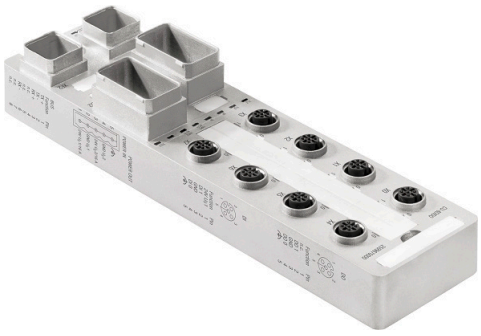
Remote-I/O-System u-remote UR67
I/O-Modules IP67 PROFINET-V14
Manual

Let's connect.



UR67-PN-V14-CU-16DI-12	2599680000
UR67-PN-V14-CU-8DIDO-12	2599670000

UR67-PN-V14-POF-16DI-12	2599700000
UR67-PN-V14-POF-8DIDO-12	2599690000

Weidmüller

Content

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Document No. 2599890000
Revision 01/March 2020

1 About this documentation

1.1 Symbols and notes

The safety notices in this documentation are designed according to the severity of the danger.

DANGER

Imminent danger to life!
Notes with the signal word "Danger" warn you of situations that will result in serious injury or death if you do not follow the instructions given in this manual.

WARNING

Possible danger to life!
Notes with the signal word "Warning" warn you of situations that may result in serious injury or death if you do not follow the instructions given in this manual.

CAUTION

Risk of injury!
Notes with the signal word "Caution" warn you of situations that may result in injury if you do not follow the instructions given in this manual.

ATTENTION

Material damage!
Notes with the signal word "Attention" warn you of hazards that may result in material damage.

Text next to this arrow are notes that are not relevant to safety, but provide important information about proper and effective work procedures.

The situation-dependent safety notices may contain the following warning symbols:

Symbol	Meaning
	Warning against dangerous electrical voltage
	Warning against electrostatically charged components
	Warning against hot surfaces
	Warning against laser rays
	Warning against automatic startup
	Observe the documentation

► All instructions can be identified by the black triangles next to the text.
– Lists are marked with a tick.

Female connections with sockets are illustrated using empty circles.

Male connections with pins are illustrated using filled circles.

1.2 Complete documentation

The documentation is intended for trained electricians who are familiar with national and international laws, provisions and standards.

All documents can also be downloaded from the Weidmüller website.

1.3 Standard data structure

All information about the structure of data (e.g. process data and parameters) refers to the standard data format settings in the module parameters. These are shown in the Motorola format.

1.4 Software releases described

The present manual describes the following firmware releases:

Firmware releases

Order No.	Module	Release
2599680000	UR67-PN-V14-CU-16DI-12	01.00.00
2599670000	UR67-PN-V14-CU-8DIDO-12	01.00.00
2599700000	UR67-PN-V14-POF-16DI-12	01.00.00
2599690000	UR67-PN-V14-POF-8DIDO-12	01.00.00

Device description files

Fieldbus protocol	Release
PROFINET	20190118

Web server language files

Language	Release	Availability
German	01.00.00	On delivery
English	01.00.00	On delivery
Chinese	01.00.00	On delivery

2 Safety

This chapter includes general safety instructions on handling the u-remote IP67 modules. Specific safety instructions for specific tasks and situations are given at the appropriate places in the documentation.

All work must only be carried out by trained electricians who are familiar with the safety standards that apply to automation technology.

The documentation must be stored in such a way that it is accessible to operating staff at all times.

2.1 General safety notice

When working during continued operations, the emergency stop mechanisms must not be made ineffective.
If faults relating to a u-remote product cannot be rectified, the product in question must be sent to Weidmüller. Weidmüller assumes no liability if the module is tampered with!
All connected devices must comply with the requirements set out in EN 61558-2-4 and EN 61558-2-6. Cables and accessories may only be installed if they meet the requirements and provisions regarding safety, electromagnetic compatibility and, if applicable, telecommunications terminal equipment, as well as the relevant specifications. Information on the specific cables and accessories that are permissible for installation is provided in this manual or can be requested from Weidmüller.

Electrostatic discharge

u-remote products can be damaged or destroyed by electrostatic discharge. During handling of the products, the necessary safety measures against electrostatic discharge (ESD) must be observed in accordance with IEC 61340-5-1 and IEC 61340-5-2. The packing and unpacking as well as the assembly and disassembly of a device must only be carried out by qualified personnel.

Fusing

The operator must set up the equipment so that it is protected against overloading. The 24 V DC power supply units used for supplying the system must fulfill the SELV category. The upstream fuse must be designed such that it does not exceed the maximum load current. The maximum permissible load current for the u-remote components can be found in the technical data.
The operator must decide whether additional surge protection is required in accordance with IEC 62305. Voltages that exceed +/-30 V may lead to the destruction of the modules. A power supply with secure isolation must be used.

Earthing (functional earth FE)

Each UR67-PN-V14 module has two earthing connections; the connection points are labelled with "XE". More information can be found in chapter 5.

Shielding

Shielded lines are to be connected with shielded plugs in compliance with the relevant standard.

2.2 Intended use

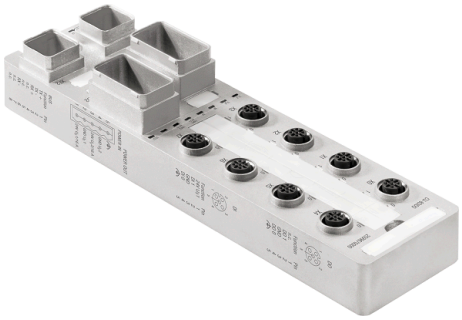
The UR67-PN-V14 modules are decentralised input and output devices within a PROFINET network (RT/IRT).
The products are designed for use in an industrial environment and must only be used within the scope of the stated technical specifications. The devices to be connected must comply with the requirements set out in EN 61558-2-4 and EN 61558-2-6. The industrial environment is labelled as such to ensure that consumers are not directly connected to the public low-voltage network. Additional measures must be taken for use in the home, and in the business and commercial sectors.
Any intervention in the products' hardware or software other than described in this manual may only be performed by Weidmüller.
Malfunction-free operation is only guaranteed if the housing is fully assembled. Observance of the documentation is also part of the intended use.

2.3 Legal notice

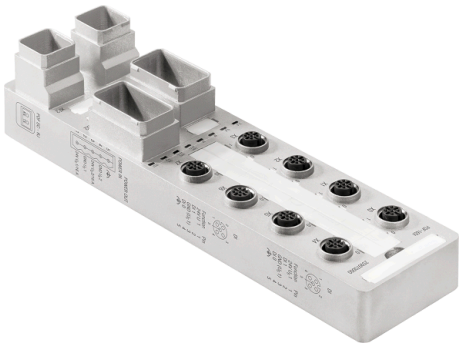
The UR67-series products comply with the EU Directive 2014/30/EU (EMC Directive).

Components of free software products are integrated into the modules: The licence terms are available from the web server.

3 System overview



UR67-PN-V14-CU-X (2599670000, 2599680000)



UR67-PN-V14-POF-X (2599690000, 2599700000)

UR67-PN-V14 modules for PROFINET

The UR67-PN-V14 modules are digital I/O modules that communicate via PROFINET.
The fully encapsulated metal housing means that the modules comply with degree of protection IP67.
The digital inputs comply with type 2 in accordance with IEC 61131-2. For connections with digital inputs, a self-resetting fuse limits the sensor supply current to 0.5 A per pin.
The output current is up to 2 A per channel. The output circuits are galvanically isolated from the rest of the network and from the sensor electronics. The outputs are designed with short circuit protection.
The modules with output functionality support a substitute value function. This function can be used to set how an output is to respond to an impaired or interrupted fieldbus communication.
The UR67-PN-V14 modules differ with regard to their I/O functionality and their Ethernet connections.

Status LEDs are assigned to the module and to each I/O connection, and the colour and flashing behaviour of these LEDs indicate the status of the connection (see chapter 8).

Module designation	Order number	Ethernet connection	Number of digital inputs	Number of digital outputs
UR67-PN-V14-CU-16DI-12	2599680000	V14 PushPull RJ45	16	0
UR67-PN-V14-CU-8DIDO-12	2599670000	V14 PushPull RJ45	8	8
UR67-PN-V14-POF-16DI-12	2599700000	V14 PushPull SC-RJ POF	16	0
UR67-PN-V14-POF-8DIDO-12	2599690000	V14 PushPull SC-RJ POF	8	8

3.1 Fieldbus features

MAC addresses
Each module has three unique MAC addresses assigned by the manufacturer that cannot be changed by the user (one for the module and two for the Ethernet ports). The MAC address of the module is imprinted on the module itself.

Integrated Ethernet switch
The integrated Ethernet cut-through switch with two connections makes it possible to set up ring topologies and line topologies.

PROFINET product features
The UR67-PN-V14 modules support the PROFINET IO device IRT (Isochronous Real-Time). This means that process data can be transferred in real-time.
The UR67-PN-V14 modules support the following PROFINET functions:
- DCP for the automatic assignment of IP addresses
- Fast start-up for prioritised start-up
- Device replacement without interchangeable medium / PG for the replacement of devices without re-configuration
- LLDP for the detection of devices in the vicinity (neighbouring device detection)
- MRP for the implementation of redundant PROFINET networks without additional switches
- Shared Device for the flexible assignment of channels and modules to different control units
- SNMP for the monitoring of network components

Alarm and diagnostic messages
The modules offer extended alarm and diagnostic messages.
- Module diagnostics
- Individual channel diagnostics
- Fibre-optic cable diagnostics (only with UR67-PN-V14-POF)

Device description files
A device description file is needed for the configuration and parameterisation of the module in the engineering tool.
- PROFINET: modular GSDML file

You can download the current device description files from the Weidmüller website.

3.2 Web server

The web server can be used to display the UR67-PN-V14 module on a connected PC. This allows you to execute the following functions for test purposes or during commissioning or service work:
- Access the module status
- Display and change the module parameters
- Access diagnostic information
- Operate the module in Force mode for testing purposes

A description of the web server can be found in chapter 9.

3.3 Accessories

Protective caps
Degree of protection IP67 is only achieved when the module is fully installed. Therefore, all connections not being used must be fitted with protective caps. The dust caps included with the module for the supply connections and the Ethernet connections are not suitable for achieving degree of protection IP67.

Connection	Protective cap	Order No.
M12	SAI-SK-M12-UNI 2029	2330260000
V14 PushPull RJ45	IE-BP-V14P	1058310000
V14 PushPull SC-RJ POF	IE-BP-V14P	1058310000
PushPull Power	IE-BP-VAPP (IP 54)	1068930000

Markers
Markers are required for the labelling of operating materials. The markers can be printed using the Weidmüller PrintJet ADVANCED (order no. 1324380000).

Markers	Order No.
ESG 8/13.5/43.3 SAI AU large markers 8/43.3 and small markers 8/13.5	1912130000

Cable lugs
In order to select the correct cable lugs for attaching the FE conductors, we recommend using the Weidmüller catalogue 6 or the product catalogue on Weidmüller website.

Cables and connections
In order to select the correct cables, we recommend using the Weidmüller catalogue 8 and 9 or the product configurator on the Weidmüller website.

