

Field bus modules with fuse type IP67 are a main component of the machine, replacing elaborately wired, and thus expensive, terminal boxes. The field bus replaces the conventional parallel wiring. This saves a lot of space in the switch cabinet. The preferred placing of the modules is close to the process. They establish the connections from sensors and actuators to the controls via pre-configured cables. In comparison to conventional wiring technology, assembly, commissioning and servicing times are significantly shortened, lowering the costs of installation and maintenance. Set-up and easy localisation of errors via field bus at the control system.

Economical distribution – compact and robust

The I/O stage is located exactly where it is needed. Directly in the machine, in the immediate vicinity of sensors and actuators, dispensing with elaborate arrangements for leading sensor cables into the control cabinet.

- Short I/O lines reduce installation expenditure
- Plug-in connections avoid wiring errors and simplify servicing
- Intricate parallel and hard-wire installation replaced by simple and fast connectors

Don't look for errors, find them – total diagnostic

That means detailed information on type and location of the error.

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

- Errors are found more rapidly, interferences are rectified faster
- Minimizes system downtime
- Shortens start-up time

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

MVK metal – robust and watertight

Fully encapsulated field bus modules in metal housings are particularly robust and thus ideal for use in rough environments in mechanical engineering and plant construction. Endurance paired with water-tightness are the keywords in such environments.

Durable and robust design

- 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
- On-site installation ensures the shortest possible I/O line while reducing installation expenditure
- Servicing simplified by clear connection configuration

MVK Plastic – Light, tight and versatile

MVK plastic modules have versatile, plugged connection technology, harmonized with the common field bus systems. With their light construction with housing protection IP67, these modules offer a convenient solution for rationalized, decentralized automation outside the immediate influence of caustic media.

Easiest service and maintenance at reduced storage costs

MVK modules with multifunctional plugs and Profibus interfaces are able to replace all functions of the MVK serie. They are suitable for “Service modules”. Only one module for every situation. The adaption into the system is fully automatically and doesn't require any further interferences into the project softwares.

Module exchanging – address configuration – ready

- easy service and maintenance
- one module for every case minimizes storage cost
- reduces down time

MVK with metal housing



MVK-MP

8 DI + 8 x diagnostic / DI
8 DI / DO + 8 x diagnostic / DI
8 DI / DO + 8 x diagnostic / DI / DO



Page 2.2.3



MVK-MDN

8 DI + 8 x diagnostic / DI
8 DI / DO + 8 x diagnostic / DI
8 DI / DO + 8 x diagnostic / DI / DO



Page 2.2.5



MVK-MI

8 DI + 8 x diagnostic / DI
8 DI / DO + 8 x diagnostic / DI
8 DI / DO + 8 x diagnostic / DI / DO



Page 2.2.7

MVK with plastic housing



MVK-P

8 DI + 8 x diagnostic / DI
4 DI 4 DO + 8 x diagnostic / DI
8 DO + 8 x diagnostic / DI
8 DI / DO + 8 x diagnostic / DI
8 DI / DO + 8 x diagnostic / DI / DO



8 DI + 8 x diagnostic / DI
8 DI / DO + 8 x diagnostic / DI
8 DI / DO + 8 x diagnostic / DI / DO

Page 2.2.4



MVK-DN

8 DI + 8 x diagnostic / DI
4 DI 4 DO + 8 x diagnostic / DI
8 DO + 8 x diagnostic / DI
8 DI / DO + 8 x diagnostic / DI / DO



Page 2.2.6



MVK-I

8 DI + 8 x diagnostic / DI
4 DI 4 DO + 8 x diagnostic / DI
8 DO + 8 x diagnostic / DI
8 DI / DO + 8 x diagnostic / DI
8 DI / DO + 8 x diagnostic / DI / DO



Page 2.2.8



MVK-DESINA® LWL ECOFAST® and MVK-DESINA® CU ECOFAST®

8 DI / DO + 8 x diagnostic / DI



Page 2.2.9

Bus modules MVK metal
Profibus-DP

Input / output module

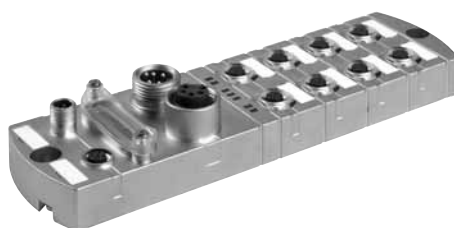
Protection IP67



MVK

Approvals 

MVK-MP



Ordering data	Art.-No.
8 DI + 8 x diagnostic / DI	55307
8 DI/DO + 8 x diagnostic / DI	55308
8 DI/DO + 8 x diagnostic / DI/DO	55309

Field bus	
Supply voltage	24 V DC (18...30.2 V), to EN61131-2
Type	Profibus-DP slave
Transfer protocol	Profibus-DP to EN50170
Operating modes	sync- and freeze-mode are supported
Transfer rate	up to 12 MBit/s

