

**SINGLE TURN  
ABSOLUTE  
ENCODER  
OB80EXS**

Explosion-proof encoder, certified by ISSEP, ATEX Ex d II C T6, according to CENELEC Standards. B10 flange (Ø 115). Fitted to be used on working environments with explosive atmosphere (except for grisu').  
Absolute single turn encoder from 7 to 12 bits.

**ATEX  
(DIRECTIVE 94/9/CE)**

**CE Ex II 2 G D**

Sized draw standard version:

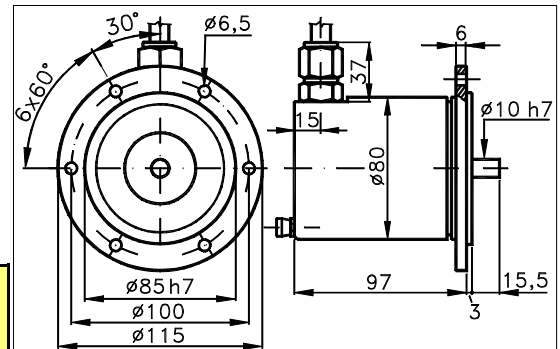
CV2 R

Measures without tolerance according to UNI ISO 2768-mk



**GAS "G"  
and  
DUST "D"**

**CE Ex II 2 G Ex d IIC T6 Gb  
D Ex tb IIIC T85°C Db IP6X**



**Ex** Encoder built with certification ATEX explosion-proof rules, according to armonized standards EN60079-0/EN60079-1/EN60079-31. Certified by ISSEP ISSEP07ATEX018X and notified by CESI CESI02ATEX138Q. Special conditions for safe use: symbol X.  
The apparatus is fitted with a cable suitable with temperature of 100°C minimum permanently connected to it; an appropriate connection of the free end of the cable shall be foreseen. The quality of the assembly screws shall be 8.8 at least.

**Ex** : Manufactured in accordance with one or more Cenelec security Standards.  
**d/tb** : It means explosion-proof case.  
**Db/Gb**: Protection level.  
**IIIC** : Conductive dust.  
**II** : Built for use in all sites except for mines with grisu'.

**C** : Maximum security (MESG) experimental gap type.  
**IP6X**: Degree of protection (IP code).  
**T6** : Maximum temperature of the case surface: 85°C (standard).

**TECHNICAL FEATURES AND POSSIBLE CONFIGURATIONS**

- **Output codes**.....: Gray, Excess, Custom
- **Max pulses/rev**.....: 4096 (12 bits)
- **Power supply Vcc**.....: 5±5%, 15±5%, 8÷24, 18÷28
- **Max consumption**.....: 180 mA
- **Light source**.....: LED with >= 100000 h life
- **Optical sensors**.....: Phototransistors
- **Max frequency**.....: 50 kHz
- **Ambient temperature**....: (T6) -20 ÷ +40 °C
- **Storage temperature**....: -30 ÷ +85 °C
- **Burn-in @ +75 °C**.....: 72 h
- **Commutazione up/down**..: Yes
- **Mechanical zero search**: No
- **Possible versions**.....: (GP) Gray -Parallel  
(GS) Gray - Serial SSI  
(EP) Excess - Parallel  
(ES) Excess - Serial SSI  
(A) Analogic 'current' (\*\*)  
(V) Analogic 'voltage' (\*\*)
- **Possible outputs**.....: (1) NPN open coll.10mA(std)  
**with GP, EP versions.** (2) NPN open coll.10mA + PTC  
(3) NPN open emitt.10mA+ PTC  
(4) Push-p. 10mA+PTC

