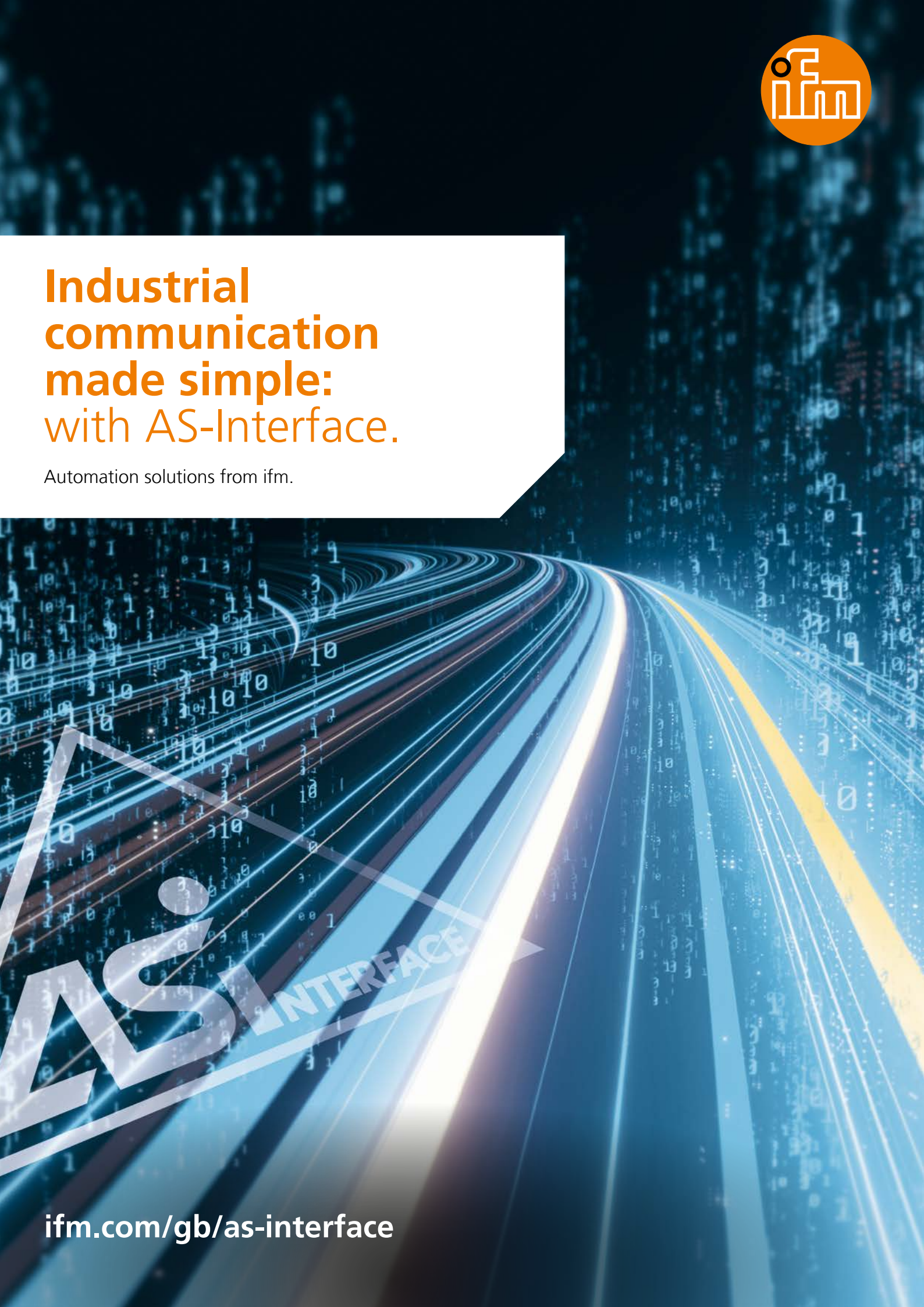
Industrial communication made simple: with AS-Interface.

Automation solutions from ifm.



ifm.com/gb/as-interface

Industrial communication made simple: with AS-Interface.

What is AS-Interface?

The actuator-sensor interface (AS-i) is a manufacturer-independent standard for connection of sensors and actuators of the first field level.

Companies worldwide are relying on simple wiring and automation technologies to improve their overall plant efficiency and availability. Always present: AS-Interface.

The sophisticated AS-Interface technology offers high reliability, noise immunity and diverse diagnostic capabilities.

The simple, very stable and proven technology enables sensors to simultaneously transmit diagnostic information to the PLC and to higher-level IT infrastructures. The modular design, the flexible and fast connection technology ensure easy integration into the system.

A two-wire flat cable transmits data and energy. This considerably reduces wiring complexity as conventional wiring of each individual sensor or actuator to the controller is no longer required,

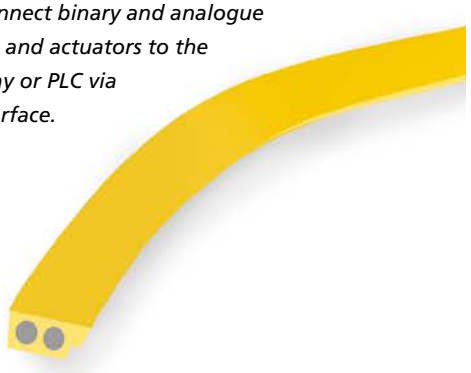
This also saves the user a considerable number of terminals, distribution boxes, input/output cards and cable harnesses.

The AS-i masters control the data exchange to the sensor/actuator level and communicate rapidly with the superior control level. They can be used as independent, decentralised controllers or as gateways to all common fieldbus systems.

Furthermore, the AS-i masters offer a wide range of diagnostic options, such as communication and hardware monitoring, to ensure high system availability.

The range includes interfaces with EtherNet/IP, PROFIBUS, PROFINET, EtherCAT, Modbus TCP or CANopen.

The decentralised AS-Interface I/O modules connect binary and analogue sensors and actuators to the gateway or PLC via AS-Interface.



The AS-Interface system: wide-ranging for your requirements.

		Sector / Industry
	**AS-Interface I/O modules**	Conveyors Packaging / Logistics Food Automotive / Handling Machine tools Mechanical engineering Port and crane systems Water treatment Biogas plants
	**AS-Interface master and controllers**	Conveyors Packaging / Logistics Food Automotive / Handling Machine tools Mining Mechanical engineering Port and crane systems Water treatment Biogas plants
	**AS-Interface Safety at Work**	Conveyors Packaging / Logistics Food Automotive / Handling Machine tools Mechanical engineering Water treatment Mining
	**AS-Interface for hazardous areas**	Mining Mills Silos
	**AS-i interface accessories**	Conveyors Packaging / Logistics Food Automotive / Handling Machine tools Mining Mechanical engineering Port and crane systems Water treatment Mills / silos Biogas

Control cabinet installation	Field installation	Device installation	Communication interfaces	Digital I/Os	Analogue I/Os	Safe I/Os	Valve functions	Voltage supply via	Sensor/actuator connection	Protection rating	AS-i address mode/profile
✓	✓	✓	AS-i / IO-Link	✓	✓		3/2 4/2 5/2 5/3	M8 M12 Terminals Round cables Flat cables	M12 Screw terminal Cage clamp	IP 20 IP 65 IP 66 IP 67 IP 68 IP 69K	single / A/B node	
✓		✓	AS-i PROFIBUS PROFINET Ethernet EtherNet/IP EtherCat Modbus TCP OPC UA					Terminals	–	IP 20	M3 + M4	
✓	✓	✓	AS-i OPC-UA PROFINET UDP/IP Modbus TCP TCP/IP EtherCat EtherNet/IP FSoE USB		✓		M12 Terminals Round cables Flat cables	M12 Screw terminal Cage clamp	IP 20 IP 66 IP 67 IP 69K	single		
	✓	✓	AS-i	✓	✓		3/2 5/2 5/3	M12 Flat cables	M12	IP 50 IP 67	single / A/B node	
✓	✓	✓	–					Round cables Flat cables M12	M12 Round cables	IP 20 IP 65 IP 67 IP 68 IP 69K	–	

Hard facts: why there is so much to be said for AS-Interface.

Simple unshielded 2-core flat cable.

Quick and easy set-up.

Quick-assembly technology with insulation displacement technology.

Time saving from 20% to 50%.

Guaranteed transmission time <10 ms with 248 inputs and outputs.

Flexible topology.

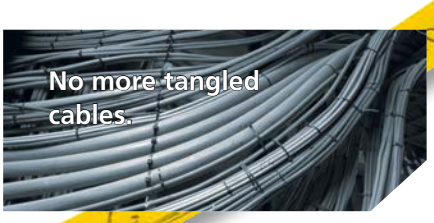
Modular structure and flexible connection technology

Control and fieldbus-independent due to simple connection with diagnostic options.

"A convincing increase in efficiency and cost savings in every respect."

AS-i – the facts.

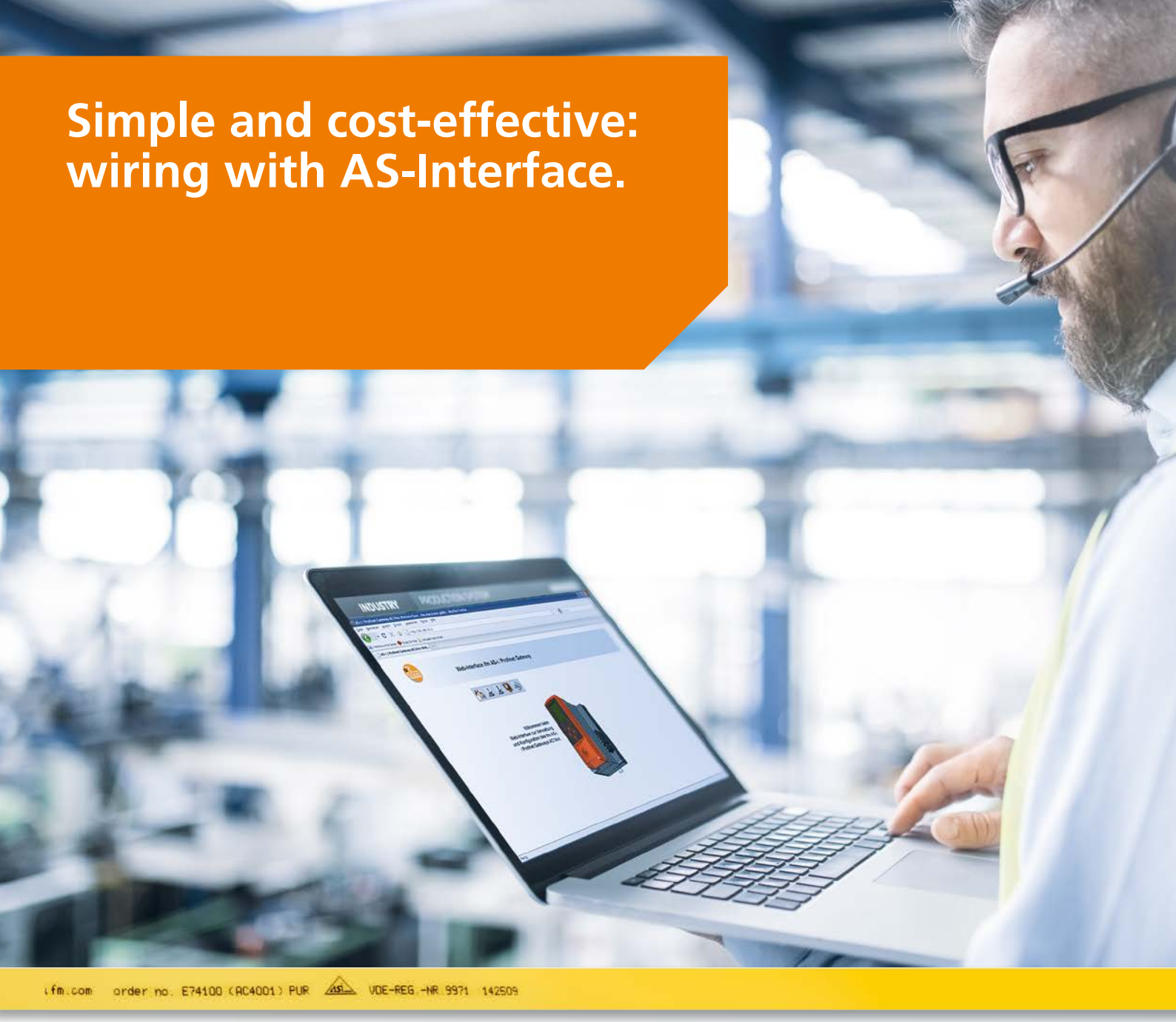
Topology	flexible tree structure
Bus medium	unscreened two-wire cable for data and energy
Cable length	100 m without repeater, up to 200 m with AS-i bus termination, up to 1,000 m with repeaters, up to 3,000 m with fibre optic repeater
Number of slaves	62 per AS-i line
Number of I/Os	248 inputs and 248 outputs or 124 analogue signals
Access	master-slave, single-master operation
Addressing	fixed, unique address in the slave (EEPROM), addressing via master or addressing device
User data	4-bit (cyclical), 4-bit parameters (acyclical)
Cycle time	max. 5 ms (single slave) or 10 ms (A/B slaves)
Error proofing	identification and repetition of corrupted messages
Functional safety	up to SIL3 (IEC 61508) and Cat.4



Cost reduction from 15% to 30%.

ifm.com/gb/as-interface
Scan the code and learn more about AS-Interface from ifm.

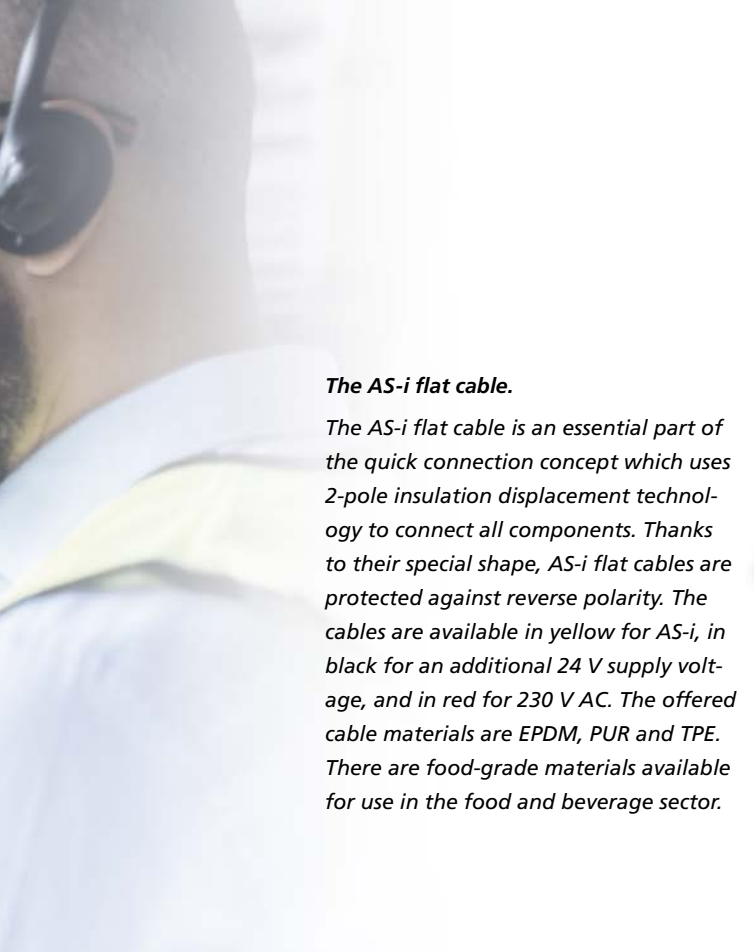
Simple and cost-effective: wiring with AS-Interface.



AS-i flat cable

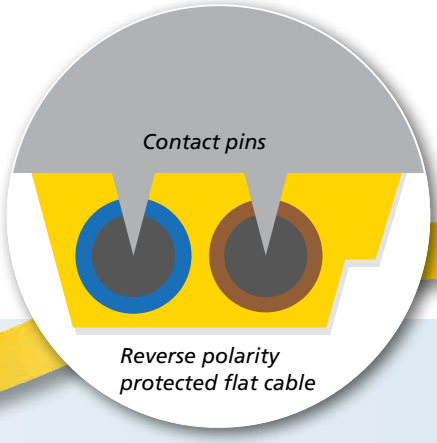
Material/colour	Length [m]	Other lengths [m]	Halogen-free	UL approval	Temperature range [°C]	Order no.
EPDM / yellow	100	50, 100 roller, 500 roller	•	–	-40...85	**E74000**
EPDM / black	100	50, 100 roller, 500 roller	•	–	-40...85	**E74010**
PUR / yellow	100	1000 roller	•	–	-40...85	**E74100**
PUR / black	100	1000 roller	•	–	-40...85	**E74110**
TPE / yellow	100	100 roller, 500 roller	•	•	-40...105	**E74200**
TPE / black	100	100 roller, 500 roller	•	•	-40...105	**E74210**
TPE / red	100	–	–	•	-40...105	**E74220**
TPE-PVC / yellow	100	–	–	•	-40...105	**E74300**
TPE-PVC / black	100	–	–	•	-40...105	**E74310**
EPDM 2.5 mm^2 / yellow	200	50, 100	•	–	-40...85	**E74406**
EPDM 2.5 mm^2 / black	200 roller	–	•	–	-40...85	**E74416**

ifm.com/gb/asi-accessories
Scan code and learn more about accessories for AS-i.



The AS-i flat cable.

The AS-i flat cable is an essential part of the quick connection concept which uses 2-pole insulation displacement technology to connect all components. Thanks to their special shape, AS-i flat cables are protected against reverse polarity. The cables are available in yellow for AS-i, in black for an additional 24 V supply voltage, and in red for 230 V AC. The offered cable materials are EPDM, PUR and TPE. There are food-grade materials available for use in the food and beverage sector.



Reduce costs thanks to insulation displacement technology and quick assembly.

A gentle jab, big effect – advantages of insulation displacement technology.

- *High application safety due to coded, reverse polarity protected flat cable*
- *Direct, simple connection of sensors, actuators and modules*
- *Same technology for the connection of AS-Interface (yellow flat cable) and additional supply via AUX (black flat cable)*
- *Different cable materials:*
  - *EPDM (rubber cable), flexible and universal*
  - *PUR oil-resistant cable*
  - *TPE / PVC for the food sector*

Accessories for AS-i flat cables

E70413
Flat cable termination

E70442
Cable clip for fixing the AS-i flat cable

Easy to deploy: AS-interface in the control cabinet.

Highly flexible AS-i topology: open tree structure.

AS-i power supplies.

AS-i power supplies provide power to the connected modules, sensors and actuators. They provide high noise immunity and sufficient power reserves to reliably handle short current spikes. In addition, they ensure reliable decoupling from interference in the primary supply.

The compact housing takes up very little space in the control cabinet. Thanks to their high degree of efficiency, the units save energy costs and reduce waste heat in the control cabinet.

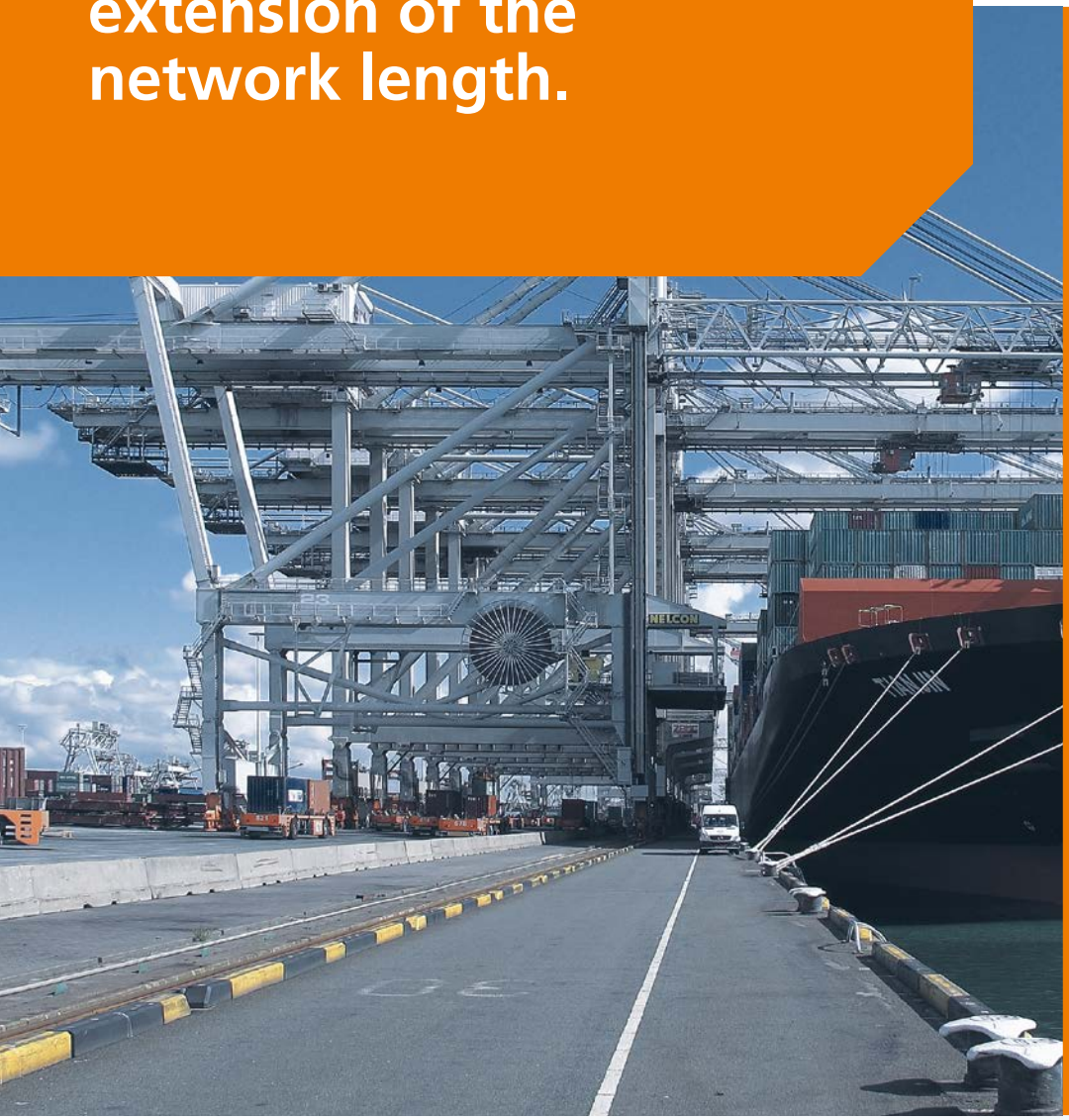
SmartPLC – the third generation of the ifm AS-i master family.