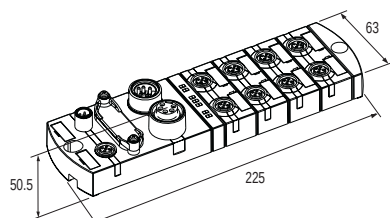
Inputs	
Type	for 3-wire sensors or mechanical switches, p-switching, IEC-1131-2 type 2 compatible
Supply voltage	24 V DC (18...30.2 V), to EN61131-2, $I_{\text{total}} \leq 200 \text{ mA}$ per M12 port
Status indicator	1 yellow LED per input

Outputs	
Supply voltage	24 V DC (18...30.2 V), to EN61131-2, $I_{\text{total}} \leq 9 \text{ A}$
Switching current per output	1.6 A, short-circuit and overload protected
Filament lamp load	10 W
Max. switching frequency	resistive load: 50 Hz; inductive load: 20 Hz
Status indicator	1 yellow LED per output

Diagnostic	
Field bus	RUN-LED
Under voltage	combined LED and alarm to the master
Short-circuit sensor / actuator	2 red LEDs per channel to M12 port
Diagnostic to DESINA® (PIN 2)	PIN-2 diagnostic with 1 red LED per M12 port and signal to master; individually parameterized as digital input see technical data

General data	
Temperature range	0...+55 °C (storage temperature -20...+70 °C)
Mounting method	2-hole screw mounting
Dimensions	225 x 63 x 50.5 mm (drill plan 208.5 ± 0.5 mm)

Dimension drawing	
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Notes	Contact layout from page 2.2.10. Further accessories from page 2.2.13. Connection cables can be found in chapter 1.4...
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Bus modules MVK
Profibus-DP

Input/output module

Protection IP67



Approvals 

MVK-P



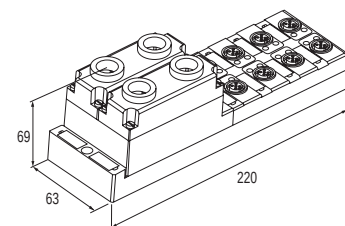
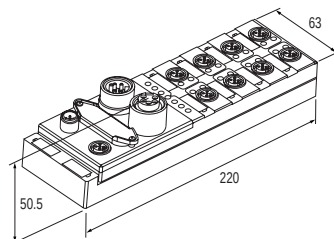
MVK-P



MVK

Ordering data	Art.-No.	Art.-No.
8 DI + 8 x diagnostic/ DI	55326	¹⁾ 55380
4 DI 4 DO + 8 x diagnostic/ DI	55328	
8 DO + 8 x diagnostic/ DI	55327	
8 DI/DO + 8 x diagnostic/ DI	55389	¹⁾ 55381
8 DI/DO + 8 x diagnostic/ DI/DO	55329	¹⁾ 55383

Field bus		
Supply voltage	24 V DC (18...30.2 V), to EN61131-2	
Type	Profibus-DP Slave	
Transfer protocol	Profibus-DP to EN50170	
Operating modes	sync- and freeze-mode are supported	
Transfer rate	up to 12 MBit/s	
Inputs		
Type	for 3-wire sensors or mechanical switches, p-switching, IEC-1131-2 type 2 compatible	
Supply voltage	24 V DC (18...30.2 V), to EN61131-2, ≤ 200 mA per M12 port	
Status indicator	1 yellow LED per input	
Outputs		
Supply voltage	24 V DC (18...30.2 V), to EN61131-2, I-total ≤ 9 A	24 V DC (18...30.2 V), to EN61131-2, I-total ≤ 12.8 A
Switching current per output	1.6 A, short-circuit and overload protected	
Filament lamp load	10 W	
Max. switching frequency	resistive load: 50 Hz; inductive load: 20 Hz	
Status indicator	1 yellow LED per output	
Diagnostic		
Field bus	RUN-LED	
Under voltage	combined LED and alarm to the master	
Short-circuit sensor / actuator	red LED per channel to M12 port	
Diagnostic to DESINA® (PIN 2)	PIN-2 diagnostic with 1 red LED per M12 port and signal to master; individually parameterized as digital input	
	see technical data	
General data		
Temperature range	0...+ 55 °C (storage temperature - 20...+ 70 °C)	
Mounting method	2-hole screw mounting	
Dimensions	220 x 63 x 50.5 mm (drill plan 208.5 ± 0.5 mm)	220 x 63 x 69 mm (drill plan 208.5 ± 0.5 mm)
Dimension drawing		



Notes
Contact layout from page 2.2.10. Further accessories from page 2.2.13. Connection cables can be found in chapter 1.4... ¹⁾ 2 shielded screw fixings supplied.

