See the Big Picture

ibaPDA Connectivity

Customized Monitoring - TwinCAT Controller Interfaces

Beckhoff
TwinCAT 2
TwinCAT 3

EtherCAT
Ethernet

Acquire data from TwinCAT controllers

ibaBM-eCAT
Acquire data via EtherCAT

ibaPDA-Interface-Generic-TCP
ibaPDA-Interface-Generic-UDP
Acquire data via Ethernet

ibaPDA-Request-TwinCAT
Acquire data using the Request method

ibaPDA-Interface-TwinCAT-Xplorer
Connection via Xplorer interface

The Expert for Measurement and Automation Systems

It is our mission to bring transparency to the world of automation with our measurement system solutions. By means of an iba system, the user can understand and master the growing technological complexity of automated processes and mechatronic systems. As with a flight recorder, all essential system and process data from various signal sources, field buses and automation systems are recorded continuously and synchronously. For analyzing these data, we have developed powerful analyzing tools which comfortably support interactive work as well as automatic information generation.

Cutting Edge

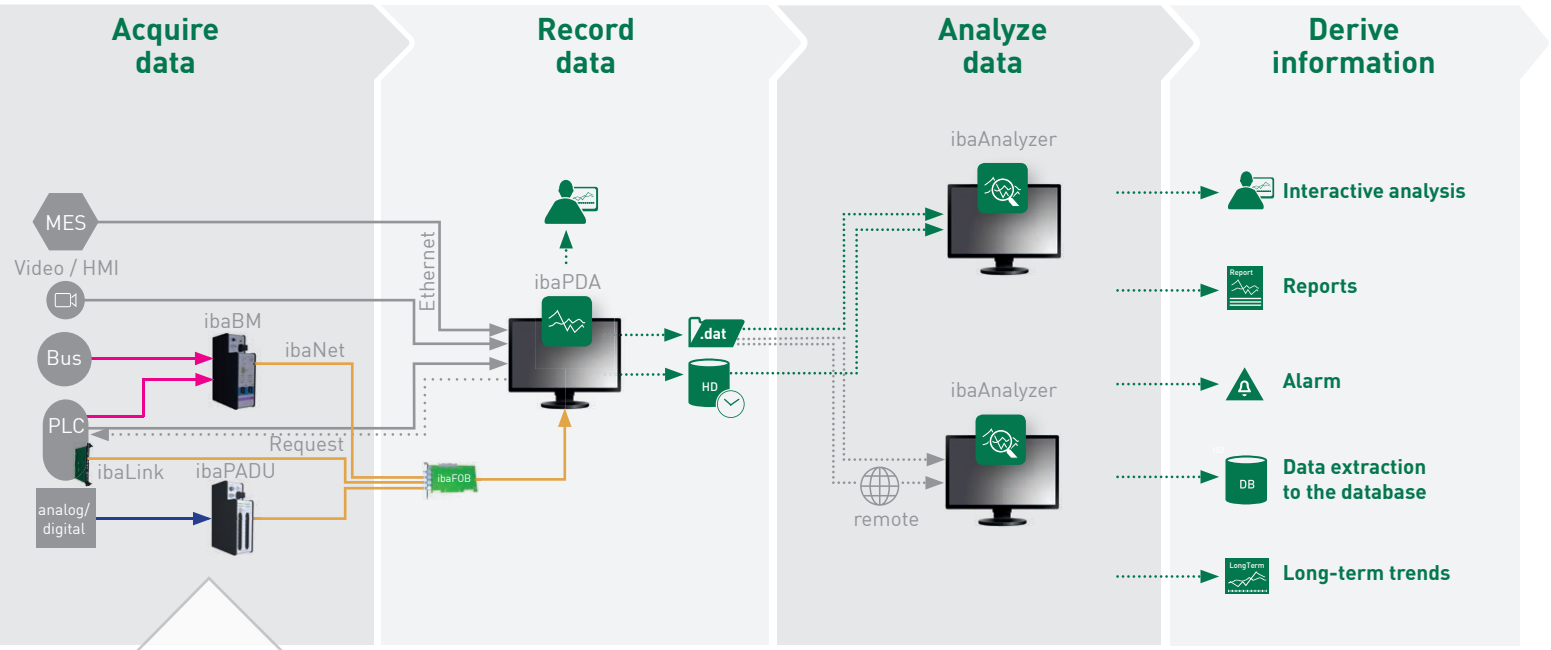
For more than 30 years, our area of expertise has been the development of high-quality systems for measurement value acquisition and analysis, signal processing and automation.
iba is one of the few manufacturers who master the whole technology chain from hardware via software to database technology. Only those manufacturers who understand their products in detail can foster innovations and provide competent advice and support to customers.

