I/O module IP65/IP67/IP69K

- Configurable I/O module for digital input, digital output and analogue input signals
- Suitable for use in environments requiring a high degree of protection
- Integrated diagnostic functions, such as wire break and short circuit detection
- M12 L-coded power port for additional power supply (up to 32 A) for devices in the surrounding area
- Easy configuration using the Bürkert Communicator software (Type 8920)

Product variants described in the data sheet may differ from the product presentation and description.

Can be combined with

Type ME63
Industrial Ethernet gateway, IP65/IP67/IP69k

Type 8653
AirLINE Field – the valve island – optimised for process automation

Type 8691
Control head for decentralised automation of ELEMENT process valves

Type 8012
Flowmeter with paddle wheel for continuous flow measurement

Type 8032
Flowmeter/threshold detector with paddle wheel

Type description

The Bürkert I/O modules Type ME64 extend the functionality of the Industrial Ethernet gateway Type ME63 and are designed for the acquisition of a wide range of sensor and control signals. Depending on the selected variant, Type ME64 offers either 16 dedicated digital inputs or universal I/O channels that can be individually configured as analogue inputs (AI), digital inputs (DI) or digital outputs (DO). This flexibility allows Type ME64 to adapt to the exact requirements of the application – ranging from simple switch signals to variable sensor and actuator configurations. All signals collected by Type ME64 are transmitted to the ME63 gateway via a CANopen-based bus. Further processing, such as forwarding via an Industrial Ethernet protocol to a higher level control system, is carried out centrally by the gateway. In combination with valve islands such as AirLINE Field Type 8653 (pneumatic control of process valves) or decentralized process valve controls such as Type 8691, Type ME64 is ideally suited for local signal acquisition, including in splash-proof environments directly at the machine or plant. Through the gateway's central configuration management, Type ME64 can be easily replaced, expanded or reconfigured as needed, ensuring simple maintenance and flexible system adaptation. Type ME63 and Type ME64 are part of Bürkert's EDIP – Efficient Device Integration Platform. EDIP simplifies the integration of field devices – such as valves, actuators and sensors – into higher level automation and control architectures and completes Bürkert's modular system concept for digital device integration.

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Visit product website

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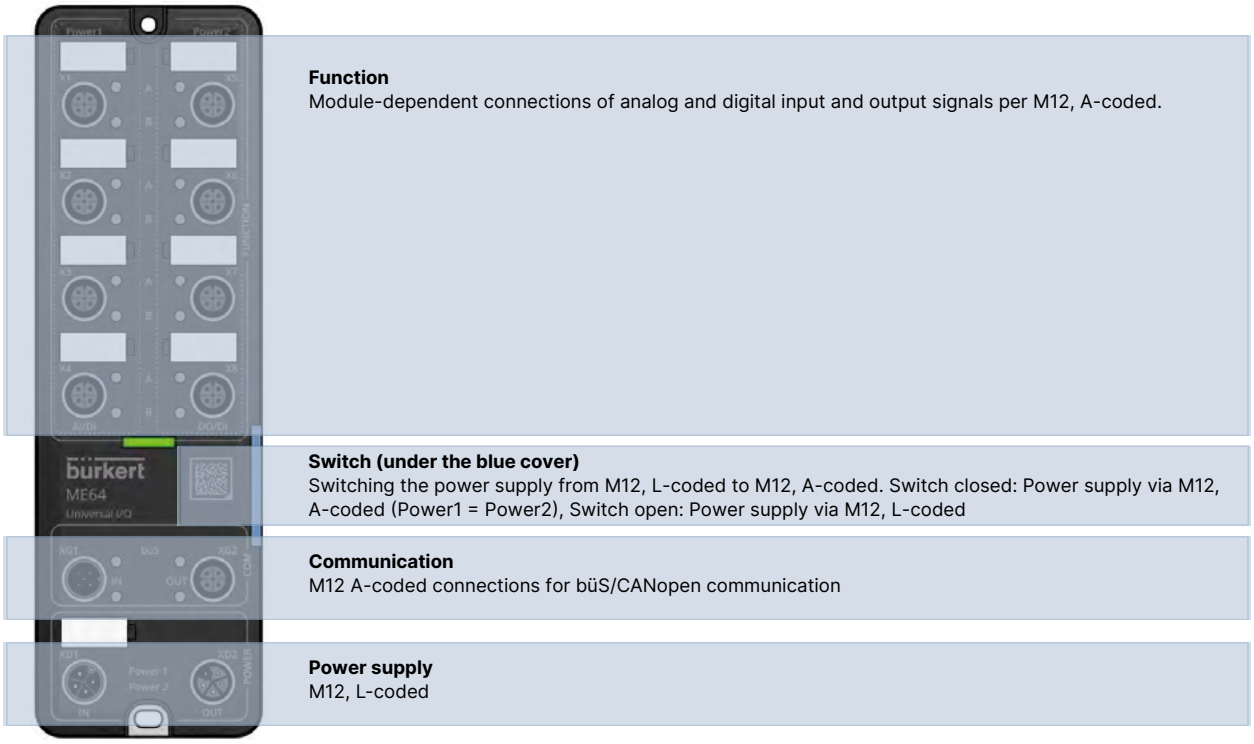
1. Product variants

1.1. ME64 I/O module

General technical data

Product properties	
Dimensions	Further information can be found in chapter "Dimensions" on page 4.
Weight	400 g
Material	
Housing	PC (polycarbonate)
Status display	RGB-LED according to NAMUR NE107, one status LED per I/O
Approvals and conformities	
Further information can be found in chapter "2. Approvals and conformities" on page 13.	
Environment and installation	
Ambient temperature	- 20 °C...+ 60 °C
Storage temperature	- 30 °C...+ 80 °C
Degree of protection	IP65, IP67 and IP69k according to EN 60529 / IEC 60529 (with cables connected and with protective caps on unused connections)
Height above sea level	Maximum 2000 m

