

- ↘ Robust
- ↘ Vibration-resistant
- ↘ Fully Potted

# MVK METAL AND IMPACT67

Compact IP67 Modules





### FACTS ABOUT MURRELEKTRONIK

- Worldwide presence with 26 branches and many partners
- Over 2.000 employees
- 2 million articles in stock, ensure fast delivery
- Over 65.000 different products

### MURRELEKTRONIK OFFERS

- System solutions for a wide range of applications
- Robust products
- Sophisticated logistics for fast deliveries

## MVK METAL AND IMPACT67 COMPACT IP67 BUS MODULES

**Fieldbus modules with IP67 protection are a key element in machine installation and can replace complex, and therefore expensive, wiring required for terminal boxes. Fieldbuses replace conventional parallel wiring. This helps save space in the control cabinet.**

The modules are placed close to the operating area. They connect sensors and actuators to the control via pluggable, pre-wired connectors. Compared to conventional wiring, it reduces the costs for assembly and maintenance.

### **Cost-effective decentralization – compact and robust**

- **Short I/O cables** – reduce the amount of wiring
- **Pluggable connections** – avoid wiring errors and simplify service work
- **Easy to install** – does not require elaborate parallel wiring

## APPLICATIONS



- **MVK Metal**
  - Machine tools and machining centers
  - Forming and sheet metal working
  - Foundry plants and forges
  - Cutting machines and welding machines
- **IMPACT67**
  - Logistics
  - Sheet metal working
  - Handling robotics
  - Transfer and materials-handling technology

## MVK METAL

### | **MAXIMUM FLEXIBILITY – THROUGH MULTIFUNCTIONAL I/O**

Both signals on each M12 port can be configured independently, whether input, output or diagnostic input. Now, modules can be used more efficiently.

- Double valves occupy only one M12 port
- No separate modules for inputs and outputs
- No unplanned reserves
- Maximum flexibility for expansions
- Fewer variations required – minimizes inventory cost

### **DON'T LOOK FOR ERRORS, FIND THEM – TOTAL DIAGNOSTICS**

That means detailed information on the types and locations of errors.

- Only the affected port is switched off and not the complete module
- Detailed message to the control + LED on-the-spot
- Errors are found more rapidly, problems are solved faster: this minimizes system downtime and shortens start-up time

### **DURABLE – AND ROBUST DESIGN**

- Metal housing with surface finishing is welding spark resistant
- Fully potted electronic unit for maximum strength against shock and vibration
- Resistant to a whole series of coolants and lubricants
- Robust design for universal applications

### **DID YOU KNOW?**

#### **MVK-PROFINET – MODULES FOR QUICK CHANGE OF TOOLS**

The Fast Start Up function (FSU) starts up PROFINET IO modules quickly: in less than 500 ms, in connection with the right control. This is a clear advantage for for applications in tool changing systems like with robots.



# IMPACT67

## | ECONOMIC DECENTRALIZATION

Impact67 is the perfect fieldbus solution for basic applications that need to be cost-effective. The modules in this product range are available with different bus protocols: PROFIBUS, CanOpen, DeviceNet, EtherCat, EtherNet/IP and PROFINET. Impact67 features pluggable connections, diagnostic options and IP67 tested seals.

This makes Impact67 the perfect choice for an electrical engineer whose objective is minimizing costs while maintaining digital inputs and outputs under normal conditions. Impact67 can be used in many different applications: in the plant engineering field (logistics, packaging and recycling industry, palletizing), in the non-cutting metal industry (sheet metal working, robotics, wood processing) and in the transfer and materials-handling industry.

## FOCUS ON ESSENTIALS...

- Predefined inputs and outputs – helps facilitate configuration
- Single channel diagnostic via LEDs – don't look for errors, find them
- Group diagnostics via the bus – easy remote diagnostics
- Port-related shut-off – only the failed port is switched off



