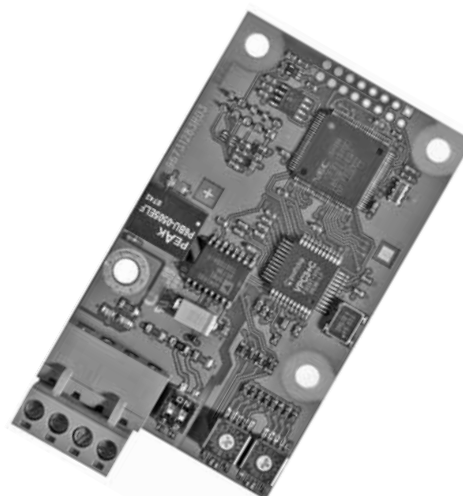


CIU, CIM

GB Service instructions





Preface

These service instructions deal with fault finding on the CIU unit (CIU = Communication Interface Unit) and the CIM module (CIM = Communication Interface Module) fitted in the unit. The service instructions can also be used for fault finding on CIM modules fitted in other products than the CIU, but they do not cover the replacement of the modules. See service instructions for the product in question.

The service instructions are aimed at professionals who are familiar with the service of electrical products.

Usage of these instructions presupposes knowledge of one or more of these documents:

- installation and operating instructions for the CIU unit
- installation and operating instructions for the CIM 1XX LON module
- installation and operating instructions for the CIM 1XX Profibus module
- installation and operating instructions for the CIM 2XX Modbus module.

Note *These instructions only apply to the CIU unit and the CIM module fitted in the unit. If the application includes other Grundfos products or other systems, see the service instructions for the product in question.*

If the fault cannot be remedied by means of these instructions, or you require spare parts or technical assistance, contact your nearest Grundfos partner or company. See the back of these instructions.

Please state these pieces of information when you contact Grundfos to get help for fault finding:

- Data on the nameplate of the CIU unit
- Data on the nameplate of the CIM module.

These service instructions are published and maintained on www.grundfos.com > International website > Launch WebCAPS.

Symbol used in this document

Note *Notes or instructions that make the job easier and ensure safe operation.*

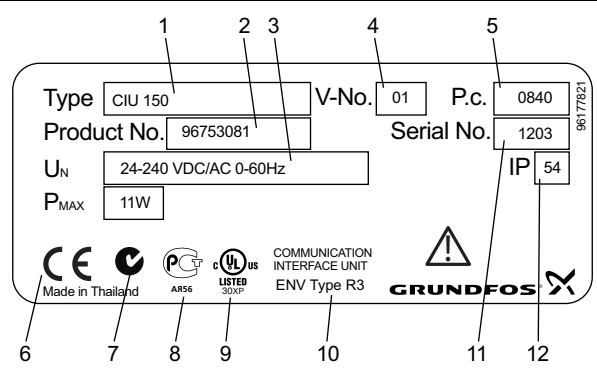
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1. CIU unit

1.1 Description



1.1.1 Nameplate



Pos.	Description
1	Type designation
2	Product number
3	Supply voltage
4	Version number
5	Production code (year and week)
6, 7, 8, 9	Approvals and CE-marking
10	Serial number
11	Enclosure class

Fig. 1 Example of nameplate

1.1.2 Explanation to symbols

Symbol	Designation	Description
	LED1	Status LED for main network
	LED2	Red/green status LED for internal communication between the CIM module and the Grundfos product

1.2 Connection

1.2.1 Power supply

For information about cable dimensions, see installation and operating instructions for the CIU unit.

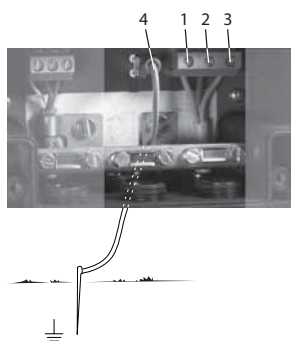


Fig. 2 Electrical connection and earthing

Pos.	Description
1	Earth terminal
2	Phase terminal
3	Neutral terminal
4	Internal earth terminal. Must be connected to earth. <ul style="list-style-type: none"> • if the CIU unit is mounted on a DIN rail without earth connection. • if the CIU unit is mounted on the wall. • if there is no efficient earth connection in the bus cable.

1.2.2 Connection of GENIbus

For information about recommended cable type and maximum cable length, see installation and operating instructions for the CIU unit.

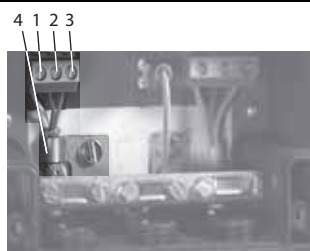


Fig. 3 GENIbus connection

Pos.	Designation	Description
1	A	GENIbus terminal A (positive data signal)
2	Y	GENIbus terminal Y
3	B	GENIbus terminal B (negative data signal)
4	–	Earth clamp

1.2.3 Connection of other bus connections

For information about recommended cable type and maximum cable length, see installation and operating instructions for the relevant CIM XXX module.

Connection of LON bus

The connection of the LON bus is described in section [2.2 Connection of LON bus](#).

Connection of Profibus

The connection of the Profibus is described in section [3.2 Connection of Profibus](#).

Connection of Modbus

The connection of the Modbus is described in section [4.2 Connection of Modbus](#).