Product design and assembly



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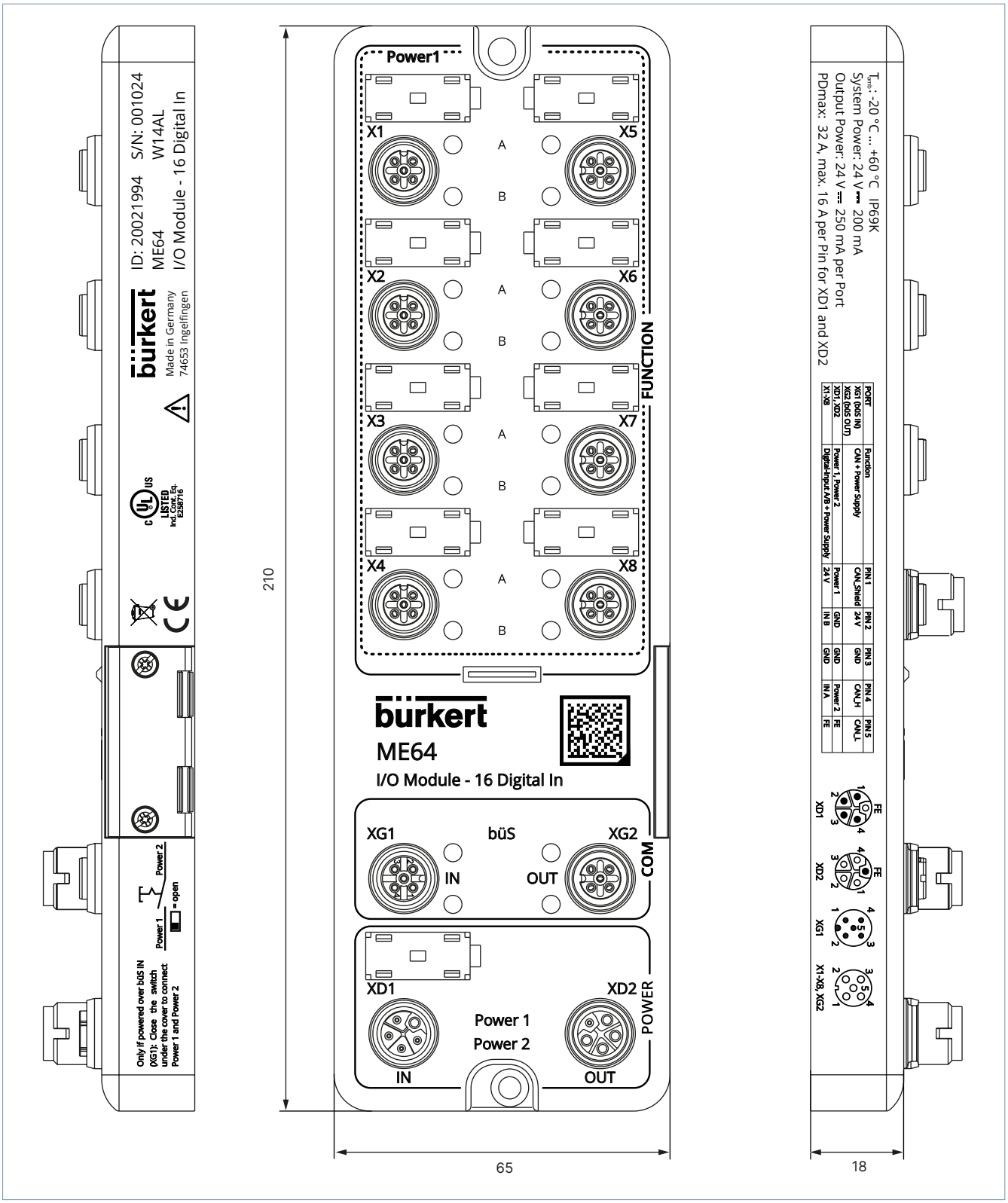
Dimensions

Note:
Dimensions in mm, unless otherwise stated



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1.2. ME64 16DI-module 1st Generation / Article no. 346856

General technical data

Electrical data	
Operating voltage	24 V DC + 20 %/- 15 %
Power consumption of the module	4.12 W
Digital inputs	
Electric variant	2-wire sensor, 3-wire sensor, mechanical limit switches
Diagnostics	Open circuit detection with 2-wire sensors, short-circuit detection with 3-wire sensors
Electrical connection	8 x M12, A-coded, socket, 5-pin (X1-X8)
Switching threshold	V_{OFF} = 0...5 V V_{ON} = 10...30 V
Input current for V_{ON}, typically 24 V DC	Maximum 5.7 mA per channel
Input type	Type1 and Type3 according to IEC 61132 - 2
Number of frequency inputs	4
Frequency input	Maximum up to 2.5 kHz
Input impedance	> 4 kΩ
Sampling time/sampling frequency	1 ms...4 s / 0.25 Hz...1 kHz
Maximum sensor power supply	16 × 125 mA

Product connections

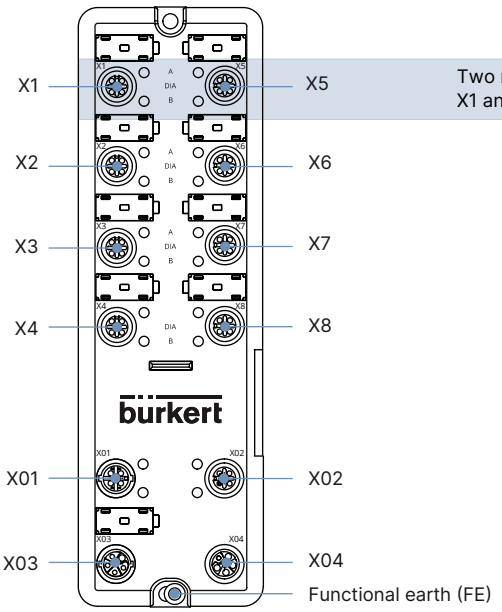
Connection details

Note:
Switch the power supply from X03 to X01 using the switch located on the side under the blue cover.

