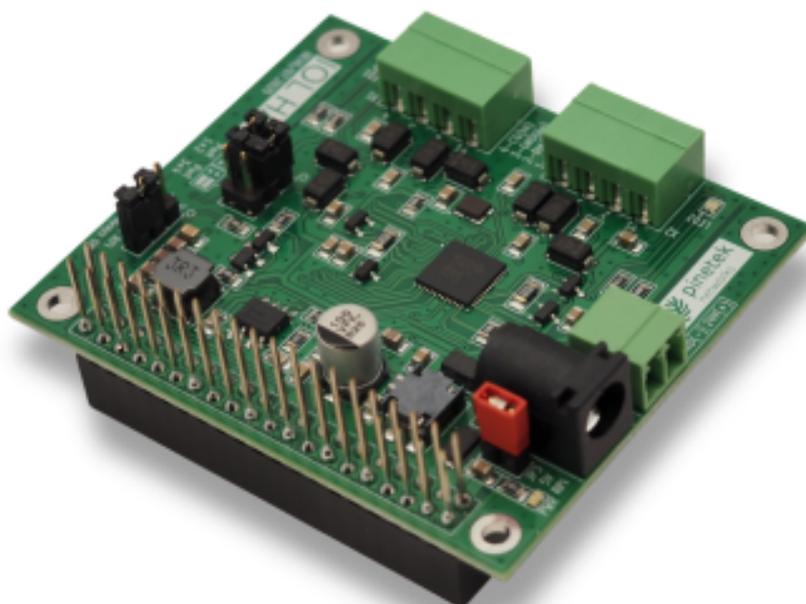


# 1.1 Principle of operation

Application Manual

[www.pinetek-networks.com](http://www.pinetek-networks.com)





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# 1.1 Principle of operation

The **Pinebox** is a smart gateway for IO-Link® sensors and devices. It can process the acquired data directly on the device with the integrated Node-RED® with Node-RED flows and JavaScript . The **Pinebox** forwards the pre-processed data to



- **Databases** (e.g., MySQL®, Amazon S3, InfluxDB®, PostgreSQL®, MongoDB®, MS SQL and others) through Node-RED connectors or to the integrated SQLite database,
- **Messages** (e.g., email, Signal® message, SMS, WhatsApp®) through Node-RED connectors,
- **Dashboards** as integrated Node-RED dashboards,
- **Communication** (e.g., MQTT, HTTP, Websocket, TCP, UDP, Modbus TCP, OPC/UA) through Node-RED connectors.

An SQLite database including a web interface is pre-installed on the device.

Alternatively the **Pinebox** works as an IO-Link interface and provides the data via the Ethernet interface using JSON.

The **Pinebox** is versatile tool for the fast and easy creation of various applications, like Smart Metering (using IO-Link current sensors), machine commissioning (using e.g., distance sensors), machine smartification for parameters like up-time or output rate.

Trademark	Owner	Website
MySQL®	Oracle Corporation	<a href="https://www.oracle.com">https://www.oracle.com</a>
SQLite®	Hipp, Wyrick & Company, Inc.	<a href="https://www.sqlite.org">https://www.sqlite.org</a>
Amazon S3	Amazon Web Services, Inc.	<a href="https://aws.amazon.com">https://aws.amazon.com</a>
InfluxDB®	InfluxData Inc.	<a href="https://www.influxdata.com">https://www.influxdata.com</a>
PostgreSQL®	PostgreSQL Global Development Group	<a href="https://www.postgresql.org">https://www.postgresql.org</a>
MongoDB®	MongoDB, Inc.	<a href="https://www.mongodb.com">https://www.mongodb.com</a>
Signal®	Signal Messenger LLC	<a href="https://signal.org">https://signal.org</a>
WhatsApp®	WhatsApp LLC	<a href="https://www.whatsapp.com">https://www.whatsapp.com</a>
Node-RED®	OpenJS Foundation	<a href="https://nodered.org">https://nodered.org</a>
IO-Link®	PROFIBUS Nutzerorganisation e.V.	<a href="https://www.io-link.com">https://www.io-link.com</a>

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