

# GHM4 SERIES

INCREMENTAL ENCODERS, GHM4 RANGE



## Features

- With its 40mm size and a 6mm solid shaft, this encoder characterizes itself by its strength and robustness of the mechanical and opto-electronic components, it's the most compact truly industrial encoder with a solid shaft
- Coded discs in synthetic material are used: stable and unbreakable (Polyfass™, MylarMyca composite)
- Available resolution up to 2 500 counts per turn
- Universal electronics 5 to 24Vdc available
- Application: micro-robotics, printing machines, low power DC motors, shears and others

## SPECIFICATIONS

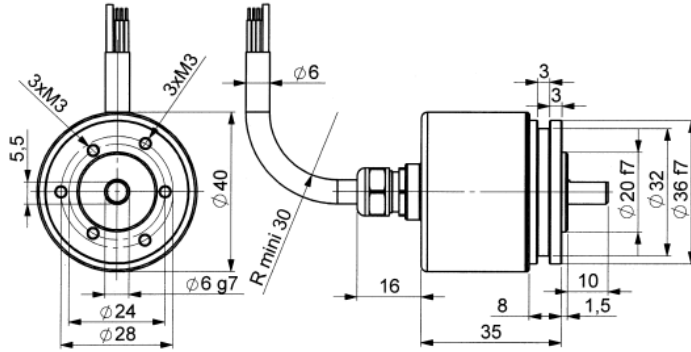
<b>Material</b>	<b>Shaft:</b> Stainless Steel <b>Cover:</b> Aluminum <b>Body:</b> Aluminum
<b>Bearings</b>	688 Series
<b>Maximum Loads</b>	<b>Axial:</b> 10 N <b>Radial:</b> 20 N
<b>Shaft Inertia</b>	$\leq 0,2 \cdot 10^{-6} \text{ kg} \cdot \text{m}^2$
<b>Torque</b>	$\leq 2 \cdot 10^{-3} \text{ N} \cdot \text{m}$
<b>Permissible Max. Speed</b>	12 000 min <sup>-1</sup>
<b>Continuous Max. Speed</b>	9 000 min <sup>-1</sup>
<b>Encoder Weight (Approx.)</b>	0,190 kg
<b>EMC</b>	EN 50082-2 (1995) EN 50081-1 (1992)
<b>Isolation</b>	1 000 Veff
<b>Operating Temperature</b>	- 20... + 80 °C (encoder T°)
<b>Storage Temperature</b>	- 40... + 80 °C
<b>Protection CEI60529 (1989)</b>	IP 54
<b>Shocks (EN60068-2-27)</b>	$\leq 300 \text{ m} \cdot \text{s}^{-2}$ (during 11 ms)
<b>Vibrations (EN60068-2-6)</b>	$\leq 100 \text{ m} \cdot \text{s}^{-2}$ (10 ... 500 Hz)

Theoretical Mechanical Lifetime 10 <sup>9</sup> Turns (F <sub>axial</sub> / F <sub>radial</sub> )	
5 N / 10 N	263
10 N / 20 N	33

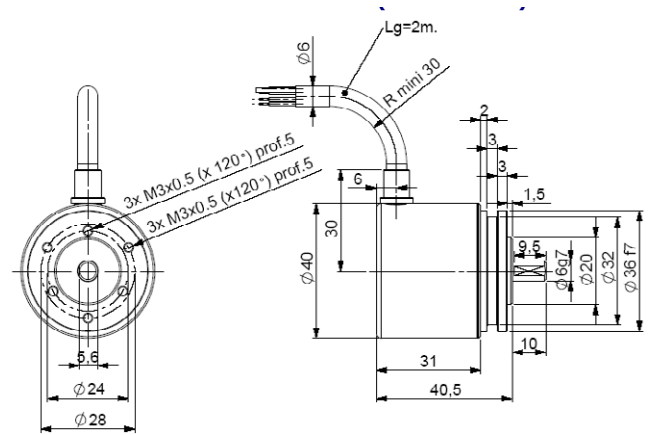
## DIMENSIONS

All dimensions are in millimeters.

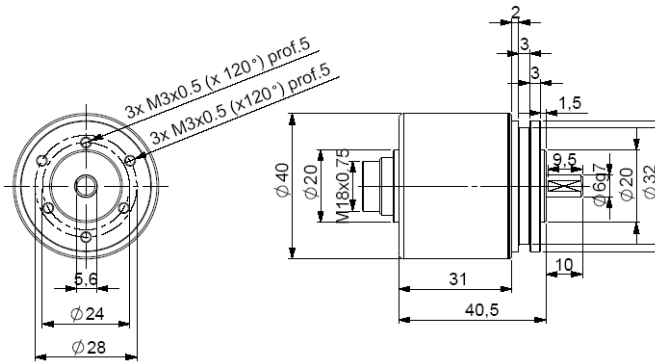
### GHM4 Connection G3A (Axial Cable)



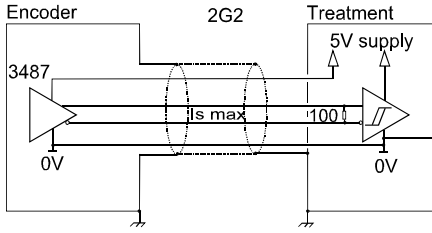
### GHM4 Connection G3R (Radial Cable)