Pin assignment

Note:

- The L-coded M12 connection (X03, X04) is designed for connecting 2 power supplies (Power1, Power2), each up to a maximum of 16 A.
- Both supplies are routed separately on the module. Power1 supplies the connections X1-X8 as well as the internal electronics of the module.



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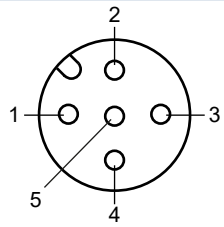
Connection	Description
X1	M12-A, socket, 2xDI und 24 V DC, maximum 4 A, 2 multifunctional inputs [1.)]
X5	M12-A, socket, 2xDI und 24 V DC, maximum 4 A, 2 multifunctional inputs [1.)]
X2-X4	M12-A, socket, 2xDI und 24 V DC, maximum 4 A, 2 digital inputs
X6-X8	M12-A, socket, 2xDI und 24 V DC, maximum 4 A, 2 digital inputs
X01	M12-A, plug, büS/CANopen IN, for connection büS/CANope network, input power aux (power supply up to 4 A)
X02	M12-A, plug, büS/CANopen OUT, for connection of büS/CANopen network, input power aux (power supply up to 4 A)
X03	M12-L, plug, power IN, maximum 32 A, for the power supply (Power1 and Power2). The module is supplied via Power1.
X04	M12-L, socket, power OUT, maximum 32 A, for the supply of further devices

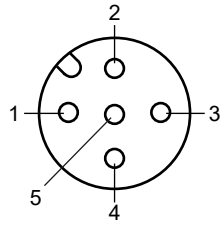
1.) Variants of a multifunction input: digital input, pulse counter, frequency input, flow rate input, flow rate totalizer input

X1, X5



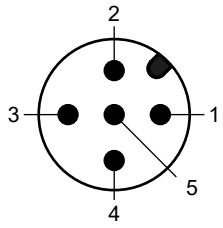
Pin	Pin assignment	Function
1	24 V	Power supply
2	IN B	Digital input B (multifunctional input)
3	GND	Power supply
4	IN A	Digital input A (multifunctional input)
5	FE	Shielding/protective earth

X2 – X4, X6 – X8

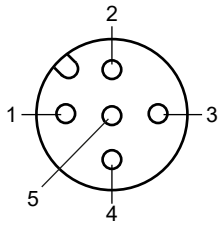


Pin	Pin assignment	Function
1	24 V	Power supply
2	IN B	Digital input channel B
3	GND	Power supply
4	IN A	Digital input A
5	FE	Shielding/protective earth

X01 (IN)

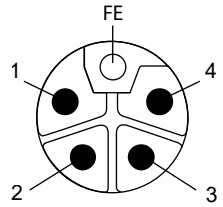


X02 (OUT)

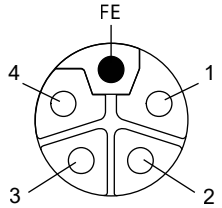


Pin	Pin assignment	Function
1	CAN_Shield	Shielding
2	24 V	Power supply
3	GND	Power supply
4	CAN_H	büS/CANopen communication
5	CAN_L	büS/CANopen communication

X03 (IN)



X04 (OUT)



Pin	Pin assignment	Function
1	24 V	Power supply Power1
2	GND	Power supply Power1, ground
3	GND	Power supply Power2, ground
4	24 V	Power supply Power2
5	FE	Shielding

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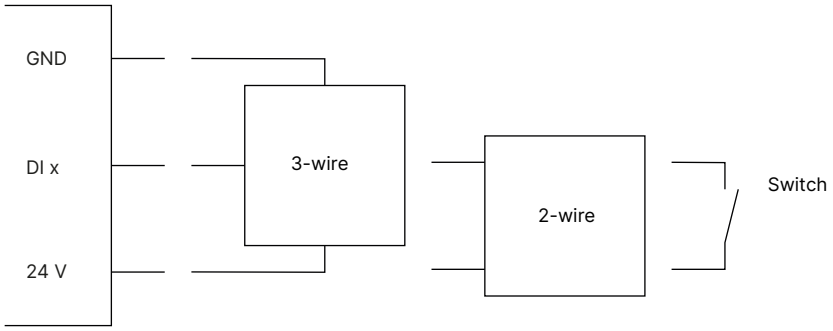
Circuit diagram



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1.3. ME64 16DI-module / Article no. 20021994

General technical data

Electrical data	
Operating voltage	24 V DC + 20 %/- 15 %
Power consumption of the module	4.12 W
Digital inputs	
Electric variant	2-wire sensor, 3-wire sensor, mechanical limit switches
Diagnostics	Open circuit detection with 2-wire sensors, short-circuit detection with 3-wire sensors
Electrical connection	8 x M12, A-coded, socket, 5-pin (X1-X8)
Switching threshold	V_{OFF} = 0...5 V V_{ON} = 10...30 V
Input current for V_{ON}, typically 24 V DC	Maximum 5.7 mA per channel
Input type	Type1 and Type3 according to IEC 61132 - 2
Number of frequency inputs	Up to 4 (variant 1) or 8 (variant 2)
Frequency input	Maximum up to 2.5 kHz
Input impedance	> 4 kΩ
Sampling time/sampling frequency	1 ms...4 s / 0.25 Hz...1 kHz
Maximum sensor power supply	16 × 125 mA

