approx.)	Driving power <sup>1)</sup>	Modulation power (modulation depth 100%)	Output
	V	A	V	V	W	W	mA	mm	mm		V	mA	V	V	W	W	W
TB 04/8	2.0	3.65	450	—	30	—	92	68	77	Tgr. class C $\lambda = 110$ cm	400	80	—	—	—	—	12
										Tgr. class C $\lambda = 80$ cm	400	80	—	—	—	—	9
										Tgr. class C $\lambda = 60$ cm	400	80	—	—	—	—	5
TC 04/10	4.0	1.1	500	—	10	—	60	57	157	Telegr. class C <sup>3)</sup>	500	50	—50	110	0.83	—	15
										Teleph. class B <sup>3)</sup>	500	26	—20	40	1.0	—	4.0
										An. mod. class C <sup>3)</sup>	500	33.5	—50	100	0.6	8.4	10
TE 05/10	6.3	0.9	500	—	12	—	80	47	118	Telegr. class C <sup>1)</sup>	500	110	—65	140	3.5	—	31
										Teleph. class B <sup>1)</sup>	500	63	—23	40	1.8	—	7.5
										An. mod. class C <sup>1)</sup>	450	90	—70	135	3.2	20	22.5

# TECHNICAL DATA OF PHILIPS TRANSISTORS

## Triodes (continued)

Type	Filament voltage	Filament current	Maximum anode voltage	Maximum screen-grid voltage	Maximum anode dissipation	Maximum screen-grid dissipation	Maximum cathode current	Maximum diameter	Maximum length	Adjustment $\lambda \approx 15 \text{ m}$	Anode voltage	Anode current	D.C. grid voltage (approx.)	Peak A.C. grid voltage (approx.)	Driving power <sup>1)</sup>	Modulation power (modulation depth 100%)	Output
	V	A	V	V	W	W	mA	mm	mm		V	mA	V	V	W	W	W
TC 05/25	4.0	2.2	600	—	40	—	100	60	173	Telegr. class C <sup>3)</sup>	600	93	—170	300	3.2	—	35
										Teleph. class B <sup>3)</sup>	600	74	—60	100	3.6	—	11
										An. mod. class C <sup>3)</sup>	600	95	—170	300	3.5	29	35
TB 1/60	7.5	3.25	1000	—	50	—	120	72	173	Telegr. class C	1250	200	—225	385	15	—	145
										Teleph. class B	1250	113	—120	145	20	—	39
										An. mod. class C	1000	184	—320	450	20	92	114
TC 1/75	10.0	1.6	1500	—	75	—	200	51	201	Telegr. class C <sup>3)</sup>	1500	123	—160	240	2.9	—	115
										Teleph. class B <sup>3)</sup>	1500	65	—55	60	1.8	—	30
										An. mod. class C <sup>3)</sup>	1250	115	—140	210	3.0	72	93
TB 2/200	12.0	2.7	2000	—	130	—	250	55	174	Telegr. class C	2000	190	—150	280	7	—	275
										Teleph. class B	2000	95	—60	80	4	—	60
										An. mod. class C	1600	135	—200	330	11.5	108	160
TB 2/500	12.0	7.3	2000	—	300	—	600	86	243	Telegr. class C	2000	410	—120	275	20	—	550
										Teleph. class B	2000	205	—55	90	6.3	—	115
										An. mod. class C	1800	300	—160	320	23	270	375
TB 3/1000	12.0	9	3000	—	500	—	700	106	262	Telegr. class C	3000	550	—200	400	20	—	1200
										Teleph. class B	3000	220	—90	127	20	—	200
										An. mod. class C	2500	400	—250	500	40	500	675
TB 3/2000	12.0	17	3500	—	1100	—	1400	154	334	Telegr. class C <sup>3)</sup>	3500	1140	—200	400	40	—	2900
										Teleph. class B <sup>3)</sup>	3500	485	—95	125	18	—	600
										An. mod. class C <sup>3)</sup>	3000	725	—300	550	90	109.0	1625
TAL 12/10	22.0	2 × 39	12000	—	4000	—	—	194	546	Telegr. class C	10000	1450	—600	1050	275	—	10500
										Teleph. class B	6000	1000	—190	315	220	—	2000
										An. mod. class C	8000	1000	—700	1150	375	4000	6000