Devices marked with „SmartPLC" are the third generation of ifm's AS-i master family. The SmartPLC AS-Interface gateways are primarily intended for use as gateways between up to two AS-Interface networks and the most common fieldbuses. The range includes the device/slave interfaces PROFINET, PROFIBUS, EtherNet/IP and EtherCAT. With the SmartPLC interface gateways, all advantages of the AS-Interface wiring system canbe used with the previously mentioned fieldbuses. To the programmer of the higher-level PLC, the SmartPLC AS-Interface gateways are normal, decentralised input/output modules.

AS-i modules for the control cabinet.

AS-i SmartLine modules are designed for use in control cabinets. Thanks to their slim, compact design, they also fit into control panels.

Easy to deploy: extension of the network length.



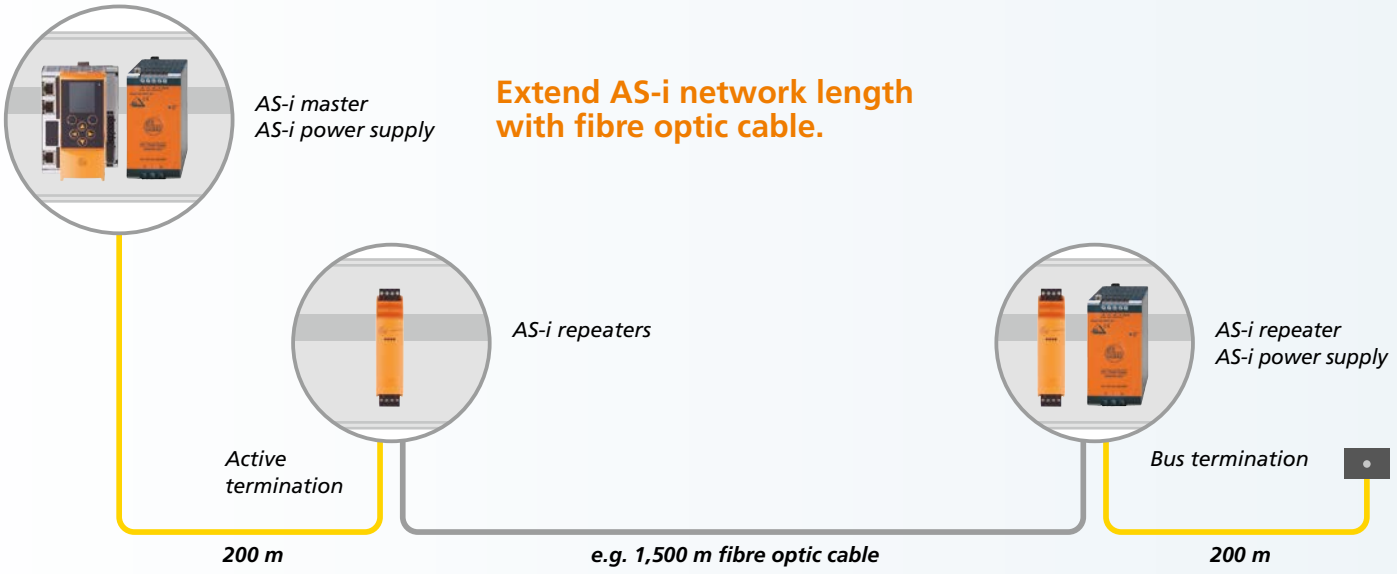
Worldwide innovation:
The fibre optic repeater can now be used to transmit AS-i signals via fibre optics.

Innovative system solution:
Data transmission is possible via an optical cable.

Simple line extension:
AS-Interface signals can be transmitted over a cable length of up to 3.2 km.

Versatile:
Mixed operation of AS-i flat cable and fibre optic is possible.

Noise immune:
Lightning protection, high reliability and immune to EMC interference.



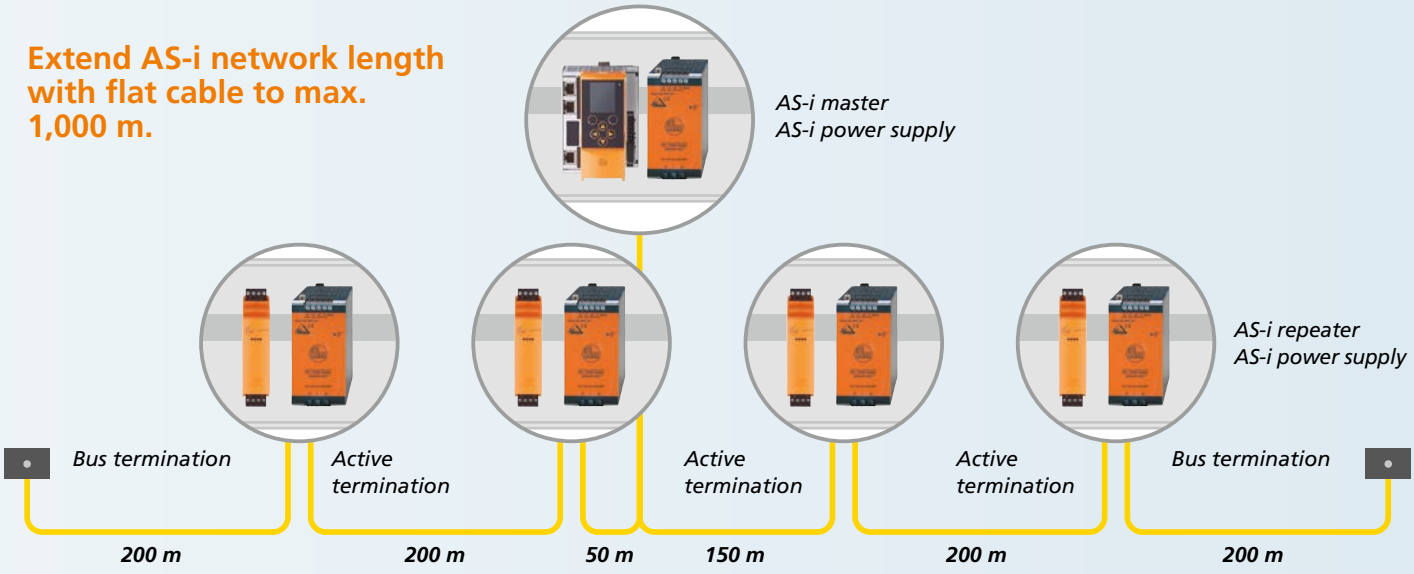
AS-i fibre optic cable repeater.

The new AS-i fibre optic repeater from ifm enables the conversion of AS-Interface signals via an optical cable. This allows for considerable cable length extension in the AS-i network. Each AS-i fibre optic repeater has two independent channels consisting of a transmitter and a receiver. These devices are supplied from the AS-Interface system. Various LEDs indicate the current operating status. This innovation is integrated into the new SmartLine housing.

Performance in the field.

Due to the optical transmission, there are no interference or earth problems. Fibre optic transmission systems therefore fundamentally exclude any EMC risk. Distance-related losses due to inductance, capacitance and resistance, as is the case with copper cables, do not occur either. The new AS-i fibre optic repeater therefore makes a major contribution to extending the service life and reducing costs. Using the new AS-i fibre optic repeater allows for additional fibre optic network topologies (line topology, star topology).

Extend AS-i network length with flat cable to max. 1,000 m.



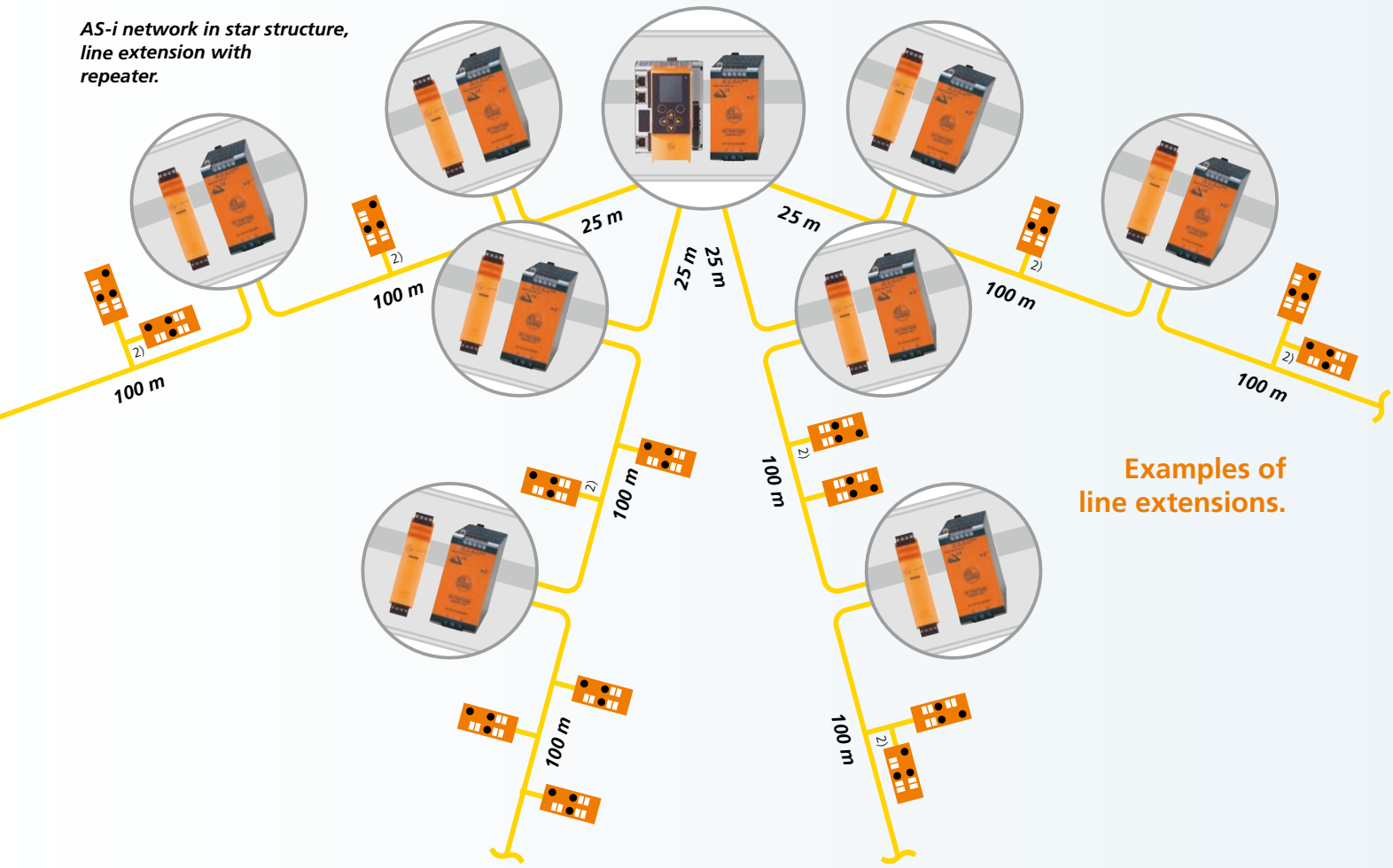
Easy to deploy: extension of the network length.

Methods for extending lines

Measure	Repeater	Dual masters	Bus termination	Tuner
Extension by	100 m	100 m	100 m	100 m
Required power supplies	1 x per master 1 x per repeater	1 x per master	1 x per master	1 x per master
Electrical separation	•	•	–	–
Voltage drop	uncritical	uncritical	critical	critical
Max. number of slaves	31 (single) 62 (A/B)	62 (single) 124 (A/B)	31 (single) 62 (A/B)	31 (single) 62 (A/B)
Costs / benefits per slave (rank) [1]	6.2 (4)	2.8 (2)	0.95 (1)	6.13 (3)
Comment	≤ repeater in series	Master in the centre	Check voltage drop at the end of the line Check telegram quality	Check voltage drop at the end of the line Check telegram quality

1) Formula: cost / benefit= unit cost / max. number of slaves

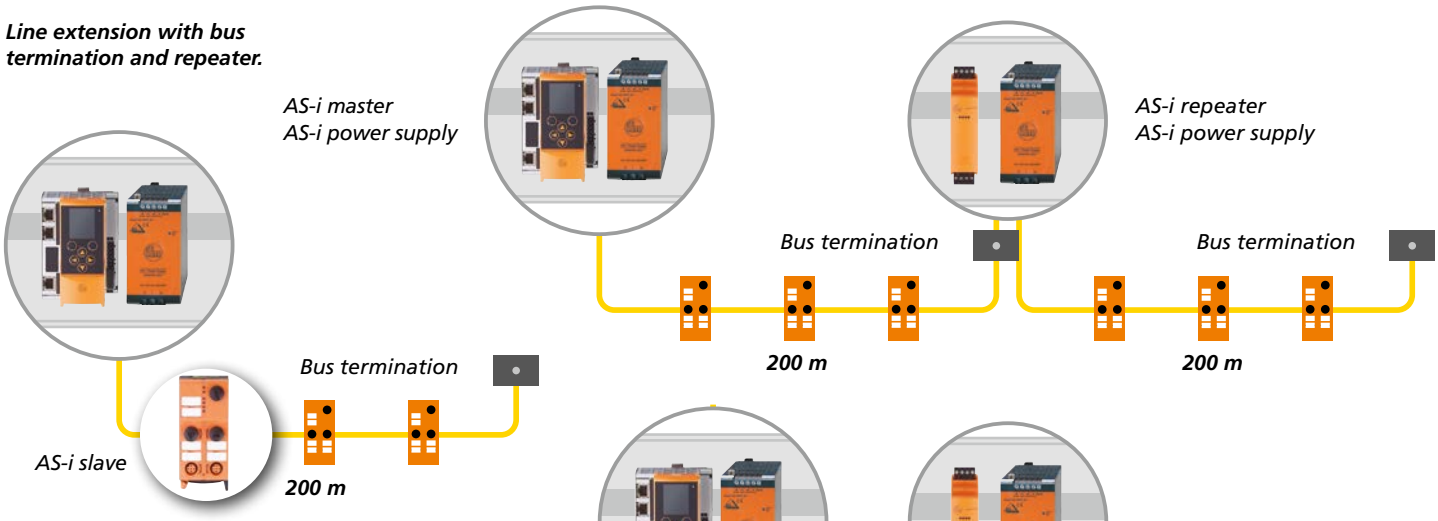
AS-i network in star structure, line extension with repeater.



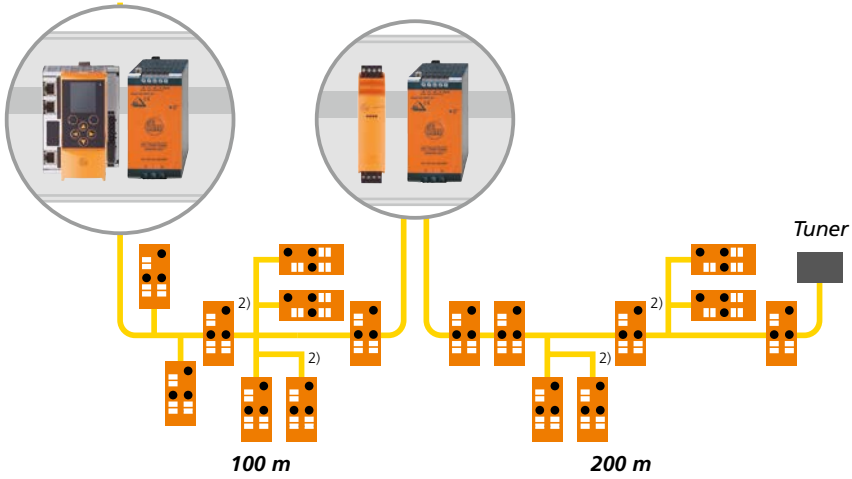
Examples of line extensions.

Examples of line extensions.

Line extension with bus termination and repeater.

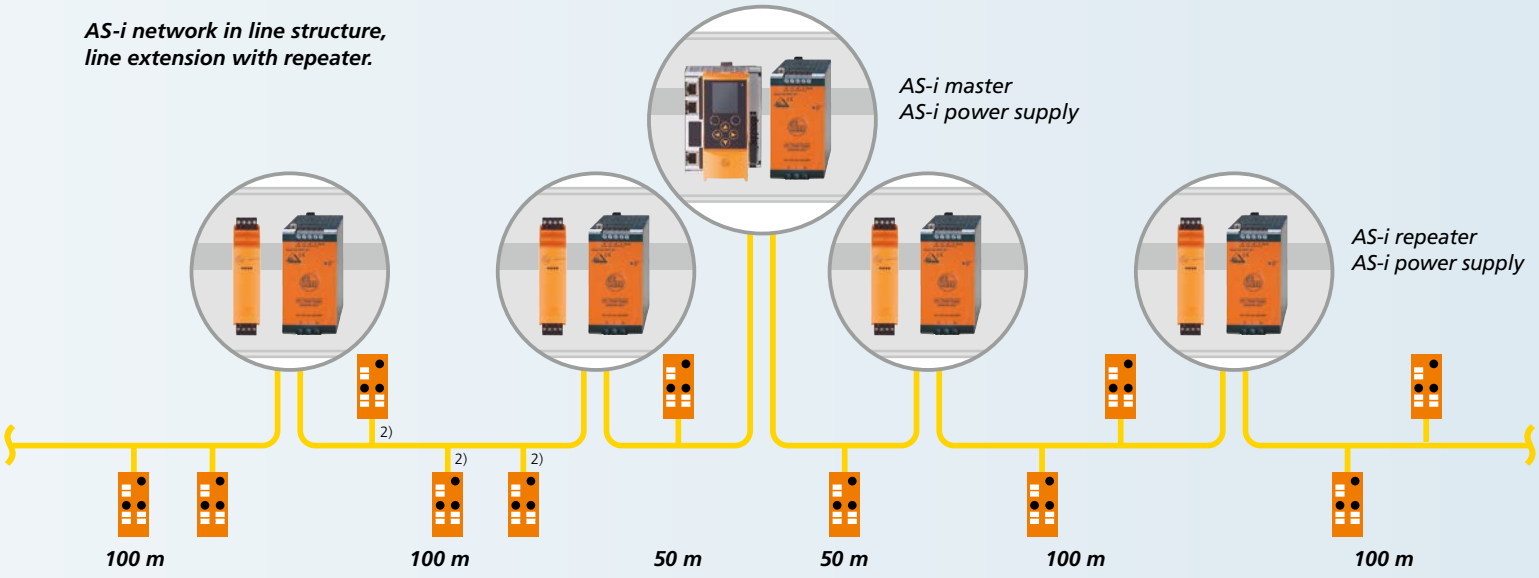


Line extension with repeater and tuner.

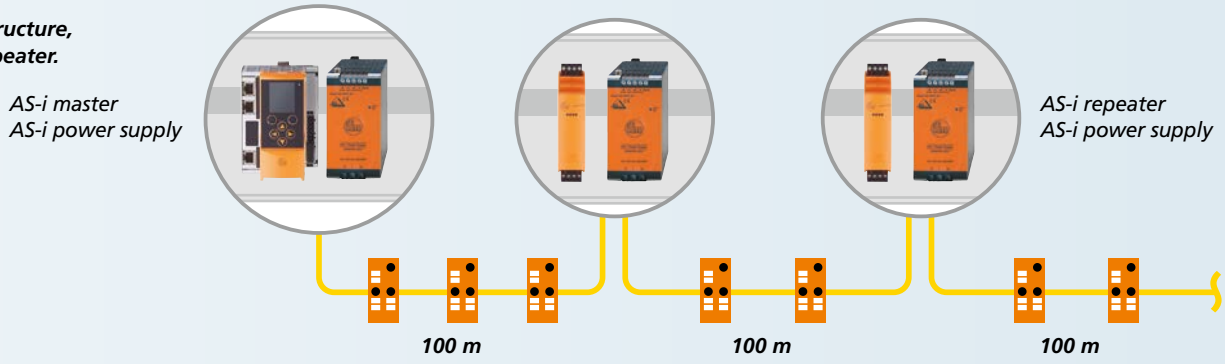


2) Include all branches and spurs in the length calculation!

AS-i network in line structure, line extension with repeater.



AS-i network in line structure, line extension with repeater.



Easy to deploy: AS-Interface in the control cabinet.

ifm.com/gb/asi-ea-modules
Scan the code and learn more about AS-Interface I/O modules.

AS-i SmartLine control cabinet modules

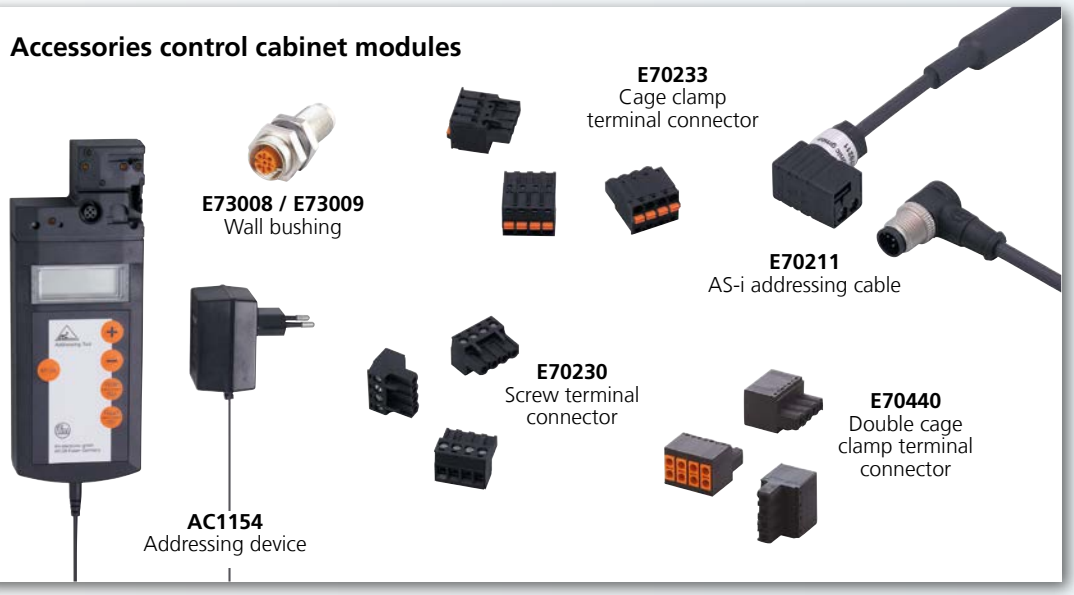
Protection rating IP20.