1.3 Fault finding

The LED (see fig. 4) on the module close to the GENibus terminals indicates that the power supply is OK.

If the LED is off, check the power supply to the terminals, pos. 1 and 2, fig. 2, using a voltmeter. If the supply voltage lies within the range stated on the CIU nameplate, the CIU unit is defective and must be replaced.



Fig. 4 Power supply LED

Pos.	Description
1	Power supply LED

1.4 Replacing the CIU unit

Before dismantling

- Switch off the power supply to the CIU unit.

1.4.1 Replacing the CIU unit

1. Note the colours of the cable conductors in the individual terminals, loosen the terminals, and pull out the conductors.
2. Loosen the cable clamps and the screwed cable entries, and pull the cables out of the cable entries.
3. Remove the CIU unit.
4. Mount the new CIU unit.
5. Lead the cables through the screwed cable entries of the new unit, and connect the cable conductors to the terminals.
6. Tighten the cable clamps and the screwed cable entries.
7. Set the CIM module as described in
 - the installation and operating instructions for the relevant module.
 - section [2.4 Replacing the CIM 1XX LON module](#),
 - section [3.4 Replacing the CIM 1XX Profibus module](#) or
 - section [4.4 Replacing the CIM 2XX Modbus module](#).
8. Switch on the power supply to the CIU unit.

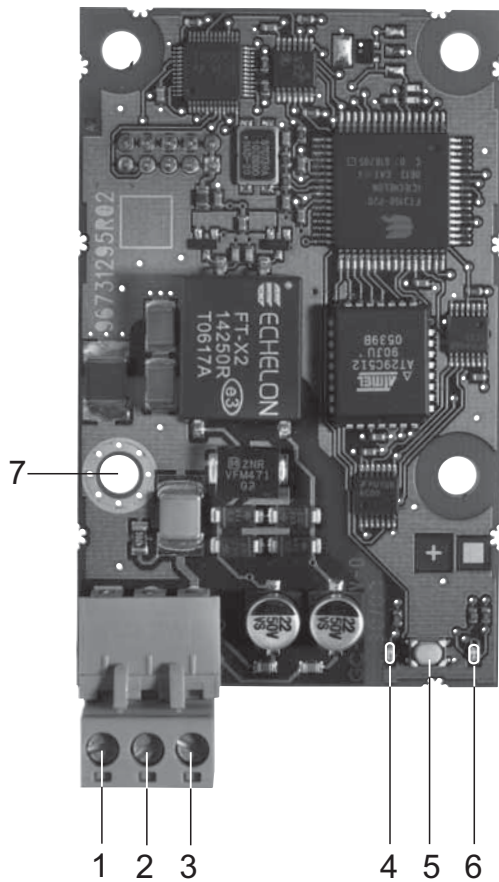
1.4.2 Replacing the CIM module

Replace the CIM module as described in

- section [2.4 Replacing the CIM 1XX LON module](#),
- section [3.4 Replacing the CIM 1XX Profibus module](#) or
- section [4.4 Replacing the CIM 2XX Modbus module](#).

2. CIM 1XX LON module

2.1 Description



Pos.	Designation	Description
1	A	LON terminal A
2	B	LON terminal B
3	Screen	LON terminal for cable screen
4	LED1	Yellow service LED
5	Pin	Service pin (push-button)
6	LED2	Red/green status LED for internal communication between the CIM 1XX and the Grundfos product.
7		Earth connection via screw

Fig. 5 CIM 1XX LON module

2.1.1 LEDs

The CIM 1XX LON module has two LEDs. See fig. 5.

- Yellow service LED (LED1, pos. 4)
- Red/green status LED (LED2, pos. 6) for internal communication between the CIM 1XX and the Grundfos product.

LED1

The yellow LED on the CIM 1XX functions as a service LED. When the Grundfos product is connected to the power supply, the service LED will flash once and then remain off if the installation has been made correctly. In case of deviations, see section 2.3 Fault finding.

LED2

Status	Description
Off.	The CIM 1XX has been switched off.
Flashing red.	No internal communication between the CIM 1XX and the Grundfos product.
Permanently red.	The CIM 1XX does not support the Grundfos product connected.
Permanently green.	Internal communication between the CIM 1XX and the Grundfos product is OK.

Note During start-up, there may be a delay of up to 5 seconds before the LED2 status is updated.

The indication of the LEDs is further described in section 2.3 Fault finding.

2.2 Connection of LON bus

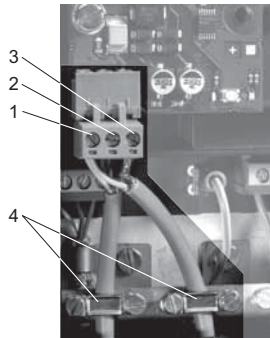
Note

The cable screen must only be connected to the screen terminal of the CIM 1XX LON module. See fig. 6, pos. 3.

The cable screen must never be connected to earth via the earth clamp. See fig. 6, pos. 4.

Note

The stripped part of the cable screen must be as short as possible to reduce the impedance at high frequencies.



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Pos.	Description
1	LON terminal A
2	LON terminal B
3	LON terminal for cable screen
4	Earth clamp

Fig. 6 LON connection

2.2.1 Registration in a LON network

Grundfos products with a CIM 1XX LON module are registered by a LON network in one of these ways:

- Service pin
- Bar code label (Neuron ID).

Service pin

When the service pin push-button of the module is activated, the module will send a unique 48 bit ID code (Neuron ID) which is registered in the LON network.



