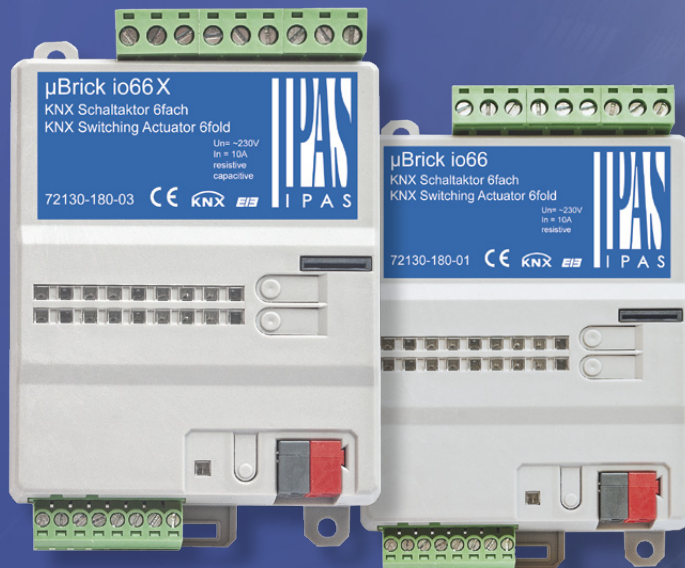## Serie µBrick

Decentralised - Compact - Functional - Favorable

IPAS system solutions for smart buildings

Since its foundation in 1996 IPAS has been known for its design panels, KNXnet/IP gateways and project-specific system solutions. ComBridge, a hallmark for web-based visualisations, and IPAS KNXnet/IP gateways are well-known in the KNX world. With the development of its actuator series µBrick, IPAS expands its range of individual system solutions.

The µBrick range consists of five different actuator types and distinguishes itself through its extremely small and compact construction. The application programs are built in such a way that basic functions can be projected intuitively. This basic functionality, however, can be greatly expanded by means of structured parameter menus in the ETS . This makes µBrick the perfect complement for IPAS' smart building concepts.

In its smart building concepts, IPAS places great emphasis on user level functions such as binary switching and shutter control, the integration of sensor events and the realisation of lighting concepts.

At management level these user level events are overseen through ComBridge visualisations or feed into complex management applications such as Smart Metering.

Mounting type		Name	Output Type	DIN MOD	Inputs	Outputs
DIN and Flush Mount	Very Flat	µBrick io66	6R 10A	4	6	6
		µBrick o8	8R 10A	4	0	8
	Flat	µBrick io66X	2C+4R 10A	4	6	6
		µBrick o12X	4C+8R 10A	4	0	12
		µBrick o18	18R 10A	4	0	18
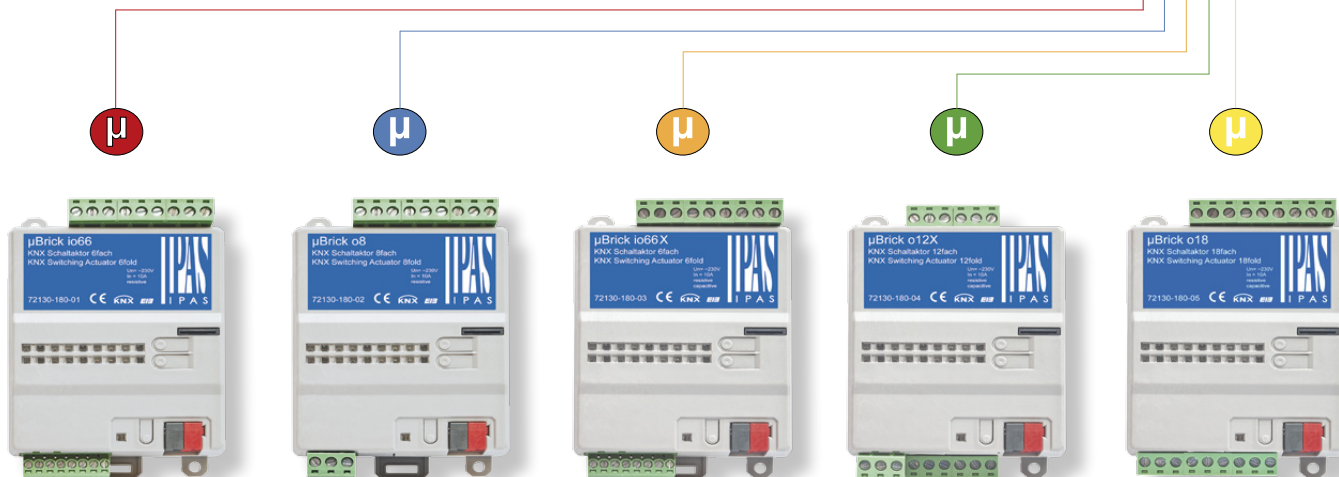
μBrick – all the advantages of a decentralised installation

