



Automation Technology for the Packaging Industry

Catalogue 2019/2020



ifm – your partner for packaging machines



The name ifm stands for a large range of different sensors and systems for automation technology worldwide.

For more than forty years the family-run company has been researching, developing and producing with the aim of optimising technical processes and conserving resources.

An extremely wide product range provides sufficient flexibility to meet customer requirements in the most varied industries: from an individual sensor and matching accessories to a complete system solution. Of course all relevant approvals are available.

As one of the global players, ifm guarantees worldwide availability of the units. More than 70 branch offices worldwide ensure competent advice on-site.

ifm – close to you!



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ifm – the company matching your requirements

close to you:

Our worldwide sales and service team is here to help you at any time.

Engineering “Made in Germany”:

German engineering available worldwide.

Flexible:

Not only our service but our broad product portfolio perfectly suit the most varying requirements.

Innovative:

More than 880 patents and in 2018 about 100 patent applications.

Reliable:

5-year warranty on ifm products.



System instead of just components
ifm provides you with a broad portfolio for flexible automation of your production. Our range of more than 7,800 articles guarantees flexibility and compatibility.



Quality as part of our philosophy
Quality is an inherent part of our philosophy. We use our customers' feedback to continuously improve the quality of our products. Our sensors are tested with values far beyond the indicated limits using special procedures.



We are there for you

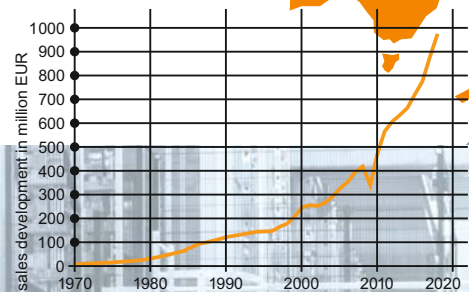
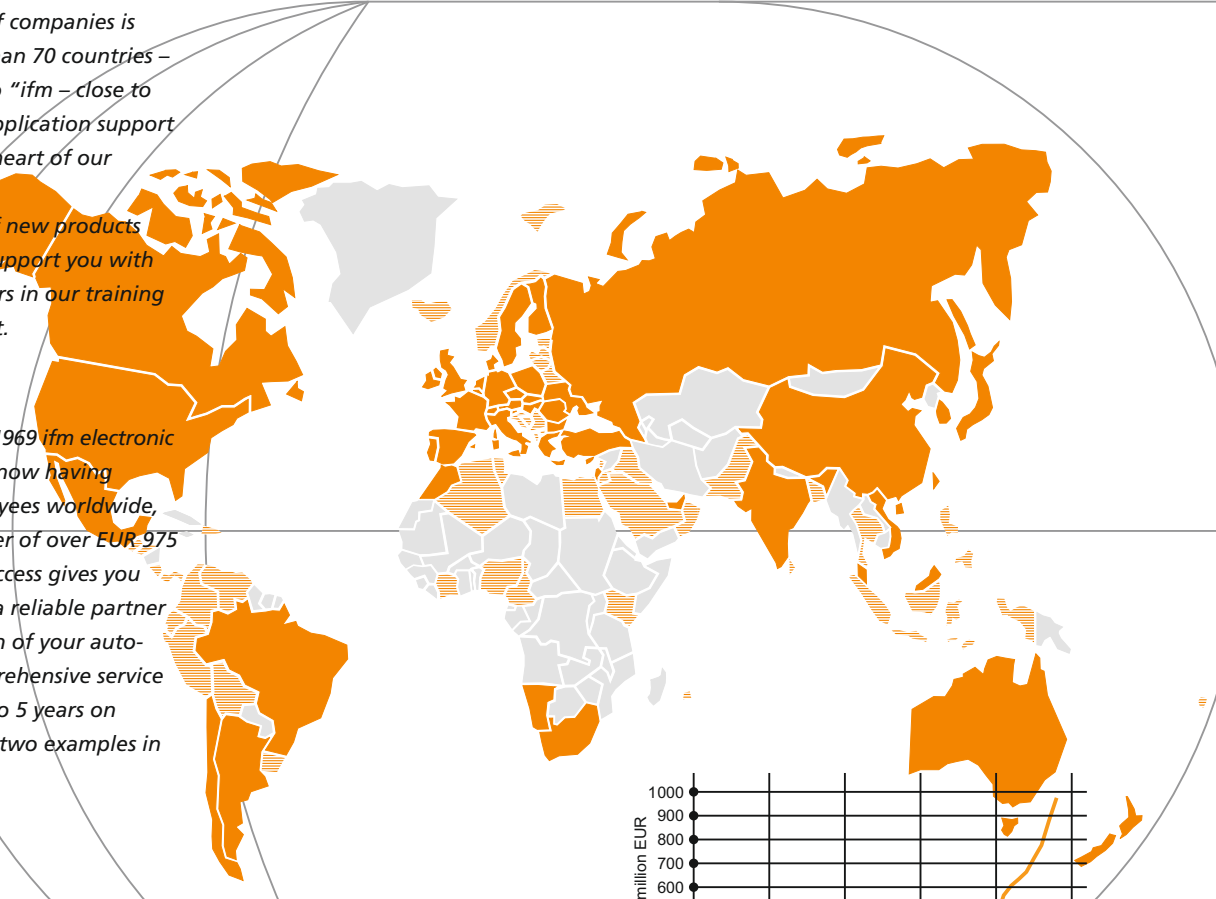
Close contact with our customers is part of our success. We have consistently developed our sales network right from the start.

Today the ifm group of companies is represented in more than 70 countries – according to the motto “ifm – close to you!” Your personal application support and service are at the heart of our operation.

For the introduction of new products and technologies we support you with workshops and seminars in our training centres or in your plant.

Security by success

Since its foundation in 1969 ifm electronic has constantly grown, now having more than 7000 employees worldwide, and achieved a turnover of over EUR 975 million in 2018. This success gives you the security of having a reliable partner for the implementation of your automation projects. Comprehensive service and a warranty of up to 5 years on standard units are just two examples in this context.



Product availability

Your deadlines matter to us. That is why we are constantly optimising our production processes. In order to be able to quickly and flexibly produce large quantities at a constantly high quality – and to continue to shorten delivery times.

See the current ifm company film to get to know us better:
ifm.com/gb/close-to-you



The ifm sales platform



Overview:

The ifm product range is clearly structured and the individual product platforms ensure quick orientation.

Selectors:

Choose between the most important technical data and you will get the product selection suitable for your requirements.

Compare:

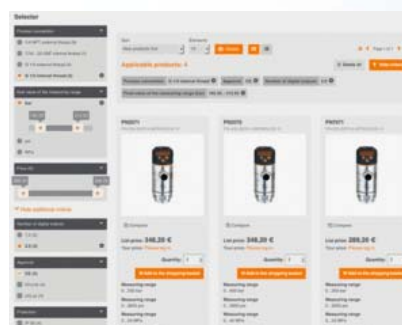
You can compare the technical data of up to 3 products. Differences are marked in colour.

Search and find:

Enter the search term in the full text search and get suggestions for products, topics and product groups.

Order:

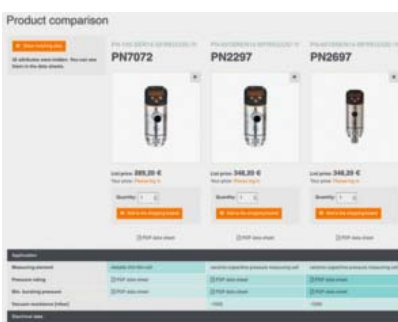
We provide a quick-order and csv import function for the shopping basket on the product pages.



More clarity

For each product group you can make a first selection via the platforms.

A clear visual language and explanatory texts give you a first impression of the products.



Compare products with each other

The selectors are the heart of the product search. The displayed selection criteria are adapted to each product range and the technical features of the products. The results can be displayed as tiles or lists.

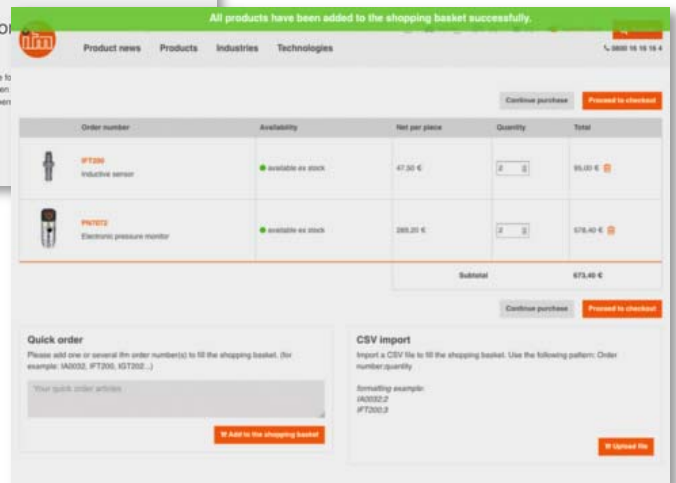
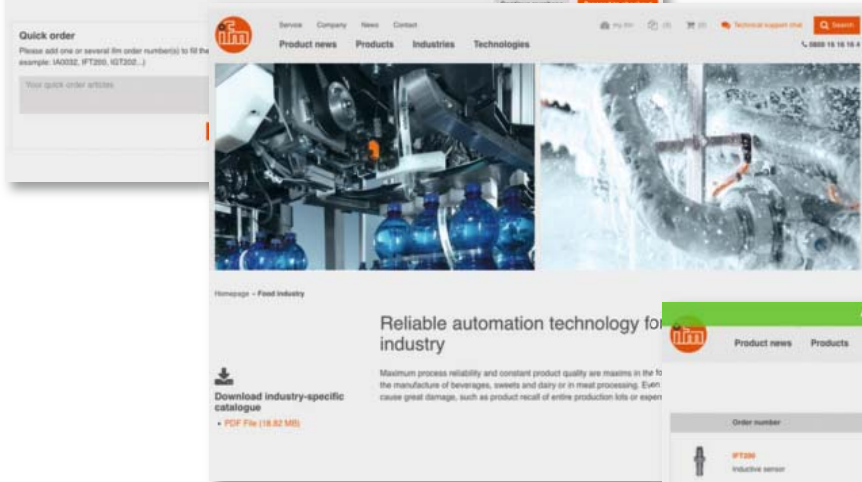


Easy purchasing

You are in control of everything in the shopping basket: quantity, modes of shipment and payment. We provide you with everything you can expect from a modern shop.