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Fig. 7 Service pin

Bar code label

The Neuron ID on the module or on the enclosed bar code label is scanned and registered in the LON network. The bar code of the Neuron ID is in Code 128 format. The additional bar code label can be attached to the building installation plan.

2.3 Fault finding

Faults in a CIM 1XX LON module can be detected by observing the status of the service LED (LED1) and the LED for internal communication (LED2). The procedure depends on whether the CIM module is fitted in the CIU unit or in another Grundfos product. See the tables below.

CIM 1XX fitted in the CIU 1XX

Fault (LED status)	Possible cause	Remedy
1. The service LED (LED1) remains off when the power supply is connected.	a) No power supply to the CIU 1XX.	Check the power supply to the CIU 1XX.
	b) The CIM 1XX is defective.	Replace the CIM 1XX.
2. The service LED (LED1) is permanently on.	a) The CIM 1XX is defective.	Replace the CIM 1XX.
3. The service LED (LED1) flashes when the power supply is connected to the CIM 1XX, turns off, turns on again and remains permanently on.	a) The CIM 1XX has no application software (application-less).	Try to download application software via a LON installation tool such as LonMaker.
	b) The CIM 1XX is defective.	Replace the CIM 1XX.
4. The service LED (LED1) flashes every second.	a) The CIM 1XX has not been fitted.	Fit the CIM 1XX by means of a LON installation tool such as LonMaker.
5. The Grundfos product does not react to changes of settings, and the readout from the LON network is incorrect. The LED for internal communication (LED2) is permanently red.	a) The CIM 1XX does not support the Grundfos product connected.	Contact the nearest Grundfos company.
	b) The LON application may be wrong, for instance CIM 110 software where CIM 100 software is required.	Download correct software via a LON installation tool such as LonMaker. Contact the system integrator, if necessary.
6. The Grundfos product does not react to changes of settings, and the readout from the LON network is incorrect. The LED for internal communication (LED2) is flashing red.	a) The cable between the CIM 1XX and the Grundfos product is connected incorrectly or damaged.	Connect the cable correctly, or replace the cable.

CIM 1XX fitted in a Grundfos product

Fault (LED status)	Possible cause	Remedy
1. The service LED (LED1) remains off when the power supply is connected.	a) The CIM 1XX has not been fitted correctly in the Grundfos product.	Fit the CIM 1XX correctly in the Grundfos product.
	b) No power supply to the CIM 1XX.	Check the power supply to the Grundfos product.
	c) The CIM 1XX is defective.	Replace the CIM 1XX.
2. The service LED (LED1) is permanently on.	a) The CIM 1XX is defective.	Replace the CIM 1XX.
3. The service LED (LED1) flashes when the power supply is connected to the CIM 1XX, turns off, turns on again and remains permanently on.	a) The CIM 1XX has no application software (application-less).	Try to download application software via a LON installation tool such as LonMaker.
	b) The CIM 1XX is defective.	Replace the CIM 1XX.
4. The service LED (LED1) flashes every second.	a) The CIM 1XX has not been fitted.	Fit the CIM 1XX by means of a LON installation tool such as LonMaker.
5. The Grundfos product does not react to changes of settings, and the readout from the LON network is incorrect. The LED for internal communication (LED2) is permanently red.	a) The CIM 1XX does not support the Grundfos product connected.	Contact the nearest Grundfos company.
	b) The LON application may be wrong, for instance CIM 110 software where CIM 100 software is required.	Download correct software via a LON installation tool such as LonMaker. Contact the system integrator, if necessary.
6. The Grundfos product does not react to changes of settings, and the readout from the LON network is incorrect. The LED for internal communication (LED2) is flashing red.	a) The cable between the CIM 1XX and the Grundfos product is connected incorrectly or damaged.	Connect the cable correctly, or replace the cable.

Note

Fault finding in a LON network requires a special tool such as Honeywell Excelon (not supplied by Grundfos).

2.4 Replacing the CIM 1XX LON module

Before dismantling

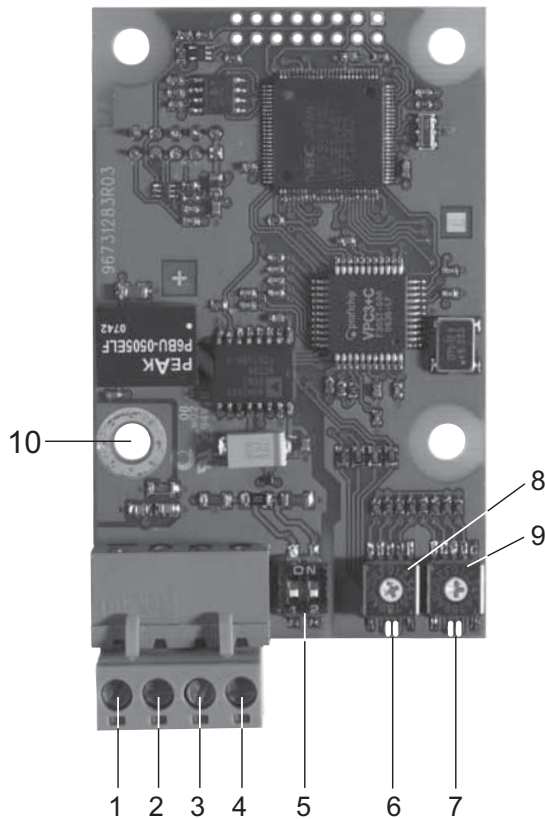
- Switch off the power supply to the CIU unit.

