bmc messsysteme gmbh

ZU-PBOX

Waterproof Housing

Get your system wrapped up.

Use the ZU-PBOX to integrate measurement components into a closed system. Combine bmcm products of signal conditioning, data acquisition, and connection technology and get a powerful compact measuring system.

Versions. You have the choice.

Two types of the box are available: The ZU-PBOX-PG featuring PG connections is more likely suitable for stationary installations. The ZU-PBOX-LAN has been optimized for network measurements in harsh environment providing required connections for power supply and network.

Protected and dry.

The plastic housing and all connections are sealed (IP54) for the measurement setup to be protected against splash water, dust, and other foreign substances.

Get connected.

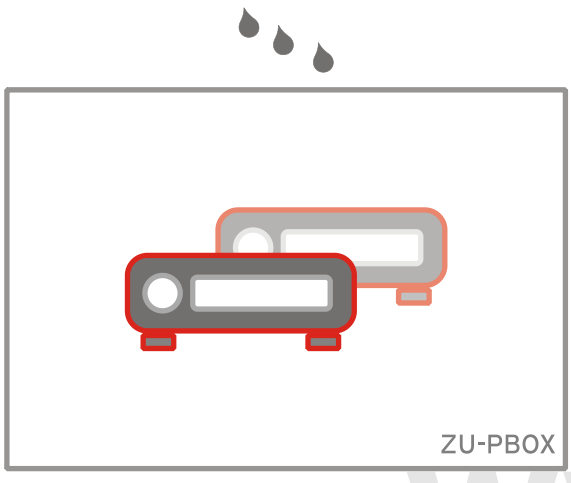
To connect analog and digital signals, up to 16 lines can be attached to the ZU-PBOX-LAN housing via flange connectors. The ZU-PBOX-PG provides 8 PG screw connectors with strain relief.

DIN rail mounting.

All components in the box are mounted onto 3 DIN rails providing for high stability.

Modular concept.
Equip individually. Be flexible.

As the technical details of the ZU-PBOX are basically determined by the respective measurement task, the different components (housing, connectors, etc.) are separately available.

