

INDUCTIVE COUPLER FOR PLC TRANSMISSION



DESCRIPTION OF AIBZ-1

Rev. 3 - January 2018

ZIV
Antonio Machado, 78-80
08840 Viladecans, Barcelona-Spain

Tel.: +34 933 490 700
Fax: +34 933 492 258
Mail to: ziv@zivautomation.com

www.zivautomation.com

SAFETY SYMBOLS



WARNING OR CAUTION:

This symbol denotes a hazard. Not following the indicated procedure, operation or alike could mean a total or partial breakdown of the equipment or even injury to the personnel handling it.



NOTE:

Information or important aspects to take into account in a procedure, operation or alike.

TABLE OF CONTENTS

	Page
1 INTRODUCTION	4
1.1 GENERAL	4
1.2 TECHNICAL CHARACTERISTICS	5
1.2.1 Electrical characteristics	5
1.2.2 Mechanical characteristics	6
1.2.3 Operating and storage conditions	6
2 INSTALLING THE COUPLER	7
2.1 WARNINGS BEFORE INSTALLING	7
2.2 INSTALLATION INSTRUCTIONS	8

1 INTRODUCTION

1.1 GENERAL

El AIBZ-1 is an inductive coupler for easy installation that is designed for transmitting PLC signals in the 100 kHz to 5 MHz band, through the ground connection of the medium-voltage cable shields.

Used in remote management and control applications, it is an efficient coupling method giving electronic devices the necessary security insulation.

FIGURE 1 shows the outside of the AIBZ-1 coupler.



FIGURE 1 Outside of the AIBZ-1 inductive coupler

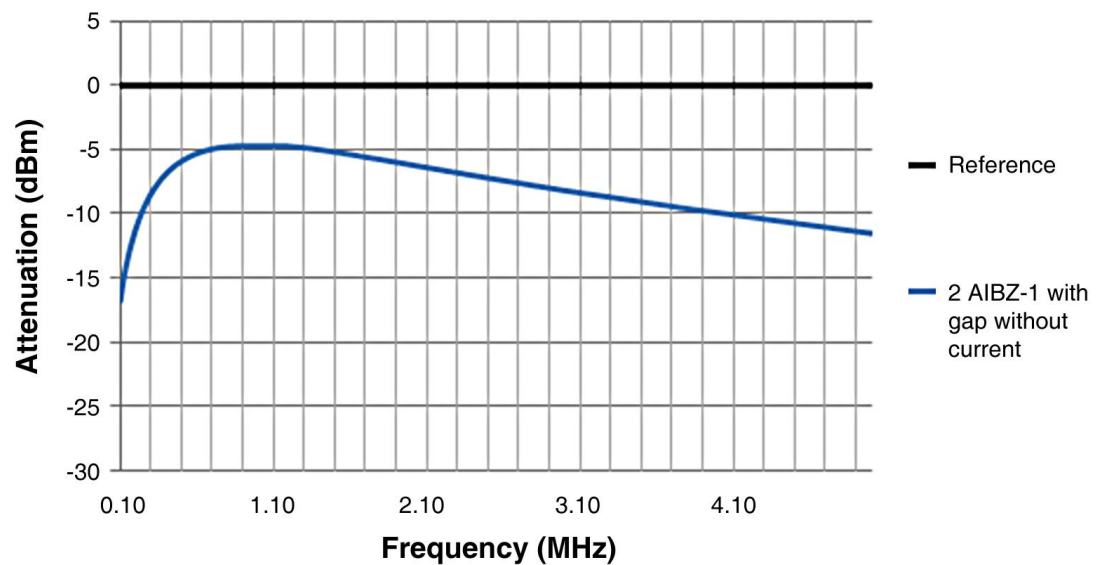
AIBZ-1

1.2 TECHNICAL CHARACTERISTICS

1.2.1 Electrical characteristics

Type	Inductive (split-core type)
Coupling	Over the ground connection of the MV cable shield
Frequency range	From 100 kHz to 5 MHz
Use	Indoor
Equipment-side nominal impedance	50 Ω balanced
Insertion loss in the frequency range	See FIGURE 2
Dielectric strength	≥ 3 kV/1 min (worst case)
Saturation	3 dB attenuation at 50 A (50 Hz)

Insertion loss (50 Ω) link 2 AIBZ-1



NOTE: Laboratory measurements on 50 Ω load using a link between two AIBZ-1 couplers

FIGURE 2 Insertion loss over a load of 50 Ω using two AIBZ-1

AIBZ-1

1.2.2 Mechanical characteristics

Dimensions	Height: 29 mm. Width: 72 mm. Depth: 108 mm See FIGURE 3
Communication equipment connection	By means of BNC and RG-58 cable
Locking system	By side levers
Material	Polyamide
Weight	300 g