# SMITTING VALVES

## Triodes (continued)

Type	Filament voltage	Filament current	Maximum anode voltage	Maximum screen-grid voltage	Maximum anode dissipation	Maximum screen-grid dissipation	Maximum cathode current	Maximum diameter	Maximum length	Adjustment $\lambda \approx 15 \text{ m}$	Anode voltage	Anode current	D.C. grid voltage (approx.)	Peak A.C. grid voltage (approx.)	Driving power <sup>1)</sup>	Modulation power (modulation depth 100%)	Output	
	V	A	V	V	W	W	mA	mm	mm		V	mA	V	V	W	W	W	
TAW 12/10	22.0	2 × 39	12000	—	7500	—	—	194	495		Telegr. class C	10000	1700	—600	1070	300	—	12000
											Teleph. class B	10000	1000	—360	245	170	—	3300
											An. mod. class C	8000	1000	—750	1150	375	4000	6000
TA 12/20	21.5	79	12000	—	18000	—	—	226	811		Telegr. class C	12000	2700	—600	1800	720	—	22000
											Teleph. class B	12000	1540	—200	435	210	—	5000
											An. mod. class C	10000	1400	—900	2100	1050	7000	9500
TA 12/35	49.0	3 × 50	15000	—	18000	—	—	226	684		Telegr. class C	15000	4000	—900	1550	700	—	42000
											Teleph. class B	15000	1750	—500	500	300	—	8500
											An. mod. class C	12000	3000	—1000	1650	910	18000	26000
TA 18/100	33.0	207	20000	—	70000	—	—	330	1333		Telegr. class C <sup>3)</sup>	20000	9000	—900	2100	3400	—	130000
											Teleph. class B <sup>3)</sup>	20000	4300	—250	600	3000	—	31000
											An. mod. class C <sup>3)</sup>	12000	4500	—600	1800	2900	27000	38000
TA 20/250	35.0	420	20000	—	130000	—	—	330	1393		Telegr. class C <sup>3)</sup>	20000	16500	—900	2400	10000	—	250000
											Teleph. class B <sup>3)</sup>	20000	9300	—300	870	7300	—	60000
											An. mod. class C <sup>3)</sup>	12000	8500	—900	2100	8400	51000	65000

## Double Tetrode

Type	Filament voltage	Filament current	Max. anode voltage	Maximum screen-grid voltage	Maximum anode dissipation	Maximum screen-grid dissipation	Maximum cathode current	Maximum diameter	Maximum length	Adjustment	Anode voltage	Anode current	D.C. grid voltage (approx.)	Peak A.C. grid voltage (approx.)	Driving power <sup>2)</sup>	Modulation power (modulation depth 100%)	Output	
	V	A	V	V	W	W	mA	mm	mm		V	mA	V	V	W	W	W	
QQE 04/20	6.3	0.8	400	250	7.5	2.5	60	59	88		Tgr. class C $\lambda = 2.5 \text{ m}$	400	90	—60	—	—	—	23.5
											Tgr. class C $\lambda = 1.75 \text{ m}$	400	88	—60	—	—	—	21.5
											Tgr. class C $\lambda = 1 \text{ m}$	360	67.5	—60	—	—	—	11

# TECHNICAL DATA

## Pentodes

Type	Filament voltage	Filament current	Maximum anode voltage	Maximum screen-grid voltage	Maximum anode dissipation	Maximum screen-grid dissipation	Maximum cathode current	Maximum diameter	Maximum length	Adjustment $\lambda \approx 15 \text{ m}$	Anode voltage	Anode current	D.C. grid-voltage (approx.)	Peak A.C. grid voltage (approx.)	Driving power <sup>2)</sup>	Modulation power (modulation depth 100%)	Output	
	V	A	V	V	W	W	mA	mm	mm		V	mA	V	V	W	W	W	
PE 04/10	12.0	0.65	600	300	10	3.0	85	53	133		Telegr. class C	500	50	-50	65	0.33	—	15
											Teleph. class B	500	26	-15	10	0.1	—	4.0
											An. mod. class C	500	10	-50	60	0.2	4.0	5.0
PC 05/15	4.0	1.1	500	300	15	5	85	53	149		Telegr. class C	500	65	-150	210	0.4	—	20
											Teleph. class B	500	30	-110	75	0.15	—	4.0
											An. mod. class C	500	32	-150	220	0.6	8.0	9.5
PE 05/15	12.0	0.37	500	300	15	5	85	51	150		Telegr. class C	500	58	-150	180	0.9	—	14
											Teleph. class B	—	—	—	—	—	—	—
											An. mod. class C	500	22	-160	180	0.7	5.5	7.0
PE 06/40	6.3	1.3	600	300	25	5	130	51	134		Telegr. class C	600	109	-75	90	0.2	—	45
											Teleph. class B	600	60	-40	20	0	—	11
											An. mod. class C	—	—	—	—	—	—	—
PE 1/80	12.0	0.9	1000	500	35	6	160	64	159		Telegr. class C	1000	120	-170	250	1.5	—	85
											Teleph. class B	1000	48	-80	60	0.3	—	13
											An. mod. class C	1000	40	-170	200	0.9	20	26
PC 1.5/100	10.0	2.0	1500	500	85	25	200	66	252		Telegr. class C	1500	130	-200	300	0.6	—	140
											Teleph. class B	1500	78	-100	80	0.8	—	34
											An. mod. class C	1500	76	-200	275	1.65	57	73
PB 2/200	12.0	3.35	2000	350	110	25	285	55	168		Telegr. class C	2000	195	-150	270	2	—	280
											Teleph. class B	1500	98	-44	65	0.5	—	37
											An. mod. class C	1800	100	-150	245	1.8	90	125

