Contactless Potentiometer FP 310 L 100

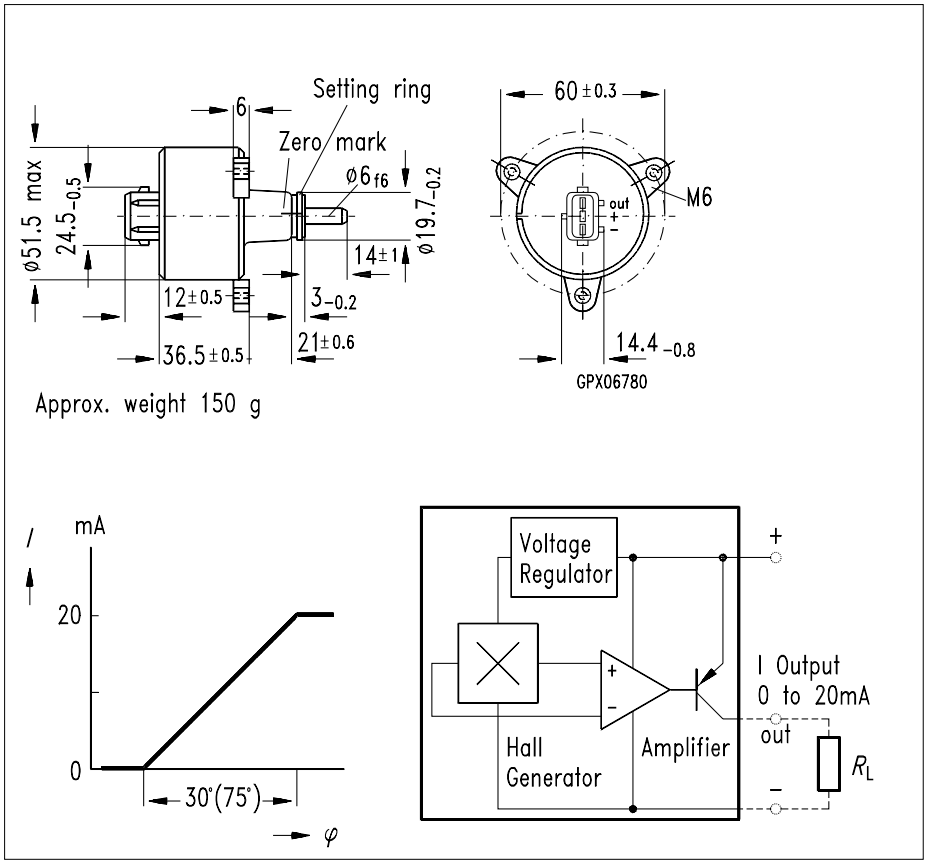
Version 2.0

Features

- Devoid of friction and abrasion at contact point
- No electrical contact noise
- Insensitive to contamination, moisture ingression, corrosion and vibration
- Low operating torque
- Long lifetime

Typical Applications

- Angular encoder
- Electric vehicles



Dimensions in mm

Type	Ordering Code
FP 310 L 100-30	Q65310-L100-U30
FP 310 L 100-75	Q65310-L100-U75

The contactless potentiometer comprises a GaAs Hall effect sensor actuated by two permanent magnets which are mounted on the end of the potentiometer spindle. The device is complete with supply voltage stabilisation and series connected output amplifier. Two measuring ranges are offered, 0…30° and 0…75°, and the output is given as a current of 0…20 mA linearly proportional to the angle of rotation. Temperature compensation circuitry is also included.

Absolute Maximum Ratings

Parameter	Symbol	Limit Values	Unit
Operating temperature	T_A	– 25 / + 70	°C
Supply voltage	V_{IN}	15	V
Supply current	I_{IN}	75	mA

Electrical Characteristics (T_A = 25 °C)

Linear angle of rotation FP 310 L 100-30 FP 310 L 100-75	Φ	 0…30 0…75	 deg. deg.
Output signal for corresponding angle of rotation	I_{OUT}	0…20	mA
Load resistance	R_L	0…500	Ω
Temperature error in the range – 25 °C…+ 70 °C	–	± 3	% FS
Linearity FP 310 L 100-30 FP 310 L 100-75	F_L	 ≤ ± 1 ≤ ± 2	 % FS % FS
Hysteresis	–	≤ ± 1	% FS
Sense of rotation (looking onto shaft)	–	clockwise	–

Mechanical Ratings

Required torque	M_d	0.2 typ.	Ncm
Max. perm. compressive axial force	$F_{a\ compr.}$	10	N
Max. perm. tensile axial force	$F_{a\ tens}$	3	N
Max. perm. radial force	F_r	10	N
Max. perm. speed	n	3000	min^{-1}
Cycles (life)	L	10^8	–

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