3.4 Explanation of serial numbers

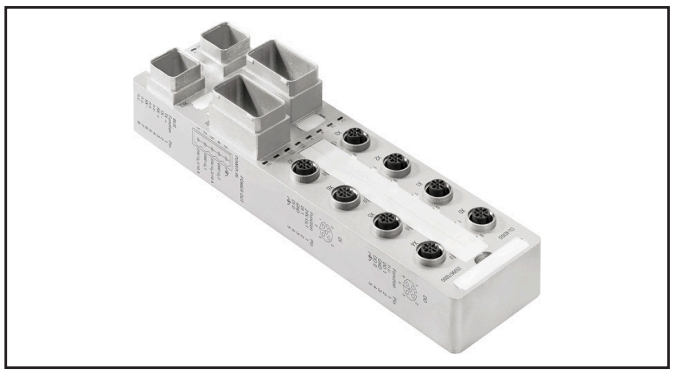
Digit	1	2		3		4		5	6	7	8	9	10	11	12	13	14	15
Year	Code		Month	Code	Day	Code	Manufacturer	Code		Product family code				Consecutive number				
2018	**A**	**S**	January	1	1	1		0	**1**	**P**	**C**	**7**	**4**	**0**	**0**	**1**	**0**	**1**
2019	A	T	February	2	2	2		0	2									
2020	A	C	March	3	3	3		0	3									
2021	A	V	April	4	4	4		0	4									
2022	A	W	May	5	5	5		0	5									
2023	A	X	June	6	6	6		0	6									
2024	A	Y	**July**	**7**	7	7		0	7									
2025	A	Z	August	8	8	8		0	8									
2026	B	A	September	9	9	9		0	9									
2027	B	B	October	O	10	A		1	0									
2028	B	C	November	N	11	B		1	1									
2029	B	D	December	D	12	C		1	2									
2030	B	E			13	D		1	3									
2031	B	F			14	E		1	4									
2032	B	G			15	F		1	5									
2033	B	H			16	G		1	6									
2034	B	I			**17**	**H**		1	7									
2035	B	J			18	I		1	8									
2036	B	S			19	J		1	9									
2037	B	L			20	S		**2**	0									
2038	B	M			21	L		2	1									
2039	B	N			22	M		2	2									
2040	B	O			23	N		2	3									
2041	B	P			24	O		2	4									
2042	B	Q			25	P		2	5									
2043	B	R			26	Q		2	6									
2044	B	S			27	R		2	7									
...					28	S		2	8									
2052	C	A			29	T		2	9									
2053	C	B			30	C		3	0									
...					31	V		3	1									

Example

Serial number: AS7H21PC7400101
Date: 17.07.2018
Manufacturer: Weidmüller
Product family: u-remote

4 Module descriptions

4.1 UR67-PN-V14-CU-16DI-12

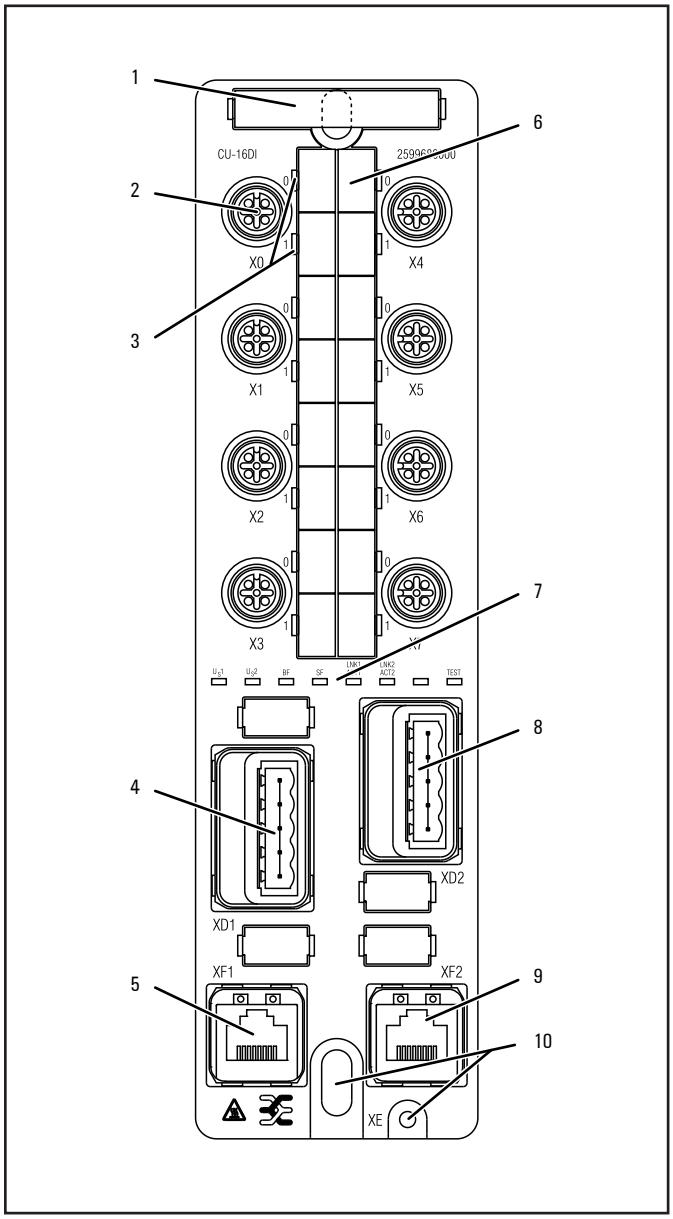


Input module UR67-PN-V14-CU-16DI-12 (Order No. 2599680000)

The module has eight 5-pin A-coded M12 connections for signal lines. The Ethernet cable is connected via two V14 PushPull RJ45 connectors. The power supply is connected via two PushPull Power connections.
The UR67-PN-V14-CU-16DI-12 module has 16 digital inputs (P-switching).

LED	Display	Meaning
X0 ... X7, 0	yellow/red	Channel 0 status
X0 ... X7, 1	yellow/red	Channel 1 status
U_{S1}	green/orange/red	Supply voltage U_{S1} status
U_{S2}	green/orange/red	Supply voltage U_{S2} status
BF	red	Bus error
SF	red	System error
LNK1/ACT1	green/orange	Connection/XF1 connection activity
LNK2/ACT2	green/orange	Connection/XF2 connection activity
TEST	white	Locating PROFINET devices

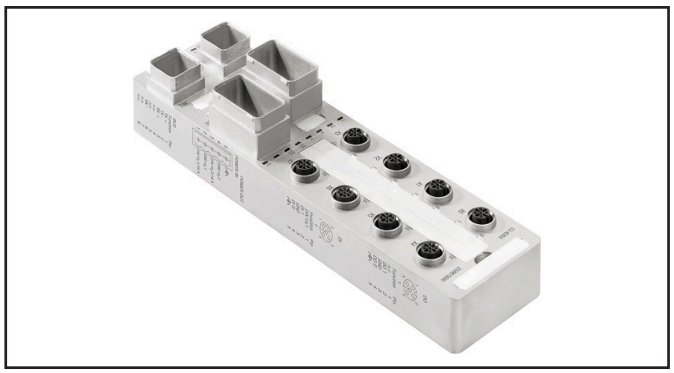
For information on LED displays and error messages, see chapter 8



Device description UR67-PN-V14-CU-16DI-12

1 Module markers
2 I/O connection X0
3 Status LED for X0 connection, channel 0/channel 1
4 Supply connection XD1
5 Ethernet connection XF1
6 Connection markers
7 Module status LEDs
8 Supply connection XD2
9 Ethernet connection XF2
10 Earthing connections XE

4.2 UR67-PN-V14-CU-8DIDO-12

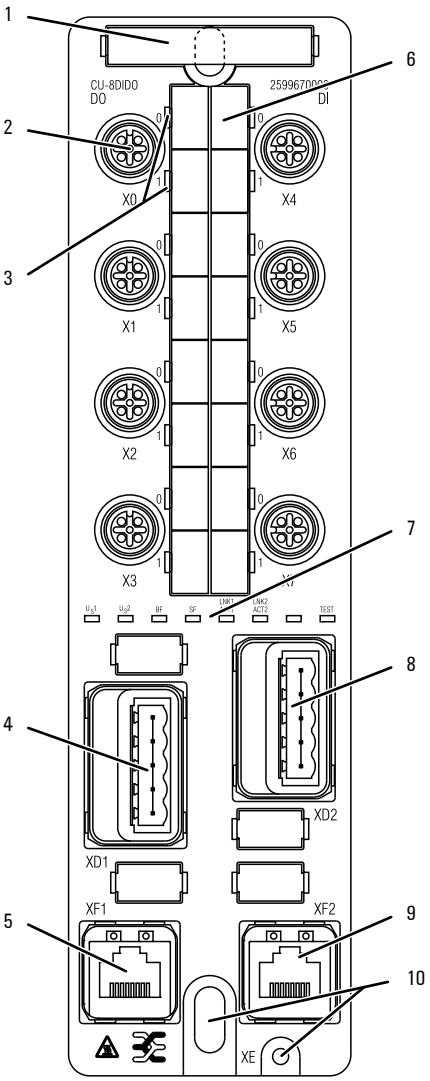


Input and output module UR67-PN-V14-CU-8DIDO-12 (Order No. 2599670000)

The module has eight 5-pin A-coded M12 connections for signal lines. The Ethernet cable is connected via two V14 PushPull RJ45 connectors. The power supply is connected via two PushPull Power connections.
The UR67-PN-V14-CU-8DIDO-12 module has 8 digital inputs and 8 digital outputs (P-switching).

LED	Display	Meaning
X0 ... X7, 0	yellow/red	Channel 0 status
X0 ... X7, 1	yellow/red	Channel 1 status
U_{S1}	green/orange/red	Supply voltage U_{S1} status
U_{S2}	green/orange/red	Supply voltage U_{S2} status
BF	red	Bus error
SF	red	System error
LNK1/ACT1	green/orange	Connection/XF1 connection activity
LNK2/ACT2	green/orange	Connection/XF2 connection activity
TEST	white	Locating PROFINET devices

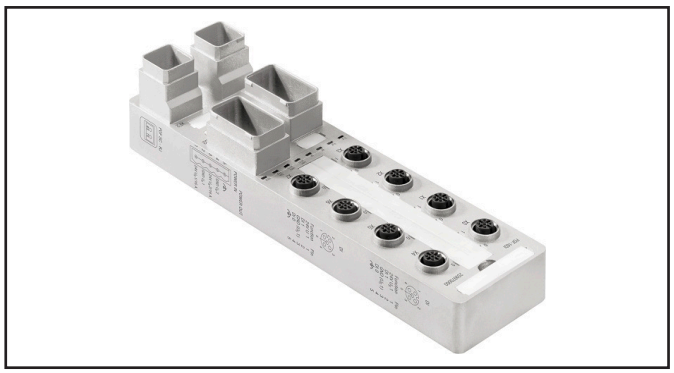
For information on LED displays and error messages, see chapter 8



Device description UR67-PN-V14-CU-8DIDO-12

1 Module markers
2 I/O connection X0
3 Status LED for X0 connection, channel 0/channel 1
4 Supply connection XD1
5 Ethernet connection XF1
6 Connection markers
7 Module status LEDs
8 Supply connection XD2
9 Ethernet connection XF2
10 Earthing connections XE

4.3 UR67-PN-V14-POF-16DI-12

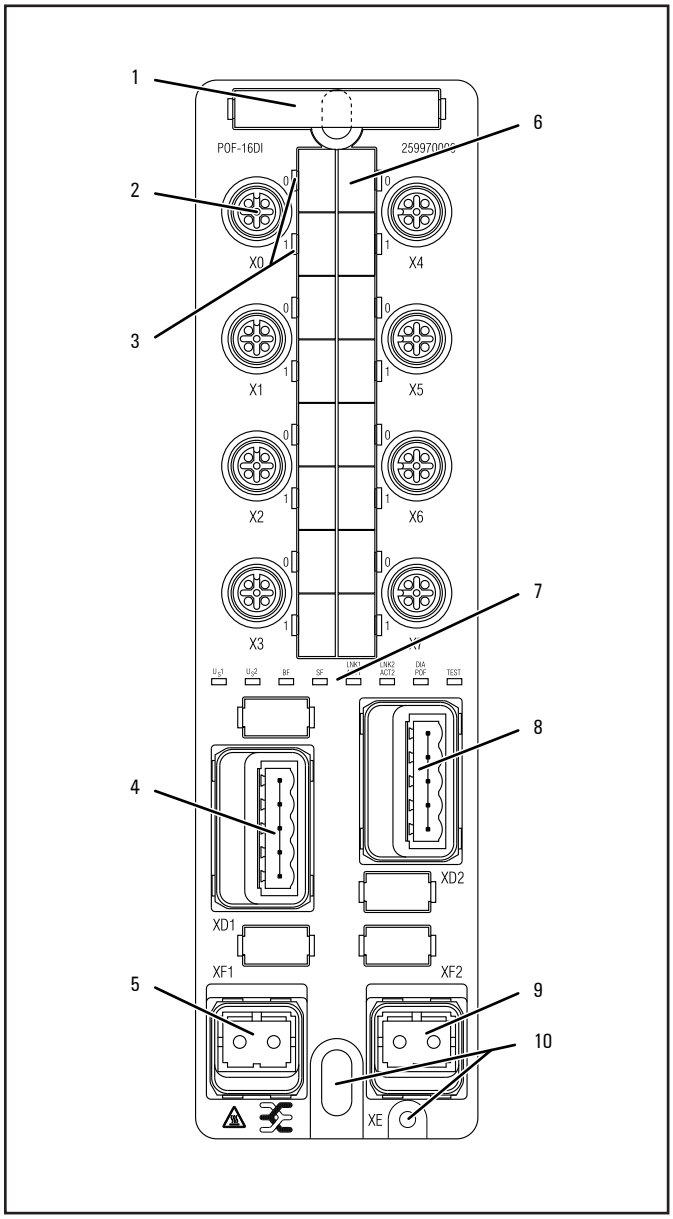


Input module UR67-PN-V14-POF-16DI-12 (Order No. 2599700000)

The module has eight 5-pin A-coded M12 connections for signal lines. The Ethernet cable is connected via two V14 PushPull SC-RJ-POF connectors. The power supply is connected via two PushPull Power connections.
The UR67-PN-V14-POF-16DI-12 module has 16 digital inputs (P-switching).