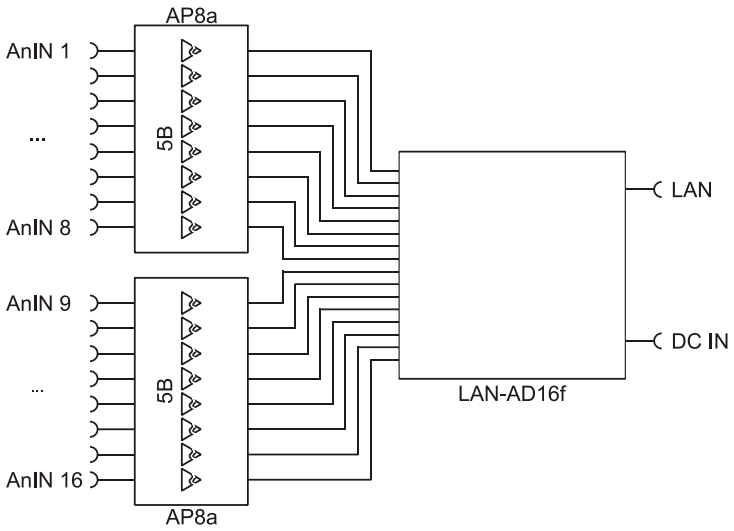


Functional diagram

1 Application examples

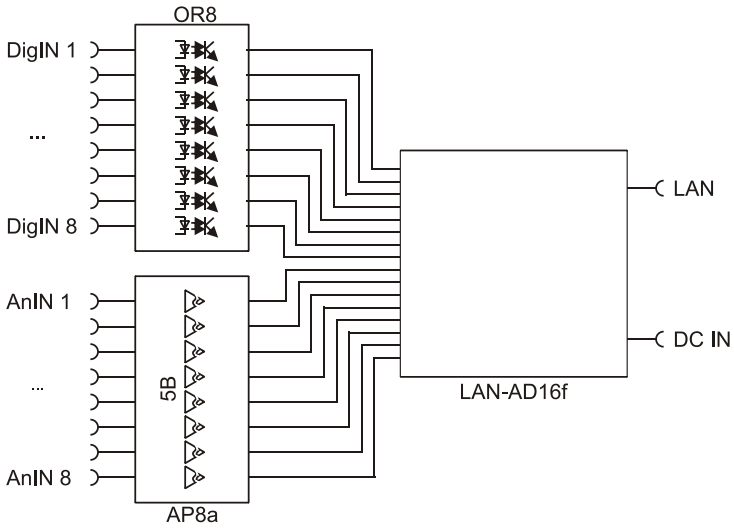
1.1 Analog data acquisition via LAN

The ZU-PBOX-LAN is particularly suitable to use with the network data acquisition system LAN-AD16f together with two AP8a backplanes integrating eight 5B amplifiers each. Those are mounted into the box on DIN rails.
As illustrated in the block diagram, 16 galvanically isolated analog inputs for data acquisition via network (Ethernet, TCP/IP) are provided in this case.



1.2 Analog and digital data acquisition via LAN

If the measurement application additionally requires digital channels, one OR8 optocoupler board and one AP8a backplane for 5B amplifiers can be used together with the LAN-AD16f.
This configuration features 8 analog inputs and 8 digital inputs for data acquisition via network (Ethernet, TCP/IP), galvanically isolated from each other and to the data acquisition unit.

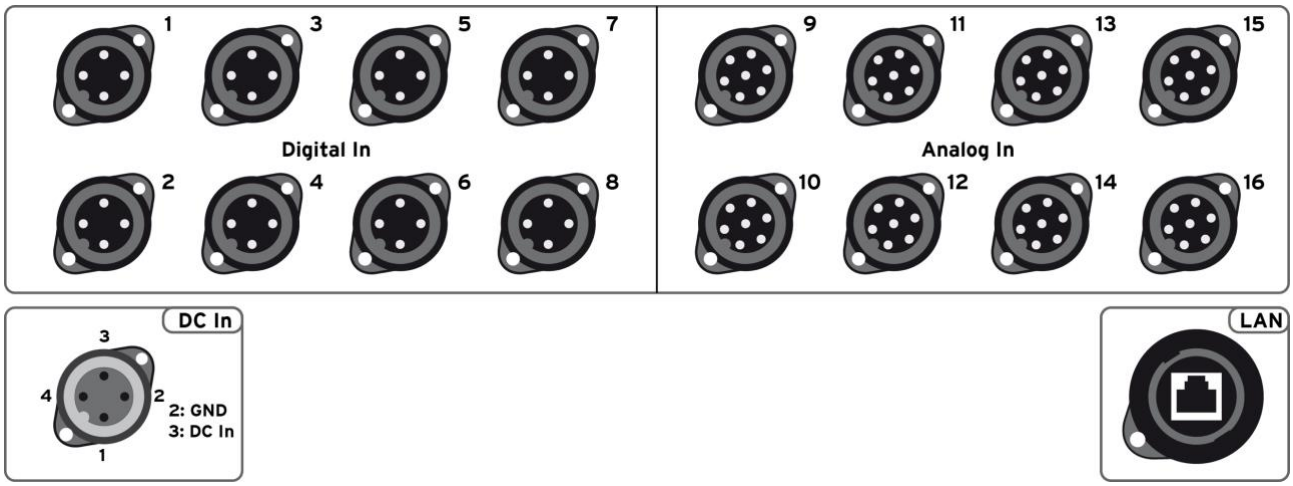


2 Connectors ZU-PBOX-PG

Eight waterproof PG screw connectors (7x PG13.5, 1x PG16) with strain relief allow the bushing of connection cables (e.g. for sensors) with a cable diameter of 6-12mm (PG13.5) or 10-14mm (PG16).

3 Connectors ZU-PBOX-LAN

All connectors for the ZU-PBOX-LAN are designed as flange plug connectors complying with the IP67 protection type. The screw connection prevents the intrusion of splash water, dust, and other foreign substances.



