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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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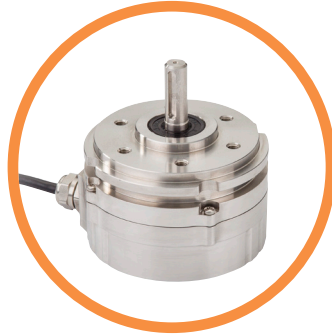


## DSM9H & DSM9X RANGES

SIL3 PLe INCREMENTAL ENCODERS



DSM9H



DSM9X



### Features

- Usable up to SIL3 and Cat.4 / PLe according IEC 61508 / EN ISO 13849
- Suitable for safe motor feedback according to IEC 61800-5-2
- Especially designed for heavy-duty (steel, paper, wood, mills, cranes...). Compact and robust conception. Excellent resistance to shocks/vibrations
- Aluminium (DSM9H) or stainless steel (DSM9X) version available
- 90mm diameter encoder, 11 mm or 12 mm solid shaft
- High temperature performance - 20°C to +85°C
- Power supply 5Vdc or 11/30Vdc
- Digital TTL/RS422 or HTL Push-pull or sine/cosine 1Vpp output
- Available resolution up to 2048 ppr
- Connector or cable output – side or end orientation



### SPECIFICATIONS

#### Mechanical

	DSM9H	DSM9X
<b>Material</b>	<b>Cover:</b> powder coated aluminum <b>Body:</b> aluminum <b>Shaft:</b> AISI 303 stainless steel	<b>Cover:</b> stainless steel <b>Body:</b> stainless steel <b>Shaft:</b> AISI 303 stainless steel
<b>Bearings</b>	6100 series - sealed	
<b>Maximum Loads</b>	<b>Axial:</b> 100 N <b>Radial:</b> 200 N	
<b>Shaft Inertia</b>	< 23,500 g.mm <sup>2</sup>	
<b>Shaft Seal</b>	Double lips	
<b>Static/Dynamic torque DSM9H</b>	20 / 150 mN.m	
<b>Static/Dynamic torque DSM9X</b>	40 / 200 mN.m	
<b>Permissible max. speed</b>	9,000 RPM	
<b>Continuous max. speed <sup>(A)</sup></b>	6,000 RPM	
<b>Theoretical mechanical lifetime L<sub>10h</sub> <sup>(A)</sup></b>	7.25 X 10 <sup>9</sup> turns / 20,147 hours	
<b>Encoder weight (approx.)</b>	1.0 kg	2.0 kg

<sup>(A)</sup> **Continuous max. speed – ½ max. load – according to ISO 281: 1990, L<sub>10</sub>**

#### Temperature Conditions

<b>Operating temperature</b>	- 20 ... + 85 °C (encoder T°)
<b>Storage temperature</b>	- 20 ... + 85 °C

## Electrical Characteristics / Functional Safety Parameters <sup>(B)</sup>

Electronic Version	Output signals	Operating Voltage +V	Supply current	Current per channel pair	Short circuits proof	Reverse polarity protected	PFD	PFH	MTTFd	DC
2G2	Digital TTL RS422	5V +/-5%	100mA with no load	40mA	Yes	Yes	7.51E-05	8.58E-10	1331	HIGH
5G2		11-30V			Not to +V		9.52E-05	1.09E-09	1050	
5G5	Yes				9.52E-05		1.09E-09	1050		
2WT	Sine Cosine 1Vpp	5V +/-5%	70mA with no load	10mA	Yes		4.29E-05	4.90E-10	2328	
5WT		11-30V			Not to +V		6.60E-05	7.53E-10	1515	

<sup>(B)</sup> **Safety mission time:** 20 years

## Standards Conformity

<b>Protection(EN 60529)</b>	IP65 - Option IP66
<b>Humidity (EN 60068-2-38)</b>	93% @ 65°C
<b>Shock (EN60068-2-27)</b>	≤ 500 g (during 6 ms)
<b>Vibration (EN60068-2-6)</b>	≤ 200 g (10 ... 2,000 Hz)
<b>EMC Immunity Test</b>	EN 61000-6-2, increased levels
<b>EMC Emission Test</b>	EN 61000-6-4, increased levels
<b>Isolation</b>	1000 Veff
<b>Salt Spray (EN 60068-2-11 part 2)</b>	96h (Aluminum), 168h (Stainless Steel)
<b>Functional safety</b>	IEC 61508
	IEC 62061
	ISO 13849-1
	IEC 61800-5-2
	IEC 62061
<b>Encoders usable up to SIL3 / PLe with external specific requirements, see safety user manual for details.</b>	
<b>Z and Z/ are not safety signals.</b>	

