

## PROGRAMMABLE INCREMENTAL ENCODERS, DHM5 RANGE

The programmable **DIGISINE™** encoder, unique combination of performance and flexibility:

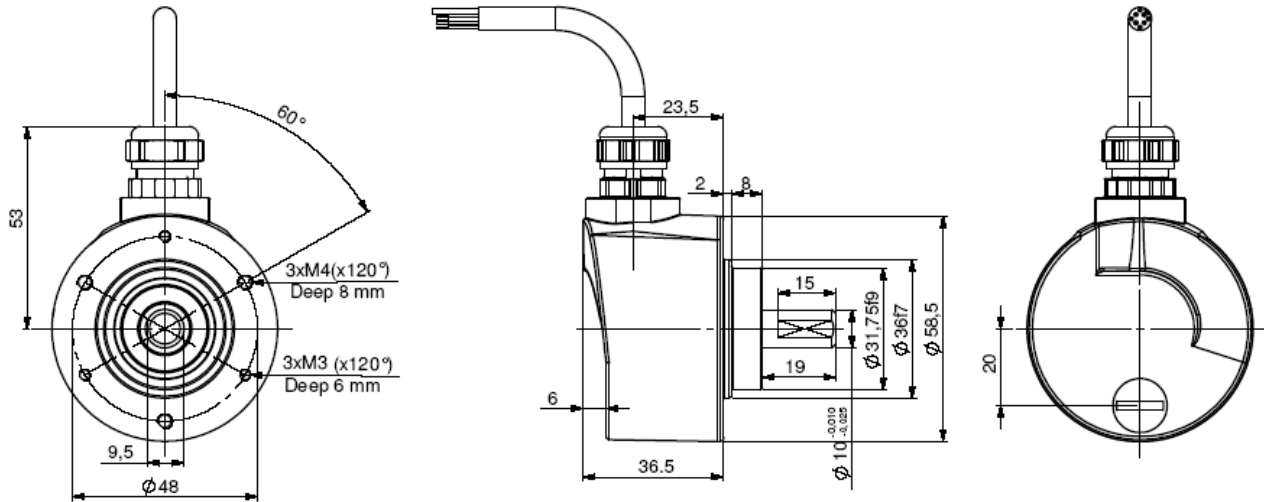
- Easy programming without any specific software or hard-ware
- Robustness and excellent resistance to shocks / vibrations
- High protection level IP65, IP67 option with a sealing flange
- High resolutions available : up to 80 000 cpt
- Universal electronic circuits from 4.75 to 30 Vdc
- High performances in temperature -30°C to 70°C (option -40°C)
- High performances in frequency of output signals : 300 kHz



