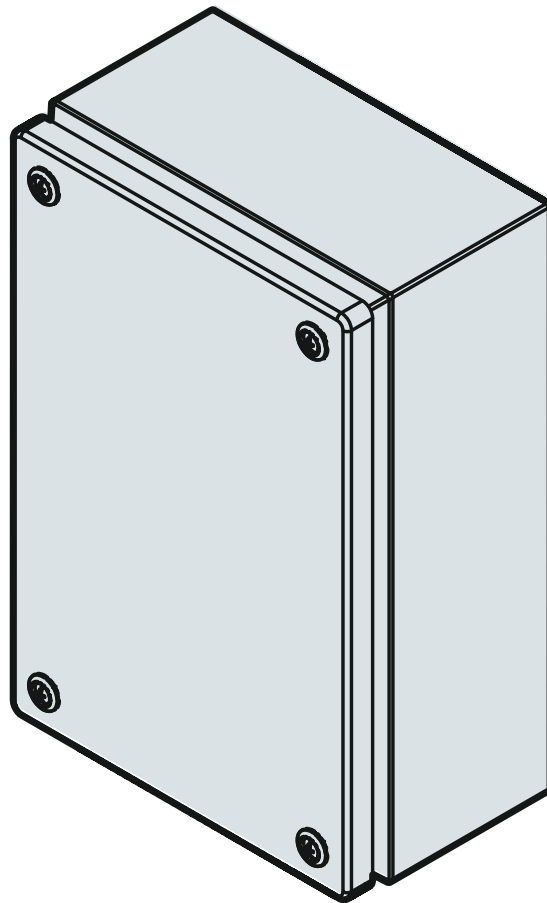


CIP402

Installation, operation and maintenance manual



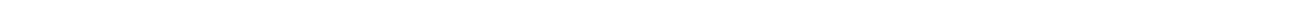
Orga Aviation BV
Strickledeweg 13
3125 AT SCHIEDAM
The Netherlands
T +31 (0) 10 208 5555
E info@orga.nl
I www.orga.nl

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Disclaimer

While every effort has been made to provide a complete, up-to-date, accurate manual, Orga will accept no liability claims for damages resulting from any errors or omissions in this manual.



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9 CONFIGURATION CODES (Appendix A, separate document)

10 TERMINAL NUMBERS

EU & UKCA declaration

1 ABOUT THIS DOCUMENT

This manual shows the information necessary to do these tasks on the CIP402:

- Installation
- Operation
- Maintenance
- Troubleshooting

1.1 Before you start



Warning:

Do not continue before you understand the contents in this manual.

1. Make sure that you know and understand the contents in this manual.
2. Follow all procedures in this manual.
3. Never change the sequence of the procedures.

1.2 Icons used in this document

The icons below are used in this document to indicate danger or to give extra information.



Warning:

Can cause personal injury.



Danger:

Electrical danger. Can cause personal injury.



Caution:

Can cause damage to the equipment.



Note:

Gives further/extra information.

1.3 Terminology

Abbreviation / term	Description
ADLS	Aircraft Detection Lighting System
Bracket	A mostly metal strip to attach the equipment to the surface.
Connection	The electrical cable to connect components electrically.
CIP	Communication & Interface Processor

ABOUT THIS DOCUMENT

Abbreviation / term	Description
Control panel	Cabinet with terminals for the connection of electrical wiring and operating elements for the system.
HHS light	Helicopter Hoist Status light.
FOT	Fiber Optic Transmitter
Label	Sticker or type plate with information of the product.
Logistic unit	Assembly of electrical and mechanical components for installation. Multiple logistic units together make a complete lighting system.
SRO light	Search and Rescue Operations light.
MLC	Marker Light Controller
OrTalk	Orga proprietary communication standard.
Substation	Equipment that is controlled and/or monitored by the CIP
Terminal	Electrical connection block, inside the CIP402.

2 SAFETY

2.1 Intended use

The CIP402 controls the Orga obstacle light system.

2.2 Safety instructions



Warning:

Only an electrical engineer is allowed to do the electrical installation.



Warning:

Make sure that the mains power supply is disconnected before you start the electrical installation.



Warning:

Do not look directly at the light of the obstacle light from a short distance. The bright light can temporarily dazzle you.



Warning:

Make sure that the system is off, before you do inspections or maintenance on the obstacle lights.

2.3 Safety instructions for operation

There are no specific safety precautions necessary.

3 WARRANTY POLICY

THE FOLLOWING IS THE STANDARD LIMITED WARRANTY FOR THE ORGA SYSTEMS AND PRODUCTS ("PRODUCTS") SUPPLIED BY ORGA AVIATION B.V., SCHIEDAM - THE NETHERLANDS, HEREINAFTER: "ORGA". THIS WARRANTY APPLIES UNLESS A DIFFERENT WARRANTY HAS BEEN SPECIFICALLY AGREED TO AND SIGNED BY AN ORGA AUTHORISED REPRESENTATIVE.

LIMITED WARRANTY

(a) Orga warrants, subject to the following limitations, that at time of delivery to Buyer, its Products will conform to applicable Orga drawings and Product specifications and will be free from defects in workmanship and material. If applicable, Orga warrants that at the time of delivery Products are compliant to applicable national and/or international rules and regulations. However, unauthorised maintenance or repair could invalidate compliance with such rules and regulations.

(b) The Products are not in conformity as meant under (a) in the case of a defect in workmanship or material becoming apparent under normal authorised use consistent with Orga Product instructions and specifications. Normal wear and tear (including but not limited to lamp failure) or problems with electrical power, relatively minor anomalies which are customary and/or technically unavoidable, or the need for periodic maintenance shall not constitute non-conformity.

These warranties shall be available to the initial purchaser, and may be transferable to its successors and assigns.

The duration of these warranties shall be as follows:

1. For LED-based Lighting fixtures sixty (60) months after shipment of the Product ex works, Schiedam, the Netherlands¹).
2. For xenon strobe lights twenty-four (24) months after shipment of the Product ex works, Schiedam, the Netherlands¹).
3. All other Products twelve (12) months after commissioning, with a maximum of eighteen (18) months after shipment of the Product ex works, Schiedam, the Netherlands¹).

(c) All Products repaired or replaced hereunder shall be warranted only for the unexpired portion of the original warranty period. If Orga is of the opinion that the complaint about the defect is justified, Orga will repair or replace at its own option any faulty Product returned within the warranty period at its cost (including material and labour costs, excluding shipping costs). Repaired or replaced Products will be delivered ex works, Schiedam, the Netherlands¹). The risk of loss or damage to all Products in transit shall be borne by Buyer.

(d) The integrity and reliability of Orga systems and Products are dependent on the use of Orga parts and components. To ensure the optimum performance and reliability of your Orga system, it is strongly advised that only components and modules manufactured by Orga be used. No other parts can be used without prior written permission from Orga.

Any right under this warranty shall lapse if the Product has been exposed or subjected to

1. Any maintenance or lack of maintenance, repair, installation, handling, transportation, storage, operation, treatment, failure to observe the instructions for use or use which is improper, excessive or otherwise is not in compliance with Orga's instructions; or

1

WARRANTY POLICY

2. Any direct intervention, alteration, modification, transformation or repair by anyone other than Orga or those specifically authorised in writing by Orga, without prior written permission from Orga; or
3. Any accident, contamination, foreign object damage, abuse, misuse, neglect, negligence or any other circumstances after delivery to Buyer; or
4. Any damage induced by failure of an Orga supplied Product not under warranty or by any Product not supplied by Orga.

Orga shall not be responsible for Buyer's or any third party's Product, Product information, or memory data contained in, sorted on, or integrated with any Product returned to Orga, whether under warranty or not. Buyer is responsible for backing up its programs and data to protect against loss or corruption.

(e) Repair or redelivery as meant in the previous paragraphs shall in principle be effected only within the Netherlands. Repair and or redelivery outside the Netherlands shall only be effected if this can reasonably be requested of Orga, such to be judged exclusively by Orga.

With respect to noticeable defects, the Buyer must submit a claim in writing within three (3) working days after delivery, failing which any claim on Orga will lapse.

Claims with respect to other defects must be made in writing within ten (10) working days after their appearance, failing which any claim on Orga will lapse.

In respect of Products or parts of Products which Orga received from third parties, the warranty obligations granted by Orga to the Buyer shall never exceed in nature nor in duration the warranty obligations granted by those third parties to Orga.

4 DESCRIPTION

The CIP402 controls the obstacle light system.

The CIP has two interfaces:

- Web interface for remote system monitoring and control.
- Serial connection and/or hard-wired Inputs and Outputs (I/O).

A help function is available on the web interface.

There are 3 types of cabinets:

Name	L (mm)	H (mm)	Module slots
CIP402-22	200	300	2
CIP402-34	300	300	4
CIP402-44	400	300	4

4.1 Explanation of the type name

Refer to the type name on the label to see the available features of the CIP402:

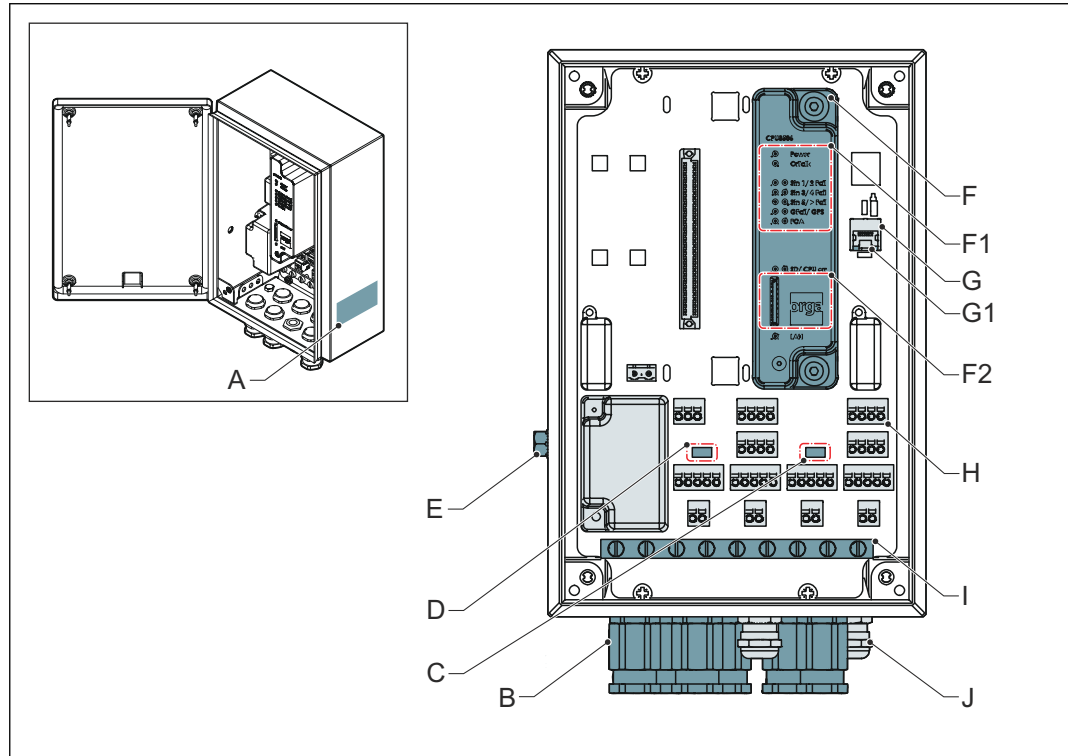
Code	Function	Description
22	Standard CIP402 variant	
AD4**	48Vdc and 120-240Vac supply	48Vdc supply voltage to CIP and several connected loads, 120- 240Vac supply voltage to certain loads.
C1*	I/O layout	Alternative Input/output lay-out.
C2*	I/O layout	Alternative Input/output lay-out.
D4**	48Vdc supply	48Vdc supply voltage to CIP and connected loads
R	Raycap Over voltage protection	
VVN	Hard wired I/O variant	Voltage in, Voltage out Neutral common

*If the type name does not contain a C, the CIP has standard I/O layout C0.

** If the type name does not contain D4 or AD4 the supply voltage is 120-240Vac.

DESCRIPTION

4.2 Overview and function of the CIP402-22



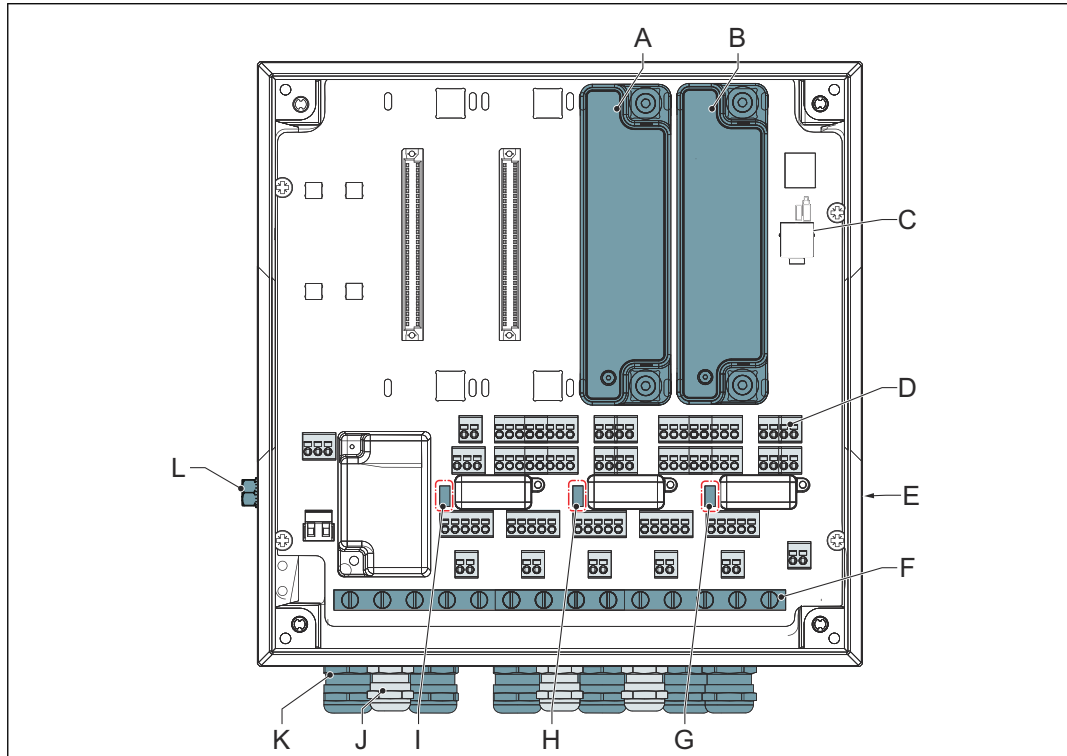
A	Label	F2	SD Slot (CPU Module)
B	Power cable gland (M25)	G	Ethernet connection
D	Dip switch 1	G1	LED indicators (Ethernet connection)
C	Dip switch 2	H	Terminal strip
E	Overvoltage protection (Optional)	I	Protective earth rail
F	CPU Module*	J	Cable gland (M16)
F1	LED indicators (CPU Module)		Not shown: Earth strip (22 cm)

*The CIP402 can contain up to four modules, depending on the cabinet type. There are two types of modules:

- The CPU8506 module (Primary).
- The IOM3318 module (Optional).

DESCRIPTION

4.3 Overview and function of the CIP402-34



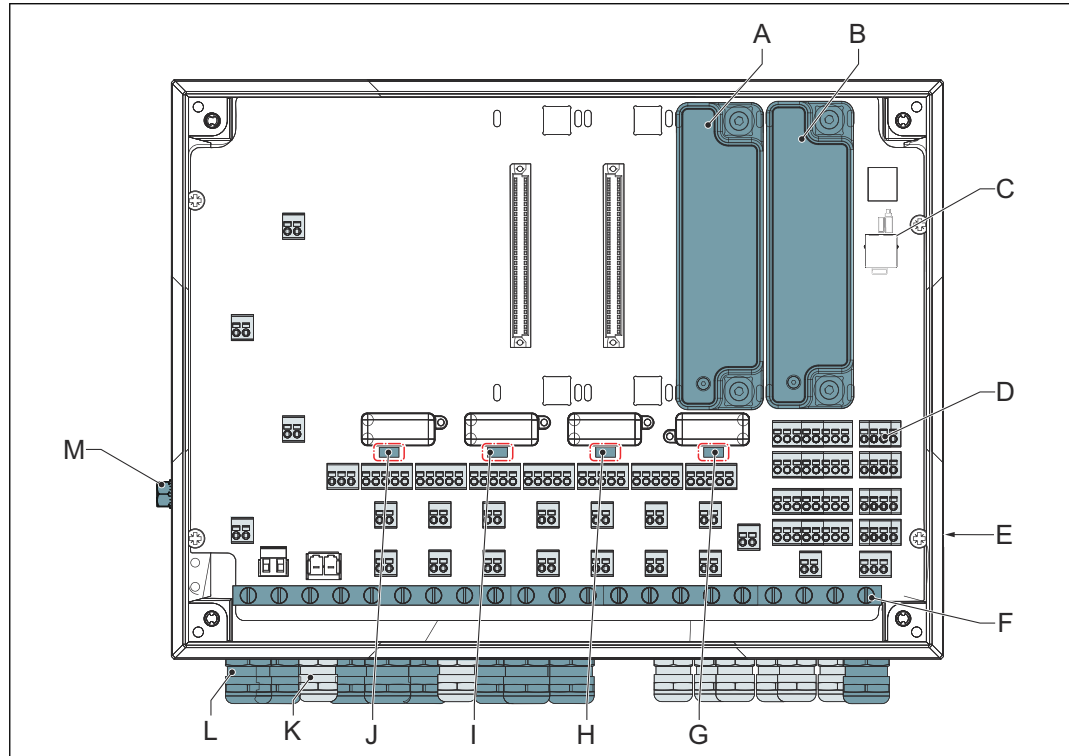
- | | | | |
|------|-----------------------|---|-----------------------------------|
| A, B | CPU Module* | H | Dip switch 2 |
| C | Ethernet connection | I | Dip switch 1 |
| D | Terminal strip | J | Cable gland (M16) |
| E | Label | K | Power cable gland (M25) |
| F | Protective earth rail | L | Overvoltage protection (Optional) |
| G | Dip switch 3 | | Not shown: Earth strip (22 cm) |

*The CIP402 can contain up to four modules, depending on the cabinet type. There are two types of modules:

- The CPU8506 module (Primary).
- The IOM3318 module (Optional).

