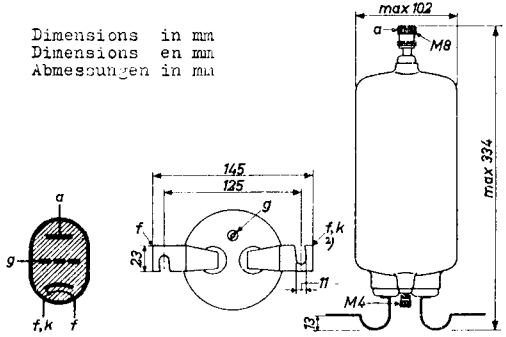
THYRATRON, mercury-vapour triode
THYRATRON, triode à vapeur de mercure
STROMTORRÖHRE, Quecksilberdampftriode

Application: electronic motor control equipment (continuous service up to 600 V D.C.), production machine control, automatic elevator control, resistance welding
Application: équipement électronique pour la commande de moteurs (service continue jusqu'à 600 V tension continue), la commande des machines de production, la commande automatique des élévateurs, soudure par résistance
Anwendung : elektronische Einrichtungen für Regelung von Motoren (Dauerbetrieb bis 600 V Gleichspannung), Regelung von Produktionsmaschinen, automatische Steuerung von Aufzüge, Widerstandsschweissung

Heating : indirect
Chauffage : indirect
Heizung : indirekt

V_f = 5,0 V
I_f = 14 A
T_w = min. 5 min[1])

Dimensions in mm
Dimensions en mm
Abmessungen in mm



Mounting position: vertical, base down
Montage : vertical, culot en bas
Einbau : senkrecht, Sockel unten

Net weight
Poids net 820 g
Nettogewicht

Shipping weight
Poids brut 1500 g
Bruttogewicht

See also "Explanation of the technical data of thyratrons" in front of this section
Voir aussi "L'explication des caractéristiques techniques des thyratrons" en tête de ce chapitre
Siehe auch die "Erläuterung zu den technischen Daten der Stromtorröhren" am Anfang dieses Abschnitts
1) See page 3; voir page 3; siehe Seite 3
2) Marked red; marqué en rouge; rot gemerkt

THYRATRON, mercury-vapour triode

APPLICATION

Electronic motor control equipment (continuous service up to 600 V D.C.)

Production machine control

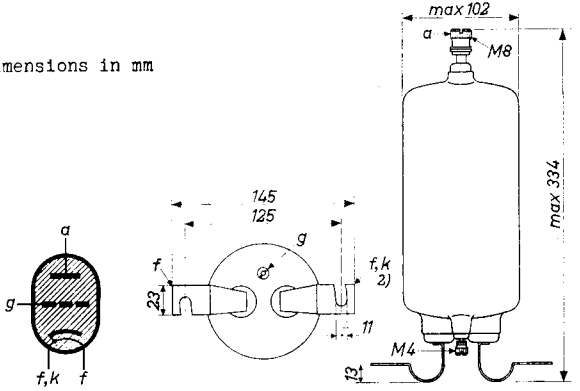
Automatic elevator control

Resistance welding

HEATING: indirect

Heater voltage	V_f	=	5.0 V
Heater current	$I_f(V_f=5.0\ V)$	=	11 A
		= max.	13 A
Waiting time	T_w	= min.	10 min.[1]

Dimensions in mm



Mounting position: vertical, base down

Net weight: 820 g Shipping weight: 1500 g

CAPACITANCES

Grid to all other elements except anode	C_g	= 30 pF
Anode to grid	C_{ag}	= 8 pF

[1]) See page B
If during long periods of service interruption (e.g. during night hours) the heater voltage is maintained at 5 V, the waiting time can be omitted

[2]) Marked red

Capacitances Capacités Kapazitäten		C_{ag} =	8 pF
		C_g =	30 pF
Typical characteristics Caractéristiques types Kenndaten		V_{arc} =	10 V
		T_{ion} =	10 µs
		T_{dion} =	1000 µs
		f = max	150 c/s

Limiting values (absolute limits)
Caractéristiques limites (limites absolues)
Grenzdaten (Absolute Grenzen)

Continuous service (motor control)
Service continue (commande de moteur)
Dauerbetrieb (Regelung von Motoren)

V_{a_p}	=		max.	1500 V
V_{ainv_p}	=		max.	2500 V
$-V_g$	=		max.	300 V
$-V_g$	=		max.	10 V[5]
$I_{surge(T=max.0,1s)}$	=		max.	1500 A
$I_{g(Va=pos)}$	=		max.	0,25 A
I_{g_p}	=		min.	0,5 mA
I_{g_p}	=		max.	1 A
R_g	=		max.	50 kΩ
R_g	=			10 kΩ[2]
I_{k_p}	= max.	30 A	100 A	160[3] A
I_k	= max.	12,5 A	10 A	20[3] A
I_{krms}	= max.	30 A	30 A	50[3] A
T_{av}	= max.	15 s	max. 15 s	[4]
t_{Hg}	=	35-75 °C	35-75 °C	40-75 °C
t_{Hg}	=	60 °C	60 °C	60 °C[2]

