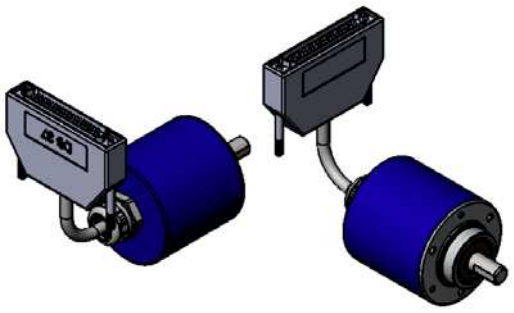
BEI Sensors SAS
Espace Européen de l'Entreprise
9, rue de Copenhague
B.P. 70044 Schiltigheim
F67013 Strasbourg Cedex

Tel : +33 (0)3 88 20 80 80
Fax : +33 (0)3 88 20 87 87
Mail : info@beisensors.com
Web : www.beisensors.com

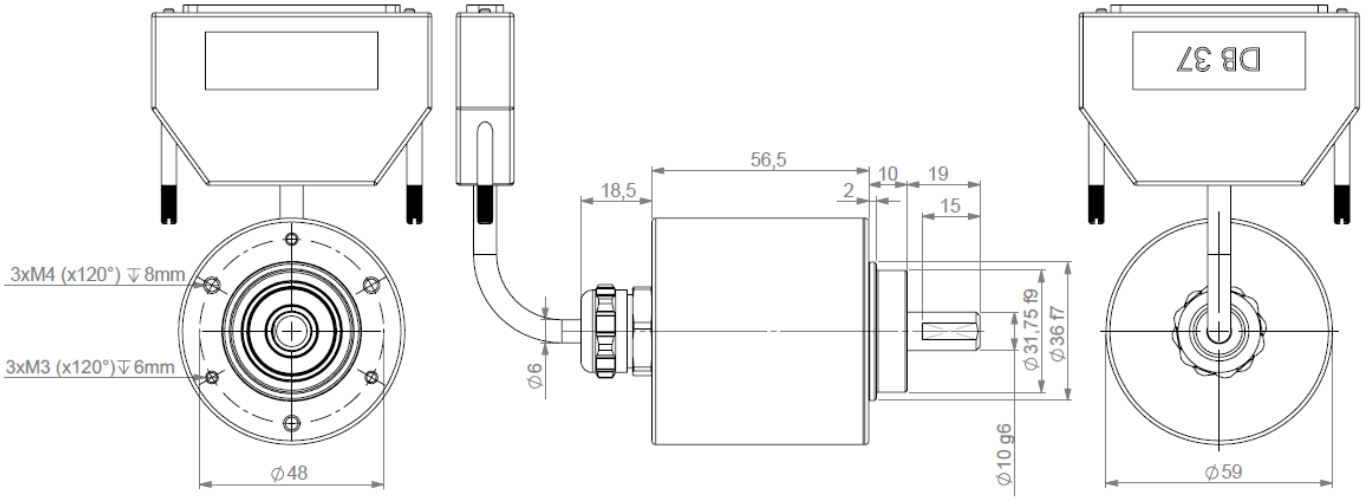
PHM5

PARALLEL ABSOLUTE MULTITURN ENCODER – PNP - NPN - PHM5 RANGE

- 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.



PHM5 PARALLEL DIMENSIONS



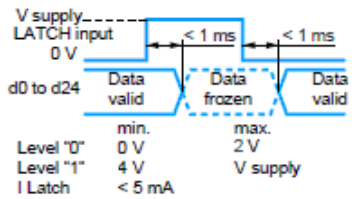
MECHANICAL CHARACTERISTICS

Material	Cover: steel
	Body: aluminium
	Shaft : stainless steel
Bearings	6 000 serie
Maximum load	Axial: 50 N
	Radial: 100 N
Shaft inertia	≤ 1.10^{-6} kg.m²
Torque	≤ 4.10^{-3} N.m
Permissible max. speed	6 000 min^{-1}
Continuous max. speed	6 000 min^{-1}