Customers relying on long-standing tried-and-tested articles can quickly order by entering the article number in the shopping basket. This saves time, in particular when a product has to be quickly reordered.

Navigation in the menu structure is no longer necessary.



For all types of display

Whether PC, laptop, tablet or smartphone – the design of the sales platform adapts to any screen size thus increasing user-friendliness. This also makes it possible to buy products using mobile equipment such as a smartphone.

Try us.
Click here to directly get to our homepage:
ifm.com



Your start into the industrial revolution. IO-Link solutions from ifm.



Simple:

The sensor parameters can be set from the controller or the master. No crawling or climbing required to set the sensor.

Transparent:

Many sensors supply measured values to the switching signals via IO-Link. The goal is a constant product quality with less energy and raw material consumption.

Reliable:

Transmission that is prone to errors and conversion of analogue signals is replaced with digital measured value transmission.

Low-cost:

Process information, switching status, diagnostic functions are transmitted without loss via a single port to the controller. Expensive analogue signal processing is no longer needed.

Fascination IO-Link

In the past binary switches usually provided simple switching signals or analogue values. Today the data from intelligent sensors is the basis for the next industrial revolution.

Sensors that extract all the information from your machines and equipment using the key technology IO-Link.

Leading manufacturers from the fields of sensors, actuators and control technology have developed IO-Link.

Together they developed a standardised and field-bus independent interface for automation providing the user with a point-to-point connection without complex addressing.

Benefit from the appeal of IO-Link, talk to us and stay as productive and competitive for your manufacturing processes of tomorrow.



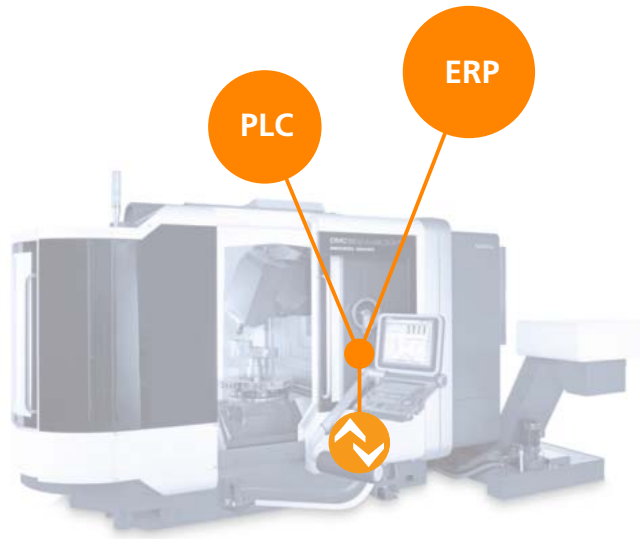


Head start with IO-Link

Use the advantages! Today IO-Link sensors from ifm give the user completely new options.

Additional sensor data, for example, is generated to achieve maximum efficiency and cost saving.

This allows process transparency from the machine to ERP to optimise your existing automation. Furthermore IO-Link has a lot more to offer:



No external influence of the signal

Data transfer is based on a 24 V signal. Screened cables and associated grounding are no longer necessary.



Tamper free

No wrong settings by operators.



No measured value losses

The entire measured value transmission is digital. Transmission that is prone to errors and conversion of analogue signals is replaced.



Identification

Only like for like replacement. No wrong sensors accepted.



Easy sensor replacement

All sensor parameters are stored in the master and transferred to the replaced unit.



Wire-break detection / diagnostics

Wire-break or short-circuit is immediately detected.

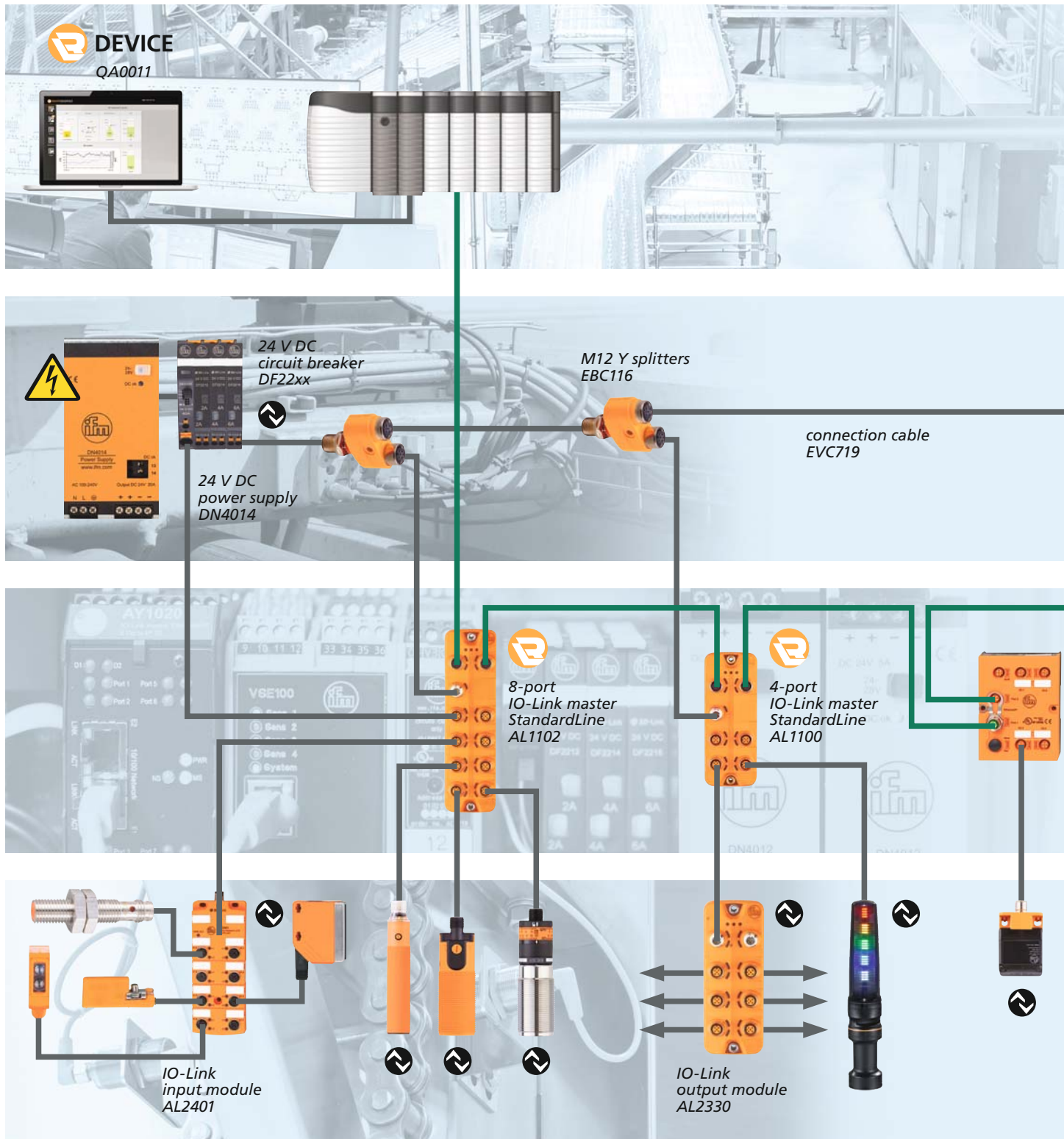


Point-to-point communication:
more details in our IO-Link video:
io-link.ifm



Future-oriented technology meets user-friendly concepts.