Product connections

Connection details

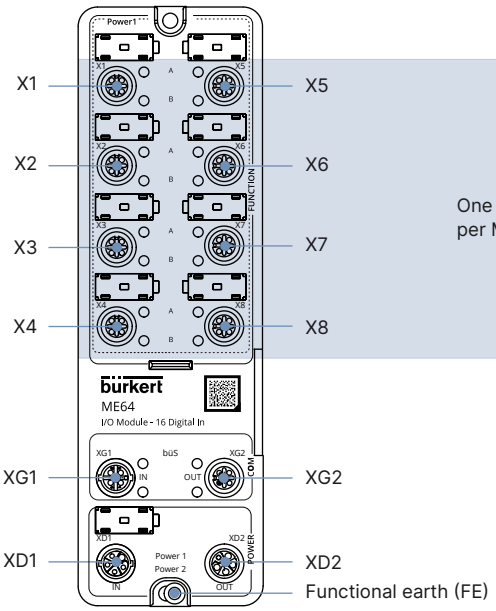
Note:

- Switch the power supply from XD1 to XG1 using the switch located on the side under the blue cover.
- In an earlier version of the module, the connections were labelled as follows: XD1/XD2 = X03/X04, XG1/XG2 = X01/X02.

Pin assignment

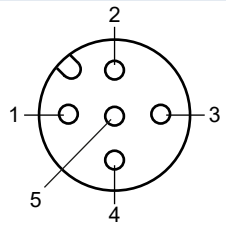
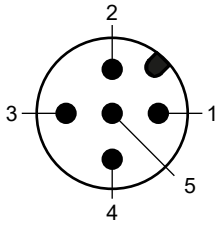
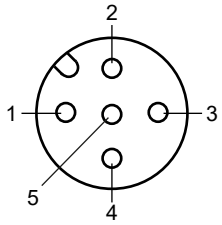
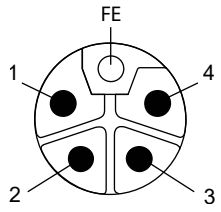
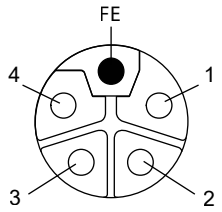
Note:

- The L-coded M12 connection (XD1, XD2) is designed for connecting 2 power supplies (Power1, Power2), each upto a maximum of 16 A.
- Both supplies are routed separately on the module. Power1 supplies the connections X1-X8 as well as the internal electronics of the module.



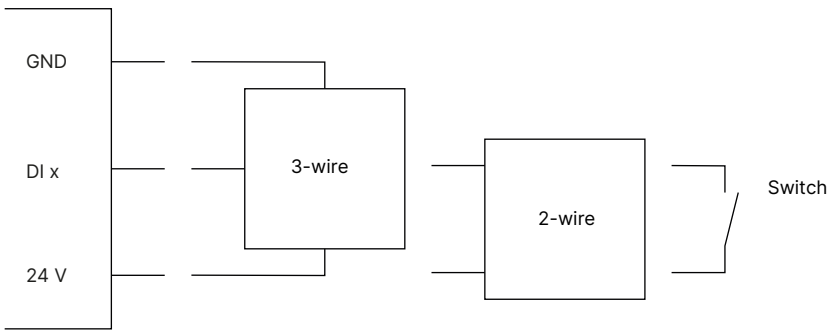
Connection	Description
X1-X8	M12-A, socket, je M12: 2x DI und 24 V DC, maximal 4 A, one multifunction input 1.)
XG1 2.)	M12-A, plug, büS/CANopen IN, for connection to büS/CANopen network, power supply up to 4 A.
XG2 2.)	M12-A, plug, büS/CANopen OUT, for connection to büS/CANopen network, power supply up to 4 A.
XD1 2.)	M12-L, plug, power IN, maximum 32 A, for the power supply (Power1 and Power2). The module is supplied via Power1.
XD2 2.)	M12-L, socket, power OUT, maximum 32 A, for the supply of further devices

1.) Variants of a multifunction input: digital input, impulse counter, flow rate input, flow rate totalizer input
2.) In an earlier version of the module, the connections were labeled as follows: XD1/XD2= X03/X04, XG1 /XG2 = X01/X02.

X1- X8		Pin	Pin assignment	Function
		**1**	24 V	Power supply
		2	IN B	Digital input B (multifunctional input)
		3	GND	Power supply
		4	IN A	Digital input A
		5	FE	Shielding/protective earth
XG1 (IN) 2.)	**XG2 (OUT) 2.)**	**Pin**	**Pin assignment**	**Function**
		**1**	CAN_Shield	büS/CANopen shielding
		2	24 V	Power supply
		3	GND	Power supply
		4	CAN_H	büS/CANopen communication
		5	CAN_L	büS/CANopen communication
XD1 (IN) 2.)	**XD2 (OUT) 2.)**	**Pin**	**Pin assignment**	**Function**
		**1**	24 V	Power supply Power1
		2	GND	Power supply Power1, ground
		3	GND	Power supply Power2, ground
		4	24 V	Power supply Power2
		5	FE	Shielding

2.) In an earlier version of the module, the connections were labeled as follows: XD1 = X03, XD2 = X04, XG1 = X01, XG2 = X02.

