



## | AHM3

Magnetic Analog Absolute Single Turn Encoders



### Features

- With its 30mm size and a 6mm solid shaft, AHM3 encoder characterizes itself by its strong robustness of the mechanical and electro-magnetic parts, it's the most compact really industrial encoder with a solid shaft.
- Application fields : agriculture, construction, forestry vehicles, medical applications, solar panels...
- Magnetic technology, contactless.
- Available resolution up to 12 bits per revolution.
- Universal supply 5 to 30Vdc available.
- Also available : analog, PWM and SSI outputs..
- Available in option : Extended temperature range (up to -40..+125°C), IP67/IP69K...



## SPECIFICATIONS

### Mechanical Data

<b>Material</b>	Shaft: stainless steel, Cover: aluminium, Body: aluminium
<b>Bearings</b>	696 series
<b>Maximal loads</b>	Axial : 20 N, Radial : 50 N
<b>Shaft inertia</b>	$\leq 0,1 \cdot 10^{-6} \text{ kg.m}^2$
<b>Torque</b>	$\leq 1 \cdot 10^{-3} \text{ N.m}$
<b>Nominal max. speed</b>	6 000 min <sup>-1</sup>
<b>Encoder weight (approx.)</b>	0,150 kg
<b>Isolation</b>	500Veff
<b>EMC</b>	EN 61000-6-4, EN 61000-6-2
<b>Operating temperature</b>	- 40... + 85 °C (encoder T°)
<b>Storage temperature</b>	- 40... + 85 °C
<b>Protection</b>	IP 65
<b>Shocks (EN60068-2-27)</b>	$\leq 2000 \text{ m.s}^{-2}$ (during 6 ms)
<b>Vibrations (EN60068-2-6)</b>	$\leq 200 \text{ m.s}^{-2}$ (55 ... 2 000 Hz)
<b>Theoretical mechanical lifetime</b>	10 <sup>9</sup> turns (Faxial / Fradial)
<b>20 N / 50 N</b>	15

## Electrical Data

<b>Power supply</b>	5-30Vdc
<b>Consumption without load</b>	< 40mA (at 24Vdc)
<b>Resolution</b>	4096 (2 <sup>12</sup> )
<b>Accuracy</b>	± 0.3 %
<b>Repeatability</b>	± 0.1 %
<b>Introduction</b>	<1s
<b>Refresh rate</b>	< 400µs

## TECHNICAL SPECIFICATIONS

### Programmable Parameters

**Resolution:** defines the resolution per revolution (0 à 4 096).

**Transmission speed:** programmable from 10kbaud (1 000m) to 1 Mbaud (25 m) ; value per default : 20 Kbaud.

**Address:** defines the software address of the encoder on the bus (1 à 127, Value per default : id = 1).

**Direction:** defines the direction of count of the encoder.

**RAX:** define the value of the current position (stationary shaft).

**Games:** high and low limits.

### Communication Modes

Encoder configuration: Reading/Writing of the encoder objects dictionary (SDO mode).

3 modes are available to interrogate the encoder position/speed :

**CYCLIC mode:** the encoder transmits its position in an asynchronous manner.

The frequency of the transmission is defined by the programmable cyclic timer register from 0 to 65 535 ms,

**SYNCHRO mode:** the encoder transmits its position on a synchronous demand by the master.

**POOLING mode** (Answer to a RTR signal): the encoder only answers to a request.

### Connectique Canopen

Type	Description	0V	+Vcc	CAN GND / 0V	CAN HIGH	CAN LOW	Ground
BB	PVC cable + DB9	6	9	3	7	2	Connector body
B7	M12 5 pinouts	1	2	3	4	5	Connector body