# TECHNICAL DATA

## Pentodes (continued)

Type	Filament voltage	Filament current	Maximum anode voltage	Maximum screen-grid voltage	Maximum anode dissipation	Maximum screen-grid dissipation	Maximum cathode current	Maximum diameter	Maximum length	Adjustment $\lambda \approx 15 \text{ m}$	Anode voltage	Anode current	D.C. grid voltage (approx.)	Peak A.C. grid voltage (approx.)	Driving power <sup>1)</sup>	Modulation power (modulation depth 100%)	Output
	V	A	V	V	W	W	mA	mm	mm		V	mA	V	V	W	W	W
<b>PB</b> 2/500	12.0	7.3	2500	500	250	60	600	86	271	Telegr. class C	2500	340	-150	270	5.4	—	600
											2000	170	— 50	60	0.7	—	90
											2000	215	-150	300	10.5	—	300
<b>PB</b> 3/800	12.0	8.5	3000	600	450	100	700	106	293	Telegr. class C <sup>3)</sup>	3000	550	-200	370	15	—	1200
											3000	215	-120	80	0.7	—	190
											2500	225	-300	400	6	285	400
<b>PAL</b> 12/15	22.0	80	12000	2000	3000	1500	—	316	609	Telegr. class C <sup>3)</sup>	12000	1900	-500	1000	180	—	14800
											12000	1000	-400	350	45	—	4000
											8000	1200	-500	1000	240	4800	5800
<b>PAW</b> 12/15	22.0	80	12000	2000	12000	1500	—	245	614	Telegr. class C <sup>3)</sup>	12000	2750	-500	1050	210	—	21000
											12000	1120	-400	360	54	—	4600
											8000	1200	-500	1000	240	4800	5800

## Rectifying Valves

Type	Filament voltage	Filament current	Maximum peak inverse voltage	Maximum D.C. output current	Maximum A.C. anode voltage (R.M.S. value)	Maximum anode current (peak value)	Voltage drop (approx.)	Maximum diameter	Maximum length	Three-phase circuit			
	V	A	kV	mA	kV	A	V	mm	mm	Maximum A.C. anode voltage (R.M.S. value)	D.C. output voltage (mean value)	D.C. output current (mean value)	Output
	V	A	kV	mA	kV	A	V	mm	mm	kV	kV	A	kW
<b>DC</b> 1/60	2.2	4	2.8	2 × 37.5	2 × 1	—	—	63.5	175	—	—	—	—
<b>DE</b> 2/200	4.0	4	5	2 × 50	2 × 2	—	—	95	176	—	—	—	—
<b>DCG</b> 2/500	2.0	4.5	6.3	250	—	1.0	13	48	126	2.55	3.0	0.75	2.25
<b>DCG</b> 4/1000	2.5	4.8	10	250	—	1.0	16	49.5	147	4.1	4.8	0.75	3.6
<b>DCG</b> 5/5000	5.0	6.75	12	1250	—	5.0	16	56	229	4.9	5.8	3.75	21.75
<b>DCG</b> 6/6000	5.0	6	13	1000	—	4.0	15	80	252	5.35	6.25	3.0	18.75
<b>DCG</b> 12/30	5.0	14	27.5	2500	—	10	11	120	381	11.2	13.2	7.5	99
<b>DCG</b> 5/30	5.0	31	13	6000	—	25	16	220	581	5.35	6.25	18	112.5

<sup>1)</sup> 2 valves, For H.F. adjustments:  $\lambda = 5 \text{ m}$

<sup>3)</sup>  $\lambda \approx 150 \text{ m}$

<sup>2)</sup> For H.F. class B teleph. in the modulation peak at 100% modulation.