

Unlocking Data in Your Facility: Modern solutions for legacy plant management

Linkedin Live November 2024



Introduction

ifm group of companies » Overview

ifm. At a glance

The ifm group of companies is a global industry leader for innovative sensors, controllers and for SAP-based solutions for supply chain management and shop floor integration worldwide.

We combine the flexibility and individuality of a family-owned company with the quality and professionalism of a corporate group.



8,750
employees



1,442
million euros
in sales*



1,170
patents



1969
founded
in Essen



90 %
product availability
on the customer's
requested date



155,000
customers
worldwide



165
countries



7 Production sites
worldwide

*Total turnover according to HGB (German Commercial Code)



Summary Content

- The important questions:
 - What, Why and How?
- The solutions to:
 - Collecting data from remote locations.
 - Collecting data from legacy plant.
 - Collecting data from OEM equipment.



The important questions

- What data do you want to collect from your machines and facilities?
- What will you do with the data once you have collected it?
- How, and from where, will you collect the data?
- Why is this important to the business?
- How do you make the data available to the business?
- How, and from where, will you collect the data?



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Top three reasons businesses want data from the OT layer



Improve your
machine availability



Ensure
process quality
and

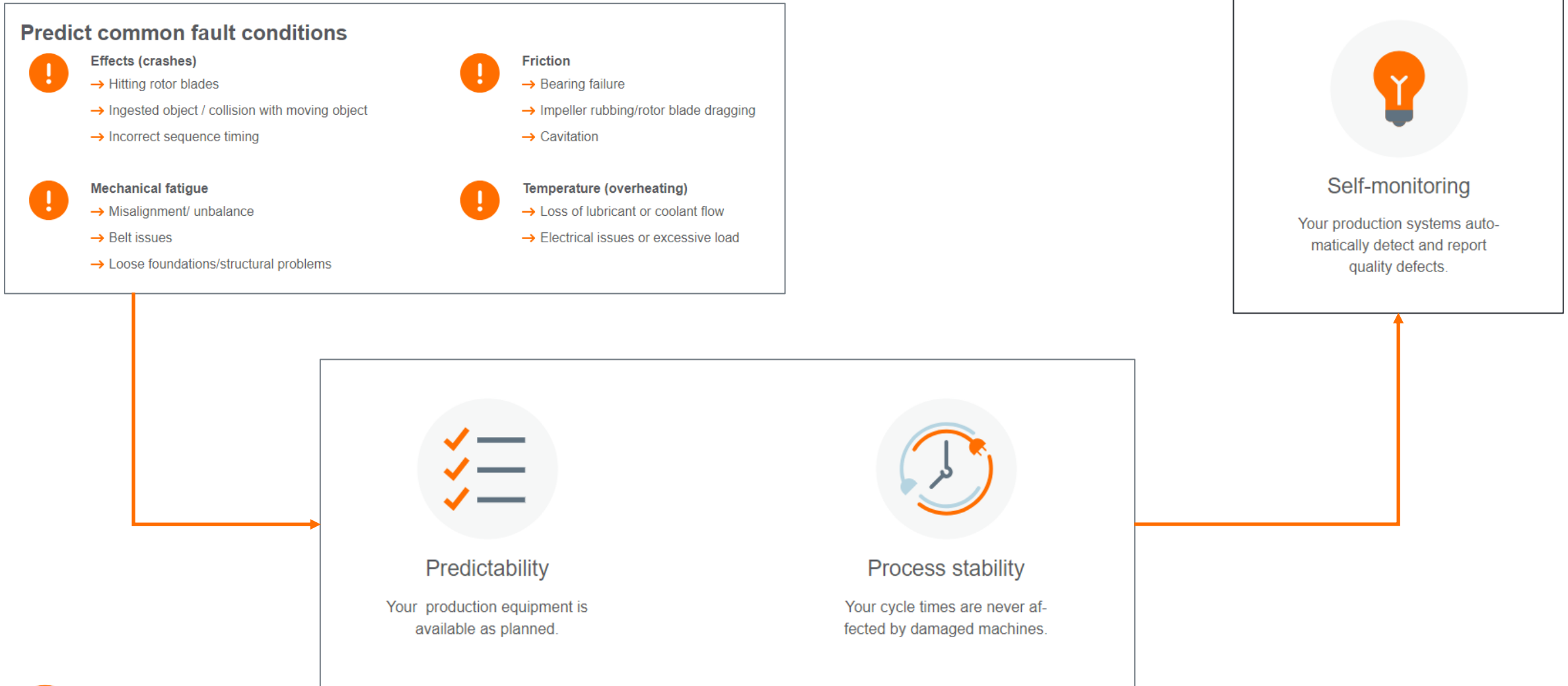


Optimise your
energy consumption



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Example – machine condition



Challenges

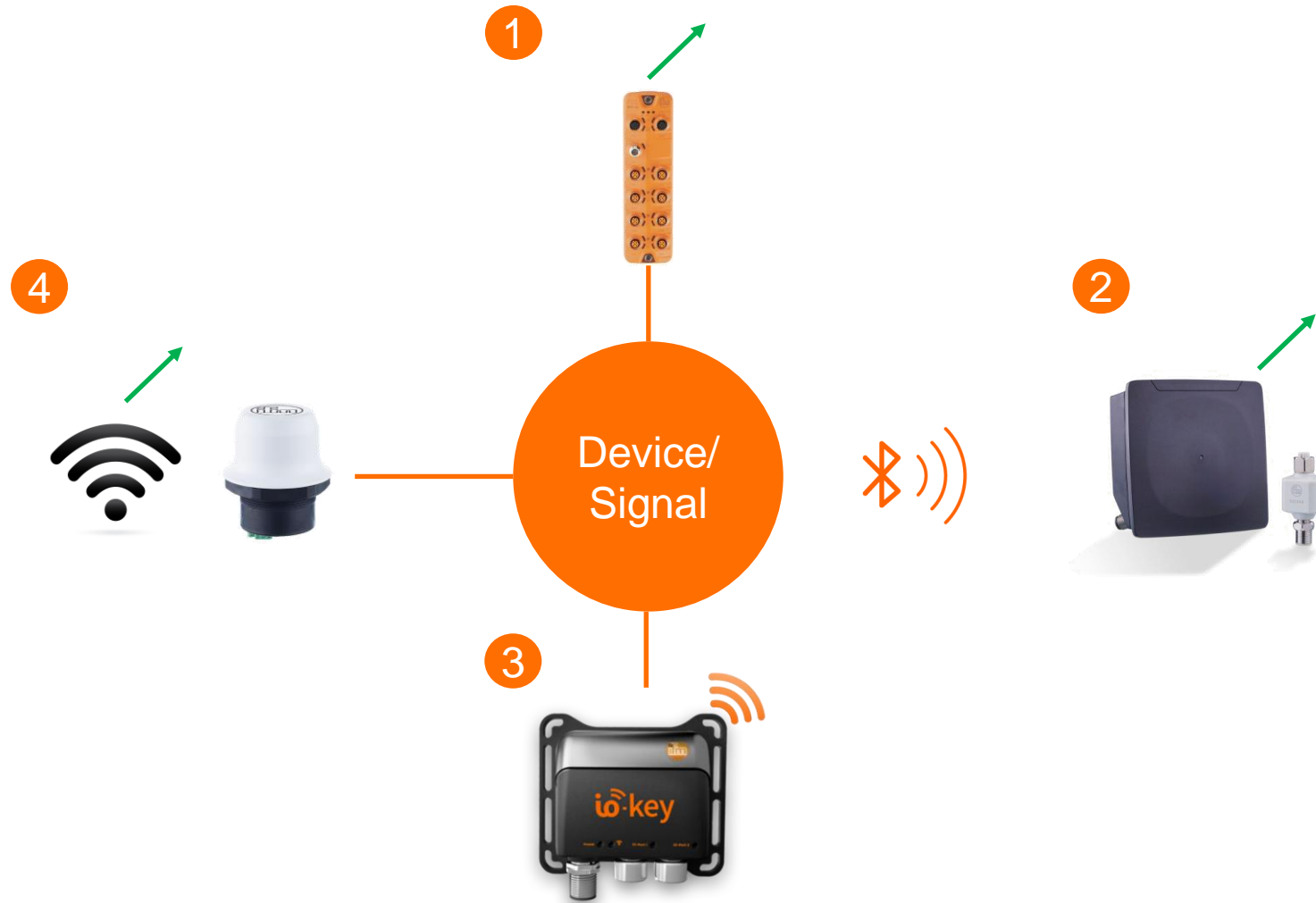
- Connectivity – Legacy kit*/remote sites etc.
- Access to data from OEM machines.
- Key instruments – low data availability.
- Collecting high-quality data.
- Connectivity to ERP/existing business level systems.
- Multiple vendors – multiple protocols.
- Making data useful and available.
- Knowledge/Skill gaps.
- Cost – ROI.

