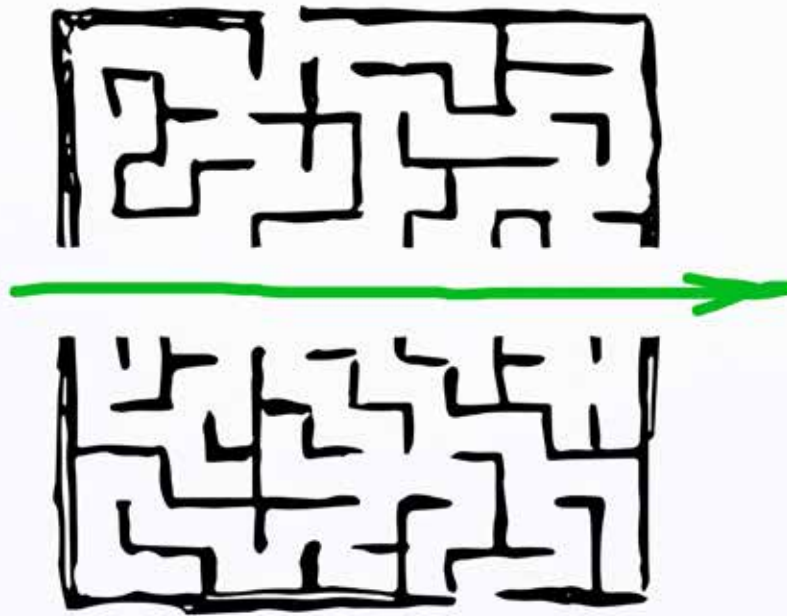


# IO-LINK

by Murrelektronik

 **IO-Link**





## 01

**Why IO-Link?** – IO-Link shortens commissioning time. The configuration data for smart sensors or actuators comes straight from the control system and does not have to be manually configured so machine set up is faster.

## 02

**What makes Murrelektronik the right partner?**  
– Murrelektronik is the expert when it comes to implementing installation concepts that are tailored to your application.

## 03

**What solutions are right for you?** – No matter which one you pick, every concept has something in common: IO-Link



## **IO-Link** **Makes** **Installations Easy**

IO-Link is the answer for more efficient, more flexible and profitable machinery – Murrelektronik has the equipment and the know-how to make it happen.

Production processes are becoming faster and more flexible and, as a result, more profitable. A lot of data is collected in modern machinery and plants during the production process. Integrating IO-Link devices simplifies data collection and handling while creating transparency all the way from the sensor-actuator level to the cloud. Murrelektronik is your expert when it comes to integrating IO-Link devices into your installation.

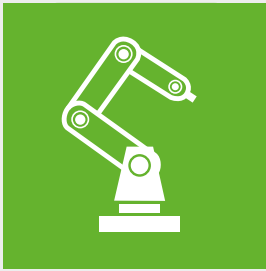
## Why IO-Link?



**IO-Link shortens commissioning time.** The configuration data for smart sensors or actuators comes straight from the control system and does not have to be manually configured so machine set up is faster.



**IO-Link lowers costs.** IO-Link communication does not require shielded cables. Instead, lower cost, standard M12 or M8 connectors can be used. The control system no longer needs costly analog cards and configurable sensors and actuators minimize the number of different versions required. As a result, procurement processes are simplified, and less storage space is needed in warehouses so direct costs are lower.



**IO-Link increases productivity.** With IO-Link, device configurations are stored in the master. When a device has to be replaced, the configuration can be transferred straight to the new component. This makes the replacement process quicker and easier while substantially lowering downtime.



**IO-Link revolutionizes maintenance.** Because IO-Link devices are constantly generating clear text process data, service technicians gain insight into application processes and conditions. Repairs can be scheduled and new maintenance routines, including the option for remote maintenance, can be established prior to a full-scale breakdown.