## MVK METAL

### Input/output modules

– digital

Protection IP67

### Approvals



#### MVK-MPNIO



#### MVK+ -MPNIO



Ordering data	Approvals	Art.-No.	Art.-No.	Approvals	Art.-No.
DI8 (DI8)		55287			55268
DIO8 (DI8)		55288			
DIO8 (DIO8)		55289	55283		
DI8 (DO8)					55269
DO8 (DI4 DI4)		55339			
<b>Field bus</b>					
Connection	M12, D-coded			data connector, Push Pull	
Transfer protocol	PROFINET IO				
Typ	PROFINET IO Device with integrated switch, Conformance Class B				
MRP	no		yes		no
Operation mode	Auto-negotiation/Auto MDI/MDI-X (MRP f. 55339)		Autonegotiation/Auto MDI/MDI-X/MRP		Autonegotiation/Auto MDI/MDI-X
Transfer rate	100 Mbit/s full duplex				
FSU support	no/yes für 55339		no		yes
<b>Supply voltage</b>					
Connection	7/8"; 5-pole; max. 9 A		power plug Push Pull; max. 12 A		
Supply voltage	24 V DC (18...30.2 V), acc. to EN61131-2				
Galvanic separation between U <sub>S</sub> and U <sub>A</sub>	no/yes für 55339		no		yes
<b>I/O-ports</b>					
Connection	M12, A-coded				
Digital inputs (DI)	acc. to EN61131-2, sensor supply < 200 mA/port				
Multifunctional channels (DI/DO)	8 M12 ports (black) each 2 digital inputs/outputs to EN61131-2, current capacity per output up to 1.6 A, sensor supply < 200 mA/port				
Outputs (DO)	output loads up to 1.6 A/channel			up to 2 A	
<b>Module diagnostic</b>					
Field bus	LED, according to standards				
Under voltage sensor/system/actuator	U <sub>S</sub> < 18 V (LED red)/U <sub>A</sub> < 18 V (LED red)				
Periphery	port-related LED (red)				
<b>Dimension</b>					
H x W x D	225 x 63 x 39 mm		225 x 63 x 42,7 mm		
<b>Accessories</b>					
		Art.-No.			Art.-No.
Cover Push Pull RJ45					7000-99671-000000
Push Pull protective cover power plug					7000-99661-000000
Push Pull dust protection set					553260
Blind plug, metal M12 x 1	1 piece	996049			996049
Blind plug, plastic M12 x 1	10 pieces	58627			58627
Blind plug, 7/8"	1 piece	55390			
Diagnostic blind plug M12 x 1	1 piece	7000-13481-000000			7000-13481-000000
Addressing cap metal	1 piece	55317			
Label plates	set 20 pieces	55318			55318



More information, for example manuals, is conveniently available in our online shop on the specific product pages

## MVK METAL

### Input/output modules

- digital
- FSU (Fast-Start-Up)

Protection IP67

#### MVK+ MPNIO POF IRT



#### MVK+ MPNIO IRT



Ordering data	Art.-No.	Art.-No.
DI8 (DI8)	55254	55528
DI8 (DO8)	55255	55529
<b>Field bus</b>		
Connection	2xSCRJ45 POF-Push Pull	RJ45 data plug, Push Pull
Transfer protocol	PROFINET IO	
PROFINET Netload Class	III	
Shared Device/Input	yes, for 2 controls	
Typ	V2.2, Conformance Class C (IRT)	
MRP	yes	
Operating modes	Autonegotiation/Auto MDI/MDI-X/MRP	Autonego./Auto MDI/MDI-X/Redundancy via MRP/Shared device/IRT
Transfer rate	up to 100 MBit/s full duplex	
FSU (Fast-Start-Up)	max. 500 ms	
<b>Supply voltage</b>		
Connection	Power plug Push Pull; max. 12 A	
Operating voltage	24 V DC (18...30.2 V), acc. to EN61131-2	
Galvanic separation between U <sub>S</sub> and U <sub>A</sub>	yes	
<b>I/O-ports</b>		
Connection	M12, A-coded, 5-pole	
Digital Input (DI)	acc. to EN61131-2, sensor supply < 200 mA/port	
Output (DO)	output loads up to 2 A/channel	
<b>Module diagnostic</b>		
Field bus	LED, according to standards	
Under voltage sensor/system/actuator	U <sub>S</sub> < 18 V (LED red)/U <sub>A</sub> < 18 V (LED red)	
Periphery	port-related LED (red)	
<b>Dimension</b>		
H x B x T	225 x 63 x 56,2 mm	225 x 63 x 42,7 mm
<b>Accessories</b>		
Cover Push Pull RJ45		7000-99671-000000
Cover Push Pull power		7000-99661-000000
Push Pull SCRJ confection tool	1 piece	7000-98111-000000
Push Pull SCRJ Connector	1 piece	7000-99701-000000
Push Pull dust protection set		553260
Blind plug, metal M12 x 1	1 piece	996049
Blind plug, plastic M12 x 1	10 pieces	58627
Blind plug diagnostic M12 x 1	1 piece	7000-13481-000000
Label plates	Set 20 pieces	55318