## Electrical Connections

		0V	+V	A or S	B or C	Z	A/ or S/	B/ or C/	Z/	Ground
<b>G6</b>	<b>M23 - 12 pins CW</b>	1	2	3	4	5	6	7	8	Connector body
<b>G8</b>	<b>M23 - 12 pins CCW</b>	10 + 11	2 + 12	8	5	3	1	6	4	Connector body
<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 shielding
<b>GP</b>	<b>PUR cable 12 wires 8230/050</b>	WH white + WH/GN white /green	BU blue + BN/GN brown / green	GY grey	BN brown	RD red	PK pink	GN green	BK black	General shielding

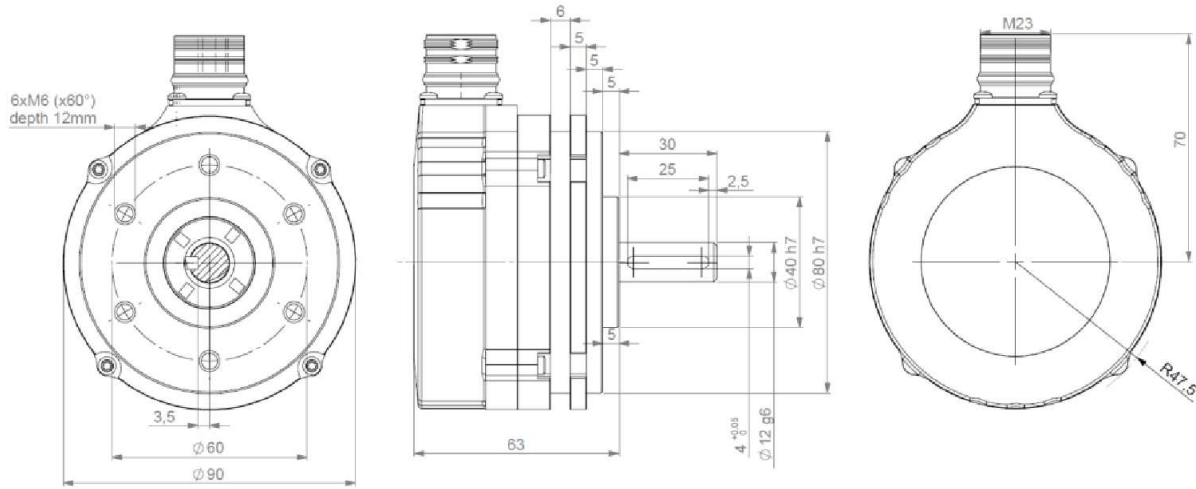
## Available Resolutions

1024, 2048

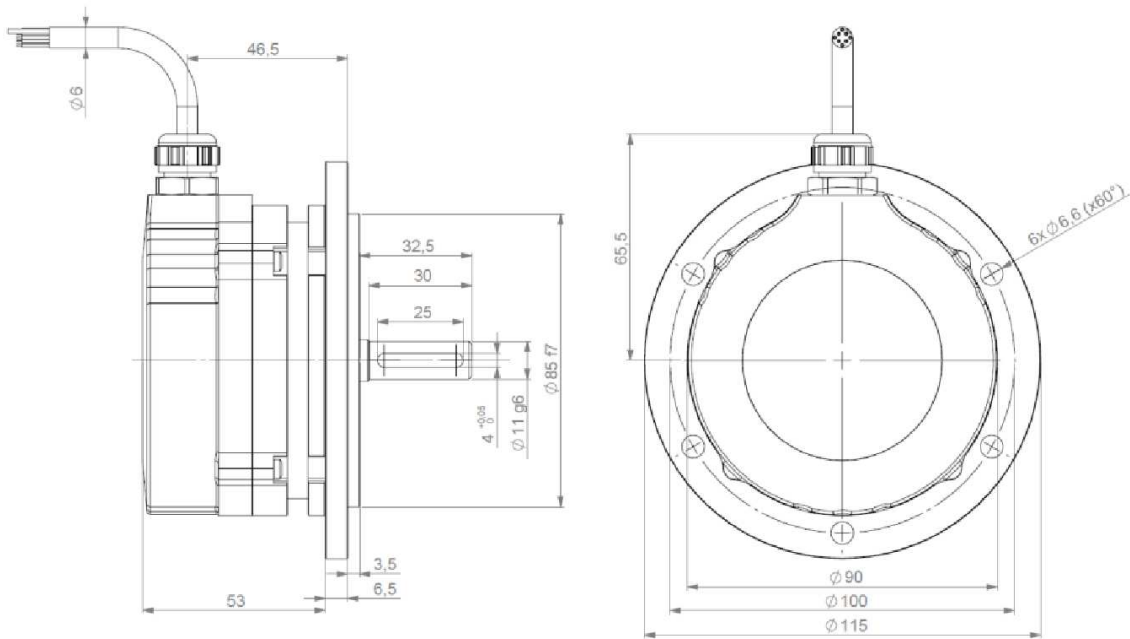


# DIMENSIONS

## DSM9H / DSM9X – radial M23 connector



## DSM9H / DSM9X radial cable - with 115mm flange





# ORDERING OPTIONS

Example : DSM9X11 / 01 / 5G29 // 01024 // GPR050 // CSA5

Contact the factory for special versions, ex: resolution, connection, flange...

<b>Family</b>	<b>DSM9X</b>	<b>11</b>	<b>01</b>	<b>5G29</b>	<b>01024</b>	<b>GPR050</b>	<b>CSA5</b>
<b>DSM9H:</b> Aluminum bearings housing <b>DSM9X:</b> Stainless steel version							
<b>Shaft</b>							
<b>11:</b> 11mm <b>12:</b> 12mm							
<b>IP</b>							
<b>01:</b> IP66 option							
<b>Supply + Output stage + Output signals</b>							
<b>Digital Signals:</b> 2: 5Vdc <b>G2:</b> driver 5Vdc RS422 <b>G5:</b> push-pull <b>9:</b> AA/ BB/ ZZ/ 5: 11- 30Vdc <b>G2:</b> driver 5Vdc RS422 <b>G5:</b> push-pull <b>9:</b> AA/ BB/ ZZ/ <b>Sine-wave signals:</b> 2: 5Vdc <b>WT:</b> sine 1Vpp <b>N:</b> SS/ CC/ ZZ/ 5: 11- 30Vdc <b>WT:</b> sine 1Vpp <b>N:</b> SS/ CC/ ZZ/							
<b>Resolution</b>							
<b>1024, 2048:</b> 2048 max							
<b>Connection + Orientation</b>							