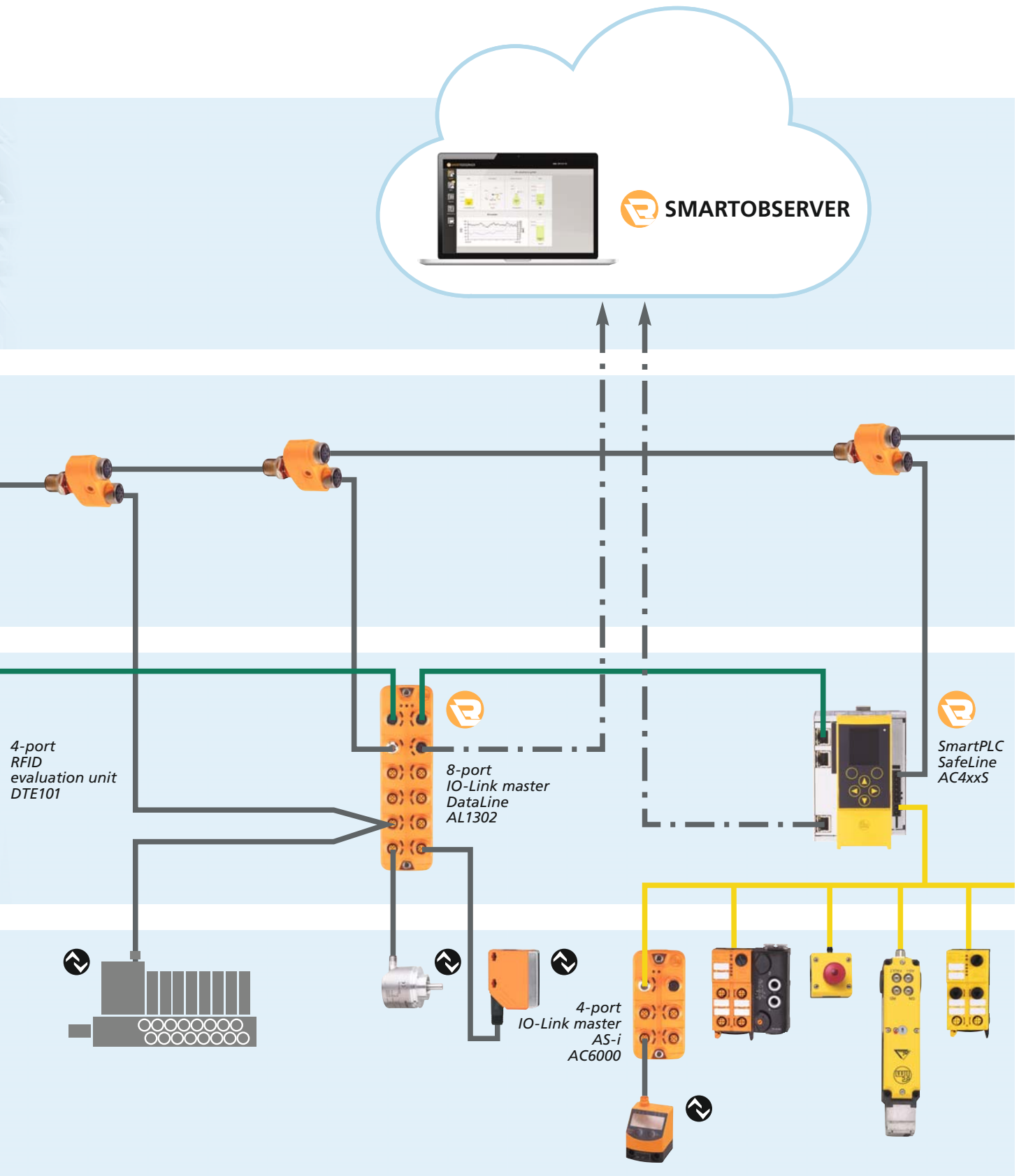
IO-Link in the packaging industry



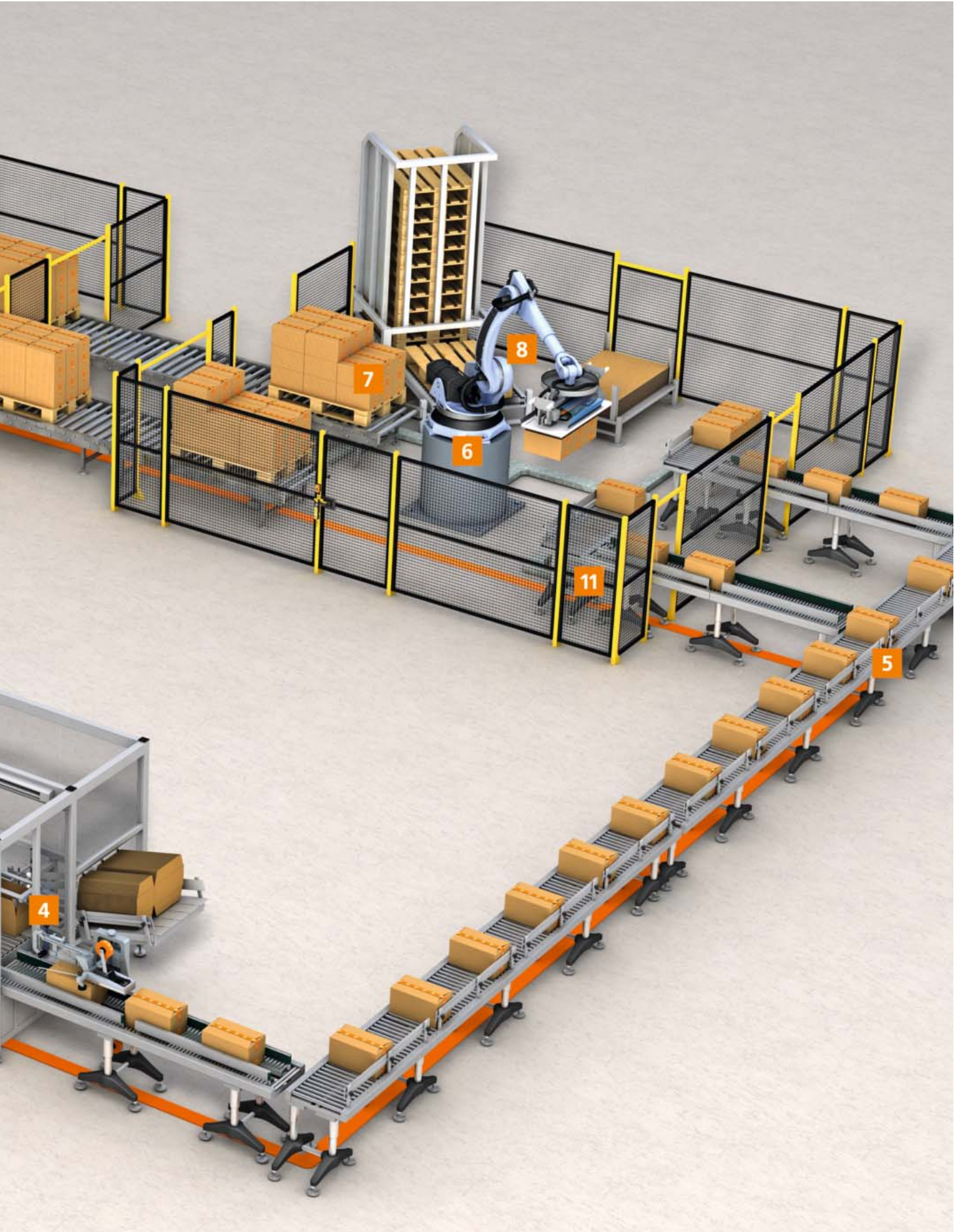
In the following countries we additionally offer application solutions consisting of hardware, software and services:









ifm offers the widest and most consistent product portfolio of IO-Link sensors, masters and software.









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Sensors and systems for packaging machines



Modern sensors for packaging machines are quick, reliable and precise – from simple position monitoring to optical quality control.

Today packaging machines are as varied as their applications. Besides primary and secondary packaging, there's a difference between solid and liquid goods.

ifm offers different sensor types, for example for dry or hygienic areas to detect position, volume and level. 2D and 3D vision systems check contours, volume or labelling. 1D/2D code readers and RFID systems for product identification complete ifm's product portfolio in this field.



Flow wrapping machine

**Detection of packing material**

Ultrasonic sensors are used to reliably check transparent films. Irrespective of material and colour, they can detect how much packing material is still in the magazine.

Ultrasonic sensors for the detection of transparent film




Type	Dimensions [mm]	Sensing range [mm]	Material	U_b [V]	Protection	f [Hz]	I_{load} [mA]	Order no.
	M18 / L = 97.5	1600	PBT	10...30	IP 67	3	100	UGT204
	53 x 20 x 37.7	1200	stainless steel (17-4 PH/1.4542)	10...30	IP 67	5	100	UGT594


**Detection of print marks**

The print marks on the film determine the machine cycle. The reliability and switching frequency of the print mark or contrast sensors are decisive for precise cutting and closing the bags.

Sensors for colour detection

Type	Operating principle	Measuring range	Light spot diameter [mm]	U_b [V]	Current consumption [mA]	Sampling rate / switching frequency [Hz]	Order no.
	Colour sensor	15...19 mm	2.5 x 6	10...36	50	2000	O5C500

Contrast sensors

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Order no.
	Diffuse contrast sensor	18...22 mm	RGB	1.5 x 5	H/D PNP/NPN	O5K500

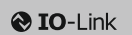
Flow wrapping machine




Cycle and speed monitoring

Machine cycle and speed are monitored using encoders. Besides the TTL and HTL signals the encoder can transmit the information as counter or RPM to the PLC. Parameters are set via IO-Link.

Encoders with display, programmable via IO-Link or pushbuttons



Type	Resolution	U _b [V]	f [kHz]	I _{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Order no.
	1...10000	4.75...30	1000	50	6	-40...85	radial / axially	RUP500




Loop control


The bag film is fed to the filling station with a loop control. The film tension is checked using a roller system. The laser distance sensor transmits the value to the PLC. Two full-metal inductive sensors detect the end positions.

Distance monitoring



Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output	Order no.
	Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary PNP	OID250

End point detection

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Order no.
	M12 / L = 45	4 f	High-grade st. steel	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	100	100	IFC275

f = flush / nf = non flush / qf = quasi-flush


Flow wrapping machine

**Overfilling at the flow wrapping machine**

The LED indicates switch point reliability. Deposits, change of material, etc. are therefore directly displayed at the sensor. So the user can perfectly (re)adjust the switch point, if needed.

Non-contact level detection



Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Order no.
	M30 / L = 92	25 nf	PBT	10...30	IP 65 / IP 67 / IP 69K	40	200	KI6000


f = flush / nf = non flush / qf = quasi-flush

Flow wrapping machine sealing bar


**Sealing bar end positions**

Type MK electronic cylinder sensors or type MR cylinder sensors with reed contact detect the end positions of the pneumatic cylinder at the sealing bar. These signals are then further processed in the PLC.

