

A.C. rectified tachogenerator

Thalheim Type TD 3

General description

Where improved speedholding ($\pm 1\%$) is required from motors running at 50 r/min and above, an a.c. rectified tachogenerator can be easily retrofitted to all the Stockline d.c. motors. The tachogenerator could also be fitted directly to machinery shafts or the back of a.c. motors to provide a speed reference for d.c. controllers or inverters.

Features

High linearity with accurate speed

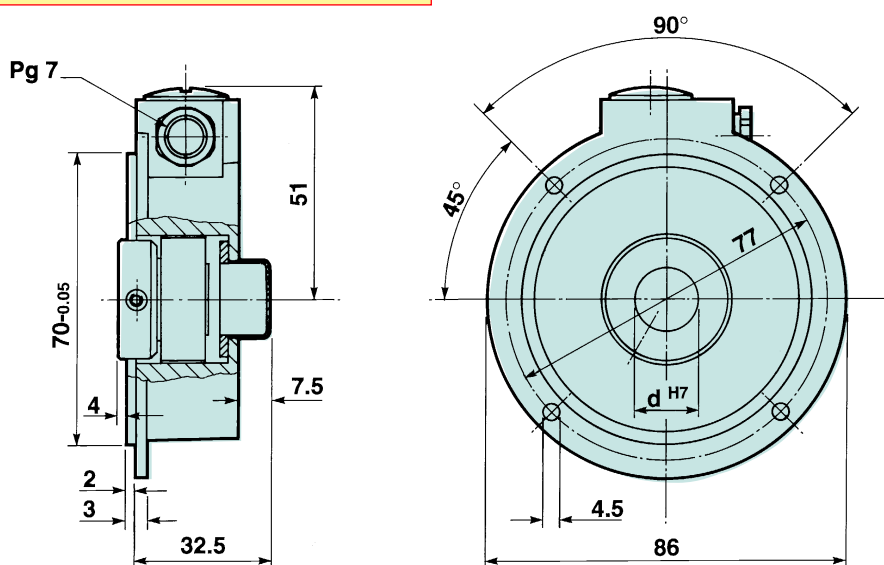
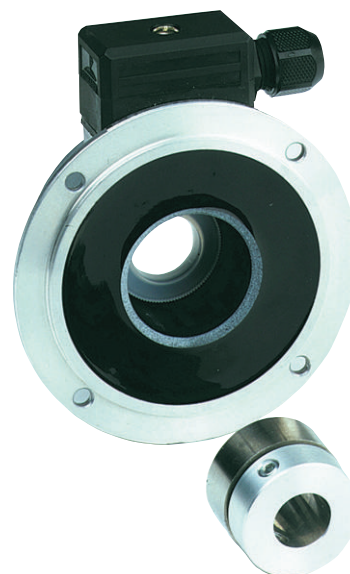
Good mechanical protection – versatility in application

8 pole Alnico magnet rotor for low ripple output

A4 stator mounting format – simple to fit

Largely unaffected by moisture and dirt

5 year guarantee



Technical data (related to 1000 r/min)

Mounting form	A4
Voltage/1000 r/min	30V d.c. $\pm 3\%$
Nominal current	2.5mA
Thermal limit current	20mA
Linearity	$\leq 0.1\%$
Direction of rotation	reversible – with no change of polarity
Ripple voltage	$\leq 4\%$
Enclosure	IP54
Rotor inertia	0.07 kg cm ²
Weight	500g
Maximum speed	12000 r/min
Temperature drift	$\pm 0.11\%$ per 10°C change
Temperature range	-30°C to +100°C
Insulation class	E

Special options

- Voltage < 30V d.c.
- Voltage $\leq 60V$ d.c.
- 3-phase output with 2m cable
- Double winding, 2 x 30V d.c.
- Hollow shaft 12 and 16mm diameter
- Explosion protection

Bore diameter d (mm)	Stockline numbers	
	Terminal box type	1m cable type
10	L4-395 267	L4-196 793
14	L4-395 389	L4-70 333

