APIS Box

Standalone protocol converter for Smart Grid, IoT, Industrial and Cloud applications

The Apis Box protocol converter enables communication between devices operating in different networks. The gateway converts between two selected protocols and thanks to the availability of various protocols, it can be used in a wide range of applications, including intelligent energy systems, industrial automation and IoT. Apis Box can also be your gateway to the cloud.
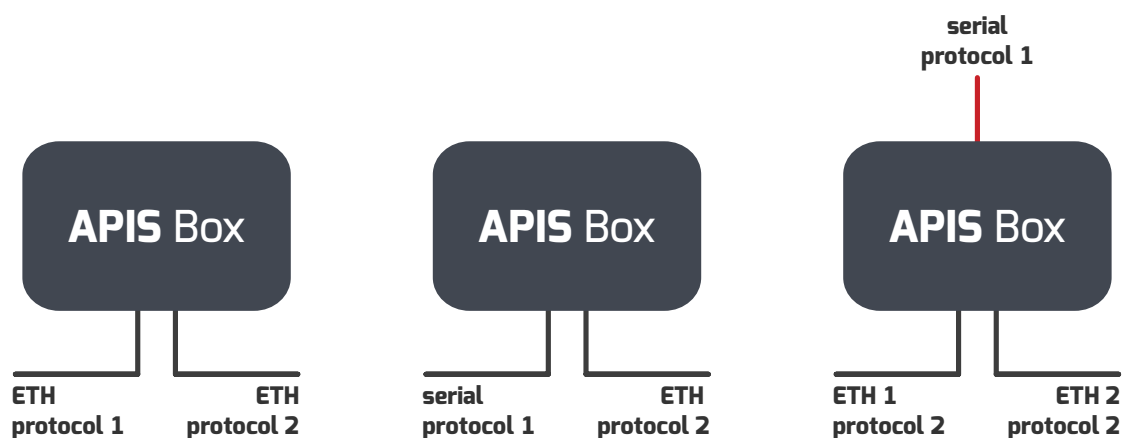
KEY FEATURES

- Easy to configure and install.
- Available in various software configurations.
- Available in a version with PRP redundancy.
- Transmits energy or industrial data to the cloud.
- Features serial and Ethernet communication interfaces.

SUPPORTED PROTOCOLS

IEC 61850, DNP3, Modbus RTU, Modbus TCP, IEC 60870-5-101, IEC 60870-5-103, IEC 60870-5-104, MQTT, proprietary protocols.

USE CASE EXAMPLES

APIS Box	APIS Box	APIS Box
ETH protocol 1 / ETH protocol 2	serial protocol 1 / ETH protocol 2	serial protocol 1 (top); ETH 1 protocol 2 / ETH 2 protocol 2

CONFIGURATION APPLICATION DROSERA

The dedicated Drosera application simplifies the configuration of the APIS protocol converter. It is designed to be user-friendly and does not require any programming knowledge. The intuitive interface provides easy access to configuration settings and mappings between selected protocols. Once the conversion mappings are defined, the application automatically generates a configuration file. This file can be uploaded directly to the APIS Box from Drosera.

PARALLEL REDUNDANCY PROTOCOL SUPPORT

The APIS Box is suitable for use in power grid and industrial applications where high availability is expected. Consequently, it is also offered with Parallel Redundancy Protocol (PRP) support in accordance with the requirements of IEC 62439-3. The version supporting PRP sends duplicated frames through both Ethernet ports to two independent local networks. The PRP implementation is protocol-independent and can be used with IEC 61850, DNP3, IEC 60870-5-104, and Modbus TCP communications. PRP is available as an optional feature.

CYBERSECURITY

As cybersecurity becomes increasingly important, especially in the context of critical infrastructure, Apis Box can be supplied with TLS encryption capabilities and authentication using digital certificates.

FIRMWARE

The APIS Box protocol converter facilitates one-to-one conversion between two chosen protocols supported by device's firmware. For example, if Apis is delivered with IEC 61850, Modbus and MQTT, it can be configured by the user to translate between one of the following pairs:
• IEC 61850/Modbus
• IEC 61850/MQTT
• Modbus/MQTT

TECHNICAL SPECIFICATION

Mechanical		Inputs and outputs	System	
Casing dim.	110x45x120 mm	ETH (100Mb)x2	**CPU**	STM32F7
Installation	DIN-Rail mount	UARTx2		
		CANx2	**Memory**	16MB SDRAM
Power Supply		SPIx2		16MB Nor Flash
12V - 50V DC		I2Cx2		2MB Nand Flash
110V - 220V AC		SD		
		USB AB	**OS**	FreeRTOS
Environmental		GPIOx32		
Operating Temp.	-20÷60℃	1 PPS signal	**LED**	4 LEDs
Storage Temp.	-30÷80℃	10 MHz signal		

JPEMBEDDED
Embedding ideas

sales@jpembedded.eu   •   +48 601088970   •   ul. Strumienna 12, 30-609 Kraków, POLAND   •   www.jpembedded.eu