Circuit diagram



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1.4. ME64 Universal I/O module / ID 20098112

General technical data

Electrical data	
Operating voltage	24 V DC + 20 %/- 15 %
Power consumption of the module	4.8 W
Maximum sensor power supply	250 mA per channel
Analog inputs	
X1-X4 configured as analogue input	
Power supply	Power1
Electrical variant	Current input or voltage input
Diagnostics	Detection of fault conditions (at 3.5 mA and 22 mA according to NAMUR NE43) Detection of an interruption at current input (open loop)
Operating mode	0...20 mA / 4...20 mA 0...10 V / 0...5 V / 0...2 V
Accuracy	± 0.5 % final value range (10 V / 20 mA)
Input impedance	Current measurement at + 25 °C ≤ 110 Ω Voltage measurement at + 25 °C ≥ 115 kΩ
Digital outputs	
P-switching (X5-X8)	
Power supply	Power2
Electrical variant	Voltage output
Operating mode	ON/OFF PWM (pulse width modulation) PFM (pulse frequency modulation) Liquid Dosing Open Loop Impulse (switching for a defined high-resolution impulse time) Dosing (switching based on taught-in dosing quantity)
Clock frequency	20 kHz adjustable
Maximum output current	1 A
Digital inputs	
X1-X8 configured as digital input	
Electric variant	2-wire sensor, 3-wire sensor, mechanical limit switches
Diagnostics	Open circuit detection with 2-wire sensors, short-circuit detection with 3-wire sensors
Switching threshold	V_{OFF} = 0...5 V V_{ON} = 10...30 V
Input current in switched state	I_ON ≥ 2.4 mA
Input type	Type1 and Type3 according to IEC 61132 - 2
Number of frequency inputs	8
Frequency input	Maximum up to 2.5 kHz
Input impedance	> 4 kΩ
Sampling time/sampling frequency	1 ms...4 s / 0.25 Hz...1 kHz

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Product connections

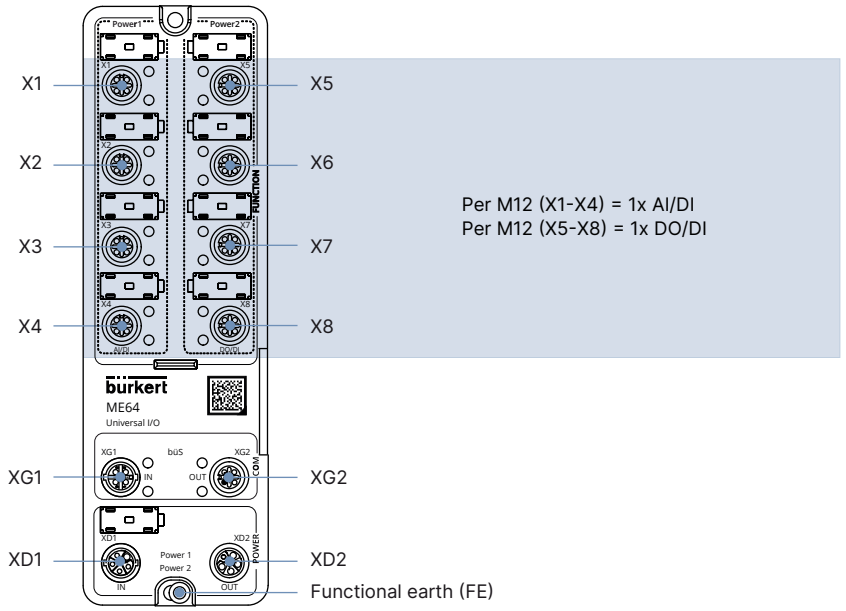
Connection details

Note:
Supplies are routed separately on the module or brought together, depending on the position of the switch under the blue cover.

Pin assignment

Note:

- The L-coded M12 connection (X03, X04) is designed for connecting 2 power supplies (Power1, Power2), each upto a maximum of 16 A.
- Both supplies are routed separately on the module. Power1 supplies the connections X1-X4 (AI/DI) as well as the internal electronics of the module. Power2 supplies connections X5-X8 (DO/DI).



Connection	Description
X1-X4	M12-A, socket, 1 x AI/DI and 24 V DC, 250 mA
X5-X8	M12-A, socket, 1 x DO/DI and 24 V DC, 250 mA
XG1	M12-A, plug, büS/CANopen IN, for connection to büS/CANopen network, power supply up to 4 A.
XG2	M12-A, plug, büS/CANopen OUT, for connection to büS/CANopen network, power supply up to 4 A.
XD1	M12-L, plug, power IN, maximum 32 A, for the power supply (Power1 and Power2)
XD2	M12-L, socket, power OUT, maximum 32 A, for the supply of further devices