μBrick actuators are installed on either a standard DIN rail or directly on the installation base. These flexible mounting options in connection with the extremely small size offer a wide range of installation options. With μBrick actuators, the KNX installation is decentralised and no longer requires a distribution box.

Decentralised installations reduce the thermal load because of reduced cable length. A lower thermal load makes buildings safer. Each decentralised device reduces the space required in the installation. Small distributions are cheaper and take up less room. These are significant advantages both for commercial and domestic buildings.

μBrick actuators can be installed in flush-mounted cabinets with a minimum size of 150mm x 80mm x40mm (LXBXT). The mounting depth of just 40mm is significantly less than the mounting depth of a common switch box, which is 55mm.

Such a low depth makes flush mounting very easy. Individual switch functions can be performed directly in the room where they are required. Of course, μBrick actuators can also be wall-mounted. In commercial buildings they are therefore perfect for mounting in cavity walls and floors - again with a minimum amount of effort.

However, not only the universal mounting options and the small size of the µBrick actuators are advantages of a decentralised installation. An additional argument can be made in favour of this installation method. The µBrick actuators µBrick io66 and µBrick io66x are equipped not only with outputs but also with inputs that can be given different types of sensors. A simple temperature sensor or a low-cost motion detector make the µBrick io66 actuators universal allrounders because any output can be equally configured as a binary output or a shutter output.

µBrick – maximum functionality, minimum size

The appeal of our µBrick actuators lies in their extremely compact and small form – an important fact when space for an installation is limited. µBrick o18 offers 18 switch outputs with a width of only 4 horizontal pitch (HP) units and a height of just under 40mm. The channels can be equally configured as simple switch outputs or as shutter outputs. In the KNX world, these are not your normal dimensions and functions.

Practice shows that the most commonly needed combination is 6 outputs and 6 inputs, for example to control 2 shutter motors and to switch 2 motion-dependent light circuits. In this case, µBrick io66 only requires a width of 4 HPs and a mounting depth of 24mm.

With these dimensions, µBrick actuators are amongst the smallest of their kind.
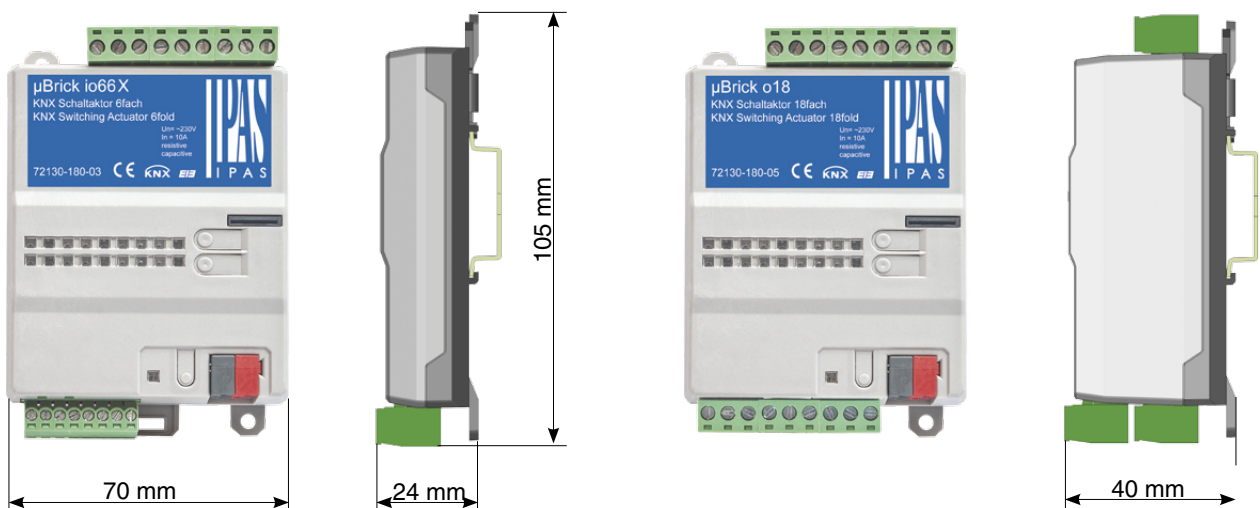
µBrick – unlimited functionality

