

EAM90-DP

ARTICLE PROPERTIES

TYPE	Large hollow shaft Profibus-DP interface absolute multiturn encoder
SIZE	Ø 90

TECHNICAL DATA

HOLLOW SHAFT DIAMETER	Ø 12H7 mm / Ø 15H7 mm / Ø 20H7 mm / Ø 24H7 mm / Ø 28H7 mm / Ø (5/8)"H7 mm / Ø 1"H7 mm	STARTING TORQUE	Hollow shaft < 0.2 N·m Shaft < 0.05 N·m
SPEED	Max. 6000 r/m (Max. 3000 r/m continuous)	BODY MATERIAL	Aluminum
BEARING LIFE	10 ⁹ revolution	HOUSING MATERIAL	Aluminum
MOMENT OF INERTIA	72 x 10 ⁻⁶ kgm ²	WEIGHT	900 g

ENVIRONMENTAL CONDITIONS

PROTECTION CLASS	IP65	OPERATING TEMPERATURE	-20 ... +80 °C
MAX LOAD CAPACITY OF THE SHAFT	40 N axial, 80 N radial	STORAGE TEMPERATURE	-25 ... +85 °C
SHOCK RESISTANCE (EN 60068-2-27)	250 g, 6 ms	RELATIVE HUMIDITY / CONDENSATION	90%, condensation not permitted
VIBRATION RESISTANCE (EN 60068-2-6)	10 g, 10 ... 2000 Hz		

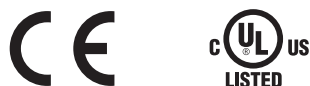
ELECTRICAL PARAMETERS

SUPPLY VOLTAGE(+UB)	10 ... 30 V DC	PROTOCOLS	Profibus-DP, encoder profile class 2
POWER CONSUMPTION	Max. 0.29 A	BAUD RATE	Max. 12 Mbit/s
LINEARITY	± 1/2 LSB (± 1 LSB 13/14 bit)	ADDRESS	Programmable via DIP switches
INTERFACE	RS485		

STANDARDS AND DIRECTIVES

LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR	EN IEC 61000-6-2 EN IEC 61000-6-4
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APPROVALS



EAM90-DP

Profibus Documentations for field bus Encoders:

Please refer to PROFIBUS-DP for detailed information, i.e. DIN 19245-3 and EN 50170, and OVERVIEW for other information.


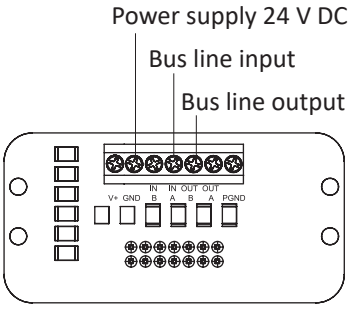
Profibus Documentations for field bus Encoders:

- Rotation direction
- Proportional factor: - Single turn resolution, - Total resolution
- Preset position
- Diagnostic mode

Profibus Documentations for field bus Encoders:

- Achieving current isolation through Fieldus DC/DC converter
- Including RS485 driver, max baud rate 12 MB
- Configure Fieldbus address through DIP switch
- LED diagnostic display
- Equipped with Class1 & Class 2 functions

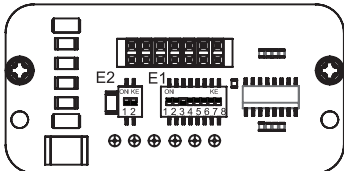
INTRODUCTION

	<p>The Profibus-DP Bus multiturn absolute encoder (identification code 0 x 0CCA) conforms to the Profibus-DP standards as described in the European Standard EN 50170 volume 2. It also complies with the existing encoder regulation document: “Profibus Profile for Encoders, Order No. 3062”.</p> <p>The Profibus-DP interface maintains the same maximum resolution and characteristics (8192 position / revolution, 8192 revolution) and the features of a stand-alone unit with the bonus of the Profibus-DP network.</p>
 <p>Terminal block</p>	<p>Through the Profibus-DP network, it is possible to:</p> <ul style="list-style-type: none"> • Obtain the angular position information from the encoder during the periodic data exchange. • Program the resolution and the revolution (refer to corresponding chapters for parameter setting). • Change the default increment counting direction (switch between CW/CCW when configuring the parameters). • Perform the Preset operation (Set the encoder to read a specific position). • Read the diagnosis status. • Obtain info about the code supplied by the device. <p>When using the device, it is possible to:</p> <ul style="list-style-type: none"> • Display the ON / OFF status. • Display the device activity on the bus. • Activate the Reset function. • Set up the device address. • If required, inserting the terminal resistor into the bus. • Change the counting direction.

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EQUIPMENT INSTALLATION

E2: Line close DIP switch-Default OFF DIP1-DIP2, the Bus-line is closed when setting the two switches ON, 220 Ω.



