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| MVK Metall and  
Impact67  
Compact Modules IP67



- | Robust
- | Vibration-proof
- | Tight



## MVK METALL

Fully encapsulated metal housings  
for rough conditions

# MVK METAL AND IMPACT67

## THE COMPACT IP67 BUS MODULES

### Application areas



#### ■ 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

## COMPACT FIELDBUS MODULES FOR SENSORS AND ACTUATORS

Fieldbus modules with IP67 protection are a key element in machine installation and can replace the complex and expensive wiring required for terminal boxes. The fieldbus substitutes conventional parallel wiring. This helps save place 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.

This reduces the costs for assembly and maintenance compared to conventional wiring.

### Cost-effective decentralization – compact and robust

- **Short I/O Cables** – reduce amount of wiring
- **Plugged Connections** – avoid wiring errors and simplify service work
- **Easy to Install** – does not require elaborate parallel wiring

## HIGHEST FLEXIBILITY – THROUGH MULTIFUNCTIONAL I/Os

Whether input, output or diagnostic input, freely selectable parameterization of both signals for each individual M12 module slot. Efficient use of modules.

- Double valves occupy only one M12 module slot
- No separate modules for inputs and outputs
- No unplanned reserves
- Maximum flexibility for expansions
- Fewer variants required, minimizes inventory carrying costs

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

Detailed information on type and location of the error.

- Only the “affected” plug position shuts down, not the whole module
- Detailed message to controls, local LED indicator

Errors are found more rapidly, interferences are rectified faster. Minimizes system down-time and shortens start-up time.

## DESIGN – DURABLE AND ROBUST

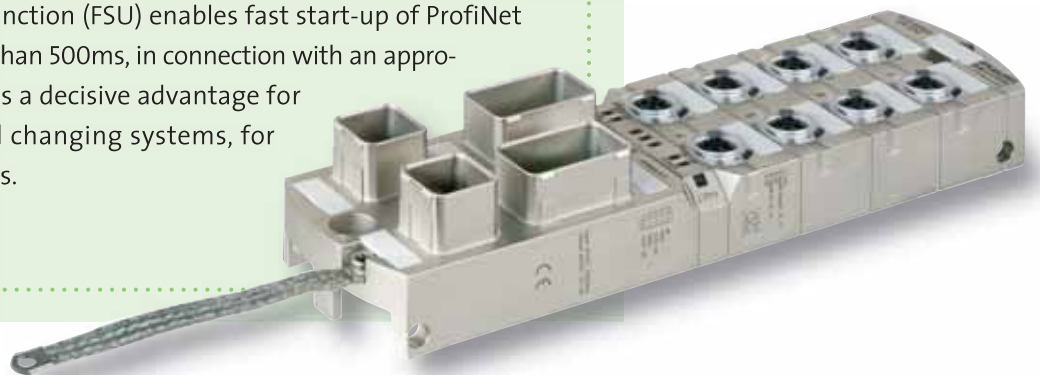
- Surface-refined zinc diecast housing for effective protection against weld spatter
- Compound-filled electronic unit for maximum strength against shock/vibration
- Resistant to a whole series of coolants and lubricants
- Robust design for universal applications

# MVK METAL

## Did you know?

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

The Fast Start Up function (FSU) enables fast start-up of ProfiNet I/O modules in less than 500ms, in connection with an appropriate control. This is a decisive advantage for applications in tool changing systems, for example with robots.



## ECONOMIC DECENTRALIZATION

Impact67 is the perfect fieldbus solution for applications that require cost-effective basic functionality. The modules of this product group are available with different bus protocols: Profibus, CanOpen, DeviceNet, EtherCat, and (starting in the third quarter of 2009) EtherNet/IP. 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 ordinary environmental conditions. Many different applications are possible for Impact67:

in the plant engineering field (logistics, waste treatment, palletizing), in 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 LED - Don't look for errors, find them
- Group diagnostic via the bus – Easy remote diagnostics
- Port-related cutoff - Only failed port is cutoff

# IMPACT67

### Your application requires:

- Economic decentralization
- Predefined inputs and outputs
- Single channel diagnostic via LED
- Port-related cutoff
- Group diagnostic via the bus

**Then IMPACT67 is the perfect choice**

### If you do not need:

- Multifunctional I/Os
- Increased resistance to media
- Extreme mechanical stability
- Comprehensive diagnostics