Bus modules MVK metal
DeviceNet

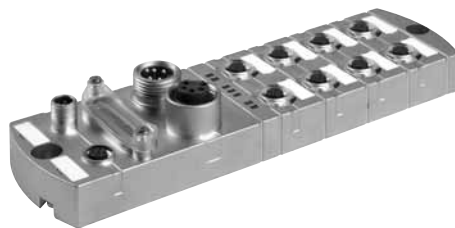
Input / output module

Protection IP67

DeviceNet
CONFORMANCE TESTED

Approvals 

MVK-MDN



Ordering data	Art.-No.
8 DI + 8 x diagnostic / DI	55297
4 DI 4 DO + 8 x diagnostic / DI	55298
8 DI/DO + 8 x diagnostic / DI/DO	55299

Field bus	
Supply voltage	24 V DC (18...30.2 V), to EN61131-2
Type	prod. type 7; generic I/O module
Transfer protocol	CAN; layer 7 DeviceNet (ODVA conformance tested)
Operating modes	polling; change of state; cyclic
Transfer rate	125 kBit/s; 250 kBit/s; 500 kBit/s
Bus connector	micro connector (M12 connector)

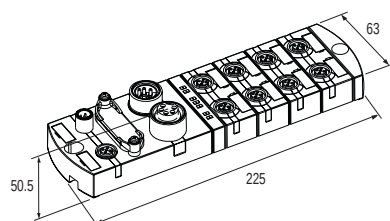
Inputs	
Type	for 3-wire sensors or mechanical switches, p-switching, IEC-1131-2 type 2 compatible
Supply voltage	24 V DC (18...30.2 V), to EN61131-2, ≤ 200 mA per M12 port
Status indicator	1 yellow LED per input

Outputs	
Supply voltage	24 V DC (18...30.2 V), to EN61131-2, I-total ≤ 9 A
Switching current per output	1.6 A, short-circuit and overload protected
Filament lamp load	10 W
Max. switching frequency	resistive load: 50 Hz; inductive load: 20 Hz
Status indicator	1 yellow LED per output

Diagnostic	
Field bus	MS-LED, NS-LED
Under voltage	combined LED and alarm to the master
Short-circuit sensor / actuator	2 red LED per channel to M12 port
Diagnostic to DESINA® (PIN 2)	PIN-2 diagnostic with 1 red LED per M12 port and signal to master; individually parameterized as digital input see technical data

General data	
Temperature range	0...+ 55 °C (storage temperature - 20...+ 70 °C)
Mounting method	2-hole screw mounting
Dimensions	225 x 63 x 50.5 mm (drill plan 208.5 $\pm$ 0.5 mm)

Dimension drawing	
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Notes	Contact layout from page 2.2.10. Further accessories from page 2.2.13. Connection cables can be found in chapter 1.4...
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Bus modules MVK
DeviceNet mini

Input / output module

Protection IP67

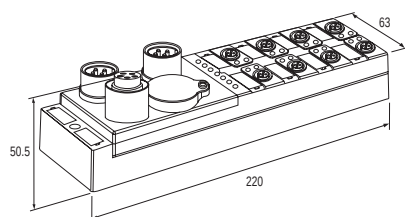
DeviceNet
CONFORMANCE TESTED

Approvals 

MVK-DN



Ordering data		Art.-No.
8 DI	+ 8 x diagnostic / DI	55311
4 DI 4 DO	+ 8 x diagnostic / DI	55313
8 DO	+ 8 x diagnostic / DI	55314
8 DI / DO	+ 8 x diagnostic / DI / DO	55312
Field bus		
Supply voltage	24 V DC (18...30.2 V), to EN61131-2	
Type	prod. type 7; generic I/O module	
Transfer protocol	CAN; layer 7 DeviceNet (ODVA conformance tested)	
Operating modes	polling; change of state; cyclic	
Transfer rate	125 kBit/s; 250 kBit/s; 500 kBit/s	
Bus connector	mini connector (7/8")	
Inputs		
Type	for 3-wire sensors or mechanical switches, p-switching, IEC-1131-2 type 2 compatible	
Supply voltage	24 V DC (18...30.2 V), to EN61131-2, ≤ 200 mA per M12 port	
Status indicator	1 yellow LED per input	
Outputs		
Supply voltage	24 V DC (18...30.2 V), to EN61131-2, $I_{\text{total}} \leq 9$ A	
Switching current per output	1.6 A, short-circuit and overload protected	
Filament lamp load	10 W	
Max. switching frequency	resistive load: 50 Hz; inductive load: 20 Hz	
Status indicator	1 yellow LED per output	
Diagnostic		
Field bus	MS-LED, NS-LED	
Under voltage	combined LED and alarm to the master	
Short-circuit sensor / actuator	red LED per channel to M12 port	
Diagnostic to DESINA® (PIN 2)	PIN-2 diagnostic with 1 red LED per M12 port and signal to master; individually parameterized as digital input see technical data	
General data		
Temperature range	0...+ 55 °C (storage temperature - 20...+ 70 °C)	
Mounting method	2-hole screw mounting	
Dimensions	220 x 63 x 50.5 mm (drill plan 208.5 ± 0.5 mm)	
Dimension drawing		



Notes
Contact layout from page 2.2.10. Further accessories from page 2.2.13. Connection cables can be found in chapter 1.4...