- **Connections** Radial (R)/ CV1 CV7 (3) VM5 TM5  
Axial ( ) : (\*)
- For the description of connections see 'ORDERING CODE' on page 2.
- **Base**.....: Aluminium (\*)
- **Cover**.....: Aluminium (\*)
- **Weight**.....: 1300 g
- **Shaft**.....: Ø 10 Stainless Steel
- **Max.rad/axial load**.....: 10 Kg
- **IP output side**.....(°): see 'CONNECTIONS' on page 2
- **IP shaft side**.....(°): std.65 | sealed 66 | low torq.-
- **Contin. max RPM**.....: 6000 | 3000 | -
- **Starting torque**.. gcm.: 18 | 50 | -
- **Impact resistance**.....: 50 G (11 ms)
- **Vibration resistance**...: 12 G (10 ÷ 2000 Hz)
- **Ball bearings life**.....: 1,5x10^9 revolutions  
(@ 1000 RPM with load of 1/4 maximum allowed)
- (\*) Custom options  
(°) IP according to CEI EN60529, EN60529, IEC 529  
(\*\*) Only power supply 15 V or 18÷28 V and resol.4096

**POSSIBLE OPTIONS**

CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION
				Z	Sealed ball bearings
				N	Stainless steel case
				G	Tropicalization

ELECTRONIC OUTPUT	INTERFACE	PARALLEL OPTIONS
» (1) NPN open coll.10mA(std) 	» (GP) (EP) Parallel The angular value is present on the output connector in a 'parallel' form. The number of conductors is proportional to the resolution and the type of selected code. Any electronic output stage can be applied.	»
» (2) NPN open coll.10mA + PTC 	» (GS) (ES) Serial SSI The data output (available only with Gray or Excess code) is controlled by an external clock. The angular position's value is first stored into the encoder and then transmitted outside starting from the MSB. The standard of transmission is RS422. The transmission sequence is 13 bits long. The clock frequency is 125 kHz.	»
» (3) NPN open emitt.10mA+ PTC 	» (A) Analogic 'current' » (V) Analogic 'voltage'	»
» (4) Push-p. 10mA+PTC 	Encoder's angular position with 12 bits resolution (4096 div./rev) is converted in an analog (mA or V) quantity proportional to its value. In the standard version (360° of rotation) Iu=1+20mA Vu=0+10V.	»

### ORDERING CODE

MAX °C CLASS (CASE) ( ) ( 6 ) T6 / T85°C	GRAY : 128,256,512,1024, 2048,4096 EXCESS: 180,360,720,1440	(1) NPN open coll.10mA(std) (1) (2) NPN open coll.10mA + PTC(1) (3) NPN open emitt.10mA+ PTC(1) (4) Push-p. 10mA+PTC (1) (5) SERIAL SSI (6) ANALOGIC 4÷20 mA (7) ANALOGIC 0÷10 V	CABLE IP66 (4) ( CV1 ) 1 m long cable ( CV7 ) 1 m long cable (1) CABLE END CONNECT. (3) IP65 encoder output ( VM5 ) 26c ( TM5 ) 26c sealed ( )			
MODEL	PULSES/REVOL.	POWER SUPPLY	VERSION	ELECTRONIC	CONNECTION	OUTPUT
OB80EXS 6	4096	5	GP	1	CV7	R
OPTIONS ( ) ( ) ( ) ( ) ( ) ( ) ( ) (Z) Sealed ball bearings (N) Stainless steel case (G) Tropicalization (X) Custom options		(5) 5 V ±5% (15) 15 V ±5% (824) 8 ÷ 24 V (1828) 18 ÷ 28 V	(GP) Gray - Parallel (GS) Gray - Serial SSI (EP) Excess - Parallel (ES) Excess - Serial SSI (A) Analogic 'current' (V) Analogic 'voltage'	(**) (**)		Axial ( ) Radial (R)

(1) For parallel version (GP), (EP)  
 (2) Only power supply 15V or 18+28V and resol.4096  
 (3) Only outside potentially explosive environments  
 (4) The junction has to be made with Ex junction box or outside potentially explosive environments

Product manufactured according to UNI EN ISO 9001:2008, supplied with CHECKING and CONFORMITY declaration with CE mark and with TWO (2) YEARS WARRANTY starting from delivery date.

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