2.4.1 Replacing the module

1. Remove the plug with the network cable.
2. Remove the earth screw, pos. 7, fig. 5, and the CIM module.
3. Fit the new module.
4. Fit the earth screw, pos. 7, fig. 5.
5. Connect the plug with the network cable to the new module.
6. Fit the label with the data of the new module in the CIU cover.
7. Switch on the power supply to the CIU unit.
8. Update the LON network with the address of the new module. See section [2.2.1 Registration in a LON network](#).

3. CIM 1XX Profibus module

3.1 Description



Pos.	Designation	Description
1	B (RxD/TxD-P)	Profibus terminal B (positive data signal)
2	A (RxD/TxD-N)	Profibus terminal A (negative data signal)
3	DGND	Profibus terminal DGND (external termination)
4	VP	+5 VDC (external termination)
5	SW1/SW2	On/off switches for termination resistors
6	LED1	Red/green status LED for Profibus communication
7	LED2	Red/green status LED for internal communication between the CIM 1XX and the Grundfos product
8	SW3	Hex switch for setting the Profibus address (four most significant bits)
9	SW4	Hex switch for setting the Profibus address (four least significant bits)
10		Earth connection via screw

Fig. 8 CIM 1XX Profibus module

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Note *The power supply, pos. 4, fig. 8, must only be used for external termination.*

3.1.1 LEDs

The CIM 1XX Profibus module has two LEDs. See fig. 8.

- Red/green status LED (LED1, pos. 6) for Profibus communication
- Red/green status LED (LED2, pos. 7) for internal communication between the CIM 1XX and the Grundfos product.

Status	LED1	LED2
Off.	The CIM 1XX has been switched off.	The CIM 1XX has been switched off.
Permanently green.	The CIM 1XX is ready for data transmission (Data Exchange State).	Internal communication between the CIM 1XX and the Grundfos product is OK.
Permanently red.	CIM 1XX module fault.	The CIM 1XX does not support the Grundfos product connected.
Flashing red.	Wrong or missing Profibus configuration.	No internal communication between the CIM 1XX and the Grundfos product.

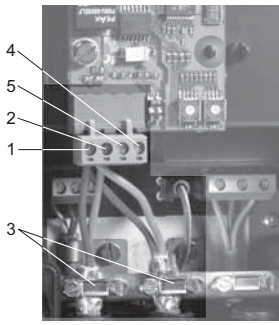
Note *During start-up, there may be a delay of up to 5 seconds before the LED2 status is updated.*

The indication of the LEDs is further described in section 3.3 [Fault finding](#).

3.2 Connection of Profibus

Note

It is important to connect the screen to earth through the earth clamp and to connect it to earth in all units connected to the bus connection.



TM04 1700 0908

Pos.	Description
1	Profibus terminal B (red conductor(s))
2	Profibus terminal A (green conductor(s))
3	Earth clamp (cable screen)
4	+5 VDC
5	DGND

Fig. 9 Profibus connection

3.2.1 Setting the Profibus address

The CIM 1XX Profibus module has two hexadecimal rotary switches for setting the Profibus address. The two switches are used to set the four most significant bits (SW3) and the four least significant bits (SW4). See fig. 10.

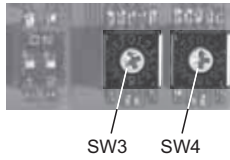


Fig. 10 Setting the Profibus address

TM04 1702 0908

Profibus address	
Switch	Description
SW3	The four most significant bits
SW4	The four least significant bits

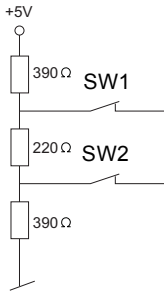
For a complete overview of Profibus addresses, see the table on page 17.

Note

The Profibus address must be set decimally from 1 to 126; hexadecimally from 01 to 7E.

3.2.2 Termination resistors

The termination resistors are fitted on the CIM 1XX Profibus module. See fig. 11.



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Fig. 11 Internal termination resistors

The CIM 1XX has a DIP switch with two switches (SW1 and SW2) for cutting the termination resistors in and out. Figure 12 shows the DIP switches in cut-out state.

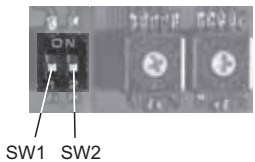


Fig. 12 Cutting termination resistors in and out

TM04 1703 0908

DIP switch settings			
Status	SW1	SW2	
Cut-in	ON	ON	
Cut-out	OFF	OFF	
Invalid state	ON	OFF	
	OFF	ON	

Note

To ensure stable and reliable communication, it is important that only the termination resistors of the first and last units in the Profibus network are cut in.

3.3 Fault finding

Faults in a CIM 1XX Profibus module can be detected by observing the status of the two communication LEDs. The procedure depends on whether the CIM module is fitted in the CIU unit or in another Grundfos product. See the tables below.