1.2.3 Operating and storage conditions

Temperature range	From -10°C to +60°C
-------------------	---------------------

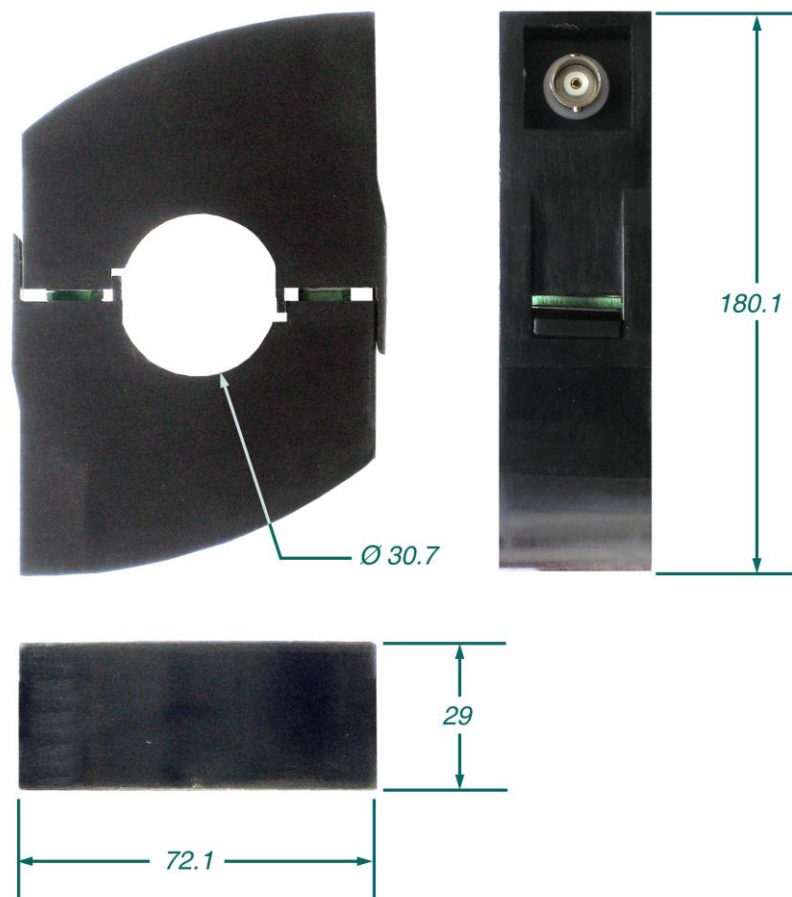


FIGURE 3 Overall dimensions of the AIBZ-1 inductive coupler

2 INSTALLING THE COUPLER

2.1 WARNINGS BEFORE INSTALLING



- !
1. The AIBZ-1 coupler must be installed and handled following the safety standards (EN 50110-1 and EN 50110-2).
 2. Special consideration should be the following:
 - Only qualified personnel appointed by the electricity company that owns the installation should carry out the installation and handling of the AIBZ-1.
 - The safety measures and prevention of risks established for this type of work by the electricity company that will use these devices have to be taken in consideration.
 - The environment in which it is to operate should be suitable for the AIBZ-1, fulfilling all the conditions indicated in section 1.2, *Technical characteristics*.
 3. ZIV will not accept responsibility for any injury to persons, installations or third parties, caused by the non-fulfilment of points 1 and 2.

2.2 INSTALLATION INSTRUCTIONS

The AIBZ-1 coupler is fixed to the ground connection of the MV cable shield.

As can be seen in FIGURE 6, a clamp is inserted in the opposite part to that of the core which contains the BNC connector.

In order to install the device, it must be first disassembled.

The disassembling procedure of the AIBZ-1 consists, as is shown in FIGURE 4, in lifting one of the levers up, using the fingers or a flat screwdriver, applying at the same time at both sides of the device an opposite force pair.

