

Single-phase A.C. tachogenerator



GE120-..., GE121-..., GE122-...

Tachogenerators

- Heavy-duty tachogenerator
- Straightforward application
- Suitable for extremely rigorous operating conditions
- NORIS tachogenerators are maintenance-free
- Rugged construction
- A.C. voltage output
- Meets CE requirements
- Noise-immune signal transmission
- No radio interference
- Direct or indirect drive possible
- Protection class: IP66 (from 3000 rpm up: IP54)
- Choice of mechanical connections for speed sensing
- Flanges and brackets available for mounting
- Suitable evaluation devices available



GE120



Germanischer Lloyd

Tachogenerators of series GE..

NORIS A.C. tachogenerators are maintenance-free speed-measuring devices using permanent-magnet excitation. They are designed to provide an A.C. voltage signal that is proportional to a speed of their drive shaft. It is possible to use either voltage or frequency as the measured variable. Tachogenerators are used where a direct supply

is desired for indicating instruments, monitoring or processing devices. Drive is either direct from the take-off shaft by means of couplings or indirectly via belt-and-pulley or friction wheel arrangements. Tachogenerators are working without operating voltage.

General notes on Type GE120-..., GE121-..., GE122-...

Method of operating of GE120-..., GE121-..., GE122-... tachogenerator

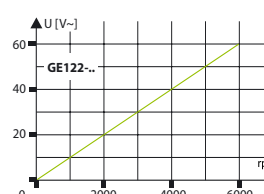
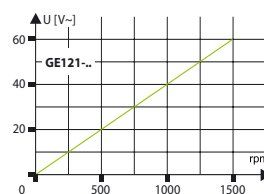
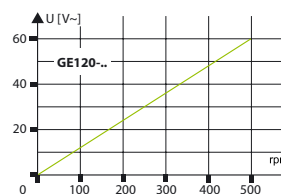
The drive shaft rotates a permanent magnet in a stationary conductor and induces a voltage in the latter whose amount and frequency are proportional to the speed of the drive shaft. The GE12x-... is of 12 the pole type having 6 pairs of poles so that the frequency of the alternating voltage is 1/10 of the input speed.

Details of the GE120-..., GE121-..., GE122-... tachogenerator

- There are three speed-range variants available of this series:
 - GE120 for full-scale speed range 60 ... 1,000 rpm
 - GE121 for full-scale speed range 150 ... 2,500 rpm
 - GE122 for full-scale speed range 500 ... 6,000 rpm
- Electrical termination by screw terminals
- Output is an approximately sinusoidal A.C. voltage
- High electric output for multiple indicator operation
- Extremely long life through extra-sturdy suspension of drive shaft
- Direct drive possible via flexible couplings
- Indirect drive possible via V-belt pulleys or friction wheels
- Wheels or pulleys can be mounted directly on the shaft
- Extremely high protection class (up to 3,000 rpm) and rugged construction

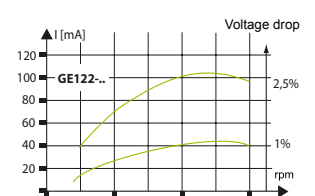
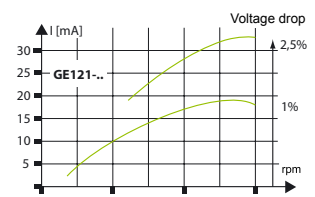
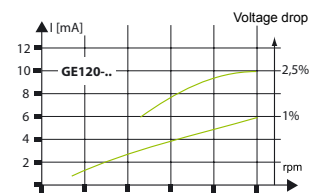
Voltage characteristic

The voltage characteristic shows the output voltage plotted against speed at a load of 1 mA:



Load characteristic

The load characteristic shows the drop in output voltage in % at varying loads and at different speeds:

