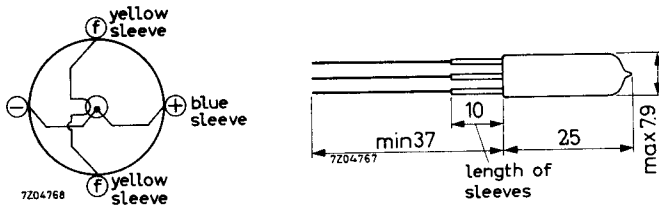


## THERMOCOUPLES

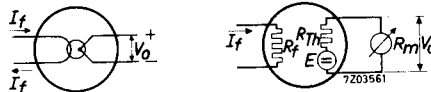
Indirectly heated thermocouples in subminiature construction.

### DIMENSIONS AND CONNECTIONS



### CHARACTERISTICS AND LIMITING VALUES (Absolute max. rating system)

		TH71	TH73	TH75	
Heater current	$I_f$	0 to 15	0 to 75	0 to 300	mA
Heater current 1)	$I_f$	0 to 5	0 to 20	0 to 100	mA
Heater current at $E = 12$ mV	$I_f$	10	40	200	mA
Heater current ( $T = \text{max. } 1$ m)	$I_f$	max.	20	100	350 mA
Heater resistance	$R_f$	68	7.0	1.2	$\Omega$
Resistance of thermocouple	$R_{TH}$	6.0	3.5	3.5	$\Omega$
Response time 2)	$T$	10	10	10	s
at heater current $I_f =$		10	40	200	mA
Heater to thermocouple voltage	$V_f/TH$	max.	100	100	100 V



- 1) In approximately this range  $V_0$  is proportional to the square of  $I_f$
- 2) Time between the moment of switching on of  $I_f$  and the moment of reaching max. voltage (See page 4).

**REMARK**

The electrical characteristics of the types TH71, TH73 and TH75 are identical to those of the types TH1, TH3, TH5 and TH91, TH93 and TH95 respectively and therefore can be used as replacement for these types.

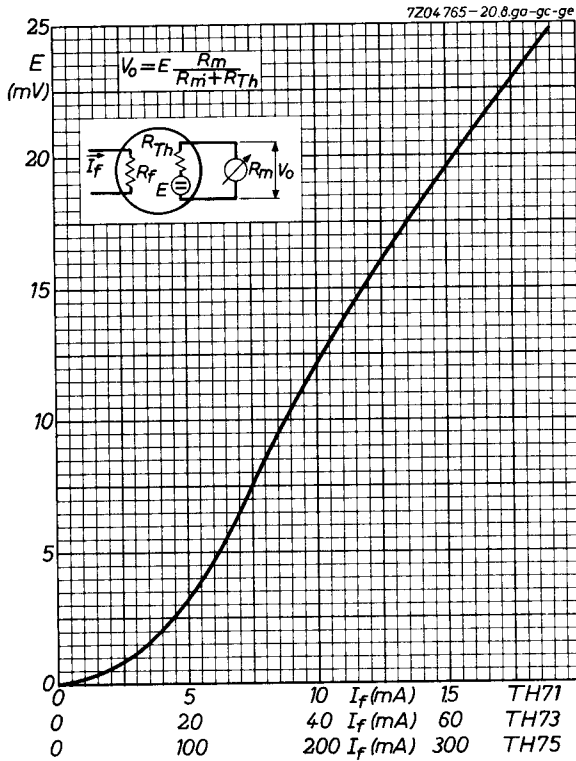
**GENERAL INFORMATION**

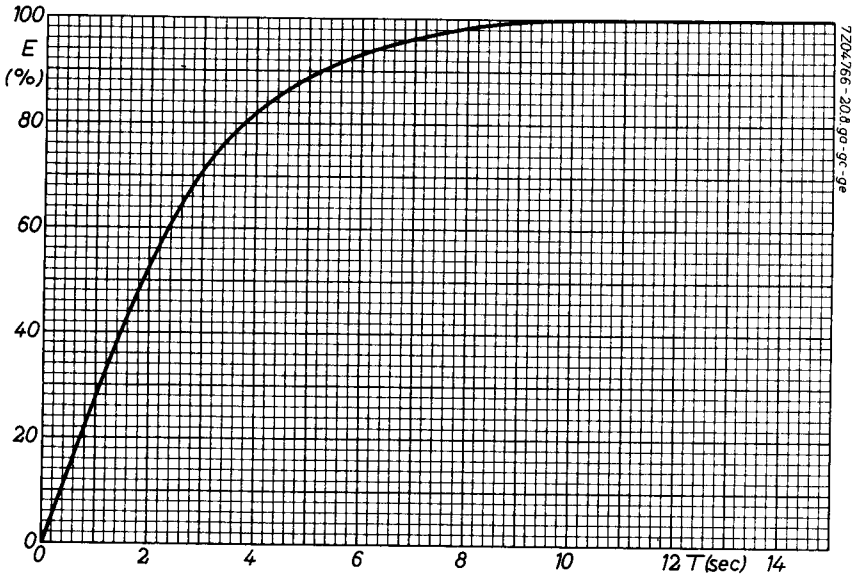
The "hot" weld of the thermocouple consists of an iron constantan junction.

The "cold" welds are iron to copper and constantan to copper junctions inside the vacuum envelope.

The tube has copper leads.

The measuring results are practically independent of the ambient temperature of the tube so that no corrections need to be made for the temperature of the "cold" weld.





# PHILIPS

Data handbook



Electronic  
components  
and materials

TH71 TH73 TH75

<b>page</b>	<b>sheet</b>	<b>date</b>
1	1	1968.12
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3	3	1968.12
4	4	1968.12
5	FP	2001.05.18