## MVK METALL

Input/output module

– digital

Protection IP67

MVK-MP



MVK-MI



MVK-MDN

DeviceNet

MVK-MC

CANopen



Ordering data	Approval	Art.-No.	Approval	Art.-No.	Approval	Art.-No.	Approval	Art.-No.
8 DI + 8 x diagnostic/ DI	cULus	55307	cULus	55294	cULus	55297	cULus	55304
8 DI/DO + 8 x diagnostic/ DI	cULus	55308	cULus	55295	cULus	55298	cULus	55305
8 DI/DO + 8 x diagnostic/ DI/DO	cULus	55309	cULus	55296	cULus	55299	cULus	55306
8 DI					cULus	5546000		
8 DO					cULus	5546100		
16 DO	cULus	55290						
8 DI + 4 DO					cULus	5546200		
8 DI + 8 DO	cULus	55274						
16 DI					cULus	5546300		
<b>Field bus</b>								
Connection	M12, B-coded		M12, B-coded		M12, A-coded		M12, A-coded	
Transfer protocol	Profibus-DP		Interbus		DeviceNet to ODVA		CANopen	
Addressing	0...99 via rotary switch		–		0...63 via rotary switch		1...99 via rotary switch	
Transfer rate	up to 12 Mbit/s		500 kbit/s		125, 250 and 500 kbit/s		up to 1 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	acc. to EN 61131-2, sensor supply < 200 mA/port							
Multifunctional channels	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	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 <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 50.5 mm						



Cables for field bus and power, terminators and further accessories see in "Connection technology for field bus systems".

## MVK METALL

### Input/output module

– digital

Protection IP67

#### MVK-MPNIO



#### MVK+ -MPNIO



Ordering data	Approval	Art.-No.	Art.-No.	Art.-No.
8 DI + 8 x diagnostic/ DI	cULus	55287		
8 DI/DO + 8 x diagnostic/ DI	cULus	55288		
8 DI/DO + 8 x diagnostic/ DI/DO	cULus	55289	55283	
8 DI + 8 DO				55269
16 DI				55268
<b>Field bus</b>				
Connection	M12, D-coded	data connector, Push Pull		
Transfer protocol	ProfiNet-I/O	ProfiNet-I/O		
Type	ProfiNet-I/O Device with integrated switch, Conformance Class B			
Operation mode	Auto-negotiation/Auto MDI/MDI-X			
Transfer rate	100 Mbit/s Full Duplex			
FSU support	no	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	no	yes	
<b>I/O-ports</b>				
Connection	M12, A-coded			
Digital inputs	acc. to EN 61131-2, sensor supply < 200 mA/port			
Multifunctional channels	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	Current load of outputs 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	



Cables for Push Pull modules see page 11.

## MVK METALL

### Input/output module

- digital
- IO Link

Protection IP67

 IO-Link

### MVK-MP IO-Link



from the third  
quarter of 2009



Ordering data	Approval	Art.-No.
4 DI/DO    4 IOL + 8 x diagnostic/ DI /DO	cULus	55315
<b>Field bus</b>		
Connection	M12, B-coded	
Transfer protocol	Profibus-DP	
Addressing	0...99 via rotary switch	
Transfer rate	up to 12 Mbit/s	
<b>Supply voltage</b>		
Connection sensor/system/actuator	7/8"; 5-pole; max 9A	
Supply voltage	24 V DC(18...30.2 V), acc. to EN61131-2	
<b>IO Link</b>		
Port type	A	
Operating mode	SIO, COM1, COM2, COM3	
<b>I/O-ports</b>		
Connection	M12, A-coded	
Multifunctional channels	4 M12 ports (black) each 2 digital inputs/outputs to EN61131-2, current capacity per output up to 1.6 A	
IO link channels	4 M12 ports (gray) with IO Link Master (PIN 4) and multifunctional channel (PIN 2)	
<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