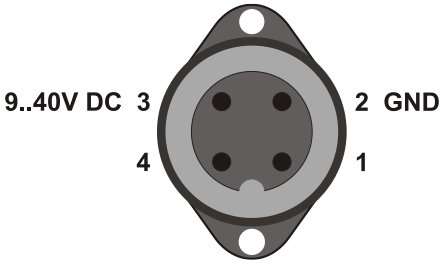
Included with delivery are the plug connectors for LAN and power supply. As the connectors for the analog and digital signal lines depend on the used data acquisition system and the respective application, two types of connectors (4- or 7-pin) are separately available (see chapter 4.1).

The figure above is only an example for a possible assignment of the measuring channels. It is always defined by the installed measurement components.

3.1 Power supply

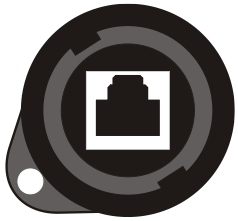
The device is supplied with power via the 4-pin plug (Hirschmann, type CA 3 GS) on the left side of the device front. The input voltage must be in the range of 9..40V DC.
A corresponding screw coupling is available at bmcm (order number: ZU-PBOX-KBU3, see chapter 4.1).

Pin	ZU-PBOX-LAN
1	n. c.
2	GND
3	9..40V DC
4	n. c.



3.2 Network

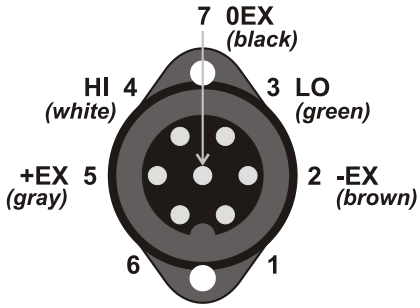
The measuring data are transmitted via network, which is a Twisted Pair connection (10MBit) with standard assignment and integrated into a waterproof female connector with screw cap to prevent external influences.



3.3 Analog inputs (optional)

Analog input channels can be attached at the female connectors of the ZU-PBOX-LAN housing. The 4-pin and 7-pin (3+PE and 6+PE) fitting sockets are available at bmcm (order numbers: ZU-PBOX-BU3 and
ZU-PBOX-BU6, see chapter 4.1). The channels of the data acquisition system are directly connected to the corresponding connectors to be reached from the outside.
The pin assignment of the 7-pin female connector is described in the following table and figure:

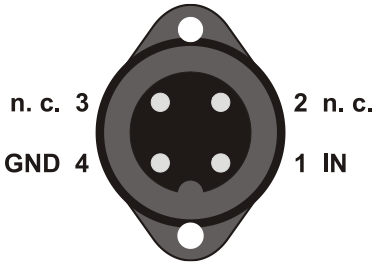
Pin	ZU-PBOX-LAN
1	n. c.
2	-EX
3	LO
4	HI
5	+EX
6	n. c.
7	0EX



3.4 Digital inputs (optional)

Digital input lines can also be led out to the 4-pin (3+PE) female connectors of the ZU-PBOX-LAN housing. They are at bmcm under the order number ZU-PBOX-BU3 (see chapter 4.1).
The assignment of the 4-pin female connector is as follows:

Pin	ZU-PBOX-LAN
1	5..30V (high)
2	n. c.
3	n. c.
4	GND



4 Supplementary products for ZU-PBOX

4.1 Cable plug connectors (only ZU-PBOX-LAN)

Analog and digital voltage signals are connected at ZU-PBOX-LAN via waterproof (IP67), circular plug connectors with flange. The fitting sockets of the CA series from Hirschmann (ZU-PBOX-BU3 and ZU-POX-BU6) are mounted at the box, the corresponding plugs (ZU-PBOX-ST3 and ZU-PBOX-ST6) are connected to sensors.
A coupling to connect the DC power supply can be ordered (ZU-PBOX-KU3).
The screw connection prevents the intrusion of splash water, dust, and other foreign substances.
The following plugs and sockets are available:

Product	Description
ZU-PBOX-BU3	Flange socket 4-pin (3+PE) with cabling prepared for mounting into the ZU-PBOX-LAN to connect digital channels (Hirschmann CA 3 GD)
ZU-PBOX-BU6	Flange socket 7-pin (6+PE) with cabling prepared for mounting into the ZU-PBOX-LAN to connect analog channels (Hirschmann CA 6 GD)
ZU-PBOX-ST3	Flange plug 4-pin (3+PE) for the connection of digital signals to ZU-PBOX-BU3 (Hirschmann CA 3 LS)
ZU-PBOX-ST6	Flange plug 7-pin (6+PE) for the connection of sensors to ZU-PBOX-BU6 (Hirschmann CA 6 LS)
ZU-PBOX-KU3	Flange coupling 4-pin (3+PE) for the connection of power supply to the DC plug of the ZU-PBOX-LAN (Hirschmann CA 3 LD)

5 Important notes for using the ZU-PBOX

- Die ZU-PBOX is only suitable for extra-low voltages - please observe the relevant regulations!
- Only use an electrical isolated power supply unit (with CE).
- Use shielded cables for reasons relating to CE. Connect the shield to ground at one end only. Close open inputs if possible. ESD voltages on lines may cause malfunction during operation.
- All accessible pins are electrostatic devices. Workplace must be conductive during installation.
- Only use non-solvent detergents for cleaning. The product is designed to be maintenance-free.
- The product must not be used for safety-relevant tasks. With the use of the product, the customer becomes manufacturer by law and is therefore fully responsible for the proper installation and use of the product. In the case of improper use and/or unauthorized interference, our warranty ceases and any warranty claim is excluded.

Do not dispose of the product in the domestic waste or at any waste collection places. It has to be either duly disposed according to the WEEE directive or can be returned to bmcm at your own expense.

6 Technical data

(typ. at 20°C)

- Connectors ZU-PBOX-PG

Connectors :	8 PG screw connectors (7x PG 13.5, 1x PG 16) with strain relief
Cable diameter allowed:	PG 13.5: 6-12mm; PG 16: 10-14mm

- Connectors ZU-PBOX-LAN

Measuring channels:	16 flange plug connectors (4- or 7-pin), optionally available at bmcm under ZU-PBOX-BU6 or ZU-PBOX-BU3 (see below)
Power supply:	flange plug connector (Hirschmann), type CA 3 GS
LAN:	Twisted Pair RJ45 socket (10BASE-T)

- General data

CE standards:	EN61000-6-1, EN61000-6-3, EN61010-1; for decl. of conformity (PDF) visit www.bmcm.de
ElektroG // ear registration:	RoHS and WEEE compliant // WEEE Reg.-No. DE75472248
Max. permissible potentials:	**60V DC (acc. to VDE)**, max. 1kV ESD on open lines
Protection:	IP54
Temperature ranges:	operating temp. –25°C..+50□C, storage temp. –25°C..+70□C
Rel. humidity:	0 - 90% (not condensing)
Housing dimensions (W x D x H):	plastic housing 393mm x 333mm x 158mm
Internal dimensions (W x D x H):	available for measurement technology: 351mm x 242mm x 120mm
Delivery:	device, description
Warranty:	2 years from date of purchase at bmcm, claims for damages resulting from improper use excluded

- Optional single components

ZU-PBOX-LAN:	waterproof plastic housing with connectors for LAN and DC, transparent lid, 3 DIN rails
ZU-PBOX-PG:	waterproof plastic housing, 8 PG, transparent lid, 3 DIN rails
ZU-PBOX-BU3:	4-pin (3+PE) fitting socket (flange socket from Hirschmann CA 3 GD) with cabling for analog or digital connections
ZU-PBOX-BU6:	7-pin (6+PE) fitting socket (flange socket from Hirschmann CA 6 GD) with cabling for analog connections
ZU-PBOX-ST3:	4-pin screw connector (flange plug from Hirschmann CA 3 LS) for sensors
ZU-PBOX-ST6:	7-pin screw connector (flange plug from Hirschmann CA 6 LS) for sensors
ZU-PBOX-KU3:	4-pin (3+PE) screw connector (flange coupling from Hirschmann CA 3 LD) for DC power supply