Bus modules MVK
Interbus

Input / output module

Protection IP67



Approvals 

MVK-MI



Ordering data

	Art.-No.
8 DI + 8 x diagnostic / DI	55294
8 DI/DO + 8 x diagnostic / DI	55295
8 DI/DO + 8 x diagnostic / DI/DO	55296

Field bus

Supply voltage	24 V DC (18...30.2 V), to EN61131-2
Type	remote bus/installations remote bus participants (slave)
Transfer protocol	Interbus to DIN EN 50254
Transfer rate	500 kBit/s

Inputs

Type	for 3-wire sensors or mechanical switches, p-switching, IEC-1131-2 type 2 compatible
Supply voltage	24 V DC (18...30.2 V), to EN61131-2, ≤ 200 mA per M12 port
Status indicator	1 yellow LED per input

Outputs

Supply voltage	24 V DC (18...30.2 V), to EN61131-2, $I_{\text{total}} \leq 9$ A
Switching current per output	1.6 A, short-circuit and overload protected
Filament lamp load	10 W
Max. switching frequency	resistive load: 50 Hz; inductive load: 20 Hz
Status indicator	1 yellow LED per output

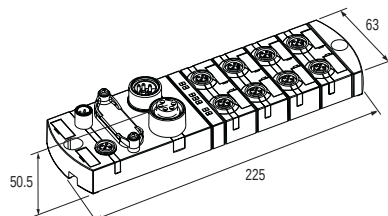
Diagnostic

Field bus	BA-, RD-, RC-LEDs
Under voltage	combined LED and alarm to the master
Short-circuit sensor / actuator	red LED per channel to M12 port
Diagnostic to DESINA® (PIN 2)	PIN-2 diagnostic with 1 red LED per M12 port and signal to master; individually parameterized as digital input see technical data

General data

Temperature range	0...+55 °C (storage temperature -20...+70 °C)
Mounting method	2-hole screw mounting
Dimensions	225 x 63 x 50.5 mm (drill plan 208.5 ± 0.5 mm)

Dimension drawing



Notes

Contact layout from page 2.2.10. Further accessories from page 2.2.13. Connection cables can be found in chapter 1.4...

Bus modules MVK
Interbus

Input / output module

Protection IP67

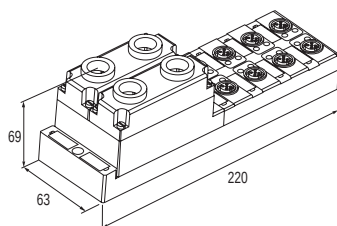


Approvals 

MVK-I



Ordering data		Art.-No.	Art.-No.
8 DI	+ 8 x diagnostic/ DI	housing blue/ black	55330
4 DI 4 DO	+ 8 x diagnostic/ DI	housing black	55331
8 DO	+ 8 x diagnostic/ DI	housing gray/ black	55332
8 DI/DO	+ 8 x diagnostic/ DI	housing black	55336
8 DI/DO	+ 8 x diagnostic/ DI/DO	housing black	
Field bus			
Supply voltage		24 V DC (18...30.2 V), to EN61131-2	
Type		remote bus/ installations remote bus participants (slave)	
Transfer protocol		Interbus to DIN EN 50254	
Transfer rate		500 kBit/s	
Inputs			
Type		for 3-wire sensors or mechanical switches, p-switching, IEC-1131-2 type 2 compatible	
Supply voltage		24 V DC (18...30.2 V), to EN61131-2, ≤ 200 mA per M12 port	
Status indicator		1 yellow LED per input	
Outputs			
Supply voltage		24 V DC (18...30.2 V), to EN61131-2, I-total ≤ 12.8 A	
Switching current per output		1.6 A, short-circuit and overload protected	2 A, short-circuit and overload protected
Filament lamp load		10 W	
Max. switching frequency		resistive load: 50 Hz; inductive load: 20 Hz	
Status indicator		1 yellow LED per output	
Diagnostic			
Field bus		BA-, RD-, RC-LEDs	
Under voltage		combined LED and alarm to the master	
Short-circuit sensor/ actuator		red LED per channel to M12 port	
Diagnostic to DESINA® (PIN 2)		PIN-2 diagnostic with 1 red LED per M12 port and signal to master; individually parameterized as digital input see technical data	
General data			
Temperature range		0...+ 55 °C (storage temperature - 20...+ 70 °C)	
Mounting method		2-hole screw mounting	
Dimensions		220 x 63 x 69 mm (drill plan 208.5 ± 0.5 mm)	
Dimension drawing			



Notes
4 separate voltages for bus electronic / sensor, actuator on left side and actuator on right side. Cable compression glands are not supplied. Contact layout from page 2.2.10. Further accessories from page 2.2.13. Connection cables can be found in chapter 1.4...

