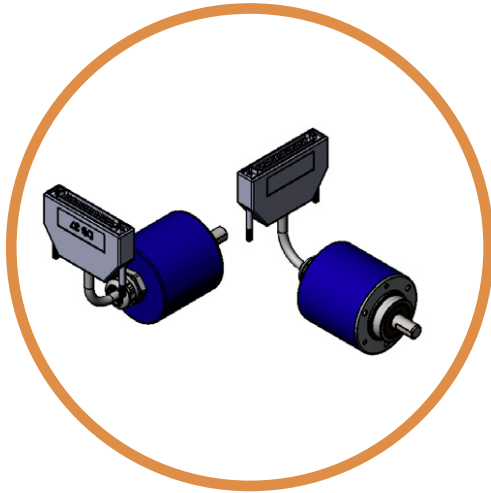




## | PHM5

### PARALLEL ABSOLUTE MULTITURN ENCODER – PNP- NPN



#### Features

- Solid shaft Ø 6 and Ø 10 mm,
- Robustness and excellent resistance to shocks / vibrations,
- High protection level IP65, IP67 option with a sealing flange,
- High performances in temperature –20°C to +85°C,
- Parallel output, PNP or NPN,
- Universal electronic circuits from 11 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),
- Reset, select, Latch, Direction functions,
- Option: push-button on the cover for an encoder reset to a value X.

## SPECIFICATIONS

### Mechanical

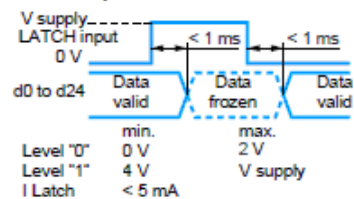
<b>Material</b>	Cover : steel
	Body : aluminum
	Shaft : stainless steel
<b>Bearings</b>	6 000 serie
<b>Maximum loads</b>	Axial : 50 N
	Radial : 100 N
<b>Shaft inertia</b>	$\leq 1.10^{-6}$ kg.m <sup>2</sup>
<b>Torque</b>	$\leq 6.10^{-3}$ N.m
<b>Permissible max. speed</b>	$\leq 4.10^{-3}$ N.m
<b>Continuous max. speed</b>	6 000 min <sup>-1</sup>
<b>Shaft seal</b>	6 000 min <sup>-1</sup>
<b>Shock (EN60068-2-27)</b>	$\leq 500$ m.s <sup>-2</sup> (during 6 ms)
<b>Vibration (EN60068-2-6)</b>	$\leq 100$ m.s <sup>-2</sup> (10 ... 2 000 Hz)
<b>EMC</b>	EN 61000-6-4, EN 61000-6-2
<b>Isolation</b>	100V (1 min.)
<b>Weight (connector)</b>	0,750 kg
<b>Operating temperature</b>	- 20 ... + 85 °C (encoder T°)
<b>Storage temperature</b>	- 20 ... + 85 °C
<b>Protection(EN 60529)</b>	IP 65 (IP67 with flange option)
<b>Theoretical mechanical lifetime 10<sup>9</sup> turns (Faxial / Fradial)</b>	25 N / 50 N : 99
	50 N / 100 N : 12

## Electrical

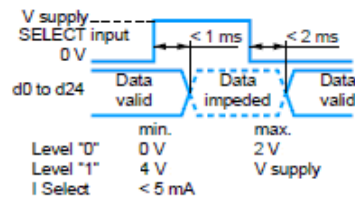
<b>Power supply</b>	11 – 30Vdc
<b>Introduction</b>	< 1 s
<b>Cons. without load</b>	< 100mA (typically 50-60mA at 24Vdc)
<b>Position refresh</b>	< 200µs

## SCHEMES

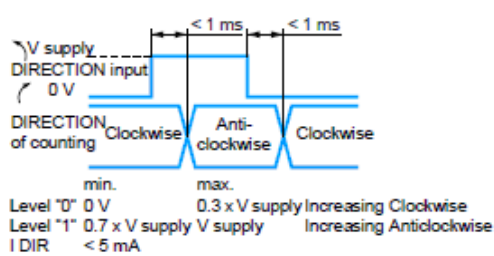
### LATCH input



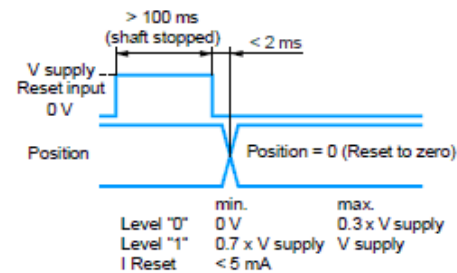
### SELECT input



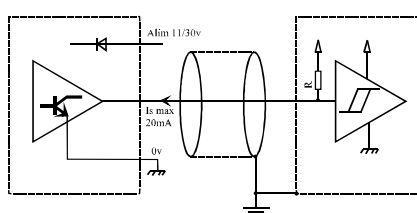
### DIRECTION input



### Input stage - Reset to zero

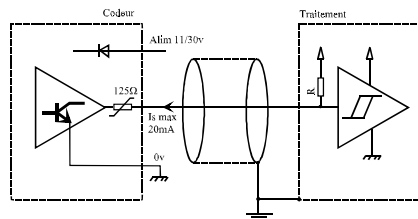


## ELECTRONIC



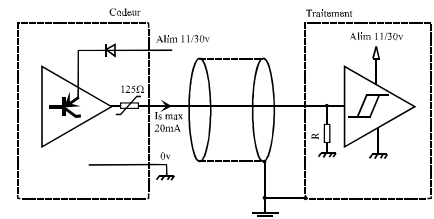
### 5S0 Electronic: OC NPN

Power supply: 11 to 30Vdc  
Current consumption (no load) : <100mA  
Max ondulation : 500mV  
Level "0" max : 1,25Vdc  
Protection against polarity inversion