Communicative

In addition to the practice-oriented functionality a main characteristic of our hardware and software products is the distinct connectivity to the automation systems. Various manufacturers and system generations are taken into account and even legacy systems can be integrated as well: A clear benefit in the life cycle of the plant.

Autonomous, modular, scalable

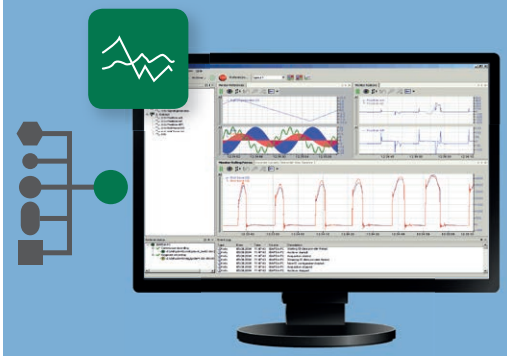
The iba system



Acquire data from TwinCAT 2 and 3 controllers

TwinCAT connectivity

The iba system offers several ways to acquire data from TwinCAT controllers – the right solution for different requirements. The iba solutions support TwinCAT 2 and TwinCAT 3.



In brief

- Connection to TwinCAT controllers via various interfaces: ibaBM-eCAT, Generic-TCP, Generic-UDP, TwinCAT-Xplorer
- Free selection of symbols with Request method or Xplorer interface
- Scan-cycle-precise acquisition via EtherCAT with ibaBM-eCAT bus monitor
- Connection without additional hardware with software interfaces Generic-TCP, Generic-UDP and TwinCAT-Xplorer
- Simple, cost-effective connection via Xplorer interface

An ibaPDA system can be connected to TwinCAT controllers via EtherCAT or Ethernet communication. Which method is best depends on, amongst other things, how quickly the data needs to be acquired, whether scan-cycle-synchronous data transmission is required and which hardware is available. In addition, the Request method and the Xplorer interface offer the option of selecting signals using the symbolic identifiers via a symbol browser without any programming effort.

Direct interface

If data needs to be acquired quickly and precisely with each scan cycle, the TwinCAT system should be connected via EtherCAT with the ibaBM-eCAT bus monitor. The bus monitor is configured as an active device; the programming of the output takes place directly in the program.
When connected via Ethernet, the communication depends on the communication performance of the controller and the network load. Therefore, acquisition via Ethernet is not 100% scan-cycle-precise. The advantage, however, is that the standard network connection of the controller can be used; in ibaPDA, only a software interface is required.
Regardless of whether the connection is via EtherCAT or Ethernet, the values to be recorded must be programmed in the controller and be sent by the controller program. Each change of values requires a program change.

Signal selection without programming

Using special iba solutions, programming effort can be avoided: With the Xplorer interface or Request method, measured values can be changed without intervention in the programming while the controller is running. In addition, the measured values can be flexibly selected by importing the address book.