## MVK METALL

### Input/output module

– analog and digital

Protection IP67

#### MVK-MP



Ordering data	Approval	Art.-No.
4 DI/DO + 4 x diagnostic/ DI /DO + 4 AO	cULus	55292
4 DI/DO + 4 x diagnostic/ DI /DO + 4 AI	cULus	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	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 1 analog channel (inputs 0...10 V, outputs 0 (4)...20 mA), inputs 0 (4)...20 mA via adapter Art.-No. 7000-42251-000000 outputs 0...10 V via adapter Art.-No. 7000-42251-000000	
Module diagnostic		
Field bus	LED, according to standards	
Under voltage sensor/system/actuator	$U_S > 18 V$ (LED red)/ $U_A > 18 V$ (LED red)	
Periphery	port-related LED (red)	
Dimension	H x W x D	225 x 63 x 50.5 mm

### Input/output module

– digital

– safety outputs

– EN954-1, category 3

Protection IP67

#### MVK-MP-Safety



Ordering data	Approval	Art.-No.
4 DI/DO + 4 x diagnostic/DI /DO + 4 DO +4 DO	cULus	55291
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. 9 A. Safety circuits via separate 7/8" supply (yellow), 2-pole emergency loop	
Supply voltage	24 V DC(18...30.2 V), acc. to EN61131-2	
I/O-ports		
Connection	M12, A-coded	
Multifunctional channels	4 M12 ports (black) each 2 digital inputs/outputs to EN61131-2, current capacity per output up to 1.6 A	
Safety outputs	4 M12 ports (yellow), divided into 2 voltage circuits, 2 outputs per port, capacity up to 2 A	
Dimension	H x W x D	225 x 63 x 50.5 mm

# IMPACT67

Input/output module

– digital

Protection IP67

**IMPACT67-P**  


**IMPACT67-DN**  


**IMPACT67-C**  


**IMPACT67-E**  


**IMPACT67-EC**  


from the third  
quarter of 2009



Ordering data	Approval	Art.-No.	Approval	Art.-No.	Approval	Art.-No.	Approval	Art.-No.	Approval	Art.-No.
16 digital inputs	cULus	55345	pending	55071	pending	55075	pending	55085	pending	55081
8 digital inputs, 8 digital outputs 2 A	cULus	55346	pending	55072	pending	55076	pending	55086	pending	55082
8 digital outputs 2 A	cULus	55347	pending	55073	pending	55077	pending	55087	pending	55083
16 digital outputs 0.5 A	cULus	55348	pending	55074	pending	55078	pending	55088	pending	55084
<b>Field bus</b>										
Connection	M12, B-coded		M12, A-coded			M12, D-coded				
Transfer protocol	Profibus-DP		DeviceNet to ODVA		CANopen		Ethernet IP		EtherCat	
Addressing	0...99 via rotary switch					0...99 via rotary switch		automatically		
Transfer rate	up to 12 Mbit/s		125 Kbit/s, 250 Kbit/s, 500 Kbit/s		up to 1 Mbit/s		up to 100 Mbit/s, Full Duplex		up to 100 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	for 3-wire sensors or mech. switches									
Sensor supply	24 V DC (18...30, 2V), acc. to EN61131-2, <= 200mA/port									
Outputs	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 50.5 mm								