## What makes Murrelektronik the right partner?

Murrelektronik is the expert when it comes to implementing installation concepts that are tailored to your application. With your help, we analyze your plant and machinery – paying special attention to both the number and the location of the inputs and outputs into which sensors, actuators and smart devices are integrated. Drawing on our industry experience and your first-hand knowledge of your facility, we can select the installation concept that best meets your needs. No matter which one you pick, every concept has something in common: IO-Link.

### Range of Options

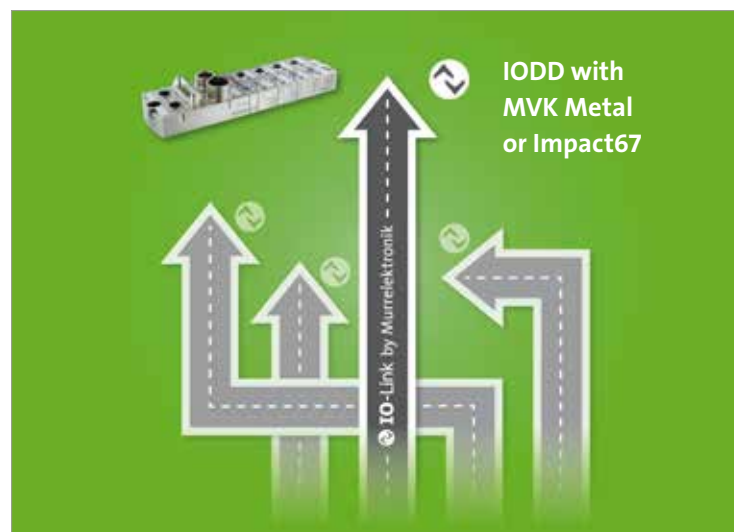
- **MVK Metal, Impact67 and Solid67:** compact fieldbus modules are all equipped with IO-Link ports
- **Easy integration of IO-Link devices**
- **MVK Fusion:** a stand-alone fieldbus module that connects standard IOs, safety applications and IO-Link devices in one module
- **Cube67:** compact, modular fieldbus system that connects up to 128 IO-Link devices on one bus node

### IO-Link Accessories

- **Hubs** let you easily multiply the number of digital IO ports
- **Analog converters** can be used to connect analog sensors and actuators to an IO-Link master
- **Inductive couplers** ensure touchless IO-Link communication over an air gap – IO-Link masters and devices can be paired and separated almost instantly (approx. 10ms) making tool changes quick and easy
- IP67 rated power supply, **Emparro67 Hybrid**, has built-in IO-Link functionality for collecting diagnostic data and operating characteristics

### IODD on Board

- **IODD** (IO Device Description) file is a device description file for IO-Link devices that contains identifying information, device configuration, process and diagnostic data, communication features and more
- **MVK Metal and Impact67** fieldbus modules store the IODD files in the GSDML file
- **No additional software needed** and time-consuming steps, like file imports, are a thing of the past – integration is achieved in record time.



### Learn from Us!

Murrelektronik is your go-to for all of your IO-Link questions. We have the products and solutions to integrate IO-Link devices into your installations. To learn more, make plans to stop by one of our Open Houses or join us at an upcoming IO-Link workshop. Need answers sooner? We're happy to work with you one on one in your facility.

## MVK METAL & IMPACT67

I/O modules with IP67 protection are a key element in machine installation and can replace complex and expensive wiring required for terminal boxes. MVK Metal and Impact67 are two of Murrelektronik's compact IO-Link fieldbus modules that are the

### Multifunctional M12 Ports

- IO-Link/DI/DO configurable channels
- Auto-configuration for standard I/O channels
- 1 A per IO-Link port
- 1.6 A per output

### IO-Link

- Configuration tool for easy configuration
- Storage function allows IO-Link devices to be replaced without any additional tools
- Covers up to 76 digital signals when combined with Murrelektronik IO-Link hubs
- Available as: 7/8", M12 L-coded and Push Pull Connectors

smartest way to connect IO-Link devices. Combining the MVK Metal or Impact67 with a variety of our IO-Link hubs and analog converters to increase flexibility and reduce hardware costs.