DESCRIPTION

4.4 Overview and function of the CIP402-44



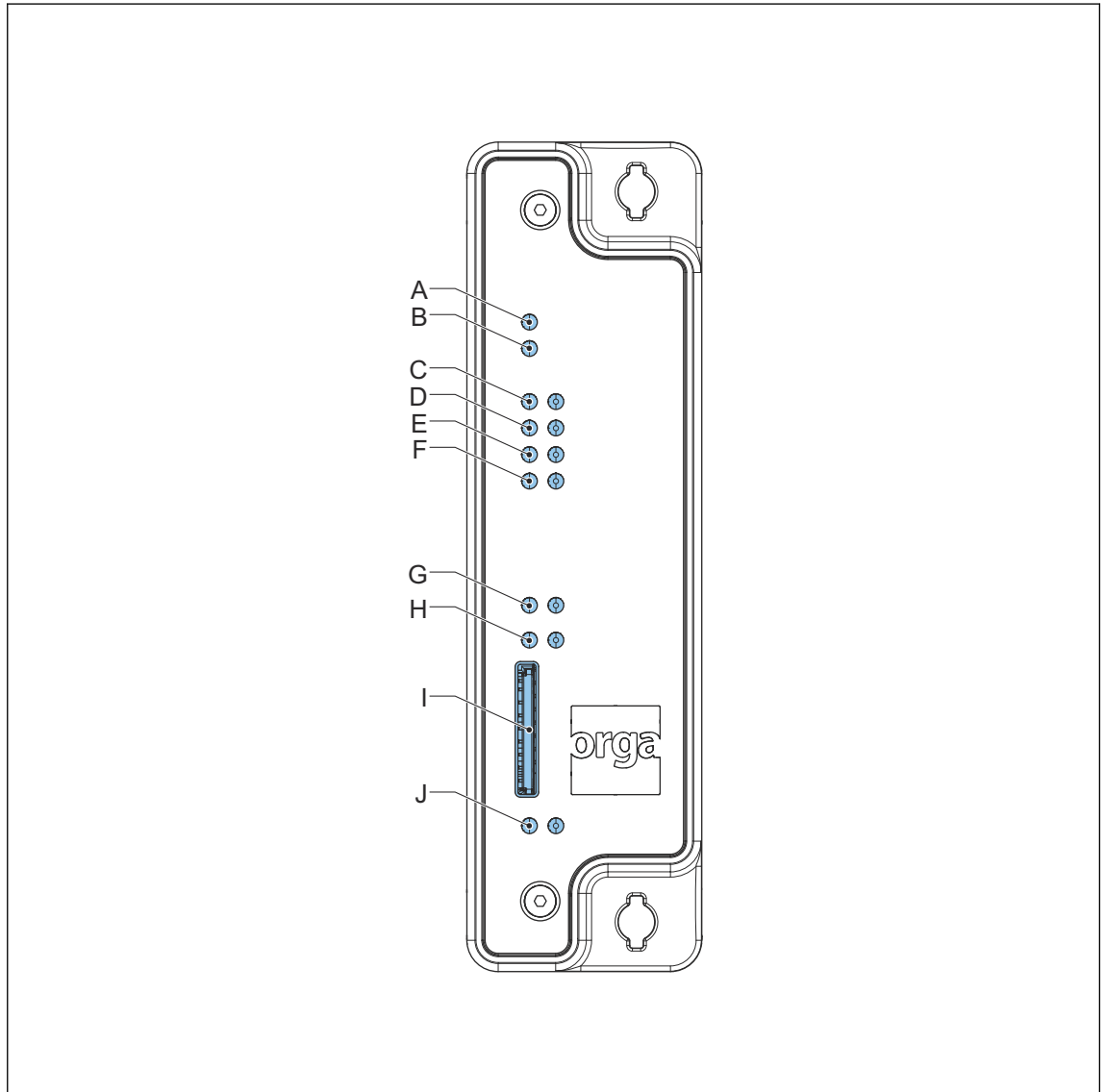
- | | | | |
|------|-----------------------|---|-----------------------------------|
| A. B | CPU Module* | I | Dip switch 2 |
| C | Ethernet connection | J | Dip switch 1 |
| D | Terminal strip | K | Cable gland (M16) |
| E | Label | L | Power cable gland (M25) |
| F | Protective earth rail | M | Overvoltage protection (Optional) |
| G | Dip switch 4 | | Not shown: Earth strip (22 cm) |
| H | Dip switch 3 | | |

*The CIP402 can contain up to four modules, depending on the cabinet type. There are two types of modules:

- The CPU8506 module (Primary).
- The IOM3318 module (Optional).

DESCRIPTION

4.4.1 Overview and function of the CPU8506 module



	Item	Color	Meaning
A	Power indicator	Green	Power available
B	OrTalk indicator	Green	Communication bus available
C	Fail indicator led 1/2	Red	Comes on when 1 / 2 fails occur, refer to the webserver for details of the fails.
D	Fail indicator led 3/4	Red	Comes on when 3 / 4 fails occur, refer to the webserver for details of the fails.

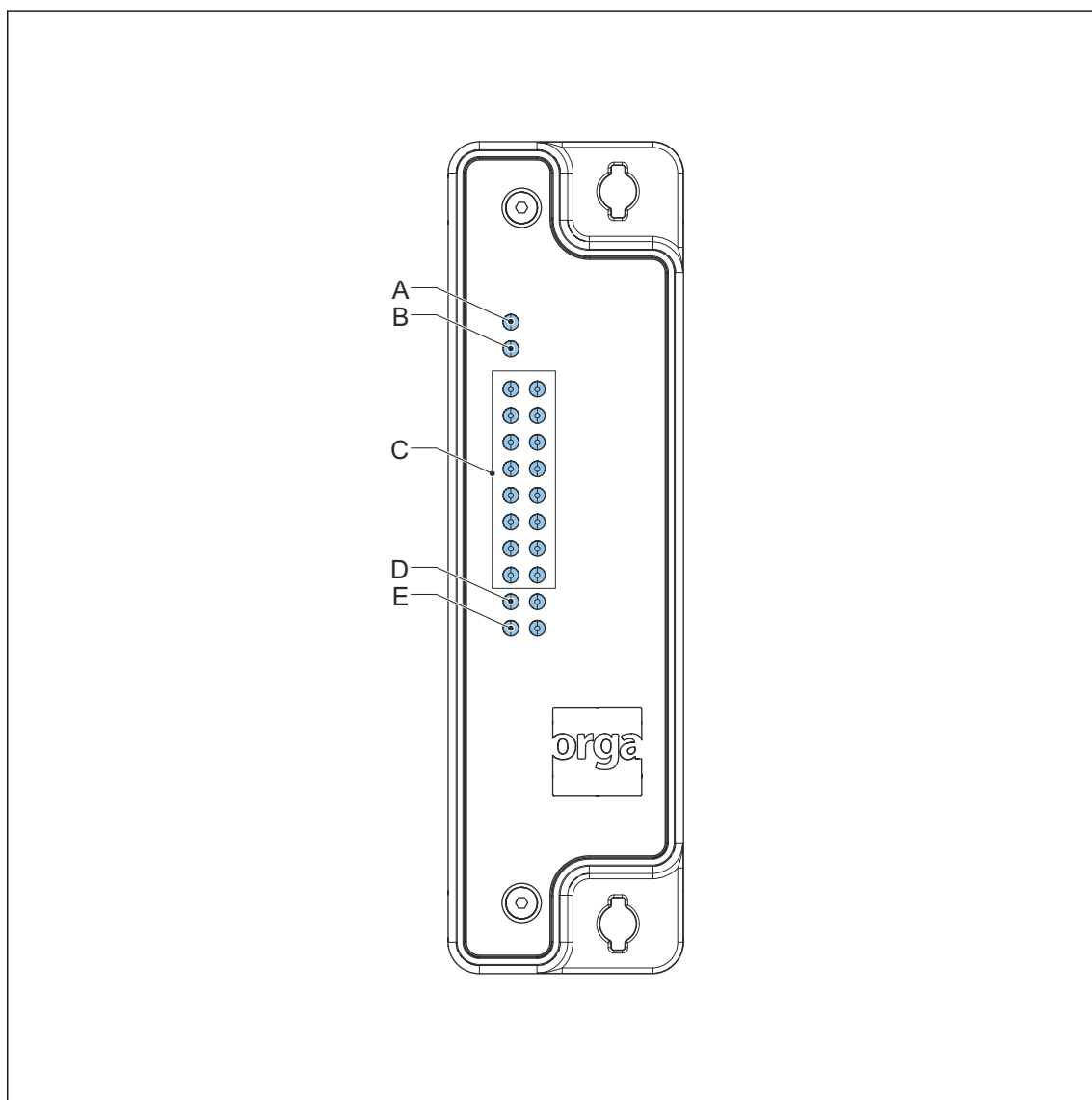
DESCRIPTION

	Item	Color	Meaning
E	Fail indicator led 5 or more	Red	Comes on when 5 or more fails occur, refer to the webserver for details of the fails.
F	Gfail/GPS XXX indicator	Red	Fail
G	ObsOn/FOA indicator	Amber	Status
H	SD/CPU error indicator	Red	SD card write/module fail
I	SD card slot	x	x
J	LAN indicator	Red/Green	Status

Function of the CPU8506 module:

- The module controls the flash character, synchronization and communication.
- The module sends the system status information to the client.
- The module has 4 inputs and 4 outputs for client purpose.
- The module is placed in the right hand slot of the PCB inside the enclosure.
- The module is secured with 2 quarter-turn fasteners.

4.4.2 Overview and function of the IOM3318 module



	Item	Color	Meaning
A	Power indicator	Green	Power available
B	OrTalk indicator	Green	Communication bus available
C	Input/ Output 1-8 indicator	Amber	Status
D	Output 9 indicator	Amber	Status
E	Output 10 Rel indicator	Amber	Status

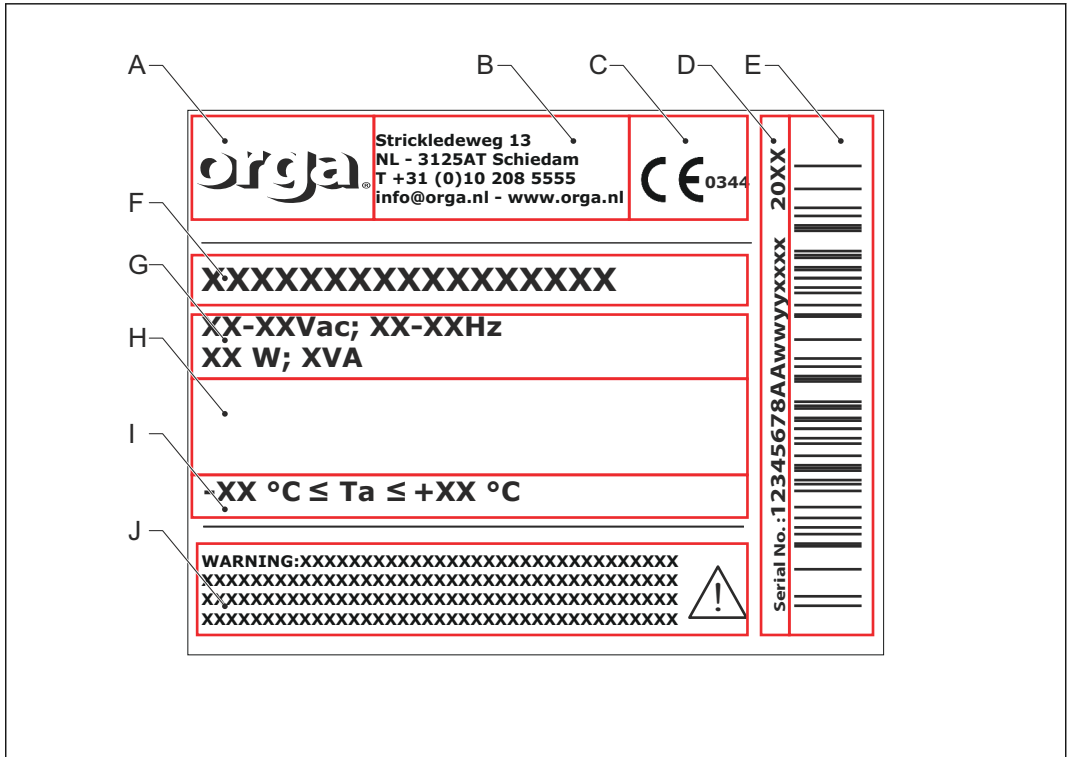
Function of the IOM3318 module:

- The module provides additional in - and output signals from and to the client.
- The module has 8 inputs and 10 outputs.
- Output 10 Rel is a powered output for the ID light in some configurations.
- The module is placed in the remaining slot of the PCB inside the enclosure.
- The module is secured with 2 quarter-turn fasteners.