CIM 1XX fitted in the CIU 1XX

Fault (LED status)	Possible cause	Remedy
1. Both LEDs (LED1 and LED2) remain off when the power supply is connected.	a) No power supply to the CIU 1XX. b) The CIM 1XX is defective.	Check the power supply to the CIU 1XX. Replace the CIM 1XX.
2. The LED for internal communication (LED2) is flashing red.	a) No internal communication between the CIU 1XX and the Grundfos product.	<ul style="list-style-type: none"> Check the cable connection between the Grundfos product and the CIU 1XX. Check that the individual conductors have been fitted correctly. Check the power supply to the Grundfos product.
3. The LED for internal communication (LED2) is permanently red.	a) The CIM 1XX does not support the Grundfos product connected.	Contact the nearest Grundfos company.
4. The Profibus LED (LED1) is permanently red.	a) Fault in the CIM 1XX.	Contact the nearest Grundfos company.
5. The Profibus LED (LED1) is flashing red.	a) Fault in the CIM 1XX Profibus configuration.	<ul style="list-style-type: none"> Check that the Profibus address (switches SW3 and SW4) has a valid value [1-126]. Check that the GSD file used is correct. Check that the Profibus cable has been fitted correctly. Check that the Profibus termination is correct.

CIM 1XX fitted in a Grundfos product

Fault (LED status)	Possible cause	Remedy
1. Both LEDs (LED1 and LED2) remain off when the power supply is connected.	a) The CIM 1XX has not been fitted correctly in the Grundfos product. b) No power supply to the CIM 1XX. c) The CIM 1XX is defective.	Check that the CIM 1XX is fitted/connected correctly. Check the power supply to the Grundfos product. Replace the CIM 1XX.
2. The LED for internal communication (LED2) is flashing red.	a) No internal communication between the CIM 1XX and the Grundfos product.	Check that the CIM 1XX is fitted correctly in the Grundfos product.
3. The LED for internal communication (LED2) is permanently red.	a) The CIM 1XX does not support the Grundfos product connected.	Contact the nearest Grundfos company.
4. The Profibus LED (LED1) is permanently red.	a) Fault in the CIM 1XX.	Contact the nearest Grundfos company.
5. The Profibus LED (LED1) is flashing red.	a) Fault in the CIM 1XX Profibus configuration.	<ul style="list-style-type: none"> Check that the Profibus address (switches SW3 and SW4) has a valid value [1-126]. Check that the GSD file used is correct. Check that the Profibus cable has been fitted correctly. Check that the Profibus termination is correct.

3.4 Replacing the CIM 1XX Profibus module

Before dismantling

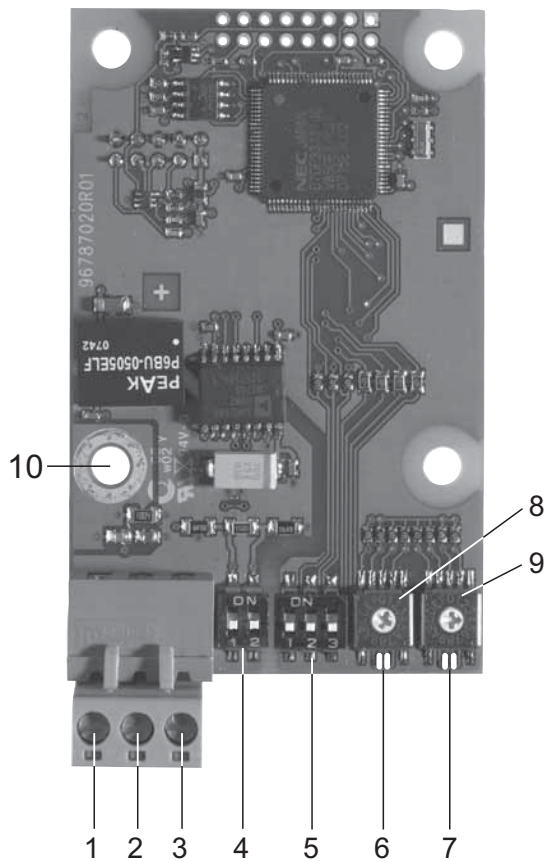
- Switch off the power supply to the CIU unit.

3.4.1 Replacing the module

- Remove the plug with the network cable.
- Remove the earth screw, pos. 10, fig. 8, and the CIM module.
- Fit the new module.
- Fit the earth screw, pos. 10, fig. 8.
- Connect the plug with the network cable to the new module.
- Set the address of the new module (see section 3.2.1 [Setting the Profibus address](#)) to the same address as that of the removed module.
- Check that the termination resistors of the new module have been set to the same settings as those of the removed module. See section 3.2.2 [Termination resistors](#).
- Fit the label with the data of the new module in the CIU cover.
- Switch on the power supply to the CIU unit.

4. CIM 2XX Modbus module

4.1 Description



Pos.	Designation	Description
1	D1	Modbus terminal D1 (positive data signal)
2	D0	Modbus terminal D0 (negative data signal)
3	Common/GND	Modbus terminal Common/GND
4	SW1/SW2	On/off switches for termination resistor
5	SW3/SW4/SW5	Switches for selection of Modbus parity and transmission speed
6	LED1	Red/green status LED for Modbus communication
7	LED2	Red/green status LED for internal communication between the CIM 2XX and the Grundfos product
8	SW6	Hex switch for setting the Modbus address (four most significant bits)
9	SW7	Hex switch for setting the Modbus address (four least significant bits)
10		Earth connection via screw

TM04 3278 4 108

Fig. 13 CIM 2XX Modbus module

4.1.1 LEDs

The CIM 2XX Modbus module has two LEDs. See fig. 13.

