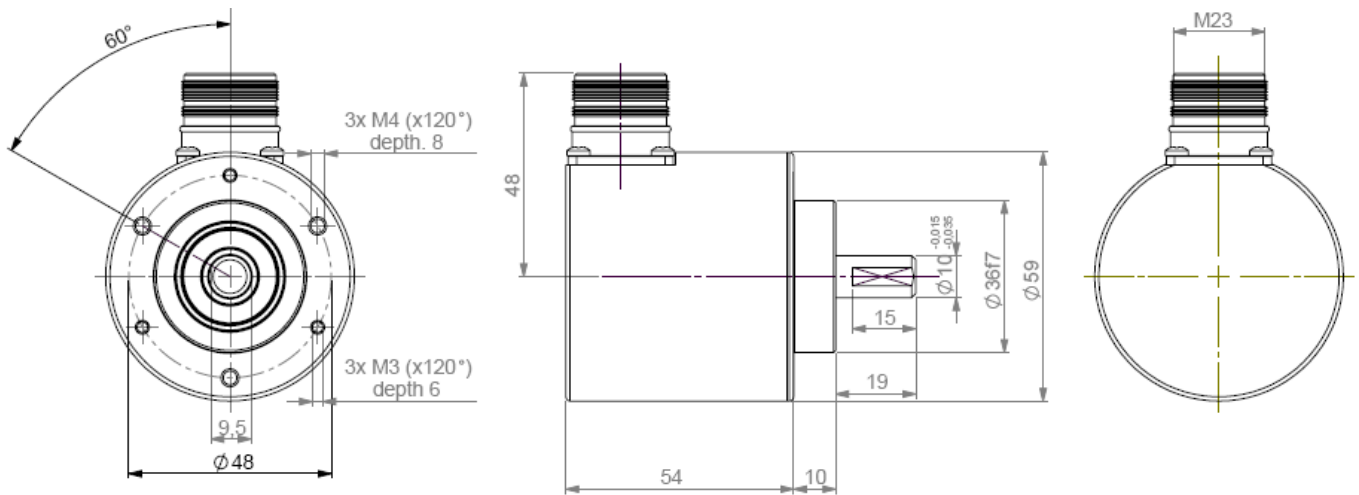


ABSOLUTE MULTITURN ENCODER, PHM5S RANGE

- Solid shaft \varnothing 10 mm, 36mm clamping flange
- Robustness and excellent resistance to shocks / vibrations
- High protection level IP65
- High performances in temperature -20°C to $+85^{\circ}\text{C}$
- Isolated SSI interface, clock from 100 to 500 kHz
- Universal electronic circuits from 5 to 30Vdc
- Protection against short-circuits and inversion of polarity
- High resolutions: 8192 (13 bits) per turn
- Turn counting: 4096 (12 bits)
- Preset (RAZ) input
- With incremental channels – 2048 points – 5 to 30 Vdc



PHM5S10 connection S6R (M23 radial)



MECHANICAL CHARACTERISTICS

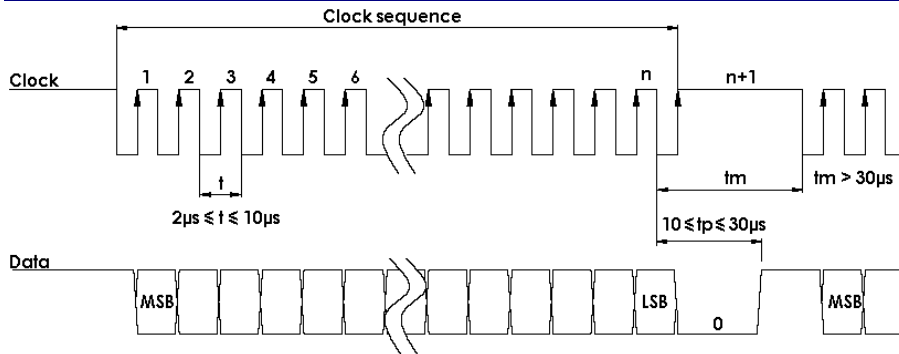
Material	Cover : treated steel	Shock (EN60068-2-27)	$\leq 500 \text{ m.s}^{-2}$ (during 6 ms)
	Body: aluminium	Vibration (EN60068-2-6)	$\leq 100 \text{ m.s}^{-2}$ (10... 2 000 Hz)
	Shaft : stainless steel	EMC	EN 61000-6-4, EN 61000-6-2
Bearings	6 000 serie	Isolation	100V (1 min.)
Maximum load	Axial : 50 N	Weight (connector)	0,520 kg
	Radial : 100 N	Operating temperature	$-20 \dots +85^{\circ}\text{C}$ (encoder T°)
Shaft inertia	$\leq 1.10^{-6} \text{ kg.m}^2$	Storage temperature	$-20 \dots +85^{\circ}\text{C}$
Torque	$\leq 4.10^{-3} \text{ N.m}$	Protection(EN 60529)	IP 65 (IP67 with flange option)
Permissible max. speed	$6\ 000 \text{ min}^{-1}$	Theoretical mechanical lifetime 10^9 turns (F_{axial} / F_{radial})	
Continuous max. speed	$6\ 000 \text{ min}^{-1}$	25 N / 50 N : 99	50 N / 100 N : 12