Request method

The Request method allows users to record signals from the controller by free signal selection. The measured values can be selected from the address book of the project and simply accessed via their symbolic names. A PLC-code block („Request block“) must be integrated into the TwinCAT system program once. After the request, the TwinCAT system sends the measured values cyclically to the ibaPDA system. The Request method is available for connections via EtherCAT and Ethernet UDP.

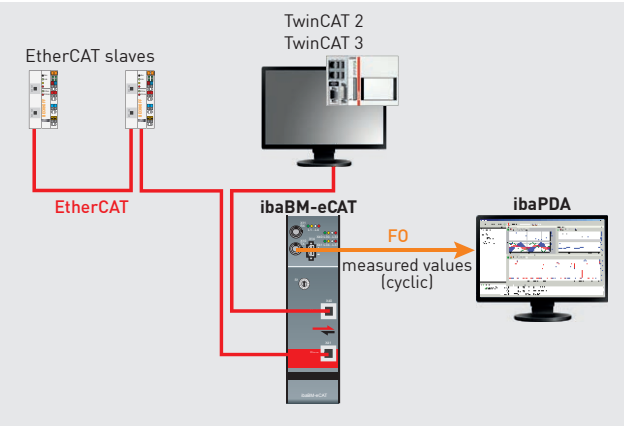
How does the Xplorer interface work?

With the TwinCAT-Xplorer interface, it is possible to easily and cost-effectively connect to TwinCAT systems. Like the Request method, the Xplorer interface allows free access to the internal data of a controller. The standard procedures of the respective controller are used; additional hardware is not required when connecting via Ethernet. However, the measured values are cyclically requested and sent by the controller in a „polling“ procedure. Data acquisition is not scan-cycle-precise since the data is only sent by the controller when the request can be processed. The signals can be easily selected in ibaPDA with a mouse click using the symbol browser. The selection of signals can be changed at any time without interruption to the controller running operation.

Acquire data via EtherCAT

The connection via EtherCAT is established with the bus monitor ibaBM-eCAT. A fast and (bus) scan-cycle-precise acquisition of measured values is possible via EtherCAT.

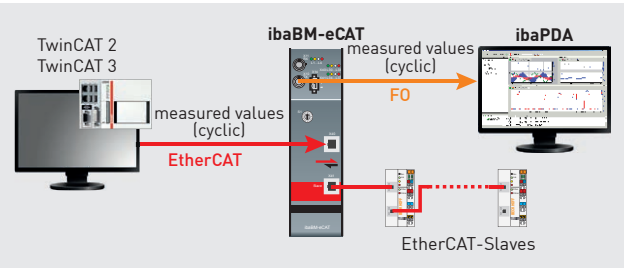
ibaBM-eCAT - Sniffer



- (Bus) scan-cycle-precise transmission of measured values
- No programming and therefore no additional load of the CPU
- Only existing data exchange between master/ slave can be detected
- Analog values are transmitted as a raw value; variable selection may be difficult

iba software	iba hardware
ibaPDA	ibaBM-eCAT ibaFOB-D card (in the PC)

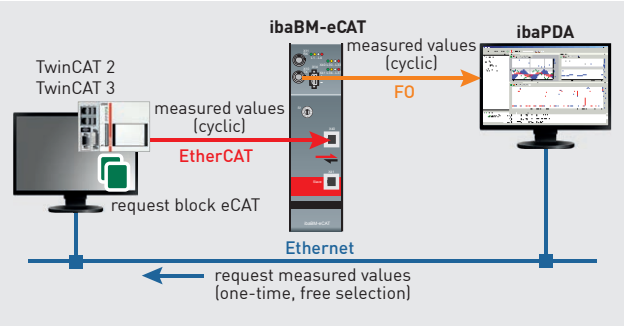
ibaBM-eCAT - Active slave



- (Bus) scan-cycle-precise transmission of measured values
- Low additional load of the CPU
- PLC program must be changed for selecting the variables to be measured

iba software	iba hardware
ibaPDA	ibaBM-eCAT ibaFOB-D card (in the PC)

ibaPDA-Request-TwinCAT



- (Bus) scan-cycle-precise transmission of measured values
- Low additional load of the CPU
- A PLC code block needs to be integrated once
- No PLC program changes needed for selecting the variables (free selection)
- Possible to change the variable selection during operation