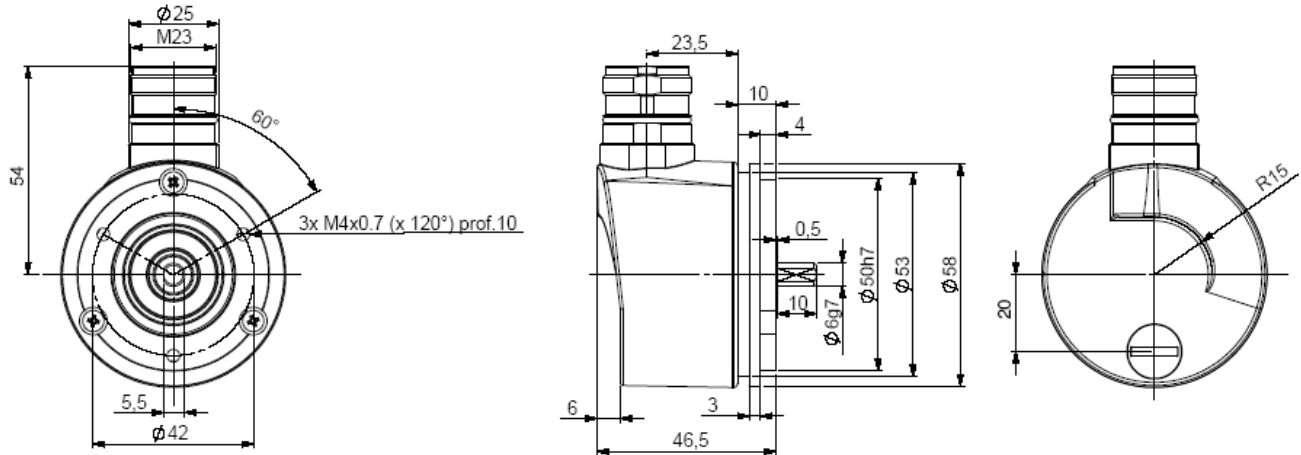
2004/108/CE



**DHM5\_10 connection U3R radial cable**



**DHM5\_06 connection G6R (radial M23), flange 9500/003 mounted on body**



### Mechanical Characteristics:

Material	Cover : zinc alloy	Shock (EN60068-2-27)	≤ 500m.s <sup>-2</sup> (during 6 ms)
	Body : aluminum	Vibration (EN60068-2-6)	≤ 100m.s <sup>-2</sup> (55 ... 2 000 Hz)
	Shaft : stainless steel	EMC	EN 50081-1, EN 61000-6-2
Ball bearings	6000 series	Isolation	1 000 Veff
Maximum loads	Axial: 50 N	Encoder weight (approx.)	0,300 kg
	Radial: 100 N	Operating temperature	- 30 ... + 70 °C (encoder T°)
Shaft inertia	≤ 1.10 <sup>-6</sup> kg.m <sup>2</sup>	Storage temperature	- 40 ... + 80 °C
Torque	≤ 4.10 <sup>-3</sup> N.m	Protection(EN 60529)	IP 65 (IP67 with flange option)
Permissible max. speed	12 000 min <sup>-1</sup>	Theoretical mechanical lifetime 10 <sup>9</sup> turns (F <sub>axial</sub> / F <sub>radial</sub> )	
Continuous max. speed	9 000 min <sup>-1</sup>	25 N / 50 N : 99	50 N / 100 N : 12

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### Electrical Characteristics:

Version	Output signals	Resolution	Operating Voltage Vcl	Supply current (no loads)	Current per channel pair	Output Levels (Is=20mA)	Frequency capability	Short circuits proof	Reverse polarity tolerant	Temperature range
RP5	HTL	See available resolutions below	4.75-30V --- 250mA	75mA	40mA	High min: Vcl - 0.5V Low max: 0.5V	Up to 300kHz	Yes	Yes	-30°C +70°C (1)
RP2	TTL RS422					5V+/-5% --- 250mA		High min : 4.5V Low max: 0.5V		
2P2			Yes							

(1) UL listed: -20°C +70°C. Device must be supplied by a Class 2, LPS or SELV limited energy source.

### Connections:

		-	+	A	B	Z	A/	B/	Z/	Ground
<b>GM</b>	M12 - 8 pins	1	2	3	4	5	6	7	8	Connector Body
<b>G6</b>	M23 - 12 pins CW	1	2	3	4	5	6	7	8	Connector Body
<b>G8</b>	M23 - 12 pins CCW	10 + 11	2 + 12	8	5	3	1	6	4	Connector Body
<b>U3</b>	PVC cable 8 wires	WH white	BN brown	GN green	YE yellow	GY grey	PK pink	BU blue	RD red	General shielding
<b>GC</b>	PUR cable 8 wires	BK black	RD red	GN green	BN brown	VT violet	YE yellow	OG orange	BU blue	General shielding
<b>G3</b>	PVC cable 8 wires (not UL)	WH white	BN brown	GN green	YE yellow	GY grey	PK pink	BU blue	RD red	General shielding
<b>GP</b>	PUR cable 12 wires (not UL)	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
<b>TE</b>	Silicone cable (2) 8 wires (not UL)	WH white	BN brown	GN green	YE yellow	GY grey	PK pink	BU blue	RD red	General shielding

(2) Advised cable for mobile application, in extreme temperature from -40°C to +70°C

### Available interpolated resolutions:

Easy multiplication of the basis resolution of the disk : 1, 2, 3, 4, 5, 8, 10, 12 and 16 times per dip-switch without specific software nor hardware.