MVK - Compact I/O modules



Bus modules MVK
DESINA®

Input / output module

Protection IP67



Approvals

MVK-DESINA® LWL ECOFAST®
fibre optic cable (F.O.)

MVK-DESINA® CU ECOFAST®
copper



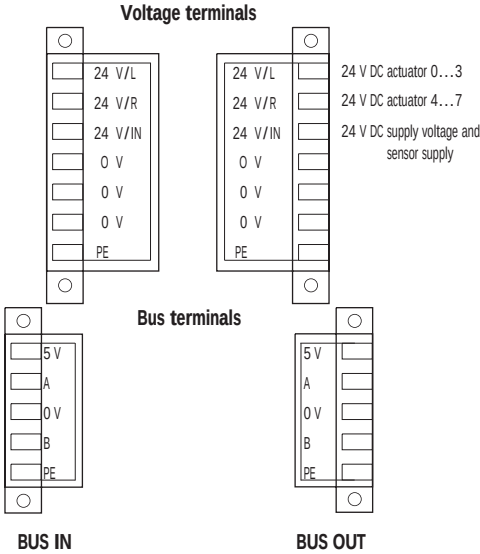
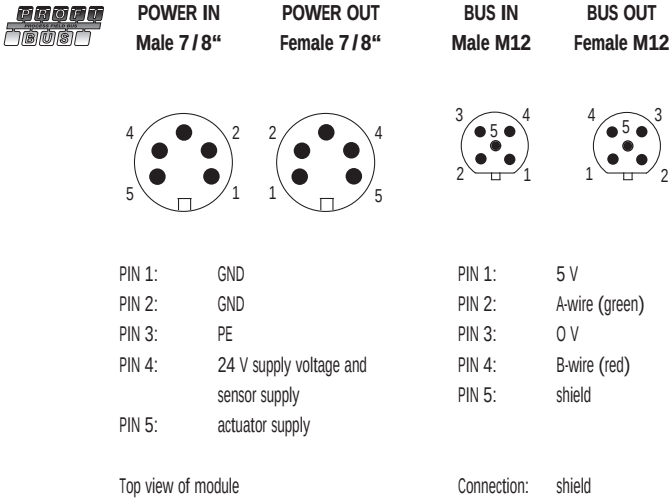
Ordering data		Art.-No.	Art.-No.
8 DI/DO + 8 x diagnostic/ DI		55325	55378
Technical data			
Supply voltage	24 V DC (18...30.2 V), to EN61131-2		
Type	Profibus-DP slave		
Transfer protocol	Profibus-DP to EN50170		
Operating modes	sync- and freeze-mode are supported		
Transfer rate	up to 12 MBit/s		
Inputs			
Type	for 3-wire sensors or mechanical switches, p-switching, IEC-1131-2 type 2 compatible		
Supply voltage	24 V DC (18...30.2 V), to EN61131-2, ≤ 200 mA per M12 female		
Status indicator	1 LED yellow per input		
Outputs			
Supply voltage	24 V DC (18...30.2 V), to EN61131-2; I-total ≤ 10 A		
Switching current per output	1.6 A, short-circuit and overload protected		
Filament lamp load	10 W		
Max. switching frequency	resistive load: 50 Hz; inductive load: 20 Hz		
Status indicator	1 LED yellow per output		
Diagnostic			
Field bus	RUN-LED		
Under voltage	combined LED and alarm to the master		
Short-circuit sensor / actuator	red LED per channel to M12 port		
Diagnostic to DESINA® (PIN 2)	PIN 2 diagnostic with 1 red LED per M12 port and signal to master; individually parameterized as digital input see technical data		
General data			
Temperature range	0...+55 °C (storage temperature -20...+75 °C)		
Mounting method	2-hole screw mounting		
Dimensions	H x W x D	220 x 63 x 50.5 mm (drill plan 208.5 ± 0.5 mm)	
Dimension drawing			

Notes
Contact layout from page 2.2.10. Further accessories from page 2.2.13. Connection cables can be found in chapter 1.4...