## SOLID67

SOLID67 are the new compact I/O modules from Murrelektronik. They make installation in the field easier and are very attractive for applications with IO-Link sensors and actuators. They provide eight IO-Link slots directly adjacent to the process and can easily incorporate classic IOs into the system.

Full encapsulation and impressive vibration and shock values (15 and 50 G) prepare the modules for use in harsh industrial environments – within a temperature range of –20 to +70 °C. This opens a door to numerous applications. Comprehensive diagnostic options at the module, through the control unit, and through an integrated web server, make troubleshooting a simple exercise.



Uses L-coded, M12 Power cables that can transmit up to 16 A. Simpler installations, reduced cable runs.



Port Class A and Port Class B



30 and 60 mm wide modules are ideal for installations with limited space.



Multiprotocol compatible modules. Turn the switch to change between protocols.

## MVK FUSION

What makes the MVK Fusion fieldbus module unique is its variety. It combines three basic functions: standard digital sensors and actuators, safety digital sensors and actuators and IO-Link.

This combination is new and innovative. It enables unique and groundbreaking automation concepts to be realized. Installation becomes simpler and faster.

MVK Fusion makes complex configurations easier because they can be done entirely by the engineering tool in the safety control system. Software developers and electrical engineers no longer need in-depth knowledge of other manufacturers' tools and manuals.

MVK Fusion makes it possible to have fewer fieldbus modules per unit. Some applications might only require a single module. This opens up new opportunities for many automation applications!



## Cube67 with IO-LINK

Cube67 is an IP67 rated, fully distributed I/O system with proven reliability in industrial applications. It can connect up to 32 I/O modules within a 60 m range.

Cube67 supports multiple protocols including Ethernet/IP, EtherCAT, ProfiBus and ProfiNet. Bus nodes have an integrated Power-T as well as communication switch connections, giving you the ability to daisy chain multiple devices together with other items on the bus network.

Absolute flexibility in system design is achieved with Cube67. Blending modules between IP67 rated applications and IP20 cabinet solutions allows the user and installer to achieve installation and maintenance in the most efficient ways.



### CUBE67 IO-LINK SYSTEM CAPABILITIES

- 128 IO-Link Master Ports possible
- A/B Interchangeable
- 1 IP Address
- IO-Link Expandable +20 m
- Integrated IO-Link Configuration Tool

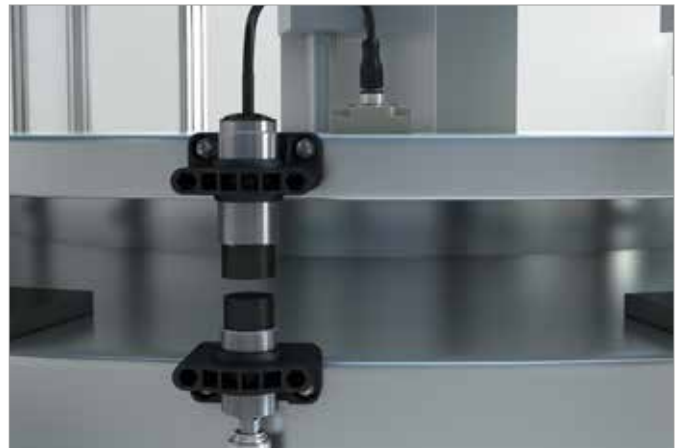
## Emparro67 Hybrid

The innovative Emparro67 Hybrid is a switch mode power supply with many powerful features. It not only allows you to relocate the power supply from the control cabinet to the field but it also monitors currents using two integrated 24V DC load circuit monitoring channels to ensure system reliability. An IO-Link interface permits extensive and transparent communication.