Lean design: 25 mm.

Terminals included in delivery.

Description	Voltage supply	A/B node	Order no.
4 digital inputs / 4 digital outputs	AS-i / AUX	•	**AC3200**
4 digital inputs (AUX) / 4 digital outputs	AS-i / AUX	•	**AC3201**
4 digital inputs	AS-i	•	**AC3202**
4 digital outputs	AUX	–	**AC3203**
4 digital inputs	AUX	•	**AC3204**
4 digital inputs / 4 relay outputs	AS-i / AUX	•	**AC3220**
4 digital inputs (AUX) / 4 relay outputs	AS-i / AUX	•	**AC3221**
4 analogue inputs current	AS-i, optional AUX	–	**AC3216**
4 analogue outputs current	AS-i, optional AUX	–	**AC3218**
4 inputs PT100	AS-i	–	**AC3222**

Accessories control cabinet modules



High efficiency.
Compact design.

AS-i power supplies and repeaters

Input voltage range [V]	Output current AS-i [A]	Order no.
88...132 / 184...264 AC	2 x 4	**AC1212**
100...240 AC	1.9	**AC1221**
88...132 / 184...264 AC	4	**AC1224**[1)]
85...132 / 184...264 AC	2.8	**AC1226**
380...480 AC	8	**AC1253**
100...120 / 200...240 AC	4	**AC1254**
100...120 / 200...240 AC	2.8	**AC1256**
100...120 / 200...240 AC	8	**AC1258**
AS-i	repeater III	**AC3226**
AS-i	fibre optic repeater	**AC3227**

1) Integrated earth fault monitor

Colour display.
Webserver.
Commissioning and diagnostic options.
Simple operation.

AS-i master

Function	Interface	Number of AS-i masters	Order no.
Gateway	PROFINET	1	**AC1401**
Gateway	PROFINET	2	**AC1402**
SmartPLC DataLine	PROFINET	1	**AC1403**
SmartPLC DataLine	PROFINET	2	**AC1404**
Gateway	Profibus DP	1	**AC1411**
Gateway	Profibus DP	2	**AC1412**
Gateway	EtherNet/IP	1	**AC1421**
Gateway	EtherNet/IP	2	**AC1422**
SmartPLC DataLine	EtherNet/IP	1	**AC1423**
SmartPLC DataLine	EtherNet/IP	2	**AC1424**
SmartPLC DataLine	EtherCAT	1	**AC1433**

ifm.com/gb/asi-master
Scan the code and learn more about AS-Interface master.

First-class diagnostics of the AC14xx e.g. via:

- *Double addressing*
- *Earth fault*
- *Telegram error, configuration error*
- *Error statistics AS-i slaves*
- *Mains symmetry*
- *Value power supply (exceeded / fallen short)*
- *Cycle time*
- *Device temperature and much more*

The online diagnostic system (OSC) summarises fault messages and warnings on the display.

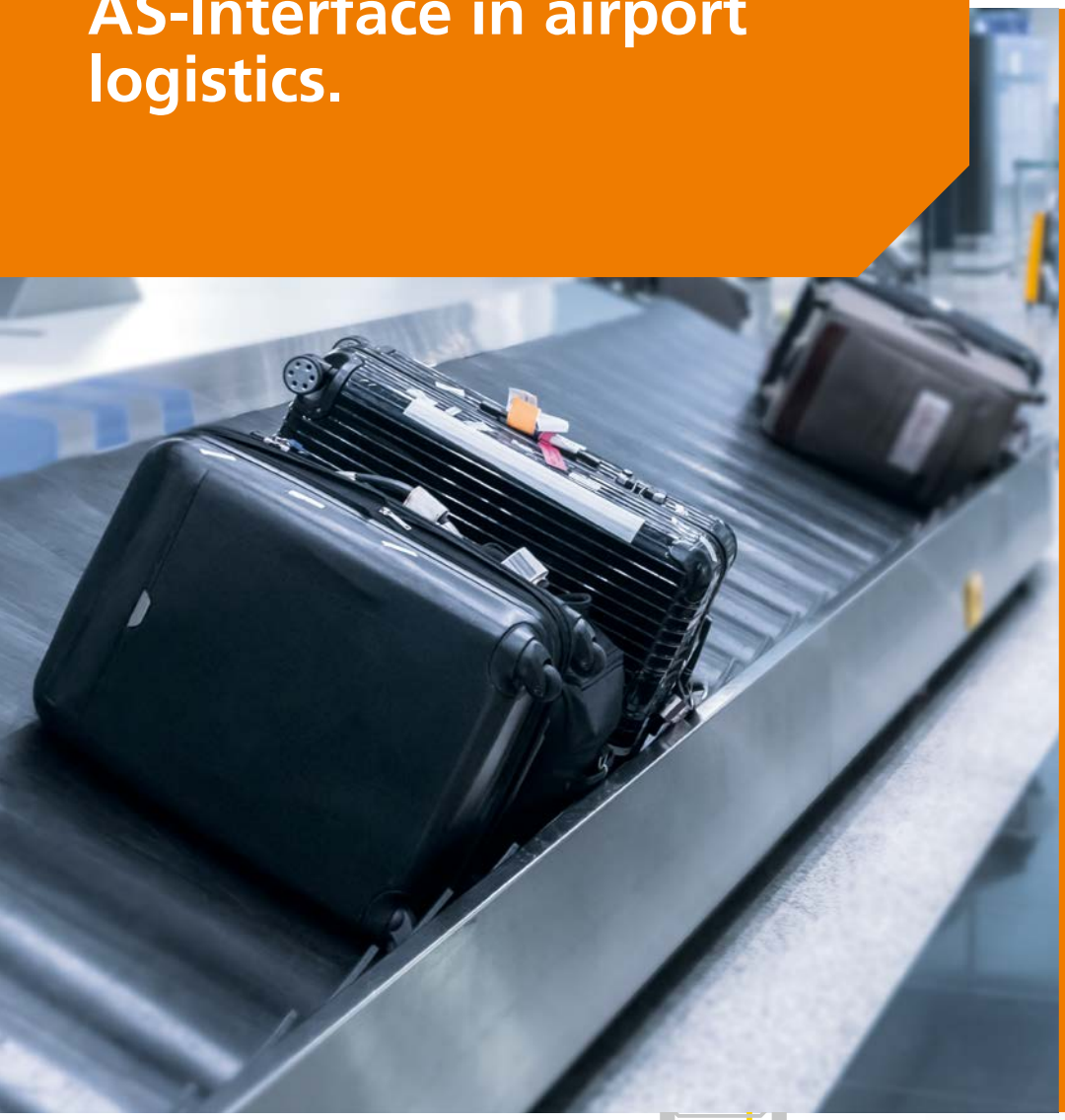
Accessories AS-i master, power supplies and repeater

E74800 / E74802
Glass / fibre optics

AC1250
AS-i data decoupling module

E74300
AS-i flat cable

Deployment on the move: AS-Interface in airport logistics.



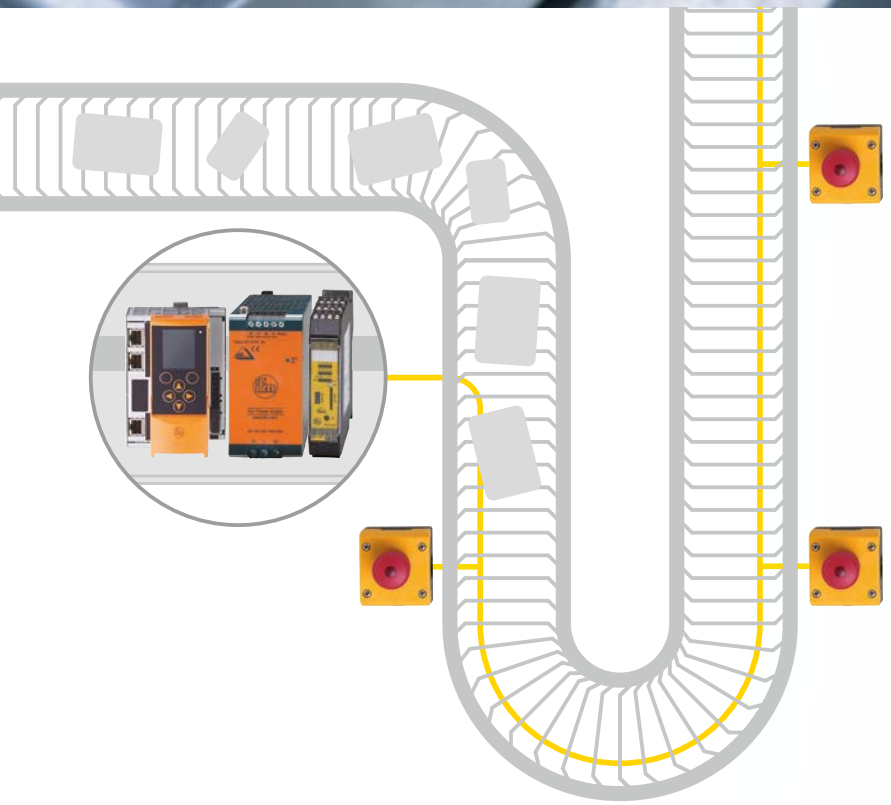
Only one cable:
Transmission of safe and non-safe signals via a common flat cable.

Cost-optimised:
Quick and inexpensive installation due to quick assembly technology.

Diagnostics:
Simple and cost-effective maintenance.

Safe:
The sophisticated AS-i technology provides high reliability and machine uptime.

Flexible:
Can be extended easily and cost-effectively at any time.



AS-interface in airport logistics

Description	Order no.
SmartPLC DataLine EtherNet/IP, 2 AS-i master	**AC1424**
Repeater III	**AC3226**
Fibre optic repeater	**AC3227**
AS-i power supply 100...120 / 200...240 V AC, 4 A output current	**AC1254**
AS-i safety monitor, 2-channel	**AC041S**
E-STOP	**AC010S**
ClassicLine I/O module 4 digital inputs / 4 digital outputs Y	**AC5212**
ClassicLine I/O module 2 digital inputs Y / 2 digital outputs Y	**AC5224**
Rope pull switch with E-STOP, 1-arm, on left	**ZB0052**
Rope pull switch with E-STOP, 1-arm, on right	**ZB0053**
AS-i Safety PCB	**E7015S**

AS-Interface for more efficient baggage handling.

Baggage handling systems are large, complex and expensive systems which play a crucial role in getting passengers and baggage on board a flight on time. This challenge is steadily increasing due to rising baggage numbers, stricter screening procedures for checked baggage and little time left for transporting baggage between flights. This requires thousands of sensors and actuators, kilometres of installation material and a connection to higher-level systems. A robust infrastructure and optimal diagnostics are required in the event of an error.

These special demands on the infrastructure are met by AS-Interface from ifm, a powerful modular system.

For the operator, a smooth process is very important. The sensors and actuators must be installed along the conveyor lines in a cost-effective and flexible manner. AS-Interface is ideally suited for this requirement. ifm offers various AS-i double masters with different fieldbus interfaces, such as EtherNet/IP, PROFINET or DeviceNet. One important function is safety technology. AS-i safety monitors are used here to put the baggage handling systems in a safe state. E-STOPS are installed along the baggage conveyor belts. If, for example, an E-STOP has been pressed, a message with exact information about the position is displayed in the control system. This enables the service staff to rectify the error in a targeted manner and in a short time.

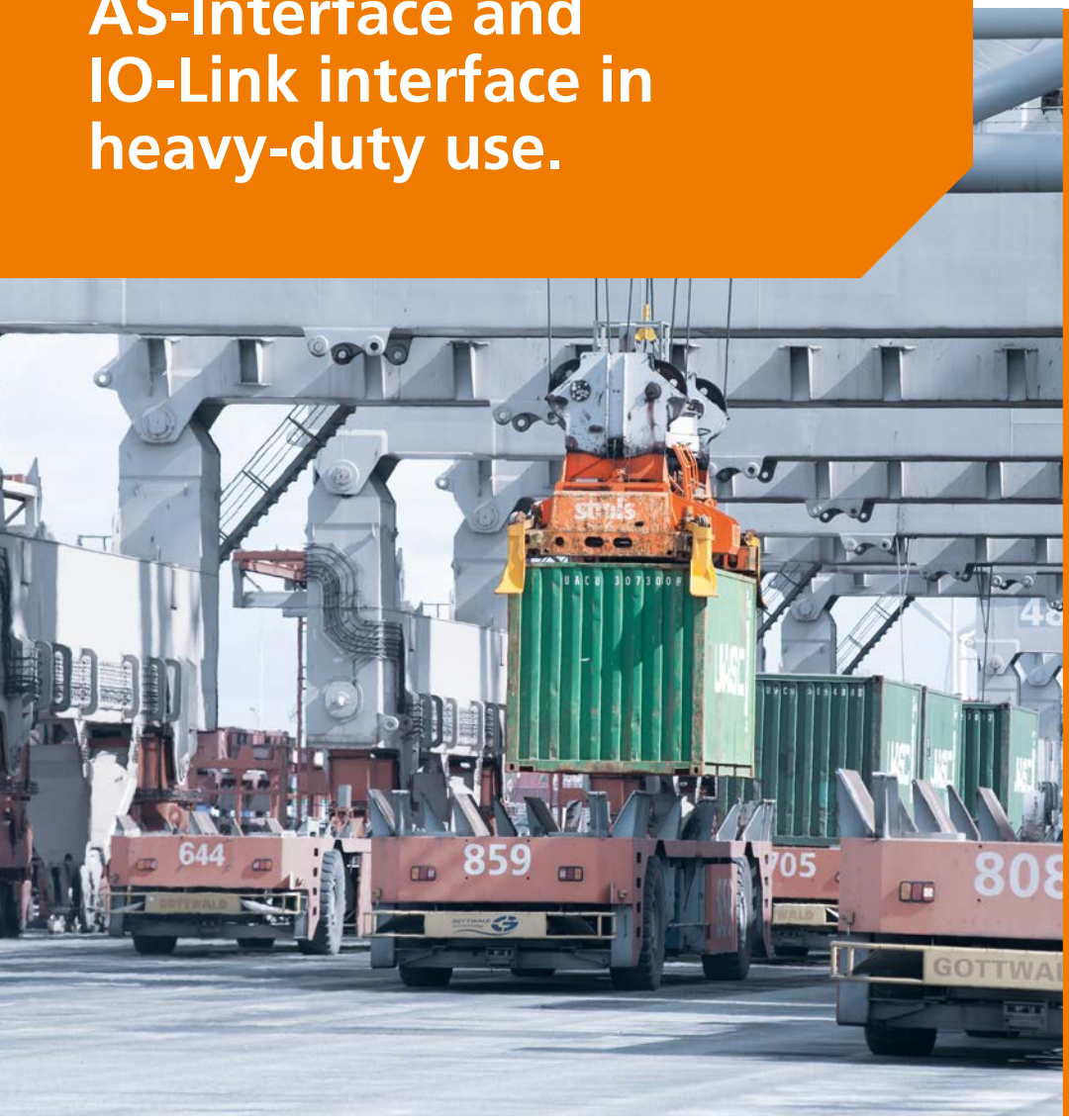
AS-i field modules.

The AS-i flat cable runs parallel to the conveyor line. The AS-i modules are connected using cost-effective quick assembly technology. The sensors and actuators are integrated via M12 plug-in connections and can be quickly replaced in the event of an error.

Rope pull switches.

The AS-i pull-wire switches are used to safeguard the baggage handling system when running underground. Local on-site operating units allow the belts to be switched on and off.

In all weathers: AS-Interface and IO-Link interface in heavy-duty use.



Standardised:
The actuator-sensor interface (AS-Interface) is a manufacturer-independent standard for connection of actuators and sensors of the first field level.

Reliable:
The sophisticated AS-i technology ensures high reliability and machine uptime.

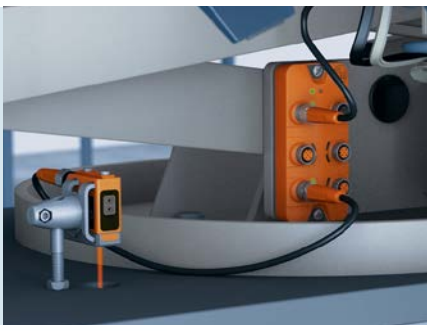
Simple:
Modular design and flexible connection technology for easy integration into the AS-Interface system.

Cost-optimised:
A two-wire flat cable transmits data and energy, eliminating complex parallel wiring.

IO-Link master meets AS-i.

The decentralised IO-Link master modules are used as a gateway and combine the advantages of intelligent wiring technology with the benefits of intelligent sensors.

IO-Link provides you with detailed diagnostics of the sensors or actuators, thereby contributing to an increase in system availability.



Robust field modules.

The decentralised AS-Interface I/O modules connect binary and analogue sensors and actuators to the gateway or PLC via AS-Interface.

Thanks to full potting, the modules are shock and vibration resistant and are particularly suitable for field applications in harsh industrial environments.

IO-Link master with AS-i interface.

The IO-Link master is a gateway for the connection of up to 8 IO-Link devices, for example sensors, valves or binary input/output modules.

The master is used to transmit machine data, process parameters and diagnostic data to the controller. Excellent electromagnetic stability, a wide temperature range, a high protection rating and a robust housing qualify the device for use in harsh industrial environments.

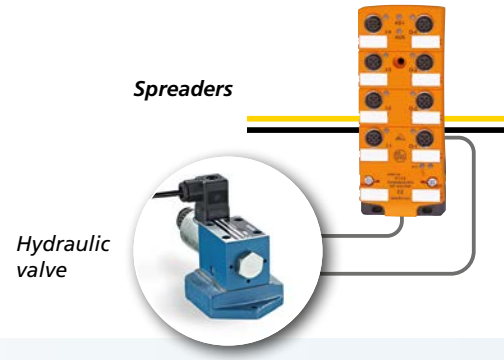
Lightning protection.

The fibre optic repeater AC3227 with AS-i bus termination can be used to provide one hundred percent lighting protection, therefore reducing downtimes.

CompactLine.

Due to the compact design and a fully potted housing the field modules withstand even the most adverse environmental conditions. Hydraulic valves can also be switched via the 2 ampere output.

In all weathers: AS-Interface and IO-Link interface in heavy-duty use.



Protection rating IP67.

High shock and vibration resistance.

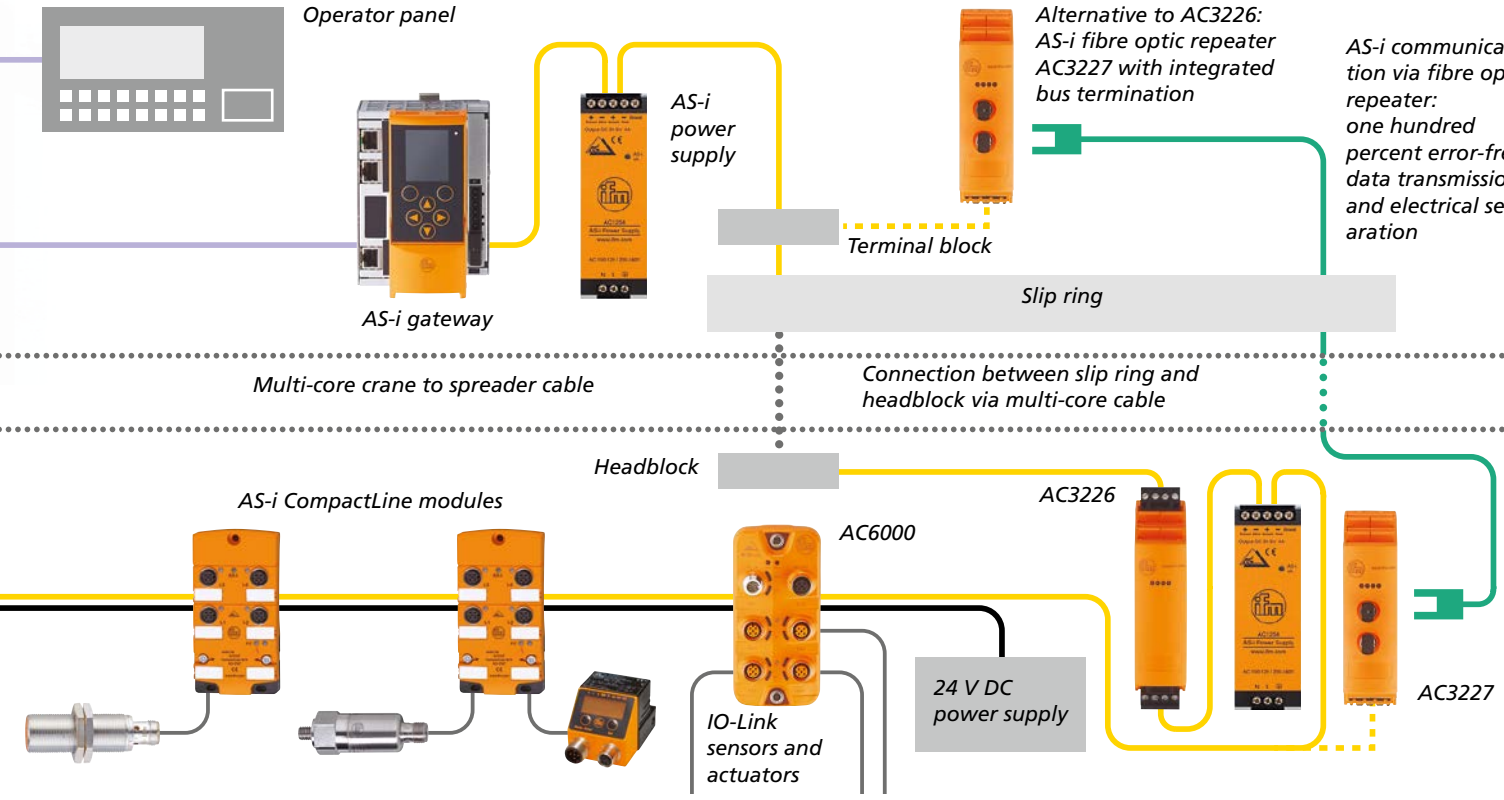
Full potting.