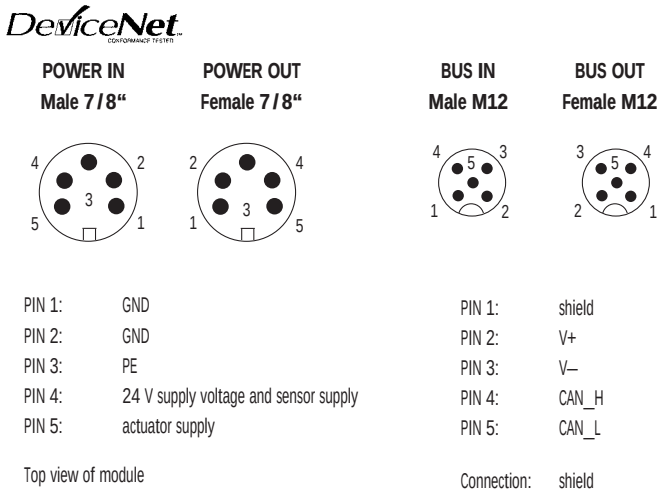
Contact layout for MVK-MP and MVK-P

Art.-No. 55307, 55308, 55309, 55326, 55327, 55328, 55329, 55389

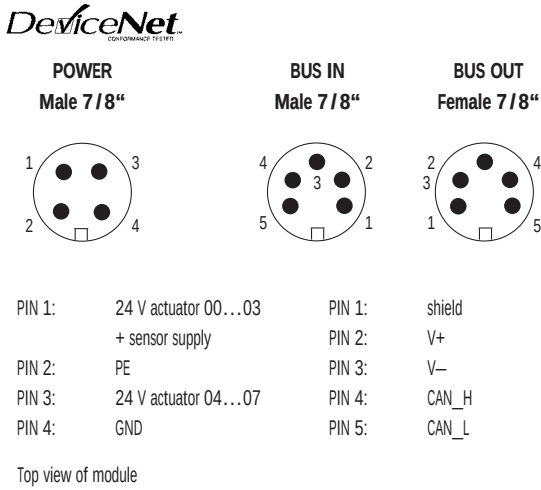
Art.-No. 55380, 55381, 55383



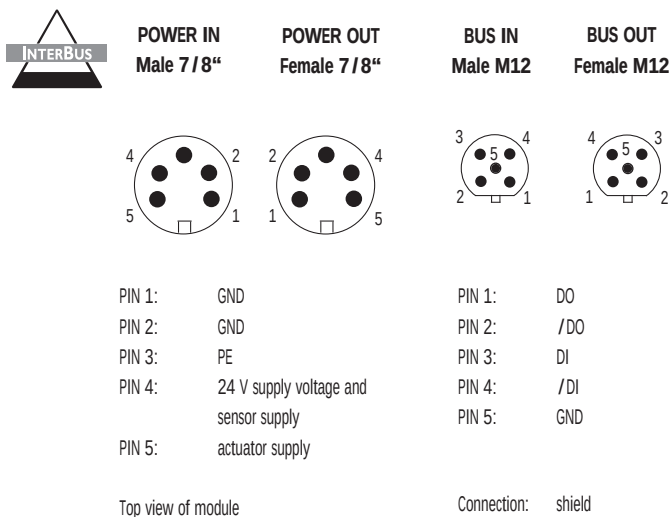
Contact layout for MVK-MDN



Contact layout for MVK-DN



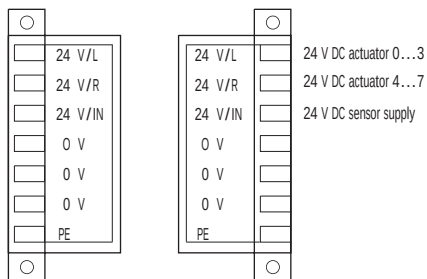
Contact layout for MVK-MI



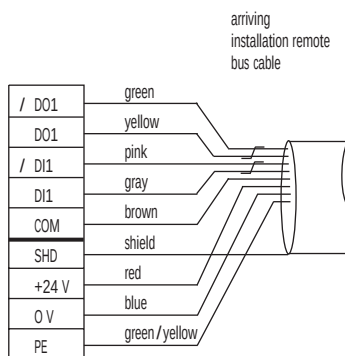
MVK-I for remote bus installer or user



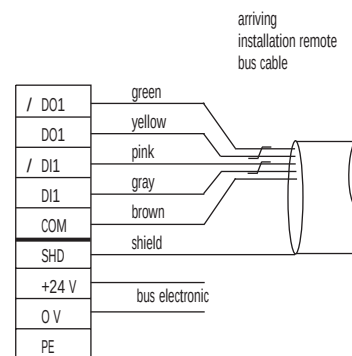
Voltage terminals



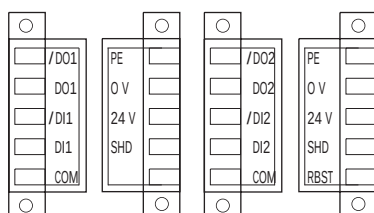
Connection as installation remote bus user