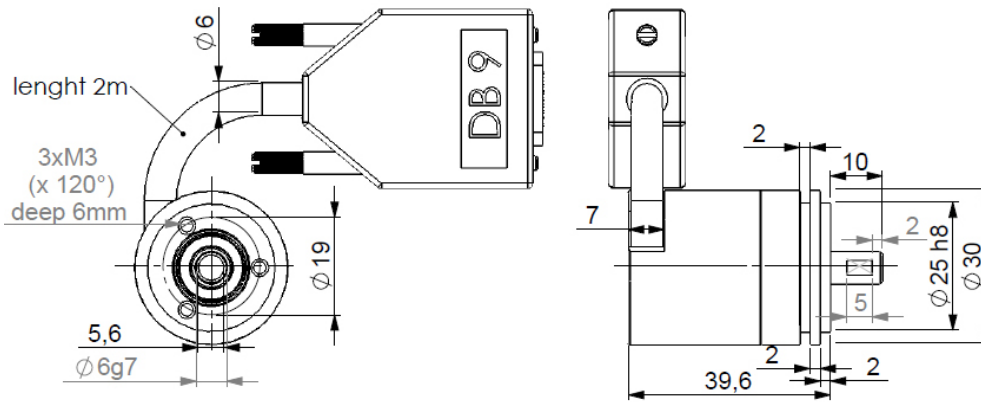
Note :

- Refer to the bus standards for the maximal derivation,
- signals 0V and CAN GND are connected together (internally);

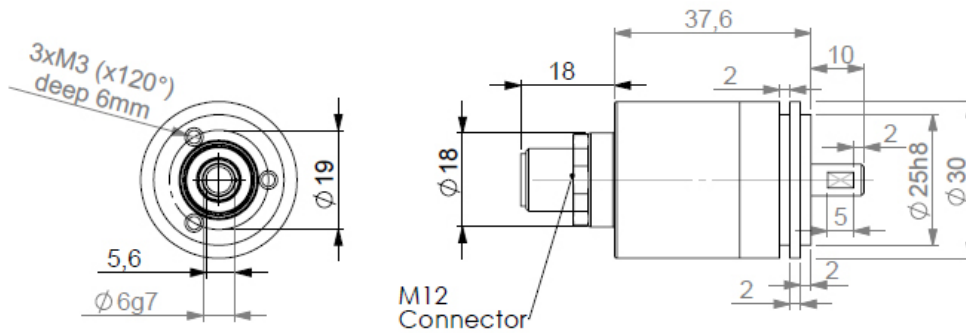


## DIMENSIONS

AHM3 BBD connection (cable + DB9 output, diagonal output)



AHM3 B7A connection (Axial M12 output)



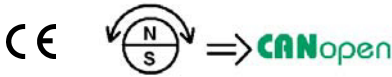
## ORDERING OPTIONS

Example : AHM3-06-P-1-BB-B-12-BB-D020

(Contact the factory for special versions , ex : dimensions, connections... ) Made in France

	AHM3	06	P	BB	B	12	BB	D020
<b>Family</b>	AHM3							
<b>Shaft Ø</b>	06 = 6mm							
<b>Supply</b>	P = 5 to 30Vdc							
<b>Output stage</b>	BB = CANopen							
<b>Code</b>	B = Binary							
<b>Resolution</b>	12 = 4096 (2 <sup>12</sup> )							
<b>Connection</b>	BB = PVC Cable + DB9 CAN- open B7 = M12 5 pinouts							
<b>Connection orientation</b>	D020 = Diagonal Cable 2m A = Axial							

## AGENCY APPROVALS & CERTIFICATIONS



## WARNINGS



### RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE

- The product's side panels may be hot, allow the product to cool before touching
  - Follow proper mounting instructions including torque values
  - Do not allow liquids or foreign objects to enter this product
- Failure to follow these instructions can result in serious injury, or equipment damage.**



### HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARCH FLASH

- Disconnect all power before installing or working with this equipment
  - Verify all connections and replace all covers before turning on power
- Failure to follow these instructions will result in death or serious injury**

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