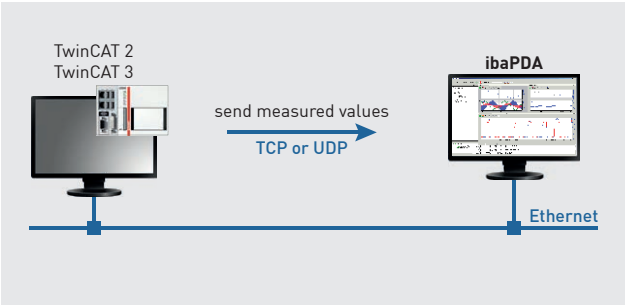
iba software	iba hardware
ibaPDA ibaPDA-Request-TwinCAT	ibaBM-eCAT ibaFOB-D card (in the PC)

Generic-TCP/Generic-UDP/Request-TwinCAT

Acquire data via Ethernet

A software interface in ibaPDA is required for collecting data via Ethernet (TCP or UDP), additional hardware is not necessary. The transmission performance depends on the network.

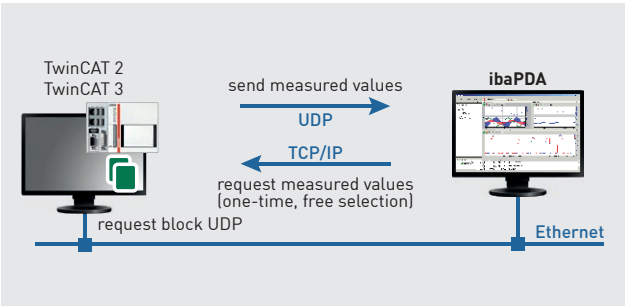
ibaPDA-Interface-Generic-TCP / ibaPDA-Interface-Generic-UDP



- Low additional load of the CPU
- TCP and UDP supported
- PLC program must be changed for selecting the values to be measured
- Transmission performance and quality depend on the network

iba software	iba hardware
ibaPDA + ibaPDA-Interface-Generic-TCP or ibaPDA-Interface-Generic-UDP	-

ibaPDA-Request-TwinCAT



- PLC code blocks need to be integrated once
- No PLC program changes needed for selecting the measured values (free selection)
- Possible to change the measured value selection during operation
- UDP supported (not TCP)
- Transmission performance and quality depend on the network

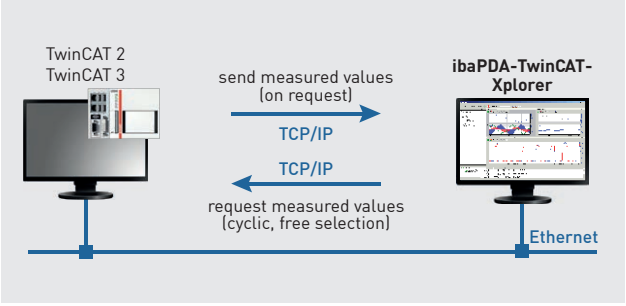
iba software	iba hardware
ibaPDA ibaPDA-Request-TwinCAT	-

TwinCAT-Xplorer

Acquire data via Xplorer interface

With the TwinCAT-Xplorer interface, measured values can be requested in a polling procedure of ibaPDA and sent by the TwinCAT controller. The Xplorer interface allows free access to the controller's internal data.