4.5 Labels



Note: This label is an example. The actual label may vary and is dependent on the version of your product.



- | | | | |
|---|---------------------------------------|---|---|
| A | Company logo | F | Type name |
| B | Address information | G | Electrical information |
| C | Other logo's such as CE certification | H | Certification information (if applicable) |
| D | Serial number and year of production | I | Additional information (if applicable) |
| E | Barcode | J | Warning sign (if applicable) |

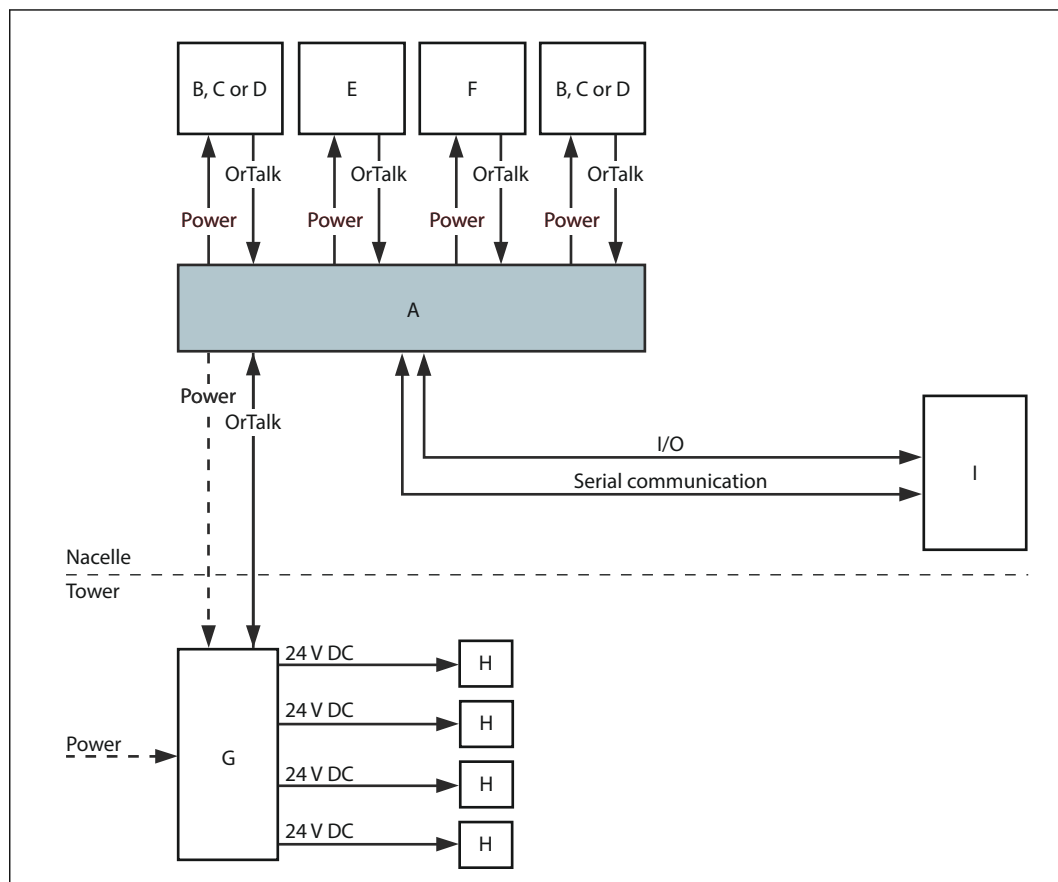
4.6 Overview of the obstacle light system

4.6.1 Obstacle light system scheme



Note: This lay-out is an example. The actual lay-out may vary and is dependent of the conversion of your system.

DESCRIPTION



Nacelle			
A	CIP402 Controller	D	High intensity aeronautical obstacle light
B	Low intensity aeronautical obstacle light	E	Orga visibility sensor
C	Medium intensity aeronautical obstacle light	F	Orga Helihoist and/or SRO light
Tower			
G	MLC Controller	H	Marker light
Customer			
I	Turbine controller		

4.6.2 Overview of the obstacle light system functions

The obstacle light system may contain, amongst others, these devices, called substations:

- High, medium or low intensity obstacle lights
- MLC including the marker lights
- Visibility sensor

The system uses a fieldbus for communication between the substations and the central controller (CIP). This fieldbus, developed by Orga, is called OrTalk. The CIP sends commands to the substations and the substations send status information back to the CIP. The CIP monitors the connection with the substations.

The obstacle lights can operate stand-alone without OrTalk communication. For stand-alone operation all obstacle lights have a general fail contact to allow for basic health monitoring. Items in the system can have these statuses:

DESCRIPTION

- Standard operation: The item operates normally.
- FAIL: Operation cannot continue safely. The fail status has high priority. The problem that caused the FAIL must be solved immediately. The system sends FAILs by default: Hardwired via Modbus and via web server.
- ALARM (optional): The item operates out of specification or close to out of specification. The problem that caused the ALARM must be solved at the earliest convenience. The system does not send ALARMS by default, this is an option.

Typical examples of problems that cause a FAIL:

- Missing substation.
- Wrong substation detected (the configuration does not agree with the installed devices).

Typical examples of problems that cause a FAIL for obstacle lights:

- Photocells in Alarm > FAIL.
- GPS lost fix > FAIL.
- LED array FAIL.

Typical examples of problems that cause a FAIL for a visibility sensors:

- Sensor communication FAIL.

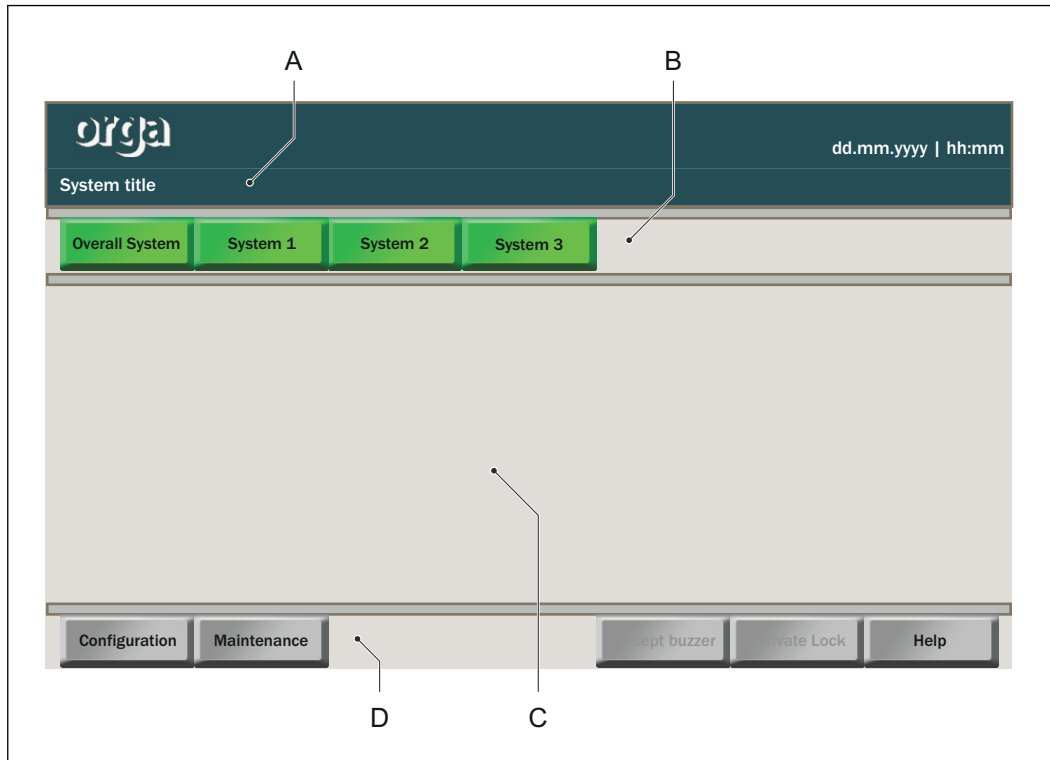
Exceptions on the FAIL and ALARM classification:

- If a substation is no longer detected in the OrTalk bus this will trigger a FAIL. It isn't necessarily the case that the system is non-compliant at that time, however as a substation isn't able to report its status to the central controller, this is treated as a FAIL.
- As long as one photocell in the system operates correctly, an error in a photocell causes an ALARM. If no photocell in the system operates correctly, this causes a FAIL.
- As long as one GPS receiver in the system operates correctly, an error in a GPS receiver causes an ALARM. If no GPS receiver in the system operates correctly, this causes a FAIL.