LED	Display	Meaning
X0 ... X7, 0	yellow/red	Channel 0 status
X0 ... X7, 1	yellow/red	Channel 1 status
U_{S1}	green/orange/red	Supply voltage U_{S1} status
U_{S2}	green/orange/red	Supply voltage U_{S2} status
BF	red	Bus error
SF	red	System error
LNK1/ACT1	green/orange	Connection/XF1 connection activity
LNK2/ACT2	green/orange	Connection/XF2 connection activity
DIA POF	green/orange/red	POF diagnostics
TEST	white	Locating PROFINET devices

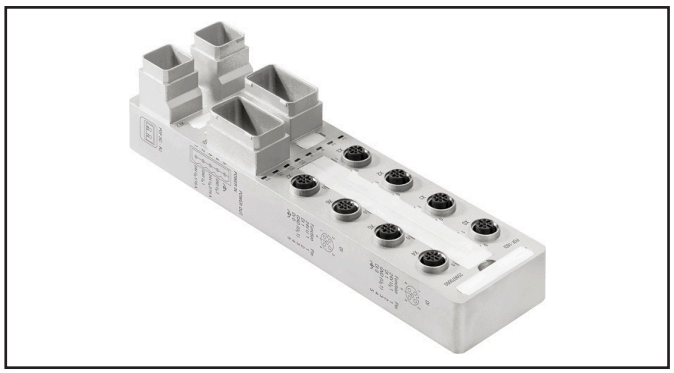
For information on LED displays and error messages, see chapter 8



Device description UR67-PN-V14-POF-16DI-12

1 Module markers
2 I/O connection X0
3 Status LED for X0 connection, channel 0/channel 1
4 Supply connection XD1
5 Ethernet connection XF1
6 Connection markers
7 Module status LEDs
8 Supply connection XD2
9 Ethernet connection XF2
10 Earthing connections XE

4.4 UR67-PN-V14-POF-8DIDO-12

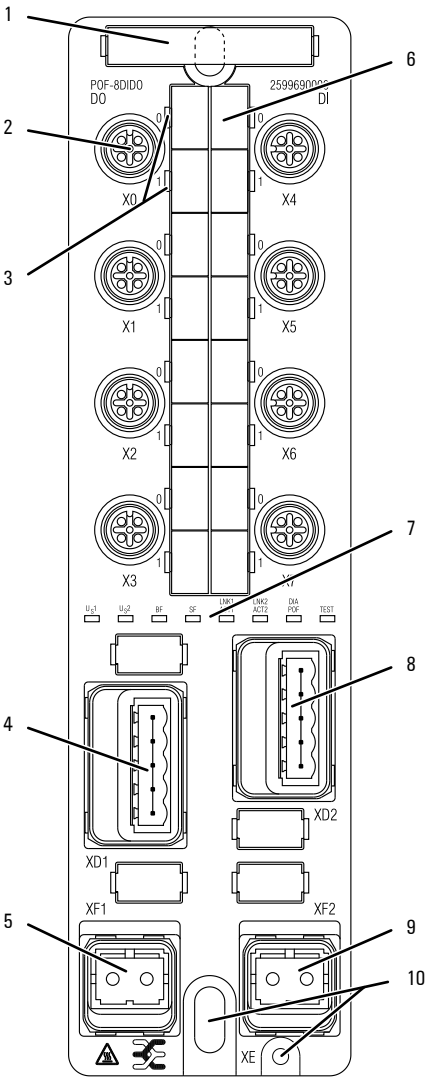


Input and output module UR67-PN-V14-POF-8DIDO-12 (Order No. 2599690000)

The module has eight 5-pin A-coded M12 connections for signal lines. The Ethernet cable is connected via two V14 PushPull SC-RJ-POF connectors. The power supply is connected via two PushPull Power connections.
The UR67-PN-V14-POF-8DIDO-12 module has 8 digital inputs and 8 digital outputs (P-switching).

LED	Display	Meaning
X0 ... X7, 0	yellow/red	Channel 0 status
X0 ... X7, 1	yellow/red	Channel 1 status
U_{S1}	green/orange/red	Supply voltage U_{S1} status
U_{S2}	green/orange/red	Supply voltage U_{S2} status
BF	red	Bus error
SF	red	System error
LNK1/ACT1	green/orange	Connection/XF1 connection activity
LNK2/ACT2	green/orange	Connection/XF2 connection activity
DIA POF	green/orange/red	POF diagnostics
TEST	white	Locating PROFINET devices

For information on LED displays and error messages, see chapter 8

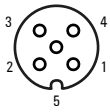


Device description UR67-PN-V14-POF-8DIDO-12

1 Module markers
2 I/O connection X0
3 Status LED for X0 connection, channel 0/channel 1
4 Supply connection XD1
5 Ethernet connection XF1
6 Connection markers
7 Module status LEDs
8 Supply connection XD2
9 Ethernet connection XF2
10 Earthing connections XE

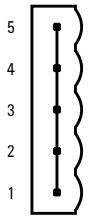
4.5 Connection assignments

I/O connections (X0 ... X7)

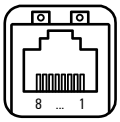
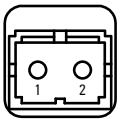
M12, A-coded		16DI	8DIDO
	1	+24 V U_{S1}	n.c. (X0 ... X3) +24 V U_{S1} (X4 ... X7)
	2	DI 1	DO 1 (X0 ... X3)[1] DI 1 (X4 ... X7)[2]
	3	GND U_{S1}	GND U_{S2} (X0 ... X3) GND U_{S1} (X4 ... X7)
	4	DI 0	DO 0 (X0 ... X3)[1] DI 0 (X4 ... X7)[2]
	5	FE	FE

1) supplied via U_{S2}
2) references U_{S1}

Supply connection (XD1, XD2)

PushPull Power		Signal	Role
	5	FE	Functional earthing
	4	GND U_{S2}	Earth/reference potential U_{S2}
	3	+24 V U_{S2} / 16 A	Supply voltage U_{S2}
	2	GND U_{S1}	Earth/reference potential U_{S1}
	1	+24 V U_{S1} / 16 A	Supply voltage U_{S1}

PROFINET (XF1, XF2)

V14 PushPull RJ45		Signal	Role
	1	TX+	Transmission data +
	2	TX-	Transmission data -
	3	RX+	Received data +
	4	n.c.	–
	5	n.c.	–
	6	RX–	Received data -
	7	n.c.	–
	8	n.c.	–
V14 PushPull SC-RJ POF			
	1	RX	Received data
	2	TX	Transmission data

4.6 Connection-channel allocation

UR67-PN-V14-CU-16DI-12, UR67-PN-V14-POF-16DI-12

Connection	Pin	Channel	Connection	Pin	Channel
X0	4	DI 0	X4	4	DI 8
	2	DI 1		2	DI 9
X1	4	DI 2	X5	4	DI 10
	2	DI 3		2	DI 11
X2	4	DI 4	X6	4	DI 12
	2	DI 5		2	DI 13
X3	4	DI 6	X7	4	DI 14
	2	DI 7		2	DI 15

UR67-PN-V14-CU-8DIDO-12, UR67-PN-V14-POF-8DIDO-12

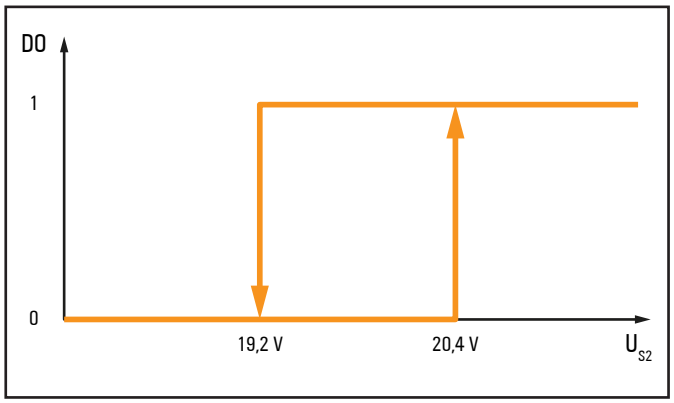
Connection	Pin	Channel	Connection	Pin	Channel
X0	4	DO 0	X4	4	DI 0
	2	DO 1		2	DI 1
X1	4	DO 2	X5	4	DI 2
	2	DO 3		2	DI 3
X2	4	DO 4	X6	4	DI 4
	2	DO 5		2	DI 5
X3	4	DO 6	X7	4	DI 6
	2	DO 7		2	DI 7

4.7 Technical Data

Technical data	UR67-PN-V14-CU-16DI-12 (2599680000)	UR67-PN-V14-CU-8DIDO-12 (2599670000)	UR67-PN-V14-POF-16DI-12 (2599700000)	UR67-PN-V14-POF-8DIDO-12 (2599690000)
Bus system				
Ethernet connection	2x V14 PushPull RJ45 data connectors (AIDA)		2x V14 PushPull SC-RJ POF data connectors (AIDA)	
Fieldbus protocol	PROFINET IO (RT / IRT), V2.3, Conformance Class C			
Redundancy protocol	MRP			
Input data width	max. 10 byte			
Output data width	max. 4 byte			
Parameter data	max. 16 byte			
Transfer rate	Max. 100 Mbps			
Fast startup	< 500 ms			
Shared device/input	yes, for 2 control units			
Addressing	DCP			
GSDML	GSDML-V2.33-WI-UR67PN-20190118.xml			
Net load	Class III as per Security Level 1 Test (PNO)			
I&M data	I&M 0-4			
Inputs				
Number	16	8	16	8
Input type	Sourcing, type 2 as per IEC 61131-2			
Low input voltage	< +5 V with regard to 0 V of input voltage U_{S1}			
High input voltage	> +11 V with regard to 0 V of input voltage U_{S1}			
Input filter	Input delay, adjustable from 0 to 20 ms			
Sensor supply	500 mA			
Sensor connection	2-wire + FE, 3-wire + FE via M12, 5-pin A-coded			
Reverse polarity protection	yes			
Short circuit protection	Sensor supply: multifuse, automatic restart after tripping			
Surge protection	Yes			
Outputs				
Number	0	8	0	8
Output type	Sourcing			
Load type	Ohmic, inductive, lamp load			
Max. output current				
per channel	2 A			
per module	16 A			
Breaking energy (inductive)	150 mJ per channel			
Switching frequency				
Ohmic load (min. 12 Ω)	500 Hz			
Inductive load (DC 13)	0.2 Hz without free-wheeling diode, 500 Hz with suitable free-wheeling diode			
Lamp load (48 W)	10 Hz			
Actuator connection	2-wire + FE via M12, 5-pin A-coded			
Short-circuit-proof	yes			
Protective circuit	Constant current with thermal cutout; configurable parameters: automatic restart / malfunction acknowledgement			

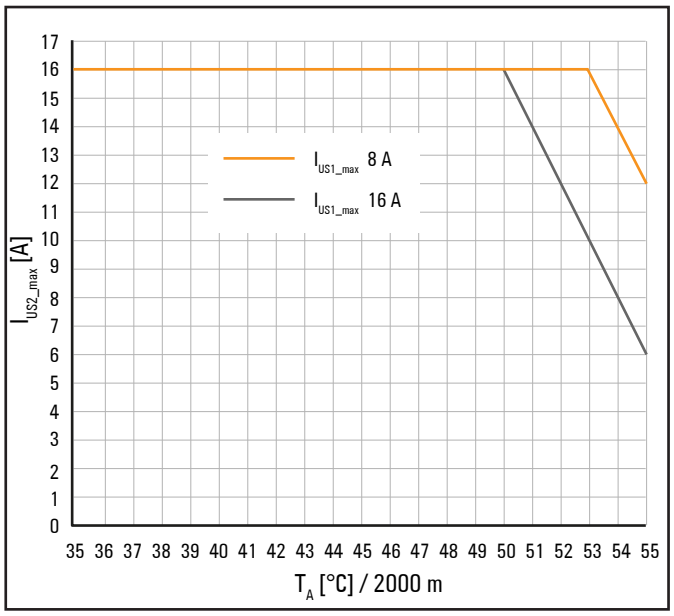
Technical data	UR67-PN-V14-CU-16DI-12 (2599680000)	UR67-PN-V14-CU-8DIDO-12 (2599670000)	UR67-PN-V14-POF-16DI-12 (2599700000)	UR67-PN-V14-POF-8DIDO-12 (2599690000)
Current limitation response time	< 100 µs			
Surge protection	yes			
Supply				
Sensor/module supply U_{S1}	24 V DC +20% / -15%			
Actuator supply U_{S2}	24 V DC +20% / -15%			
Module electronics current consumption	< 150 mA at 24 V DC			
Test voltage	500 V DC between current paths and to FE			
Functional safety	Actuator supply $U_{S2,}$ reliable cutout in accordance with PL d			
Voltage bypass	10 ms			
General data				
Type of protection	IP 67 (not UL-tested)			
Enclosure material	Die-cast zinc, matt nickel surface			
Temperature				
Operation	-20 ... +55 °C			
Storage, transport	-40 ... +70 °C			
Weight	965 g	970 g	995 g	1000 g
Dimensions (H × W × D)	43 × 60 × 225 mm		51 × 60 × 225 mm	
Flammability rating	UL 94			
Air pressure				
Operation	1013 hPa (height: 0 m) up to 700 hPa (height: 3000 m) in accordance with IEC 61131-2			
Storage, transport	1013 hPa (height: 0 m) up to 700 hPa (height: 3000 m) in accordance with IEC 61131-2			
Humidity	10% to 95%, non-condensing in accordance with DIN EN 61131-2			
Vibration resistance	0.35 mm / 10 ... 60,1 Hz and 5 g / 60,1 ... 500 Hz in accordance with DIN EN 60068-2-6			
Shock resistance	50 g / 11 ms in accordance with DIN EN 60068-2-27			
Pollution degree	3 (in accordance with EN 60664-1, VDE 0110-1)			
Overvoltage category	II			
Tightening torques				
Mounting screw M6	3 Nm			
Earthing screw M4	1.2 Nm			
Plug connector M12	0.5 Nm			
M12 protective cap	0.5 Nm			
Approvals and standards				
EMC	EN 61000-6-2:2005/AC:2005, EN 61000-6-4:2007/A1:2001			

4.8 Output behaviour in the event of under-voltage



Output signal versus supply voltage U_{S2} (output set in process data)

4.9 Derating



Derating of the UR67-PN-V14-POF modules

Above 2000 m, the permissible ambient temperature for UR67-PN-V14-POF modules decreases by 1 °C per 200 m.