## Analog Converter

Murrelektronik's IO-Link analog converter can be used to connect analog devices to an IO-Link master. It converts the analog signal to the IO-Link protocol. This makes it possible for sensors and actuators to be used in a variety of IO-Link applications without having to be integrated into installation concepts again and again. It is the quickest, easiest and most economical way to integrate analog devices into an IO-Link system.



## IO-Link Hub

With Murrelektronik's IO-Link hubs, several digital sensors and actuators can easily be connected via a standard sensor cable to an IO-Link master.

MVP12-Metal IO-Link hubs automatically transmit diagnostic data, down to the individual channel, directly to the control unit without parameterization. If an error occurs, the affected hub port is disabled.

The Murrelektronik Basic IO-Link hub, is an economical solution for high-quality decentralized installation.



## Inductive Coupler



Murrelektronik's IO-Link inductive couplers transmit power and bidirectional IO-Link communication contactlessly across an air gap. This prevents mechanical wear from occurring and is an ideal solution for replacing heavily stressed slip rings.




Typical applications include tool changers, feed units and rotary indexing machines – areas in which power and data need to be transmitted to movable machine and system parts.







## IO-Link Master Modules

Input/Output Modules – digital – IP67	MVK Metal DIO14 DIO2/IOL2 4P	MVK Metal DIO12 DIO4/IOL4 4P	IMPACT67 DIO14 DIO2/IOL2 4P	IMPACT67 DIO12 DIO4/IOL4 4P
				
<b>EtherNet/IP</b>				
<b>Order Data</b>	Art.-No <b>55543</b>	Art.-No <b>55544</b>	Art.-No <b>55143</b>	Art.-No <b>55144</b>
<b>Description</b>	Addressing: DHCP, BOOTP or IP address by rotary switch			
IO-Link	2x Master, V1.1.2	4x Master, V1.1.2	2x Master, V1.1.2	4x Master, V1.1.2
Port class	Class B (not galvanically separated)			
Nominal current L+ (Pin 1 and 3)	max. 1 A per port			
Nominal current 2L+ (Pin 2 and 5)	max. 1.6 A per port			
Housing	metal		plastic	
<b>Supply voltage</b>				
Connection	7/8", 4-pole, 2x max. 9 A			
Operation voltage	24 V DC (18...30.2 V), EN61131-2			

Input/Output Modules – digital – IP67	MVK Metal DIO14 DIO2/IOL2 IRT	MVK Metal DIO12 DIO4/IOL4 IRT	IMPACT67 DIO14 DIO2/IOL2 IRT	IMPACT67 DIO12 DIO4/IOL4 IRT
				
<b>PROFI NET</b>				
<b>Order Data</b>	Art.-No <b>55531</b>	Art.-No <b>55532</b>	Art.-No <b>55131</b>	Art.-No <b>55132</b>
7/8"	<b>55531</b>	<b>55532</b>	<b>55131</b>	<b>55132</b>
M12 Power, L-coded	<b>55161</b>	<b>55162</b>	<b>55151</b>	<b>55152</b>
<b>Description</b>	Addressing: DCP			
IO-Link	2x Master, V1.1.2	4x Master, V1.1.2	2x Master, V1.1.2	4x Master, V1.1.2
Port class	Class B (not galvanically separated)	Class 2xA + 2xB (not galvanic. sep.)	Class B (not galvanically separated)	Class 2xA + 2xB (not galvanic. sep.)
Nominal current L+ (Pin 1 and 3)	max. 1 A per port			
Nominal current 2L+ (Pin 2 and 5)	max. 1.6 A per port			
Housing	metal		plastic	
<b>Supply voltage</b>				
Connection 7/8"	5-pole, 2x max. 9 A			
Connection M12 Power	4-pole, L-coded, 2x max. 16 A			
Operation voltage	24 V DC (18...30.2 V), EN61131-2			