Temperature range -25...80 °C.

2 A outputs.

AS-i M12 modules CompactLine

Description	Voltage supply	A/B node	Order no.
Splitter box	AS-i / AUX	–	**AC2413**
4 digital inputs	AS-i	–	**AC2410**
4 digital inputs	AS-i	•	**AC2457**
4 digital inputs Y / metal parts VA	AS-i	•	**AC2486**
2 digital inputs / 2 digital outputs	AS-i / AUX	–	**AC2411**
4 digital inputs / 4 digital outputs	AS-i / AUX	–	**AC2412**
4 digital inputs / 4 digital outputs, AUX inputs supplied	AUX / AUX	–	**AC2466**
4 digital inputs Y / 4 digital outputs	AS-i / AUX	•	**AC2471**
4 digital outputs	AUX	–	**AC2417**
4 digital outputs, metal parts VA	AUX	•	**AC2487**
4 digital inputs	AS-i via M12	–	**AC2464**
4 digital inputs / 4 digital outputs	AS-i / AUX via M12	–	**AC2465**
2 analogue current inputs, 2 and 3-wire, 4...20 mA	AS-i	–	**AC2402**
2 analogue current inputs, 2 and 4-wire, 4...20 mA	AS-i	–	**AC2403**
M12 modules with increased EMC resistance			
4 digital inputs, no IR interface	AS-i	–	**AC2434**
4 digital inputs / 4 digital outputs, no IR interface	AS-i / AUX	–	**AC2435**
4 digital inputs Y, no IR interface	AS-i	•	**AC2477**
4 digital inputs Y / 4 digital outputs, no IR interface	AS-i / AUX	–	**AC2479**



IO-Link master with AS-Interface

For connection of up to four IO-Link devices.

Reliable transmission of machine data, process parameters and diagnostic data to the controller.

Description	Connection	Order no.
8 digital inputs or 4 digital inputs and 4 digital outputs	M12	**AC6000**
4 digital inputs or 2 digital inputs and 2 digital outputs	M12	**AC6002**

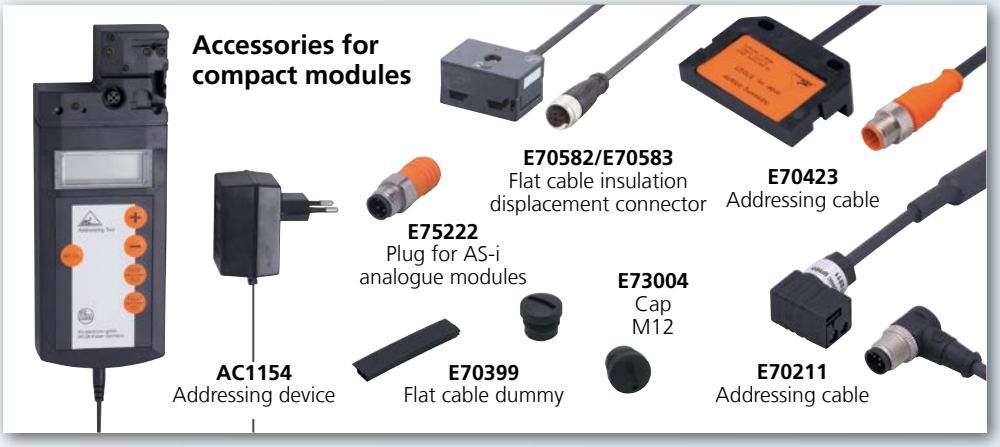
AS-i fibre optic repeater for line extension

Reliable long term performance in tough conditions

Fast data transfer for Safety at Work

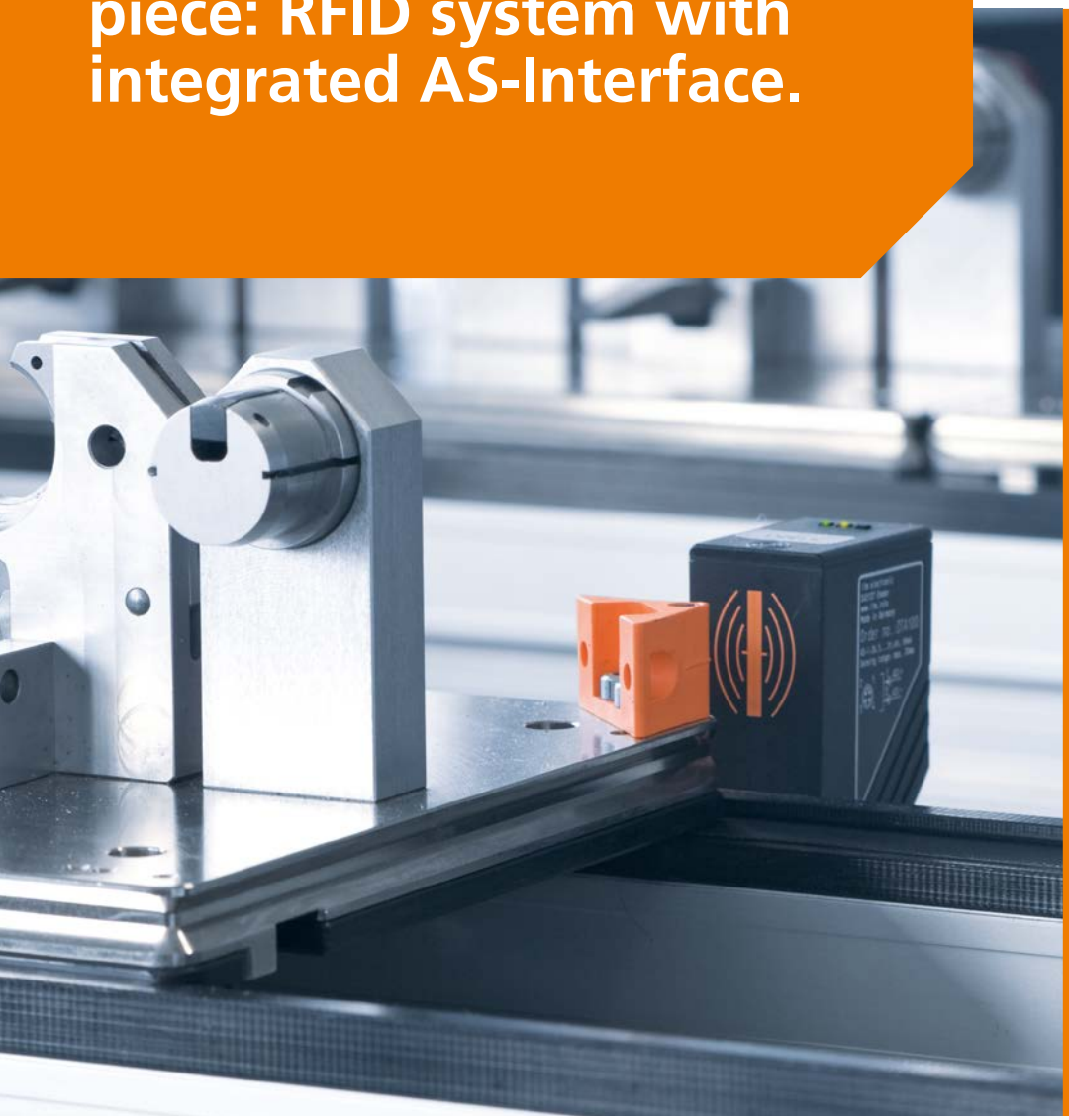
Description	Order no.
Extension of the AS-i network by 100 m	**AC3226**
Extension of the AS-i network via fibre optics to max. 3,200 m	**AC3227**

Accessories for compact modules



ifm.com/gb/asi-ea-modules
Scan the code and learn more about AS-Interface I/O modules.

Keeping track of the work-piece: RFID system with integrated AS-Interface.



Plug and play:
Simple and quick commissioning saves time and money.

Communicative:
Thanks to the connection to the AS-i master, communication to all PLCs, or IT systems, is possible via the fieldbus and TCP/IP interfaces that are available.

Safe:
The high reading reliability of the compact unit ensures a smooth process flow.

User-friendly:
No programming required for read/write units with AS-Interface. The stored value is automatically supplied by the transponder when passing the antenna.

Industry standard:
The certified AS-i standard guarantees interoperability with other automation components.

Simple connection

Unpack, assign an address, connect: The RFID antennas of the DTS125 system are set up in no time. Up to 31 can be connected to the network via an easy-to-use M12 connector or via an AS-i splitter box.

Robust and battery-free

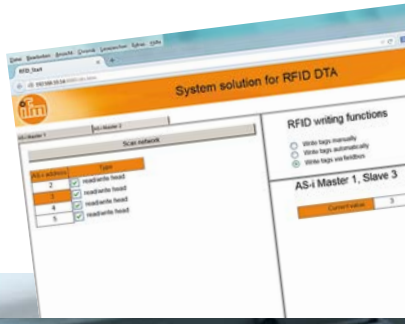
The ID tags for assembly and conveyor systems, which do not require any batteries, are extremely robust and particularly suited for use at high ambient temperatures. They are reliably detected by the RFID system DTS125 at a travel speed of up to 0.5 m/s.

Reliable product tracking in harsh environments

The RF identification system DTS125[2)] from ifm is based on 125 KHz technology. It has been designed for production control and is used wherever optical processes, such as the use of bar codes, are not suitable due to the harsh operating conditions (oils, metal swarf). The system is ideal for solving tasks in assembly and conveying applications as well as in handling automation and in packaging and filling systems.

DTS125 is the first RFID system for AS-Interface worldwide. It offers the following advantage: In addition to the antenna, the compact read/write heads also include the complete evaluation and the interface to AS-i. In this way, the devices can be operated directly on the AS-Interface and enable data transmission to the controller.

2) DTS: Data Transfer System



ifm System-Solutions app RFID DTA

App simplifies handling

With the browser-based system solution app "RFID DTA", ifm simplifies the handling of RFID data and the communication with higher-level networks. The app can be used on all web interface enabled devices.

Keeping track of the work-piece: RFID system with integrated AS-Interface.

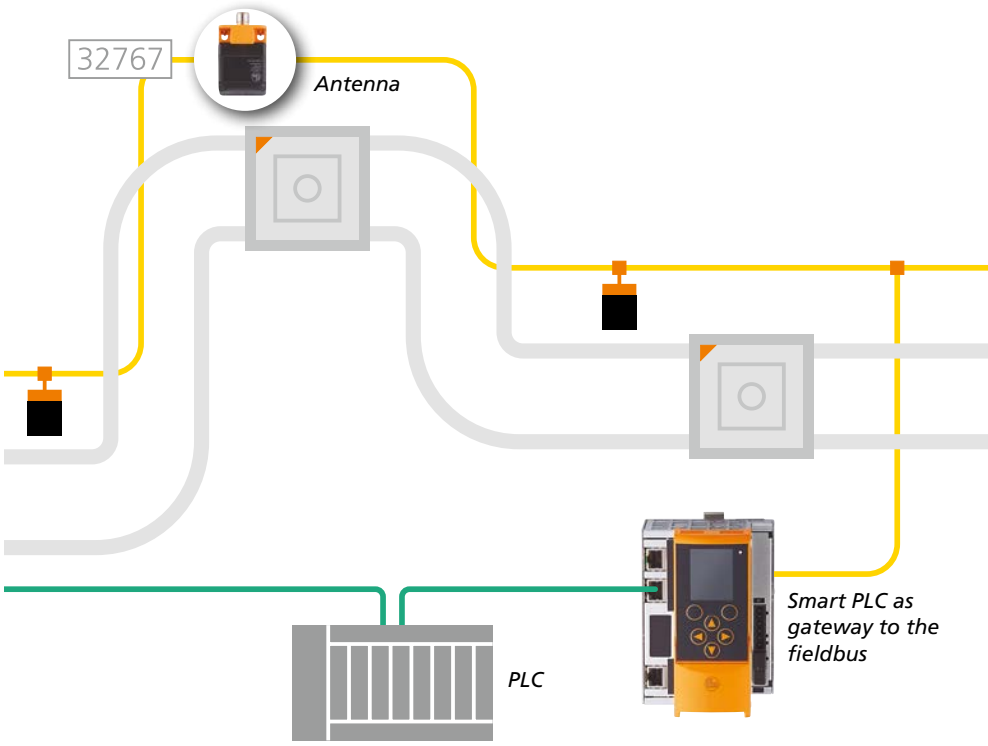
LF-RFID system DTS125 · 125 KHz
read/write heads with AS-Interface

Type	Description	Max. range [mm]
55 x 24 x 41 mm	read/write head	10
	read head	10
40 x 40 x 54 mm	read/write head	65
	read head	65
92 x 80 x 40 mm	read/write head	100
	read head	110

LF RFID system DTS125 · 125 KHz
RFID hand-held reader

Description	Order no.
RFID reader with USB interface for contactless reading and writing of RFID transponders 125KHz - Q5	**E80321**

Ready for use in no time: RFID system DTS125 with integrated evaluation



Temperature range [°C]	Order no.
-20...50	**DTA100**
-20...50	**DTA101**
-20...50	**DTA200**
-20...50	**DTA201**
-20...50	**DTA300**
-20...50	**DTA301**

LF RFID system DTS125 · 125 KHz
0AS-i transponder

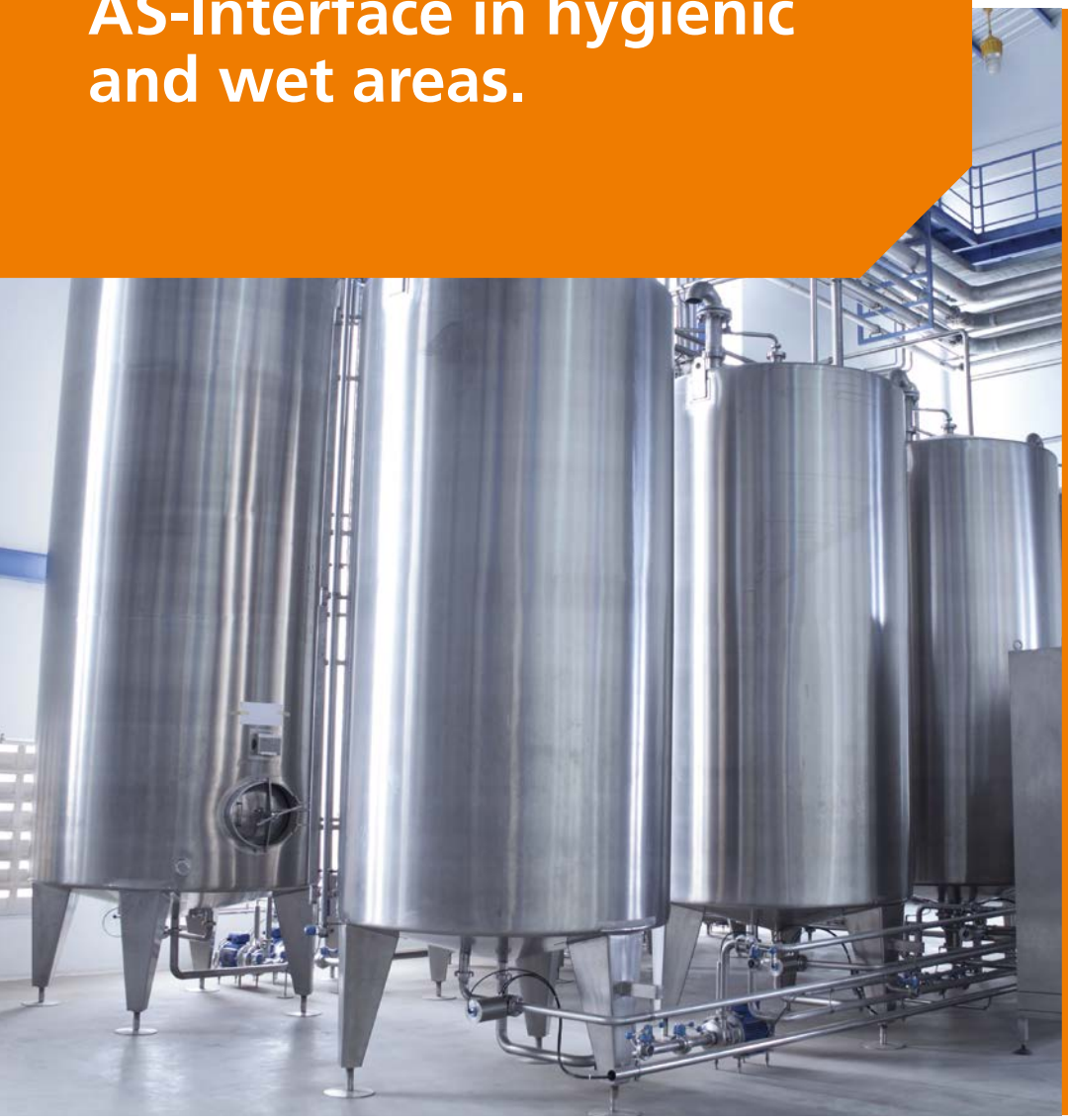
Type ID-TAG	Workpiece carrier	Temperature range [°C]	Peak temperature [°C]	Order no.
M5 x 0.8 / L=16.5	installation plastic	-40...85	120 (test duration 1 x 100 h)	**E80301**
18 x 33 x 16.9	installation housing	-40...85	120 (test duration 1 x 100 h)	**E80302**
M18 x 1	flush installation in metal	-25...85	160 (test duration 1 x 35 h)	**E80311**
Ø 12 / L=2	installation plastic / metal	-25...85	160 (test duration 1 x 35 h)	**E80312**
Ø 30 / L=2.15	installation plastic / metal	-25...70	130 (test duration 1 x 100 h)	**E80318**
Ø 50 / L=2.2	installation plastic / metal	-25...70	100 (test duration 1 x 100 h)	**E80319**
54 x 86 x 1	plastic	-35...50	50 (test duration 1 x 24 h)	**E80320**
Ø 26 / L=4	installation plastic / metal	-25...85	160 / 200 [3)]	**E80322**

3) 500 cycles 5 min (160 °C), 20 s (ΔT), 5 min (20 °C), 20 s (ΔT)
10 cycles 10 min (200 °C), 20 s (ΔT), 1 h (20 °C), 20 s (ΔT)

Automated guided vehicle systems (AGV).

Identification systems not only record the position (localisation) of a product, but also whether the correct product is on the AGV and whether the correct product is in the correct place.

Clean technology: AS-Interface in hygienic and wet areas.

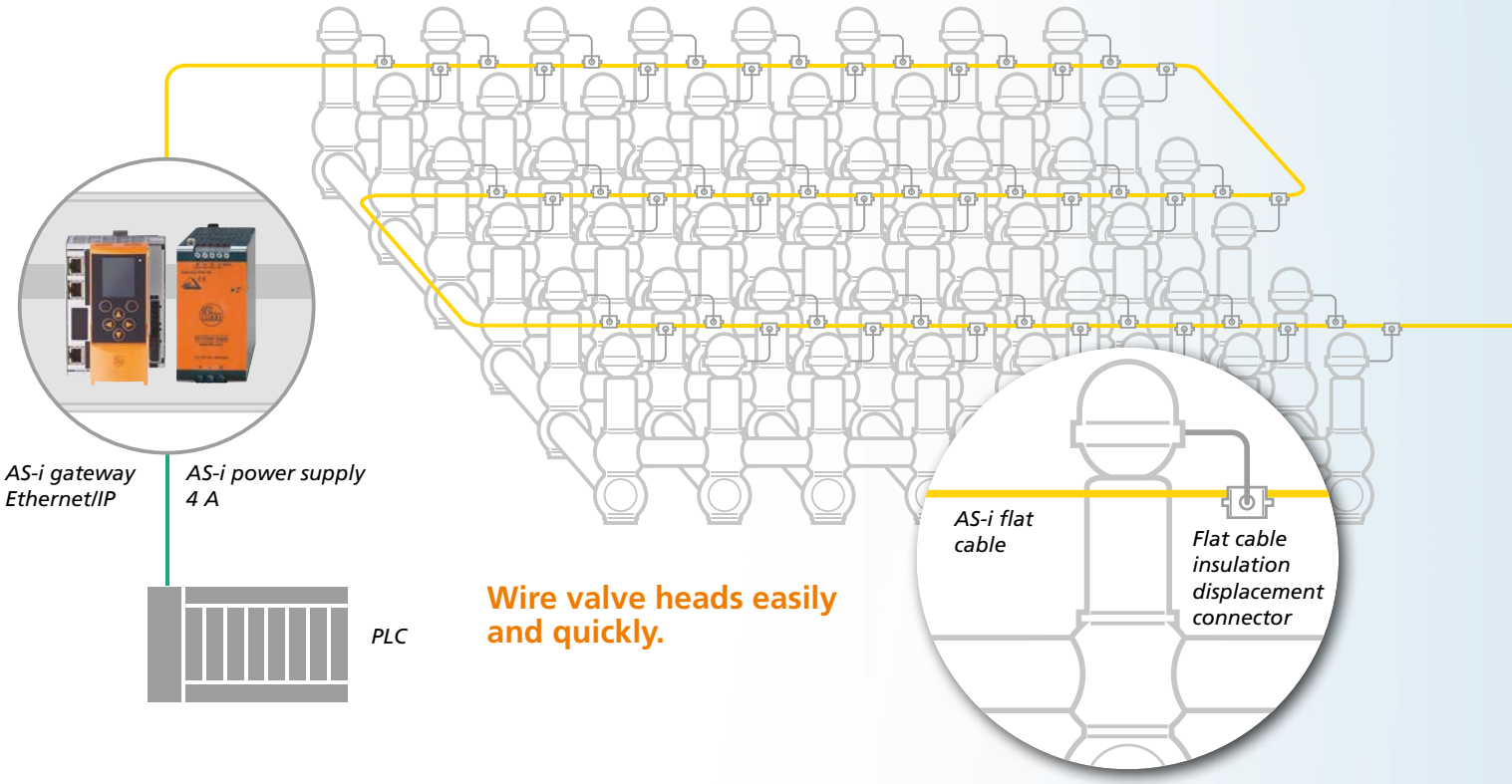


Easy wiring:
Do not fit cable glands, set down cables, strip them and place them on terminals.