If we think about the tasks of a switch actuator, the first thing that comes to mind is the closing of a contact in order to send energy, for example, to a light. However, experience from practice shows that the demands made on an actuator are much more complex. Which conditions need to be met so that an actuator switches? Is it meant to open or close immediately or with a delay?

Other functions in addition to the common switch functions are important. In the development of the actuator series µBrick, IPAS has tried to incorporate as many actuator functions as possible. However, experience also shows that with increasing complexity, function control also becomes more difficult.

We have therefore developed an ETS application that is intuitive and self-explanatory. In the application's basic setting, the standard parameters for simple switch functions are visible. If the basic settings are changed, only those parameters are shown which are relevant to the selected funtion. This system guarantees constant oversight of the current programming.

A overview of the functions our actuator series µBrick

Binary inputs for the connection of:
Conventional motion detectors, temperature sensors, window contacts, threshold value switches, etc.

Binary channel outputs with objects for:
Current status notifications, operating hours (counting bi-directionally), switching cycle counters (counting bi-directionally), KNX scenes, timer functions, activation objects, etc.

Objects for sun protection screen control in connection with objects for:
Current status notifications, scene control, activation objects, etc.

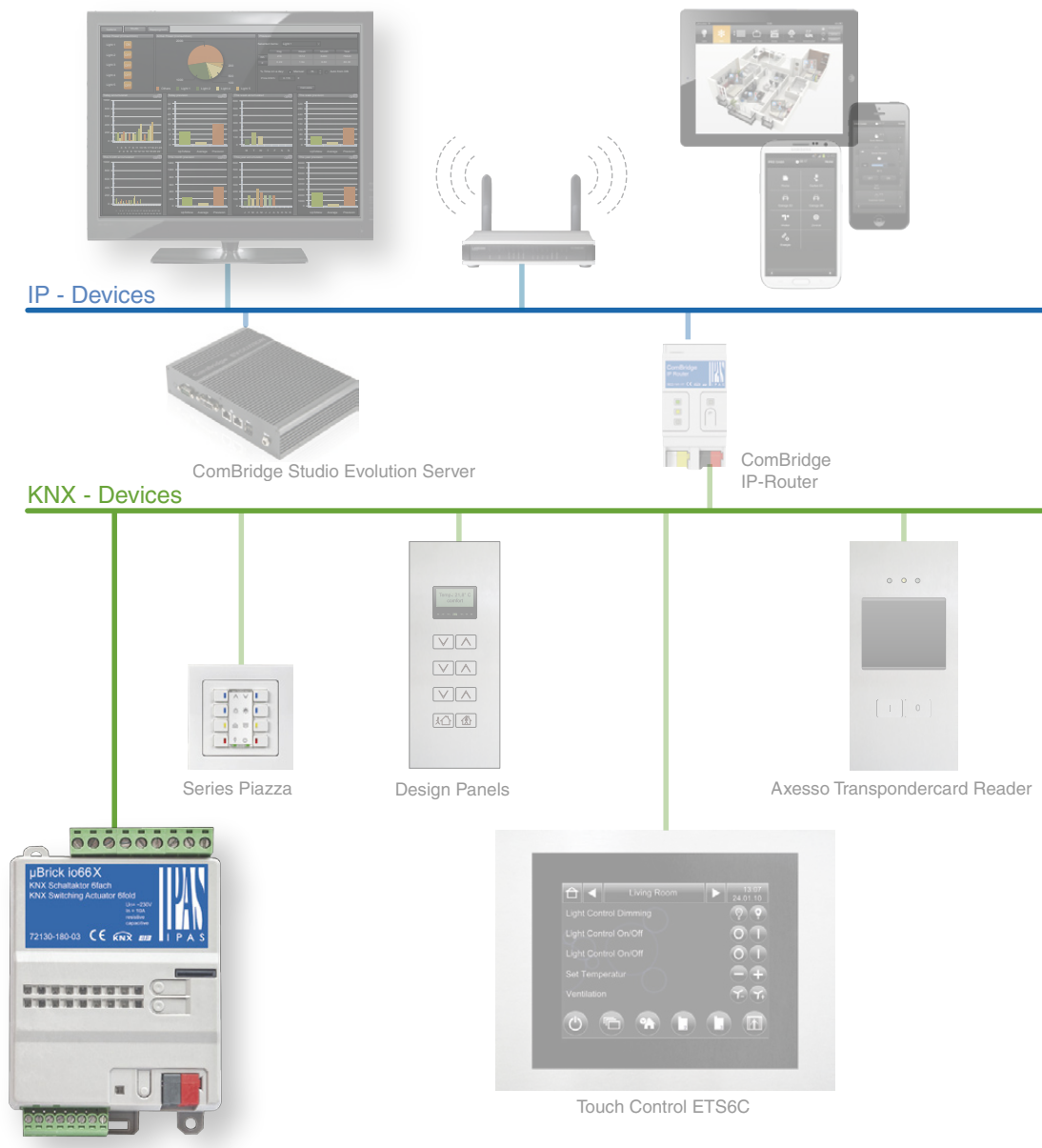Advanced objects and functions such as:
Logic functions (Boolean, gate and filter functions, comparators), data point conversion, KNX scenes, value setting objects, analogue and digital alarms, etc.

