

# ROTACOD

ATEX absolute multi-turn encoder

Series

**XAC77**



- Absolute single & multiturn encoders
- ATEX II 2G Ex d IIC T6 Gb, II 2D Ex tb IIIC T85°C Db certification
- Installation in zones 1, 2, 21 and 22
- Point-to-point fieldbus communication
- SSI or Bit parallel output
- Fully programmable analogue output (V/I)



XAC77

## ENVIRONMENTAL SPECIFICATIONS

Shock:	100 g, 6 ms
Vibrations:	10 g, 10-2000 Hz
Protection:	IP65
Environmental temperature max.:	40°C max.
Encoder operating temperature range:	-25°C +85°C (-13°F +185°F)
Storage temperature range:	-25°C +85°C (-13°F +185°F) (98% R.H. without condensation)

## MECHANICAL SPECIFICATIONS

Protection mode:	ATEX II 2G Ex d IIC T6 Gb, II 2D Ex tb IIIC T85°C Db
Dimensions:	see drawing
Shaft diameter:	Ø 14 mm
Shaft loading (axial, radial):	60 N max.
Shaft rotational speed:	6000 rpm max.
Starting torque (at 20°C):	< 5 Ncm
Bearings life:	400x10 <sup>6</sup> rev. min. (10 <sup>9</sup> rev. min. with shaft loading of 20 N max.)
Electrical connections:	cable output 3 m (9.8 ft) (max. 8 m for Ethernet versions)
Weight:	~ 1 kg (35,2 oz)
Option:	• additional cable

## ELECTRICAL SPECIFICATIONS

Resolution:	SSI, Bit Parallel: 8192 cpr max. or 8192 cpr x 4096 turns max. Analogue output: 12 bit or 13 x 14 bit Profibus, CANopen, DeviceNet: 262144 cpr or 65536 cpr x 16384 turns Profinet, EtherCAT, Powerlink, Ethernet/IP, Modbus TCP/IP: 262144 cpr or 65536 cpr x 16384 turns
Accuracy:	± 0,04°
Output circuits:	SSI (RS422), Bit Parallel NPN, Push Pull gray or binary coded Profibus-DP, CANopen, DeviceNet Profinet, EtherCAT, Powerlink, Ethernet/IP, Modbus TCP/IP 0-5V, 0-10V, -5/+5V, -10/+10V 4-20mA, 0-20mA, 0-24mA
Counting frequency:	> 150 kHz
Power supply:	+10Vdc +30Vdc
Power consumption:	2,2 W max.
Protection:	against inversion of polarity and short circuit
EMC:	electro-magnetic immunity, according to: EN 61000-4-2 EN 61000-4-4
Functions:	• Counting direction (input) • Zero setting / Preset (input) <i>Profibus, CANopen, DeviceNet functions refer to HM58 FB series</i> <i>Analogue functions refer to EM58 PA series</i> <i>Profinet, EtherCAT, Powerlink, Ethernet/IP, Modbus refer to relevant user manual</i>
Optoelectronic life:	100.000 hrs min.