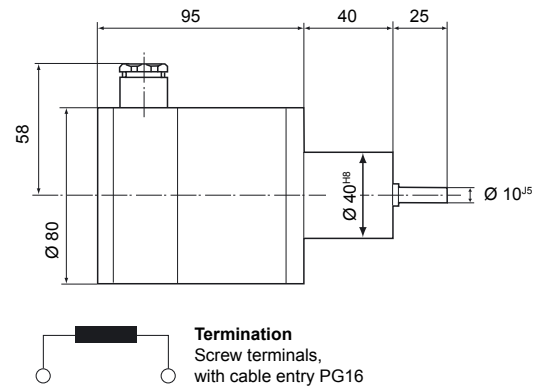


Technical Data

Series GE120-..., GE121-..., GE122-...	
Maximum speed	GE120-... 1,000 rpm, GE121-... 2,500 rpm, GE122-... 6,000 rpm
Upper speed range	GE120-... 60 - 1,000 rpm GE121-... 150 - 2,500 rpm GE122-... 500 - 6,000 rpm
Calibration	GE120-... 500 rpm, GE121-... 1,500 rpm, GE122-... 6,000 rpm = 60 V/AC
Error class	1% DIN IEC51-1
Output signal	AC voltage
Frequency of AC voltage	0,1 x speed
Wave form of AC voltage	Approximately sinusoidal with approx. 10% ripple
Pole pairs/poles	6/12
Max. radial shaft loading	70 N
Starting torque	0,04 Nm
Vibration resistance	4g DIN IEC 60068-T2-6 increased strain, characteristic 2 (10 - 100 Hz)
Shock resistance (impact)	300 m/s ² with 18 ms dwell time DIN IEC 60068-T2-27
Climatic test	DIN IEC60068-T2-30
Operating temperature	-20 ... +80 °C
Shelf temperature	-45 ... +85 °C
Humidity	RH 96% maximum
Insulation test	2 kV
Protection class	IP66 (GE122-... from 3,000 rpm up IP54)
Termination	Screw terminals
Mechanical connection	GE12x: connection 2 to DIN 5377 (additional see type key)
Installed position	Any
Weight	Approx. 1.5 kg
Standard supply	CE requirements complied with, DIN 5377, type approval by GL

Other Data

GE120, GE121, GE122 with connection 2 to DIN 5377



Accessory to tachogenerators

Item	Description
Pedestal, brackets and flanges for mounting of tachogenerators	
HA6	Bracket Ø 120, prepared, mounting hole Ø 40 ^{H7}
HA6-1	Bracket Ø 120, not prepared, mounting hole Ø 40 ^{H7}
HA8-1	Pedestal to DIN 5377, base mounting, axe height 63, mounting hole Ø 40 ^{H11}
HA8-2	Pedestal to DIN 5377, base mounting, axe height 125, mounting hole Ø 40 ^{H11}
FL21-1	Flange Ø 120 to DIN 5377 connection 7, with bore, mounting hole Ø 40 ^{H7}
FL21-2	Flange Ø 120, to DIN 5377 connection 7, not prepared, mounting hole Ø 40 ^{H7}
Driver for connection between shaft and coupling	
ANx-xG	Different thread, diameter and slit deliverable
Rubber coupling	
KG2-1	Rubber coupling, 10 ^{F7} bore, 50 mm length
Wheels or pulleys of indirect drive	
RR99	Friction wheel Ø 99, additional deliverable
RK100	V-belt pulley Ø 100, additional deliverable

additional by inquiry
additional information for drive and mounting see drawing

Type key / variants

Device code

GE	Single-phase A.C. tachogenerator
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Type series

120	Rugged construction, calibration 500 rpm = 60 V/AC, upper speed range 60 ... 1,000 1/min
121	Rugged construction, calibration 1,500 rpm = 60 V/AC, upper speed range 150 ... 2,500 1/min
122	Rugged construction, calibration 6,000 rpm = 60 V/AC, upper speed range 500 ... 6,000 1/min

Variant

without designation	Connection 2 to DIN 5377 (standard variant)
- D	Connection for flexible shaft to DIN 75532 E2, drawing 40.400
- R	Connection with shaft connection 10 x 3 mm, drawing 40.400
- Wx	Connection with shaft in special length x=length of shaft, drawing 40.400
- Z15	With toothed wheel drive, 15 teeth for VG9
- ZT21-1	With toothed wheel drive, 21 teeth for VG25

additional by inquiry

GE 121 (GE121)



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