* Analogue and Digital signals from none Smart instruments and sensors



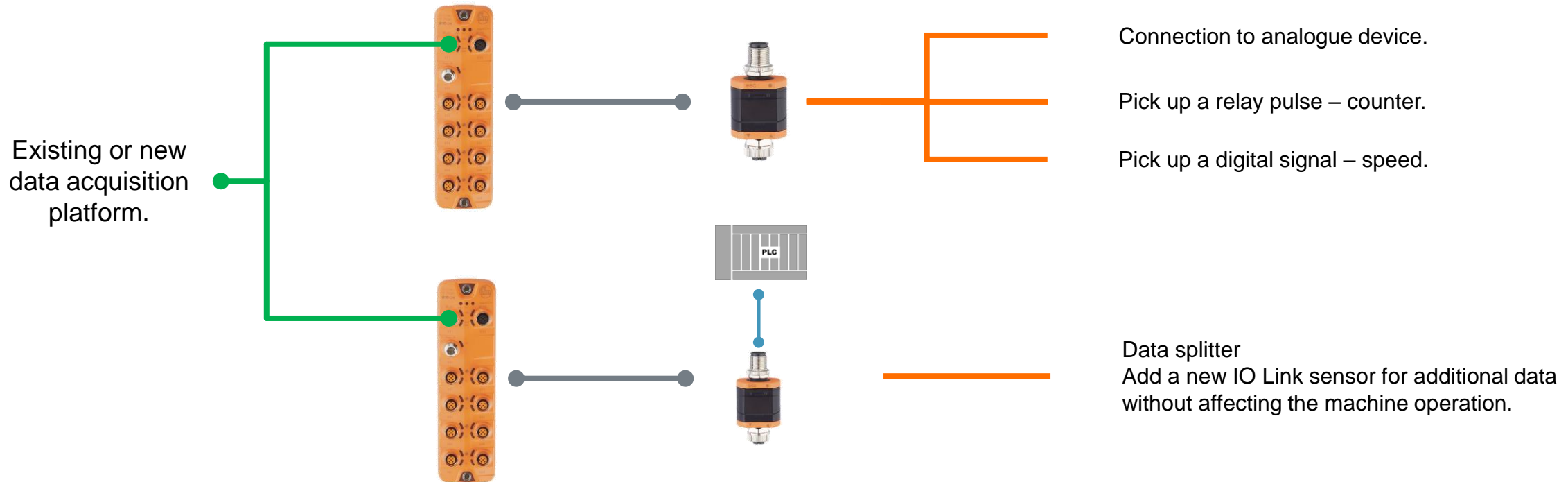
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The connectivity challenge



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Industrial networking with converters



Use cases:

- Connect legacy kit into existing control solutions.
- Add intelligent sensors but retain machine function.
- Collect machine data for OEE/ planning.
- Collect data from OEM machine without affecting function or warranty.