Zylindersensoren T-Nut zur Endlagererkennung

Type	Dimensions [mm]	Material	U _b [V]	f [Hz]	Protection	I _{load} [mA]	T _a [°C]	Order no.
	25.3 x 5 x 6.5	PA (polyamide)	10...30	10000	IP 65 / IP 67	100	-25...85	MK5100

Zylindersensoren C-Nut zur Endlagererkennung

Type	Dimensions [mm]	Material	U _b [V]	f [Hz]	Protection	I _{load} [mA]	T _a [°C]	Order no.
	17.5 x 2.8 x 7.7	PA (polyamide)	10...30	5000	IP 65 / IP 67	100	-25...85	MK5329

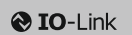
Flow wrapping machine sealing bar




Position detection

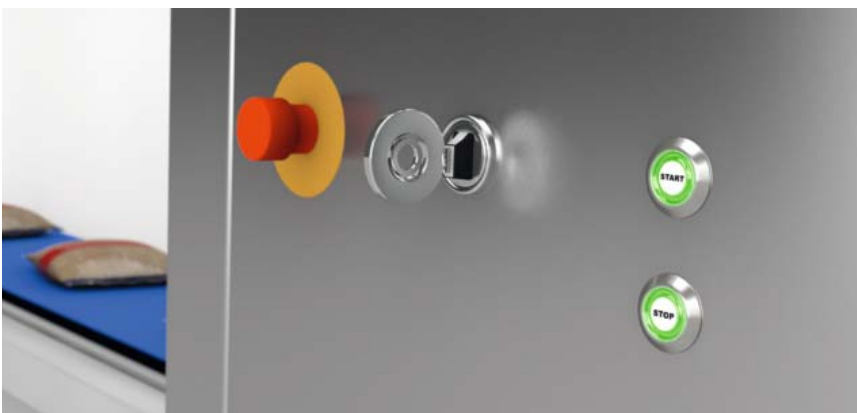
The photoelectric sensors of the O6 family reliably detect the packed goods. Depending on packaging and size photoelectric sensors can be used with polarisation filter, as through-beam sensor or as diffuse reflection sensor with background suppression.

Photoelectric sensors for determining position



Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Order no.
	Background suppression	2...200 mm	Red	8	H/D PNP	O6H309

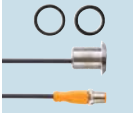

Cartoning machines



Non-contact switching without mechanical pressure

Dynamic touch sensors detect an approaching human hand and suppress interference such as water, layers of ice or foreign bodies to a large extent. The green LEDs can be controlled separately and, for example, be used to indicate the status of machines.

Non-contact sensors with LED ring

Type	U _b [V]	I _{load} [mA]	Current consumption [mA]	Ambient temperature [°C]	Protection	Order no.
	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	KT5351
	24	200	30	-40...85	IP 65 / IP 67 / IP 69K	KT5111

Cartoning machines





Visual indication

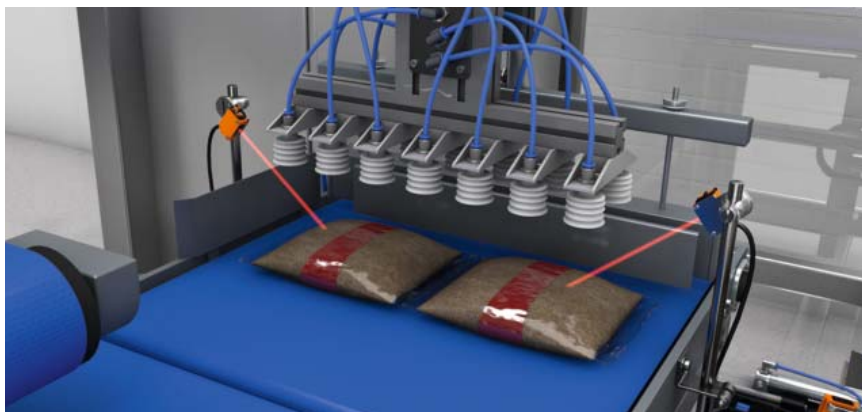
Light towers are used for status indication or as warning devices everywhere in factories on machines, conveyors and installations.

The RGB LED light tower from ifm can be adapted as needed by means of IO-Link or a setting button.

Configurable RGB LED light towers



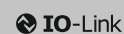
Type	Dimensions [Ø x H]	Communication	Items supplied	Protection rating	Order no.
	70 x 344	Digital inputs / IO-Link	Mounting base	IP 65	DV1500
	70 x 384	Digital inputs / IO-Link	Mounting base / buzzer	IP 54	DV1510



Positioning for handling application

Diffuse reflection sensors with background suppression detect if the goods are correctly positioned for the handling robot or gripper.

Photoelectric sensors for product detection



Type	Operating principle	Range	Type of light	Protection	Output H = light-on D = dark-on	Order no.
	Background suppression	2...200 mm	Red	IP 65 / IP 67 / IP 68 / IP 69K	H/D PNP	O6H309
	Diffuse reflection sensor	5...500 mm	Red	IP 65 / IP 67 / IP 68 / IP 69K	H/D PNP	O6T309

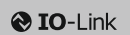
Cartoning machines




Pressure monitoring at suction grippers

Pressure measurement at the suction grippers by the type PQ vacuum sensors detect whether there is sufficient vacuum for a safe gripping operation. The values can be provided as switch point or transferred to the PLC via IO-Link.

Vacuum pressure sensor for measuring the vacuum on a suction gripper




Type	Process connection	Display	Measuring range [bar]	Poverload max. [bar]	Pbursting min. [bar]	U _b DC [V]	Order no.
	G 1/8 female / M5 female	Display unit	-1...1	20	30	18...32	PQ3809




Level detection in the carton magazine

Type O7 photoelectric sensors are used to detect the level in the carton magazine. They reliably detect when the carton magazine needs to be refilled.

Min. / max. carton magazine monitoring

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Order no.
	Polarisation filter	0.03...1 m	Red	55	D PNP	O7P200

Prismatic reflector


Type	Description	Order no.
	Prismatic reflector · Ø 50 mm · round · fixing by screw · For red light and infrared light retro-reflective sensors · Housing materials: plastics	E20956

Vision systems


**Completeness monitoring**

The 3D sensor detects overfill or underfill of goods. The time of flight technology used allows evaluation of volume, distance or level and provides the data as switch point or via the Ethernet interface.

3D vision sensors for underfill / overfill

Type	Operating principle	Resolution (pixels)	Angle of aperture (horizontal x vertical) [°]	Lighting	Max. sampling rate [Hz]	Ambient temperature [°C]	Order no.
	3D sensor	176 x 132	40 x 30 ****	Infrared LED	25	-10...50	O3D300

Operating software ifm Vision Assistant for completeness monitoring


Type	Description	Order no.
	Operating software · O3D3xx	E3D300

**Detection of packing material**

The photoelectric sensors of the O8 family reliably detect the packed goods. Thanks to their compact design they can be mounted almost everywhere. The sensor parameters and diagnostic data are transmitted via the IO-Link interface.

Small photoelectric sensors for the detection of goods



Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Order no.
	Background suppression	1...80 mm	Red	4.5	H PNP	O8H220
	Polarisation filter	0.02...1.8 m	Red	120	D PNP	O8P200


Vision systems




Detection of QR codes

Photoelectric multicode readers are ideal for identification tasks in conveying. They ensure that the right product is in the right place at the right time.

Product identification via multicode reader

Type	Dimensions [mm]	Max. field of view size [mm]	Type of light LED	Motion speed [m/s]	Process interface	Order no.
	60 x 42 x 53.5	64 x 48	red light	≤ 7	Ethernet TCP/IP, EtherNet/IP, RS-232	O2I300

Operating software

Type	Description	Order no.
	Operating software · O2I · for multicode reader · Create and manage application-specific configurations Monitor mode for set-up and service Service reports for statistical evaluations	E2I200

Roller conveyors




Monitoring of roller conveyors

ifm encoders monitor the speed of the roller conveyor. They are extremely robust and can be adjusted to almost every application by means of the integrated IO-Link interface.

IO-Link encoders

 IO-Link

Type	Resolution	U _b [V]	f [kHz]	I _{load} [mA]	Shaft [mm]	Ambient temperature [°C]	Cable entry	Order no.
	1...10000	4.75...30	1000	50	10	-40...85	radial / axially	RV3100

Roller conveyors





IO-Link field masters

Everywhere on the machine IO-Link masters can be integrated into the existing bus system. They enable communication down to the IO-Link sensor. Moreover IO-Link actuators and conventional sensors can be connected.

IO-Link master field modules



Type	Inputs / outputs	Description	Order no.
	max. 4 IO-Link ports / max. 8 digital inputs / max. 4 digital outputs	IO-Link master with Profinet interface · I/O modules for field applications · M12 connector · housing: polyamide / socket: Brass nickel-plated	AL1300
	max. 8 IO-Link ports / max. 12 digital inputs / max. 8 digital outputs	IO-Link master with EtherNet/IP interface · I/O modules for field applications · M12 connector · housing: polyamide / socket: Brass nickel-plated	AL1222


Safety technology



Monitoring of safety doors

Fail-safe sensors are used for tamper-free monitoring of safety doors and dampers. When these are opened, the controller switches off this area.

Safety door contact sensor with coded target

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Order no.
	36 x 13 x 26	5 nf	PA	24	IP 67 / IP 69K	150	50	MN2025

f = flush / nf = non flush / qf = quasi-flush

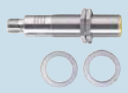
Safety technology



Axis range scanning with limit fields


For range detection of the main axis of rotation on robots fail-safe inductive sensors of category SIL2 safely detect the presence of metal targets without contact and without any special counter-part.