The UR67-PN-V14-CU modules can be operated up to 3000 m within the entire temperature range.

5 Installation and wiring

WARNING

Dangerous contact voltage!

- ► All installation and wiring work must be carried out with the power supply disconnected.
- ► Make sure that the place of installation has been disconnected from the power supply!

CAUTION

Hot surface!

The module can become very hot when in operation.

- ► Allow the module to cool down before touching it.

CAUTION

Risk of glare!

The Ethernet connections of the UR67-PN-V14-POF modules contain a Class-1 laser.

- ► Never look either directly or indirectly into the laser beam!
- ► Never aim the laser beam at other persons!

5.1 Preparing for installation

Make sure that the permitted environmental conditions for installation and operation are observed (see Technical data).

Installation dimensions

The installation dimensions are provided in the installation drawings on the following pages.

Unpacking the delivery

- ► Please check the delivery for completeness and transport damage.
- ► Please report any transport damage immediately to the respective transport company.

ATTENTION

The product can be destroyed by electrostatic discharge!

u-remote products can be destroyed by electrostatic discharge.

- ► Please make sure that persons and work equipment are sufficiently earthed!

- ► Unpack all of the parts.
- ► Dispose of all packaging in accordance with the local disposal guidelines. The cardboard packaging can be sent for paper recycling.

5.2 Installing a module

The installation surface must be level.

- ► Drill the holes for the fixings (for the drilling dimensions, see the installation drawings on the following pages).
- ► Attach each module with two screws and a washer (in accordance with DIN EN ISO 7089).
- ► Observe the indicated screw dimension and tightening torques (see installation drawing).

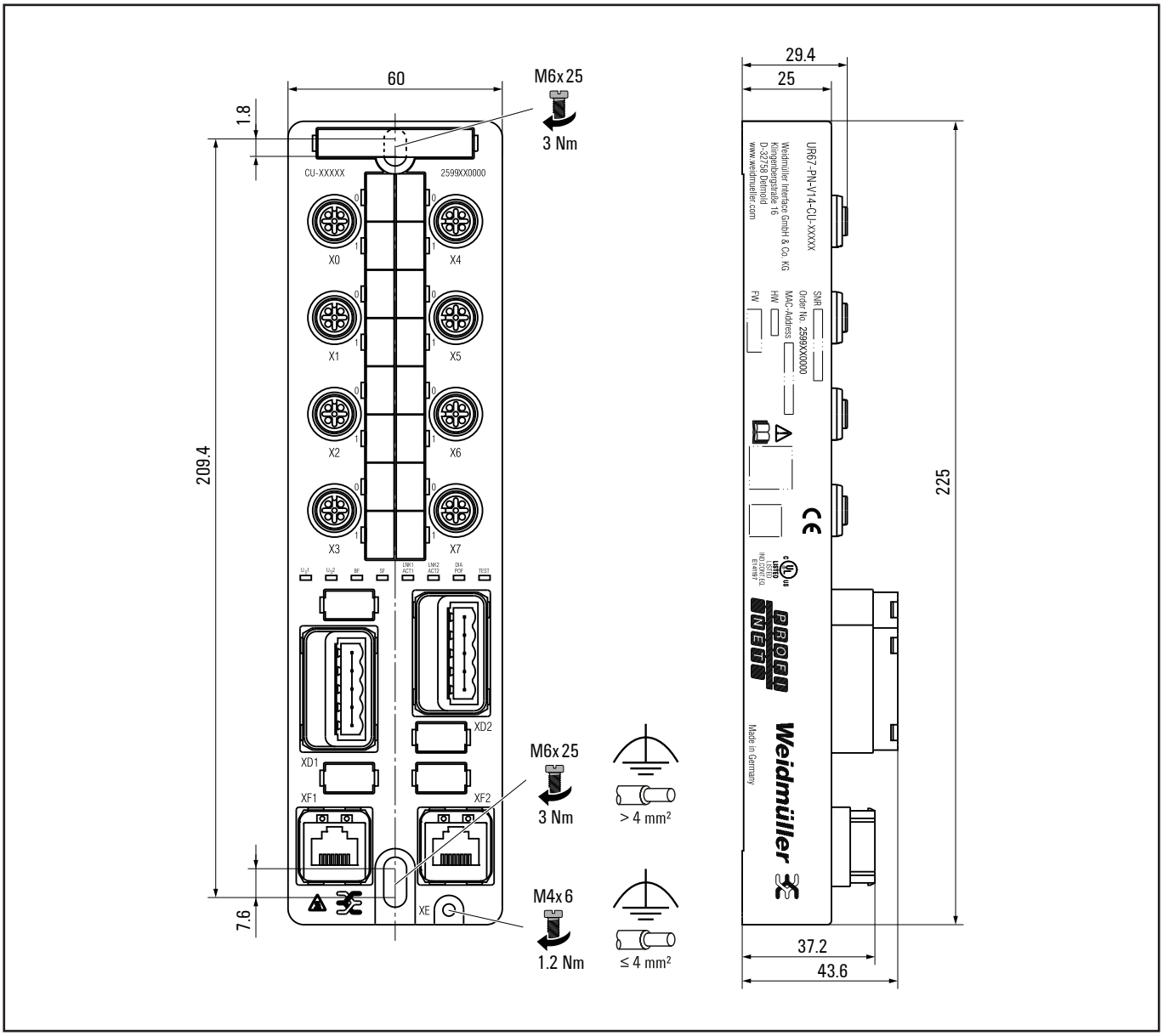
5.3 Earthing the module

The module must be earthed in order to discharge interference currents and for EMC stability.

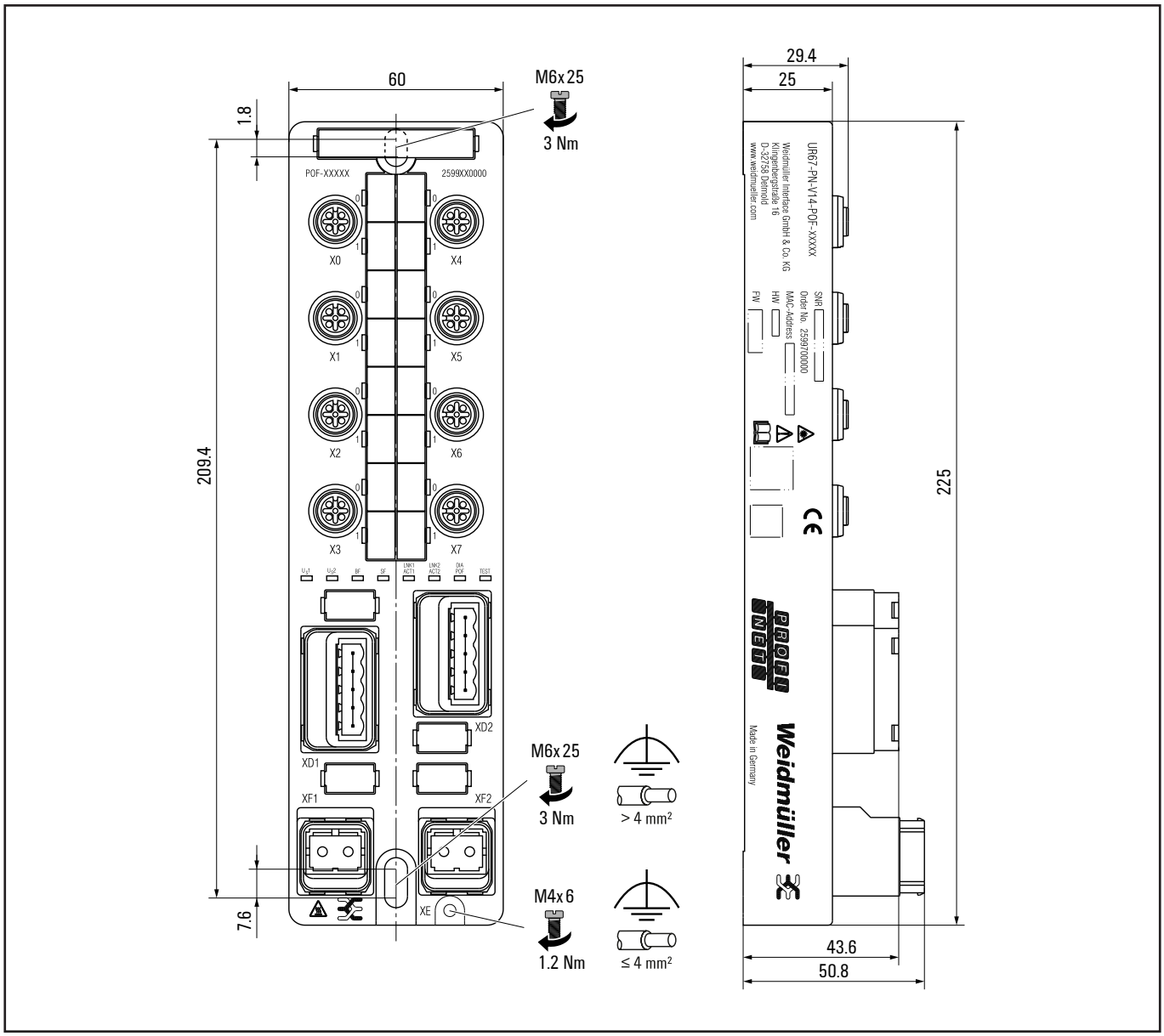
- ► Connect one of the earth connections XE to the reference earth (see installation drawing) using a low-impedance connection.

If the installation surface is earthed, the connection can be made directly via the mounting screws.

If the installation surface is not earthed, use an earthing strap or a suitable cable with cable lug!



Installation dimensions UR67-PN-V14-CU-16DI-12 (2599680000), UR67-PN-V14-CU-8DIDO-12 (2599670000)



Installation dimensions UR67-PN-V14-POF-16DI-12(2599700000), UR67-PN-V14-POF-8DIDO-12 (2599690000)

5.4 Attaching markers

The module and all ports can be labelled using markers.

► Press the labelled marker into the corresponding fixture opening.
► To remove a marker, lever it out carefully using a screwdriver (2.5 or 3 mm).

5.5 Wiring

WARNING

Dangerous contact voltage!
► All installation and wiring work must be carried out with the power supply disconnected.
► Make sure that the place of installation has been disconnected from the power supply!

Once the module has been mechanically installed, the wiring can then be carried out.

► Connect all cables according to the wiring diagram.

All unused ports must be sealed with protective caps in order to achieve protection class IP67.

The dust caps included with the module for the supply connections and the Ethernet connections are not suitable for achieving degree of protection IP67.

Ensure compliance with the minimum permissible cable bending radius.

5.6 Insulation testing

Insulation tests must always be carried out before each commissioning and in accordance with the respective national provisions.

ATTENTION

The product can be destroyed as a result of excessive test voltage!
Please observe the following during insulation tests:
– The test voltage within a channel must not exceed 30 V between 24 V and GND!*
– A max. test voltage of 500 V can be applied to all other connection points.

* We recommend connecting 24 V and GND at the power supply plug.

6 Commissioning

WARNING!

Manipulation of the control unit!
During commissioning, the system may be manipulated to such an extent that can result in risks to life and material damage.
► Make sure that system components cannot start up unintentionally!

CAUTION

Hot surface!
The module can become very hot when in operation.
► Allow the module to cool down before touching it.

The procedure during commissioning depends on which control unit is being used.

6.1 Requirements

Before you start the commissioning work, the following requirements must be fulfilled.
– The control unit must be in operation.
– The UR67 modules must be completely installed and wired up.
– The control unit and all UR67 modules must be connected via Ethernet, and a PC must also be connected using the control unit software.
– The power supply must be switched on.