With cost-effective temperature sensors, the temperature in up to six rooms can be regulated with just one µBrick actuator.

µBrick – cost-effective whilst offering maximum functionality

In addition to the technical advantages, IPAS µBrick actuators also stand out for their economic advantages. IPAS has managed to greatly reduce the channel price in the actuators. Because of the decentralised installation methods used with µBrick actuators, much less cable is required, reducing material costs. With less cable length, the installation costs are also lower. The individual configuration of the inputs means that low-cost, conventional sensors can be used in KNX installations, which further reduces costs. In addition to these economic advantages, the clearly structured ETS application enables complex switch demands to be performed intuitively and quickly.

Low channel prices, decentralised installation methods, a compact shape and universally configured outputs and inputs all contribute to the cost-effectivenes of IPAS µBrick actuators. The example below shows the advantages of µBrick actuators.

IP - Devices

ComBridge Studio Evolution Server

ComBridge IP-Router

KNX - Devices

Series Piazza

Design Panels

Axesso Transpondercard Reader

Touch Control ETS6C

Advantages of µBricks in a common usecase

A five-bedroom flat with hallway and bath is planned once with centrally installed devices and once with µBrick actuators. The following functions are required:

- 11 lighting circuits
- 4 **sun protection** elements
- 4 room thermostats
- 4 radiators
- 5 motion detectors
- 5 window contacts
- 1 water level sensor
- 1 smoke detector
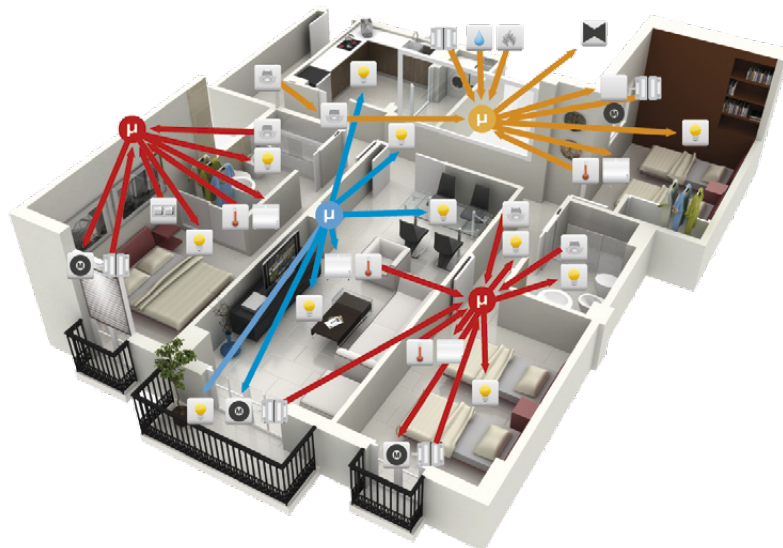
µBrick in comparison
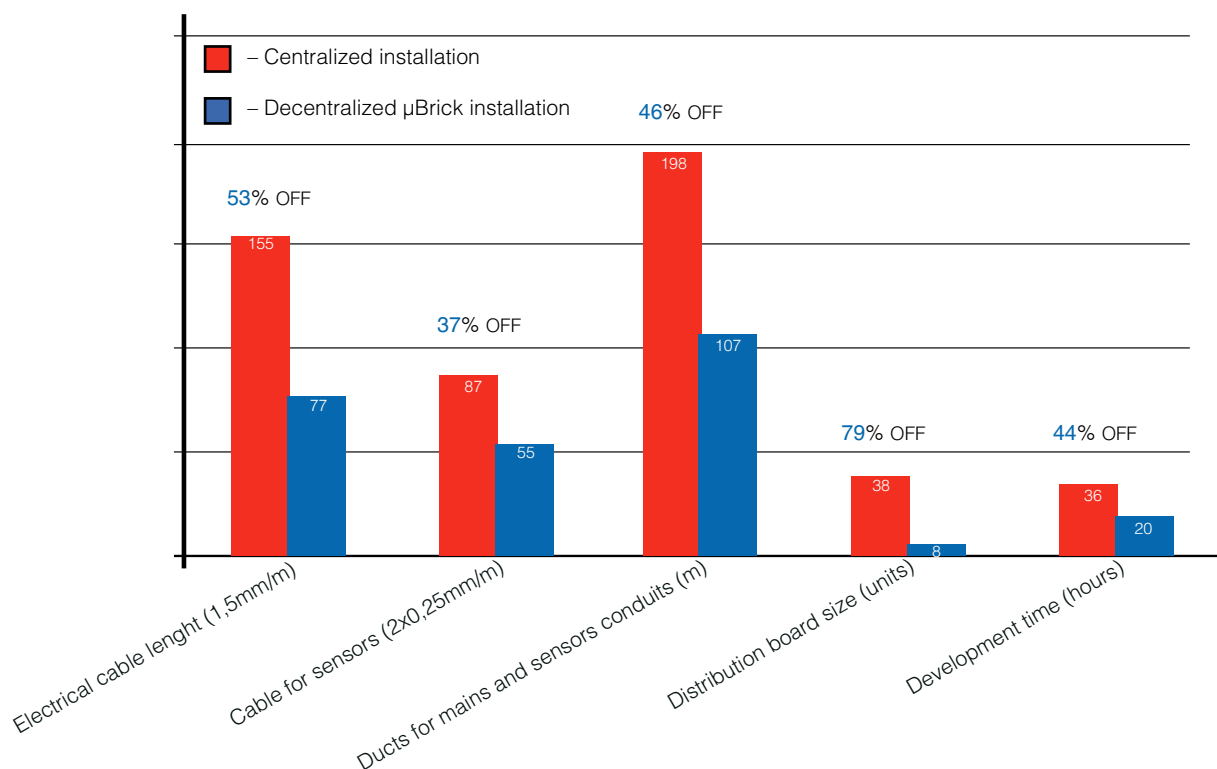