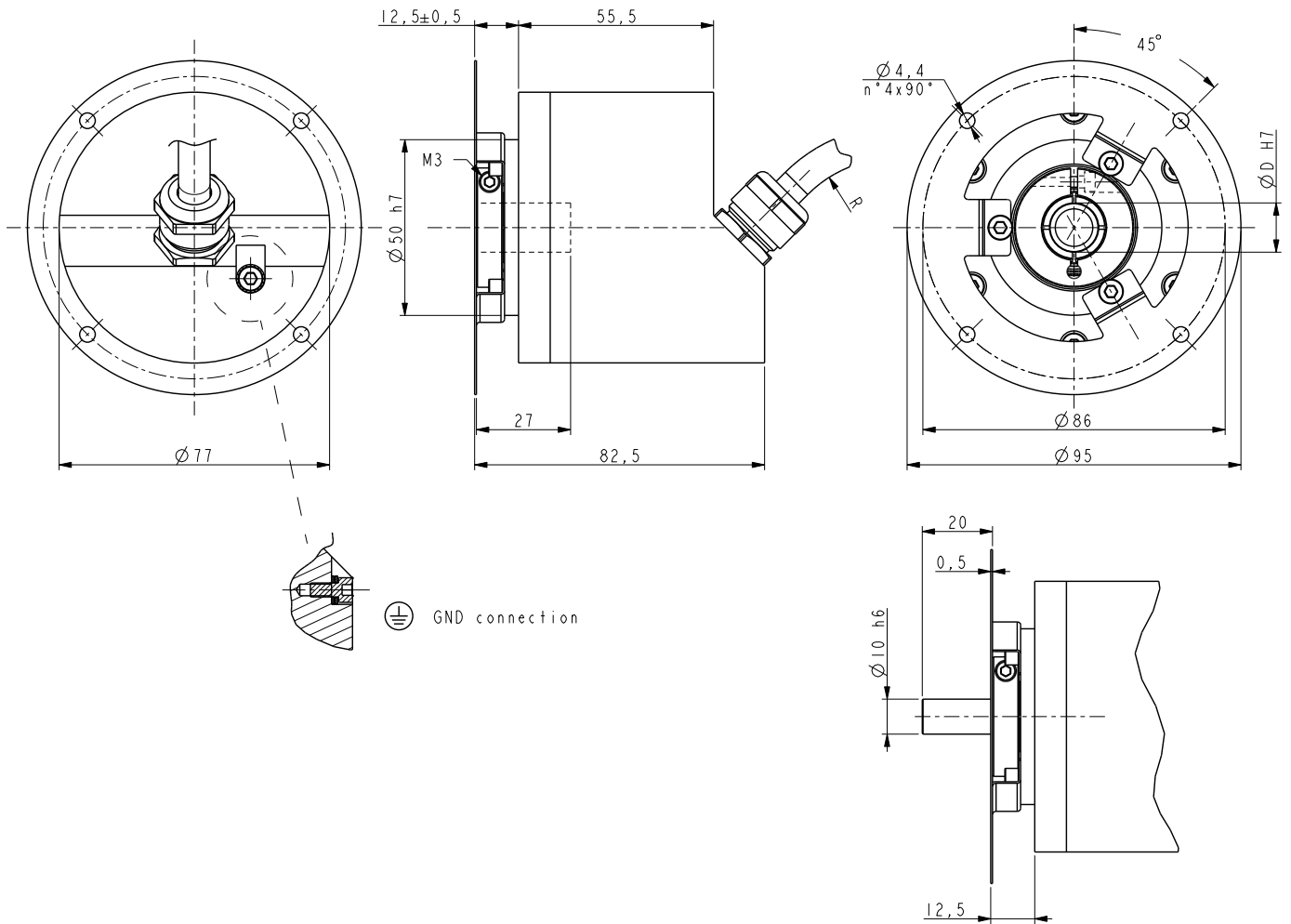
## MATERIALS

Flange:	anticorodal, EN AW-6082 (UNI EN 573)
Housing:	anticorodal, EN AW-6082 (UNI EN 573)
Bearings:	ABEC 5
Shaft:	1.4305 (UNI EN 10088-1)

## ACCESSORIES

LKM-1758:	Ø 10 mm solid shaft extension
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XAC77

Order code - SSI and Bit Parallel

XAC77	XX Ⓐ	/	XXXXX Ⓑ	X Ⓒ	XX Ⓓ	-	XX Ⓔ	-	X Ⓕ	XX Ⓖ	/Sxxx Ⓗ
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Ⓐ RESOLUTION

12 = 4096 cpr  
13 = 8192 cpr

Ⓑ REVOLUTIONS

1 = single turn  
4096 = 4096 turns  
16384 = 16384 turns

Ⓒ OUTPUT CODE

B = Binary  
G = Gray

Ⓓ OUTPUT CIRCUITS

N = NPN o.c.  
Y = Push-Pull  
R = SSI, tree format  
B = SSI, LSB aligned

Ⓔ SHAFT DIAMETER

14 = 14 mm

Ⓕ CONNECTION POSITION

- = axial  
R = radial

Ⓖ CABLE LENGTH

L3 = cable output 3 m  
L5 = cable output 5 m  
L7 = cable output 7 m  
L10 = cable output 10 m