## MVK METAL

### Input/output modules

- active
- safe inputs/outputs up to cat. 4/PLe (EN ISO 13849-1), up to SIL 3 (IEC 61508), up to SILCL 3 (IEC 62061)

Protection IP67

Approval



### MVK-MPNIO Safety



### MVK-MPNIO Safety



Ordering data	Art.-No.	Art.-No.	Art.-No.	Art.-No.
F DI16/8 IRT	55556		55562	
F DI8/4 F DO4 IRT		55557		55563
<b>Field bus</b>				
Connection	M12, D-coded		RJ45 data plug, Push Pull	
Transfer protocol	PROFINET IO			
Typ	V2.2, Conformance Class C (IRT)			
MRP	yes			
Addressing	DCP, Safety addressing by rotary switch			
Transfer rate	to 100 MBit/s full duplex			
<b>Supply voltage</b>				
Connection	7/8", 5-pole, 2 × max. 9 A		Power plug, Push Pull, max. 12 A	
Operating voltage	24 V DC (EN 61131-2)			
<b>I/O-ports</b>				
Connection	M12, A-coded, 5-pole			
Safe input (DI)	24 V DC (EN 61131-2), max. 200 mA (PIN 1+5), short-circuit/overload protected, or max. 700 mA only for one PIN			
Safe output (DO)	–	24 V DC (EN 61131-2), max. 2 A	–	24 V DC (EN 61131-2), max. 2 A
<b>Diagnostic</b>				
Communication status	per LED			
Diagnostic via LED/diagnostic via bus	per module and channel			
Monitoring - under voltage	yes			
Monitoring - no voltage	yes			
Short circuit and overload	yes			
Actuator warning	per channel via LED and bus			
Cross-link detection	sensor/actuator			
Wire break detection	yes			
<b>Dimension</b>				
H x B x T	225 x 63 x 42 mm		225 x 63 x 42,7 mm	
<b>Accessories</b>				
		Art.-No.		Art.-No.
Cover Push Pull RJ45				7000-99671-000000
Cover Push Pull power				7000-99661-000000
Push Pull dust protection set				553260
Blind plug, metal M12 x 1	1 piece			996049
Blind plug, plastic M12 x 1	10 pieces			58627
Blind plug, 7/8"	1 piece	55390		
Blind plug diagnostic M12 x 1	1 piece			7000-13481-000000
Addressing cap metal	1 piece	55317		
Cable fixation 8xM12	1 piece			55554
Label plates, yellow	Set 20 pieces			55316
Label plates, white	Set 20 pieces			55318



More information, for example manuals, is conveniently available in our online shop on the specific product pages



