

# Combination

## Encoder and tachogenerator in combination

### Solid shaft with synchro flange

10...10000 pulses per revolution

#### OG 60 + GT 5



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#### Technical data - electrical ratings

Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approval	CE

#### Technical data - electrical ratings (tachogenerator)

Reversal tolerance	≤0.1 %
Linearity tolerance	≤0.15 %
Temperature coefficient	±0.005 %/K (open-circuit)
Isolation class	B
Calibration tolerance	±5 %
Climatic test	Humid heat, constant (IEC 60068-2-3, Ca)
Performance	0.075 W (speed ≥5000 rpm)
Armature-circuit time-constant	<4.5 μs
Open-circuit voltage	7...10 mV per rpm

#### Technical data - electrical ratings (encoder)

Voltage supply	9...26 VDC 5 VDC ±5 %
Consumption w/o load	≤100 mA
Pulses per revolution	10...10000
Phase shift	90° ±8°
Scan ratio	46...54 %
Reference signal	Zero pulse, width 90°
Output frequency	≤250 kHz
Output signals	K1, K2, K0 + inverted
Output stages	HTL TTL/RS422

#### Features

- Robust aluminium housing
- Flange connector with metal mating connector
- Synchro flange, solid shaft ø6 mm
- Open circuit voltage 7...10 mV per rpm

#### Technical data - mechanical design

Size (flange)	ø58 mm
Shaft type	ø6 mm solid shaft
Admitted shaft load	≤50 N axial ≤60 N radial
Flange	Synchro flange
Protection DIN EN 60529	IP 54
Operating speed	≤12000 rpm
Operating torque typ.	1 Ncm
Rotor moment of inertia	22 gcm <sup>2</sup>
Materials	Housing: aluminium die-cast Shaft: stainless steel
Operating temperature	-30...+85 °C
Resistance	IEC 60068-2-6 Vibration 10 g, 10-2000 Hz IEC 60068-2-27 Shock 100 g, 6 ms
Connection	Flange connector M23, 12-pin Screw terminal connector
Weight approx.	350 g

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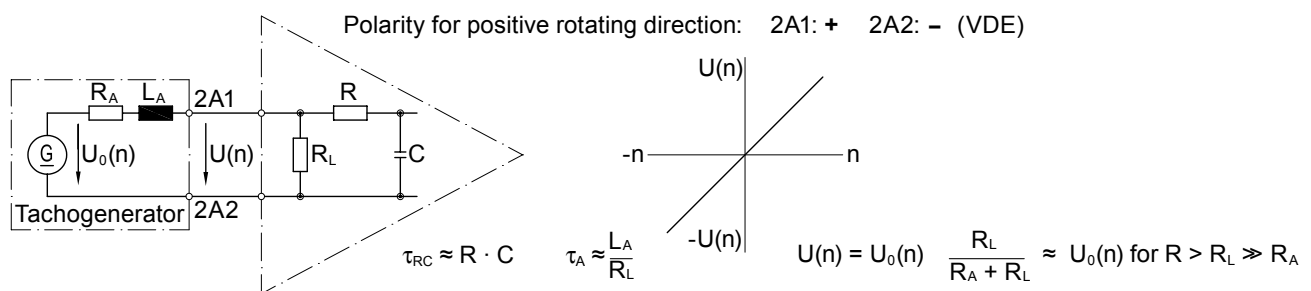
Part number	
<b>Incremental encoder with tachogenerator</b>	
<b>OG60</b>	<b>DN</b> <b>+ GT5.05L/4</b>
<u>Open-circuit voltage</u> 07 7 mV per rpm 09 9.5 mV per rpm 10 10 mV per rpm	
<u>Voltage supply / signals</u> CI 9...26 VDC / output stage HTL (C) with inverted signals TTL 5 VDC / output stage TTL with inverted signals R 9...26 VDC / output stage TTL with inverted signals	
Pulse number - see table	
<u>Output signals</u> DN K1, K2, K0	

Pulse number				
10	300	625	1800	4096
20	360	720	2000	5000
60	400	900	2048	6000
100	500	1000	2500	8192
200	512	1250	3000	10000
256	600	1500	3600	

Other pulse numbers on request.

Data according to type							
Type	Off-load voltage	Minimum load required depending on speed range [rpm]			Maximum operating speed	Armature resistance	Armature inductance
		0-3000	0-6000	0-n <sub>max</sub>			
	U <sub>0</sub> [mV/rpm]	R <sub>L</sub> [kΩ]	R <sub>L</sub> [kΩ]	R <sub>L</sub> [kΩ]	n <sub>max</sub> [rpm]	R <sub>A</sub> (20°C) [Ω]	L <sub>A</sub> [mH]
GT5.05L/407	7	≥10	≥23	≥65	10000	240	45
GT5.05L/409	9.5	≥18	≥44	≥121	10000	410	80
GT5.05L/410	10	≥20	≥48	≥133	10000	430	85
Superimposed ripple (for τ <sub>RC</sub> = 0.3 ms):		≤0.7% (peak-peak)			≤0.35% (rms)		

### Replacement switching diagram



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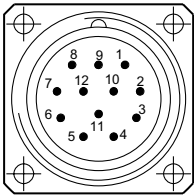
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##### Terminal assignment

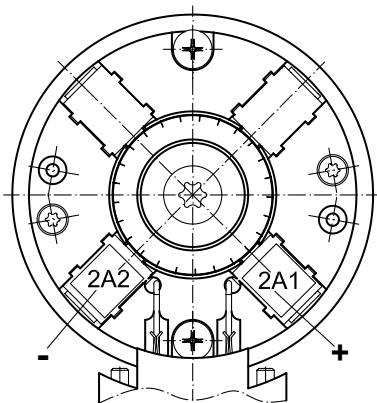
**View A-** Flange connector OG 60, M23, 12-pin, male contacts, clockwise

Pin	Assignment
1	$\overline{K2}$ (K2 inv.)
2	n.c.
3	K0 (zero pulse)
4	$\overline{K0}$ (zero pulse inv.)
5	K1
6	$\overline{K1}$ (K1 inv.)
7	n.c.
8	K2
9	n.c.
10	0 V
11	n.c.
12	+UB



**View B** - Connecting terminal GT 5

Polarity for positive direction of rotation



##### Accessories

Eccentric disks  
(clamping claws)

##### Connectors and cables

HEK 8 Sensor cable for encoders

##### Mounting accessories

K 35 Spring washer coupling  
for solid shaft  $\varnothing 6...12$  mm

##### Diagnostic accessories

HENQ 1100 Analyzer for encoders

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## Dimensions