Fail-safe inductive sensors

Type	Length [mm]	Enable zone [mm]	Housing material	U _b DC [V]	Protection	Response time in case of a safety request / enable time [ms]	Order no.
	M18 / L = 86.5	> 10 f	Brass	24	IP 65 / IP 67	≤ 5 / ≤ 5	GG8515

f = flush / nf = non flush / qf = quasi-flush

Evaluation relay for safety technology

Type	U _b [V]	Electrical design	ISO 13849-1: Category / performance level	IEC 61508: SIL	Order no.
	24	Relay	4 / e	3	G15015

Palletisers




Monitoring of pallet magazines

Ultrasonic sensors detect the level of the pallet magazine. Depending on the type the level is provided via the IO-Link or analogue output. The advantage with ultrasonic sensors is their colour-independent detection.

Ultrasonic sensors for easy detection of pallets



Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Order no.
	M18 / L = 97.5	2200	stainless steel 316L / 1.4404	10...30	IP 67	2	100	UGT513


Palletisers




Positioning of pallets

The photoelectric sensors signal to the PLC when the pallets are at the right position for the robot. Depending on the width, this is done by means of a through-beam sensor or retro-reflective sensor with polarisation filter.

Photoelectric sensors with increased range

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Order no.
	Polarisation filter	0.1...7 m	Red	175	H+D PNP	O5P202

Prismatic reflector

Type	Description	Order no.
	Prismatic reflector · Ø 80 mm · round · For red light and infrared light retro-reflective sensors · Housing materials: plastics	E20005




Monitoring of magazines

The distance sensors of the O5 family measure the level in the magazine on the time of flight principle (PMD technology). The values can be transmitted as switching signals or as continuous value via IO-Link.

Distance / level monitoring of magazines



Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output	Order no.
	Background suppression	0.03...2 m	Red	< 5	2 switching outputs normally open / closed complementary PNP	O5D150


Palletisers




(De)palletisers

Robots help with palletising and de-palletising. The 3D sensor detects the exact position and orientation of the packages. The sensor is set up by the user in a few steps via an app.

3D vision sensor for monitoring of the palletising process

Type	Operating principle	Resolution (pixels)	Angle of aperture (horizontal x vertical) [°]	Lighting	Max. sampling rate [Hz]	Ambient temperature [°C]	Order no.
	3D sensor	176 x 132	60 x 45	Infrared LED	25	-10...50	O3D302

Fixing components for 3D sensors

Type	Description	Order no.
	Mounting set · O3D · Clamp mounting · Type Smart Camera · rod mounting Ø 14 mm · Housing materials: fixture: stainless steel / clamp: stainless steel	E3D301

Sensors on the palletiser robot




IO-Link field masters

The decentralised IO-Link master modules serve as a gateway between intelligent IO-Link sensors and the field bus. The IO-Link modules allow access down to the IO-Link sensor or actuator.

IO-Link master field modules



Type	Inputs / outputs	Description	Order no.
	max. 4 IO-Link ports / max. 8 digital inputs / max. 4 digital outputs	IO-Link master with Profinet interface · I/O modules for field applications · M12 connector · housing: polyamide / socket: Brass nickel-plated	AL1100

Sensors on the palletiser robot




Field modules with IO-Link connection


Up to 8 or 16 conventional sensors can be connected to these modules. IO-Link transfers the signals to any IO-Link master / PLC via one unscreened M12 connection cable. This reduces wiring complexity.

IO-Link modules CompactLine for the connection of binary sensors to the IO-Link master




Type	Inputs / outputs	Description	Order no.
	8 x 2 inputs	Active CompactLine module (IO-Link device) · 8 way · Supply via IO-Link M12 connector · Digital inputs · Sockets M12 x 1 · PA / socket: Brass nickel-plated / O-Ring : Viton	AL2401


Photoelectric sensors with background suppression

Type	Operating principle	Range	Type of light	Spot Ø at max. range [mm]	Output H = light-on D = dark-on	Order no.
	Background suppression	2...200 mm	Red	8	H/D PNP	O6H201

Accessories

Type	Description	Order no.
	Protective cap · M12 · for M12 sockets of ClassicLine modules, CompactLine modules and AirBoxes · Housing materials: PA black	E73004

Connectors

Type	Cable	Wire specification	Material housing / nut	U [V]	T _a [°C]	Pro-tection	LEDs	Order no.
	0.3 m black PUR cable	4 x 0.34 mm ² , Ø 4.9 mm	TPU / Brass	250 AC 300 DC	-25...90	IP 65 / IP 67 / IP 68 / IP 69K	–	EVC010

Sensors on the palletiser robot




Pressure monitoring


Depending on the task and equipment of the robot compressed air for valve control or vacuum for suction grippers are monitored at the robot head using pressure sensors. In addition to the two-colour display the PQ series has switching and IO-Link outputs.

Pressure monitoring at the robot head via IO-Link



Type	Process connection	Display	Measuring range [bar]	P _{overload} max. [bar]	P _{bursting} min. [bar]	U _b DC [V]	Order no.
	G 1/8 female / M5 female	Display unit	-1...10	20	30	18...32	PQ3834

Connectors



Type	Description	Order no.
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M8 connector · 2 m · Housing materials: housing: TPU orange / sealing: FKM	EVC153



Monitoring of pallet grippers

Modern robot heads must perform several different tasks. To avoid collision and damage to the goods inductive sensors detect where exactly the pallet gripper is positioned.

End position detection with inductive sensors

Type	Dimensions [mm]	Sensing range [mm]	Material	U _b [V]	Protection	f [Hz]	I _{load} [mA]	Order no.
	M12 / L = 45	4 f	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	IFS244
	M12 / L = 45	7 nf	Brass	10...30	IP 65 / IP 66 / IP 67 / IP 68 / IP 69K	700	100	IFS245


f = flush / nf = non flush / qf = quasi-flush

AS-Interface


**Safety control system SmartPLC**

The SmartPLC combines two separate PLCs in one compact housing. The advantage of the AS-i bus is that signals of safe and non-safe sensors / actuators can be transmitted on the same cable.

Safe SmartPLC with integrated gateway

Type	Description	Order no.
	AS-i Profinet gateway with safe preprocessing · Ethernet configuration interface with dynamic web interface for configuration and diagnosis including remote maintenance · Profinet RT device class B · LCD colour display · Integrated safety and non safety PLC · Configuration and setup by CODESYS V3 configuration software · aluminium powder-coated / steel sheet galvanised / Makrolon · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3	AC402S


AS-Interface power supply

Type	Output current AS-i [A]	Description	Order no.
	8	Power supply · AS-i power supply 115/230 V AC · Integrated data decoupling · steel sheet	AC1258

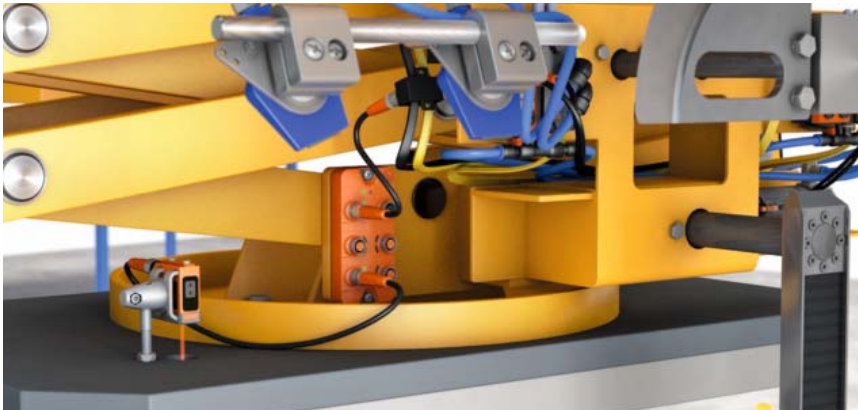
**Control of pneumatic cylinders**

The AirBox allows direct and decentralised control of cylinders via the AS-i bus. The modules have inputs / outputs for the connection of cylinder and pressure sensors. This simplifies installation.

AS-Interface AirBox for decentralised control of pneumatic cylinders

Type	Inputs /outputs	Description	Order no.
	4 inputs / 2 outputs; AirBox supply via AS-i	AS-i AirBox · 2 x 3/2-way slide valves free from overlapping · monostable · Three orientations of the flat cable are possible · AS-i flat cable connection · Version 2.11 and 3.0 with extended addressing mode · Addressing socket · PA / POM / Piercing contacts: CuSn6 surface nickel and tin-plated	AC5228

AS-Interface




Connect IO-Link and AS-i

The IO-Link master is used as a gateway between IO-Link and AS-Interface.

It allows bidirectional access via AS-i down to the IO-Link capable sensor or actuator.

IO-Link master with AS-i interface




Type	Inputs / outputs	Description	Order no.
	max. 4 IO-Link ports / max. 8 digital inputs / max. 8 digital outputs	IO-Link master with AS-i interface · I/O modules for field applications · Sockets M12 x 1 · housing: PA / socket: Brass nickel-plated	AC6000




Exchange data via RFID

Wherever long writing and reading distances are important the RFID antenna is used. Production data and quality parameters can be saved on an ID tag using the type ANT.