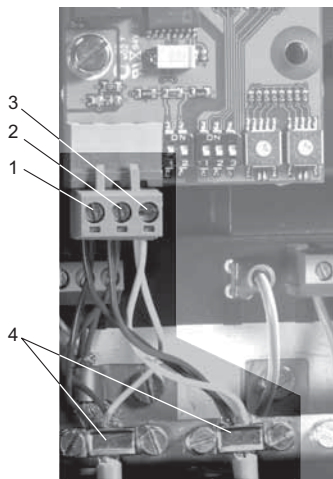
- Red/green status LED (LED1, pos. 6) for Modbus communication
- Red/green status LED (LED2, pos. 7) for internal communication between the CIM 2XX and the Grundfos product.

Status	LED1	LED2
Off.	No Modbus communication.	The CIM 2XX has been switched off.
Flashing green.	Modbus communication active.	
Flashing red.	Fault in the Modbus communication.	No internal communication between the CIM 2XX and the Grundfos product.
Permanently red.	Fault in the CIM 2XX Modbus configuration.	The CIM 2XX does not support the Grundfos product connected.
Permanently green.		Internal communication between the CIM 2XX and the Grundfos product is OK.

Note *During start-up, there may be a delay of up to 5 seconds before the LED2 status is updated.*

The indication of the LEDs is further described in section [4.3 Fault finding](#).

4.2 Connection of Modbus



TM04 1698 0908

Fig. 14 Example of Modbus connection as daisy chain

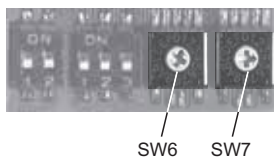
Pos.	Description
1	Modbus terminal D1 (yellow conductor(s))
2	Modbus terminal D0 (brown conductor(s))
3	Modbus terminal Common/GND (grey conductor(s))
4	Earth clamp (cable screen)

Note

It is important to connect the screen to earth through the earth clamp and to connect it to earth in all units connected to the bus connection.

4.2.1 Setting the Modbus address

The CIM 2XX Modbus module has two hexadecimal rotary switches for setting the Modbus address. The two switches are used to set the four most significant bits (SW6) and the four least significant bits (SW7). See fig. 15.



TM04 1706 0908

Fig. 15 Setting the Modbus address

For a complete overview of Modbus addresses, see the table on page 18.

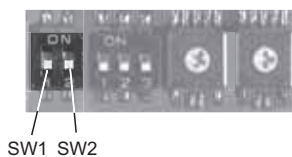
Note

The Modbus address must be set decimally from 1 to 247; hexadecimally from 01 to F7.

4.2.2 Termination resistor

The termination resistor is fitted on the CIM 2XX Modbus module and has a value of 150 Ω.

The CIM 2XX has a DIP switch with two switches (SW1 and SW2) for cutting the termination resistor in and out. Figure 16 shows the DIP switches in cut-out state.



TM04 1701 0908

Fig. 16 Cutting the termination resistor in and out

DIP switch settings

Status	SW1	SW2
Cut-in	ON	ON
	OFF	OFF
Cut-out	ON	OFF
	OFF	ON

Note

To ensure stable and reliable communication, it is important that only the termination resistor of the first and last units in the Modbus network is cut in.

4.2.3 Setting the parity

The CIM 2XX Modbus module is default set to even parity (1 stop bit). It is possible to change the parity. The parity can be changed to no parity (2 stop bits). It is not possible to set the parity to odd. See fig. 17.



SW3
Fig. 17 Parity

DIP switch settings

Parity	SW3
Even parity, 1 stop bit	OFF
No parity, 2 stop bits	ON

TM04 1709 0908

4.2.4 Setting the Modbus transmission speed

The transmission speed must be set correctly before the CIM 2XX Modbus module is ready to communicate with the Modbus network. See fig. 18.



SW4 SW5
Fig. 18 Modbus transmission speed

DIP switch settings

Transmission speed [bits/s]	SW4	SW5
9600	OFF	ON
19200	OFF	OFF
38400	ON	OFF
Software-defined	ON	ON

TM04 1710 0908

Note

When the transmission speed is set to "software-defined", the speed can be set to 1200, 2400 or 4800 bits/s via a Modbus register.

See the specific functional profile on the CD-ROM supplied with the CIU/CIM.

4.3 Fault finding

Faults in a CIM 2XX Modbus module can be detected by observing the status of the two communication LEDs. The procedure depends on whether the CIM module is fitted in the CIU unit or in another Grundfos product. See the tables below.

CIM 2XX fitted in the CIU 2XX

Fault (LED status)	Possible cause	Remedy
1. Both LEDs (LED1 and LED2) remain off when the power supply is connected.	a) No power supply to the CIU 2XX. b) The CIM 2XX is defective.	Check the power supply to the CIU 2XX. Replace the CIM 2XX.
2. The LED for internal communication (LED2) is flashing red.	a) No internal communication between the CIU 2XX and the Grundfos product.	<ul style="list-style-type: none"> Check the cable connection between the Grundfos product and the CIU 2XX. Check that the individual conductors have been fitted correctly. Check the power supply to the Grundfos product.
3. The LED for internal communication (LED2) is permanently red.	a) The CIU 2XX does not support the Grundfos product connected.	Contact the nearest Grundfos company.
4. The Modbus LED (LED1) is permanently red.	a) Fault in the CIM 2XX Modbus configuration.	<ul style="list-style-type: none"> Check the transmission speed (switches SW4 and SW5). See section 4.2.4. If the switches are set to "software-defined", an invalid value may have been set via Modbus. Try one of the preselected transmission speeds, e.g. 19200 bits/s. Check that the Modbus address (switches SW6 and SW7) has a valid value [1-247]. See section 4.2.1.
5. The Modbus LED (LED1) is flashing red.	a) Fault in the Modbus communication (fault in parity or cyclic redundancy check).	<ul style="list-style-type: none"> Check the transmission speed (switches SW4 and SW5). See section 4.2.4. Check the parity setting (switch SW3). See section 4.2.3. Check the cable connection between the CIM 2XX and the Modbus network. Check the termination resistor settings (switches SW1 and SW2). See section 4.2.2.