Ⓗ CUSTOM VERSION

## Order code - Profinet, EtherCAT, Powerlink, Ethernet/IP, Modbus

XAC77	XX/XXXXX (a)	XX (b)	-	XX (c)	-	X (d)	XX (e)	/Sxxx (f)
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<b>(a) RESOLUTION</b> <b>18/1</b> = 262144 cpr single turn <b>16/16384</b> = 65536 cpr x 16384 turns  <b>(b) OUTPUT</b> <b>PT</b> = Profinet IO <b>EC</b> = EtherCAT <b>PL</b> = Ethernet Powerlink V2.0 <b>EP</b> = Ethernet/IP <b>MT</b> = Modbus TCP/IP	<b>(c) SHAFT DIAMETER</b> <b>14</b> = 14 mm  <b>(d) CONNECTION POSITION</b> - = axial <b>R</b> = radial	<b>(e) CABLE LENGTH</b> <b>L3</b> = cable output 3 m (min. length) <b>L5</b> = cable output 5 m <b>L8</b> = cable output 8 m (max. length)	<b>(f) CUSTOM VERSION</b>
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## Order code - Profibus, CANopen, DeviceNet

XAC77	XX/XXXXX (a)	XX (b)	-	XX (c)	-	X (d)	XX (e)	/Sxxx /AABT (f)
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<b>(a) RESOLUTION</b> <b>18/1</b> = 262144 cpr single turn <b>16/16384</b> = 65536 cpr x 16384 turns  <b>(b) OUTPUT</b> <b>PB</b> = Profibus-DP V1 <b>CB</b> = CANopen DS301, DS406 <b>FD</b> = DeviceNet ( <i>/AABT selection is mandatory</i> )	<b>(c) SHAFT DIAMETER</b> <b>14</b> = 14 mm  <b>(d) CONNECTION POSITION</b> - = axial <b>R</b> = radial	<b>(e) CABLE LENGTH</b> <b>L3</b> = cable output 3 m <b>L5</b> = cable output 5 m <b>L7</b> = cable output 7 m <b>L10</b> = cable output 10 m	<b>(f) CUSTOM VERSION or FACTORY SETTING</b>
<b>AA: address</b> <b>00h ÷ 7Dh</b> = addr. 00 ÷ 125 for PB output (default = 7D)* <b>01h ÷ 7Fh</b> = addr. 01 ÷ 127 for CB output (default = 01)* <b>00h ÷ 3Fh</b> = addr. 00 ÷ 63 for FD output**  * For PB and CB: address and baud rate are pre-programmed according to /AAB factory setting ** For FD: address and baud rate are hardware fixed according to /AAB factory setting	<b>B: baud rate</b> <b>A</b> = 20 Kb/s (only CB) <b>B</b> = 50 Kb/s (only CB) <b>C</b> = 100 Kb/s (only CB) <b>D</b> = 125 Kb/s (CB and FD) <b>E</b> = 250 Kb/s (CB and FD) <b>F</b> = 500 Kb/s (CB and FD) (default) <b>G</b> = 800 Kb/s (only CB) <b>H</b> = 1000 Kb/s (only CB) <b>Z</b> = 00 (only PB)	<b>T: bus termination</b> <b>0</b> = Termination deactivated <b>1</b> = Termination activated	

## Order code - Analogue output (programmable)

XAC77	XX/XXXXX (a)	XX (b)	-	XX (c)	-	X (d)	XX (e)	/Sxxx /Pxxx (f)
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<b>(a) RESOLUTION</b> <b>12/1</b> = 12 bit single turn <b>12/16384</b> = 12 x 14 bit	<b>(c) SHAFT DIAMETER</b> <b>14</b> = 14 mm  <b>(d) CONNECTION POSITION</b> - = axial <b>R</b> = radial	<b>(e) CABLE LENGTH</b> <b>L3</b> = cable output 3 m <b>L5</b> = cable output 5 m <b>L7</b> = cable output 7 m <b>L10</b> = cable output 10 m	<b>(f) CUSTOM VERSION</b>
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