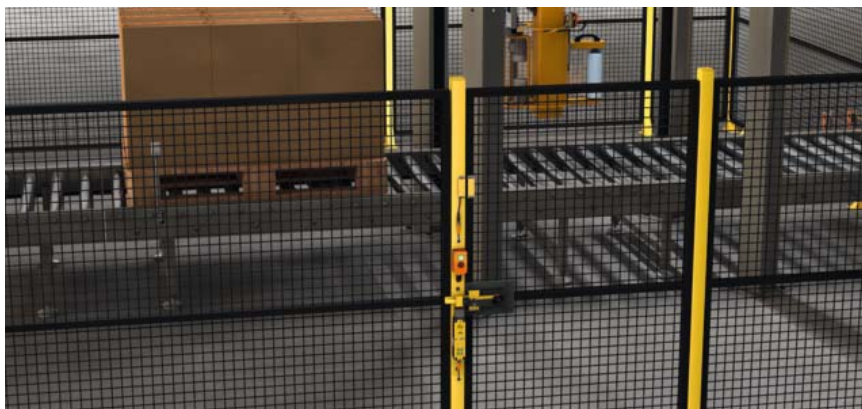
RFID systems with AS interface

Type	Description	Order no.
	RFID evaluation unit with PROFINET IO data interface · outputs: 4 outputs for up to 4 read/write heads type ANT41x/ANT51x · Housing materials: Upper part: PA Grivory GV-5H orange / Upper part: TPE / lower part: GD-AISI12	DTE101

RFID 13.56 MHz antenna

Type	Description	Order no.
	Read/write head · read distance up to 200 mm · RFID standard ISO 15693 · Housing materials: PBT / PC / stainless steel	ANT600


Safety at Work technology



Access protection Safety at Work

To prevent access to a safety area while the machine is in operation, the safety sensors with guard locking protect the area. They are quickly and easily connected to an AS-i safety control system (SmartPLC).

Safety-related access protection with positive guard locking


Type	Description	Order no.
	Safety switch with guard locking · Normally closed principle · Rotatable actuating head made of metal · Mechanical release on the front · Supply via AS-i / solenoid supply ext. from 24 V DC · M12 connector · thermoplastic reinforced glass-fibre	AC9015
	Safety switch with guard locking · Normally open principle · Rotatable actuating head made of metal · Mechanical release on the front · Supply via AS-i / solenoid supply ext. from 24 V DC · M12 connector · thermoplastic reinforced glass-fibre	AC9025




Protection of operators and machines

To protect operators type OY safety light curtains protect accessible areas at the inlet and outlet. Using a safety AS-i module they can be quickly and easily connected to an AS-i safety control system (SmartPLC).

Photoelectric safety light grids / curtains

Type	Sensor length [mm]	Resolution / detection capacity [mm]	Protected area height [mm]	Protected area width [m]	Response time [ms]	U _b [V]	Order no.
	1863	14	1810	0...3 / 1...6	20	24	OY0115

Safe AS-Interface modules

Type	Description	Order no.
	AS-i Safety at Work · Addressing socket · Three orientations of the flat cable are possible · Sockets M12 x 1 · PA / Piercing contacts: CuSn6 surface nickel and tin-plated · Complies with the requirements: ISO 13849-1: category 4 · ISO 13849-1: PL e · IEC 61508: SIL 3 · IEC 62061: SILcl 3	AC5075

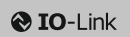
Voltage supply





Electronic 24 V circuit breakers

Electronic 24 V circuit breakers permanently monitor the secondary circuit and reliably switch it off in the event of a failure. The system has a modular design. All data is directly transferred to the connected IO-Link master.

Intelligent circuit breakers with IO-Link





Type	Description	Order no.
	Supply module, IO-Link · rail TH35 (to EN 60715) · Input current (max. total current) 40 A · for circuit protection modules DF22xx · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 19.2...30 V DC · IP 20	DF2101
	Circuit protection module, IO-Link · rail TH35 (to EN 60715) · Nominal current (Fail-safe element) 2 x 2 A · for supply module DF2100 · Ambient temperature -25...60 °C · push-in terminals · contact lever/strip · Operating voltage 19.2...30 V DC · IP 20	DF2212



Connection cable for every application

In dry or wet applications connection cables must reliably withstand any movement and vibration of the machine. Connection cables from ifm are ideal thanks to their vibration protection and high IP class.

Connectors

Type	Description	Order no.
	Socket · angled · Free from silicone · Free from halogen · Gold-plated contacts · M12 connector · 5 m · Housing materials: housing: TPU orange / sealing: FKM	EVC005
	Socket · angled · Free from silicone · Free from halogen · oil resistant · UV resistant · hydrolyse-proof · microbe-resistant · flame-retardant · acc. to IEC 60332-2 and FT2 · Gold-plated contacts · M12 connector · 5 m · Housing materials: housing: TPU black transparent / sealing: FKM	EVC664



Albania

ifm electronic monoprosopi E.P.E.
27, Andrea Papandreou Street
15125 Amaroussi
Tel. +30 210 61 800 90
Fax +30 210 61 994 00
info.gr@ifm.com
www.ifm.com/gr

Algeria

**Sarl AMS Algérie – Automatismes
Motorisation & Services**
Lotissement C, lot n°190 B
16000 Draria
Tel. +213 5 59 43 45 22
Tel. +213 23 26 41 45
Fax +213 21 35 44 21
contact@amsalgerie.com
www.amsalgerie.com

Argentina

ifm electronic s.r.l.
Lola Mora 421
10° piso, oficina 3
1107 - Puerto Madero
Ciudad Aut. Buenos Aires
Tel./Fax +54 (011) 5353-3436
Interior del país: 0810-345-3436
info.ar@ifm.com
www.ifm.com/ar

Armenia

Industrial Components LLC
28/15, Artsakh Street
0041 Yerevan
Tel. +374 10 450035
Fax +374 10 450035
icomponents@bk.ru

Australia

ifm efector Pty Ltd.
PO Box 479
Suite 3, 745 Springvale Road
Mulgrave VIC 3170
Tel. 1300 365 088
Fax 1300 365 070
sales.au@ifm.com
www.ifm.com/au

Austria

ifm electronic gmbh
Wienerbergstraße 41
Gebäude E
1120 Vienna
Tel. +43 / 1 / 617 45 00
Fax +43 / 1 / 617 45 00 10
info.at@ifm.com
www.ifm.com/at

Bangladesh

Sensotec Automation and Control
5, New Eskaton Road
Ghausnagar, Ramna
1000 Dhaka
Tel. +880 171 154 689 0
Fax +880 293 300 93
sensotec@agni.com

Belarus

ifm electronic
Ibragimova, 31, k.50
office 808
105318 Moscow
Tel. +7 (495) 921-44-14
Fax +7 (495) 651-82-97
info.ru@ifm.com
www.ifm.com/ru

Belgium and Luxembourg

ifm electronic n.v./s.a.
Zuiderlaan 91 - B6
1731 Zellik
Tel. +32 2 481 0220
Fax +32 2 463 1795
info.be@ifm.com
www.ifm.com/be

Bolivia

BAVARIA SRL
C. Mario Diaz de medina (26-A), n° 32
Zona Calacoto Alto, Urb. Morocollo –
Santos Pariamo
La Paz
Tel. +591 2 279 269 1
Mobile +591 720 47 442
alvarobaptista@bavaria.bo
www.bavaria.bo

Bosnia and Herzegovina

ifm electronic gmbh
Wienerbergstr. 41
Gebäude E
1120 Wien
Tel. +43 / 1 / 617 45 00
Fax +43 / 1 / 617 45 00 10
info.hr@ifm.com
https://www.ifm.com/hr

Brazil

ifm electronic Ltda.
Rua Leonora Cintra, 140
Jardim Analia Franco
03337-000 São Paulo
Tel. +55-11-2672-1730
Fax +55-11-2673-3501
info.br@ifm.com
www.ifm.com/br

Bulgaria

ifm electronic eood
1202 Sofia
ul. Klokochnica No 2A
Business Centre IVEL
fl.4, office 17
Tel. +359 2 807 59 69
Fax +359 2 807 59 60
info.bg@ifm.com

Cameroon

TSI
Rue Njoh
BP 3301
Face Clé des Chateaux
Douala
Tel. +237 9691 1865
SOFIPAC
Bonapriso suite à la Rue des Palmiers
3724 Douala
Tel. +237 96911865
info@sofipacsarl.com
www.sofipacsarl.com

Canada

ifm efector Canada Inc.
ifm efector Canada Inc.
Suite-302 at 2476 Argentinia Road
Mississauga, Ontario L5N 6M1
Canada
Tel. 855-436-2262
Fax 855-399-5099
info.ca@ifm.com
www.ifm.com/ca

Chile

ifm electronic SpA
Av. Presidente Eduardo Frei Montalva
#6199, Oficina 5041,
Comuna de Conchalí,
Santiago, Chile
Tel.: +56-2-32239282
info.cl@ifm.com

China

ifm electronic (Shanghai) Co., Ltd
Building 15,
No. 1000, Zhangheng Road,
Pu Dong District.
201203 Shanghai, P.R.China
Tel. +86 21 3813 4800
Fax +86 21 5027 8669
400 National Service Hotline:
400 880 6651
Involving: Contract quotation,
Product delivery, Technical support, etc
info.cn@ifm.com
www.ifm.com/cn
ifm electronic (HK) Ltd
Unit 2106, 21/F,
Tower 2, Metroplaza
No. 223 Hing Fong Road,
Kwai Chung,
N.T., Hong Kong.
info.hk@ifm.com
www.ifm.com/hk
ifm electronic (Taiwan) Limited
9F.-6, No.12, Fuxing 4th Rd., Cianjhen
District, Kaohsiung City,
Postal Code 806, Taiwan, R.O.C.
Tel. +886-7-335-7778
Fax +886-7-335-6878
info.tw@ifm.com
www.ifm.com/tw

Colombia

SENSOMATIC SAS
Calle 1 F 25a – 50
Bogotá D.C.
Tel. +57 124 741 74
Fax +57 121 367 53
info@sensomatic-ltda.com
www.sensomatic-ltda.com

Costa Rica

Genbus SA
Santa Rosa, Sto. Domingo, Heredia.
Bodegas Del Sol, Bogeda n° 22
Tel. +506 25 60 39 58
Tel. +506 22 62 39 27
info@genbuscr.com
www.genbuscr.com

Croatia

ifm electronic gmbh
Wienerbergstr. 41
Gebäude E
1120 Wien
Tel. +43 / 1 / 617 45 00
Fax +43 / 1 / 617 45 00 10
info.hr@ifm.com
www.ifm.com/hr