6.2 Device description files

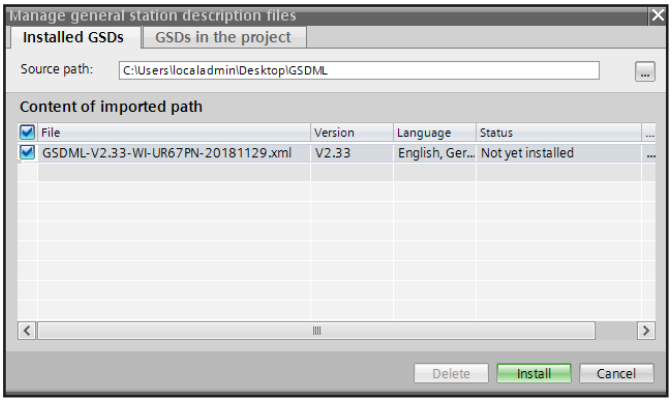
The naming convention for GSDML files always follows this pattern: GSDML_V2.33-WI-UR67-yyyymmdd.xml. The date in the file name (dd.mm.yyyy) indicates the version of the GSDML file and helps to determine whether you are already using the latest version.

► Download the device description files from the Weidmüller website.

6.3 Commissioning with the TIA portal

Installing the device description files

► Open the following path in the project view: **Extras/ Manage general station description files**
► Select the directory where you have stored the device description files.
The available files are displayed.



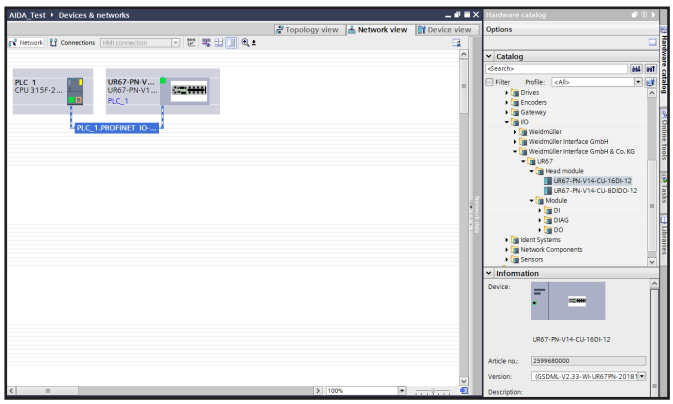
Selecting the GSDML file (TIA portal)

► Select the files that you would like to install.
► Click on **Install**.
► When the installation is complete, click on **Close**.
The hardware catalogue is updated automatically. The devices from the current device description file are now listed in the hardware catalogue.

Connecting a module to the PROFINET network

► Start the TIA portal.
► Create a new project or open an existing project.
► Configure the control unit and the network as usual.
► Switch to the network view.
► In the hardware catalogue, select the UR67-PN-V14 module under **PROFINET IO/Additional field devices/IO/ WI UR67**.
► Double-click on the module in the hardware catalogue.
The module is added to the network view.

► Connect the module and the control unit to a network line.



Integrating a UR67-PN-V14 module (TIA portal)

Configuring the process data structure

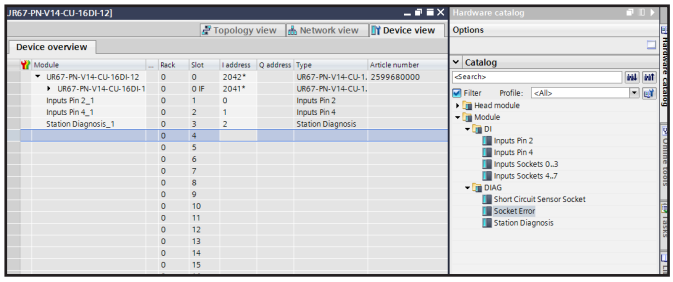
Once you have integrated the module into the PROFINET network, you can configure the process data structure.

The GSDML of the UR67-PN-V14 module has a modular structure. Process data is displayed in terms of either sockets or pins, depending on the selected modules.

Socket-based process data modules cannot be combined with pin-based process data modules.

► Click on the module in the device view.
► Select the required process data module from the hardware catalogue.
► Double-click on the process module.

The module is added to the next available slot in the device view.



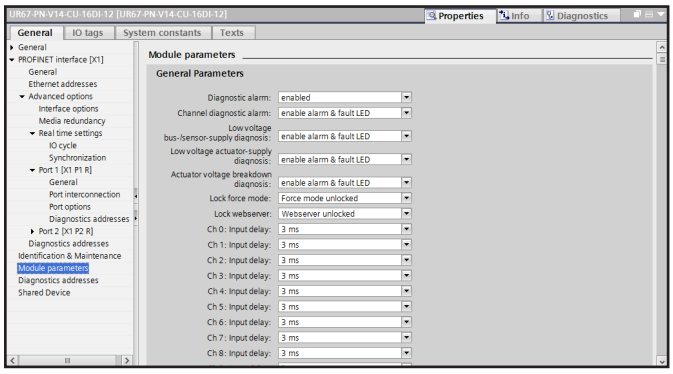
Configuring the process data structure (TIA portal)

Parameterising the module

A detailed description of the individual parameters and their availability can be found in Section 6.4.

► Double-click on the device in the device view.
► Select the **General** tab in the **Inspector window**.
► Select **Module parameters**.

The list of all parameters is displayed.



Editing module parameters (TIA portal)

► Click on the parameter that you would like to change and amend the setting as required.
► Use this method to edit all of the parameters that you would like to change.

The settings only take effect once they have been loaded into the control unit.

Assigning an IP address

You can manually change the IP address of the module.

► Click on the module in the device view.
► Select **General/PROFINET interface/Ethernet addresses** in the **Inspector window**.
► In the **IP protocol** section, activate **Set IP address in the project**.
► Enter an IP address and a subnet mask.

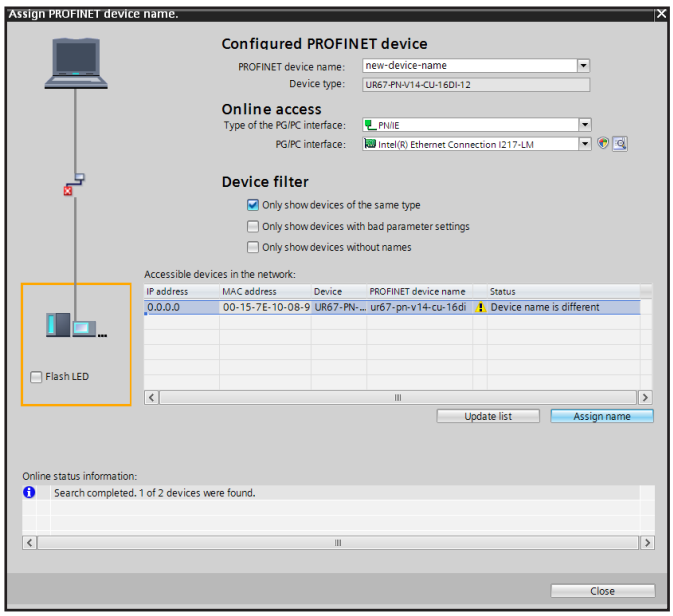
The settings only take effect once they have been loaded into the control unit.

Assigning device names

PROFINET devices are addressed in PROFINET via a unique device name. These names can be freely assigned; however, they can only be used once in the network.

► Right-click on the subnet line in the network view.
► Select **Assign PROFINET device name** in the context menu.

The **Assign PROFINET device name** dialog box opens.



Assigning a device name (TIA portal)

► Click on **Update list**.
► From this list, select the module for which you wish to change the name.

You can check your selection by carrying out an LED flash test.
► Activate **Flash LED**.
If you have selected a UR67-PN-V14 module, the TEST LED and the LNK/ACT LED for this module will flash.

► Enter the desired device name in the **PROFINET device name** field.
► Click on **Assign name**.
The new device name is then assigned to the selected module.

► Click on **Close** to close the dialog box.

Setting up fast start-up

With fast start-up, there is less than 500 ms between switching on a device and the first exchange of process data.

► Click on the module in the device view.
► Select **General/PROFINET interface/Advanced options** in the **Inspector window**.
► Activate **Prioritized startup**.

Configuring the topology

You can configure the interconnection of the PROFINET ports for the individual devices.

► In the device view, double-click on the device for which you wish to configure the interconnection.
► Select **General/PROFINET interface [X1]/Port X0n 10/100 MBit/s [X1 Pn R]/Port interconnection** in the **Inspector window.**
► Select the port for the neighbouring device in the **Partner port** section.
► Repeat this process for all of the interconnections.

Setting up device replacement without interchangeable medium/PG

The UR67-PN-V14 modules support the "Device replacement without interchangeable medium/PG" function. Modules in a PROFINET network can be exchanged for identical modules without having to reassign the device name using a programming device. The control unit assigns the device name to the exchanged module based on the configured topology and the real neighbourhood relationships determined by the IO devices.

To use the "Device replacement without interchangeable medium/PG" function, the following conditions must be met:
– The control unit must support the "Device replacement without interchangeable medium/PG" function.
– The neighbouring PROFINET devices of the module to be exchanged must support the "Device replacement without interchangeable medium/PG" function.
– The function must be activated for the control unit.
– The PROFINET network topology must be configured.
– The new device in the exchange must be set to its factory settings.

Setting up a Media Redundancy Protocol (MRP)

With the UR67-PN-V14 modules, redundant PROFINET communication can be achieved with a ring topology and no need for additional switches. In this instance, an MRP redundancy manager closes the ring, detects individual outages and sends data packages via the redundant path in the event of an error.

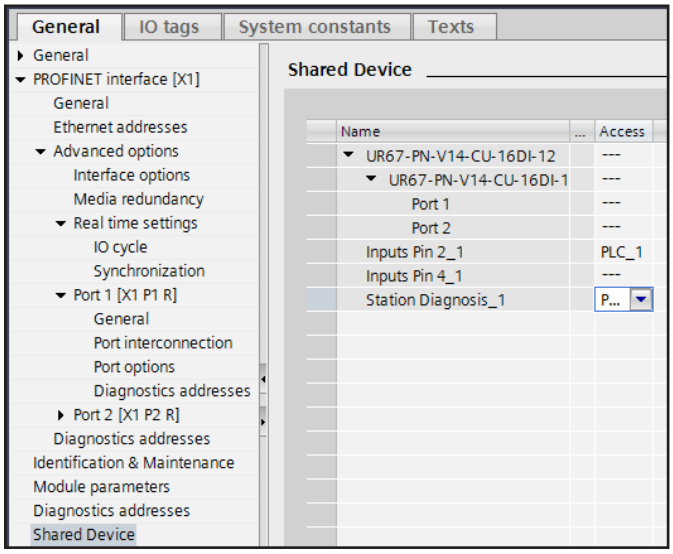
To use the MRP, the following conditions must be met:
– All devices must support MRP.
– The devices must only be connected via the ring ports – a meshed topology is not permitted.
– The ring must contain a maximum of 50 devices.
– All of the devices must have the same redundancy domains.
– A prioritised start-up (fast start-up) is not permitted.
– The automatic network setting must be used on all devices.

► Configure a device as a redundancy manager (e.g. the control unit).

► In the device view, double-click on a device that you wish to configure as a redundancy client.
► Select **General/PROFINET interface [X1]/Advanced options/Media redundancy** in the **Inspector window.**
► In the **MRP domain** menu, select the redundancy domain for the redundancy manager.
► Select the option **Client** from the **Media redundancy role** menu.
► Select **General/PROFINET interface [X1]/Advanced options/Real time settings/IO cycle** in the **Inspector window**.
► Set the update time.
► Set the response monitoring time. The response monitoring time must be longer than the reconfiguration time (typically 200 ms).
► Configure all other devices in the ring as redundancy clients.

Setting up Shared Device

► Create a new project.
► Add two control units.
► Configure the control units with different IP addresses from the same subnet.
► Add the UR67-PN-V14 module and figure as normal.
► Create a copy of the module in the network view.
► Assign each of the modules to a different control unit.
► Assign the same IP address to both modules.
► Assign the same device name to both modules.
► In the device view, double-click on the module assigned to the first control unit.
► Select **General/PROFINET interface [X1]/Shared Device** in the **Inspector window**.
► Select the process data modules you want the first control unit to access.



Assigning process data modules to a control unit (TIA portal)

► In the device view, double-click on the module assigned to the second control unit.
► Select **General/PROFINET interface [X1]/Shared Device** in the **Inspector window**.
► Select the process data modules you want the second control unit to access.
► Load the configuration in the two control units.