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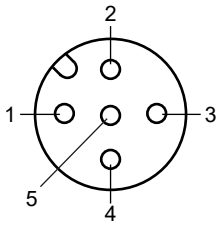
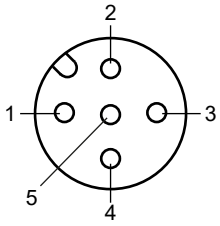
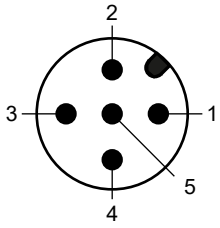
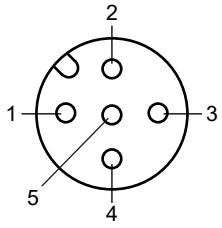
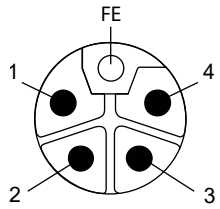
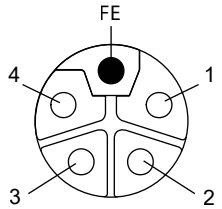
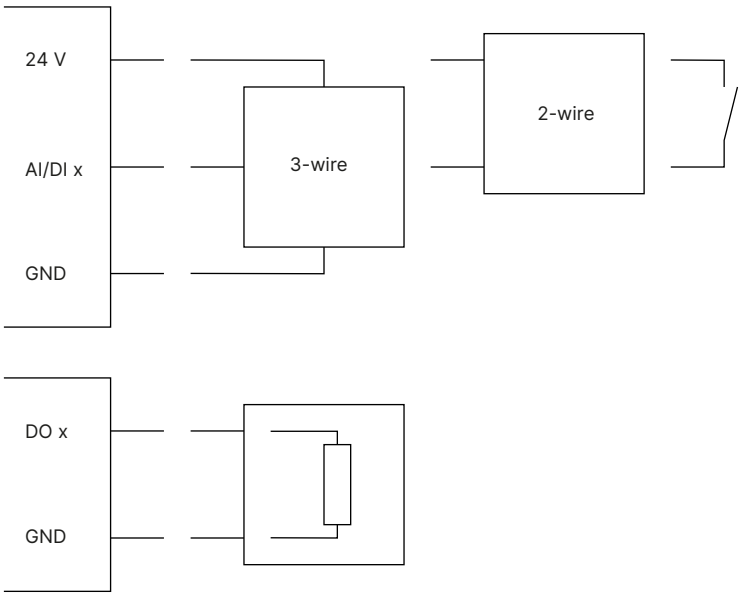
X1-X4	Pin	Pin assignment	Function
	**1**	24 V	Power supply Power1
	2	AI/DI	Analogue input (configurable as DI)
	3	GND	Power supply
	4	–	–
	5	FE	Shielding/protective earth

X5-X8	Pin	Pin assignment	Function
	**1**	24 V	Power supply Power2
	2	DO/DI	Digital output (configurable as DI)
	3	GND	Power supply
	4	–	–
	5	FE	Shielding/protective earth

XG1 (IN)	XG2 (OUT)	Pin	Pin assignment	Function
		**1**	CAN_Shield	büS/CANopen shielding
		2	24 V	Power supply Power1
		3	GND	Power supply
		4	CAN_H	büS/CANopen communication
		5	CAN_L	büS/CANopen communication

XD1 (IN)	XD2 (OUT)	Pin	Pin assignment	Function
		**1**	24 V	Power supply Power1
		2	GND	Power supply
		3	GND	Power supply
		4	24 V	Power supply Power2
		5	FE	Shielding

Circuit diagram



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2. Approvals and conformities

2.1. General notes

- The approvals and conformities listed below must be stated when making enquiries. This is the only way to ensure that the product complies with all required specifications.
- Not all available variants can be supplied with the below mentioned approvals or conformities.

2.2. Conformity

In accordance with the Declaration of Conformity, the product is compliant with the EU Directives.

2.3. Standards

The applied standards which are used to demonstrate compliance with the EU Directives are listed in the EU-Type Examination Certificate and/or the EU Declaration of Conformity.

2.4. North America (USA/Canada)

ME64 16DI-module / Article no. 20021994

Approval	Description
c UL us LISTED	**Optional: UL Listed for the USA and Canada** UL Listed for the USA and Canada according to: UL 61010-1 (ELECTRICAL EQUIPMENT FOR MEASUREMENT, CONTROL, AND LABORATORY USE – Part 1: General Requirements) Certificate No.: E258716

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3. Product accessories

3.1. EDIP – Efficient Device Integration Platform

EDIP is a Bürkert device platform that standardises the operation, communication and interfaces of many process devices (for example, sensors, mass flow controllers). Thanks to EDIP, devices can be intelligently networked and operated with the standardised software, the Bürkert Communicator. The backbone and connecting link of EDIP is a digital interface that complies with the CANopen standard and can always be used in a manner compatible with it.

EDIP offers the user the following advantages:

- Interoperability - guaranteed by the uniform interface
- Comfortable operation and display concept
- Faster and simplified commissioning
- Modularity - allows the devices to be adapted to individual customer requirements
- Easy transfer and safeguarding of device settings

