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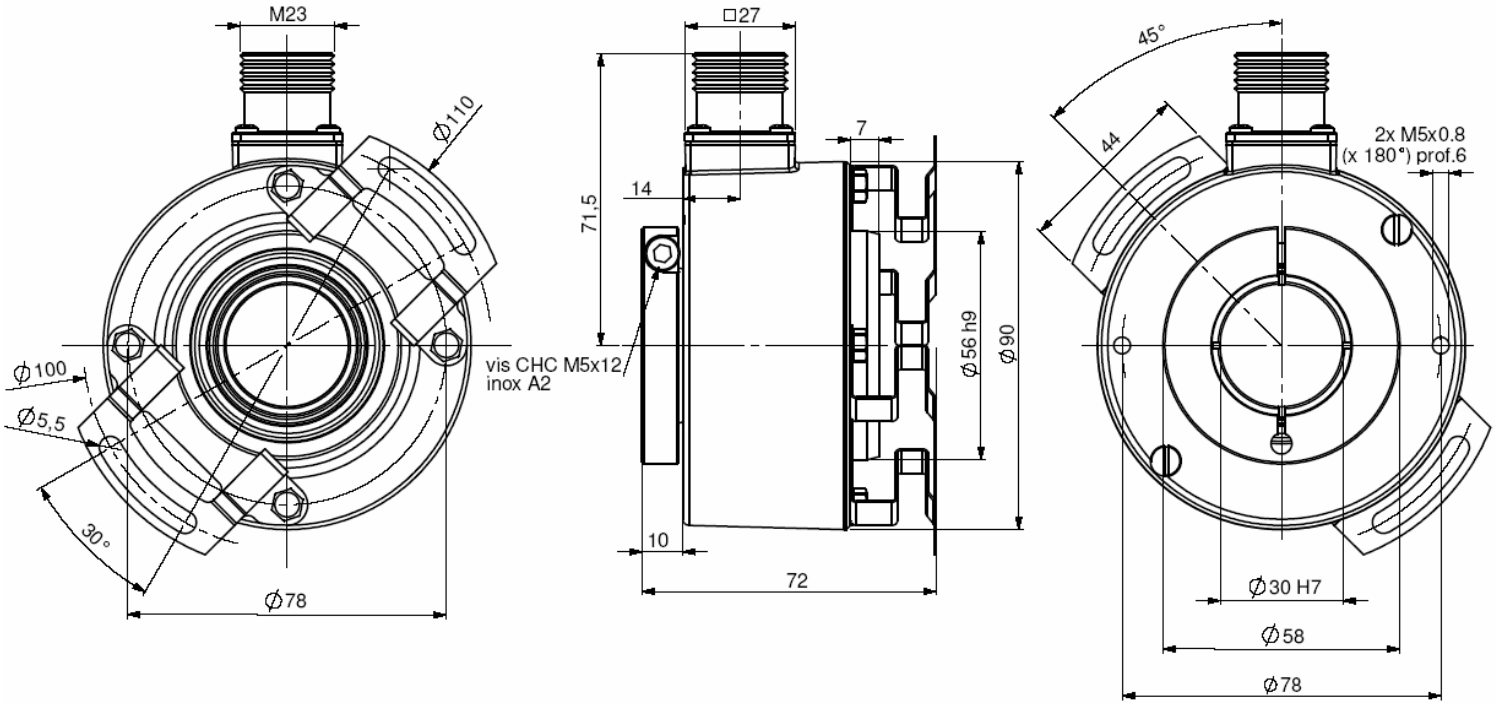
PHU9

SSI PROGRAMMABLE MULTITURN ABSOLUTE ENCODER, PHU9 RANGE

- Heavy duty version, Ø 30mm through shaft, reduction hubs available
- Robustness and excellent resistance to shocks / vibrations
- High performances in temperature –20°C to +80°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 available: 8192 (13 bits) per turn
- Turn counting up to 65 536 (16 bits)
- 2 inputs : DIRECTION and RAZ
- Type choice of the desired limit value : position, rotation speed, temperature
- Diagnostic functions: temperature, rotation speed, position, input/output level
- Programming of the encoder with a serial transmission RS232 directly with the serial PC connection: resolution, number of turn, output code, parity, SSI frame bit number, reset value, functions of the 2 outputs : (OUT 1 and OUT 2): limit switch, incremental channels

RS232

PHU9_30 connection P6R (radial M23), DAC9445/009* mounted on body



* Accessory to be ordered separately

CHARACTERISTICS

Material	Cover : zinc alloy	Shocks (EN60068-2-27)	≤ 500 m.s^{-2} (during 6 ms)
	Body : aluminium	Vibrations (EN60068-2-6)	≤ 100 m.s^{-2} (10 … 2 000 Hz)
	Shaft : stainless steel	EMC	EN 61000-6-4, EN 61000-6-2
Bearings	6 807 serie	Isolation	100V (1 min)
Maximal loads	Axial : 50 N	Encoder weight (approx)	0,700 kg
	Radial : 80 N	Operating temperature	- 20... + 80 °C (encoder T°)
Shaft inertia	≤ 55.10^{-6} kg.m^2	Storage temperature	- 20... + 80 °C
Torque	≤ 25.10^{-3} N.m	Protection(EN 60529)	IP 65
Permissible max. speed	6 000 min^{-1}	Torque (ring screw)	nominal: 3N.m, break: 4N.m
Continuous max. speed	3 600 min^{-1}	Theoretical mechanical lifetime 10^9 turns (F_{axial} / F_{radial})	
Shaft seal	Viton	25 N / 40 N : 140	50 N / 80 N : 17