Czech Republic

ifm electronic, spol. s r.o.
GreenLine Kačerov
Jihlavská 1558/21
140 00 Praha 4 – Michle
Tel. +420 267 990 211
Fax +420 267 750 180
info.cz@ifm.com
www.ifm.com/cz

Denmark

ifm electronic a/s
Ringager 4A
2605 Brøndby
Tel. +45 70 20 11 08
info.dk@ifm.com
www.ifm.com/dk

Dominican Republic

Ilumeyco Soluciones
Av Sabana Larga No. 160
Reparto Oquet
Santiago
Tel. +1809 5834255
info@ilumeyco.com
www.ilumeyco.com

Ecuador

ECUAINSETEC
Yugoslavia N34-110 Y Azuay
Quito
Tel. +593 2 2450475
info@ecuainsetec.com.ec
www.ecuainsetec.com.ec

Egypt

**Egyptian Establishment
for Electromechanical Supplies Co.**
3155 El Mokattam
Alhadba alwosta Second district
(main branch)
27 Elsalam Street
Haram Street,
Near to Three Pyramids Hotel
Giza
Tel. +20 2 27298238
Fax +20 2 27298239
Mobile +20 1001061791
info@3ESsupplies.com
www.3ESsupplies.com

El Salvador

Provincer
Prolongación Boulevard Constitución,
Residencial La Gloria, Block C-3 pje. 2-C
N*1 Mejicanos
San Salvador
Tel. +503 25643005
www.provincersv.com

Estonia

Pesmel Estonia Ltd.
Segu 4
76505 Saue
Tel. +372 674 73 30
Fax +372 674 73 31
pesmel@pesmel.ee
www.pesmel.ee

Finland

ifm electronic oy
Vaakatie 5
00440 Helsinki
Tel. +358 (0)75 329 5000
Fax +358 (0)75 329 5010
info.fi@ifm.com
www.ifm.com/fi

France

ifm electronic
Siège :
Savoie Technolac BP226
73374 Le Bourget du Lac
Agence commerciale :
Immeuble Uranus
1-3 rue Jean Richepin
93192 NOISY LE GRAND CEDEX
Tel. 09 70 15 30 01
Fax 0820 22 22 04
info.fr@ifm.com
www.ifm.com/fr

Germany

ifm electronic gmbh
Friedrichstr. 1
45128 Essen
Tel. +49 201 24 22 0
Fax +49 201 24 22 12 00
info@ifm.com
www.ifm.com/de

Greece

ifm electronic monoprospoi E.P.E.
27, Andrea Papandreou Street
15125 Amaroussi
Tel. +30 210 61 800 90
Fax +30 210 61 994 00
info.gr@ifm.com
www.ifm.com/gr

Guatemala

**IASA Ingenieros Civiles
Electromecánicos Asociados, SA**
20 Calle 25-55 Zona 12
Empresarial El Cortijo 3 of 907
99999 Guatemala City
Tel. +502-23061300
info@iasa.com.gt
www.iasa.com.gt

Honduras

RyD INDUSTRIAL
Bo. Paz Barahona
14 Y 15 Calle 11 Ave.
San Pedro Sula #142
Tel. +504 5503703
Fax +504 5501108
ventas@rydindustrial.com
www.rydindustrial.com

Hungary

ifm electronic kft.
Szent Imre út 59. I.em.
H-9028 Győr
Tel. +36-96 / 518-397
Fax +36-96 / 518-398
info.hu@ifm.com
www.ifm.com/hu

India

ifm electronic India Private Limited
Plot No. P-39/1
MIDC Gokul Shirgaon
Kolhapur – 416234
Maharashtra State
Tel. +91 / 231 / 267 27 70
Fax +91 / 231 / 267 23 88
info.india@ifm.com
www.ifm.com/in

Indonesia

PT. Indoserako Sejahtera
Jl. P. Jayakarta 121 No. 59
10730 Jakarta Pusat
Tel. +62 21 6 24 8923
Fax +62 21 6 24 8922
iso297@dnet.net.id
www.indoserako.com

Iraq

EIA Elite Co Electrical
Instrument and Automation
P.O.Box 45-0240
Erbil, Kurdistan
Iraq
Talal Katmeh
Managing Director
Tel. +96 475 11790069
talal.katmeh@eiaelite.com
www.eiaelite.com

Ireland

ifm electronic (Ireland) Ltd.
No. 7, The Courtyard
Kilcarbery Business Park
New Nangor Road
Clondalkin
Dublin 22
Tel. +353 / 1 / 461 32 00
Fax +353 / 1 / 457 38 28
sales_ie@ifm.com
www.ifm.com/ie

Israel

ifm electronic (Israel) Ltd.
Tsor St. 8
Kohav Ya'ir-Tzur Yig'al
4486400 Israel
Tel. +972 (0)74-7671700
sales.il@ifm.com
www.ifm.com

Italy

ifm electronic
Centro Direzionale Colleoni
Palazzo Andromeda 2
Via Paracelso n. 18
20864 Agrate Brianza (MB)
Tel. +39 (0)39-6899982
Fax +39 (0)39-6899995
info.it@ifm.com
www.ifm.com/it

Ivory Coast

DM Company
Marcory Hibiscus
Rue Boulevard du Gabon, Villa 270
1381 Abidjan 13
Tel. +225 21 28 04 72
Fax +225 21 28 04 18
info@dmc-ci.com
www.dmc-ci.com

Japan

ifm efector co. ltd.
Tozan Building 10F
4-4-2 Nihonbashi-Honcho, Chuo-ku
Tokyo 103-0023
JAPAN
Telefon +81-3-5255-5500
Fax +81-3-5255-5511
info.jp@ifm.com
www.ifm.com/jp

Jordan

**Technical Center
For Industrial Services**
Broadcasting Street
Building # 48
PO Box:
110130 Amman
11110 Jordan
Mohannad Sha'ban
Training & Technical Support Engineer
Email m.shaban@tec-jo.com
Tel. +962 6 4739112
Mobile +962 79 9490149
Fax +962 6 4789611

AI Mashreqan Trading Supplies Co.

Otbah ben gazwan.
Modern Business Building 1st floor
Amman
Tel. +962 65540844
Fax +962 65540846
info@mashreqan.com
www.mashreqan.com

Kenia

Thames Electricals Ltd.
Sasio Road, off Lunga Road
PO Box 10403-00400
Nairobi
Tel. +254 20533276
Fax +254 20533883
lnl@africaonline.co.ke

Korea

ifm electronic Ltd.
Hyundai Liberty House 201
Dokseodang-ro Yongsan-Gu
04420 Seoul
Tel. +82 2-790-5610
Fax +82 2-790-5613
info.kr@ifm.com
www.ifm.com/kr

Kuwait

**Kana Controls
General Trading & Contracing Co.**
Avenues Mall, 5th block
Al-Rai, 5th Ring Road
Between Ghazali Street & Mohammed
Bin Alqasem Street
13052 Kuwait City
Tel. +965 24741373
info@kanacontrols.com
www.kanacontrols.com

Latvia

EC Systems
Katlakalna 4a
1073 Riga
Tel. +371 672 41231
Fax +371 672 48478
www.ecsystems.lv

Lebanon

**MEDEVCO
Middle East Development Co. SAL**
PO Box 67
9999999 Jounieh
Tel. +961 9 233550
Fax +961 9 233553
info@medevco-lebanon.com

Lithuania

Elinta UAB
Terminalo Str. 3, Biruliskes
54469 Kaunas district
Tel. +370 37 351 987
Fax +370 37 452 780
info@elinta.lt
www.elinta.lt

Macedonia

ifm electronic gmbh
Wienerbergstr. 41
Gebäude E
1120 Wien
Tel. +43 / 1 / 617 45 00
Fax +43 / 1 / 617 45 00 10

Malaysia & Singapore

ifm electronic Pte Ltd
3A International Business Park
#06-05 ICON@IBP
Singapore 609935
Tel. +6565628661
Fax +6565628660
sales.sg@ifm.com
www.ifm.com/sg

Malaysian Branch Office

No. 9F – 2A, 9th Floor,
Tower 4 @ PFCC, Jalan Puteri 1/2,
Bandar Puteri Puchong,
47100 Puchong, Selangor
Tel. + 603 8066 9853
Fax + 603 8066 9854
sales.my@ifm.com
www.ifm.com/my

Martinique

EMPH
Immeuble Seen
Zone industrielle La Lezarde
97232 Le Lamentin
Tel. +33 596 513154
Fax +33 596 570845
contact@emph-mq.com
www.emph-martinique.com

Mexico

ifm efector S. de R.L. de C.V.
Ave. Arq. Pedro Ramirez Vázquez 200-4
Planta Baja, Col. Valle Oriente.
San Pedro Garza Garcia, N.L. 66269
Tel. +52-81-8040-3535
Fax +52-81-8040-2343
clientes.mx@ifm.com
www.ifm.com/mx

Montenegro

ifm electronic gmbh
Wienerbergstr. 41
Gebäude E
1120 Wien
Tel. +43 / 1 / 617 45 00
Fax +43 / 1 / 617 45 00 10

Morocco

SOFIMED
137 Boulevard Moulay Ismail,
Roches Noires
20290 Casablanca
Tel. +212 522 240 101
www.sofimedmaroc.com

Namibia

ifm electronic (pty) Ltd
1 Basement Office,
Decor House
25 Dr. W. Kulz Street
Windhoek
Namibia
Tel. +264 61 300984 / 300998
Fax +264 61 300910
Fax to email +264 88 651 9943
info.na@ifm.com
www.ifm.com/na