Factor	Basis resolutions															Code switch				
	250	256	360	500	1000	1024	1500	1800	2000	2048	2500	3000	3600	4000	4096	5000	1	2	3	4
<b>X 1</b>	250	256	360	500	1 000	1 024	1 500	1 800	2 000	2 048	2 500	3 000	3 600	4 000	4 096	5 000	ON	ON	ON	ON
<b>X 2</b>	500	512	720	1 000	2 000	2 048	3 000	3 600	4 000	4 096	5 000	6 000	7 200	8 000	8 192	10 000	ON	ON	ON	ON
<b>X 3</b>	750	768	1 080	1 500	3 000	3 072	4 500	5 400	6 000	6 144	7 500	9 000	10 800	12 000	12 288	15 000	ON	ON	ON	ON
<b>X 4</b>	1 000	1 024	1 440	2 000	4 000	4 096	6 000	7 200	8 000	8 192	10 000	12 000	14 400	16 000	16 384	20 000	ON	ON	ON	ON
<b>X 5</b>	1 250	1 280	1 800	2 500	5 000	5 120	7 500	9 000	10 000	10 240	12 500	15 000	18 000	20 000	20 480	25 000	ON	ON	ON	ON
<b>X 8</b>	2 000	2 048	2 880	4 000	8 000	8 192	12 000	14 400	16 000	16 384	20 000	24 000	28 800	32 000	32 768	40 000	ON	ON	ON	ON
<b>X 10</b>	2 500	2 560	3 600	5 000	10 000	10 240	15 000	18 000	20 000	20 480	25 000	30 000	36 000	40 000	40 960	50 000	ON	ON	ON	ON
<b>X 12</b>	3 000	3 072	4 320	6 000	12 000	12 288	18 000	21 600	24 000	24 576	30 000	36 000	43 200	48 000	49 152	60 000	ON	ON	ON	ON
<b>X 16</b>	4 000	4 096	5 760	8 000	16 000	16 384	24 000	28 800	32 000	32 768	40 000	48 000	57 600	64 000	65 536	80 000	ON	ON	ON	ON

### Ordering Options:

Use this diagram, working from left to right to construct your model number (Example : **DHM5\_06//RP59//01024//G6R//\*\*03\*\***)

DHM5	--	//	---	-	//	----	//	---	---	//	**	--	**
TYPE:	SHAFT BORE:		VOLTAGE/ OUTPUT:	CHANNELS:		CYCLES/ TURN:		OUTPUT TERMINATION:	CABLE LENGTH:		FLANGE:		
<b>DHM5</b> = Solid shaft encoder	<b>06</b> = 6mm  <b>09</b> = 9.52mm  <b>10</b> = 10mm  <b>08</b> = 8mm (option)		<b>RP5</b> = 4.75-30V voltage and push-pull output  <b>2P2</b> = 5V voltage and RS422 output  <b>RP2</b> = 4.75-30V voltage and RS422 output	<b>9</b> = AA/ BB/ ZZ/ B before A Z gated A&B		(Enter Cycles)  See available resolutions above		<b>G3R</b> = PVC cable (not UL) <b>GCR</b> = PUR cable <b>GPR</b> = PUR cable (not UL) <b>TER</b> = Silicone cable (not UL) <b>U3R</b> = PVC cable  <b>GMR</b> = M12 <b>G6R</b> = M23 12 pins CW <b>G8R</b> = M23 12 pins CCW	<b>xxx</b> = cable length ex. 020 = 2meters  <b>Blank</b> (no cable)		<b>**03**</b> = synchro flange		

Made in France