CIM 2XX fitted in a Grundfos product

Fault (LED status)	Possible cause	Remedy
1. Both LEDs (LED1 and LED2) remain off when the power supply is connected.	a) The CIM 2XX has not been fitted correctly in the Grundfos product. b) No power supply to the CIM 2XX. c) The CIM 2XX is defective.	Check that the CIM 2XX is fitted/connected correctly. Check the power supply to the Grundfos product. Replace the CIM 2XX.
2. The LED for internal communication (LED2) is flashing red.	a) No internal communication between the CIM 2XX and the Grundfos product.	Check that the CIM 2XX is fitted correctly in the Grundfos product.
3. The LED for internal communication (LED2) is permanently red.	a) The CIM 2XX does not support the Grundfos product connected.	Contact the nearest Grundfos company.
4. The Modbus LED (LED1) is permanently red.	a) Fault in the CIM 2XX Modbus configuration.	<ul style="list-style-type: none"> Check the transmission speed (switches SW4 and SW5). See section 4.2.4. If the switches are set to "software-defined", an invalid value may have been set via Modbus. Try one of the preselected transmission speeds, e.g. 19200 bits/s. Check that the Modbus address (switches SW6 and SW7) has a valid value [1-247]. See section 4.2.1.
5. The Modbus LED (LED1) is flashing red.	a) Fault in the Modbus communication (fault in parity or cyclic redundancy check).	<ul style="list-style-type: none"> Check the transmission speed (switches SW4 and SW5). See section 4.2.4. Check the parity setting (switch SW3). See section 4.2.3. Check the cable connection between the CIM 2XX and the Modbus network. Check the termination resistor settings (switches SW1 and SW2). See section 4.2.2.

4.4 Replacing the CIM 2XX Modbus module

Before dismantling

- Switch off the power supply to the CIU unit.

4.4.1 Replacing the module

1. Remove the plug with the network cable.
2. Remove the earth screw, pos. 10, fig. 13, and the CIM module.
3. Fit the new module.
4. Fit the earth screw, pos. 10, fig. 13.
5. Connect the plug with the network cable to the new module.
6. Set the address of the new module (see section [4.2.1 Setting the Modbus address](#)) to the same address as that of the removed module.
7. Set the termination resistor of the new module, the parity and the transmission speed to the same settings as those of the removed module. See sections [4.2.2 Termination resistor](#), [4.2.3 Setting the parity](#) and .
8. Fit the label with the data of the new module in the CIU cover.
9. Switch on the power supply to the CIU unit.

5. Address tables

5.1 Profibus addresses

Profibus address	SW3	SW4
1	0	1
2	0	2
3	0	3
4	0	4
5	0	5
6	0	6
7	0	7
8	0	8
9	0	9
10	0	A
11	0	B
12	0	C
13	0	D
14	0	E
15	0	F
16	1	0
17	1	1
18	1	2
19	1	3
20	1	4
21	1	5
22	1	6
23	1	7
24	1	8
25	1	9
26	1	A
27	1	B
28	1	C
29	1	D
30	1	E
31	1	F
32	2	0
33	2	1
34	2	2
35	2	3
36	2	4
37	2	5
38	2	6
39	2	7
40	2	8
41	2	9
42	2	A
43	2	B
44	2	C
45	2	D

Profibus address	SW3	SW4
46	2	E
47	2	F
48	3	0
49	3	1
50	3	2
51	3	3
52	3	4
53	3	5
54	3	6
55	3	7
56	3	8
57	3	9
58	3	A
59	3	B
60	3	C
61	3	D
62	3	E
63	3	F
64	4	0
65	4	1
66	4	2
67	4	3
68	4	4
69	4	5
70	4	6
71	4	7
72	4	8
73	4	9
74	4	A
75	4	B
76	4	C
77	4	D
78	4	E
79	4	F
80	5	0
81	5	1
82	5	2
83	5	3
84	5	4
85	5	5
86	5	6
87	5	7
88	5	8
89	5	9
90	5	A

Profibus address	SW3	SW4
91	5	B
92	5	C
93	5	D
94	5	E
95	5	F
96	6	0
97	6	1
98	6	2
99	6	3
100	6	4
101	6	5
102	6	6
103	6	7
104	6	8
105	6	9
106	6	A
107	6	B
108	6	C
109	6	D
110	6	E
111	6	F
112	7	0
113	7	1
114	7	2
115	7	3
116	7	4
117	7	5
118	7	6
119	7	7
120	7	8
121	7	9
122	7	A
123	7	B
124	7	C
125	7	D
126	7	E