[2] Recommended value; valeur recommandée; Empfohlener Wert

[3] Overload, during max.5 sec in each 5 minutes operating period
Surcharge, durée 5 sec au max. dans chaque période d'opération de 5 minutes
Überlastung, während max.5 Sek. in jeder Betriebsperiode von 5 Minuten

[4] Max. 1 cycle
1 cycle au max.
Max. 1 Periode

[5] Tube conductive
Tube conductif
Gezündete Röhre

TYPICAL CHARACTERISTICS

Tube voltage drop	V_{arc} =	10 V
Ionisation time	T_{ion} =	10 µsec
Deionisation time	T_{dion} =	1000 µsec

LIMITING VALUES (Absolute limits)

I. For continuous service (motor control)

Frequency	f	= max.	150 c/s
Peak anode voltage	V_{ap}	= max.	1500 V
Peak inverse anode voltage	$V_{a\ inv\ p}$	= max.	2500 V
Grid voltage before conduction	$-V_g$	= max.	300 V
Grid voltage during conduction	$-V_g$	= max.	10 V
Surge current	$I_{a\ surge}$	= max.	1500 A
Max. duration	T	= max.	0.1 sec
Grid current (anode positive)	I_g	= max.	0.25 A
Peak grid current	I_{gp}	= max.	1 A
		= min.	0.5 mA
Grid circuit resistance	R_g	= max.	50 kΩ[1]

Peak cathode current	I_{kp}	= max.	80	100	160[2]	A
Cathode current (RMS value)	I_k	= max.	30	30	50[2]	A(RMS)
Average cathode current	I_k	= max.	12.5	10	20[2]	A
Averaging time	T_{av}	= max.	15	15	[3]	sec
Mercury temperature	t_{Hg}	= max.	75	75	75	°C [4]
		= min.	35	35	40	°C

[1]) Recommended value 10 kΩ

[2]) Overload during max. 5 sec in each 5 minutes operation period

[3]) Max. 1 cycle

[4]) Recommended value 60 °C

Limiting values (absolute limits)
Caractéristiques limites (limites absolues)
Grenzdaten (absolute Grenzen)

A.C. and welder operation (two tubes in inverse parallel)
Opération C.A. et de soudure (deux tubes en montage anti parallèle)
Wechselstrom- und Schweissbetrieb (zwei Röhren in Antiparallelschaltung)

V_{a_p}	=		max.	750 V
V_{ainv_p}	=		max.	750 V
$-V_g$	=		max.	300 V
$-V_g$	=		max.	10 V [5]
Duty cycle Facteur de marche= Einschaltdauer		10	50	100 %
I_{k_p}	= max.	156	78	39 A
I_k	= max.	5	12,5	12,5 A
$I_{o_{rms}}$	= max.	110	55	27,5 A
T_{av}	= max.	5	5	15 sec
I_{surge} (T=max.0,1 s)	=		max.	1500 A
I_g (Va = pos.)	=		max.	0,25 A
R_g	=		max.	50 kΩ
R_g	=			10 kΩ [2]
t_{Hg}	=			40-80 °C
t_{Hg}	=			60 °C [2]

[2] [5] See page 2; voir page 2; siehe Seite 2

[1] See curves on page B
During long periods of interrupted service (e.g. during night hours) it is recommended to reduce Vf to 60-80% instead of switching off the filament. In this way the value of Tw can be decreased according to the dotted curve
Voir les courbes sur page B
Pendant les périodes du service interrompu longues (p.e. pendant les heures de nuit) il est recommandé de reducer Vf à 60-80% au lieu de mettre hors circuit le filament. De cette manière la valeur de Tw peut être diminuée selon la courbe pointilée
Siehe die Kurven auf Seite B
Während langen Betriebsunterbrechungen (z.B. während der Nachtstunden) ist es empfehlenswert Vf zu reduzieren bis auf 60-80% statt den Glühfaden auszuschalten. In dieser Weise kann den Wert von Tw entsprechend die gestrichelte Kurve verringert werden

LIMITING VALUES (Absolute limits; continued)

II. For A.C. and welding control operation

Two tubes in inverse parallel

Frequency	f	= max.	150 c/s
Peak anode voltage	V_{a_p}	= max.	750 V
Peak inverse anode voltage	$V_{a\ inv\ p}$	= max.	750 V
Grid voltage before conduction	$-V_g$	= max.	300 V
Grid voltage during conduction	$-V_g$	= max.	10 V
Surge current	$I_{a\ surge}$	= max.	1500 A
Max. duration	T	= max.	0.1 sec
Grid current (anode positive)	I_g	= max.	0.25 A
Grid circuit resistance	R_g	= max.	50 kΩ[1])
Mercury temperature	t_{Hg}	= max.	80 °C
		= min.	40 °C[2])