Input/Output Modules – digital – IP67	MVK Fusion FDI6/3 FDO2/1 DIO4 IOL2 PP IRT	MVK Fusion FDI6/3 FDO2/1 DIO4 IOL2 PP IRT K	MVK Metal DI6 DO6 IOL IRT PushPull
			
<b>PROFI NET</b>			
<b>Order Data</b>	Art.-No <b>55510</b>	Art.-No <b>5551001</b>	Art.-No <b>55516</b>
	<b>55510</b>	<b>5551001</b> with heat sink	<b>55516</b>
<b>Description</b>	Addressing: DCP		
IO-Link	2x Master, V 1.1.2		V1.1.2
Port class	Class 1xA + 1xB (galvanically separated)		Class 2xB (galvanically separated)
Nominal current L+ (Pin 1 and 3)	max. 700 mA per port		
Nominal current 2L+ (Pin 2 and 5)	max. 2 A per port		
Housing	metal		
<b>Supply voltage</b>			
Connection	10/100 Mbit/s; Push Pull RJ45 Data connector		
Operation voltage	24 V DC (18...30.2 V), EN61131-2		

## IO-Link Master Modules

Input/Output Modules	SOLID67 PN/E IOL8		SOLID67 PN/E IOL8		SOLID67 PN/E IOL8		Cube67+ DIO12 IOL4 E 8xM12
– digital – IP67							
	EtherNet/IP		EtherNet/IP		EtherNet/IP		
<b>Order Data</b>	Art.-No <b>54504</b>		Art.-No <b>54505</b>		Art.-No <b>54506</b>		Art.-No <b>56766</b>
<b>Description</b>							
Addr. EtherNet IP / Profinet	DHCP, BOOTP or IP address by rotary switch / DCP						Cube67
IO-Link	8 x Master, V1.1.2		8 x Master, V1.1.2		8 x Master, V1.1.2		4 x Master, V1.1.2
Port class	Class 4xA + 4xB (galvanically separated)						Class A + B (not galvanic. separated)
Nominal current L+ (Pin 1 and 3)	max. 500 mA per port		max. 500 mA per port		max. 500 mA per port		max. 700 mA per port
Nominal current 2L+ (Pin 2 and 5)	max. 2 A per port		max. 4 A per module		max. 4 A per module		max. 1.6 A per port
Connection	M12		M12		M8		M12
Housing	metal						plastic
<b>Supply voltage</b>							
Connection	M12 Power, 5-pole, L-coded						via internal system connection
Operation voltage	24 V DC (18...30.2 V), EN61131-2						24 V DC (18...30.2 V), EN61131-2

## IO-Link Devices – On-machine Power Supply

Single-phase,  
primary switch mode

– Short-circuit- and  
overload-protected

Emparro67 Hybrid



Ordering Data	Art.-No	Art.-No	Art.-No	Art.-No
	<b>85676</b>	<b>85677</b>	<b>85678</b>	<b>NEC class 2 85679</b>
Current	10 A	10 A	10 A	2x 4 A
<b>IO-Link</b>				
IO-Link specification	V1.1.2			
Port class	Class A			
Operation mode	COM2			
Parameter	ON/OFF; setting tripping current, setting output voltage, and many more			
Diagnostics	Output current, alarm, life cycle, and many more			
Connection	M12, male			

## IO-Link Devices – IO-Link Analog Converter

Input Modules

– analog  
– IP65/IP67

AI I 0 ... 20mA, M12,  
straight

AI I 4 ... 20mA, M12,  
straight

AI U 0 ... 10V, M12,  
straight


AI U -10- +10V, M12,  
straight

Multi AI U / I, M12, straight





Order Data	Art.-No	Art.-No	Art.-No	Art.-No	Art.-No
	<b>5000-00501-1100000</b>	<b>5000-00501-1110000</b>	<b>5000-00501-1200000</b>	<b>5000-00501-1210000</b>	<b>5000-00501-1300001</b>
<b>Description</b>					
Input Range	0 ... 20 mA	4 ... 20 mA	0 ... 10 V	-10 ... +10 V	0 ... 20 mA, 4 ... 20 mA, 0 ... 10 V, -10 ... +10 V
Resolution (analog)	15 Bit + sign				
IO-Link Specification	V1.1.2				
Port class	Class A				
Operation mode	COM2				
Connection	M12, 5-pole, A-coded				
Housing	plastic				
<b>Supply voltage</b>					
Operation voltage	24 V DC (18...30.2 V)				