### 5S1 Electronic: OC NPN + CTP

Power supply: 11 to 30Vdc  
Current consumption (no load): <100mA  
Max ondulation : 500mV  
Level "0" max : 3,75V at  $I_s$  max  
Protection against short-circuits  
Protection against polarity inversion



### 5S6 Electronic : OC PNP + CTP

Power supply: 11 to 30Vdc  
Current consumption (no load): <100mA  
Max ondulation : 500mV  
Level "1" mini :  $V_{cc} - 4,5Vdc$  at  $I_s$  max  
Protection against short circuits  
Protection against polarity inversion



## PARALLEL CONNECTION

1	GN green	Output Bit 0
2	YE yellow	Output Bit 1
3	GY grey	Output Bit 2
4	PK pink	Output Bit 3
5	BU blue	Output Bit 4
6	RD red	Output Bit 5
7	BK black	Output Bit 6
8	VT violet	Output Bit 7
9	WH/BN white/brown	Output Bit 8
10	WH/GN white/green	Output Bit 9
11	WH/YE white/yellow	Output Bit 10
12	WH/GY white/grey	Output Bit 11
13	WH/PK white/pink	Output Bit 12
14	WH/BU white/blue	Output Bit 13
15	WH/RD white/red	Output Bit 14
16	WH/BK white/black	Output Bit 15
17	BN/GN brown/green	Output Bit 16
18	BN/YE brown/yellow	Output Bit 17
19	BN/GY brown/grey	Output Bit 18

20	BN/PK brown/pink	Output Bit 19
21	BN/BU brown/blue	Output Bit 20
22	BN/RD brown/red	Output Bit 21
23	BN/BK brown/black	Output Bit 22
24	GN/GY green/grey	Output Bit 23
25	GN/PK green/pink	Output Bit 24
26	GN/BU green/blue	Reserved
27	GN/RD green/red	RESET
28	GN/BK green/black	SELECT
29	YE/GY yellow/grey	LATCH
30	YE/PK yellow/pink	DIRECTION
31	YE/BU yellow/blue	Reserved
32	YE/RD yellow/red	Reserved
33	NC	Reserved
34	YE/BK yellow/black	Reserved
35	RD/BK red/black	Reserved
36	BN brown	11 to 30Vdc
37	WH white	0 Vdc

### SELECT

Active data output, pin SELECT at 0Vdc  
 Non active data output: pin select to +Vcc

### LATCH

Active data: pin LATCH to 0Vdc  
 Data frozen: pin LATCH to +Vcc

DIRECTION, LATCH, RAX and SELECT inputs have to be connected to 0Vdc or +Vcc (LATCH, SELECT and RAX at 0V if not used)

Reserved: Do not connect !

Example of pin assignment for configuration 10x7 bits : data available on pin 1 to 17 - Max: 25 bits (Resolution + Number of turns)

### DIRECTION

Increasing code clockwise: pin DIRECTION at 0Vdc  
 Increasing code counter clockwise: Pin DIRECTION at +Vcc

### RAX (PRESET to X):

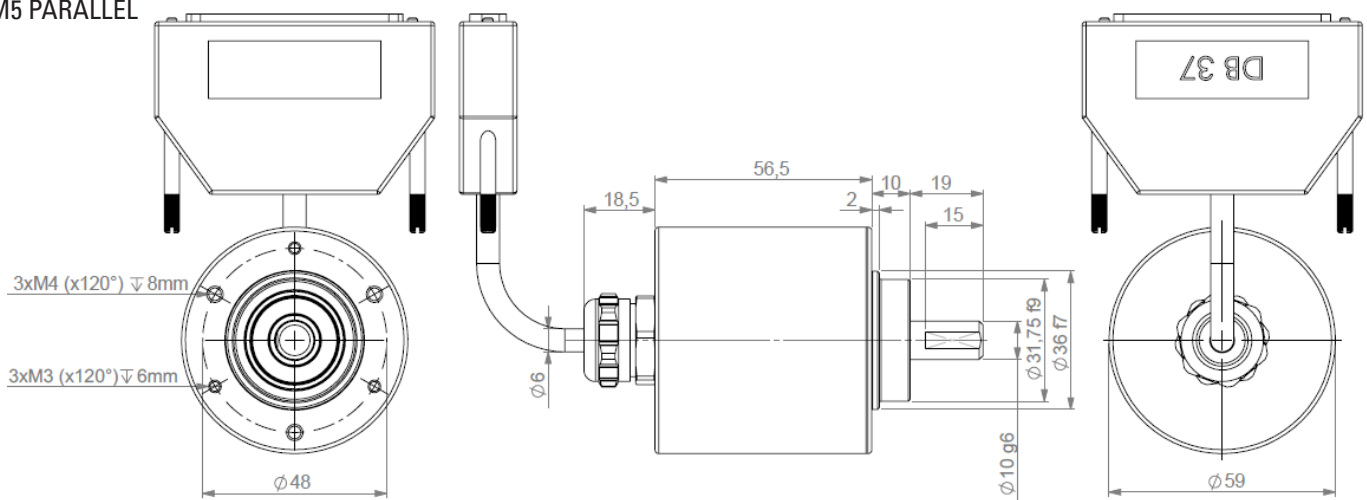
For an electrical RAX (or push-button option) : pin RAX to +Vcc during minimum 100ms.