### GHM4 Connection G2A / GDA (Axial DIN)

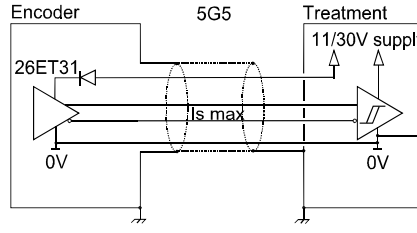


## OUTPUT ELECTRONIC / SUPPLY



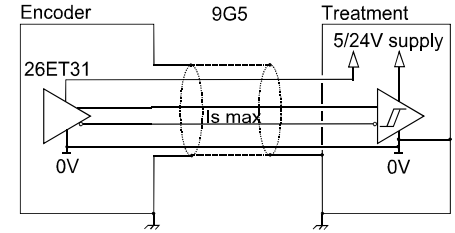
### 2G2 Electronic (100kHz)

Supply : 5Vdc  $\pm$  10%  
 Cons. without Load : 100mA max  
 Current per Channel : 40mA max  
 0 max (Is=20mA) :  $V_{ol} = 0,5Vdc$   
 1 min (Is=20mA) :  $V_{oh} = 2,5Vdc$



### 5G5 Electronic (100kHz)

Supply : 11 to 30Vdc  
 Cons. without Load : 75mA max  
 Current per Channel : 40mA max  
 0 max (Is=20mA) :  $V_{ol} = 0,5Vdc$   
 1 min (Is=20mA) :  $V_{oh} = Vcc-3Vdc$



### 9G5 Electronic (100kHz)

Supply : 5 to 24Vdc  
 Cons. without Load : 75mA max  
 Current per Channel : 40mA max  
 0 max (Is=20mA) :  $V_{ol} = 0,5Vdc$   
 1 min (Is=20mA) :  $V_{oh} = Vcc-3Vdc$

Protection Against Short Circuits of the Electronics : 5G5 and 9G5

Protection Against Inversion of Polarity for the Electronics : 5G5

## STANDARD CONNECTION

		-	+	A	B	0	A/	B/	0/	Ground
<b>G3</b>	<b>PVC Cable, 8 Wires 8230/020</b>	WH White	BN Brown	GN Green	YE Yellow	GY Grey	PK Pink	BU Blue	RD Red	General Shield
<b>GD</b>	<b>DIN Connector 8 Pinouts</b>	1	2	3	4	5	6	7	8	Connector Body
<b>G2</b>	<b>DIN Connector 5 Pinouts</b>	1	2	3	4	5	/	/	/	Connector Body

## ORDERING OPTIONS

Example : GHM4\_06 // 5G5 // 9 // 2500 // G3 // R020

Contact the factory for special versions, ex: special flanges, electronics, connections...

<b>Family</b>	GHM4	06	//	5G5	9	//	2500	//	G3	R020
<b>GHM4</b>										
<b>Shaft</b>										
<b>06:</b> 6mm										
<b>L6:</b> 6mm 16mm Length (option)										
<b>Supply + Output stage</b>										
<b>2:</b> 5Vdc										
<b>G2:</b> 5Vdc RS422										
<b>5:</b> 11 to 30Vdc										
<b>G5:</b> Push-Pull										
<b>9:</b> 5 to 24Vdc										
<b>G5:</b> Push-Pull										
<b>Output Signal</b>										
<b>9:</b> A,A/,B,B/,0,0/(0 gated A & B)										
<b>A:</b> A,A/,B,B/,0,0/(0 gated A)										
<b>N:</b> A,A/,B,B/,0,0/(0 ungated)										
<b>Resolution <sup>(A)</sup></b>										
<b>1-2500:</b> Max										
<b>Connection</b>										
<b>GD:</b> DIN 8 Pins										
<b>G2:</b> DIN 5 Pins										
<b>G3:</b> PVC Cable 8 Wires										
<b>Connection Orientation</b>										
<b>R:</b> Radial Cable (0 + meters + 0)										
<b>A:</b> Axial Cable (0 + meters + 0)										

## GENERAL NOTES

<sup>(A)</sup> **Available Resolutions:** 1 2 4 5 6 10 15 16 20 24 25 27 30 35 36 40 50 60 64 75 80 90 96 100 120 125 127 128 150 160 180 200 250 256 300 360 384 400 480 500 512 517 600 720 750 800 1000 1024 2500

## AGENCY APPROVALS & CERTIFICATIONS



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Mailing Address: Sensata Technologies, Inc., 529 Pleasant Street, Attleboro, MA 02703, USA

### CONTACT US

#### Americas

+1 (800) 350 2727  
sensors@sensata.com

#### Europe, Middle East & Africa

+33 (3) 88 20 8080  
position-info.eu@sensata.com

#### Asia Pacific

sales.isasia@list.sensata.com  
China +86 (21) 2306 1500  
Japan +81 (45) 277 7117  
Korea +82 (31) 601 2004  
India +91 (80) 67920890  
Rest of Asia +886 (2) 27602006  
ext 2808