Quick set up:
Simply lay the AS-i cable in the system, mount the splitters and modules, connect the peripherals and put them into operation.

Easy to deploy:
Decentralised installation of the modules / splitters where they are required.

Simply reliable:
High protection rating IP 69K in stainless steel or plastic housing. The peripherals are easily mounted with the modules or splitters using M12 connection cables of the EVF series for the food industry.



Wire valve heads easily and quickly.

Field modules ProcessLine

AS-i ProcessLine modules have been specially developed for use in wet areas in the food and beverage industry. With a full stainless steel housing and protection rating IP 69K, the units are built to meet the hygienic requirements of high-pressure cleaning cycles. The housing has neither corners nor edges and thus bacteria cannot grow.

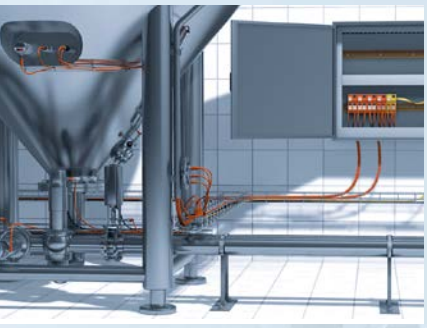
The ProcessLine module is mounted using only one screw therefore contamination on the front of the unit is greatly reduced.

All electrical connections are M12 connectors with radial sealing. The clearly visible status LEDs are integrated in one central light dome.

Passive voltage splitters

Due to the materials used and the well-known innovative housing design, the voltage splitters are optimally suited for use in hygienic applications.

The 4-way or 8-way voltage splitters can be used either to supply up to 8 AS-i devices, e.g. valve heads, quarter-turn sensors, motor controllers etc., or to supply voltage to IO-Link masters, e.g. StandardLine. Overcurrent detection indicates by a red-flashing LED at the respective M12 connection that more than the permitted 4 A per channel are being drawn.



Transfer measured values in the process area with AS-Interface.

Process sensors communicate with higher-level bus systems via AS-i modules, for example for parameter setting or diagnostics. Measured values are digitally transmitted without loss via unscreened standard cables.

Valve monitoring with AS-Interface.

Wiring and triggering of valve heads with AS-i splitter modules. T-series all-metal inductive sensors are used for position sensing.

Clean technology: AS-Interface in hygienic and wet areas.

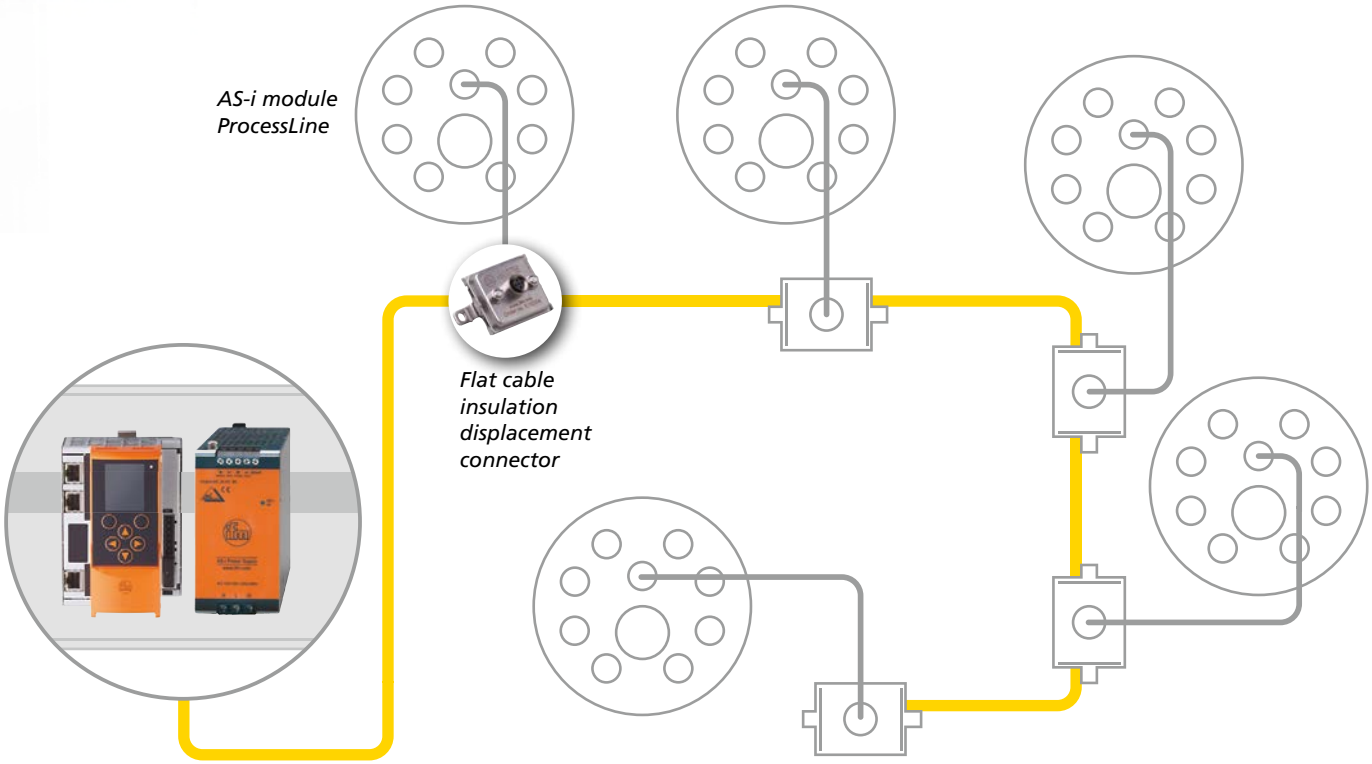
Tight even under high pressure.

AS-i ProcessLine modules have been specially developed for use in wet areas in the food and beverage industry. For hygiene requirements with regular cleaning cycles under high pressure, the housing is completely made of stainless steel and has a protection rating IP 69K.

ifm.com/gb/asi-ea-modules
Scan the code and learn more about AS-Interface I/O modules.

AS-i modules for hygienic and wet areas

Description	Voltage supply	A/B node	Order no.
Splitter box	AS-i / AUX	–	**AC2900**
4 digital inputs / 3 digital outputs	AS-i / AUX	•	**AC2904**
8 digital inputs	AS-i	•	**AC2910**
4 analogue inputs 4...20 mA, galvanic connection	AS-i	–	**AC2916**
4 analogue inputs 4...20 mA, no galvanic connection	AS-i	–	**AC2923**
Illuminated pushbutton, white / blue	AS-i	•	**AC2380**
Illuminated pushbutton, green / red	AS-i	•	**AC2381**
Splitter 4-way	AS-i / AUX	–	**AC2950**
Splitter 8-way	AS-i / AUX	–	**AC2951**
AS-i / IO-Link master, 4 ports	AS-i / AUX	–	**AC6001**
AS-i / IO-Link master, 2 ports	AS-i	–	**AC6003**



Clean business.

Control of a food packaging machine using SmartPLC, AirBoxes including EMERGENCY STOP function.

Accessories for hygienic and wet areas

E70354
Flat cable insulation displacement connector AS-i / AUX

E75354
Flat cable insulation displacement connector AS-i

E74300
AS-i flat cable

E74310
AS-i flat cable

E70390
Torque wrench

E70455
Flat cable insulation displacement connector AS-i

E70377 / E70372
Flat cable splitter AS-i / AS-i or AUX / AUX

E73009
Wall bushing

E70299
Flat cable dummy

E70442
Cable clip for fixing the AS-i flat cable

Explosive use: AS-Interface in ATEX applications – also for Zone 22 (ATEX II 3D/3G).

Flexible with system:
Low installation costs, avoidance of downtimes, easy maintenance and adaptation of the system to changing production conditions are proof of the flexibility of the AS-i system.

Simple and reliable:
Thanks to the quick assembly technology between the upper and lower parts, the AirBox is securely connected to the AS-i cable and ready for use in seconds.

Slide valve technology:
The AirBoxes are characterised by non-overlapping slide valves, pressure peak resistance up to 12 bar, short switching times and various valve functions. A short pneumatic check can also be carried out without the voltage supply using the implemented manual actuation.

AS-i ideally suited for the feed industry.
Many on-site boxes, parallel lines, terminal points and complex wiring – thanks to AS-i, these are a thing of the past at the feed manufacturer Hendrix for Farmers in the Netherlands.

Instead of many terminal points, parallel lines, full cable ducts – simply AS-i.

In so-called silo applications, such as wheat and grain silos, mills, concentrated feed or compound feed plants, increased demands are sometimes placed on the AS-i system and the components used.

Due to the ATEX approval for the hazardous area (zone 22, non-conductive dusts; II 3D) of various AS-i components, the simple, fast and clear wiring technology can also replace the conventional parallel wiring in these applications.

Conventional parallel wiring means: many terminals, high wiring complexity and complicated maintenance.

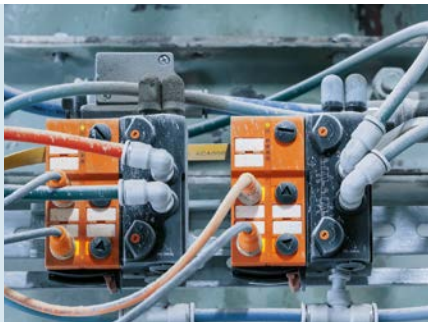
Using the yellow AS-i cable, the I/O points in the system can be reached by the short-0 est route. Installation complexity and maintenance are reduced to a minimum.

In all these applications, there is a large number of flaps and slides which can be controlled decentrally via the AirBox pneumatic modules.

Long pneumatic hoses to the actuator are eliminated, resulting in shorter switching times, leakage points are reduced to a minimum, resulting in cost savings all along the line.

AS-i and pneumatics.

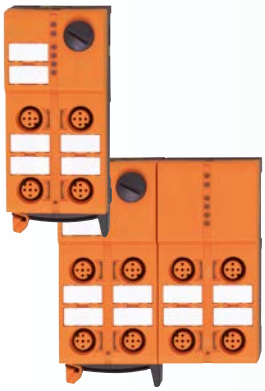
Simple, cost-effective wiring and hosing of the sensors and actuators. The decentralised mounting of the AirBox directly on the actuator reduces the amount of hosing required and ensures quick switching times.



AS-i AirBox – time-saving installation thanks to quick assembly technology.

Explosive use: AS-Interface in ATEX applications – also for Zone 22 (ATEX II 3D/3G).

ifm.com/gb/asi-atex
Scan the code and learn more about AS-Interface and ATEX.



AS-i ClassicLine ATEX modules with quick assembly technology[4)]

Description	ATEX marking	A/B node	Order no.
4 digital inputs	II 3D	–	**AC505A**
4 digital inputs	II 3D	•	**AC515A**
4 digital outputs	II 3D	–	**AC508A**
2 digital inputs / 2 digital outputs Y	II 3D	–	**AC507A**
2 digital inputs Y / 2 digital outputs Y	II 3D	•	**AC514A**
4 digital inputs / 4 digital outputs	II 3D	•	**AC535A**
2 analogue inputs 4...20 mA	II 3D	–	**AC522A**

4) Only in conjunction with impact protection E7000A or equivalent protection

AS-i AirBox ATEX modules with quick assembly technology for decentralised triggering of cylinders and quarter-turn actuators[4)]

Description	ATEX marking	A/B node	Order no.
4 digital inputs Y / 2 pneumatic outputs 2 x 3/2 ways, monostable	II 3D	•	**AC528A**
4 digital inputs Y / 2 pneumatic outputs 2 x 3/2 ways, monostable	II 3D	–	**AC542A**
2 digital inputs Y / 1 pneumatic output 1 x 5/2 way, monostable	II 3D	–	**AC246A**
4 digital inputs Y / 1 pneumatic output 1 x 5/2 way, monostable	II 3D	•	**AC546A**
4 digital inputs Y / 2 pneumatic outputs 1 x 5/2 ways, bistable	II 3D	•	**AC551A**
4 digital inputs Y / 2 pneumatic outputs 1 x 5/3 ways, locked	II 3D	•	**AC570A**

4) Only in conjunction with impact protection E7000A or equivalent protection

Reducing energy costs.

Annual energy costs caused by leakage

Hole Ø [mm]	Air loss at 6 bar [l/s]	Energy loss at 6 bar [kWh]	Costs at 6 bar [EUR]
1	1.238	0.3	158
3	11.14	3.1	1,629
5	30.95	8.3	4,362
10	123.8	33	17,345

kWh x EUR 0.06 x 8,760 operating hours / year;
Source: Optimum compressed air distribution Karl-Heinz Feldmann, expert Verlag

Type SD compressed air meter

What energy cost savings are still possible?

A pressure reduction of 1 bar alone means energy cost savings of 6 to 10 %.

Type SD compressed air meters help to locate leakages. They are used to precisely measure flow, consumption, pressure and medium temperature.

(Use outside the ATEX environment)

AS-i dual sensors for pneumatic quarter-turn actuators

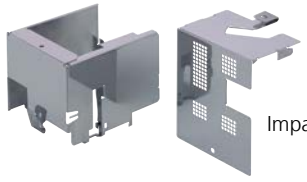
Description	Sensing range / measuring range [mm]	ATEX marking	A/B node	Order no.
1 digital output	4	II 3G	•	**AC326A**
2 digital outputs	4	II 3D	•	**AC327A**
1 digital output	4	II 3D	•	**AC336A**

Note: It is the responsibility of the operator to check the suitability of the flat cables for use in hazardous areas, taking into account the operating conditions (temperature, chemical influence, etc.). EPDM and TPE cables are available for the ATEX modules and ATEX splitters.

Accessories for ATEX modules

E74000
AS-i flat cable

E75228
L-plug-in connection for pneumatic connections



E7000A
Impact protection

E75227
T-plug-in connection for pneumatic connections

E75229
L-plug-in connection for pneumatic connections

E7377A
Flat cable splitter ye/ye for Zone II 3D/3G

E75232
Pneumatic silencer

E73004
Cap M12

E75231
Sealing plug for AS-i AirBox

E75233
3/2- way shut-off valve

E7354A
Flat cable insulation displacement connector ye/bl for Zone II 3D/3G

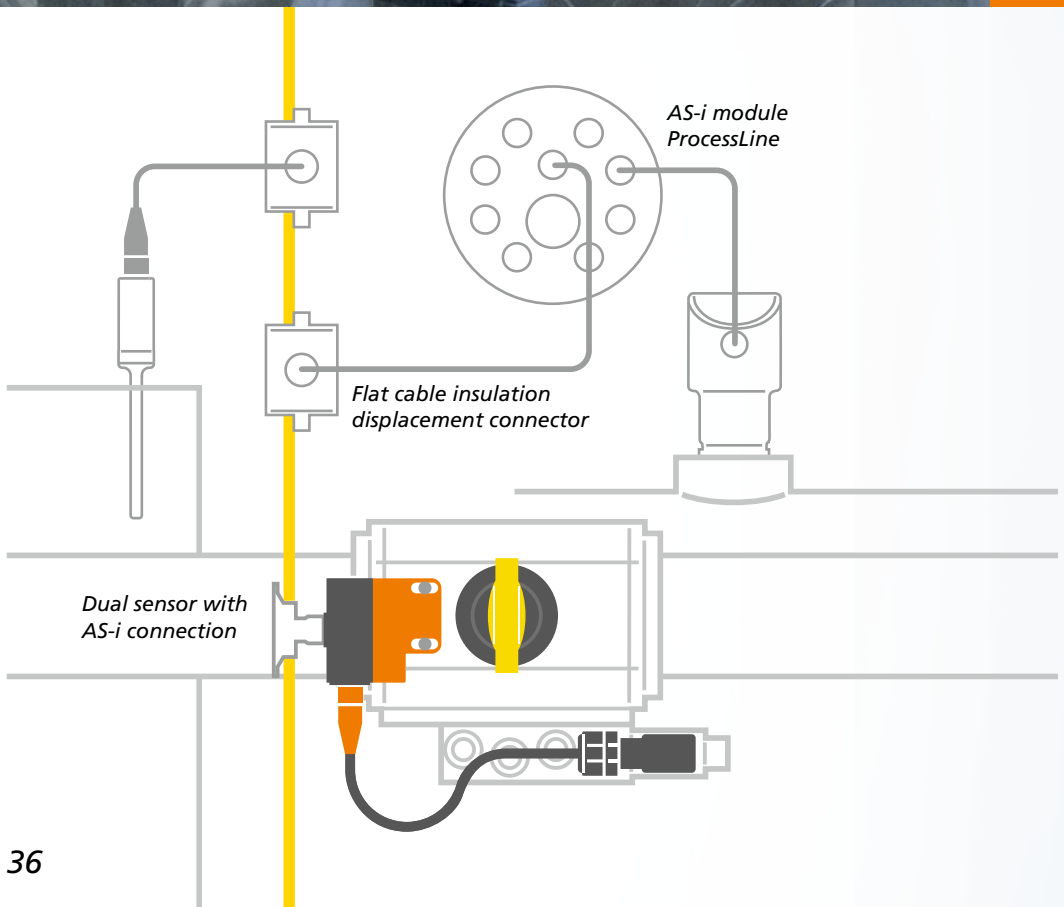
Correctly positioned: pneumatic rising stem valves and quarter-turn actuators with AS-i connection.

System solution:
AS-i is a manufacturer-independent standard for the bus connection of actuators and sensors of the first field level. ifm electronic offers AS-i as an all-in-one solution.

Safe:
The sophisticated AS-i technology provides high reliability and machine uptime.

Simple:
Modular structure and flexible connection technology ensure easy integration into the AS-i system.

Cost-optimised:
A two-wire flat cable transmits data and energy, eliminating complex parallel wiring.



Position feedback and valve control.

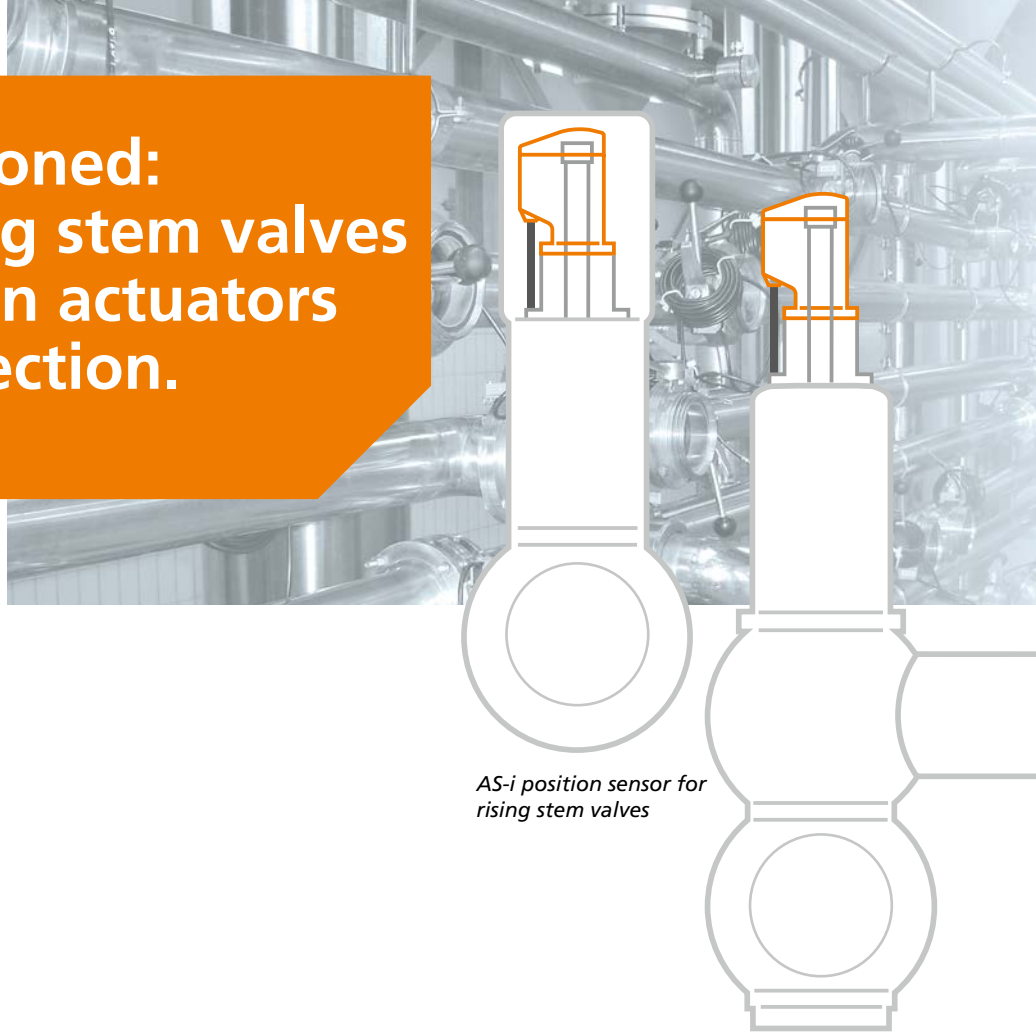
In addition to position monitoring, the ifm dual sensors from the T family are also used to trigger pneumatic rotary drives using solenoid valves.

Up to two input and output signals are transmitted via a 2-wire bus cable to the AS-i master using AS-i at a lower cost than conventional wiring. With only one AS-i master up to 62 actuators and solenoids can be monitored and switched. Cable breaks and short circuits on the valve are monitored for diagnostics. This provides additional safety.

Wiring made easy.

The simple connection of the AS-i cable to the dual sensors to the quarter-turn actuators makes commissioning child's play.

Correctly positioned: pneumatic rising stem valves and quarter-turn actuators with AS-i connection.