TwinCAT-Xplorer



- Simple configuration
- No PLC program changes needed for selecting the measured values (free selection)
- Possible to change the measured value selection during operation
- Access possible via TCP/IP

iba software	iba hardware
ibaPDA + ibaPDA-Interface-TwinCAT-Xplorer or ibaPDA-PLC-Xplorer (max. 64 signals)	-

Order information

Software

Order no.	Name	Description
30.602560	ibaPDA-V6-256[1]	Basic package for 256 signals, 2 clients, 2 data storages
30.681500	ibaPDA-PLC-Xplorer[2]	ibaPDA system for 64 signals, 2 clients, 2 data storages + S7-Xplorer (interface for SIMATIC S7) + AB-Xplorer (interface for Allen-Bradley) + B&R-Xplorer (interface for B&R systems) + Codesys-Xplorer (interface for CODESYS-based systems) + Logix-Xplorer (interface for ControlLogix systems) + MELSEC-Xplorer (interface for Mitsubishi MELSEC systems) + Sigmatek-Xplorer (interface to SIGMATEK systems) + TwinCAT-Xplorer (interface to Beckhoff systems)
30.001931	Upgrade-PLC-Xplorer to PDA-V6-64	Upgrade to ibaPDA-V6 with 64 signals and PLC-Xplorer interfaces
31.001042	ibaPDA-Interface-PLC-Xplorer	License bundle of all current PLC-Xplorer interfaces (S7, AB, B&R, Codesys, Logix, MELSEC, Sigmatek, TwinCAT-Xplorer) for an ibaPDA system
31.000005	ibaPDA-Interface-TwinCAT-Xplorer	License extension for ibaPDA system for TwinCAT-Xplorer interface
31.100005	one-step-up-Interface-TwinCAT-Xplorer	License extension for 16 more TwinCAT-Xplorer connections
31.001075	ibaPDA-Interface-Generic-UDP	License extension for ibaPDA system for a UDP interface (64 connections)
31.101075	one-step-up-Interface-Generic-UDP	License extension for existing ibaPDA-Interface-Generic-UDP interface for 64 more UDP connections (maximum 3)
31.001076	ibaPDA-Interface-Generic-TCP	License extension for ibaPDA system for a TCP interface (64 connections)
31.101076	one-step-up-Interface-Generic-TCP	License extension for existing ibaPDA-Interface-Generic-TCP interface for 64 more TCP connections (maximum 3)
31.001303	ibaPDA-Request-TwinCAT	License extension for ibaPDA system for the use of Request-TwinCAT with ibaBM-eCAT or UDP

[1] Other licenses are available for ibaPDA for a larger number of signals, clients and data storages.

[2] With ibaPDA-PLC-Xplorer, a cost-effective entry-level solution is available that is ideal for efficient troubleshooting or commissioning, for example. ibaPDA-PLC-Xplorer offers full ibaPDA functionality for up to 64 signals and includes all available Xplorer interfaces. All Xplorer interfaces can also be licensed separately.

Hardware

13.127000	ibaBM-eCAT	Bus monitor for EtherCAT
11.118030	ibaFOB-2i-Dexp	FO card, PCI Express, 2 inputs
11.118020	ibaFOB-io-Dexp	FO card, PCI Express, 1 input, 1 output
11.118010	ibaFOB-2io-Dexp	FO card, PCI Express, 2 inputs, 2 outputs
11.118000	ibaFOB-4i-Dexp	FO card, PCI Express, 4 inputs
11.116200	ibaFOB-4o-D rackline-slot	FO card, 4 outputs, short design for ibaRackline
11.117010	ibaFOB-io-USB	FO adapter with USB interface, 1 input, 1 output

iba AG Headquarters Germany

Office address
Koenigswarterstr. 44
D-90762 Fuerth

Mailing address
P.O. box 1828
D-90708 Fuerth

Tel.: +49 (911) 97282-0
Fax: +49 (911) 97282-33

www.iba-ag.com
iba@iba-ag.com

iba AG is represented worldwide with subsidiaries and sales partners.