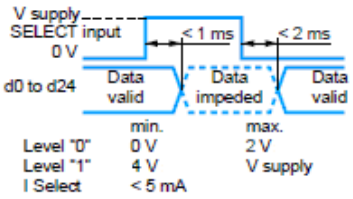
Shock (EN60068-2-27)	≤ 500 m.s⁻² (during 6 ms)
Vibration (EN60068-2-6)	≤ 100 m.s⁻² (10… 2 000 Hz)
EMC	EN 61000-6-4, EN 61000-6-2
Isolation	100V (1 min.)
Weight (connector)	0,750 kg
Operating temperature	- 20 ... + 85 °C (encoder T°)
Storage temperature	- 20 ... + 85 °C
Protection (EN 60529)	IP 65 (IP67 with flange option)
Theoretical mechanical lifetime 10^9 turns (F_{axial} / F_{radial})	
25 N / 50 N : 99	50 N / 100 N : 12

SCHEMES

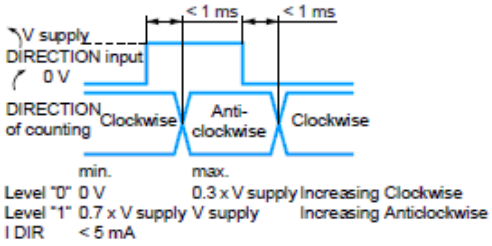
LATCH input



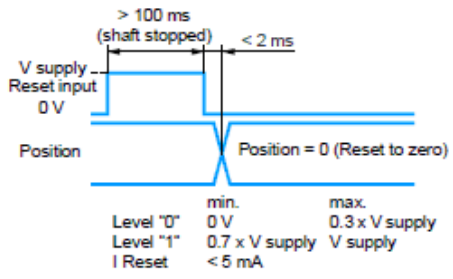
SELECT input



DIRECTION input



Input stage - Reset to zero



ELECTRONIC

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

BEI Sensors SAS
Espace Européen de l'Entreprise
9, rue de Copenhague
B.P. 70044 Schiltigheim
F67013 Strasbourg Cedex

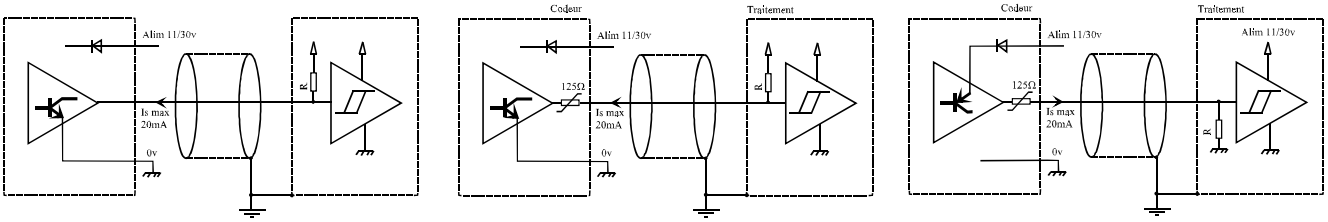
Tél : +33 (0)3 88 20 80 80
Fax : +33 (0)3 88 20 87 87
Mail : info@beisensors.com
Web : www.beisensors.com

PHM5

PARALLEL ABSOLUTE MULTITURN ENCODER – PNP - NPN - PHM5 RANGE

CE

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 Is 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 : Vcc - 4,5Vdc at Is 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

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

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

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

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)

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

	Shaft Ø	Supply	Output stage	Code	Resolution	Number of turns	Connection	Orientation
PHM5	**10** : 10mm **06** : 6mm	**5** : 11 to 30Vdc	**S0** : NPN OC **S1** : NPN OC + CTP **S6** : PNP OC + CTP	**G**: Gray **B**: Binary	**13** : Standard **13** bits Nota: Available form 0 to 13 bits	**B12** Standard **12** bits Nota: Available form 0 to 16 bits Max: 25 bits (Resolution + Number of turns)	**S3** Cable + SUBD37 pinouts output	**A010** : Axial 1m cable
PHM5 _	**10 //**	**5**	**S1**	**G //**	**13**	**B12 //**	**S3**	**A010**

Made in France