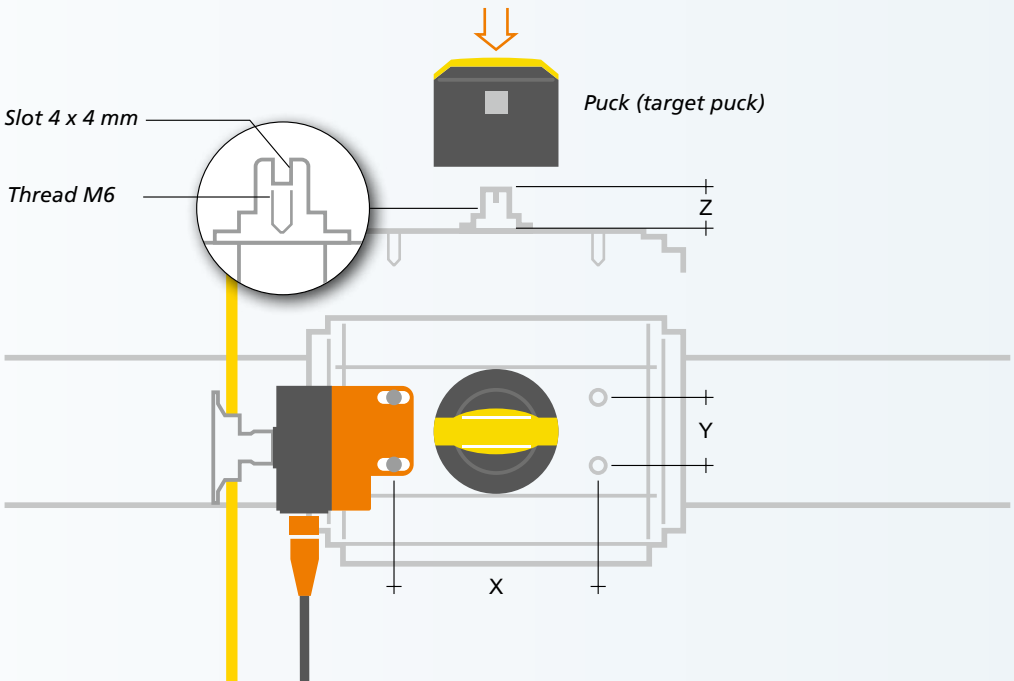


AS-i position sensor for rising stem valves

AS-i automation set quarter-turn actuators

Description	Assembly dimensions X / Y[3] [mm]	Height of the drive shaft Z[3] [mm]	Order no.
Bürkert solenoid valve	80 / 30	20	**AC0017**
	80 / 30	30	**AC0019**
	130 / 30	30	**AC0020**
Norgren solenoid valve	80 / 30	20	**AC0021**
	80 / 30	30	**AC0022**
	130 / 30	30	**AC0023**

[3] See sketch



Triggering and feedback.

In the case of quarter-turn actuators, the flap cannot only be positioned, but also pneumatically triggered via the additional output in a cost-effective manner using AS-i.

IXxxxx

AS-i position and dual sensors

Description	Sensing range / measuring range [mm]	Temperature range [°C]	Order no.
Position sensor for rising stem valves; AS-i, freely programmable switching outputs: Valve open / closed / seat lift	0...80	-25...70	**IX5030**
Dual sensor for pneumatic quarter-turn actuators; AS-i, 2 inputs / 1 output	4	-20...70	**AC2310**
Dual sensor for pneumatic quarter-turn actuators; AS-i, 2 inputs, A/B node	4	-20...70	**AC2315**
Dual sensor for pneumatic quarter-turn actuators; AS-i, 2 inputs / 1 output, A/B node	4	-20...70	**AC2316**
Dual sensor for pneumatic quarter-turn actuators; AS-i, 2 inputs / 2 outputs, A/B node	4	-20...70	**AC2317**

Pucks for position feedback on quarter-turn actuators

E12724
Puck Basic

E12725
Puck adjustable

Assembly dimensions X / Y [mm]	Height of the drive shaft Z [mm]	Description	Order no.
80 / 30	30	puck Basic	**E12517**
80 / 30	30	puck adjustable	**E12516**
80 / 30	30	puck Basic [5)]	**E12724**
80 / 30	30	puck adjustable[5)]	**E12725**
80 / 30	20	puck Basic + Adapter	**E12517 + E12526**
80 / 30	20	target puck adjustable + adapter	**E12516 + E12526**
130 / 30	30	large target puck basic	**E17328**
130 / 30	30	Large target puck, adjustable	**E17119**

5) Position feedback for ball valves

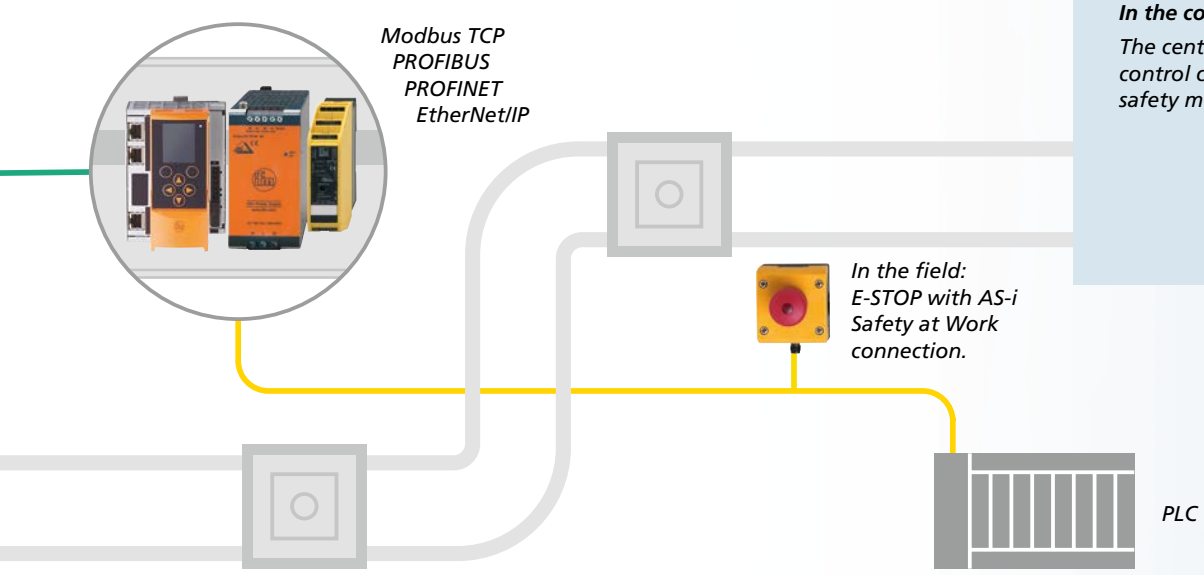
On the safe side: with AS-i Safety at Work.

Simple:
Modular design and flexible connection technology for easy integration into the AS-Interface system.

Cost-optimised:
A two-wire flat cable transmits safe and non-safe data as well as power. Complex parallel wiring is not necessary.

Flexible:
Can be extended easily and cost-effectively at any time.

Safe:
The sophisticated AS-i technology ensures high reliability and machine uptime.



In the control cabinet.
The central safety components in the control cabinet: AS-i master and AS-i safety monitor.

In the field: E-STOP with AS-i Safety at Work connection.

Less wiring – lower costs.

Safety at Work is the safety-related extension of the existing AS-Interface system. The user can integrate all binary safety-related components, e.g. e-stops, safety light grids or protective guard locks etc.

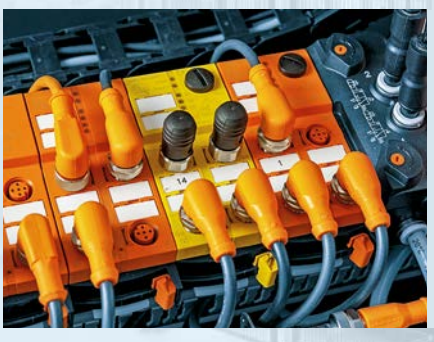
The great advantage lies in the joint use of standard and safety-relevant components in one system. Only a safety monitor and safe AS-i slaves are added to the existing AS-i system with standard components such as AS-i master, AS-i power supply, AS-i slaves etc. A mixture of safe and non-safe AS-i slaves is therefore possible without any problems.

Safety stop.

Illuminated E-STOP with integrated AS-i connection. Fool-proof to EN ISO 13850. Pull to reset.

Safe access

Safe door switch with mechanical securing function and integrated AS-i connection. Rotatable actuating head made of metal. Mechanical release on the front.

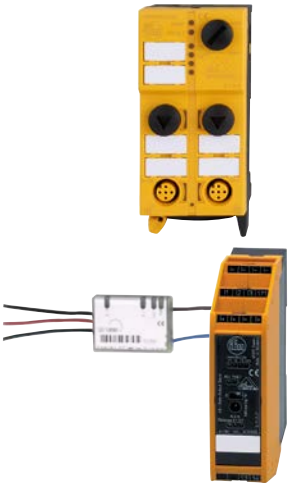


Safe inputs.

Safe AS-i input module for mechanical contacts. The AS-i flat cable is directly connectable, orientation is possible in three directions.

On the safe side: with AS-i Safety at Work.

ifm.com/gb/asi-safety
Scan the code and learn more about AS-i Safety at Work.



AS-i Safety at Work safe slaves

Inputs	Outputs
2 safe inputs	2 x LED
2 x 2 safe inputs	2 x LED, 2 semiconductors (not safe)
2 safe inputs	2 x LED
2 safe inputs	2 x LED
2 x 2 safe inputs	2 x LED, 2 semiconductors (not safe)
2 x safe inputs	2 x LED, 2 x relay outputs
2 safe inputs	1 x LED
2 safe inputs	1 x LED
4 inputs (not safe)	2 x LED, 1 safe relay output

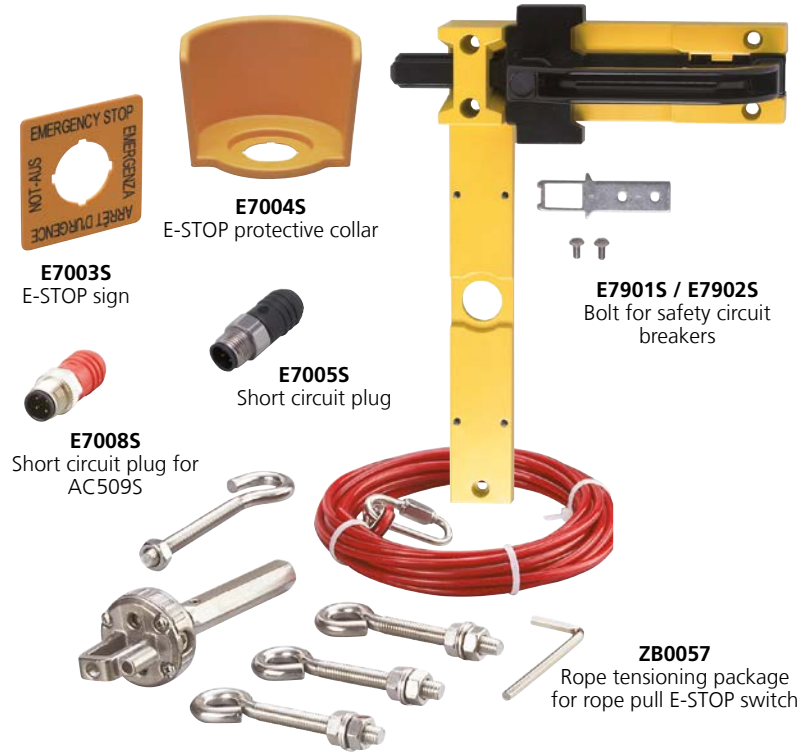
AS-i Safety at Work components

Description	IEC61508	EN ISO 13849-1	Tamper-proof according to EN ISO 13850
AS-i safety switch with guard locking (spring force)	–	up to PL d	–
AS-i safety switch with guard locking (magnetic force)	–	up to PL d	–
AS-i safety switch with guard locking (spring force)	–	up to PL d	–
AS-i safety switch with guard locking (magnetic force)	–	up to PL d	–
E-STOP tamper-proof	SIL 3	PL e Cat. 4	•
E-STOP mushroom key tamper-proof	SIL 3	PL e Cat. 4	•
Safe AS-i e-stop operating unit	SIL 3	PL e	•
E-STOP	–	–	•
Rope pull switch with E-STOP, 2-arm	–	PL e	•
Rope pull switch with E-STOP, 1-arm, on left	–	PL e	•
Rope pull switch with E-STOP, 1-arm, on right	–	PL e	•

IEC61508	IEC 62061	EN ISO 13849-1	Voltage supply	Connection for	Protection rating	Order no.
–	SIL cl 3	PL e Cat. 4	AS-i	mechanical contacts	IP 67	**AC505S**
–	SIL cl 2	PL d Cat. 3	AS-i	mechanical contacts (NC) or electronic contacts	IP 67	**AC506S**
SIL 3	SIL cl 3	PL e Cat. 4	AS-i	OSSD	IP 67	**AC507S**
SIL 3	SIL cl 3	PL e Cat. 4	AS-i / AUX	OSSD	IP 67	**AC508S**
–	SIL cl 2	PL d Cat. 3	AS-i	OSSD / mechanical contacts	IP 67	**AC509S**
SIL 3	–	PL e Cat. 4	AS-i	1 or 2-channel mechanical contacts	IP 20	**AC009S**
SIL 3	–	PL e	AS-i	mechanical contacts	depending on housing > IP 54	**AC015S**
SIL 3	–	PL e	AS-i	mechanical contacts	depending on housing > IP 54	**E7015S**
SIL 3	–	PL e	AS-i	mechanical contacts or electronic contacts	IP 20	**AC030S**

Voltage supply	A/B node	Order no.
AS-i, external solenoid supply 24 V DC	–	**AC901S**
AS-i, external solenoid supply 24 V DC	–	**AC902S**
AS-i	–	**AC903S**
AS-i	–	**AC904S**
AS-i	–	**AC010S**
AS-i	–	**AC011S**
AS-i	–	**AC012S**
12...30 V AC / DC	no profile	**E7007S**
12...30 V AC / DC	no profile	**ZB0051**
12...30 V AC / DC	no profile	**ZB0052**
12...30 V AC / DC	no profile	**ZB0053**

Accessories for Safety at Work



E7003S
E-STOP sign

E7004S
E-STOP protective collar

E7901S / E7902S
Bolt for safety circuit breakers

E7005S
Short circuit plug

E7008S
Short circuit plug for AC509S

ZB0057
Rope tensioning package for rope pull E-STOP switch

On the safe side: with safety control systems for industrial applications.

Double:
Fail-safe PLC and standard PLC in one housing.

Versatile:
Can be used for different functions and apps.

Productive:
High machine uptime due to sophisticated diagnostics

Connective:
Supports numerous bus systems.

Outputs:
Eight safe local inputs and four safe local outputs.

Clear:
Status display for safe I/Os. Error memory with time stamp for up to 2,000 messages.

AS-i safe controllers

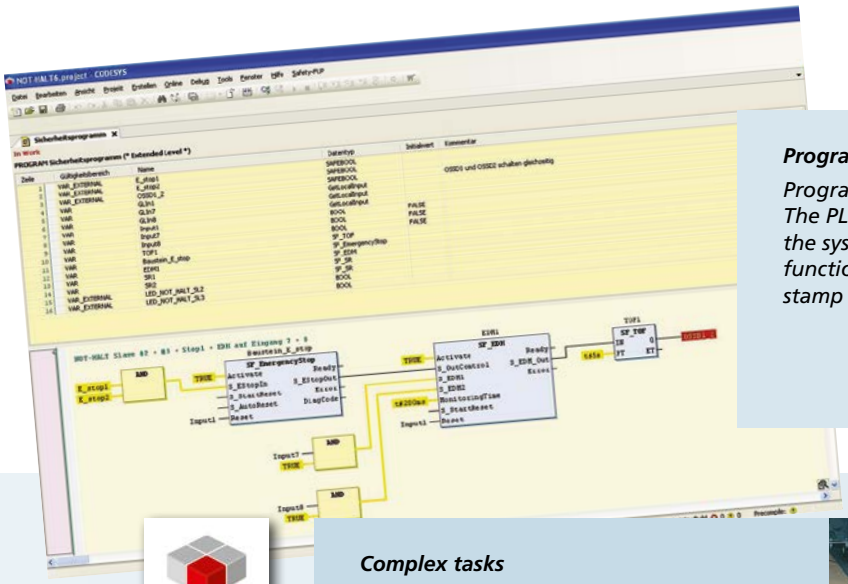
Description	IEC61508	EN ISO 13849-1	Communication interface	Number of AS-i masters
AS-i EtherNet/IP gateway with safe preprocessing	SIL 3	PL e Cat. 4	UDP/IP, Modbus TCP, TCP/IP, EtherCat, EtherNet/IP, FSoE	2
AS-i EtherNet/IP gateway with safe preprocessing	SIL 3	PL e Cat. 4	OPC-UA, PROFINET, UDP/IP, Modbus TCP, TCP/IP, EtherCat, EtherNet/IP, FSoE	2
AS-i EtherCat gateway with PLC	SIL 3	PL e Cat. 4	UDP/IP, Modbus TCP, TCP/IP, EtherCat, EtherNet/IP, FSoE	2
AS-i safety monitor	SIL 3	PL e	AS-i / USB	1
Safe contact extension, undelayed	SIL 3	PL e	–	–

Fail-safe PLC and standard PLC in one housing. Lots of additional information included.

The SmartPLC combines two separate PLCs in terms of hardware in one compact housing.

While the one PLC solves safety-related applications, the second PLC either works as a standard PLC or as platform for other tasks.

Both PLCs communicate with each other, so that all system controls including safety and visualisations can be implemented with just one SmartPLC.



Programming.

Programming is done via CODESYS V3. The PLC has access to all interfaces of the system such as convenient diagnostic functions and error memory with time stamp for up to 2,000 messages.

Profile	Order no.
M4	**AC422S**
M4	**AC402S**
M4	**AC432S**
S-7.5.5	**AC041S**
–	**AC053S**

Complex tasks

Control of a palletiser: The required technology is very complex since operation is carried out automatically. The SmartPLC from ifm allows processing of safe and non-safe signals at the same time.

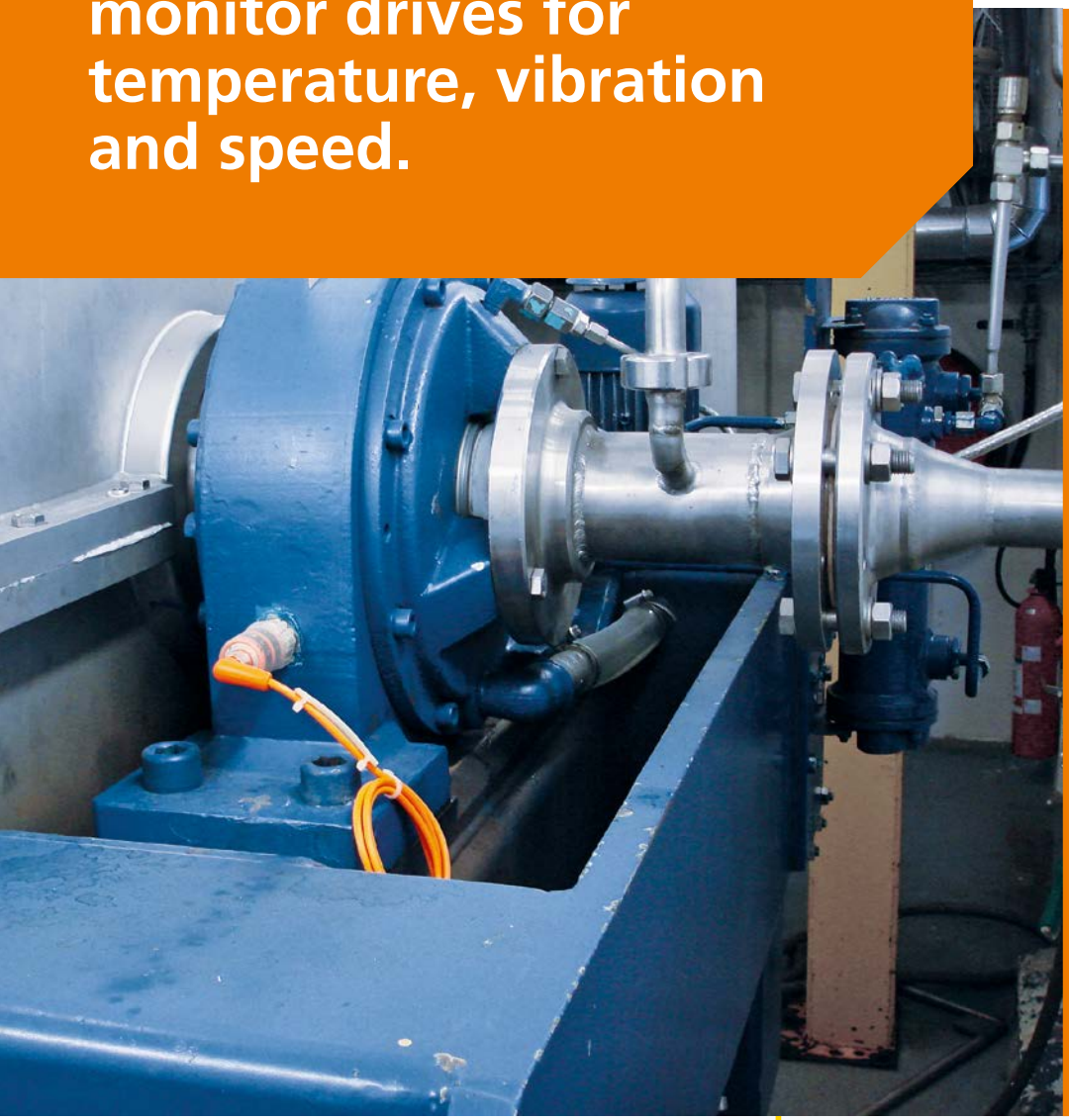
Accessories for safety monitor

E7052S
SD memory card

E7050S
Software ASIMON V3 G2

E7051S
USB connection cable

Everything runs smoothly: monitor drives for temperature, vibration and speed.