DESCRIPTION

4.7 Overview and function of the web interface

4.7.1 Screen



- | | |
|---|---|
| <p>A Title bar</p> <p>B Main bar, this part of the screen shows the item buttons.</p> | <p>C Main screen, this part of the screen shows the command buttons and the indicators.</p> <p>D Menu bar</p> |
|---|---|

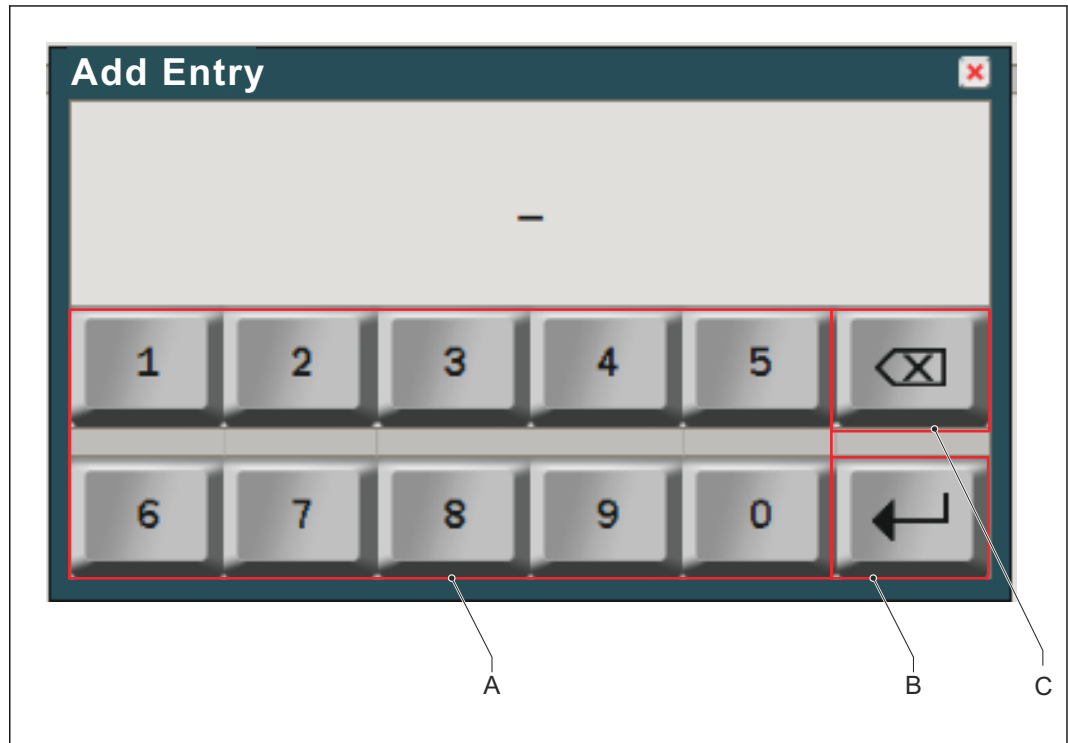
4.7.2 Numeric entry screen



Note:

The numeric entry screen from firmware version 1.24 and onwards is shown. Appearance in older firmware versions are different.

DESCRIPTION



A Numeric keyboard.

B Enter function.

C Backspace function.

4.7.3

Buttons

The web interface has two types of buttons.

Item buttons

The item buttons always correspond with an item of the product on the platform. An item can be:

- a system;
- a part of a system;
- a controller;

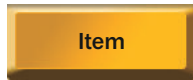
The name of the item is on the button.

The colour of the item button gives information about the status of the item:

DESCRIPTION

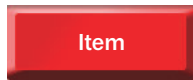


The item is in standard operation. Press the green item button for more information and settings of the item.



The yellow colour has two meanings:

- The item is in alarm status: Press the yellow item button for more information about the alarm settings of the item.
- The item has a manual override: Press the yellow item button for more information about the manual override setting of the item.

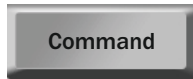


The item is in fail status. The fail status has high priority. Operation cannot continue safely. The problem that caused the fail must be solved immediately. Press the red item button for more information about the fail settings of the item.

Command buttons

The command button controls actions and settings. The name of the action or setting is on the button.

The colour of the command button gives information about the status of the command:



The action or setting is available. Press the grey button to activate the setting, or to perform the action.



The action or setting is not available. The system will not react when the grey button is pressed.



The setting is activated. The system will not react when the blue button is pressed. If you want change this setting, you must press another grey command button on the same line.

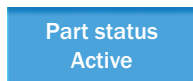
4.7.4

Indicators

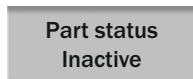
The web interface has two types of indicators.

Part status indicators

The second line in the controller menu shows the status of all available parts.



The part of the device is active.







The part of the device is inactive.

Text message indicators

DESCRIPTION

In the alarm / fail menu and the history logging menu, the text message have an indicator. The indicator shows the status of the message.

 Text message Standard	The message refers to a situation where the system is in standard operation.
 Text message Alarm	The message explains an alarm status.
 Text message Fail	The message explains a fail status.
 Text message Changes	The message explains changes in the system. These changes do not apply to fails or alarms.

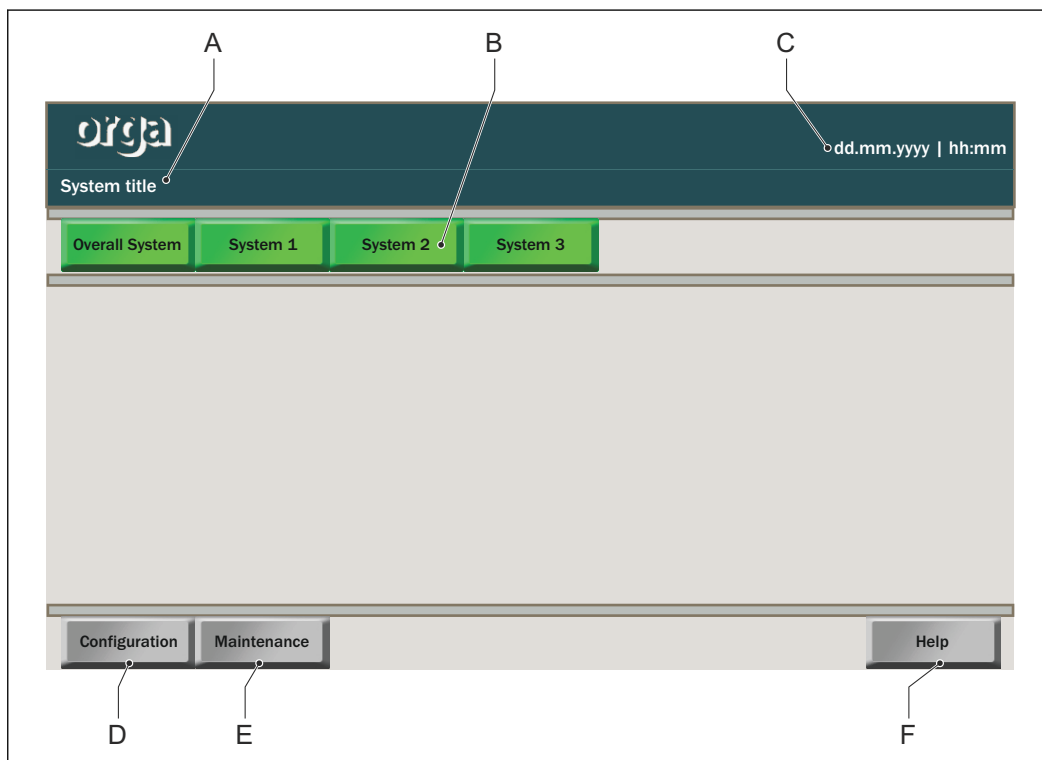


Note:

- *The Indicator starts blinking if there is a new alarm/ fail.*
- *The Indicator stops blinking if the alarm/ fail is accepted.*

4.7.5

Start menu

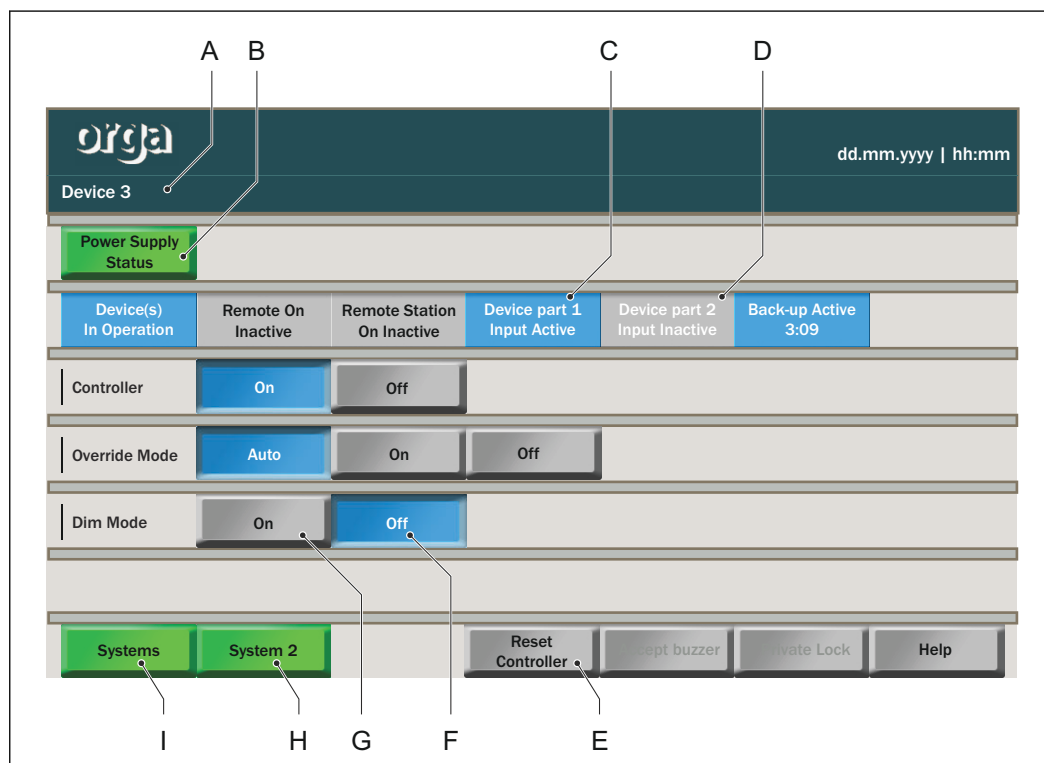


In the start menu the title bar shows the system title of the configuration (A). The site name, the date and the time (C) are always present in the title bar.

The main bar in the start menu shows all the present systems in the configuration. Press the item button (B) to navigate to the system menu of that item.

In the menu bar the command buttons can be pressed to navigate to configuration (D) and maintenance (E) settings. The help button (F) is always, at any level present in the menu bar.

4.7.6 Controller menu



In the controller menu the title bar shows the name of the device (A).

The second line shows all parts of the device. The indicators tell whether the part is active (C) or inactive (D).

The next lines in the main screen show the settings of the device. The blue command buttons (F) represent the active setting. Push the grey command button (G) to change this setting.

In the menu bar the item button (H) can be pushed to navigate to the system menu of the device. Push the item button (I) to navigate to the start menu. Push the command button (E) to reset the controller, this applies the default settings to all systems.