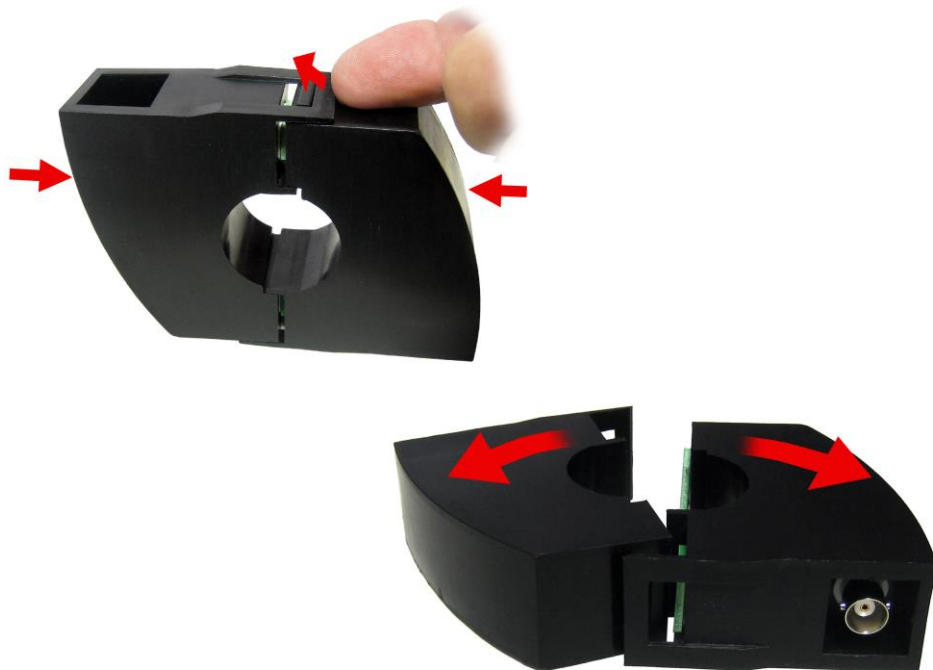


FIGURE 4 AIBZ-1 disassembling

AIBZ-1

Once disassembled, insert the clamp and clamp the AIBZ-1 coupler to the ground connection and then lock the system by using the levers. To do this, see FIGURE 5, clamp the lever of one of the cores to the lever of the other core. By using this union as a hinge, lock the other lever.

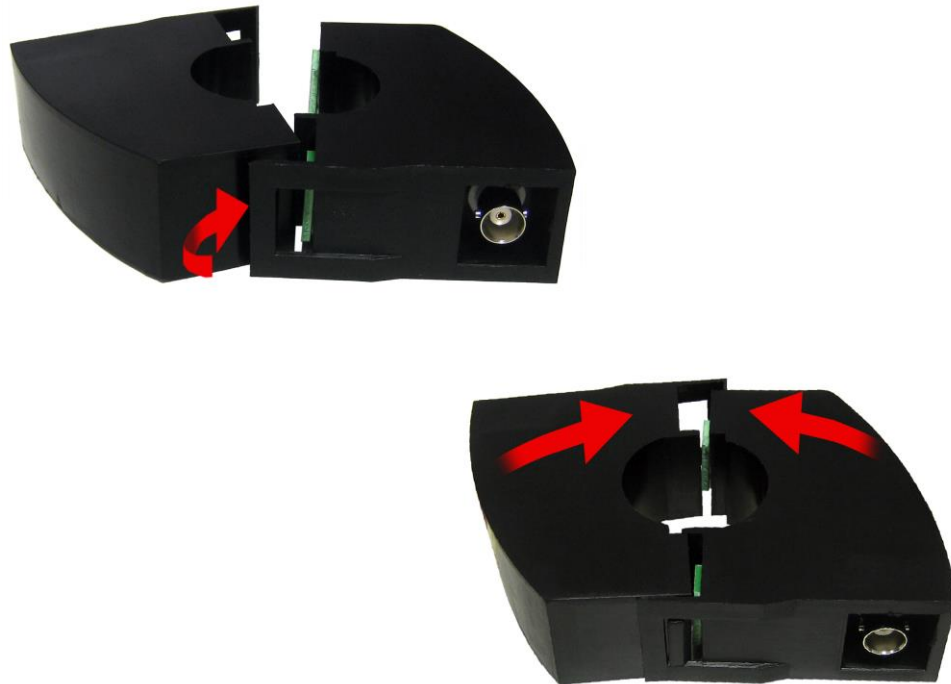


FIGURE 5 AIBZ-1 locking

As is shown in FIGURE 6, the clamp is inserted through the center hole of the AIBZ-1 and closes embracing at the same time the cable and the coupler.

Keep the ground connection of the shield as far away from the BNC connector as possible, in order to maintain the dielectric strength characteristic as high as possible.

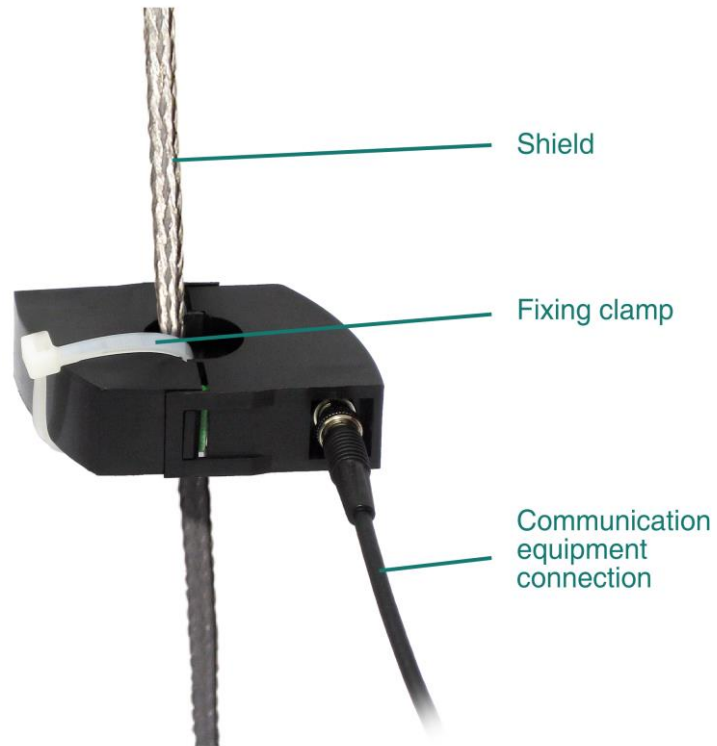


FIGURE 6 Detail of AIBZ-1 installation



FIGURE 7 Example of installation of the AIBZ-1