6.4 Adjustable parameters

Overview of the adjustable parameters

Channel	Designation	Options	Default
	IP address	4 digits between 0 and 255	0.0.0.0
	Subnet mask	4 digits between 0 and 255	0.0.0.0
	Gateway	4 digits between 0 and 255	0.0.0.0
	Diagnostic alarm	enabled / disabled	enabled
	Channel diagnostic alarm	enabled / disabled / enable alarm & fault LED / enable only fault LED	enable alarm & fault LED
	Low voltage bus-/sensor-supply diagnosis	enabled / disabled / enable alarm & fault LED / enable only fault LED	enable alarm & fault LED
	Low voltage actuator-supply diagnosis	enabled / disabled / enable alarm & fault LED / enable only fault LED	enable alarm & fault LED
	Actuator voltage breakdown diagnosis	enabled / disabled / enable alarm & fault LED / enable only fault LED	enable alarm & fault LED
	Restart output after short-circuit[1]	automatic / confirmation needed	confirmation needed
	Lock force mode	Force mode unlocked / Force mode locked	Force mode unlocked
	Lock webserver	Webserver unlocked / Webserver locked	Webserver unlocked
	Diagnostic alarm POF-transceiver[2]	enabled / disabled	enabled
0 ... 15[3] 8 ... 15[1]	Input delay	no / 0.3 ms / 3 ms / 10 ms / 15 ms / 20 ms	3 ms
0 ... 7	Substitute value[1]	Off / On / Hold last value	Off
0 ... 15	Channel diagnosis[3]	disabled / enabled	disabled
0 ... 7	Channel diagnosis DO[1]	disabled / enabled	disabled
8 ... 15	Channel diagnosis DI[1]	disabled / enabled	disabled

1) only with UR67-PN-V14-CU-8DIDO-12, UR67-PN-V14-POF-8DIDO-12
2) only with UR67-PN-V14-POF-16DI-12, UR67-PN-V14-POF-8DIDO-12
3) only with UR67-PN-V14-CU-16DI-12, UR67-PN-V14-POF-16DI-12

"IP address" parameter

This parameter is used to set the IP address for the module.

0.0.0.0 ... 255.255.255.255 (default: 0.0.0.0)
The IP address of the module is 0.0.0.0 ... 255.255.255.255.

"Subnet mask" parameter

This parameter is used to set the subnet mask for the module.

0.0.0.0 ... 255.255.255.255 (default: 0.0.0.0)
The module uses the subnet mask 0.0.0.0 ... 255.255.255.255.

"Gateway" parameter

This parameter is used to set the gateway for the module.

0.0.0.0 ... 255.255.255.255 (default: 0.0.0.0)
The module uses the gateway 0.0.0.0 ... 255.255.255.255.

"Diagnostic alarm" parameter

This parameter activates diagnostic alarms.

Enabled (default)
The diagnostic alarms are activated.

Disabled
The diagnostic alarms are deactivated.

"Channel diagnostic alarm" parameter

This parameter is used to set the diagnostic behaviour of the module in the event of a channel fault.

Enable only alarm
Diagnosis is only displayed via the diagnostic alarms.

Disabled
Diagnosis is disabled.

Enable alarm & fault LED (default)
Diagnosis is displayed via the diagnostic alarms and the associated fault LED.

Enable only fault LED
Diagnosis is only displayed via the associated fault LED.

"Low voltage bus-/sensor-supply diagnosis" parameter

This parameter is used to set the diagnostic behaviour of the module in the event of low bus/sensor supply voltage.

Enable only alarm
Diagnosis is only displayed via the diagnostic alarms.

Disabled
Diagnosis is disabled.

Enable alarm & fault LED (default)
Diagnosis is displayed via the diagnostic alarms and the associated fault LED.

Enable only fault LED
Diagnosis is only displayed via the associated fault LED.

"Low voltage actuator-supply diagnosis" parameter

This parameter is used to set the diagnostic behaviour of the module in the event of low actuator supply voltage.

Enable only alarm
Diagnosis is only displayed via the diagnostic alarms.

Disabled
Diagnosis is disabled.

Enable alarm & fault LED (default)
Diagnosis is displayed via the diagnostic alarms and the associated fault LED.

Enable only fault LED
Diagnosis is only displayed via the associated fault LED.

"Actuator voltage breakdown diagnosis" parameter

This parameter is used to set the diagnostic behaviour of the module in the event of an actuator supply voltage breakdown.

Enable only alarm
Diagnosis is only displayed via the diagnostic alarms.

Disabled
Diagnosis is disabled.

Enable alarm & fault LED (default)
Diagnosis is displayed via the diagnostic alarms and the associated fault LED.

Enable only fault LED
Diagnosis is only displayed via the associated fault LED.

"Restart output after short-circuit" parameter

This parameter is used to set the restart behaviour of the outputs following a short circuit in the actuator supply.

Automatic
Outputs return to normal operation automatically following a short circuit.

Confirmation needed (default)
A short circuit must be acknowledged before the outputs return to normal operation.

"Lock force mode" parameter

This parameter can be used to lock the Force mode of the web server application.

Force mode unlocked (default)
The Force mode of the web server application is not locked.

Force mode locked
The Force mode of the web server application is locked.

"Lock webserver" parameter

This parameter can be used to lock the web server application.

Webserver unlocked (default)
The web server application is not locked.

Webserver locked
The web server application is locked.

The web server application can only be unlocked again using an engineering tool.

"Input delay" parameter

This parameter defines the filter behaviour of an input.

No
Signals are not filtered.

0.3 ms ... 20 ms (default: 3 ms)
Signals lasting less than 0.3 ms ... 20 ms are filtered.

"Substitute value" parameter

This parameter is used to set the behaviour of the associated output in the event of disrupted fieldbus communication.

Off (default)
The output is inactive in the event of disrupted fieldbus communication.

On
The output is active in the event of disrupted fieldbus communication.

Hold last value
The output is held at the last value in the event of disrupted fieldbus communication.

"Channel diagnosis" parameter

This parameter activates channel diagnostics for the associated channel.

Disabled (default)
Channel diagnostics are disabled for this channel.

Enabled
Channel diagnostics are enabled for this channel.

"Channel diagnosis DO" parameter

This parameter activates channel diagnostics for the associated output.

Disabled (default)
Channel diagnostics are disabled for this channel.

Enabled
Channel diagnostics are enabled for this channel.

"Channel diagnosis DI" parameter

This parameter activates channel diagnostics for the associated input.

Disabled (default)
Channel diagnostics are disabled for this channel.

Enabled
Channel diagnostics are enabled for this channel.

6.5 Simple Network Management Protocol (SNMP)

The UR67-PN-V14 modules support the objects listed in the PROFINET specification in accordance with the SNMP v1 protocol standard. This includes objects from RFC 1213 MIB-II (system group and interfaces group) and from LLDP-MIB.

The community strings are:
- Read Community: public
- Write Community: private

7 Bit assignment

7.1 Process input data

The GSDML of the UR67-PN-V14 module has a modular structure. Process data is displayed in terms of either sockets or pins, depending on the selected modules.

Socket-based process data modules cannot be combined with pin-based process data modules.

Socket-based display

Inputs for socket 0 ... 3

Bit	UR67-PN-V14-xx-16DI-12	UR67-PN-V14-xx-8DIDO-12
0	Status bit: socket X0, pin 4	-
1	Status bit: socket X0, pin 2	-
2	Status bit: socket X1, pin 4	-
3	Status bit: socket X1, pin 2	-
4	Status bit: socket X2, pin 4	-
5	Status bit: socket X2, pin 2	-
6	Status bit: socket X3, pin 4	-
7	Status bit: socket X3, pin 2	-

Inputs for socket 4 ... 7

Bit	UR67-PN-V14-xx-16DI-12	UR67-PN-V14-xx-8DIDO-12
0	Status bit: socket X4, pin 4	Status bit: socket X4, pin 4
1	Status bit: socket X4, pin 2	Status bit: socket X4, pin 2
2	Status bit: socket X5, pin 4	Status bit: socket X5, pin 4
3	Status bit: socket X5, pin 2	Status bit: socket X5, pin 2
4	Status bit: socket X6, pin 4	Status bit: socket X6, pin 4
5	Status bit: socket X6, pin 2	Status bit: socket X6, pin 2
6	Status bit: socket X7, pin 4	Status bit: socket X7, pin 4
7	Status bit: socket X7, pin 2	Status bit: socket X7, pin 2

Pin-based display

Pin 4 inputs

Bit	UR67-PN-V14-xx-16DI-12	UR67-PN-V14-xx-8DIDO-12
0	Status bit: socket X0, pin 4	-
1	Status bit: socket X1, pin 4	-
2	Status bit: socket X2, pin 4	-
3	Status bit: socket X3, pin 4	-
4	Status bit: socket X4, pin 4	Status bit: socket X4, pin 4
5	Status bit: socket X5, pin 4	Status bit: socket X5, pin 4
6	Status bit: socket X6, pin 4	Status bit: socket X6, pin 4
7	Status bit: socket X7, pin 4	Status bit: socket X7, pin 4

Pin 2 inputs

Bit	UR67-PN-V14-xx-16DI-12	UR67-PN-V14-xx-8DIDO-12
0	Status bit: socket X0, pin 2	-
1	Status bit: socket X1, pin 2	-
2	Status bit: socket X2, pin 2	-
3	Status bit: socket X3, pin 2	-
4	Status bit: socket X4, pin 2	Status bit: socket X4, pin 2
5	Status bit: socket X5, pin 2	Status bit: socket X5, pin 2
6	Status bit: socket X6, pin 2	Status bit: socket X6, pin 2
7	Status bit: socket X7, pin 2	Status bit: socket X7, pin 2

7.2 Process output data

The GSDML of the UR67-PN-V14 module has a modular structure. Process data is displayed in terms of either sockets or pins, depending on the selected modules.

Process output data is only available for modules with output functionality.

Socket-based process data modules cannot be combined with pin-based process data modules.

Socket-based display

Inputs for socket 0 ... 3

Bit	UR67-PN-V14-xx-16DI-12	UR67-PN-V14-xx-8DIDO-12
0	-	Control bit: socket X0, pin 4
1	-	Control bit: socket X0, pin 2
2	-	Control bit: socket X1, pin 4
3	-	Control bit: socket X1, pin 2
4	-	Control bit: socket X2, pin 4
5	-	Control bit: socket X2, pin 2
6	-	Control bit: socket X3, pin 4
7	-	Control bit: socket X3, pin 2

Pin-based display

Pin 4 outputs

Bit	UR67-PN-V14-xx-16DI-12	UR67-PN-V14-xx-8DIDO-12
0	-	Control bit: socket X0, pin 4
1	-	Control bit: socket X1, pin 4
2	-	Control bit: socket X2, pin 4
3	-	Control bit: socket X3, pin 4
4	-	-
5	-	-
6	-	-
7	-	-

Pin 2 outputs

Bit	UR67-PN-V14-xx-16DI-12	UR67-PN-V14-xx-8DIDO-12
0	-	Control bit: socket X0, pin 2
1	-	Control bit: socket X1, pin 2
2	-	Control bit: socket X2, pin 2
3	-	Control bit: socket X3, pin 2
4	-	-
5	-	-
6	-	-
7	-	-

7.3 Diagnostic data

The diagnostic data is part of the input data. The individual diagnostic data modules can be combined as required. Detailed descriptions regarding the diagnostics can be found in chapter 8.

Station diagnostics

Bit	UR67-PN-V14-xx-16DI-12	UR67-PN-V14-xx-8DIDO-12
0	Undervoltage Bus/sensor supply	Undervoltage Bus/sensor supply
1	Actuator supply undervoltage	Actuator supply undervoltage
2	No actuator supply	No actuator supply
3	-	-
4	Short circuit in the sensor supply	Short circuit in the sensor supply
5	-	Actuator shutdown
6	-	Actuator warning
7	-	-

Socket peripheral fault

Bit	UR67-PN-V14-xx-16DI-12	UR67-PN-V14-xx-8DIDO-12
0	Socket X0	Socket X0
1	Socket X1	Socket X1
2	Socket X2	Socket X2
3	Socket X3	Socket X3
4	Socket X4	Socket X4
5	Socket X5	Socket X5
6	Socket X6	Socket X6
7	Socket X7	Socket X7

Short circuit in the sensor supply

Bit	UR67-PN-V14-xx-16DI-12	UR67-PN-V14-xx-8DIDO-12
0	Socket X0	-
1	Socket X1	-
2	Socket X2	-
3	Socket X3	-
4	Socket X4	Socket X4
5	Socket X5	Socket X5
6	Socket X6	Socket X6
7	Socket X7	Socket X7

Pin 4 actuator shutdown

Bit	UR67-PN-V14-xx-16DI-12	UR67-PN-V14-xx-8DIDO-12
0	-	Socket X0, pin 4
1	-	Socket X1, pin 4
2	-	Socket X2, pin 4
3	-	Socket X3, pin 4
4	-	-
5	-	-
6	-	-
7	-	-

Pin 2 actuator shutdown

Bit	UR67-PN-V14-xx-16DI-12	UR67-PN-V14-xx-8DIDO-12
0	-	Socket X0, pin 2
1	-	Socket X1, pin 2
2	-	Socket X2, pin 2
3	-	Socket X3, pin 2
4	-	-
5	-	-
6	-	-
7	-	-

Pin 4 actuator warning

Bit	UR67-PN-V14-xx-16DI-12	UR67-PN-V14-xx-8DIDO-12
0	-	Socket X0, pin 4
1	-	Socket X1, pin 4
2	-	Socket X2, pin 4
3	-	Socket X3, pin 4
4	-	-
5	-	-
6	-	-
7	-	-

Pin 2 actuator warning

Bit	UR67-PN-V14-xx-16DI-12	UR67-PN-V14-xx-8DIDO-12
0	-	Socket X0, pin 2
1	-	Socket X1, pin 2
2	-	Socket X2, pin 2
3	-	Socket X3, pin 2
4	-	-
5	-	-
6	-	-
7	-	-

POF diagnostics

Bit	UR67-PN-V14-POF-xxxx-12
0	Maintenance requirement: system reserve < 2 dB
1	Maintenance request: system reserve < 0 dB
2 ... 7	-

8 Diagnostics

8.1 Descriptions of errors

Diagnostics	Possible cause
Bus/sensor supply undervoltage	U_{S1} < 20.4 V
Actuator supply undervoltage	U_{S2} < 20.4 V
No actuator supply	U_{S2} < 19.2 V
Short circuit in the sensor supply	Short circuit in the sensor supply (pin 1) to GND (0 V) or sensor supply overload.
Actuator shutdown	Short circuit in the output channel to GND (0 V) or output channel overload
Actuator warning	Short circuit in the output channel to 24 V
Maintenance requirement	POF system reserve < 2 dB
Maintenance request	POF system reserve < 0 dB
Simulation active	Force mode activated in the web application
Configuration error	Socket-based process data modules are combined with pin-based process data modules.
Application error	Error when performing the application due to excessive network load

8.2 Diagnostics at the control unit

Diagnostics in process data

The diagnostic data is part of the input data. The individual diagnostic data modules can be combined as required. Detailed descriptions regarding the diagnostic data can be found in chapter 7.3.