Europe

Benelux, France, Spain, Portugal, Ireland, Great Britain, French-speaking Switzerland
iba Benelux BVBA
Tel: +32 (9) 22 62 304
sales@iba-benelux.com
www.iba-benelux.com

Denmark, Finland, Norway, Sweden
iba Scandinavia
c/o Begner Agenturer AB
Tel: +46 (23) 160 20
info@iba-scandinavia.com
www.iba-scandinavia.com

iba Polska
c/o ADEGIS Sp. z o.o. Sp.k.
Tel: +48 32 75 05 331
support@iba-polska.com
www.iba-polska.com

Italy, Slovenia, Croatia, Italian-speaking Switzerland
iba Italia S.R.L.
Tel: +39 (432) 52 63 31
sales@iba-italia.com
www.iba-italia.com

iba Russia
c/o OOO FEST
Tel: +7 (4742) 51 76 81
dmitry.rubanov@iba-russia.com
www.iba-russia.com

Central and South America

iba LAT, S.A.
Tel: +507 (474) 2654
eric.di.luzio@iba-lat.com
www.iba-lat.com

iba LAT Bolivia
Tel: +591 (2) 21 12 300
mario.mendizabal@iba-lat.com
www.iba-lat.com

iba LAT Argentina
Tel: +54 (341) 51 81 108
alejandro.gonzalez@iba-lat.com
www.iba-lat.com

iba LAT Brazil
Tel: +55 (11) 4111 6512
iba@iba-brasil.com
www.iba-lat.com

Australia

Australia, New Zealand, Oceania
iba Oceania Systems Pty Ltd.
Tel: +61 (2) 49 64 85 48
fritz.woller@iba-oceania.com
www.iba-oceania.com

Africa

iba Africa
c/o Variable Speed Systems cc
Tel: +27 83 456 1866
danie.smal@iba-africa.com
www.iba-africa.com

North America (NAFTA)

USA
iba America, LLC
Tel: +1(770) 886-2318 102
esnyder@iba-america.com
www.iba-america.com

Canada
iba America, LLC
Tel: +1(770) 886-2318 100
sb@iba-america.com
www.iba-america.com

Mexico
iba America, LLC
Tel: +1(770) 886-2318 103
jgiraldo@iba-america.com
www.iba-america.com

Asia

Western and Central Asia Philippines, Taiwan, Vietnam, Cambodia, Laos, Myanmar, Bangladesh, Bhutan, Nepal, Sri Lanka
iba Asia GmbH & Co. KG
Tel: +49 (911) 96 94 346
mario.gansen@iba-asia.com
www.iba-asia.com

Malaysia and Singapore
iba Malaysia
c/o iba Engineering & Consulting (Malaysia) SDN. BHD
Tel: +60 12 25 35 991
bruno.marot@iba-malaysia.com
www.iba-malaysia.com

Saudi Arabia, UAE, Qatar, Kuwait, Bahrain and Oman
iba Gulf
c/o ASM
Tel: +966 12 690 2144
a.magboul@iba-gulf.com
www.iba-gulf.com

Korea and Japan
iba Korea System Co. Ltd.
Tel: +82 (51) 612-3978
sh.lee@iba-korea.com
www.iba-korea.com

iba China Ltd.
Tel: +86 (21) 58 40 27 68
julia.wang@iba-china.com
www.iba-china.com

iba Systems India Pvt. Ltd.
Tel: +91 (22) 66 92 08 69
shraddhap@iba-india.com
www.iba-india.com

iba Indonesia
c/o PT. Indahjaya Ekaperkasa
Tel: +62 (21) 34 57 809
sandhi.sugiarto@iba-indonesia.com
www.iba-indonesia.com

iba Thailand
c/o SOLCO Siam Co. Ltd.
Tel: +66 (38) 606232
pairote@iba-thai.com
www.iba-thai.com

iba Turkey Ltd.
Tel: +90 (312) 22 34 790
ahmet@iba-turkey.com
www.iba-turkey.com