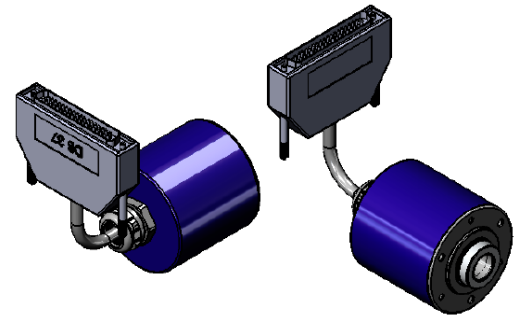
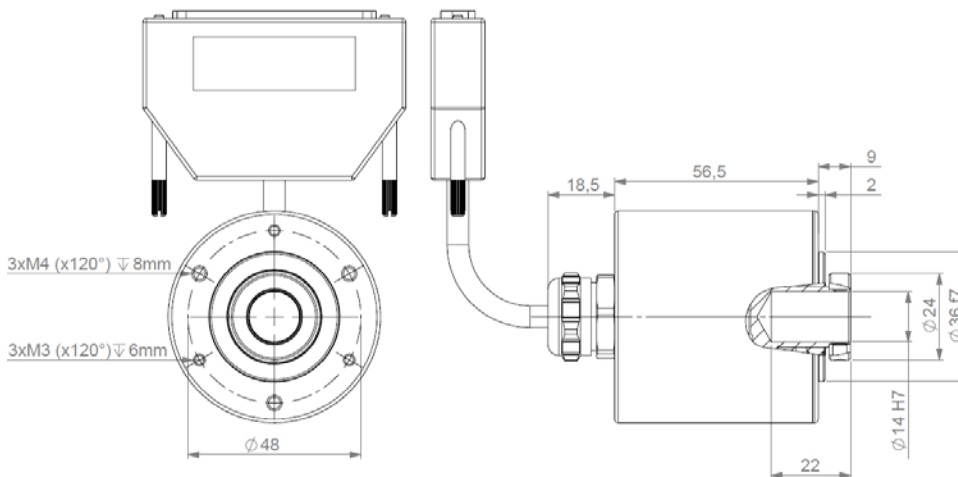


## PARALLEL ABSOLUTE MULTITURN ENCODER – PNP - NPN - PHK5 RANGE

- Blind shaft 14mm, reduction hub available, 15mm option,
- Robustness and excellent resistance to shocks / vibrations,
- High protection level IP65,
- High performances in temperature  $-20^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ ,
- 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.

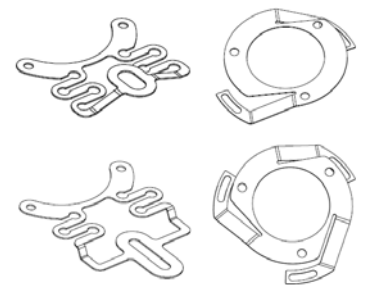


### PHK5 PARALLEL DIMENSIONS



### DAC SYSTEMS

To be ordered separately – several types available:

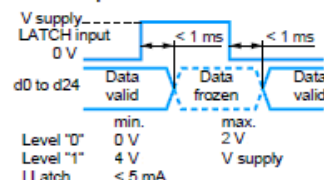


### MECHANICAL CHARACTERISTICS

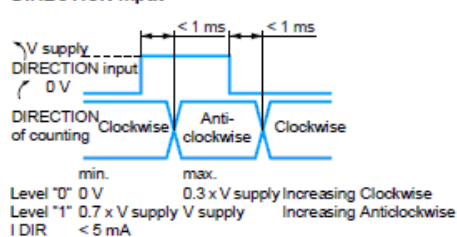
Material	Cover : treated steel	Vibration (EN60068-2-6)	$\leq 100\text{m.s}^{-2}$ (10 ... 2 000 Hz)
	Body: aluminium	EMC	EN 61000-6-4, EN 61000-6-2
	Shaft : stainless steel	Isolation	100V (1 min)
Bearings	6 803 serie	Weight	0,480 kg
Maximum load	Axial : 20 N	Operating temperature	$-20 \dots +85^{\circ}\text{C}$ (encoder $T^{\circ}$ )
	Radial : 50 N	Storage temperature	$-20 \dots +85^{\circ}\text{C}$
Shaft inertia	$\leq 2,2 \cdot 10^{-6} \text{ kg.m}^2$	Protection(EN 60529)	IP 65
Torque	$\leq 6 \cdot 10^{-3} \text{ N.m}$	Torque (ring pressure screw)	nominal: 1.5N.m, break: 2.0N.m
Permissible max. speed	$6\,000 \text{ min}^{-1}$	Theoretical mechanical lifetime $10^9$ turns ( $F_{axial} / F_{radial}$ )	
Continuous max. speed	$6\,000 \text{ min}^{-1}$	10 N / 25 N	185
		20 N / 50N	24
Shock (EN60068-2-27)	$\leq 500\text{m.s}^{-2}$ (during 6 ms)		

### SCHEMES

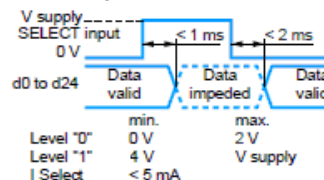
#### LATCH input



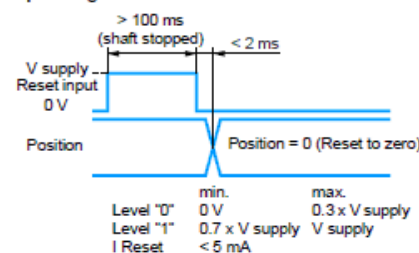
#### DIRECTION input



#### SELECT input



#### Input stage - Reset to zero

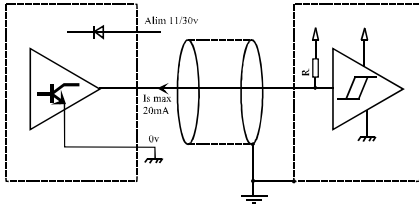


### ELECTRONIC

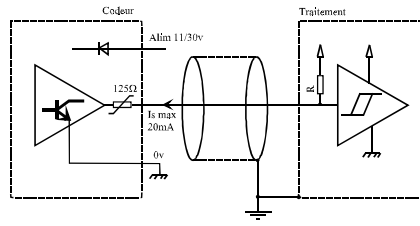
Power supply	11 – 30Vdc
Introduction	$< 1 \text{ s}$
Cons. without load	$< 100\text{mA}$ (typically 50-60mA at 24Vdc)
Position refresh	$< 200\mu\text{s}$

## PARALLEL ABSOLUTE MULTITURN ENCODER – PNP - NPN - PHK5 RANGE

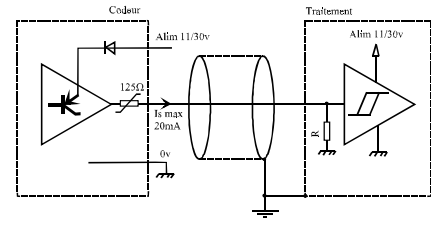
### ELECTRONIC



**550 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



**551 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



**556 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

#### 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.

### 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
PHK5	14 :	5 :	S0 :	G :	13 :	B12	S3	A010 :
	14mm	11 to 30Vdc	NPN OC	Gray	Standard 13 bits	Standard 12 bits	Cable + SUBD37 pinouts output	Axial 1m cable
	Reduction hub available		S1 :	B :	Nota: Available form 0 to 13 bits	Nota: Available form 0 to 16 bits		
	15 :		S6 :			Max: 25 bits (Resolution + Number of turns)		
	15mm option		PNP OC + CTP					
PHK5 _	14 //	5	S1	G //	13	B12 //	S3	A010

Made in France

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