PROFINET diagnostics

– USI (User Structure Identifier): 0x8000

Channel error type	Channel number	Diagnostics
10	0 x 8000	Simulation active
256	0x0000 – 0x0007	Actuator shutdown
512	0x0000 – 0x0007	Actuator warning
1024	0 x 8000	Actuator supply undervoltage
1280	0 x 8000	No actuator supply
1536	0x0000 – 0x000F	Short circuit in the sensor supply
1792	0 x 8000	Bus/sensor supply undervoltage
2048	0 x 8000	Configuration error
2304	0 x 8000	Application error

8.3 LED displays and troubleshooting

The module's parameter settings influence the behaviour of the LED displays (see chapter 6.4).

LED		Status	Recommended measures
Module	**U_{S1}**	green: $U_{S1} \geq 20.4$ V	
		orange: 20.4 V > $U_{S1} \geq 19.2$ V	– Check supply voltage
		red: 19.2 V > $U_{S1} > \sim 12$ V	– Check supply voltage
		off: $U_{S1} < \sim 12$ V	– Check supply voltage
	U_{S2}	green: $U_{S2} \geq 20.4$ V	
		orange: 20.4 V > $U_{S2} \geq 19.2$ V	– Check supply voltage
		red: 19.2 V > $U_{S2} > \sim 12$ V	– Check supply voltage
		off: $U_{S1} < \sim 12$ V	– Check supply voltage
	BF	red: no fieldbus connection	– Check Ethernet cable – Check PLC configuration – Check device name
		Flashing red: – Configuration error – No connection to control unit – Error in parameter set	– Check that the GSDML file is up to date – Check the fieldbus parameters and the PLC configuration
	SF	Red: – Configuration error – Module error – New diagnostic message appears	– Check that the GSDML file is up to date – Read off the diagnostic message from the web server or engineering tool and determine which further actions to take
		Flashing red: module is in Force mode	
	LNK1/ACT1	Green: connection established between port XF1 of the module and another field device	
		Flashing green: locating PROFINET devices	
		Flashing orange: data being exchanged on port XF1	
	LNK2/ACT2	Green: connection established between port XF2 of the module and another field device	
		Flashing green: locating PROFINET devices	
		Flashing orange: data being exchanged on port XF2	
	POF DIA	Green: signal OK	
		Orange: maintenance requirement (POF system reserve < 2 dB)	– Replace POF cable
		Red: maintenance request (POF system reserve < 0 dB)	– Replace POF cable
	TEST	Flashing white: locating PROFINET devices	

LED		Status	Recommended measures
Channel	**0**	Yellow: channel active	
X0 ... X7		Red: – Actuator shutdown – Actuator warning – Sensor short circuit at the socket	– Check connection and pin assignment – Check wiring – Check actuator – Check sensor
		Off: channel inactive	
	1	Yellow: channel active	
		Red: – Actuator shutdown – Actuator warning – Sensor short circuit at the socket	– Check connection and pin assignment – Check wiring – Check actuator – Check sensor
		Off: channel inactive	

9 Web server

The web server is used to display the UR67 module on a connected PC. This allows you to carry out the following functions for test purposes or during commissioning or service work:
- Access the module status
- Display and change the module parameters
- Access diagnostic information
- Reset the device to factory settings
- Operate the module in Force mode for testing purposes
- Updating firmware

9.1 Connecting and starting up the web server

Web browsers
The web server can be used with the following web browsers:
- Mozilla Firefox 64 or higher
- Google Chrome 71 or higher

Screen resolution
When working with the web server, we recommend using a screen resolution of 1280 x 800 or higher, but at least 768 x 800. The operator front-end is displayed optimally when the browser window is maximised.

Starting the web server
The module must be completely assembled and connected to the power.

► Make sure that the PC and the module are connected via Ethernet.

The modules are delivered with the IP address 0.0.0.0. A free IP address must be assigned to the module before the web server can be used (e.g.using an engineering tool). The PC and the module must be in the same subnet.

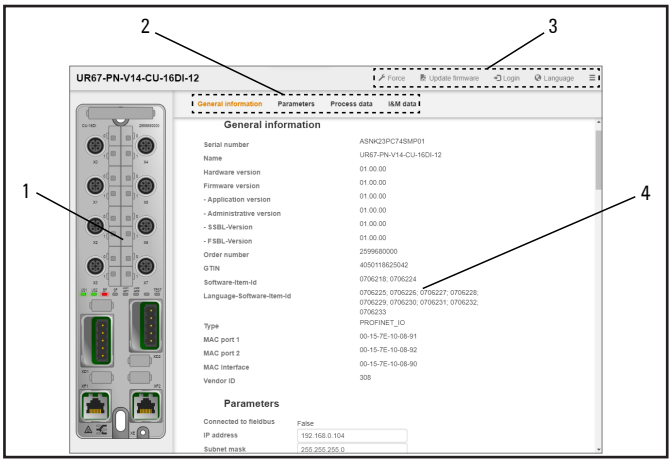
► Open one of the browsers listed above.
► In the address line, enter the IP address of the module.

The web server will then be started up. The connected module will be displayed.

If the web server does not start up:
► Clear the browser cache. Deleting only the history is not a sufficient measure in this instance.
► Restart the web server.
► Check the module IP address and check whether the correct subnet has been selected.

9.2 Getting to know and setting up the web server

Module overview
The overview page is displayed every time the web server is started up.



Overview page with operating elements

1 Module detailed view
2 Navigation bar
3 Menu bar
4 Display area

Operating instructions

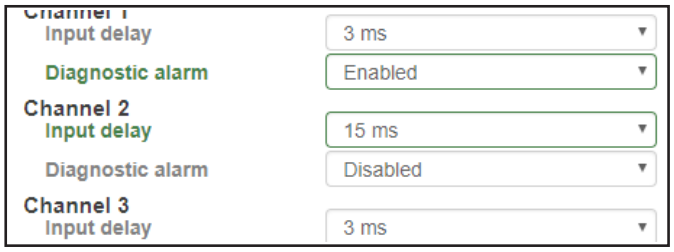
Single mouse clicks (left mouse button) are all that is needed to operate the web server. Some areas of the interface are mouse-sensitive, i.e. they change when the cursor is moved over them even without clicking the mouse ("mouse-over").

When the cursor changes to this icon, the user is expected to click the mouse.

When the cursor changes to this icon, you can click the left mouse button to display additional information.

Tracking changes

Any changed settings will be indicated by a green frame and green text.

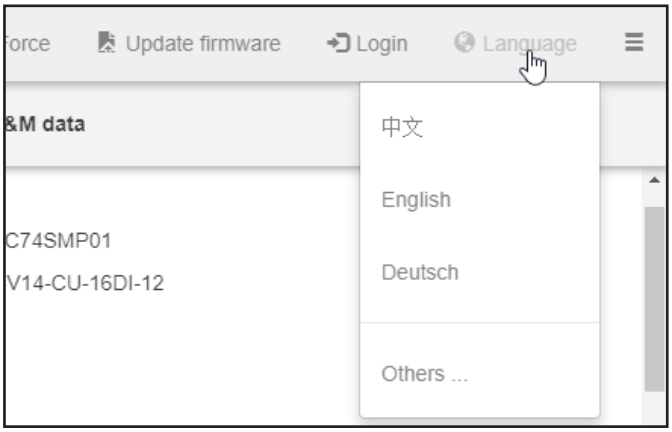


Changes marked

In this state, you can revert each individual change back to its original setting; the changes have not yet been accepted by the module. Changes are only saved when you click on **Apply**. Clicking on **Discard** will undo all changes.
Once you have applied or undone the changes, the markers will be removed.

Setting the language

► To change the language, click on **Language** in the menu bar and then on the required setting.



Setting the language

Logging in and logging out

Access to the following functions is restricted by means of password protection:

- Editing parameters
- Editing I&M data
- Restarting the web server
- Resetting the device to factory settings
- Operating the module in Force mode
- Replacing language files
- Loading firmware updates

Users without a user ID have read-only rights, but no write access. They cannot use the specified functions. If you are not logged in and you attempt to carry out one of these functions, you will be asked to enter your username and password.

► Click on **Login** in the menu bar.
► Enter the username and password.
► Click on **Login**.

Entering the username and password

The following login data applies on delivery.
Username: **admin**
Password: **Detmold**

Once you have successfully entered the username and password, you will not have to enter this information again for the same session.

You can log back out again as follows:
► Click on **Logout** in the menu bar.

Logging out

Retrieving licence information

Components of free software are integrated into the UR67-PN-V14 products. The licence terms are accessible from within the program.

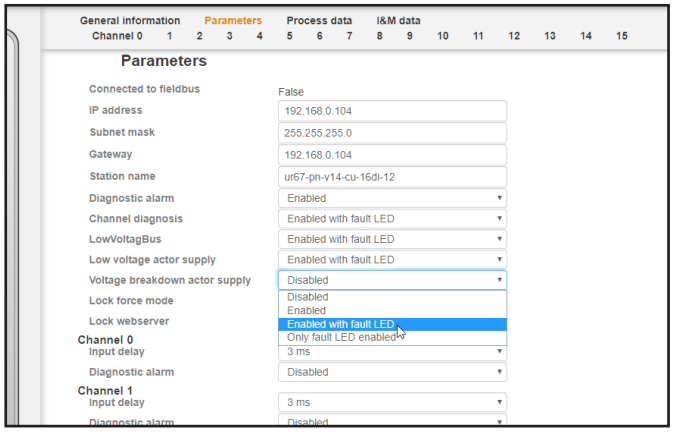
► Click on ☰ in the menu bar.
► Click on **Info**.
► Click on **Open Source Libraries**.

A dialog box will appear containing the licensing text for the free software being used.

9.3 Accessing and editing parameters

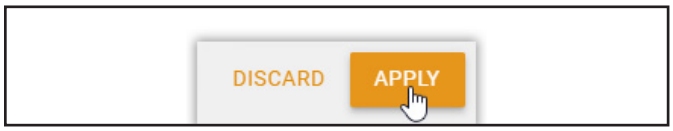
► Click on **Parameters** in the navigation bar.
The parameters are displayed.

For parameters that can be edited, you can enter the changes in the respective entry field or choose alternative settings from a dropdown menu.



Accessing and editing module parameters

► Make sure that you are logged in.
► Enter the required changes.
► Click on **Apply** to save the change.

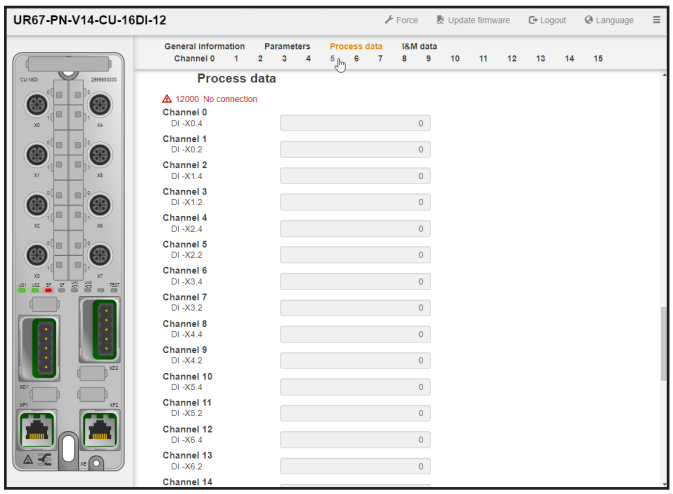


Applying a change

Changes are only saved when you click on **Apply**. Clicking on **Discard** will undo all changes.