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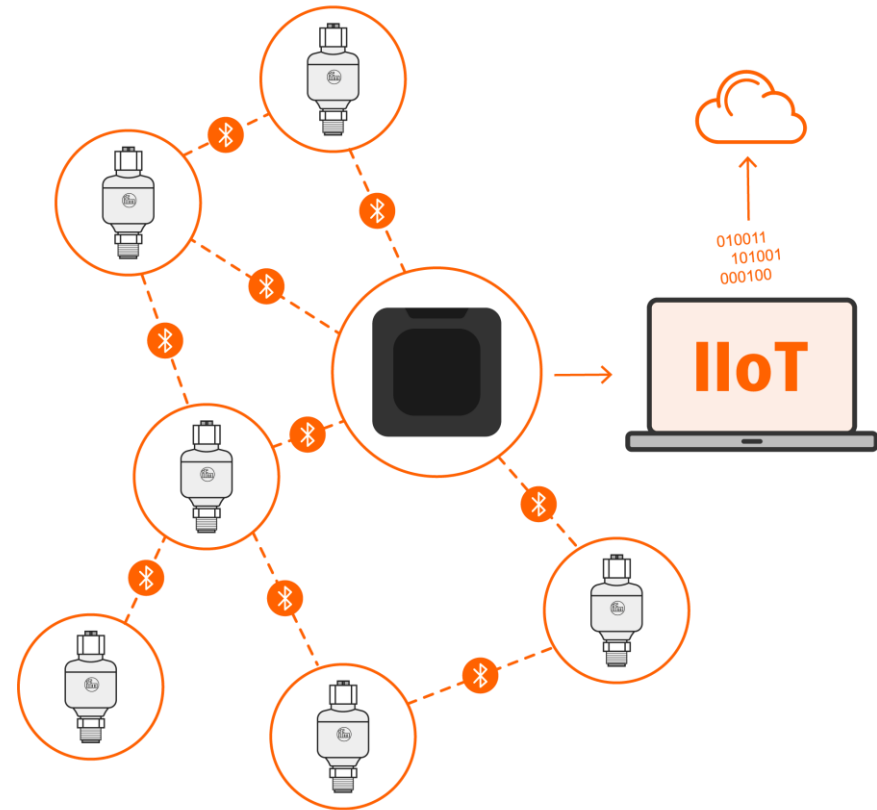
Bluetooth Mesh



- Vendor independent connection of IO link devices.
- Integrate up to 50 devices.
- Max range from device to base station 20 metres.

Use case:

- Monitoring of critical plant such as primary pumps and compressors in hard to access locations.