## ACCESSORIES FOR PROFINET PUSH PULL MODULES

<b>Push Pull Connector, Field-wireable</b>		<b>Art.-No.</b>
Push Pull data connector 4-pole field-wireable		7000-99611-0000000
Push Pull power plug 5-pole field-wireable		7000-99601-0000000
<b>Push Pull, Protective Cover</b>		<b>Art.-No.</b>
Push Pull protective cover data connector		7000-99671-0000000
Push Pull protective cover power plug		7000-99661-0000000
<b>Push Pull Data Connector With Open Ended Wires</b>		<b>Art.-No.</b>
Push Pull Profinet cable with open ended wires 1.5 m	PUR-OB, wire diameter 2x2x0.34 mm <sup>2</sup> , jacket color green	7000-99631-7960150
Push Pull Profinet cable with open ended wires 3.0 m	PUR-OB, wire diameter 2x2x0.34 mm <sup>2</sup> , jacket color green	7000-99631-7960300
Push Pull Profinet cable with open ended wires 5.0 m	PUR-OB, wire diameter 2x2x0.34 mm <sup>2</sup> , jacket color green	7000-99631-7960500
Push Pull Profinet cable with open ended wires 7.5 m	PUR-OB, wire diameter 2x2x0.34 mm <sup>2</sup> , jacket color green	7000-99631-7960750
Push Pull Profinet cable with open ended wires 10.0 m	PUR-OB, wire diameter 2x2x0.34 mm <sup>2</sup> , jacket color green	7000-99631-7961000
Push Pull Profinet cable with open ended wires 15.0 m	PUR-OB, wire diameter 2x2x0.34 mm <sup>2</sup> , jacket color green	7000-99631-7961500
Push Pull Profinet cable with open ended wires 20.0 m	PUR-OB, wire diameter 2x2x0.34 mm <sup>2</sup> , jacket color green	7000-99631-7962000
<b>Push Pull Data Connector Connection Cable</b>		<b>Art.-No.</b>
Push Pull Profinet connection cable 0.3 m	PUR-OB, wire diameter 2x2x0.34 mm <sup>2</sup> , jacket color green	7000-99651-7960030
Push Pull Profinet connection cable 0.6 m	PUR-OB, wire diameter 2x2x0.34 mm <sup>2</sup> , jacket color green	7000-99651-7960060
Push Pull Profinet connection cable 1.0 m	PUR-OB, wire diameter 2x2x0.34 mm <sup>2</sup> , jacket color green	7000-99651-7960100
Push Pull Profinet connection cable 1.5 m	PUR-OB, wire diameter 2x2x0.34 mm <sup>2</sup> , jacket color green	7000-99651-7960150
Push Pull Profinet connection cable 2,0m	PUR-OB, wire diameter 2x2x0.34 mm <sup>2</sup> , jacket color green	7000-99651-7960200
Push Pull Profinet connection cable 5.0 m	PUR-OB, wire diameter 2x2x0.34 mm <sup>2</sup> , jacket color green	7000-99651-7960500
Push Pull Profinet connection cable 10.0 m	PUR-OB, wire diameter 2x2x0.34 mm <sup>2</sup> , jacket color green	7000-99651-7961000
<b>Push Pull Power Cable With Open Ended Wires</b>		<b>Art.-No.</b>
Push Pull power cable with open ended wires 1.5 m	PUR-JBZ, wire diameter 5x2.5 mm <sup>2</sup> , jacket color gray	7000-99621-9620150
Push Pull power cable with open ended wires 3.0 m	PUR-JBZ, wire diameter 5x2.5 mm <sup>2</sup> , jacket color gray	7000-99621-9620300
Push Pull power cable with open ended wires 5.0 m	PUR-JBZ, wire diameter 5x2.5 mm <sup>2</sup> , jacket color gray	7000-99621-9620500
Push Pull power cable with open ended wires 7.5 m	PUR-JBZ, wire diameter 5x2.5 mm <sup>2</sup> , jacket color gray	7000-99621-9620750
Push Pull power cable with open ended wires 10.0 m	PUR-JBZ, wire diameter 5x2.5 mm <sup>2</sup> , jacket color gray	7000-99621-9621000
Push Pull power cable with open ended wires 15.0 m	PUR-JBZ, wire diameter 5x2.5 mm <sup>2</sup> , jacket color gray	7000-99621-9621500
Push Pull power cable with open ended wires 20.0 m	PUR-JBZ, wire diameter 5x2.5 mm <sup>2</sup> , jacket color gray	7000-99621-9622000
<b>Push Pull Power Connection Cable</b>		<b>Art.-No.</b>
Push Pull power cable 0.3 m	PUR-JBZ, wire diameter 5x2.5 mm <sup>2</sup> , jacket color gray	7000-99641-9620030
Push Pull power cable 0.6 m	PUR-JBZ, wire diameter 5x2.5 mm <sup>2</sup> , jacket color gray	7000-99641-9620060
Push Pull power cable 1.0 m	PUR-JBZ, wire diameter 5x2.5 mm <sup>2</sup> , jacket color gray	7000-99641-9620100
Push Pull power cable 1.5 m	PUR-JBZ, wire diameter 5x2.5 mm <sup>2</sup> , jacket color gray	7000-99641-9620150
Push Pull power cable 2,0m	PUR-JBZ, wire diameter 5x2.5 mm <sup>2</sup> , jacket color gray	7000-99641-9620200
Push Pull power cable 5.0 m	PUR-JBZ, wire diameter 5x2.5 mm <sup>2</sup> , jacket color gray	7000-99641-9620500
Push Pull power cable 10.0 m	PUR-JBZ, wire diameter 5x2.5 mm <sup>2</sup> , jacket color gray	7000-99641-9621000



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