## IO-Link Devices – IO-Link Analog Converter

<b>Output Modules</b> – analog – IP65/IP67	AO I 0 ... 20mA, M12, straight	AO I 4 ... 20mA, M12, straight	AO U 0 ... 10V, M12, straight	AO U -10- + 10V, M12, straight	AO Multi U / I, M12, straight
					
<b>Order Data</b>	Art.-No 5000-00501-2100000	Art.-No 5000-00501-2110000	Art.-No 5000-00501-2200000	Art.-No 5000-00501-2210000	Art.-No 5000-00501-2300001
<b>Description</b>					
Input Range	0 ... 20 mA	4 ... 20 mA	0 ... 10 V	-10 ... +10 V	0 ... 20 mA, 4 ... 20 mA, 0 ... 10 V, -10 ... +10 V
Resolution (analog)	15 Bit + sign				
IO-Link Specification	V1.1.2				
Port class	Class A				
Operation mode	COM2				
Connection	M12,5-pole, A-coded				
Housing	plastic				
<b>Supply voltage</b>					
Operation voltage	24 V DC (18...30.2 V)				

## IO-Link Devices – Hubs

<b>IO-Link Devices</b> – IP67	MVP12-Metal 8xM12 DI8 DO8 IOL K3	MVP12-Metal 8xM12 DI16 IOL	MVP12 plastic DI8 DO8 IOL	MVP12 plastic DI16 IOL
				
<b>Order Data</b>	Art.-No DI8 DO8 IOL – K3 55518	Art.-No DI16 IOL 55519	Art.-No DI8 DO8 IOL 59402	Art.-No DI16 IOL 59401
<b>Description</b>				
IO-Link specification	V1.1.2			
Port class	Class B (galvanically separated)		Class B	
Operation mode	COM2			
Connection	M12			
Housing	metal		plastic	
<b>Input</b>				
Sensor supply US	24 V DC (EN 61131-2), max. 100 mA (M12 female), short-circuit and overload protected			
<b>Output</b>				
Actuator supply UA	24 V DC (EN 61131-2), max. 4 mA	–	24 V DC (EN 61131-2), max. 4 mA	–

## IO-Link Devices – Inductive Coupler

<b>IO-Link Devices</b> – IP67/IP68	IO-Link coupler primary M12 male	IO-Link coupler secondary M12 female	Universal holder
			
<b>Order Data</b>	Art.-No 59450	Art.-No 59451	Art.-No 59452
<b>Description</b>			
IO-Link specification	V1.1.2		
Port class	Class A		
Operation mode	COM2		
Connection	M12 (male) 4-pole, A-coded	connect. cable 0.3m M12 (fem.) 4-pole, A-coded	–
Housing	metal		plastic
<b>Supply voltage</b>			
Operation voltage	24 V DC ± 10%	–	–



*stay connected*

 [www.murrelektronik.com](http://www.murrelektronik.com)

Die in dem Prospekt enthaltenen Angaben wurden mit der größtmöglichen Sorgfalt erarbeitet. Für die Richtigkeit, Vollständigkeit und Aktualität ist die Haftung auf grobes Verschulden begrenzt.

Unsere gesellschaftliche Verantwortung umfasst das ganzheitliche Handeln des Unternehmens. Wir achten auch auf eine umweltgerechte Produktionskette bei unseren Prospekten.