9.4 Accessing process data and diagnostics

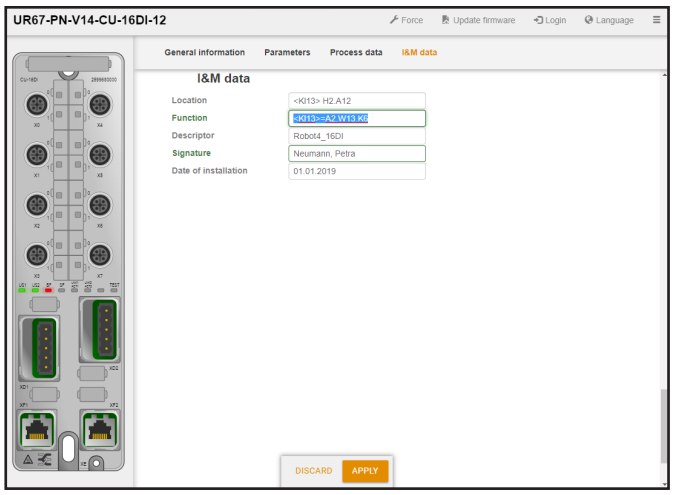
► Click on **Process data** in the navigation bar.
The process data and diagnostics are displayed.



Accessing process data and diagnostics

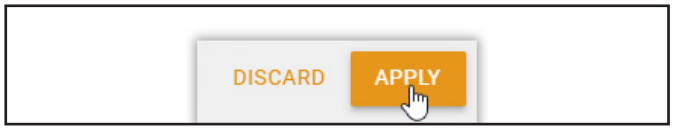
9.5 Accessing and editing I&M data

► Click on **I&M data** in the navigation bar.
The I&M data is displayed.



Accessing and editing I&M data

► Make sure that you are logged in.
► Enter the required changes.
► Click on **Apply** to save the change.



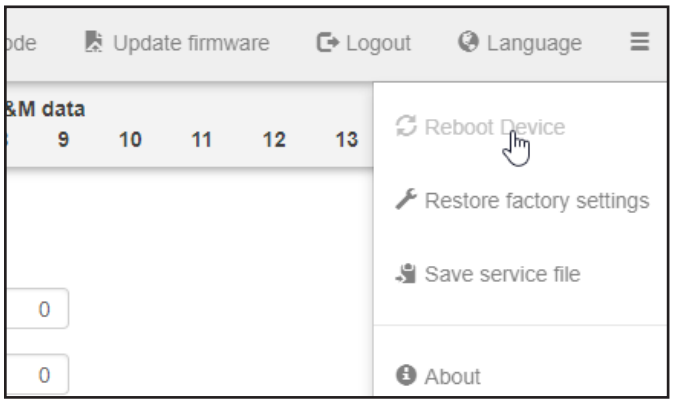
Applying a change

Changes are only saved when you click on **Apply**. Clicking on **Discard** will undo all changes.

9.6 Restarting the web server

The module is restarted during the restart process! All data which is not protected against power failure is reset.

► Make sure that you are logged in.
► Click on ☰ in the menu bar.
► Click on **Reboot Device**.
► Confirm by clicking on **OK**.



Restarting the web server and module

The module and the web server are restarted.

► Assign an IP address to the module again in order to access the web server again.

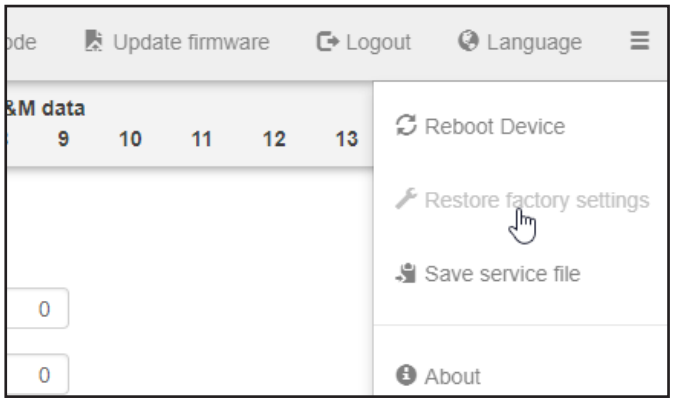
9.7 Resetting the module to factory settings

This function allows you to reset the module to its original state upon delivery. The following data is reset as part of this process:

- Parameters, incl. network parameters
- I&M data

The module is restarted during the reset process!

► Make sure that you are logged in.
► Click on ☰ in the menu bar.
► Click on **Restore factory settings**.
► Confirm by clicking on **OK**.



Resetting the module to factory settings

The module and the web server are restarted. The module will once again be in the same state as it was when it was initially delivered.

► Assign an IP address to the module again in order to access the web server again.

9.8 Web server in Force mode

Enabling Force mode

WARNING!

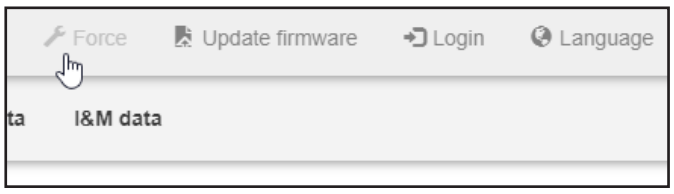
Manipulation of the control unit!
In Force mode, the system may be manipulated to such an extent that life-threatening personal injury and material damage may occur.
Only use Force mode if you are very familiar with the connected system and always know the consequences that your actions will have!

If Force mode is enabled when the fieldbus is connected, a diagnostic alarm will be triggered. Depending on the parameterised alarm behaviour, output process data may continue to be transferred by the PLC and processed by the module for all unforced output channels. All of the forced output channels ignore the process data and proceed exclusively according to the forced values.
Input process data is always transferred regardless of whether it is simulated through forced operations or whether it has been imported via physical inputs.

If Force mode is enabled without a fieldbus connection, the fieldbus interface will be deactivated for the duration of forced operations. A new fieldbus connection can only be established again once Force mode has been terminated.

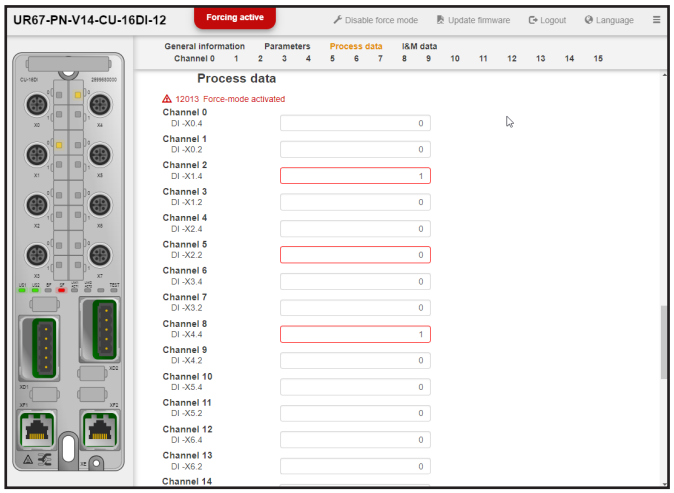
Force mode allows you to carry out functional tests or preconfigure the module prior to commissioning, even if no sensors or actuators have been connected. To do so, you must change the operating mode of the web server.

► Make sure that you are logged in.
► Click on **Force** in the menu bar.
► Confirm by clicking on **OK**.



Switching to Force mode

The web server is now in Force mode, which can be identified by the red bar. Forced channels can be identified by a red border.



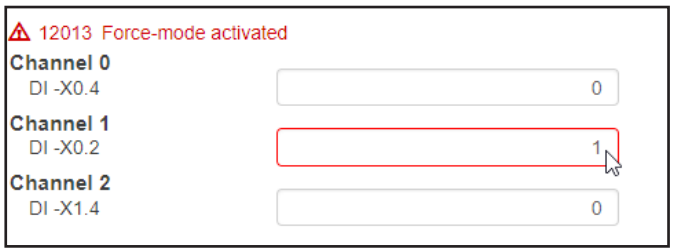
Display in Force mode

Force mode is terminated when the connection between the web server and the module is interrupted.

Forcing channels

► Click on a channel to force that channel.

The channel is immediately switched to the new status.

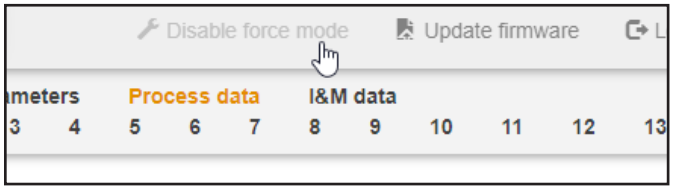


Forcing a channel

Terminating/disabling Force mode

► Click on **Disable force mode** in the menu bar.

Force mode will also be terminated when you log out.



Disabling Force mode

The station is put back into the status it was in prior to forced operations.

9.9 Updating firmware

► Click on **General information**.
► Check the installed firmware version.
► Download the latest firmware from the Weidmüller website.

Firmware files have the “bsc” file extension. The file for UR67-PN-V14 modules, for example, is named FB-PN-IRT-FULL-0706224-01_00_00-8.bsc.

- The old firmware in the module is overwritten when a firmware update is performed.
- You cannot access the module via the web server while the firmware files are being loaded.
- Make sure that the following points are complied with when the firmware files are being loaded:
  - The power supply must not be interrupted
  - The connection to the web server must not be interrupted
  - No changes may be made to the module

► Make sure that you are logged in.
► To perform a firmware update, click on **Update firmware** in the menu bar.

Updating firmware

► Click on **Select firmware file**.
► Select the firmware file from the storage location on your computer and click on **Open**.
► Click on **Upload file**.
The firmware is updated. Once the update is complete, you will be prompted to restart the module.
► Click on **Restart**.

The module and the web server are restarted.

► Assign an IP address to the module again in order to access the web server again.

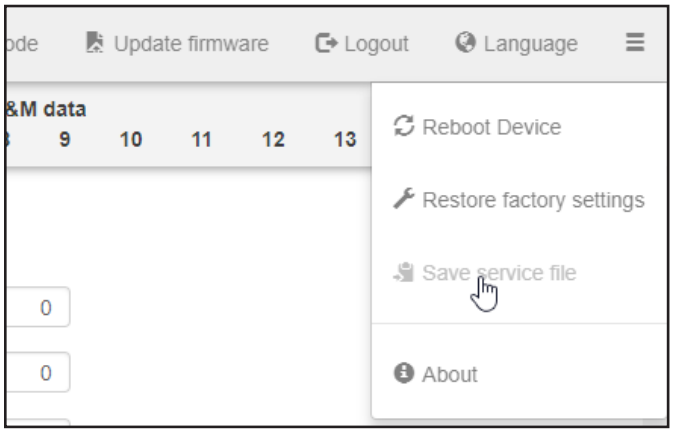
If you lose connection to the web server during the update:
► Restart the web server.
► Wait until the firmware update is complete.
► Restart the web server.

If you cannot start the web server, proceed as follows:
► Delete the temporary browser data (clear the cache). Deleting only the history is not a sufficient measure in this instance.
► Make sure that you have assigned an IP address to the module.
► Restart the web server.

9.10 Saving a service file

In the event of problems and service cases, it may be helpful to save the current log data for the module. This data can provide the service technician with valuable information about the malfunction. The service file contains data that has been recorded since the start of operation. Following a power reset, the log file will be empty and the record will start again from the beginning.

► Click on ☰ in the menu bar.
► Click on **Save service file**.



Saving a service file

The service file is saved on the computer (UR67-PN-V14-CU-16DI-XYZ_logdata.wmi). You may need to select a storage location first.

10 Disassembly and disposal

WARNING

Dangerous contact voltage!

- ► All installation and wiring work must be carried out with the power supply disconnected.
- ► Make sure that the place of installation has been disconnected from the power supply!

CAUTION

Hot surface!

The module can become very hot when in operation.

- ► Allow the module to cool before touching it.

CAUTION

Risk of glare!

The Ethernet connections of the UR67-PN-V14-POF modules contain a Class-1 laser.

- ► Never look either directly or indirectly into the laser beam!
- ► Never aim the laser beam at other persons!

10.1 Disassembling the u-remote module

- ► Remove all cables and lines.
- ► Unscrew the mounting screws on the module.
- ► Please observe the instructions for proper disposal.

10.2 Disposing of the u-remote module

ATTENTION

Products in the u-remote series are subject to WEEE (EU Directive 2012/19 EU), which regulates the collection and recycling of electrical and electronic equipment.

- ► Make sure that disassembled products are properly disposed of!

When all u-remote products reach the end of their life cycle, you can return them to Weidmüller, and we will arrange for their proper disposal. This also applies to countries outside the European Union.

- ► Please pack the products properly and send them to your responsible distributor.

You can find the address of your respective country representative on the Weidmüller website.

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