ELECTRICAL CHARACTERISTIC

Input signal clock CLK	per opto-coupleur	Power supply	5 – 30Vdc
Output signal DATA	line - driver selon RS422	Introduction	$< 1 \text{ s}$
Clock frequency CLK	100kHz – 500kHz	Cons. without load	$< 100\text{mA}$ (typically 50-60mA at 24Vdc)
Precision	$\pm \frac{1}{2} \text{ LSB}$ (13 bits)	Position refresh	$< 200\mu\text{s}$

ABSOLUTE MULTITURN ENCODER, PHM5S RANGE

SSI TRANSMISSION

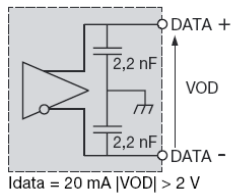


Transmission	Transmission up to 400m* at 100kHz in function of the cable characteristics
Cable	High security of transmission by using shielded cable and twisted pairs

*Consult us for length > 100m

ELECTRICAL DATAS

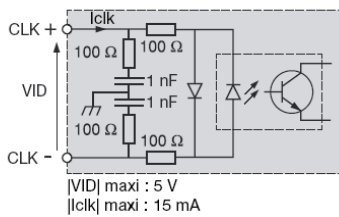
Data output RS422



$I_{data} = 20 \text{ mA}$ $|VOD| > 2 \text{ V}$
Protection against short circuits

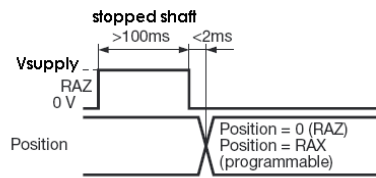
Isolated Clk input

Power supply: 5 to 30 V
Max ond. : 500mV for 11 to 30Vdc power supply
Protection against inversion of polarity
Cons. without load: 100mA max.



$|VID| \text{ maxi} : 5 \text{ V}$
 $|I_{clk}| \text{ maxi} : 15 \text{ mA}$

RAZ / RAX input



min 0 V
max $0,3 \times V_{supply}$
Level "0" 0 V
Level "1" $0,7 \times V_{supply}$
 $I_{RAZ/RAX} < 5 \text{ mA}$

DATA VALID MT

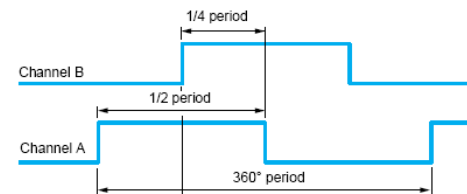
Diagnostic output for monitoring the multi-turn sensor. Below a defined voltage level, this monitoring output is sitched to LOW

Increasing code in clockwise rotation

INCREMENTAL CHANNELS

Channel A (rising edge) arriving before B in the clockwise direction viewed from base side.

Period: 360° electrical.
Cyclic ratio: 180° electrical $\pm 10\%$.
Phase displacement: 90° electrical $\pm 25\%$.



SSI CONNECTION (TYPE 00 : BEI IDEACOD STANDARD)

Fonction	+Vcc	Gnd	Clk+	Data+	RAZ	Data-	Clk-	DATA VALID MT	Channel A	Channel B
S6	1	2	3	4	5	6	7	10	11	12

ORDERING REFERENCE

	Shaft Ø	Supply	Output stage	Code	Output	Resolution	Nb of turn	Nb data	Connection	Customized product
PHM5S	10/00/ 10mm shaft 36mm clamping flange	P: 5 to 30Vdc	SS: SSI without parity	G: Gray	OF: Data Valid MT & 2048 ppr Channels	13: 13 bits	B12: 12 bits	D5: 25 bits	00R/00/ CW M23 12pins radial connection Special long cover	****9R: Encoder adapted to the customer need
PHM5S	10/00/	P	SS	G /	OF /	13	B12	D5 //	00R/00/	****9R

Made in France