Ordering example

(5) off a.c. rectified tachogenerators type TD3 with cable and 14mm hollow shaft

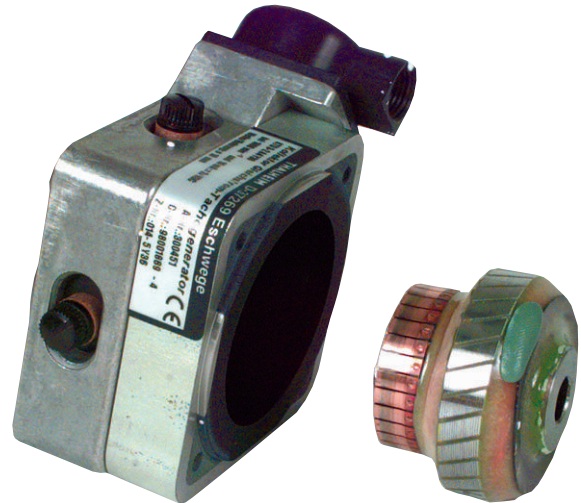
Stockline No. L4-703 33

General description

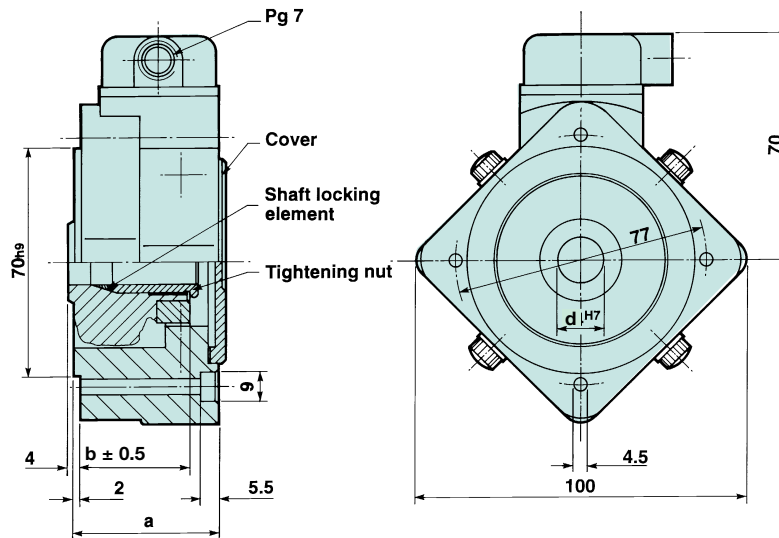
By utilising a d.c. design, the effective speed range is extended. This makes the unit suitable for low speed applications and 4 quadrant drives. The unit has IP54 protection which enables its use in more demanding applications. The two tachogenerators described below are physically similar but have different voltage outputs.

Features

- Skewed armature – smooth low speed output**
- High number of commutator segments – low ripple**
- Slim yet robust design – extends versatility**
- Four-pole design – smooth voltage output at all times**
- Silver graphite brushes – low wear and long life**
- Silver track, long life model available**



	a	b
KTD3-2	44.5	30
KTD3-6	54.5	40



Technical data (related to 1000 r/min)

	KTD 3-2	KTD 3-6
Mounting form	A4	
Voltage/1000 r/min	20V d.c.	60V d.c.
Rated current	10 mA / 30 mA	
Thermal limit current	80 mA	
Linearity	≤0.15%	
Direction of rotation	Reversible with change in polarity	
Reversing error	≤±0.1%	
Ripple voltage	≤0.4%	
Temperature drift	±0.1% per 10K (compensated)	
Minimum load resistance	7500 Ω	
Armature resistance	170 Ω	200 Ω
Maximum speed	6000 r/min	3000 r/min
Enclosure	IP54	
Brushes	4 off AG 3 x 4 x 12 silver graphite	
Weight, armature	250g	360g
Total weight	1350g	1550g
Inertia	610 gcm ²	900 gcm ²

Special options

- with cable
- hollow shaft 12 and 16mm diameter
- with centrifugal switch
- other voltages

Mounting

Ensure concentricity between shaft and stator body of 0.02mm.

Tacho type	Bore diameter d (mm)	Stockline numbers	
		Terminal box type	1m cable type
KTD3-2	10	L4-101 071	L4-215 536
	14	L4-116 754	L4-235 649
KTD3-6	14	L4-268 829	L4-61 099

Brushes (4 per tacho)

Stockline No. L4-121 239

Ordering example

(2) off d.c. tachogenerators type KTD3-2 20V/1000 rpm

Stockline No. L4-116 754

Long-life tachogenerator flange mounted

Thalheim Type KTD 50-6 B10

This high quality d.c. tachogenerator is designed to offer long life for reduced maintenance. The unit is flange mounted and can be adapted to fit onto the B-shield of the Lenze GFQU motor.

The output is 60V/1000 r/min as standard.

Very low ripple rate over the whole speed range, even at speeds near zero

Long life silver track commutator

Temperature compensation as standard

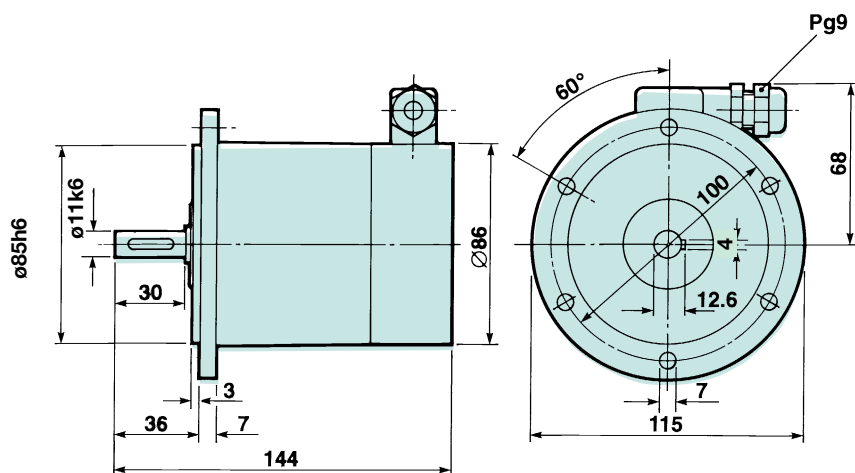
Maintenance-free

Sealed die-cast housing of light alloy

Magnetic system screened against external field influence

Two years guarantee

Plug and socket connection



Ordering example

(5) off tachogenerators type KTD50-6 with plug/socket connection.