## DIMENSIONS

All dimensions are in: mm

### PHM5 PARALLEL



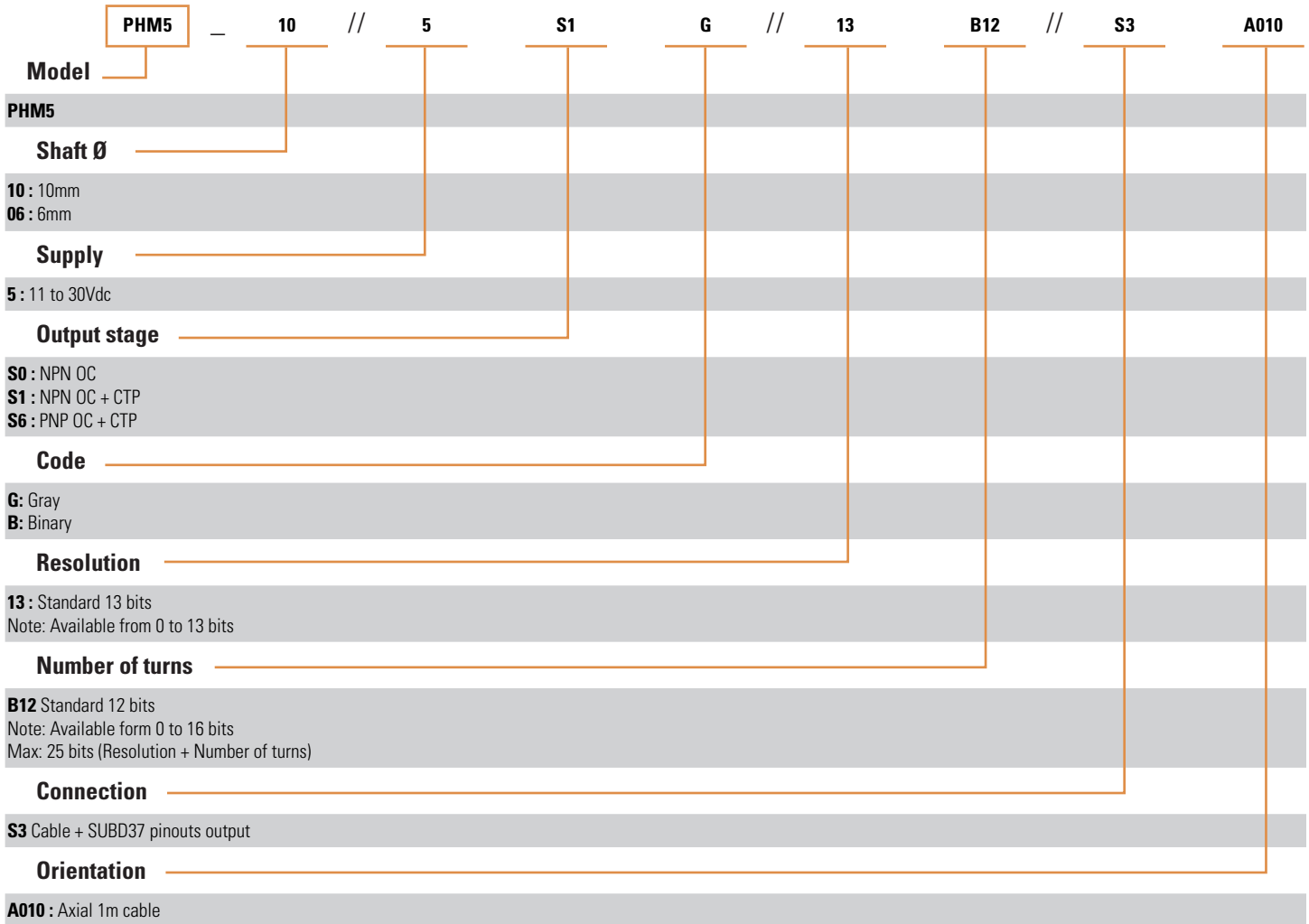
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# ORDERING OPTIONS

Example : PHM5\_10 //5S1G //13B12 //S3A010

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



# AGENCY APPROVALS & CERTIFICATIONS



Made In France

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