E1: Address DIP switch – DIP1-DIP7 address setting switch, binary operation, default address 4 in the diagram, max 126 acceptable ty Profibus network.
DIP8: CW/CCW

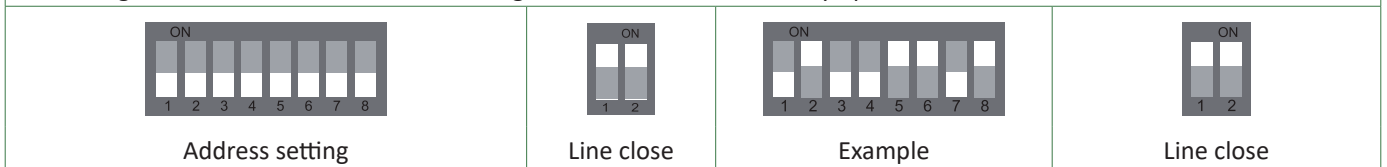
Installing the Profibus-DP encoder in a network requires the execution of the standard steps necessary for configuring any Profibus-DP slave. The sequence of steps is as follows:

- 1-Commissioning the slave on the master (see corresponding paragraph).
- 2-Wiring the encoder into the Profibus network using or not terminations depending on the physical position the device has in the bus.
- 3-Directly set the address (which much the unique in the network and the same as the one chosen in point 1) for the slave.
- 4-Preparing the master side application and setting up the Profibus network. On the back cover of the encoder there is a LED inspection window. The device operating status can be controlled by the two LED through the window. The green one shows the power presence and must be permanently switched on. The red LED switches off only during the periodic data exchange between the Profibus master and the encoder.

Note: To set and configure the slave into the Profibus-DP master it is necessary to use the “gsd” file delivered with the encoder.

DIP-SWITCHES SETUP (CONFIGURING SLAVE ADDRESS)

Below it is reported an example of the standard position of address and termination DIP switches as well as settings for closing a Profibus line. In this example, device address 1011001,77 denary, bit 7 top digit, bit lowest order, bit 8 using for converting count direction, bit 1 to bit 7 setting the encoder address, binary operation.



NETWORK PARAMETERS

Usually, an A type cable is used to wire a DP / FMS network. This cable has to have the following characteristics:

Parameter	A type cable
Characteristic resistance (Ω)	135 ... 165 at a certain frequency (3 ... 20 Mhz)
Rated capacity (PF/m)	< 30
Loop resistance (Ω/Km)	≤ 110
Core diameter (mm)	> 0.64 ^{*)}
Core cross-section (mm2)	> 0.34 ^{*)}

This cable allows the optimal network utilization. In fact, it is possible to reach the maximum communication speed allowed (12 Mbaud). However, there are some limitations due to the maximum physical dimensions of a bus segment as follows:

kbaud	9.6	19.2	93.75	187.5	500	1500	12000
Range / Segment	1200 m	1200 m	1200 m	1000 m	400 m	200 m	100 m

Finally, the physical characteristics of a Profibus network are now known.

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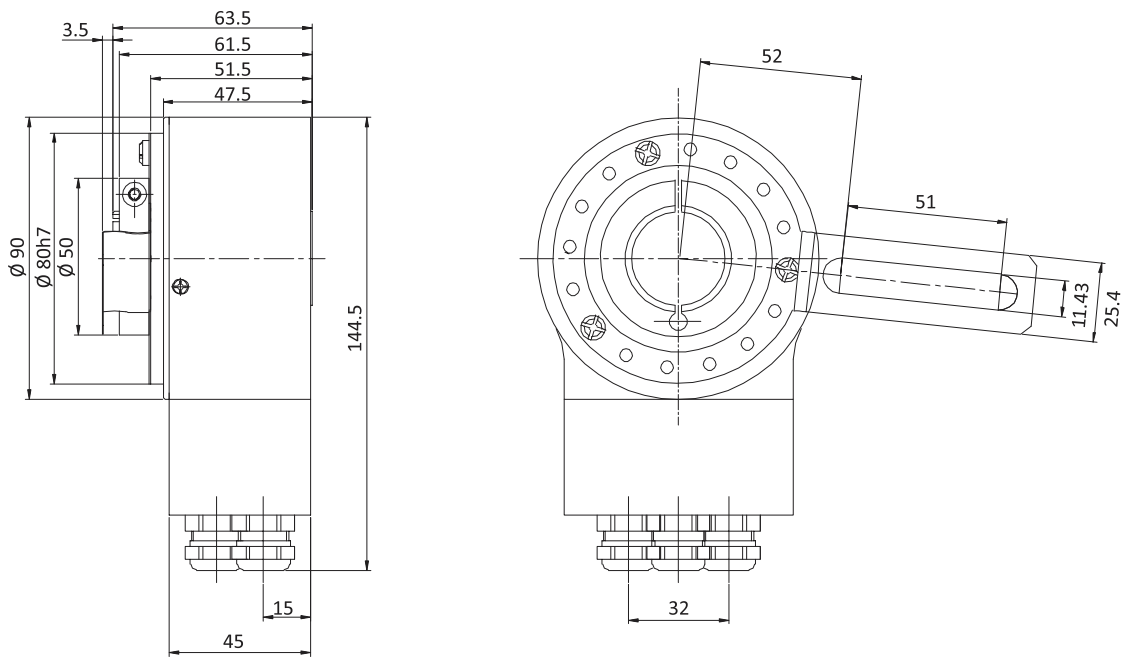
CONNECTION