Caution

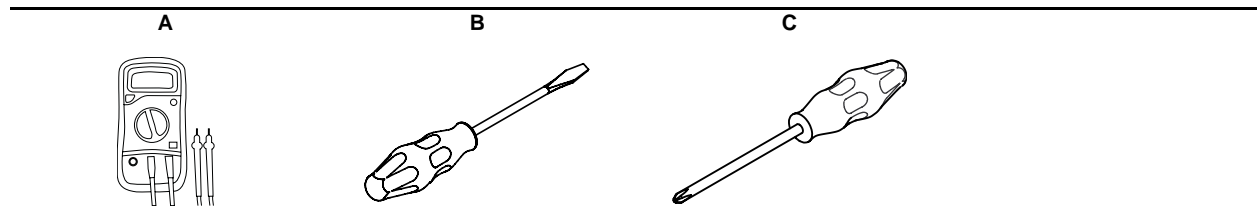
It is very important to ensure that two devices do not have the same address on the network. If two devices have the same address, the result will be an abnormal behaviour of the whole serial bus.

5.2 Modbus addresses

Modbus address	SW 6	SW 7	Modbus address	SW 6	SW 7	Modbus address	SW 6	SW 7	Modbus address	SW 6	SW 7	Modbus address	SW 6	SW 7
1	0	1	51	3	3	101	6	5	151	9	7	201	C	9
2	0	2	52	3	4	102	6	6	152	9	8	202	C	A
3	0	3	53	3	5	103	6	7	153	9	9	203	C	B
4	0	4	54	3	6	104	6	8	154	9	A	204	C	C
5	0	5	55	3	7	105	6	9	155	9	B	205	C	D
6	0	6	56	3	8	106	6	A	156	9	C	206	C	E
7	0	7	57	3	9	107	6	B	157	9	D	207	C	F
8	0	8	58	3	A	108	6	C	158	9	E	208	D	0
9	0	9	59	3	B	109	6	D	159	9	F	209	D	1
10	0	A	60	3	C	110	6	E	160	A	0	210	D	2
11	0	B	61	3	D	111	6	F	161	A	1	211	D	3
12	0	C	62	3	E	112	7	0	162	A	2	212	D	4
13	0	D	63	3	F	113	7	1	163	A	3	213	D	5
14	0	E	64	4	0	114	7	2	164	A	4	214	D	6
15	0	F	65	4	1	115	7	3	165	A	5	215	D	7
16	1	0	66	4	2	116	7	4	166	A	6	216	D	8
17	1	1	67	4	3	117	7	5	167	A	7	217	D	9
18	1	2	68	4	4	118	7	6	168	A	8	218	D	A
19	1	3	69	4	5	119	7	7	169	A	9	219	D	B
20	1	4	70	4	6	120	7	8	170	A	A	220	D	C
21	1	5	71	4	7	121	7	9	171	A	B	221	D	D
22	1	6	72	4	8	122	7	A	172	A	C	222	D	E
23	1	7	73	4	9	123	7	B	173	A	D	223	D	F
24	1	8	74	4	A	124	7	C	174	A	E	224	E	0
25	1	9	75	4	B	125	7	D	175	B	F	225	E	1
26	1	A	76	4	C	126	7	E	176	B	0	226	E	2
27	1	B	77	4	D	127	7	F	177	B	1	227	E	3
28	1	C	78	4	E	128	8	0	178	B	2	228	E	4
29	1	D	79	4	F	129	8	1	179	B	3	229	E	5
30	1	E	80	5	0	130	8	2	180	B	4	230	E	6
31	1	F	81	5	1	131	8	3	181	B	5	231	E	7
32	2	0	82	5	2	132	8	4	182	B	6	232	E	8
33	2	1	83	5	3	133	8	5	183	B	7	233	E	9
34	2	2	84	5	4	134	8	6	184	B	8	234	E	A
35	2	3	85	5	5	135	8	7	185	B	9	235	E	B
36	2	4	86	5	6	136	8	8	186	B	A	236	E	C
37	2	5	87	5	7	137	8	9	187	B	B	237	E	D
38	2	6	88	5	8	138	8	A	188	B	C	238	E	E
39	2	7	89	5	9	139	8	B	189	B	D	239	E	F
40	2	8	90	5	A	140	8	C	190	B	E	240	F	0
41	2	9	91	5	B	141	8	D	191	B	F	241	F	1
42	2	A	92	5	C	142	8	E	192	C	0	242	F	2
43	2	B	93	5	D	143	8	F	193	C	1	243	F	3
44	2	C	94	5	E	144	9	0	194	C	2	244	F	4
45	2	D	95	5	F	145	9	1	195	C	3	245	F	5
46	2	E	96	6	0	146	9	2	196	C	4	246	F	6
47	2	F	97	6	1	147	9	3	197	C	5	247	F	7
48	3	0	98	6	2	148	9	4	198	C	6			
49	3	1	99	6	3	149	9	5	199	C	7			
50	3	2	100	6	4	150	9	6	200	C	8			

Caution *It is very important to ensure that two devices do not have the same address on the network. If two devices have the same address, the result will be an abnormal behaviour of the whole serial bus.*

6. Service tools



Special tools

Pos.	Description	Further information	Part number
A	Digital multimeter, type RMS	CAT III / 1000 V	

Standard tools

Pos.	Description	Further information	Part number
B	Screwdriver, straight slot	0.5 x 3.0	
C	Screwdriver, pozidriv	PZ1, PZ2	

Subject to alterations.

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