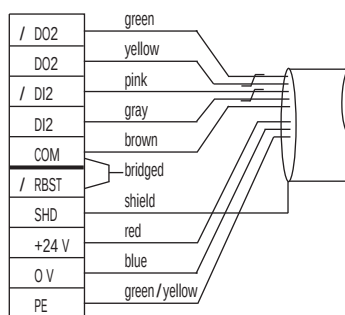
Connection as remote bus user



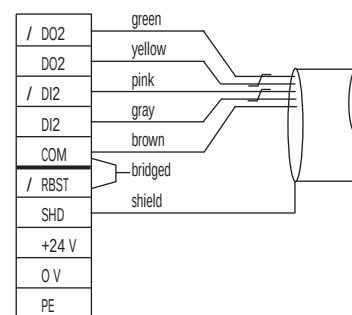
Bus terminals



passing installation remote bus cable



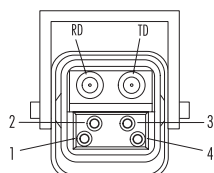
passing installation remote bus cable



Contact layout for MVK-DESINA® LWL ECOFAST® and MVK-DESINA® CU ECOFAST®



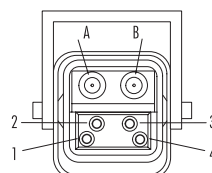
Male / female LWL



- TD: transmit data (LWL)
- RD: receive data (LWL)
- PIN 1: 24 V equal channels supply not switched (U_{ns})
- PIN 2: GND
- PIN 3: GND
- PIN 4: 24 V unequal channels supply switched (U_s)

Top view of module

Male / female CU

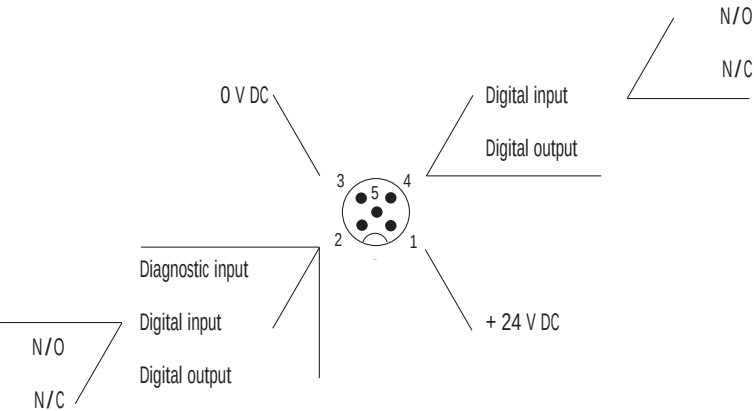


- Data A: bus cable
- Data B: bus cable
- PIN 1: 24 V equal channels supply not switched (U_{ns})
- PIN 2: GND
- PIN 3: GND
- PIN 4: 24 V unequal channels supply switched (U_s)