In this example, the low gross prices of the µBrick actuators speak for themselves. The calculation shows that when µBrick actuators are used, more than 60% of the KNX device costs can be saved.
If all materials and expenses are compared, the result is clear: When making use of all optimisation options in connection with the low costs of the µBrick actuators, the total costs for the KNX Installation go down by more than 50% compared with a central KNX installation.

IPAS – for buildings of the future

Since its establishment in 1996, IPAS stands for innovative products and solutions in building automation. Based on the global KNX standard, IPAS develops and manufactures devices and software for buildings of the future.

Every day our highly-qualified IPAS team rises to the challenge of developing the best technological and economical solutions for our clients. Knowledge, experience and creativity direct everything we do from development to production and distribution.

Informed by our project management experience and the global use of our products, IPAS today stands for sustainable values. It is our company policy to create and sustain employment, to assume responsibility for the community and to train young people.

Our relationship with our clients is based on fairness, cooperation and integrity.

In the manufacture of our products, we strive for the upmost quality taking into consideration resource saving technologies and manufacturing processes. Sustainability and environmental awareness are integral to our work. Our certified quality management system in accordance with DIN/ISO 9001, guarantees that all our processes meet these requirements.

It is our aim to always realise the individual wishes of our clients and to offer the best-possible solutions for your requirements, true to our maxim:

"A satisfied client is the best reference".

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