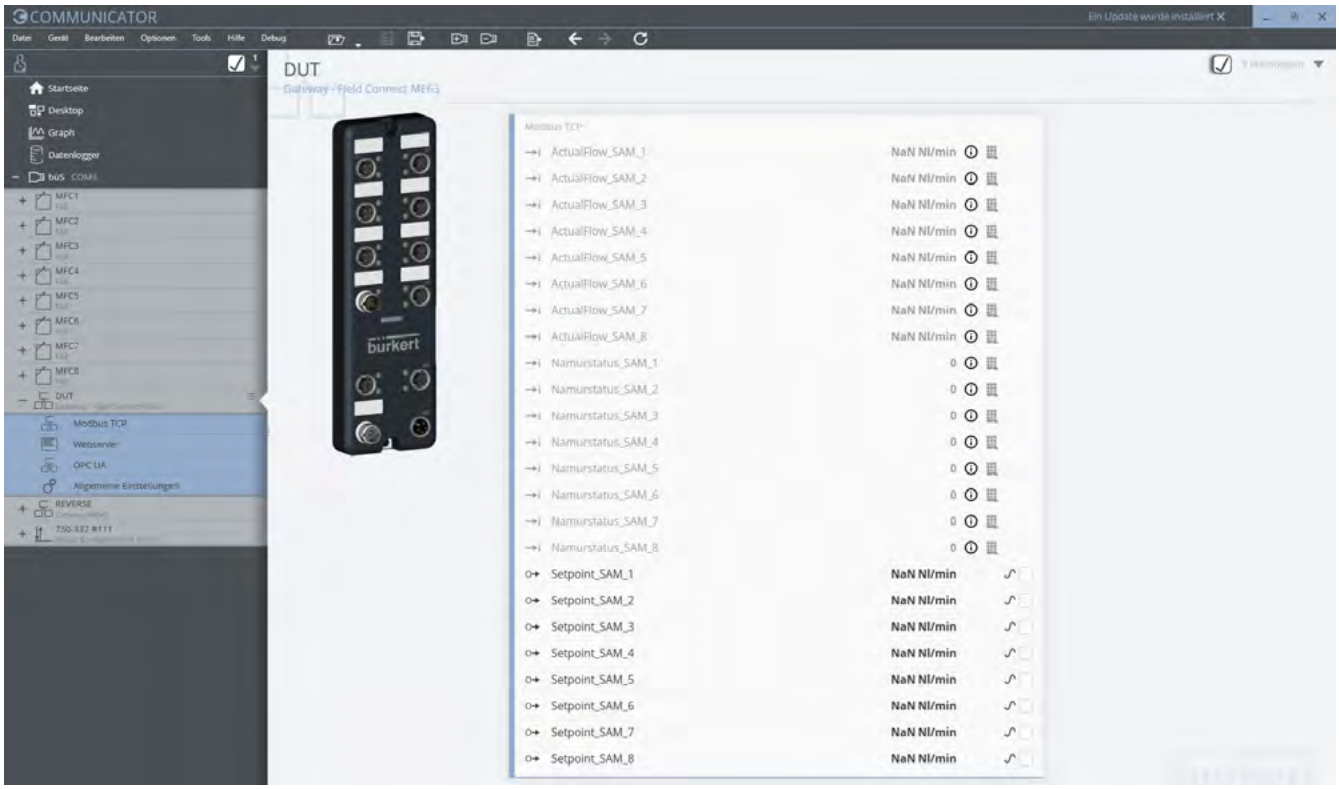
3.2. Bürkert Communicator software

Note:
The associated communication software can be downloaded under **Type 8920** ▶.

The Bürkert Communicator is the most important software tool of the device platform EDIP (Efficient Device Integration Platform). The extensive features of this universal tool facilitate the configuration and parameterisation of all devices equipped with the digital CANopen-based interface. The Bürkert Communicator provides the user with a complete overview of all cyclic process values and acyclic diagnostic data. The integrated graphical programming environment enables the creation of control functions for decentralised sub-systems. The connection to the PC can be established via a USB-büS interface set. This is available as an accessory, see **"5.4. Ordering chart accessories" on page 16**.

The Bürkert Communicator enables:

- Configuration, parameterisation and diagnosis of EDIP devices/networks
- Easy and convenient assignment (mapping) of cyclical values
- Graphical display of process values
- Firmware update of the connected EDIP devices
- Saving and restoring device configurations



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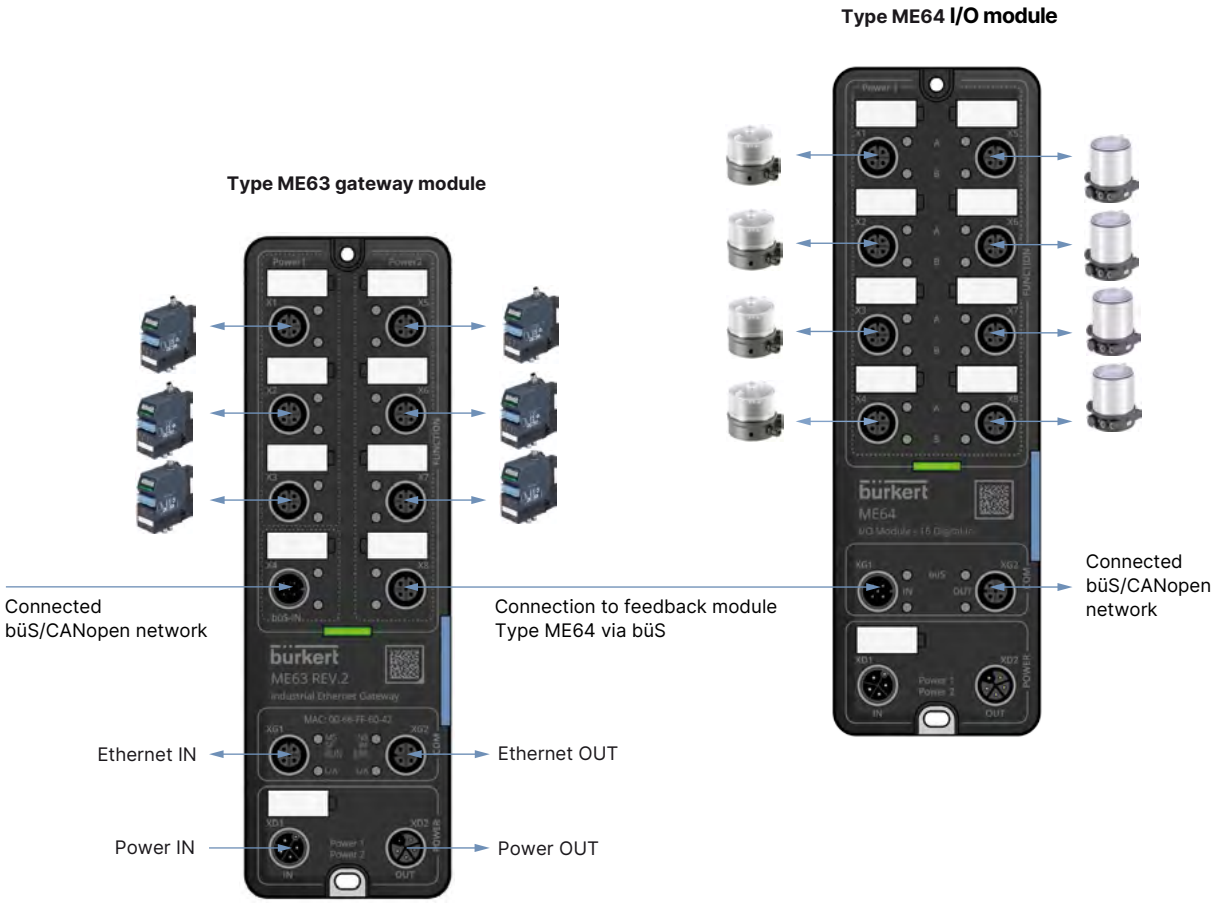
4. Networking and combination with other Bürkert products