4.7.7 Settings and functions

A device can have three types of settings. The available settings and operating modes on your screen depend on the actual configuration.

Controller

- On: The devices in this controller are active. The operation mode is set in the line override Mode.
- Off: The devices in this controller are inactive.

Override mode

- Auto: The controller operates the device.
- On: The devices in this controller are ON.
- Off: The devices in this controller are OFF.
- Night: The devices in this controller operate in night mode.
- Twilight: The devices in this controller operate in twilight mode.
- Day: The devices in this controller operate in day mode.

DESCRIPTION



Note: The override function has a timer. This timer is fixed and resets the system automatically after 2 hours.

4.8 Description of the hard-wired Inputs and Outputs (I/O)

4.8.1 Technical description of the I/O inputs and outputs

Input ratings

Type	Inputs	Voltage range	Max. current
Default	24 Vdc	10-32Vdc (24Vdc nominal)	10mA
P	Potential free	-	-

Output ratings

Type	Outputs	Max. Voltage	Max. current
Default	24 Vdc	Max. 30V	50mA



Note: The collector has bidirectional outputs. If the polarity connection is incorrect, the fail signal is available.

4.8.2 Functional description of the I/O inputs

Forced OFF

When the input is high, the visible light of all connected lanterns will be turned OFF. If the lanterns emits IR light as well, this will remain ON. This function is developed for the use in combination with an Aircraft Detection Lighting System (ADLS).



Note: If the input is removed, the connected obstacle lights will become active for at least 10 seconds.

ID light

When the input is high, all connected ID lights are ON.

Reduced intensity override

The inputs can be used to set the connected obstacle lights into different intensity override modes.

Table 1: Reduced intensity override input

State	Reduced intensity over-ride 2	Reduced intensity over-ride 3	Mode
1	0	0	auto*
2	1	0	30%

DESCRIPTION

State	Reduced intensity over-ride 2	Reduced intensity over-ride 3	Mode
3	0	1	10%
4	1	1	100%

*auto mode, the default intensity level of the lanterns is state 4 and can be set into a different state when there is a control with a lower priority.

Helicopter Hoist Operation

The inputs can be used to set the connected Orga HHS light into different override modes.



Note:

If there is no Orga HHS light installed, the logical relations are still applicable. Refer to section [4.9](#).

Table 2: Helicopter Hoist Operation input C0

State	Helicopter Hoist Operation 1	Helicopter Hoist Operation 2	HHS light mode
1	0	0	OFF
2	1	0	ON Flashing
3	0	1	OFF
4	1	1	ON Steady

Search and Rescue Operation

When the input is high, all connected Orga Search and rescue operation lights are ON.



Note:

If there is no Orga SRO light installed, the logical relations are still applicable. Refer to section [4.9](#).

4.8.3 Functional description of the I/O Outputs

ID light

When the ID light controller override is set into ON mode, the ID light output is high..

Helicopter Hoist Operation

When the HHS light controller is set into a override mode, the outputs are set according to Table 7.

Table 3: Helicopter Hoist Operation output C0

State	Helicopter Hoist Operation 1	Helicopter Hoist Operation 2	HHS light mode
1	0	0	OFF
2	1	0	ON Flashing
3	0	1	OFF
4	1	1	ON Steady

DESCRIPTION

Search and rescue

When the Search and rescue light controller override is set into ON mode, the Search and rescue light output is high.

Visibility information output

When a Orga visibility sensor is present, the CIP uses the actual measured visibility to set the outputs according to Table 10.

4.8.4 Description of the hard-wired I/O Input and Output Connections

Table 4: Inputs on terminal block J43 for subtypes: CIP402-22, CIP402-22-R, CIP402-22-VVN, CIP402-34-IO

Terminal	Name	Function
J43-1	Input 1	Instant on
J43-2	Input 2	Spare
J43-3	Input 3	Spare
J43-4	Input 4	Spare

Table 5: Outputs on terminal block J47 for subtypes: CIP402-22, CIP402-22-R, CIP402-22-VVN, CIP402-34-IO

Terminal	Name	Function
J47-1	Opto out 1	General Fail
J47-2	Opto out 2	Spare
J47-3	Opto out 3	Spare
J47-4	Opto out 4	Spare

Table 6: Inputs on terminal block J41 for subtypes: CIP402-34-IO

Terminal	Name	Function
J41-1	Input 1	Spare
J41-2	Input 2	ID Marking IN
J41-3	Input 3	Reduced intensity IN 2
J41-4	Input 4	Reduced intensity IN 3
J41-5	Input 5	Helihoist operation IN (on)
J41-6	Input 6	Helihoist mode IN (steady)
J41-7	Input 7	Search And Rescue active IN
J41-8	Input 8	Spare

Table 7: Outputs on terminal block J45 for subtypes: CIP402-34-IO

Terminal	Name	Function
J45-1	Opto out 1	ID Marking active OUT
J45-2	Opto out 2	(Visibility Meter) Reduced intensity OUT 2
J45-3	Opto out 3	(Visibility Meter) Reduced intensity OUT 3
J45-4	Opto out 4	Spare
J45-5	Opto out 5	Helicopter active OUT (indicator)
J45-6	Opto out 6	Helicopter mode OUT (steady)
J45-7	Opto out 7	Search And Rescue active OUT
J45-8	Opto out 8	Spare

4.9 Logical relations

4.9.1 Logical relations C0

When the HHS Light Controller is set into the override modes ON flashing or ON steady:

- The ID Light Controller is set into ON mode. The installed ID lights are switched ON.
- The Obstacle Light Controller is set into OFF mode. The connected Obstacle lights are switched OFF.
- The Search And Rescue Light Controller is set into OFF mode. The SRO light function is disabled.

When the Search And Rescue Light Controller is set into override ON mode:

- The Obstacle Light Controller is set into OFF mode. The connected Obstacle lights are switched OFF.

5 INSTALLATION

5.1 Unpack the delivery

1. Do a check on the delivery for completeness.
2. Do a check on the delivery for damage.
3. Report damages or missing parts immediately to Orga. Refer to the last page for the contact information.

5.2 Preparation

1. Make sure that you know the type names of the devices in the system. You can find the type name on the label of the device.
2. Make sure that the devices in the system are installed correctly.

5.3 Install the CIP402



Caution:

- The CIP402 must be installed on a rigid, vertical surface.
- The CIP402 must be installed indoors.
- Make sure that the CIP402 is shaded from direct sunlight.



Note:

Make sure that there is enough space to open the cover of the CIP402.

Tools and parts

- Fasteners

Attach the CIP402 to the surface:

1. Use the mounting holes and the fasteners to mount the cabinet.

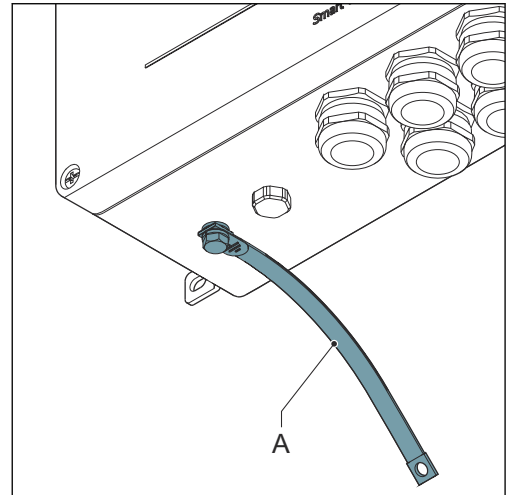
Name	L (mm)	H (mm)
CIP 402-22	160	260
CIP 402-34	260	260
CIP 402-44	360	260

Note:

The CIP402-22-R is fitted with an additional bracket.
Mounting hole dimensions: L(mm) 456, H(mm) 262.

5.4 Ground the equipment

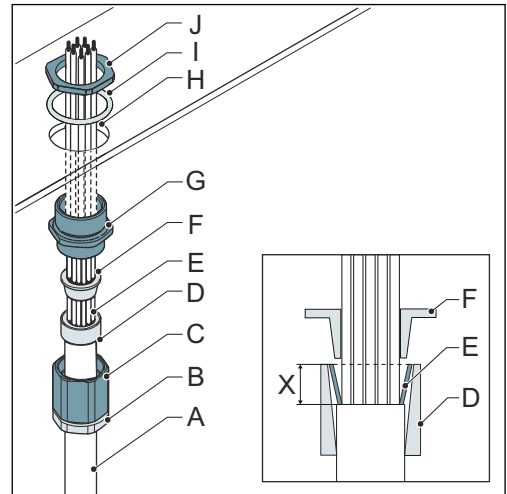
1. Connect the earth strip (A) to a grounded structure. Use an M6 bolt and a spring lock washer.
2. If applicable, connect the overvoltage protection to a grounded structure.



5.5 Install the power supply cable

5.5.1 Install the cable gland on the cable

1. Install the entry part (G) in hole of the cabinet (H);
 - a. Put the locking ring (I) on top of the thread;
 - b. Screw the nut (J) and tighten;
2. Strip the screen of the cable (E) over a distance of 11 mm (X).
3. Loosen the lock nut (B)
4. Put the cable (A) through these parts:
 - a. Lock nut (B);
 - b. Body (C);
 - c. Clamping ring (D);
 - d. Clamping cone (F).
5. Put the complete assembly through the hole (H). *Make sure that the cable is sufficient to make all the connections*
6. Push the body (C) into the entry part (G) and hand tighten.
7. Tighten the lock nut (B) with 4 complete turns.



5.5.2 Connect the wires







1. Connect the wires to the terminal strip X01 to these terminals:

Wire	Wire colour	Terminal
Phase (L or +)	Brown or black	See the label in the door.
Neutral (N or -)	Blue or white	

2. Connect the protective earth wire (green-yellow or green) to the protective earth rail.

5.6 Connect the ethernet cable

Preliminary requirements

	<ol style="list-style-type: none"> Requirement 1. Requirement 2. 		<ul style="list-style-type: none"> Supply 1. Supply 2.
	<ol style="list-style-type: none"> Operator Operating duration 		<ul style="list-style-type: none"> STP cable RJ-45 connector Ferrite choke @orga: partnummer?
	<ul style="list-style-type: none"> Equipment 1. Equipment 2. 		<ul style="list-style-type: none"> Safety precaution 1. Safety precaution 2.