## MVK METAL

Input/output modules

– digital

Protection IP67

Approval



MVK-MP



MVK-MDN

DeviceNet

MVK-MC

CANopen

MVK-ME

EtherNet/IP



Ordering data	Art.-No.	Art.-No.	Art.-No.	Art.-No.
DI8 (DI8)	55307	55297	55304	
DIO8 (DI8)	55308	55298	55305	
DIO8 (DIO8)	55309	55299	55306	55099
DO8 (DO8)	55290			
DO4 (DO4) DI4 (DI4)	55274			
<b>Field bus</b>				
Connection	M12, B-coded	M12, A-coded	M12, A-coded	M12, D-coded
Transfer protocol	PROFIBUS-DP	DeviceNet to ODVA	CANopen	EthernetIP
Addressing	0..99 via rotary switch	0..63 via rotary switch	1..99 via rotary switch	rotary switch
Transfer rate	up to 12 Mbit/s	125, 250 and 500 kbit/s	up to 1 Mbits	up to 100 Mbits
<b>Supply voltage</b>				
Connection	7/8"; 5-pole; max. 9 A			
Supply voltage	24 V DC (18...30.2 V), acc. to EN61131-2			
<b>I/O-ports</b>				
Connection	M12, A-coded			
Digital inputs	(DI) acc. to EN61131-2, sensor supply < 200 mA/port			
Multifunctional channels	(DI/DO) 8 M12 ports (black) each 2 digital inputs/outputs to EN61131-2, current capacity per output up to 1.6 A, sensor supply < 200 mA/port			
Outputs	(DO) output loads up to 1.6 A/channel (Art.-No. 5546100 2 A/channel)			
<b>Module diagnostic</b>				
Field bus	LED, according to standards			
Under voltage sensor/system/actuator	$U_s < 18\text{ V}$ (LED red)/ $U_A < 18\text{ V}$ (LED red)			
Periphery	port-related LED (red)			
<b>Dimension</b>				
H x W x D	225 x 63 x 50.5 mm			
<b>Accessories</b>				
Blind plug	metal M12 x 1, 1 piece			Art.-No. 996049
Blind plug	plastic M12 x 1, 10 pieces			58627
Blind plug	7/8", 1 piece			55390
Diagnostic blind plug	M12 x 1, 1 piece			7000-13481-000000
Addressing cap	metal, 1 piece			55317
Label plates	set 20 pieces			55318



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## MVK METAL

### Input/output modules

– analog and digital

Protection IP67

### Approval



### MVK-MP



Ordering data		Art.-No.
AO4 (I) DIO4 (DIO4)		55292
AO4 (U) DIO4 (DIO4)		55293
Field bus		
Connection	M12, B-coded	
Transfer protocol	PROFIBUS-DP	
Addressing	0...99 via rotary switch	
Transfer rate	up to 12 Mbit/s	
Supply voltage		
Connection sensor/system/actuator	7/8"; 5-pole; max 9A	
Supply voltage	24 V DC(18...30.2 V), acc. to EN61131-2	
I/O-ports		
Connection	M12, A-coded	
Multifunctional channels	(DI/DO)	4 M12 ports (black) each 2 digital inputs/outputs to EN61131-2, current capacity per output up to 1.6 A
Analog channels		4 M12 ports (green) each with 1 analog channel (input 0...10 V, output 0 (4)...20 mA), Input 0 (4)...20 mA via adaptor Art.-No. 7000-42251-000000 Output 0...10 V via adaptor Art.-No. 7000-42252-000000
Module diagnostic		
Field bus	LED, according to standards	
Under voltage sensor/system/actuator	$U_s < 18 \text{ V}$ (LED red)/ $U_A < 18 \text{ V}$ (LED red)	
Periphery	port-related LED (red)	
Dimension		
H x W x D	225 x 63 x 50.5 mm	
Accessories		Art.-No.
Blind plug	metal M12 x 1, 1 piece	996049
Blind plug	plastic M12 x 1, 10 pieces	58627
Blind plug	7/8", 1 piece	55390
Diagnostic blind plug	M12 x 1, 1 piece	7000-13481-000000
Addressing cap	metal, 1 piece	55317
Label plates	set 20 pieces	55318



## MVK METAL

### Input/output modules

- passive
- output groups up to PLd (EN ISO 13849-1) can be switched off via safety relays

Protection IP67

Approval



### MVK-MP-Safety



Ordering data		Art.-No.
K3 DO4 (DO4) DIO4 (DIO4)		55291
Field bus		
Connection	M12, B-coded	
Transfer protocol	PROFIBUS-DP	
Addressing	0...99 via rotary switch	
Transfer rate	to 12 MBit/s	
Supply voltage		
Connection sensor/system/actuator	7/8", 5-pole, max. 9 A, safe circuits (1 + 2) via separate 7/8" supply (yellow), 2-pole disconnectable	
Operating voltage	24 V DC(18...30.2 V), acc. to EN61131-2	
I/O-ports		
Connection	M12, A-coded	
Multifunctional channels (DI/DO)	4 M12 ports (black) each 2 digital inputs/outputs to EN61131-2, current capacity per output up to 1.6 A	
Safe output (DO)	4 M12 ports (yellow), divided in 2 voltage circuits, 2 outputs per port, current capacity up to 2 A	
Diagnostic		
Communication status	per LED	
Diagnostic via LED/diagnostic via bus	per module and channel	
Monitoring - under voltage	yes	
Monitoring - no voltage	yes	
Short circuit and overload	yes	
Actuator warning	per channel via LED and bus	
Cross-link detection	sensor/actuator	
Cable break	per port	
Dimension		
H x B x T	225 x 63 x 39 mm	
Accessories		Art.-No.
Blind plug	metal M12 x 1, 1 piece	996049
Blind plug	plastic M12 x 1, 10 pieces	58627
Blind plug	7/8", 1 piece	55390
Diagnostic blind plug	M12 x 1, 1 piece	7000-13481-0000000
Addressing cap	metal, 1 piece	55317
Label plates	set 20 pieces	55318