4.1. Example of combination with Type ME63

Note:

- Drop lines must not be longer than 5 m.
- Signal integrity measurement is recommended for star cabling of more extensive networks.
- See „Supplement | Cabling guide büS/EDIP“ on our website under „User Manuals“, **Type ME64** ▶.



Short description of the illustrated example

- Connection of 8 (maximum 16) feedback signals via drop line to X1-X8 on Type ME64
- Integration into büS/CANopen network via X4 on ME63rev.2, with connection via X8 to XG1 of the ME64 module
- By connecting the büS/CANopen network to a ME63rev.2 gateway, all signals are accessible via an Ethernet connection.

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5. Ordering information

5.1. Bürkert eShop

Bürkert eShop – Easy ordering and quick delivery

You want to find your desired Bürkert product or spare part quickly and order directly? Our online shop is available for you 24/7. Sign up and enjoy all the benefits.

Order online now

5.2. Bürkert product filter

Bürkert product filter – Get quickly to the right product

You want to select products comfortably based on your technical requirements?
Use the Bürkert product filter and find suitable articles for your application quickly and easily.

Try out our product filter

5.3. Ordering chart

Description	Article no.
16DI module 1st Gen (variant 1, with 4 frequency inputs) Type ME64	346856
16DI module (variant 2, with 8 frequency inputs) Type ME64	20021994
Universal I/O Type ME64	20098112

5.4. Ordering chart accessories

Note:
A complete overview of all associated cables and connectors, as well as other accessories, can be found in the appendix of the cabling guide, see „Supplement | Cabling guide büS/EDIP“ on our website under „User Manuals“, **Type ME64** ▶.

Description	Article no.
Passive distributor Type ME66 (version 2, with separate power supply via X03)	20028654
Gateway Industrial Ethernet Type ME63	20081128
Display FieldConnect 3.5" (8.9 cm) Type ME61	368544
Display FieldConnect 7" (17.8 cm) Type ME61	358545
Micro-SD card for fieldbus gateway Type ME43 and Type ME63	774087
Protective cap for M12 plug	917155
USB-büS interface set 1 for connection to the Bürkert Communicator software: includes connection cable (M12 and micro USB), stick with integrated terminating resistor, power supply and software, Type 8923	772426
USB-büS interface set 2 (Type 8923) for connection to the Bürkert Communicator software: includes büS stick, connection cable to M12 plug, M12 connection cable on micro USB for the büS service interface, cable length: 0.7 m	772551
Bürkert Communicator software	**Typ 8920** ▶

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5.5. büS plug

Description	Article no.
Y-connector, 5-pin, A-coded; M12 socket to M12 plug and M12 socket	772420
Y-connector, 5-pin, A-coded, with power interruption; M12 socket to 2x M12 plug	772421
Y-connector, 5-pin, A-coded; with power interruption; M12 socket to M12 plug and M12 plug	775884
M12, büS terminating resistor 120 Ω, M12 plug, 5-pin	772424
M12, büS terminating resistor 120 Ω, M12 socket, 5-pin	772425

5.6. Ordering chart cable

büS connection cable

Shielded cable, 2 × 0.75 mm^2, 2 × 0.34 mm^2

Description	Article no.
M12 socket, straight, 5-pin, A-coded to M12 plug, straight, 5-pin, A-coded, cable length: 0.5 m	772403
M12 socket, straight, 5-pin, A-coded to M12 plug, straight, 5-pin, A-coded, cable length: 1 m	772404
M12 socket, straight, 5-pin, A-coded to M12 plug, straight, 5-pin, A-coded, cable length: 3 m	772405
M12 socket, straight, 5-pin, A-coded to M12 plug, straight, 5-pin, A-coded, cable length: 5 m	772406

Power cable

Unshielded cable, 5 × 2.5 mm^2

Description	Article no.
M12 socket, straight, 5-pin, L-coded to M12 plug, straight, 5-pin, L-coded, cable length: 3 m	775063
M12 socket, straight, 5-pin, L-coded to M12 plug, straight, 5-pin, L-coded, cable length: 5 m	775064
M12 socket, straight, 5-pin, L-coded to M12 plug, straight, 5-pin, L-coded, cable length: 10 m	775065

Industrial Ethernet cable

Description	Article no.
M12 plug, straight, 4-pin, D-coded to M12 plug, straight, 4-pin, D-coded, cable length: 1 m	775040
M12 plug, straight, 4-pin, D-coded to M12 plug, straight, 4-pin, D-coded, cable length: 3 m	775042
M12 plug, straight, 4-pin, D-coded to M12 plug, straight, 4-pin, D-coded, cable length: 10 m	775044
M12 plug, straight, 4-pin, D-coded to RJ45 connector, cable length: 3 m	775052
M12 plug, straight, 4-pin, D-coded to RJ45 connector, cable length: 5 m	775053
M12 plug, straight, 4-pin, D-coded to RJ45 connector, cable length: 10 m	775054

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