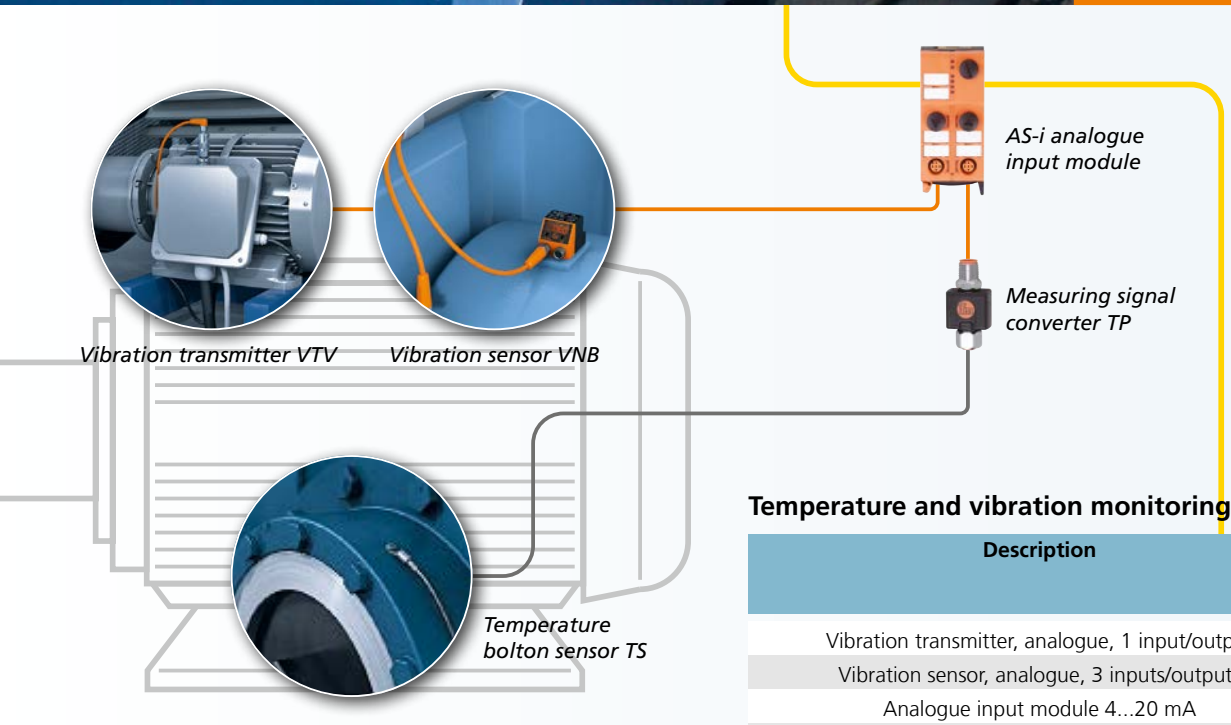


Temperature, vibration and speed:
A wide range of options with AS-Interface, e.g. when it concerns extension of system monitoring.

Temperature at a glance:
With a simple extension of the AS-i system, the temperature is always under control.

Early detection:
With a simple extension of the AS-i system, vibrations can be detected and potential damage identified at an early stage.

Slowly or quickly:
With a simple extension of the AS-i system, reliably detect overspeed or underspeed.



Temperature and vibration monitoring on drives

Description	Order no.
Vibration transmitter, analogue, 1 input/output	**VTV122**
Vibration sensor, analogue, 3 inputs/outputs	**VNB001**
Analogue input module 4...20 mA	**AC5222**
Temperature bolt-on sensor	**TS2229**
Measuring signal transducers for temperature sensors	**TP3231**

Drive monitoring with AS-i.

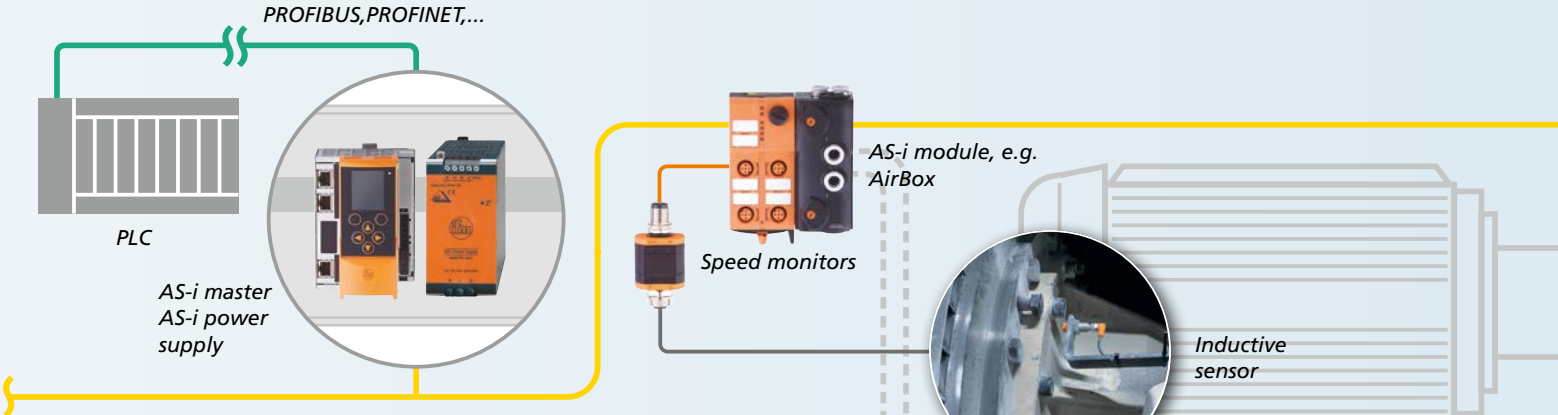
Temperatures can be measured, for example on drives with simultaneous vibration measurement, using a single AS-i analogue input module.

The vibration sensor is connected to the analogue input module via channel 1 and the temperature sensor with a measuring signal transducer via channel 2.

The additional channel speed monitoring on drives, i.e. signalling and displaying an overspeed or underspeed, can be done via a classic AS-i input module in combination with the DP speed monitor and an inductive sensor.

The speed monitor is parameterised e.g. via the moneo I configure software.

Falling below a certain speed is defined here so that this state (signal) is then transmitted to the AC14xx controller / PLC via the AS-i module. The 7-segment LED display can be used to read off the speed of the drive directly on site on the speed monitor.



Channel speed monitoring on drives

Description	Order no.
Inductive sensor M18, 8 mm sensing range	**IGS277**
Speed monitor, IO-Link, 0...2,000 Hz	**DP2122**
AS-i AirBox, 1x 5/2-way slide valve	**AC5246**
AS-i gateway, PROFINET	**AC1401**

The intelligent connection: AS-Interface and IO-Link.

Strong synergy:
Ingenious connection technology combined with intelligent sensors.

User-friendly:
Simple and cost-effective wiring plus extended diagnostic options.

Very easy:
Simplified sensor exchange due to integrated parameter memory in the IO-Link master.

Save time and money:
Quick, easy commissioning and increased system availability.

Make use of advantages:
The sensors provide direct process values, no influence on the signal (EMC) and no conversion losses.

Efficient:
Modular and scalable design.

AS-i and IO-Link for factory automation

Description	Order no.
AS-i master with fieldbus interface	**AC14xx**
AS-i power supply	**AC12xx**
24 V DC power supply	**DN40xx**
IO-Link master with AS-i interface (AS-i / AUX) 4-port	**AC6000**
IO-Link master with AS-i interface (AS-i) 2-port	**AC6002**
Light tower	**DVxxx**

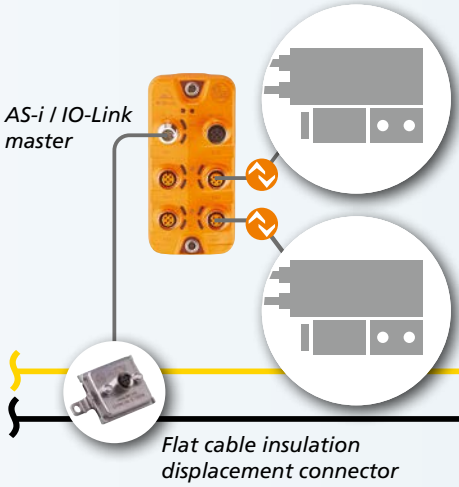
Accessories

E70354
Flat cable insulation displacement connector AS-i / AUX

E75354
Flat cable insulation displacement connector AS-i

EVCxxx
Connection cable

AS-i and IO-Link in factory automation.



Successful together.

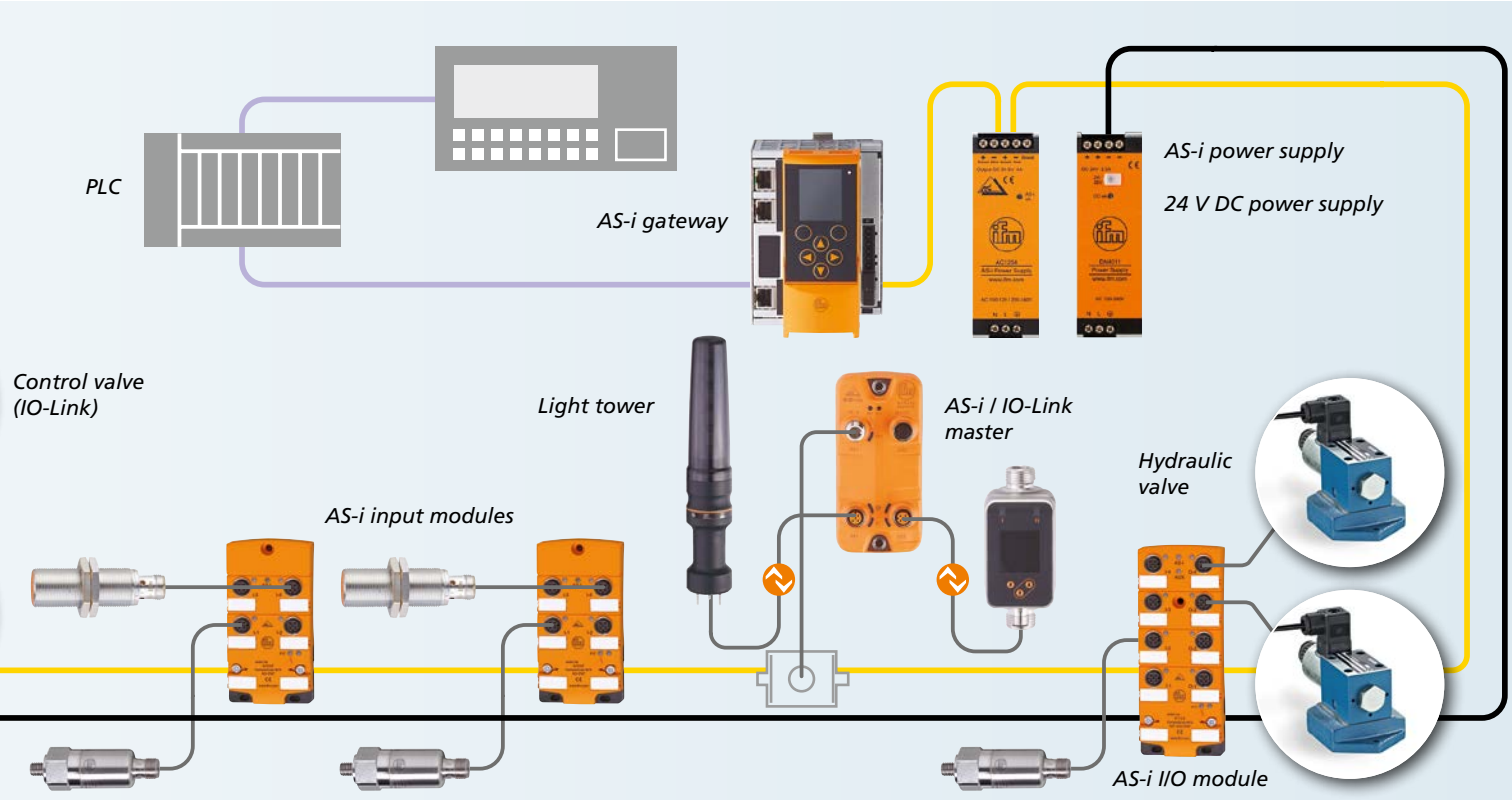
The decentralised IO-Link master modules are used as an interface between intelligent IO-Link sensors and the AS-Interface wiring system.

"Mixed mode" makes it possible to use IO-Link on system parts where detailed diagnostics of sensors and actuators are required without having to forego the advantages of the AS-i wiring system.

This is because the AS-i flat cable can still be used, i.e. the simple, cost-effective connection technology is not lost.

The cost-effective wiring and simple commissioning of AS-i combined with the extended diagnostic options of IO-Link can significantly increase the availability of the entire system. The wiring effort is reduced by modular design which incorporates intelligent sensor technology.

This saves precious time and money.

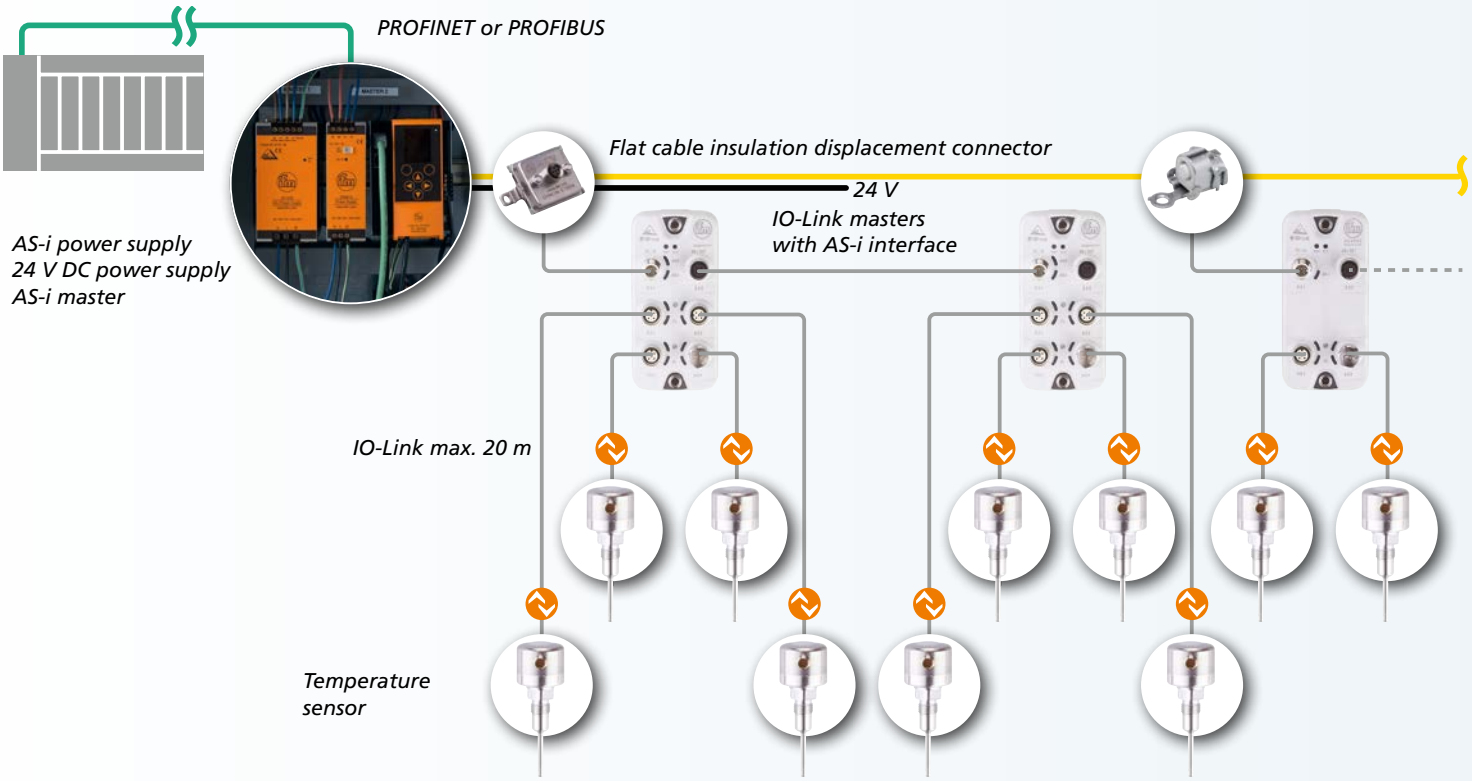


The intelligent connection: AS-Interface and IO-Link.

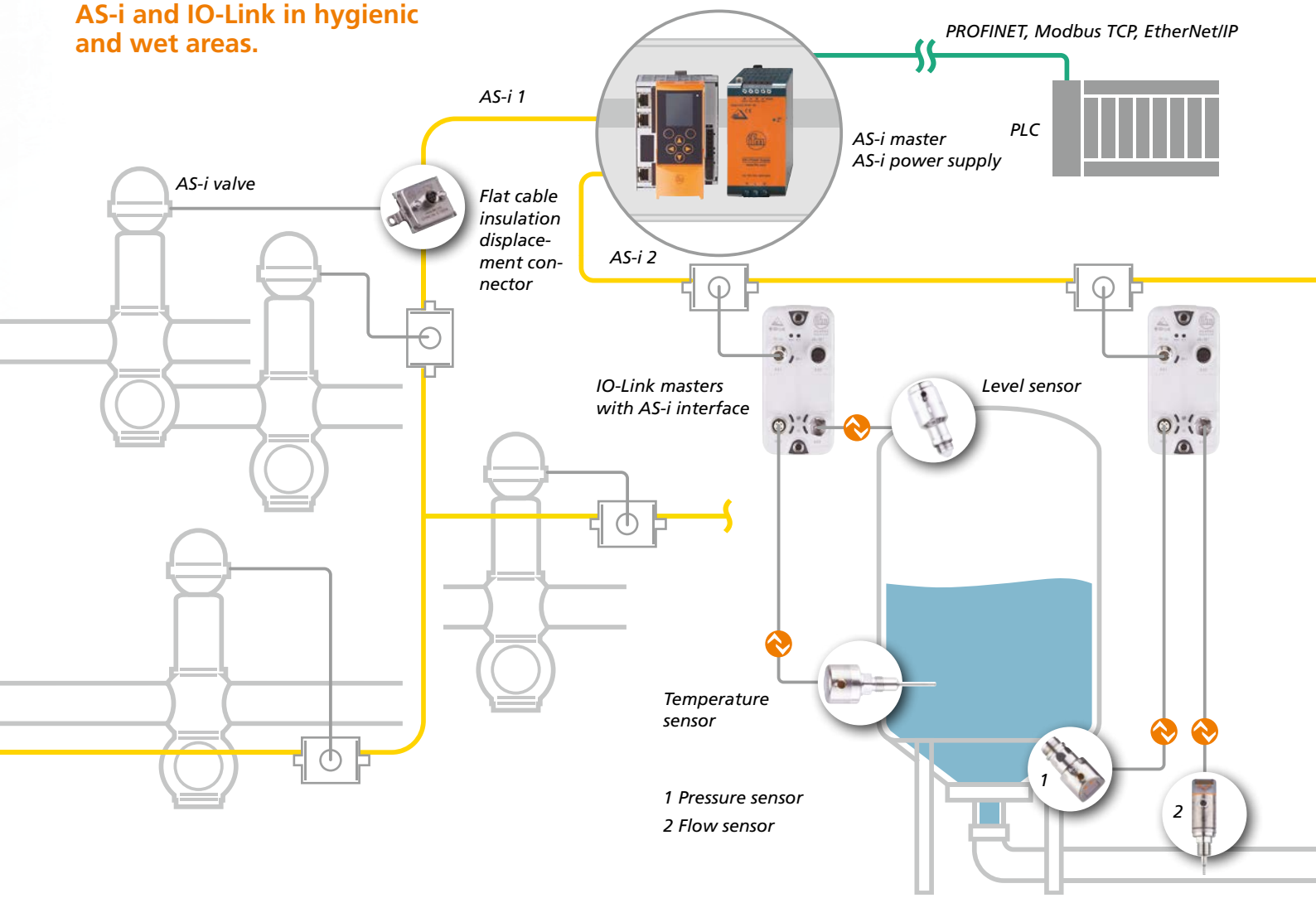
AS-i and IO-Link for hygienic and wet areas

Description	Order no.
AS-i master with fieldbus interface	**AC14xx**
IO-Link master with AS-i interface (AS-i / AUX) 2-port	**AC6003**
Level sensor	**LW2720**
Level sensor	**LMTxxx**
Conductivity sensor	**LDLxxx**
Temperature sensor	**TCCxxx**
Flow sensor	**SAxxxx**
Pressure sensor	**PIxxxx**

ifm.com/gb/asi-ea-modules
Scan the code and learn more about AS-Interface I/O modules.



AS-i and IO-Link in hygienic and wet areas.



AS-i and IO-Link for hygienic and wet areas

Description	Order no.
AS-i master with fieldbus interface	AC1402 AC1412
IO-Link master with AS-i interface (AS-i / AUX) 4-port	AC6001
Temperature sensor	TCC511
Stand-alone licence for online and offline parameter setting of IO-Link devices	QMP010
Set USB IO-Link master, connector	ZZ1060

Accessories

E70354
Flat cable insulation displacement connector AS-i / AUX

E75354
Flat cable insulation displacement connector AS-i

E70455
Flat cable insulation dis-placement connector AS-i

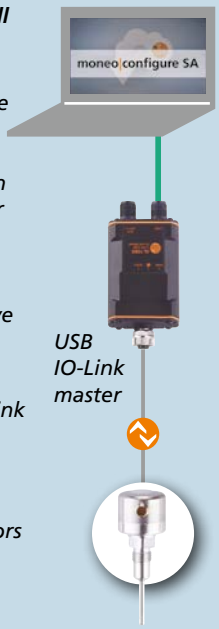
EVFxxx
Connecting cable with plug

EVFxxx
Connection cable

Central parameter setting of all IO-Link sensors with only one software tool.

*The parameter setting software **moneo\|configure** enables the parameter setting of IO-Link devices with just a few clicks. In addition to intuitive parameter setting and the management of the user's own parameter data sets, the software offers the option of visualising the live process data.*

- *Manufacturer-independent*
- *Automatic detection of IO-Link devices*
- *Management of parameter data sets easier than ever*
- *Direct access to IO-Link sensors without diversions via the PLC*



Aim high: AS-Interface in building services engineering.

Simple:
Flexible and simple design for any type of building.

Clear:
A disposal chute for waste disposal in the basement.

Cost-optimised:
Reduction in waste management costs, effective recycling.

User-friendly:
Simple handling by the user.

Minimum space requirement:
Only one two-core yellow wire to the flap controller.