V+	Supply voltage
GND	Ground
B	Profibus-DP line input(RD)
A	Profibus-DP line input(GN)
B	Profibus-DP line output(RD)
A	Profibus-DP line output(GN)

DIMENSIONS (mm)

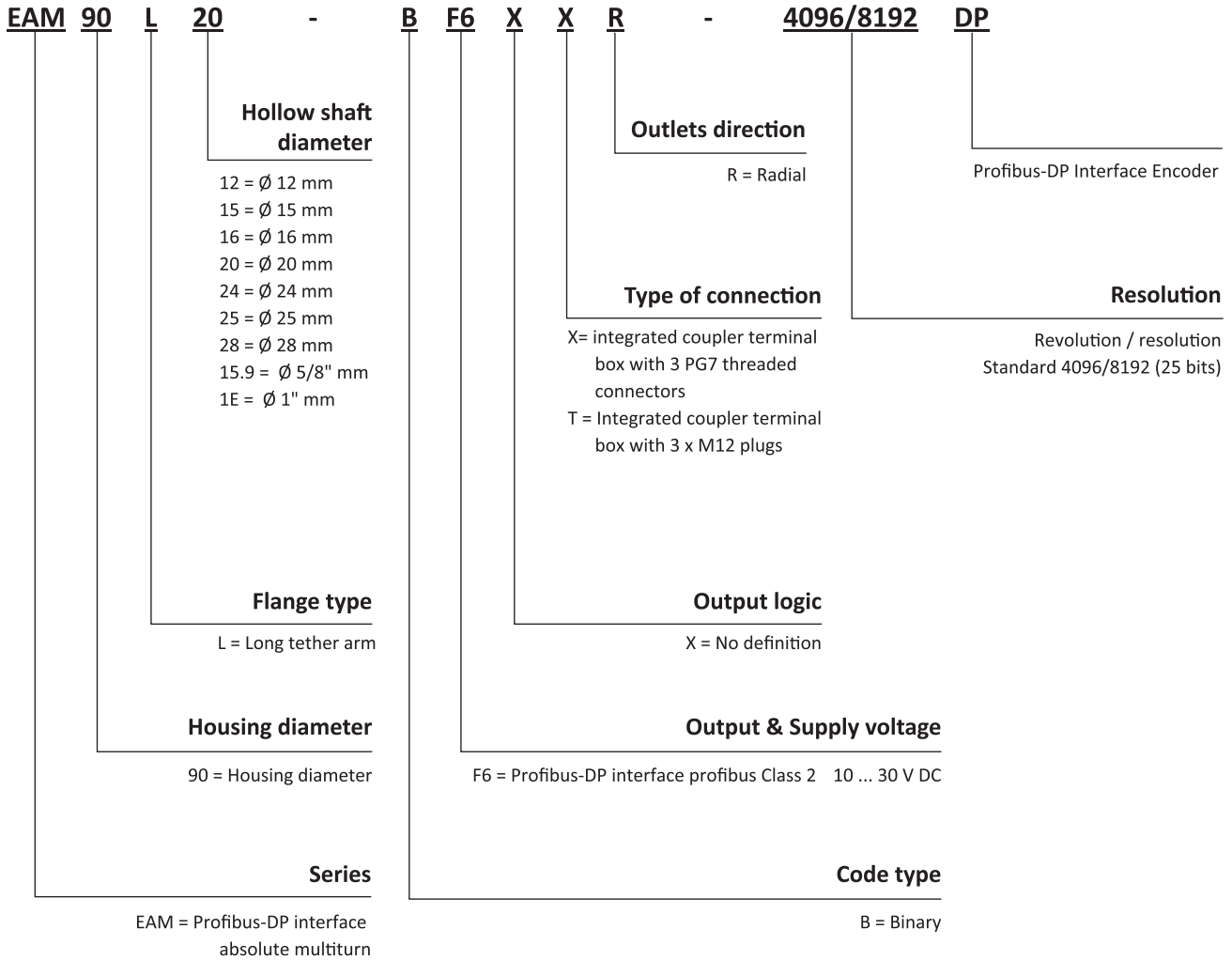
EAM90L

Accessories:
E41350087



EAM90-DP

ORDER CODE



EAM90-DP

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