## IMPACT67

### Input/output modules

– digital

Protection IP67

Approval



### IMPACT67-P



### IMPACT67-DN

DeviceNet

### IMPACT67-C

CANopen



Ordering data	Art.-No.	Art.-No.	Art.-No.
DI16	55345	55071	55075
DI8/DO8 – 2A	55346	55072	55076
DO8 – 2A	55347	55073	55077
DO16 – 0,5A	55348	55074	55078
<b>Field bus</b>			
Connection	M12, B-coded	M12, A-coded	
Transfer protocol	PROFIBUS-DP	DeviceNet to ODVA	CANopen
Addressing	0...99 via rotary switch		
Transfer rate	up to 12 Mbit/s	125 Kbit/s, 250 Kbit/s, 500 Kbit/s	up to 1 Mbit/s
<b>Supply voltage</b>			
Connection	7/8"; 5-pole; U <sub>A</sub> max. 9 A, U <sub>S</sub> max. 9 A		
Supply voltage	24 V DC (18...30.2 V), acc. to EN61131-2		
<b>I/O-ports</b>			
Connection	M12, A-coded		
Inputs	(DI) for 3-wire sensors or mech. switches		
Sensor supply	24 V DC (18...30, 2V), acc. to EN61131-2, <= 200 mA/port		
Outputs	(DO) Semiconductor output short-circuit/overload protected, with 0.5 A or max. 2 A		
Overload cutoff	port-related		
<b>Module diagnostic</b>			
Field bus	RUN-LED		
Supply voltage	LED, alarm via the bus		
I/O overload	LED on the port, group alarm via the bus		
<b>Dimension</b>			
H x W x D	225 x 63 x 36 mm		
<b>Accessories</b>			
Blind plug	M12 x 1, 10 pieces		58627
Label plates	20 pieces		55318
Blind plug	7/8", 1 piece		55390



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## IMPACT67

### Input/output modules

– digital

Protection IP67

### Approval



### IMPACT67-E

EtherNet/IP™

### IMPACT67-EC

EtherCAT™



### IMPACT67-PNIO



Ordering data	Art.-No.	Art.-No.	Art.-No.
DI16	55085	55081	55091
DI8/DO8 – 2 A	55086	55082	55092
DO8 – 2 A	55087	55083	55093
DO16 – 0,5 A	55088	55084	55094
DIO8 (DIO8) – 1,6 A	55089		
<b>Field bus</b>			
Connection	M12, D-coded		
Transfer protocol	Ethernet IP	EtherCat	PROFINET IO
Addressing	0...99 via rotary switch	automatically	
Transfer rate	up to 100 Mbit/s, full duplex	up to 100 Mbit/s	10/100 Mbit/s full duplex
<b>Supply voltage</b>			
Connection	7/8"; 5-pole; U <sub>A</sub> max. 9 A, U <sub>S</sub> max. 9 A		
Supply voltage	24 V DC (18...30.2 V), acc. to EN61131-2		
<b>I/O-ports</b>			
Connection	M12, A-coded		
Inputs	(DI) for 3-wire sensors or mech. switches		
Sensor supply	24 V DC (18...30, 2V), acc. to EN61131-2, <= 200 mA/port		
Outputs	(DO) Semiconductor output short-circuit/overload protected, with 0.5 A or max. 2 A		
Overload cutoff	port-related		
<b>Module diagnostic</b>			
Field bus	RUN-LED		
Supply voltage	LED, alarm via the bus		
I/O overload	LED on the port, group alarm via the bus		
<b>Dimension</b>			
H x W x D	225 x 63 x 36mm		
<b>Accessories</b>			
Blind plug	M12 x 1, 10 pieces		58627
Label plates	20 pieces		55318
Blind plug	7/8", 1 piece		55390