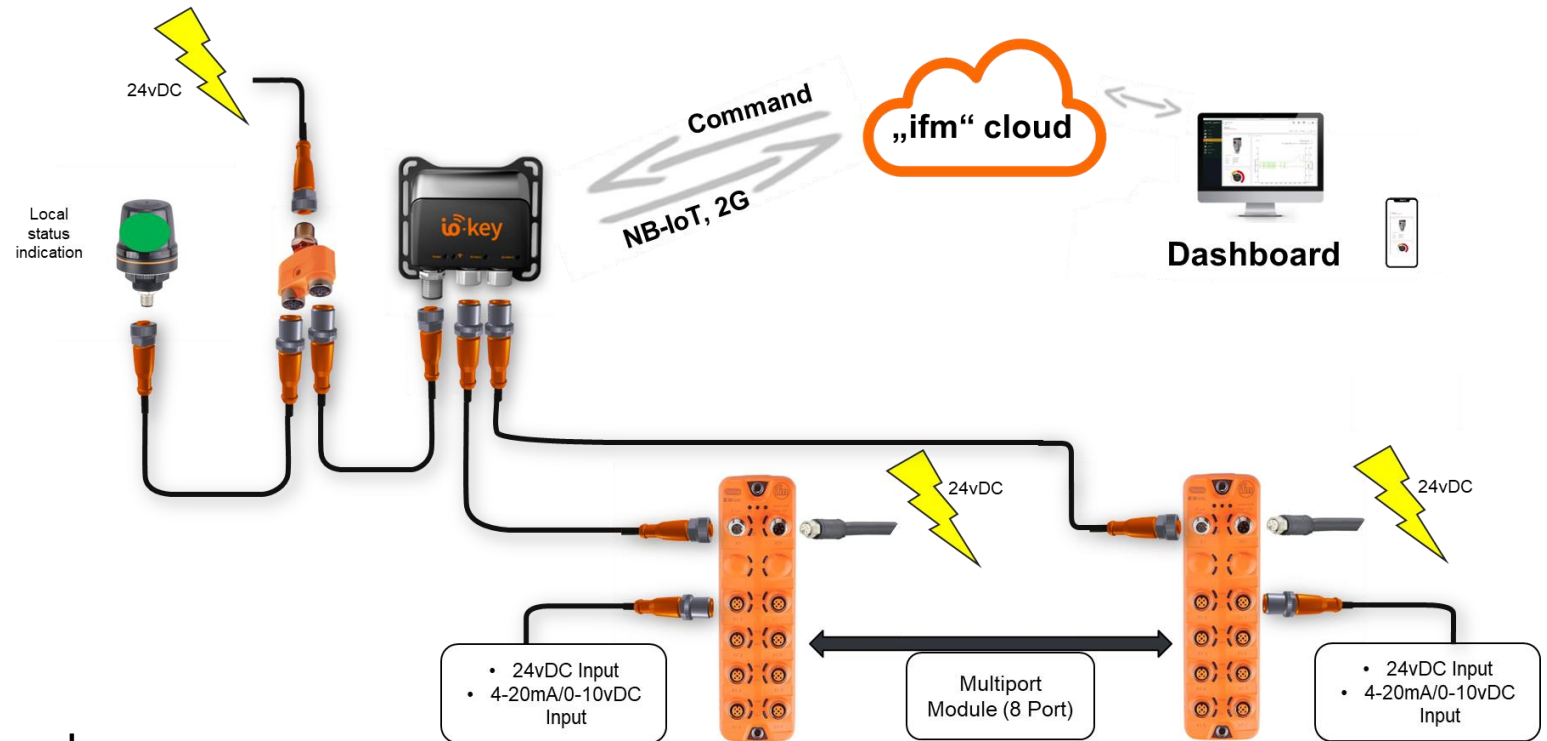


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Io-key – 2g/NB-IoT gateway



- Online monitoring of sensors.
- Simple setup of alarms and dashboards.
- Vendor independent.



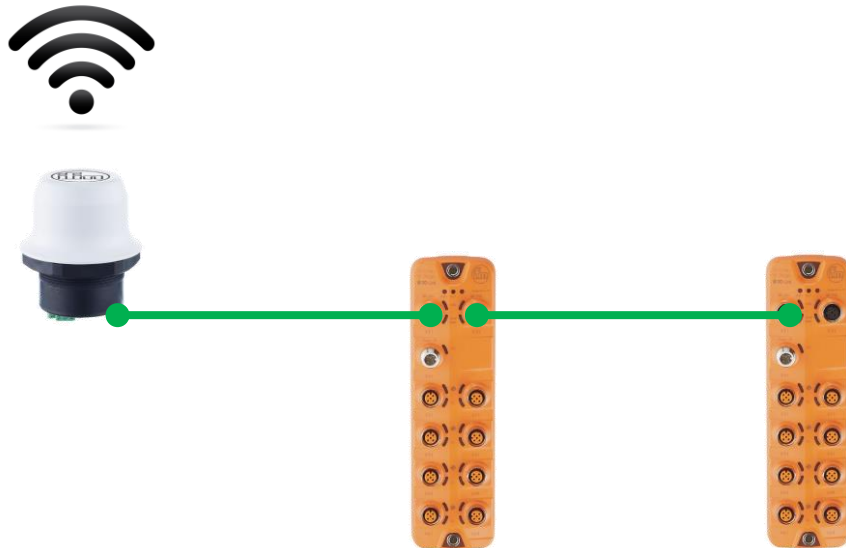
Use cases:

- Provide 24/7 monitoring of remote assets.
- Connect into company-wide IIoT solution.