Stockline No. L4-429 820

Technical data (related to 1000 r/min)

No load voltage	60V d.c.
Enclosure	IP54
Inertia	800 g.cm ²
Maximum speed	9000 r/min
Load resistance	$R_L \geq 2.7k\Omega$ 0-3000 r/min $R_L \geq 11k\Omega$ 0-6000 r/min $R_L \geq 30k\Omega$ 0-9000 r/min
Armature resistance	80 Ω at 20°C
Linearity error	$\leq 0.15\%$
Reversing error	$\leq 0.1\%$
Ripple rate	$\leq 0.45\%$ peak to peak, $\leq 0.2\%$ rms
Calibration tolerance	$\pm 1\%$
Weight	2.5 kg

Special options

- Shaft diameter 7mm
- Other voltages – 20, 30, 40 V/1000 r/min

Fixing kit

The fixing kit to fit this tachogenerator on the back of the C range, GFRK and GFQU/GFQK motors consists of an adaptor plate plus servoflex 308.16 coupling.

Stockline No. L2-222 240

Terminal box connection

The KTD50-6 is also available with a terminal box. Enclosure increases to IP55. Length increases from 144 to 178mm and the terminal box protrudes 84 mm from the centre line.

Stockline No. L4-429 839

Long-life tachogenerator foot mounted

Thalheim
Type KTD 50-6

B3

Similar quality to the flange mounted version (B10).

Easy mounting

60V/1000 r/min as standard

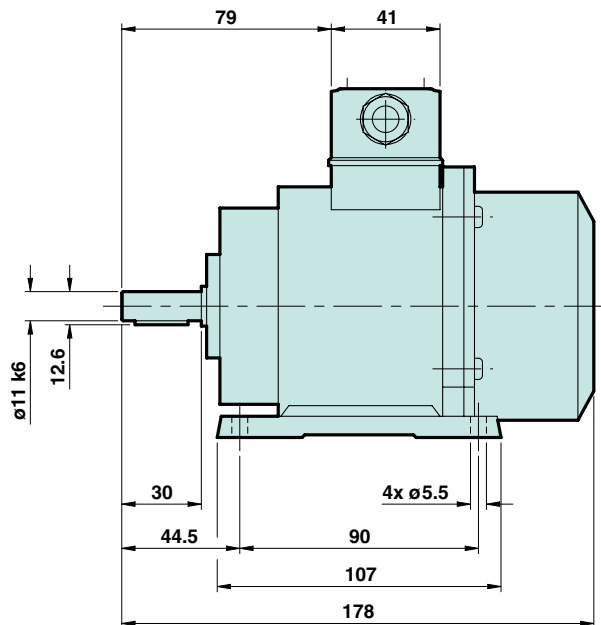
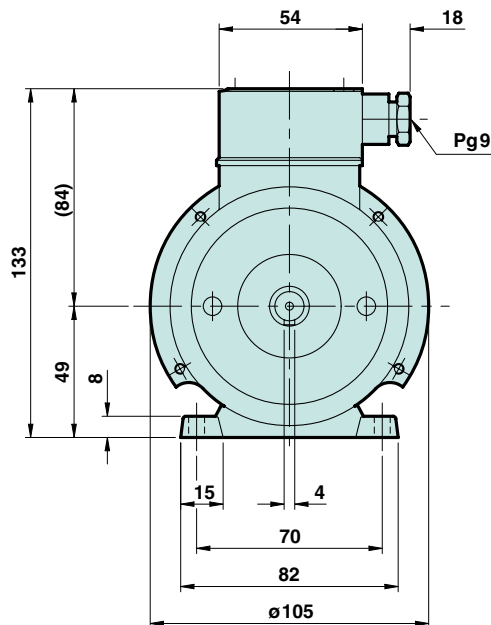
Maintenance-free

Low ripple rate even at speeds near zero

Temperature compensation as standard

Magnetic system screened against external field influence

2 years guarantee



Technical data (related to 1000 r/min)

No load voltage	60V d.c.
Enclosure	IP54
Inertia	1.1 Kg cm ²
Maximum speed	9000 r/min
Load resistance	$R_L \geq 2.7k\Omega$ 0-3000 r/min $R_L \geq 11k\Omega$ 0-6000 r/min $R_L \geq 30k\Omega$ 0-9000 r/min
Armature resistance	80 Ω at 20°C
Linearity error	$\leq 0.15\%$
Reversing error	$\leq 0.1\%$
Ripple rate	$\leq 0.45\%$ peak to peak, $\leq 0.2\%$ rms
Calibration tolerance	$\pm 1\%$
Weight	2.5 kg

Ordering example

(3) off KTD50-6 B3

Stockline No. L4-116 797

Spare brush (2 required per tach)

Stockline No. S8-512 060