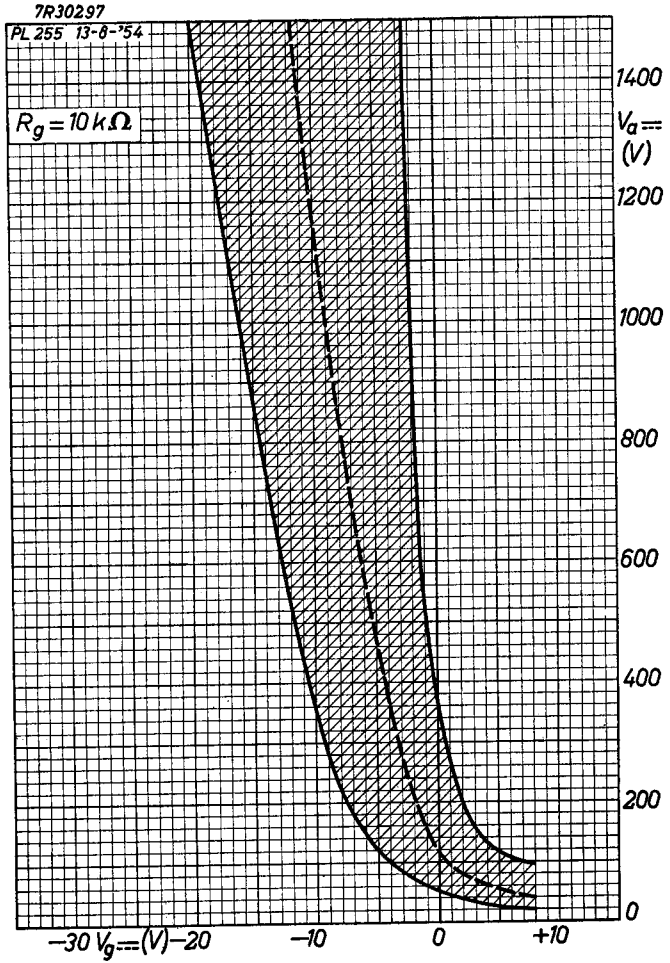
Duty factor	δ	=	10	50	100 %
Peak cathode current	I_{k_p}	= max.	156	78	39 A
Cathode current (RMS value)	I_k	= max.	110	55	27.5 A(RMS)
Average cathode current	I_k	= max.	5	12.5	12.5 A
Averaging time	T_{av}	= max.	5	5	15 sec