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Industrial wireless technology



Use cases:

- Link multiple machines into existing wireless infrastructure.
- Industrial Wireless bridges to link buildings.



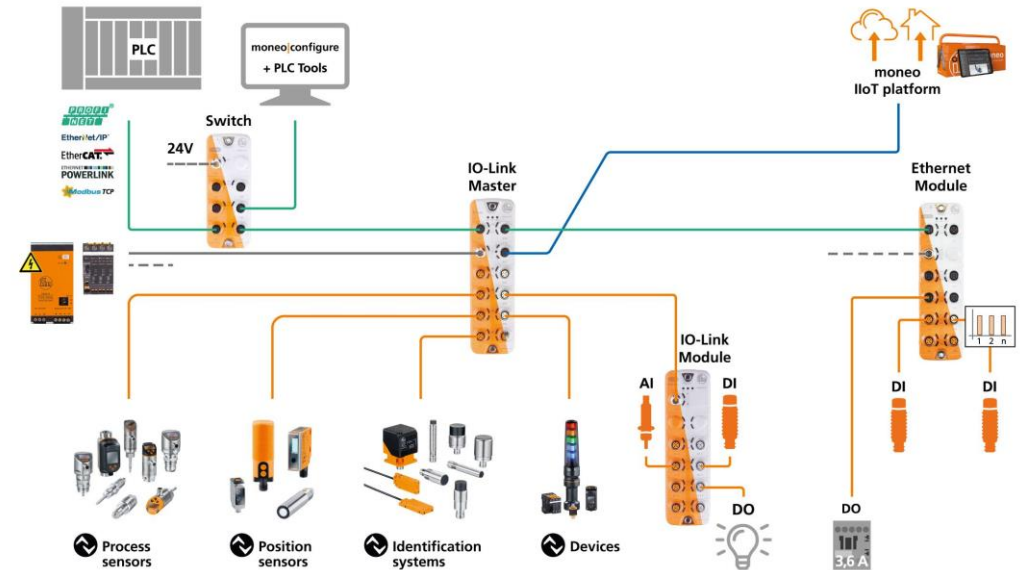
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High quality data

Smart Sensors



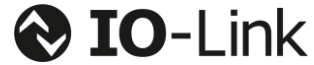
- More process data from the same device on the one cable.
- Additional device level diagnostics.
- Multi-vendor solutions.
- Simple plug and work connectivity.
- Parameter setting and plant commissioning from a single network connection.
- Reduced cost of device.
- Reduced cabling.



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High quality data

Smart Sensors



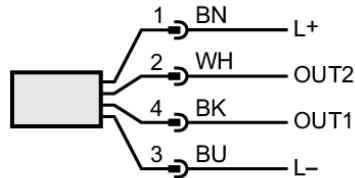
Example: Flow meter – SM8xxx series



Legacy



Connector: 1 x M12; coding: A;



- colours to DIN EN 60947-5-2
- OUT1:
 - switching output volumetric flow quantity monitoring
 - switching output Temperature monitoring
 - Pulse output quantity meter
 - frequency output volumetric flow monitoring
 - frequency output Temperature monitoring
 - signal output Preset counter
 - IO-Link
- OUT2:
 - switching output volumetric flow quantity monitoring
 - switching output Temperature monitoring
 - analogue output flow
 - analogue output temperature
 - input counter reset