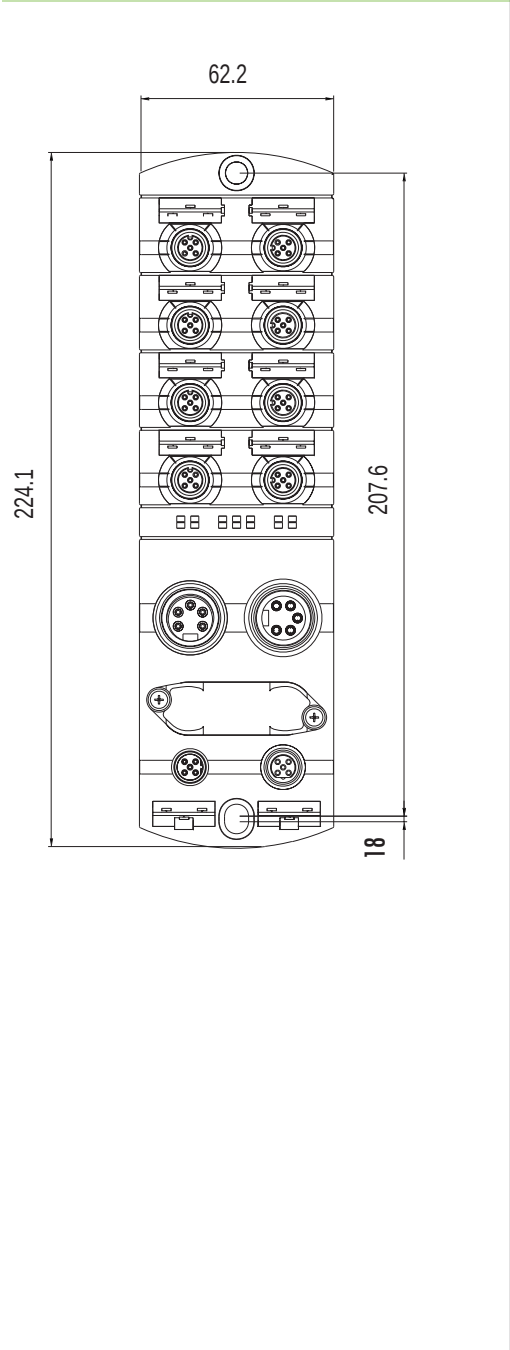
Top view of module

Possible parameterizations for multi functional I/Os

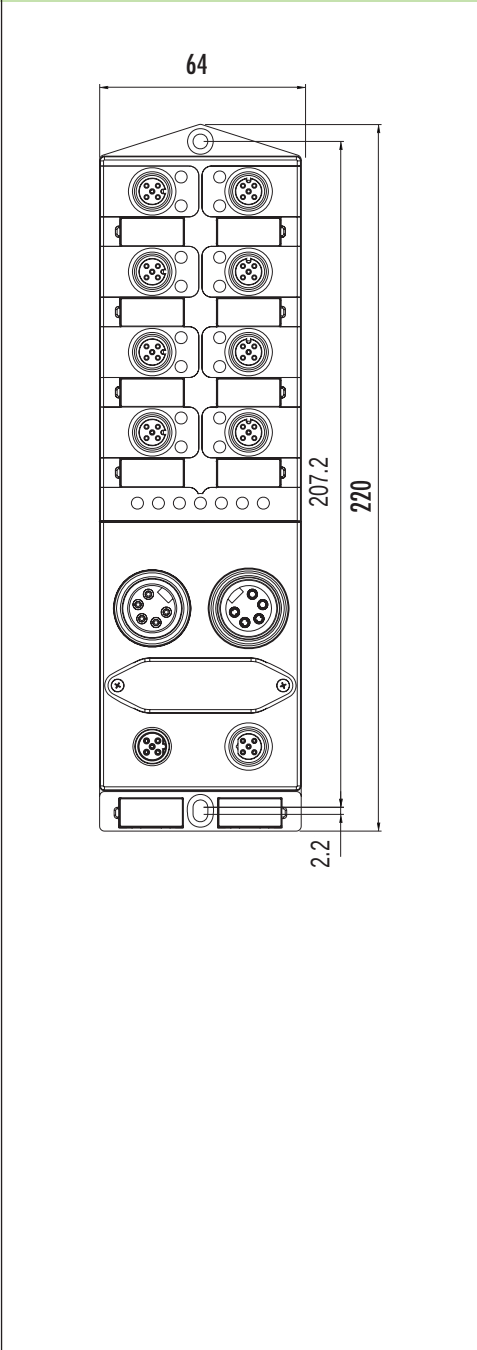
MVK



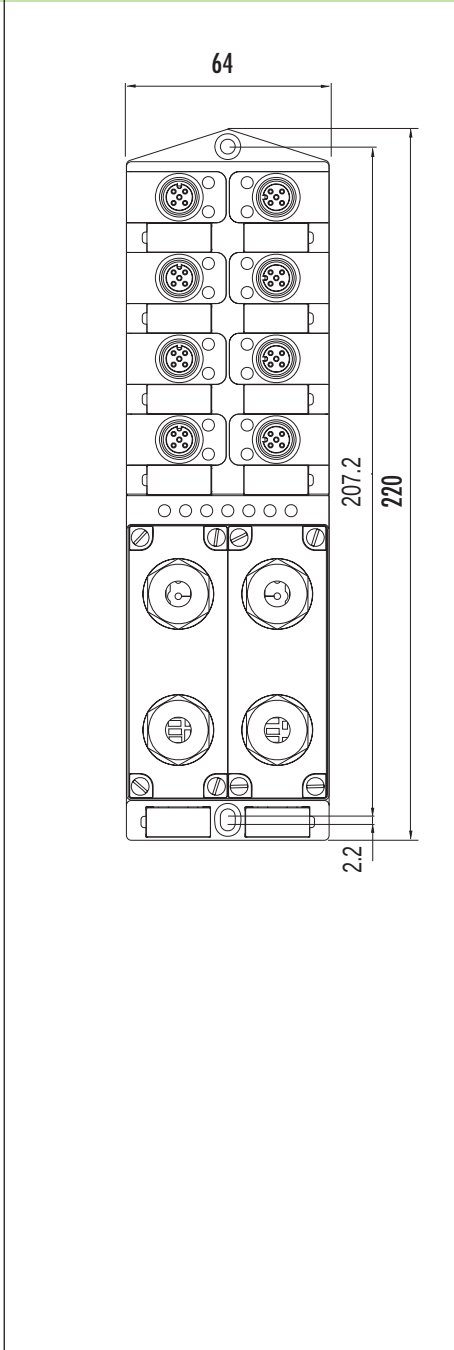
Drill plan for MVK metal housing



Drill plan for MVK plastic housing



Drill plan for MVK-I plastic housing



Installation technology		Art.-No.
	DESINA® terminator	7000-33021-0000000
	DESINA® addressing or coding plug	55379
Installation technology		Art.-No.
	Blind cap hybrid field bus connector	Set (1 piece) 67584
	Blind plug 7/8"	55390
	Addressing lid metal	Set (1 piece) 55317
Other		
	MVK manuals available to download from www.murrelektronik.com	PROFIBUS DeviceNet Interbus
Notes		
		Further system accessories on request.