[1]) Recommended value 10 kΩ

[2]) Recommended value 60 °C

PHILIPS

PL 255



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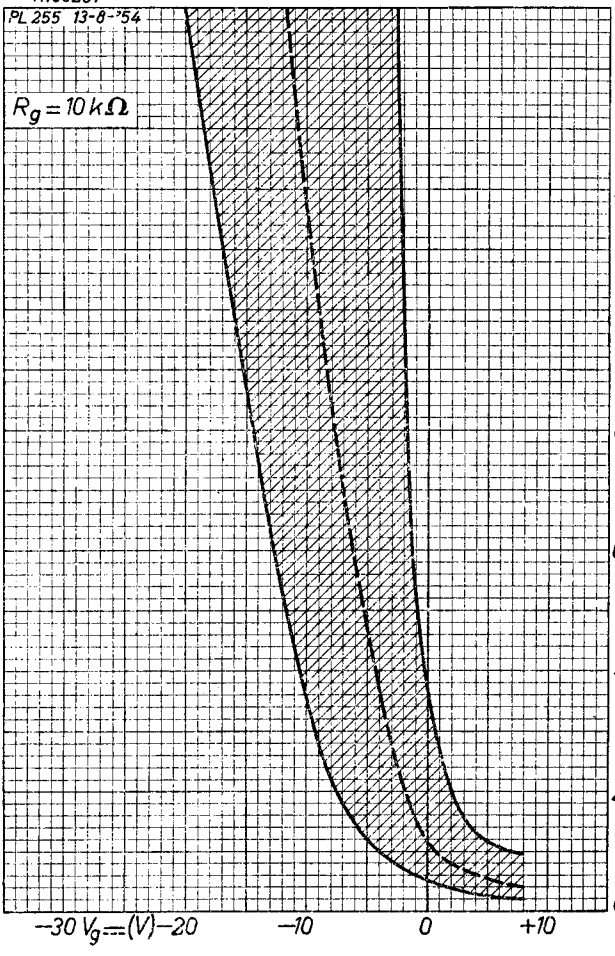
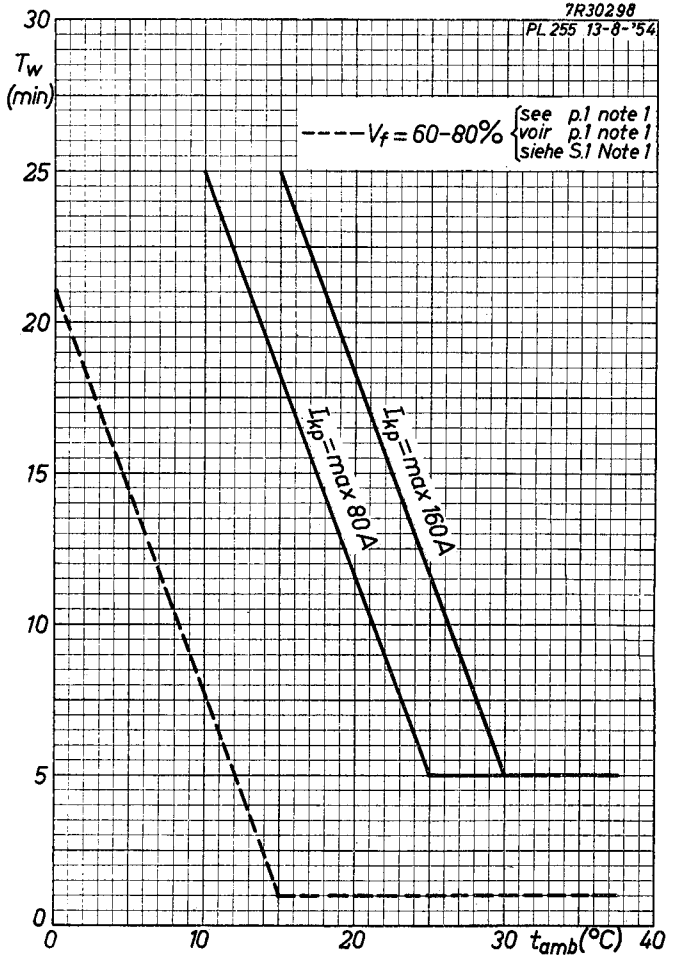
A


7R30297
PL 255 13-8-'54
$R_g = 10\,k\Omega$
1400
V_a =
(V)
1200
1000
800
600
400
200
0
−30 V_g =(V) −20
−10
0
+10

12.12.1962

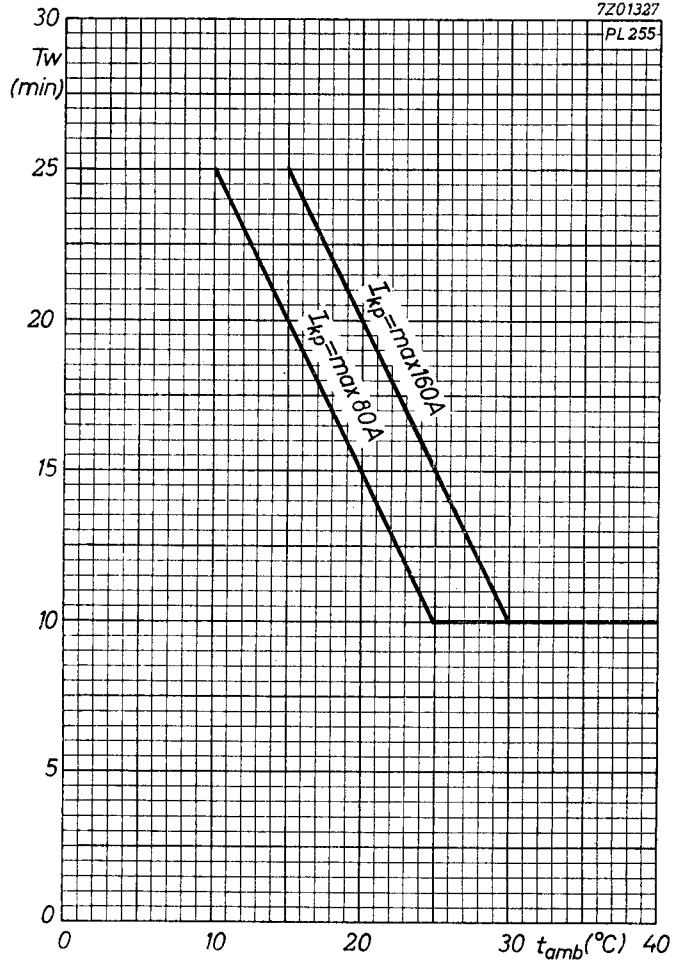
A

PL 255 **PHILIPS**



B

PL255 **PHILIPS**



B

PL255

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8	A	1962.12.12
9	B	1954.08.08
10	B	1962.12.12
11	FP	2000.05.16