## IO-LINK MASTER MODULES

Input/output modules	DIO16 4P			DIO14 DIO2/IOL2 4P			DIO12 DIO4/IOL4 4P		
– digital									
Protection IP67									
EtherNet/IP									
									
<b>Ordering data</b>	<b>Art.-No.</b>	<b>Art.-No.</b>	<b>Art.-No.</b>	<b>Art.-No.</b>	<b>Art.-No.</b>	<b>Art.-No.</b>	<b>Art.-No.</b>	<b>Art.-No.</b>	
	55542	55543	55544	55142	55143	55144			
<b>Field bus</b>									
Connection	M12, D-codiert								
Transfer protocol	EtherNet IP 10/100 Mbit/s								
Addressing	DHCP, BOOTP or IP address by DIP switch								
IO-Link	–	2 x Master	4 x Master	–	2 x Master	4 x Master	–	–	
Operating mode	–	COM1; COM2; COM3 (automatic)		–	COM1; COM2; COM3 (automatic)		–	–	
Transfer parameter	–	32 Byte (via IO-Link Port)		–	32 Byte (via IO-Link Port)		–	–	
Port class	–	Class B (not galvanically separated)		–	Class B (not galvanically separated)		–	–	
Specification	–	IO-Link Master V1.12		–	IO-Link Master V1.12		–	–	
<b>Supply voltage</b>									
Connection	7/8", 4-pole, 2 x max. 9 A								
Supply voltage	24 V DC (18...30.2 V), acc. to EN61131-2								
<b>Technical Data</b>									
Digital inputs	24 V DC (EN 61131-2), max. 200 mA (M12 fem.), short-circuit a. overload protected								
Digital outputs	24 V DC (EN 61131-2), max. 9 mA, max. 1.6 A per output, short-circuit a. overload protected								



## IO-LINK MASTER MODULES

Profinet V2.3  
Conformance Class B/  
Conformance Class C

Protection IP67

IO-Link



DIO16 IRT



DIO14  
DIO2/IOL2 IRT

DIO12  
DIO4/IOL4 IRT

DIO16 IRT



DIO14  
DIO2/IOL2 IRT

DIO12  
DIO4/IOL4 IRT

Ordering data	Art.-No.	Art.-No.	Art.-No.	Art.-No.	Art.-No.	Art.-No.
	55530	55531	55532	55130	55131	55132
<b>Field bus</b>						
Connection	M12, D-codiert					
Transfer protocol	PROFINET IO					
PROFINET Netload Class	III					
Shared Device/Input	yes, for 2 controls					
Typ	V2.3, Conformance Class C IRT					
MRP	yes					
Operation mode	Autonegotiation/Auto MDI/MDI-X					
Transfer rate	up to 100 Mbits Full Duplex					
FSU support	max. 500 ms					
<b>Supply voltage</b>						
Connection	7/8"; 5-pole; max. 9 A					
Supply voltage	24 V DC (18...30.2 V), acc. to EN61131-2					
<b>Technical Data</b>						
Multifunctional channels	8 M12 ports, with deactivated IO-Link up to 16 dig. inputs/outputs					
Digital inputs	acc. to EN 61131-2, Type3 (200 mA), single channel protection					
Digital outputs	Max. 1.6 A per output cycle frequency max. 50 Hz, single channel protection					
IO-Link	V 1.12 / EN61131-2 Typ 1, Com1/Com2/Com3, automatic startup, bis zu 1 A Last					
IO-Link 1.1 Class A Port	–	max. 2 (X6, X7)	max. 4 (X4, X5, X6, X7)	–	max. 2 (X5, X7)	max. 4 (X1, X3, X5, X7)
IO-Link 1.1 Class B Port	–	max. 2 (X6, X7)	max. 2 (X4, X5)	–	max. 2 (X5, X7)	max. 2 (X1, X3)
Shock (EN 60068 Part 2-27)	50 g			15 g		





*stay connected*

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

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