Procedure

1. Install the cable gland.
2. Install the ferrite choke on the cable. Inside the CIP402, as close to the cable gland as possible.
3. Install the connector on the cable.
4. Connect the cable to the ethernet connection.

5.7 Install the cables of the ID light

1. Install the cable gland on the cable. Refer to [5.5.1](#).
2. Connect the wires to the terminal strip X81 to these terminals:

Wire	Terminal
Phase (L or +)	See the label in the door.
Neutral (N or -)	

3. Connect the protective earth (green-yellow or green) to the protective earth rail.

5.8 Install the cables of the obstacle light(s)

1. Prepare the data cable. Refer to [5.9.3](#).
2. Install the cable gland on the cable. Refer to [5.9.2](#).

3. Connect the wires to these terminals:

Wire	Colour	Terminal strip	Terminal
Phase (L or +)	Brown or black	X11; X12	See the label in the door.
Neutral (N or -)	Blue or white		
A	Orange	X31; X32	
B	Yellow		
Ortalk screen (SCN)	Black shrink sleeve		
Alarm wire 1	Red		
Alarm wire 2	Violet (Purple)		



Note: Isolate the alarm wires.

4. Connect the protective earth (green-yellow or green) to the protective earth rail.
5. Set dip switch 1.
 - a. If you connect one obstacle light: Activate dip switch 1 (on).
 - b. If you connect two obstacle lights: De-activate dip switch 1 (off).

5.9 Install the cables of the MLC

Do this procedure if the system contains an MLC.

Procedure

1. Connect the cables. Refer to the applicable procedures in this section.
2. Set dip switch 2.
 - a. If you connect one MLC and no visibility sensor: Activate dip switch 1 (on).

5.9.1 Install the power cable of the MLC

Procedure

1. Install the cable gland on the power cable. Refer to [5.9.2](#).
2. Connect the wires of the power cable to the terminal strip X13 to these terminals:

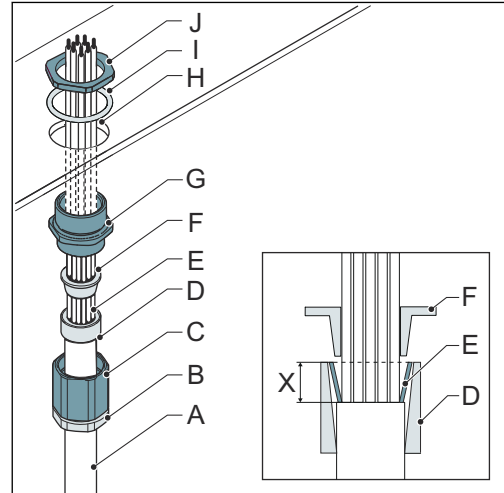
Wire	Wire colour	Terminal
Phase (L or +)	Brown or black	See the label in the door.
Neutral (N or -)	Blue or white	

3. Connect the protective earth (green-yellow or green) to the protective earth rail.

5.9.2 Install the cable gland on the cable

Procedure

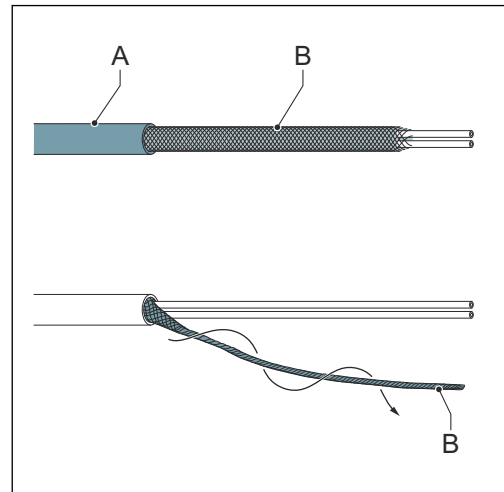
1. Install the entry part (G) in hole of the cabinet (H);
 - a. a) Put the locking ring (I) on top of the thread;
 - b. b) Screw the nut (J) and tighten;
2. Strip the screen of the cable (E) over a distance of 11 mm (X).
3. Loosen the lock nut (B)
4. Put the cable (A) through these parts:
 - a. Lock nut (B);
 - b. Body (C);
 - c. Clamping ring (D);
 - d. Clamping cone (F).
5. Put the complete assembly through the hole (H). *Make sure that the cable is sufficient to make all the connections*
6. Push the body (C) into the entry part (G) and hand tighten.
7. Tighten the lock nut (B) with 4 complete turns.



5.9.3 Prepare both ends of the data cable

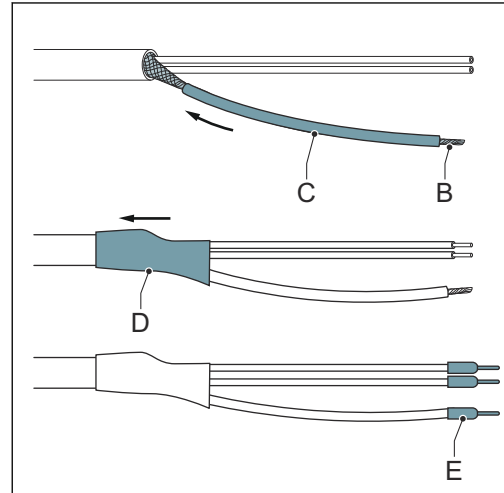
Procedure

1. Remove circa 10 cm of the cable jacket (A).
2. Unwind the screen (B) from the cable.
3. Twist the screen (B) to a strand.




INSTALLATION

4. Apply a shrink sleeve (C) around the screen strand (B).
5. Apply a shrink sleeve (D) around the cable.
6. Apply wire pins (E) at the ends of the screen strand and the wires.



5.9.4 Install the data cable

Preliminary requirements

	<ol style="list-style-type: none"> 1. Both ends of the data cable are prepared. 2. The cable gland is installed on the data cable.
--	--

Procedure

1. Connect the wires of the data cable to the terminal strip X33 to the terminals indicated in the table. Use the same wire for A and B as you did in the installation procedure of the MLC.

Wire	Terminal
A	See the label in the door.
B	
Ortalk screen (SCN)	
Alarm wire 1	
Alarm wire 2	

5.10 Install the cables of the Visibility sensor

Do this procedure if the system contains an Visibility sensor.

INSTALLATION

1. Connect the cables.

Wire	Colour	Terminal strip	Terminal
Phase (L or +)	Brown or black	X14	See the label in the door.
Neutral (N or -)	Blue or white		
A	Orange	X34	
B	Yellow		
Ortalk screen (SCN)	Black shrink sleeve		
Alarm wire 1	Red		
Alarm wire 2	Violet (Purple)		

2. Connect the protective earth (green-yellow or green) to the protective earth rail.
3. Set dip switch 2.
 - a. If you connect one Visibility sensor and no MLC Activate dip switch 1 (on).
 - b. If you connect besides the Visibility sensor an MLC (or an other Visibility sensor): De-activate dip switch 1 (off).

5.11 Install the cables of the HSS and/or SRO light

1. Connect the cables.

Wire	Colour	Terminal strip	Terminal
Phase (L or +)	Brown or black	X15; X16	See the label in the door.
Neutral (N or -)	Blue or white		
A	Orange	X35; X36	
B	Yellow		
Ortalk screen (SCN)	Black shrink sleeve		
Alarm wire 1	Red		
Alarm wire 2	Violet (Purple)		

2. Connect the protective earth (green-yellow or green) to the protective earth rail.
3. Set dip switch 3.
 - a. If you connect one of these items, activate dip switch 3 (on).
 - b. If you connect two of these items, de-activate dip switch 3 (off).

5.12 Connect the hardwired inputs and outputs

1. Connect the hard wired inputs and outputs. Refer to the connection scheme of the obstacle light system and/or section [4.8](#) for the applicable I/O layout.

5.13 Fail output

5.13.1 Connect the fail output

If the acquisition-, control- or PLC-system contains a fail input, connect it with the fail output of the CIP. Make sure that the ratings and polarity are correct:

1. Make sure that the connected system is compatible with the output ratings. Never connect a power supply directly. Refer to section [4.8.1](#).
2. Connect the wires to the terminals indicated in the table.

Wire	Terminal
+	X47.1
-	X48.1

3. Do a check for correct functioning:
 - a. Connect the CIP to the power supply and make sure that the fail output is closed. There are no fails.
 - b. Disconnect the CIP from the power supply and make sure that the fail output is open.

5.13.2 Output ratings of the fail output

See technical description of the I/O inputs and outputs. Refer to section [4.8.1](#).

6 CONFIGURATION

Configure the controller. Use display, buttons and the procedures below to configure the equipment.

6.1 Connect to the web interface

Tools and parts

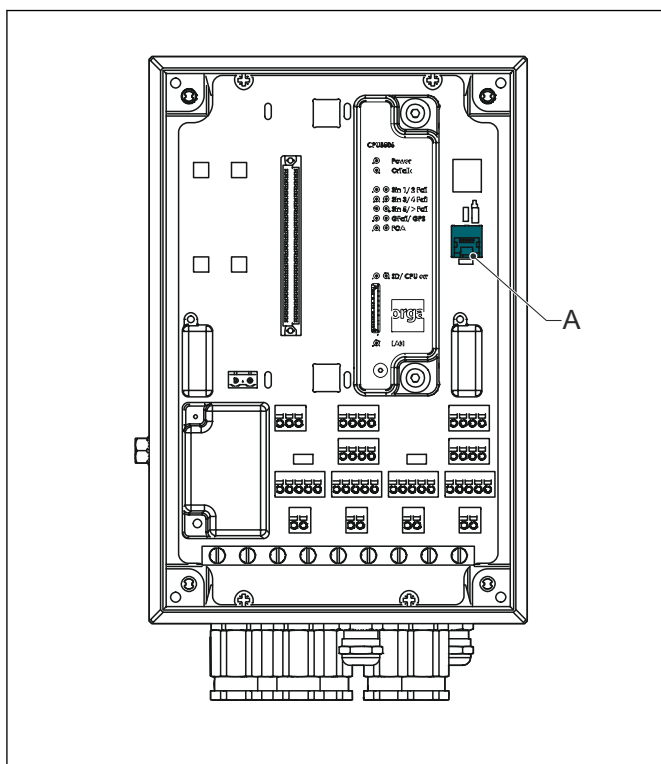
- A compatible internet browser (Microsoft Internet Explorer is preferred).
- RJ45 ethernet cable.