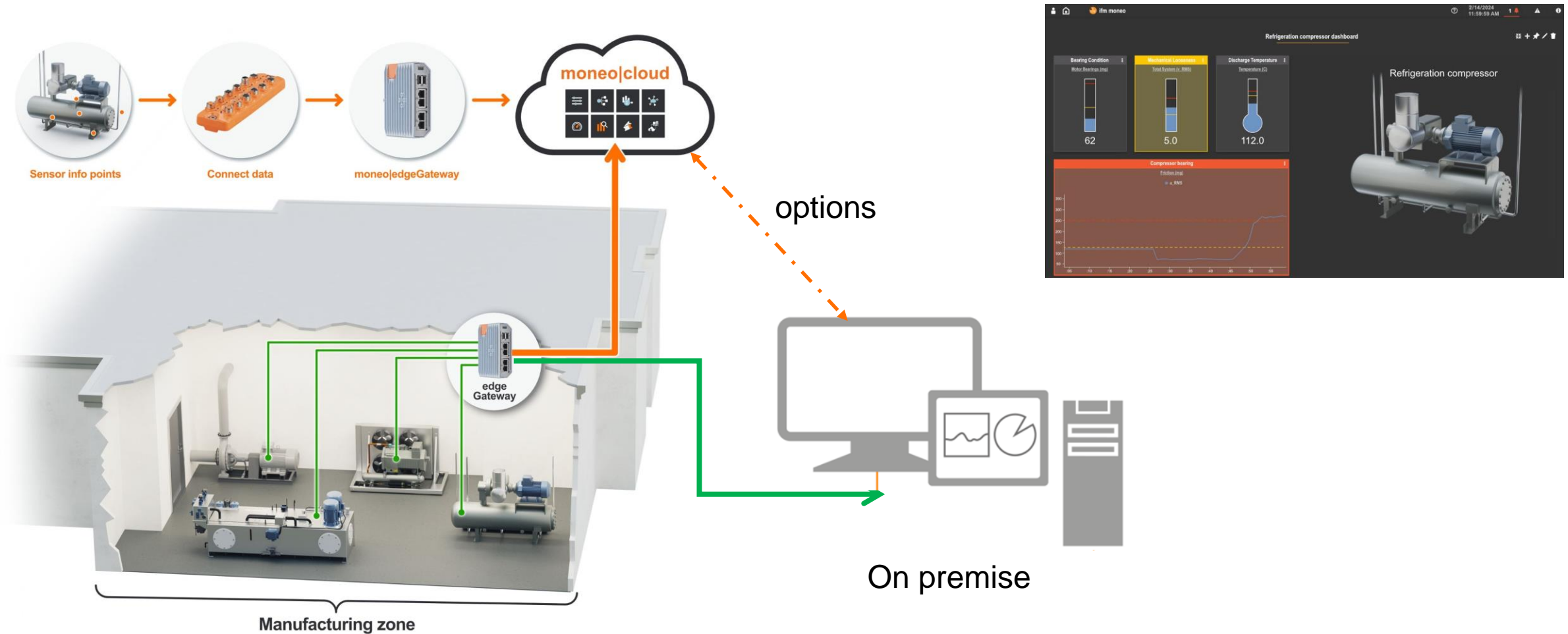
Smart

Process data input	Subindex 0	RecordT (96 Bit)
Totaliser 1		Float32T
Quantity meter 1 which continuously totals the volumetric flow since the last reset		
Value range [L]	(-999999.99999 To 999990) * 1000	
Flow		IntegerT (16 Bit)
Current flow		
Value range [L/min]	(-10800 To 10800) * 0.0166667	
	-32760	(UL)
	32760	(OL)
	-32762	(cr.UL)
	32762	(cr.OL)
	32764	(NoData)
Temperature		IntegerT (16 Bit)
Current temperature		
Value range [°C]	(-4200 To 11200) * 0.01	
	-32760	(UL)
	32760	(OL)
	-32762	(cr.UL)
	32762	(cr.OL)
	32764	(NoData)
Device status		UIntegerT (4 Bit)
Current device status, a copy of the parameter [Device Status, Index 36] in the process data channel		
Value range	0	(Device is OK)
	1	(Maintenance required)
	2	(Out of specification)
	3	(Functional check)
	4	(Failure)
OUT2		BooleanT
Current status of the digital signal [OUT2]		
Value range	false	(OFF)
	true	(On)
OUT1		BooleanT
Current status of the digital signal [OUT1]		
Value range	false	(OFF)
	true	(On)



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Making data available to the business



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