Netherlands

ifm electronic b.v.
Deventerweg 1 E
3843 GA Harderwijk
Tel. +31 / 341 438 438
Fax +31 / 341 438 430
info.nl@ifm.com
www.ifm.com/nl

New Zealand

ifm efector pty ltd.
Unit 13, 930 Great South Road
Penrose, Auckland
Tel. +64 / 95 79 69 91
Fax +64 / 95 79 92 82
sales.nz@ifm.com
www.ifm.com/nz

Nigeria

Automated Process Ltd.
3rd Floor,
32 Lagos Abeokuta Expressway
Near Cement Bus Stop
Dopemu, Agege
Lagos
Tel. +234 1 4729 967
Fax +234 1 4925 865
sales@automated-process.com
www.automated-process.com

Norway

JFKnudtzen AS
Billingstadsletta 97
1396 Billingstad
Postboks 160
1378 Nesbru
Tel. +47 66 98 33 50
Fax +47 66 98 09 55
firmapost@jfknudtzen.no
www.jfknudtzen.no

Oman

TEC
Technical Engineering Comp. LLC
PO Box 59
Madinat Al Sultan Qaboos
115 Muscat
Tel. +968 24591670
Fax +968 2451700
tecoman@omantel.net.om

Pakistan

Automation Controls (Pak)
Appt # 33 C III Chenab Block,
Allama Iqbal Town
Lahore - Pakistan
Tel. 0092-42-37809948/9
Fax 0092-42-37809950
faheem@acpak.com.pk
www.acpak.com.pk
AL-MATEEN ASSOCIATES
51 Tariq Block,
New Garden Town,
Lahore, Pakistan
Tel. 0092-42-35914783, 35832037
asimjaved@al-mateen.com
www.al-mateen.com

Panama

JDA INGENIERIA
Golden Point Tower Office: 15-07
Via Ricardo J. Alfaro,
Ciudad de Panamá
Tel. +507 3030216
Tel. +507 3030217
Mobile +507 62004205
jaguilar@jdaingenieria.com
www.jdaingenieria.com

Peru

ACME
Av. Andres Tinoco 133
Lima, Surco
Tel. +51 990556005
acmecia@acmecia.com
www.acmecia.com

Philippines

iProcess Controls Trading INC.
Unit 303 Tower B Almanza Metropolis
Condominium Manila Doctors Village,
Almanza Las Pinas City
Tel. +63 27722309
Fax +63 25875990
ifm@iprocesscontrols.com
GRAM Industrial, Inc.
8th Floor The Sycamore Building
Alabang –
Zapote Road Muntinlupa City, 1770
Tel. +63 2 807 2084 / +63 2 850 8496
Cel. No. +63 917 552 7825
info@gram.com.ph
www.gram.com.ph

Poland

ifm electronic Sp.z o.o.
ul. Węglowa 7
PL 40-105 Katowice
Tel. +48 32 70 56 454
Tel. +48 32 70 56 480
Fax +48 32 70 56 455
info.pl@ifm.com
www.ifm.com/pl

Portugal

ifm electronic s.a.
Parque Tecnológico S. Félix da Marinha
Avenida Manuel Violas, 476
4410-137 São Félix da Marinha
Tel. +351 22 37 17 108
Fax +351 22 37 17 110
info.pt@ifm.com
www.ifm.com/pt

Qatar

Advanced Fluid Power
PO Box 201382
Building No. 01
Shop No. 36 & 37
Barwa Village Al Wakra
Doha
Tel. +974 40164273
Tel. +974 40164275
Fax +974 40164274
sales@afp-qatar.com
www.afp-qatar.com

Réunion

Diffusion Instrumentations
21 rue de la Martinique
ZA Foucherolles-Sainte-Clotilde
Tel. +262 216870
diffusion.maruszczak@laposte.net

Romania

ifm electronic s.r.l.
Mihai Viteazu Str. Nr. 1
Selimbar, Sibiu
557260
Tel. 0040 269 224550
Fax 0040 269 224766
info.ro@ifm.com

Russia

ifm electronic
Ibragimova, 31, k.50
office 808
105318 Moscow
Tel. +7 (495) 921-44-14
Fax +7 (495) 651-82-97
info.ru@ifm.com
www.ifm.com/ru

Saudi Arabia

**Noor Al-Shomoe
for Electric & Maintenance**
King Khalid Street, Cross 5
PO Box 2571
31952 Al-Khobar
Tel. +966 38939418
Fax +966 38946341
h.o.info@nooralshomoe.com
Bariq Trading Establishment
PO Box 27001
11417 Riyadh
Tel. +966 14728782
Fax +966 14725576
info@bariqarabia.com
www.bariqarabia.com

Senegal

D.M.R. suarl
Résidence KASTELLE Almadies
Zone 16-17
Zone 16-17 BP30127
Dakar
Senegal
Telefon +221 33 868 1504
Fax +33 8240043
cabinetdmr@yahoo.fr

Serbia

ifm electronic gmbh
Wienerbergstr. 41
Gebäude E
1120 Wien
Tel. +43 / 1 / 617 45 00
Fax +43 / 1 / 617 45 00 10
info.hr@ifm.com
https://www.ifm.com/hr

Slovakia

ifm electronic spol. s.r.o.
Rybnicna 40
831 06 Bratislava
Tel. +421 / 2 / 44 87 23 29
Fax +421 / 2 / 44 64 60 42
info.sk@ifm.com
www.ifm.com/sk

South Africa

ifm electronic (pty) Ltd
112 Sovereign Drive,
Route 21 Corporate Park
Centurion
0157
Postnet Suite 279
ZA Foucherolles-Sainte-Clotilde
Elardus Park
0047
National 0861 IFM RSA (436 772)
International +72 12 450 0400
Fax +27 12 450 0412
info.za@ifm.com
www.ifm.com/za

Spain

ifm electronic s.l.
Parc Mas Blau
Edificio Inbisa
c/ Garrotxa 6-8
08820 El Prat de Llobregat
Tel. 0034 93 479 30 80
Fax 0034 93 479 30 86
info.es@ifm.com
www.ifm.com/es

Sri Lanka

ifm electronic India Private Limited
Plot No. P-39/1
MIDC Gokul Shirgaon
Kolhapur – 416234
Maharashtra State
Tel. +91 / 231 / 267 27 70
Fax +91 / 231 / 267 23 88

Sweden

ifm electronic ab
Drakegatan 6
41250 Gothenburg
Tel. växel 031-750 23 00
Fax 031-750 23 29
info.se@ifm.com
www.ifm.com/se

Switzerland

ifm electronic ag
Altgraben 27
4624 Härkingen
Tel. 0800 88 80 33
Fax 0800 88 80 39
info.ch@ifm.com
www.ifm.com/ch

Thailand

SCM Alliance Co. Ltd.
700/19-24
Phaholyothin Road
Samsennai Phayatai
10400 Bangkok
Tel. +66 2 615 4888
Fax +66 2 615 4644
contact@scma.co.th
www.scma.co.th
www.ifm-thailand.com

Tunesia

TECHNOPREST
90, Avenue de Carthage Appt. A33
1000 Tunis
Tel. +216 71 385 355
Tel. +216 71 389 203
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www.technoprest.com.tn

Turkey

ifm electronic
Elektrikli ve Elektronik Aletler
İth.lhr.Paz.Tic.Ltd.Şti.
Merkez Mah. Nadide Sok.
Anittepe Sitesi No:28
34381 Şişli / İstanbul
Tel. +90 / 212 / 210 5080
Fax +90 / 212 / 221 7159
info.tr@ifm.com
www.ifm.com/tr

Ukraine

ifm electronic
Mariny Raskovoj 11
02002 Kiev
Tel. +380 44 501 8543
Fax +380 44 501 8543
info.ua@ifm.com
www.ifm.com/ua

United Arab Emirates

Al Itqan
Factory Equipment Trading LLC
PO Box 92924
Dubai
Tel. +971 42673838
Fax +971 42672300
aifeqtrd@eim.ae
www.itqanuae.com

United Kingdom

ifm electronic Ltd.
efector House
Kingsway Business Park
Oldfield Road
Hampton
Middlesex TW12 2HD
Tel. +44 / 20 / 8213 0000
Fax +44 / 20 / 8213 0001
enquiry_gb@ifm.com
www.ifm.com/uk

Uruguay

Temac SA
Isabela 3264
Montevideo
Tel. +598 22188017
ventas@temac.com.uy
www.temac.com.uy

USA

ifm efector, inc.
1100 Atwater Dr.
Malvern, PA 19355
Tel. +1-800-441-8246
Fax +1-800-329-0436
info.us@ifm.com
www.ifm.com/us

Venezuela

Petrobornas CA
CC Plaza Aeropuerto
Calle Neveri
Piso 1 Local 3 Unare
25300 Puerto Ordaz
Tel. +58 286 9513382
info@petrobornas.net
petrobornas.net

Vietnam

ifm electronic Vietnam Co., Ltd.
Room 401, 4th Floor,
HD Tower,
25 Bis Nguyen Thi Minh Khai Street,
Ben Nghe Ward, District 1
700000 Ho Chi Minh City
Vietnam
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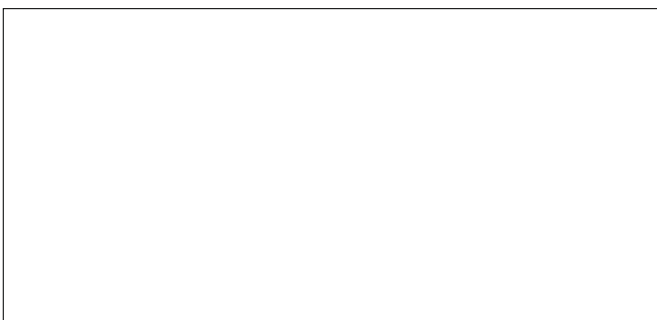
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