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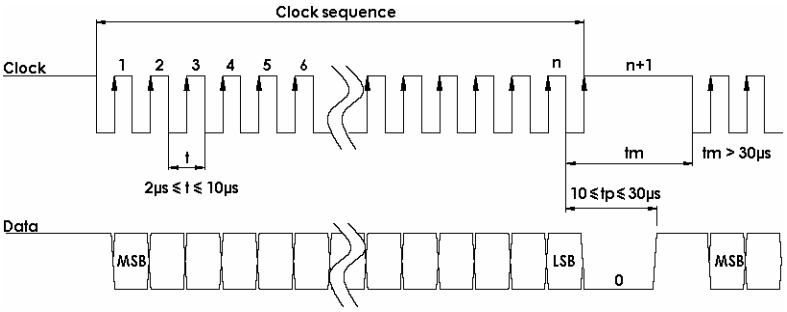
In order to optimize the installation times of SSI encoders, BEI IDEACOD has developed a friendly software, easy to use, with which it's possible to program your encoder under WINDOWS in only 2 minutes. With a simple connection to the serial connector of your PC, you can :
- configure : the number of points per revolution, the number of turns, the code type, SSI frame bit number, the parity, reset value
- read : type of selected encoder, the serial number of the encoder, the position of the encoder, the temperature, the speed of rotation, the level of the input/output
- save the chosen configuration, load saved configurations
- function of the outputs and limit value : position, speed of rotation, temperature, incremental channels 2048 ppr

ELECTRICAL CHARACTERISTIC

Input signal clock CLK	per opto-coupleur
Output signal DATA	line - driver RS422
Clock frequency CLK	100kHz – 500kHz
Precision	± ½ LSB (13 bits)

Power supply	5 – 30Vdc
Introduction	< 1 s
Cons. without load	< 100mA (typically 60-70mA at 24Vdc)
Position refresh	< 200µs

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

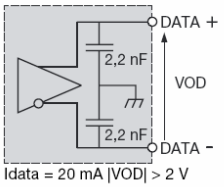
* consult us for length > 100m

SSI CONNECTION

Type	Vcc	Gnd	Clk+	Data+	RAZ	Data-	Clk-	DIR.	OUT1	OUT2	TXD Encoder RXD RS232	RXD Encodeur TXD RS232
P6	1	2	3	4	5	6	7	9	10	11	8	12

The pinouts TXD and RXD entries used for the encoder programming
Connect the entry DIRECTION and RAZ to a potential (RAZ to the 0V if not used)

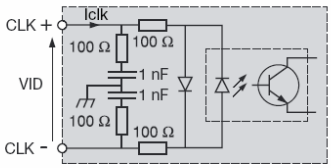
Data output RS422



Idata = 20 mA |VOD| > 2 V
Protection against short circuits

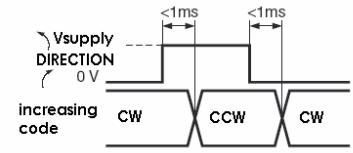
Isolated Clk input

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.



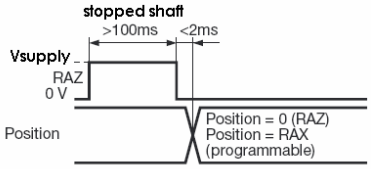
|VID| maxi : 5 V
|Iclk| maxi : 15 mA

DIRECTION input



	min	max	increasing
Level ''0''	0V	0,3xVsupply	CW
Level ''1''	0,7xVsupply	Vsupply	CCW
I direction	< 5mA		

RAZ / RAX input



	min	max
Level ''0''	0 V	0,3xVsupply
Level ''1''	0,7xVsupply	Vsupply
I RAZ/RAX	< 5mA	

Output : - Max current: 20m A
- Level ''0'' max : 0.5V, Level ''1'' min : Vsupply-2,5V
- Limit switch time answer : < 400µs
- Incremental channels : 100kHz max

Programmation cable : PC RS232
- Supply : 230Vac / 12Vdc
- Cable SubD9 (serial PC) / M23 12 pins (encoder)

Reference : PRO-020S001

ORDERING REFERENCE (Contact the factory for special versions, ex:special flanges, connections, electronics...)

	Shaft Ø	Supply	Output stage	Code	Resolution			Connection	Orientation
					13 B12 D5				
					Resolution	Nb of turn	Nb data		
PHU9_	**30**:30mm reduction hubs available	**P** : 5 to 30Vdc	**PX** : SSI programmable Nota : without parity by default	**G** : Gray default	**13:** 13 bits default	**B12:** 12 bits default	**D5:** 25 bits default	**P6**: M23 12pins CW for SSI transmission	**R** : radial
PHU9 _	**30 //**	**P**	**PX**	**G //**	**13**	**B12**	**D5 //**	**P6**	**R**

SOFTWARE / CONFIGURATION MANUAL: consult us

Made in FRANCE

a company of Schneider Electric