AS-Interface for building services engineering

Description	Order no.
SmartPLC DataLine EtherNet/IP, 2 AS-i master	**AC1424**
Repeater III	**AC3226**
Fibre optic repeater	**AC3227**
AS-i power supply 100...120 / 200...240 V AC, 4 A output current	**AC1254**
AS-i PCB module 4 digital inputs / 4 digital outputs, cast	**AC2750**

Accessories for building services engineering

E74300
AS-i flat cable

E74800 / E74802
Glass / fibre optics

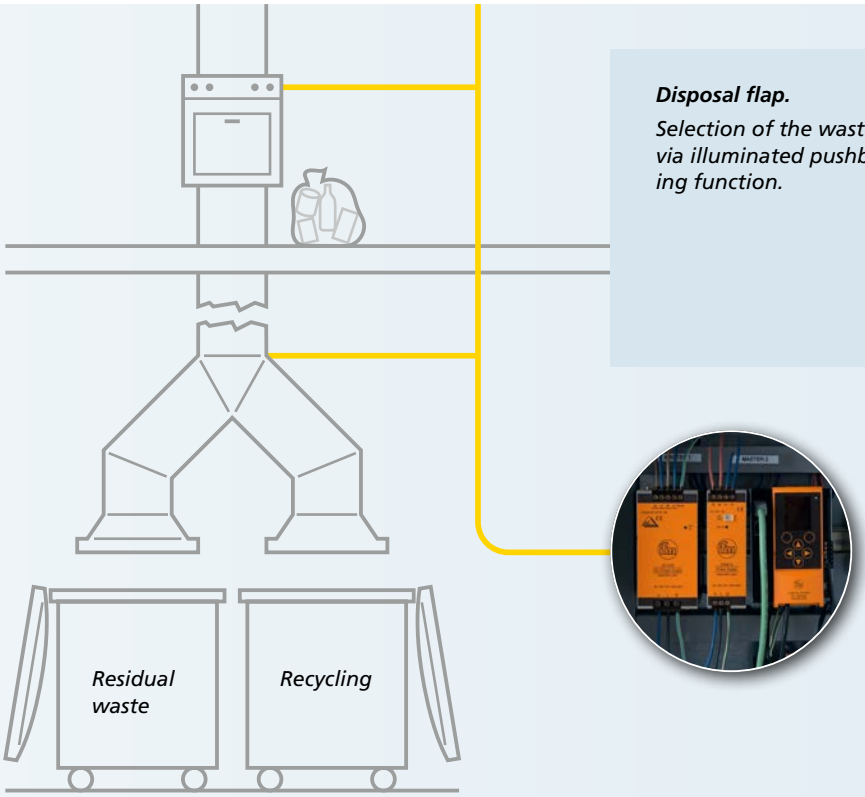
Waste chute systems for residential buildings.

The waste chute system for residential buildings is a simple solution and offers the disposal of several types of waste (yellow / grey waste) via a single chute. The system collects waste or recycling waste which is disposed of from the floors above through the chute system. The waste is fed into the waste bins via a funnel. As soon as all bins are full, an indicator light comes on to show that the bins are ready for removal and collection.

This solution, equipped with AS-Interface from ifm, combines innovation with practicality. There is an electronic diversion system in the basement that transfers the disposed waste to the correct collection bin in the bin room.

User-friendly, with colour-coded pushbuttons (marked with waste symbols), the system allows easy identification of different types of waste to assist in the correct separation of waste for disposal.

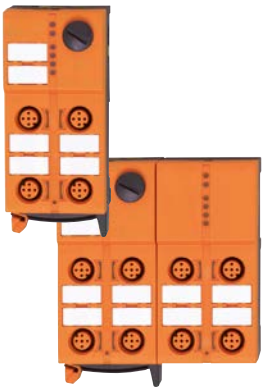
This may result in significant savings in waste management



Disposal flap.

Selection of the waste to be disposed of via illuminated pushbuttons and unlocking function.

Not found the right one yet? Other AS-i products from ifm.



AS-i M12 modules ClassicLine with quick assembly technology including lower part

Description	Voltage supply	Output current [A]	A/B node	Order no.
4 digital inputs	AS-i	–	–	**AC5205**
4 digital inputs Y	AS-i	–	•	**AC5215**
4 digital inputs	AS-i	–	•	**AC5245**
3 digital outputs Y	AUX	1	•	**AC5203**
4 digital outputs Y	AUX	1	–	**AC5208**
4 digital outputs Y	AUX	2	–	**AC5213**
2 digital inputs / 2 digital outputs Y	AS-i / AUX	2	–	**AC5211**
2 digital outputs Y / 2 digital inputs Y	AS-i / AUX	1	•	**AC5214**
2 digital outputs Y / 2 digital inputs Y	AS-i / AUX	2	•	**AC5234**
2 digital outputs Y / 2 digital inputs Y	AS-i / AS-i	0.2	•	**AC5224**
4 digital inputs / 3 digital outputs Y	AS-i / AUX	1	•	**AC5204**
4 digital inputs / 4 digital outputs Y	AS-i / AUX	1	–	**AC5209**
4 digital inputs Y / 4 digital outputs Y	AS-i / AUX	1	•	**AC5235**
4 digital inputs Y / 4 digital outputs Y	AS-i / AUX	2	•	**AC5236**
4 digital inputs / 4 digital outputs Y	AS-i / AUX	1	•	**AC5275**
4 digital inputs Y AUX / 4 digital outputs Y	AUX / AUX	1	•	**AC5293**

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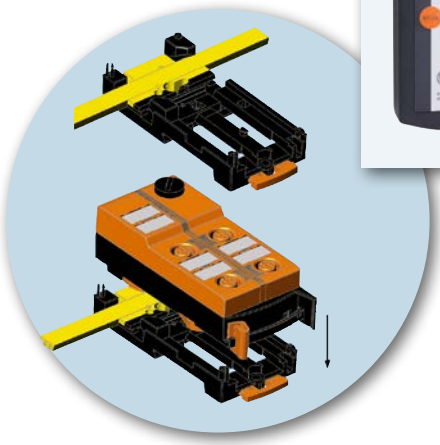
Scan the code and learn more about AS-Interface I/O modules.



AS-i pushbutton modules with M12 voltage supply from AS-i

Description	Protection rating	A/B node	Order no.
Illuminated pushbutton, 5 different colour caps	IP 67	•	AC2386
Illuminated pushbutton, red / green	IP 67	•	AC2388
Illuminated pushbutton, 5 different colour caps	IP 67	•	AC2396
Illuminated pushbutton, red / green	IP 67	•	AC2398
Illuminated pushbutton stainless steel, white / blue	IP 67, IP 68, IP 69K	•	AC2380
Illuminated pushbutton stainless steel, red / green	IP 67, IP 68, IP 69K	•	AC2381

Accessories for pushbutton modules

E75396
DIN rail holder

E75354
Flat cable insulation displacement connector

E70583
Flat cable insulation displacement connector

AC5005
Flat cable insulation displacement connector

AS-i AirBox modules with quick assembly technology including lower part

Description	AUX	A/B node	Order no.
2 x 3/2 ways, monostable	–	–	AC5227
2 x 3/2 ways, monostable	–	•	AC5228
2 x 3/2 ways, monostable	•	•	AC5243
1 x 5/2 ways, monostable	–	•	AC5246
1 x 5/2 ways, monostable	•	•	AC5249
1 x 5/2 ways, monostable	–	–	AC5287
1 x 5/2 ways, bistable	–	–	AC5250
1 x 5/2 ways, bistable	–	•	AC5251
1 x 5/2 ways, bistable	•	•	AC5253
1 x 5/3 ways, locked	–	•	AC5270
1 x 5/3 ways, locked	•	•	AC5271
AS-i AirBox modules with screw mounting			
2 x 3/2 ways, monostable	–	–	AC2024
1 x 4/2 ways, monostable	–	–	AC2046
2 x 3/2 ways, monostable, metal VA	–	–	AC2055

Accessories for AirBox modules

E74000
AS-i flat cable

E70399
Flat cable dummy

E75231
Sealing plug for AS-i AirBox

E75228
L-plug-in connection for pneumatic connections

E75232
Pneumatic silencer

AC5000/ AC5014
Lower part for AS-i AirBox AC2024, AC2046, AC2055

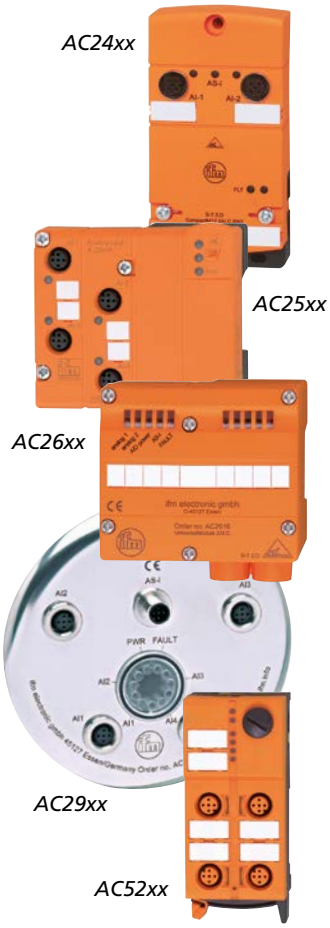
E75233
3/2- way shut-off valve

E73004
Cap M12

E70413
Flat cable termination

E75229
L-plug-in connection for pneumatic connections

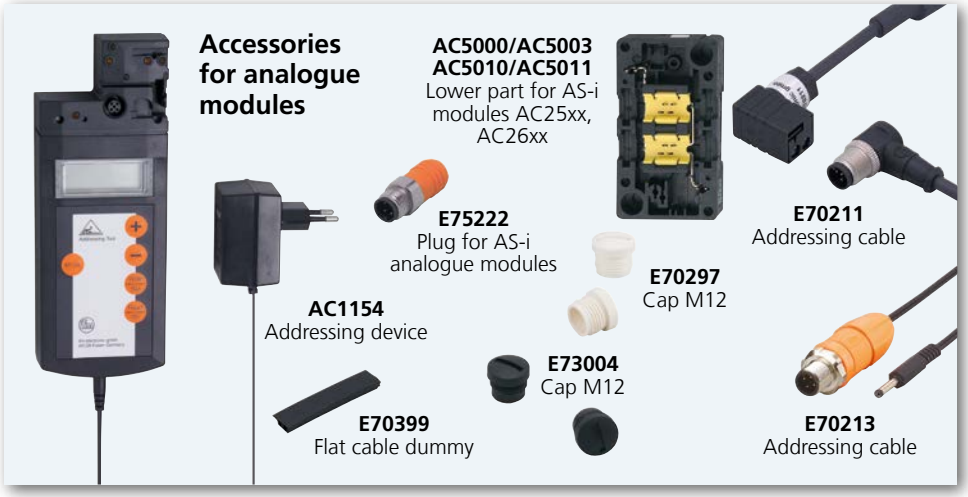
Not found the right one yet? Other AS-i products from ifm.



AS-i analogue modules for field applications

Description	Connection technology	Sensor supply	Actuator supply	Order no.
2 analogue inputs, 4...20 mA	2 and 3-wire	AS-i	–	**AC2402**
2 analogue inputs, 0...10 V	2 and 4-wire	AS-i	–	**AC2403**
4 analogue inputs, 4...20 mA	2, 3 and 4-wire	AS-i optional AUX	–	**AC2516**
4 analogue inputs, 0...10 V	2, 3 and 4-wire	AS-i optional AUX	–	**AC2517**
2 analogue outputs, 4...20 mA	2-wire	–	AS-i optional AUX	**AC2518**
4 analogue outputs, 0...10 V	2-wire	–	AS-i optional AUX	**AC2519**
4 inputs, Pt100	2 and 4-wire	–	–	**AC2520**
4 analogue outputs, 0...20 mA	3-wire	–	–	**AC2521**
2 analogue inputs, 4...20 mA	2, 3 and 4-wire	AS-i optional AUX	–	**AC2616**
2 analogue inputs, 0...10 V	2, 3 and 4-wire	AS-i optional AUX	–	**AC2617**
2 analogue outputs, 0...20 mA	2 and 4-wire	–	AS-i optional AUX	**AC2618**
2 analogue outputs, 0...10 V	2 and 4-wire	–	AS-i optional AUX	**AC2619**
4 inputs, Pt100	2 and 3-wire	AS-i	–	**AC2620**
4 analogue inputs, 4...20 mA	2 and 3-wire	AS-i	–	**AC2916**
4 analogue inputs, 4...20 mA	2, 3 and 4-wire	AS-i	–	**AC2923**
4 analogue inputs, 4...20 mA, AUX	2 and 3-wire	AUX	–	**AC5216**
4 analogue outputs, 0...20 mA	2, 3 and 4-wire	–	AUX	**AC5218**
2 analogue inputs, 4...20 mA	2 and 3-wire	AS-i	–	**AC5222**
2 analogue inputs, 4...20 mA	2, 3 and 4-wire	AS-i	–	**AC5223**
4 analogue inputs, 4...20 mA, AUX	2, 3 and 4-wire	AUX	–	**AC5226**
1 analogue input / 1 analogue output 2 digital inputs	2, 3 and 4-wire	AS-i	AS-i	**AC5230**

ifm.com/gb/asi-ea-modules
Scan the code and learn more about AS-Interface I/O modules.



AS-i M8 modules with full potting and voltage supply via M12 plug

Description	Voltage supply	A/B node	Order no.
4 digital inputs	AS-i	•	**AC2484**
2 digital inputs / 2 digital outputs	AS-i / AS-i	•	**AC2482**
8 digital inputs / 1 slave address	AS-i	•	**AC2488**
2 x 4 digital inputs / 2 slave addresses	AS-i	•	**AC2489**
4 digital inputs / 4 digital outputs	AS-i / AUX	•	**AC2490**

Accessories for M8 modules

E70096
Flat cable insulation displacement connector

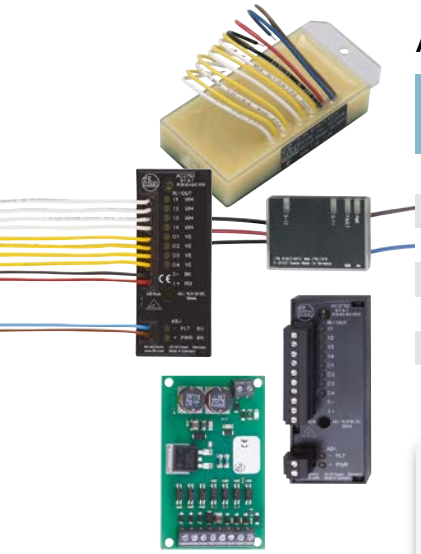
E70583
Flat cable insulation displacement connector

E73005
Cap M8

E73006/E73007
Digital factory

AC5005
Flat cable insulation displacement connector

AS-i PCBs for housing installation with voltage supply from AS-i



Voltage supply from AS-i.

Description	Connection	Cast	Order no.
4 digital inputs / 3 digital outputs	wires	•	**AC2728**
2 digital inputs / 1 digital output	wires	•	**AC2729**
3 digital inputs / 3 digital outputs	terminals	–	**AC2731**
4 digital outputs / 4 digital outputs	wires	•	**AC2750**
4 digital inputs / 3 digital outputs	wires	•	**AC2751**
4 digital inputs / 4 digital outputs	terminals	•	**AC2752**
4 digital inputs / 3 digital outputs	terminals	•	**AC2753**

Accessories for PCBs

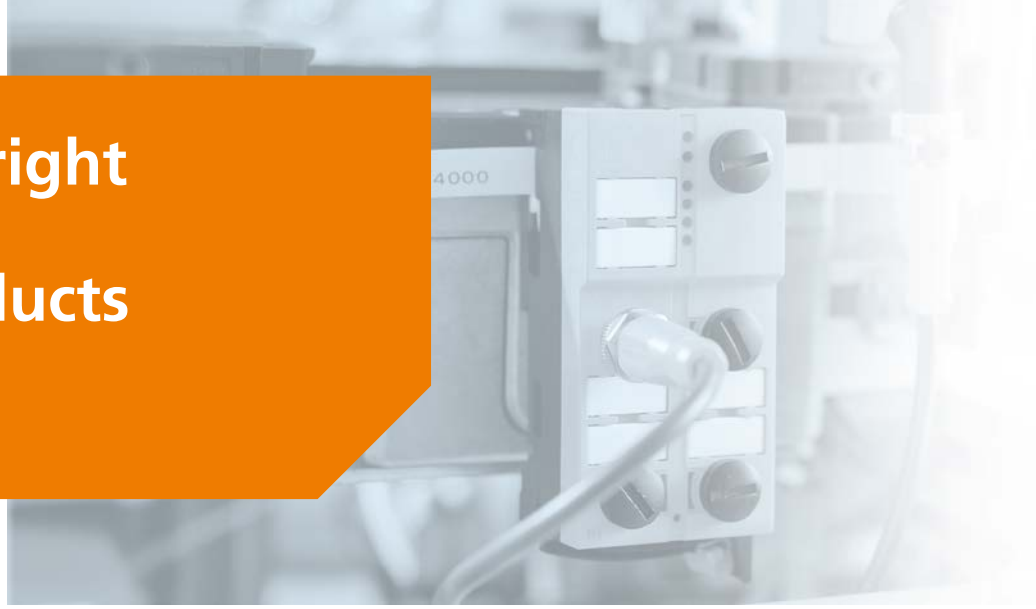
AC1154
Addressing device

E70432
DIN rail holder

E70431
Cage clamp terminal

E73008 / E73009
Wall bushing

Not found the right one yet? Other AS-i products from ifm.



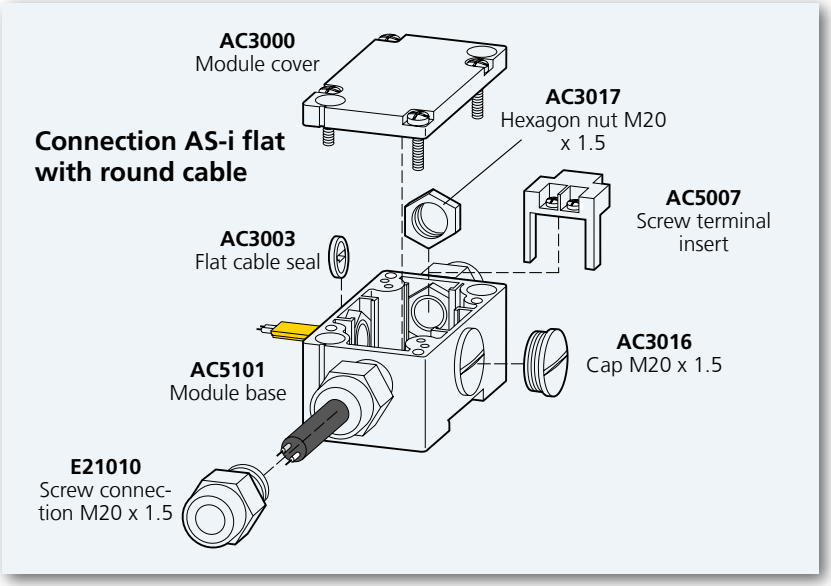
AS-i sensors

Description	Sensing range / measuring range	Temperature range [°C]	Order no.
Inductive AS-i sensor M12	4 mm f	-25...70	**IFC247**
Inductive AS-i sensor M12	7 mm nb	-25...70	**IFC248**
Inductive AS-i sensor M18	8 mm f	-25...70	**IGC234**
Inductive AS-i sensor M30	14 mm f	-25...70	**IIC220**
Inductive AS-i sensor M30	22 mm nf	-25...70	**IIC221**
Inductive AS-i sensor cuboid	15 mm f	-25...70	**IM5118**

b: flush installation; nb: non-flush installation

AS-i accessories

Description	Use	Order no.
Lower part for AS-i modules including accessories (complete set)	adapter flat cable to round cable	**AC5031**
Lower part for AS-i modules	adapter flat cable to round cable	**AC5101**
Module cover	for using a module base as a branching box	**AC3000**



AS-i accessories

No.	Description	Use	Order no.
1	Passive bus termination	cable extensions	**AC1147**
2	Passive bus termination	line extension with 2 different terminating resistors	**E70580**
3	Addressing cable	addressing slaves with addressing socket, e.g. AC52xx	**E70213**
4	Flat cable insulation displacement connector	connection of AS-i slaves with M12 plug, e.g. AC2484	**AC5005**
5	T splitters	slaves with double assignment of inputs, e.g. AC52xx	**EBC114**
6	Cable clip	flat cable holder	**E70067**
7	Flat cable insulation displacement connector	connection of AS-i slaves with M12 plug, e.g. AC2484, AC23xx	**E70096**
8	Cable clip	flat cable holder stainless steel	**E70442**
9	Flat cable insulation displacement connector, coupling nut stainless steel	connection of AS-i slaves with M12 plug, e.g. AC2484	**E70471**
10	Flat cable splitter box	voltage splitter AS-i / AS-i or AUX / AUX	**E70581**
11	Flat cable insulation displacement connector, 1 m	AS-i / AUX voltage can be tapped via M12 cable socket	**E70582**
	Flat cable insulation displacement connector, 0.6 m	AS-i voltage can be tapped via M12 cable socket	**E70583**
12	Flat cable insulation displacement connector	connection of AS-i slaves with M12, e.g. AC2484	**E70585**
		connection of AS-i slaves with M12, e.g. AC2316	**E70586**
		AS-i / AUX on M12 socket, 4A	**E70587**
13	Flat cable insulation displacement connector	AS-i / AUX on M12 socket, 4A	**E70588**
14	Flat cable insulation displacement connector, 2 m	cable end open 2-pole, 2 x 0.34 mm²	**E70598**
15	Flat cable splitter box	voltage splitter AS-i / AS-i or AUX / AUX	**E70600**
16	Flat cable insulation displacement connector V2A, 2 m	cable end open 2-pole, 2 x 0.34 mm²	**E79995**
17	Flat cable insulation displacement connector V2A, 1 m	cable end M12 socket (stainless steel), 2 x 0.34 mm²	**E79998**
18	Flat cable insulation displacement connector with quick assembly	connection of AS-i devices	**E75005**
19	Flat cable insulation displacement connector with quick assembly coupling nut stainless steel	connection of AS-i devices	**E75471**

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Scan code and learn more about accessories for AS-i.

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