

PROGRAMMABLE INCREMENTAL ENCODERS, DHM9 RANGE

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

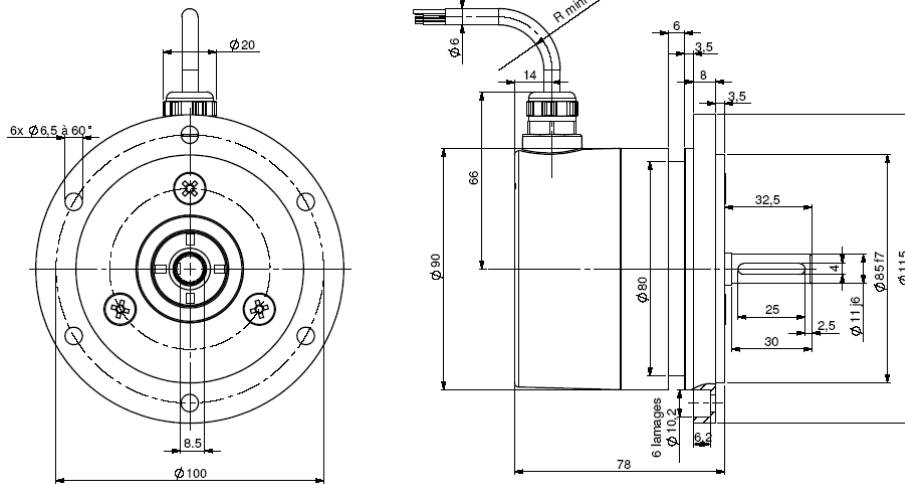
- Easy programming without any specific software or hard-ware
- Excellent resistance to shocks/vibrations and to extreme axial/radial loads
- High performances in temperature -30°C to 70°C (option -40°C)
- High protection level: IP65
- 11 or 12mm solid shaft
- Universal electronic circuits from 4.75 to 30 Vdc
- High performances in frequency of output signals : 300 kHz
- High resolutions: up to 80 000 cpt
- Connection with cable or connector output
- REO 115mm flange (Euroflange B10) for tacho-generator mounting



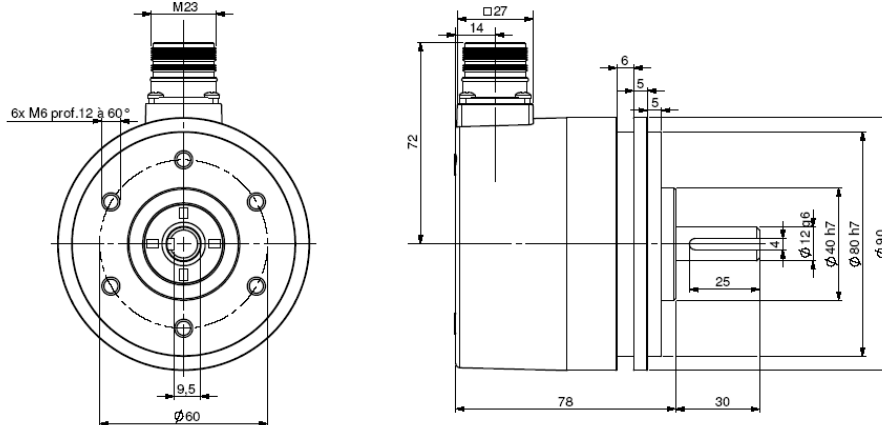
2004/108/CE



DHM9_11 connection U3R (radial cable) with flange 9500/007



DHM9_12 connection G6R (radial M23)



Mechanical Characteristics:

Material (Stainless steel option)	Cover : zinc alloy	Shocks (EN60068-2-27)	$\leq 500 \text{ m.s}^{-2}$ (during 6ms)
	Body : aluminum	Vibrations (EN60068-2-6)	$\leq 200 \text{ m.s}^{-2}$ (10 ... 1 000 Hz)
Shaft material	Stainless steel	EMC	EN 61000-6-4, EN 61000-6-2
Bearings	6001 serie	Isolation	1 000 V eff
Maximum loads	Axial : 100 N	Encoder weight (approx.)	1,100kg
	Radial : 200 N	Operating temperature	$-30 \dots +70^{\circ}\text{C}$ (encoder T°)
Shaft inertia	$\leq 15.10^{-6} \text{ kg.m}^2$	Storage temperature	$-40 \dots +80^{\circ}\text{C}$
Torque	$\leq 10.10^{-3} \text{ N.m}$	Protection(EN 60529)	IP 65
Permissible max. speed	$9\,000 \text{ min}^{-1}$	Theoretical mechanical lifetime 10^9 turns (F_{axial} / F_{radial})	
Continuous max. speed	$6\,000 \text{ min}^{-1}$	20 N / 30 N : 360	50 N / 100 N : 18
Shaft seal	Viton double lips	100 N / 200 N : 2,2	

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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 (!)
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
GM	M12 - 8 pins	1	2	3	4	5	6	7	8	Connector Body
G6	M23 - 12 pins CW	1	2	3	4	5	6	7	8	Connector Body
G8	M23 - 12 pins CCW	10 + 11	2 + 12	8	5	3	1	6	4	Connector Body
U3	PVC cable 8 wires	WH white	BN brown	GN green	YE yellow	GY grey	PK pink	BU blue	RD red	General shielding
GC	PUR cable 8 wires	BK black	RD red	GN green	BN brown	VT violet	YE yellow	OG orange	BU blue	General shielding
GP	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
TE	Silicone cable (?) 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	1 024	1500	1800	2000	2048	2500	3000	3600	4000	4096	5000	1	2	3	4
X 1	250	256	360	500	1000	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
X 2	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
X 3	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
X 4	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
X 5	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
X 8	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
X 10	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
X 12	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
X 16	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 : DHM9_11//RP59//01024//G6R//**07**)

DHM9	--	//	---	-	//	---	//	---	---	//	**	**
TYPE:	SHAFT BORE:		VOLTAGE/ OUTPUT:	CHANNELS:		CYCLES/ TURN:		OUTPUT TERMINATION:	CABLE LENGTH:		FLANGE:	
DHM9 = Solid shaft encoder	11 = 11mm 12 = 12mm		RP5 = 4.75-30V voltage and push-pull output 2P2 = 5V voltage and RS422 output RP2 = 4.75-30V voltage and RS422 output	9 = AA/ BB/ ZZ/ B before A Z gated A&B		(Enter Cycles) See available resolutions above		GCR = PUR cable GPR = PUR cable (not UL) TER = Silicone cable (not UL) GMR = M12 G6R = M23 12 pins CW G8R = M23 12 pins CCW	xxx = cable length ex. 020 = 2meters Blank (no cable)		**07** = 9500/007 flange	

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