<b>G6:</b> M23 12 pins CW <b>A:</b> axial <b>R:</b> radial <b>G8:</b> M23 12 pins CCW <b>A:</b> axial <b>R:</b> radial <b>GP:</b> PUR cable 12 wires <b>A:</b> axial cable (example: <b>020</b> = 2m, <b>050</b> = 5m) <b>R:</b> radial cable (example: <b>020</b> = 2m, <b>050</b> = 5m) <b>G3:</b> PVC cable 8 wires <b>A:</b> axial cable (example: <b>020</b> = 2m, <b>050</b> = 5m) <b>R:</b> radial cable (example: <b>020</b> = 2m, <b>050</b> = 5m)							
<b>Flange</b>							
<b>CS A4:</b> positive lock by key with aluminum 115 mm flange <b>CS A5:</b> positive lock by key with stainless steel 115 mm flange <b>CS ****:</b> positive lock by key without flange							



# AGENCY APPROVALS & CERTIFICATIONS



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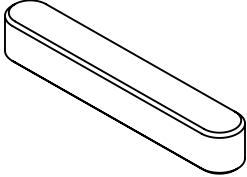
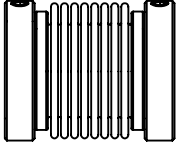
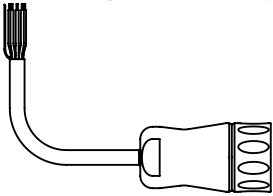


## GENERAL NOTES

**For a safe installation according to the required safety level needed in the application, refer to the user safety manual - during the installation on the equipment, a quick installation guide is provided with each encoder.**



## ACCESSORIES

<p><b>Metal shaft key 4mm square by 25mm long</b></p> 	<p>9435/001</p>	<p>DSM9H DSM9X</p>
<p><b>Safety Bellows Couplings</b> For 11mm, 12mm shaft</p> 	<p>9404/S/11-11 9404/S/12-12</p>	<p>DSM9H DSM9X</p>
<p><b>Standard Mating Connector</b> 2m, 5m, 7m, 10m Mating Cable Assembly</p> 	<p>9416/076-8230/020-G6-020 = 2m 9416/076-8230/020-G6-050 = 5m 9416/076-8230/020-G6-070 = 7m 9416/076-8230/020-G6-100 = 10m</p> <p>For use with M23 connector type G6</p>	<p>DSM9H DSM9X</p>

Made in France

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