1. Connect the computer to the ethernet socket (A). Use the ethernet cable.
2. Change the TCP/IPv4 settings of the computer. Use these settings:

- IP-address:
192.168.75.3
- Subnet mask:
255.255.255.0
- DHCP settings:
'Static'

Refer to the help-function of the computer or your system administrator.

3. Enter the IP-address (192.168.75.2 by default) of the CIP402 in the address bar of the internet browser.
4. If applicable, run the application. The internet browser shows the start menu of the web interface.
5. If the internet browser does not show the start menu, refer to section [8.2](#).

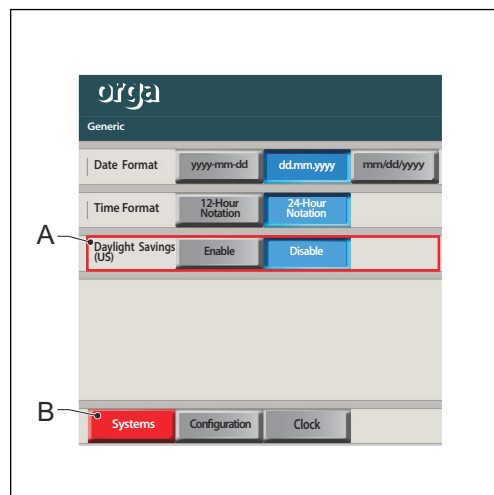


6.2 Set the date and time

6.2.1 Set the daylight savings function

1. In the start menu of the web interface, click 'Configuration'.
2. Click 'Clock'.
3. Click 'Generic'.
4. Enable or disable the daylight savings function (A).
5. Click 'Systems' (B), to activate the 'Settings Changed' pop-up screen;
 - Click 'Yes' to keep the changes.
 - Click 'No' to ignore the changes.

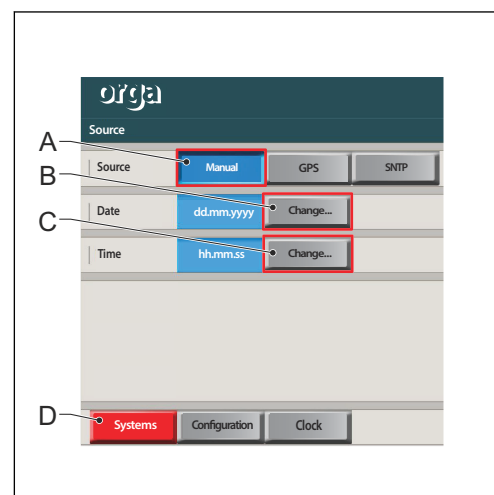
After your decision the start menu is shown.



6.2.2 Set the date and time source

1. In the start menu of the web interface, click 'Configuration'.
2. Click 'Clock'.
3. Click 'Source'.
4. Click 'Manual' (A).
5. Click 'Change' to set Date (B) and / or Time (C).
6. Click 'Systems' (D), to activate the 'Settings Changed' pop-up screen;
 - Click 'Yes' to keep the changes.
 - Click 'No' to ignore the changes.

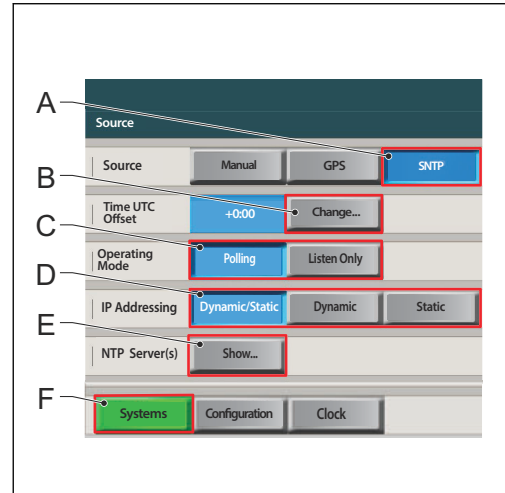
After your decision the start menu is shown.



6.2.3 SNTP Settings

1. In the start menu of the web interface, click 'Configuration'.
2. Click 'Clock'.
3. Open the 'Source' menu of the web interface and Click 'SNTP' (A).
4. Use the different buttons to change the 'Source' functions;
 - Click the Change button (B) to set 'Time UTC Offset' settings.
 - Click the Polling or Listen only button (C) to set 'Operating mode' settings.
 - Click the Dynamic/Static, Dynamic or Static button (D) to set 'IP addressing' settings.
 - Click the Show button (E) to set 'NTP Server' settings.
5. Click 'Systems' (H), to activate the 'Save' pop-up screen;
 - Click 'Yes' to keep the changes.
 - Click 'No' to ignore the changes.

After your decision the start menu is shown.



6.3 Configure the system

Start the 'Self Configuration' mode

1. In the start menu of the web interface, click 'Configuration'.
2. Click 'Self Configuration'.

Add a device

1. Enter the configuration code of the device. Use the number buttons. Refer to appendix A for the type numbers.



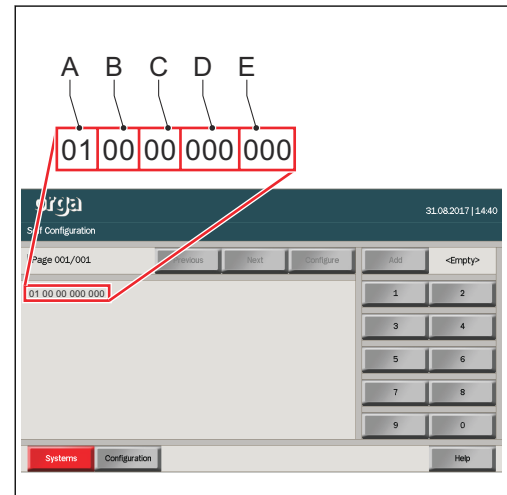
Note:

The configuration code has these digits:

- A 01
- B Station number
- C The number of stations
- D Type number
- E Subtype number

Use these station numbers:

- 01 for obstacle light 1
- 02 for obstacle light 2
- 61 for SRO- and HHS lights
- 71 for an MLC
- 80 for an SWS200



2. Click 'Add'.
3. Repeat steps 1 and 2 for all substations.

Configure the main/standby function



Note:

The main/standby function sets the obstacle lights with even station numbers on standby. These obstacle lights will come on when a failure occurs in the obstacle lights with an odd station number.

1. If applicable, activate the main/standby function:
 - a. Enter the subtype number '045'. Use the number buttons.
 - b. Click 'Add'.

Configure a MLC402

If an MLC402 is connected to the CIP, you must configure the MLC402.



Note: Before you configure the MLC402, you must have added the configuration code of the MLC402 .

1. Enter the code from the table below. *Use the number buttons.*

MLC402 Configuration	A	B	C	D	E
values	04	The station number of the MLC402	00	Number of marker lights (1, 2, 3, or 4)	-

For example: 0471003 indicates that the MLC402 with station number 71 has 3 marker lights connected.

Configure the Power back up and Low power function



Note:

- *If your CIP is equipped with the SPS60 + UMI400 power back-up system this needs to be configured.*
- *Make sure the configuration is done simultaneously with the configuration of the self configuration mode whereafter the low power mode has to be configured. Refer to section 6.3.*
- *If the obstacle light system is running on backup power the low power function ensures that the most important functions are retained.*

1. If applicable, activate the SPS60 + UMI400 function: Enter the configuration code. Refer to the table below. *Use the number buttons.*

Power back-up system Configuration	A	B	C	D	E
SPS60 + UMI400	01	90	01	056	000

2. Click 'Add'.
3. If applicable, Set the low power function: Enter the configuration code. Refer to the table below. *Use the number buttons.*



Note:

Use the codes below to switch off the relevant station / controller if the mains power is gone.

Low power mode Configuration	A	B	C	D	E
SWS	42	80	00	002	-
L550-HHS	41	101	00	002	-
L550-SRO	41	102	00	002	-
ID Marking light controller	41	103	00	002	-

Confirm the configuration

1. Click 'Configure'. This question appears: 'All entries added?'
2. Click 'Yes'. This message appears: 'The system is configured'.
3. Wait for one minute.
4. Refresh the browser window. The system is configured.

7 MAINTENANCE

7.1 Preventive maintenance on the controller

Preventive maintenance on the controller is not necessary.

8 TROUBLESHOOTING



Note:

- *The possible causes for fail and alarms are described within the User Interface.*
- *Make sure to follow each step to find the solution to your problem.*

Follow the steps below to start the troubleshooting procedure: :

1. Open the User Interface or webserver (if applicable).
2. Check the interface for red buttons.
3. Click the red button.
4. Click on the 'more info' button.
 - Possible causes are shown in the User Interface, *Make sure to follow each step.*
5. Click System to return to start screen of the User Interface.

8.1 General troubleshooting procedure



Warning:

Only an electrical engineer is allowed to do maintenance on the electrical system.

1. Connect to the web interface. Refer to section [6.1](#).
2. Connect to the web interface. Refer to section [8.2](#).
3. On the start menu of the web interface, Click 'Overall System'. The screen shows the status of the system.
4. Click 'All'. The screen shows all fail and alarm messages.
5. Click 'More info...'. The screen shows information on the message and instructions.
6. Solve the failure. Do the steps that are written in the instructions on the screen.



Note:

More than one fail or alarm message can occur for one failure. Click 'Accept All' to discard all fail and alarm messages.

8.2 Troubleshooting on the web interface connection

1. Make sure that you properly did the procedure in section [6.1](#).
2. Open the cover.
3. Compare the blink sequence of the ethernet status LED with the codes in section [8.3](#).
4. If the ethernet status LED is off, stop the firewall of the computer or ask your system administrator.
5. Reset the ethernet connection:
 - a. Push and hold the reset button until the ethernet status LED comes on steady.
 - b. Do the procedure in section [6.1](#). Use the default IP-address 192.168.75.2.
6. If you still cannot connect to the web interface, call Orga.

8.3 Troubleshooting table: web interface connection.

Code	Problem	Possible cause	Solution
0.1 sec on, 0.1 sec off	Ethernet fail	The CIP402 is defective	<ol style="list-style-type: none"> 1. Push and hold the reset button until the ethernet status LED comes on steady. 2. Do the procedure in section 6.1. 3. Call Orga

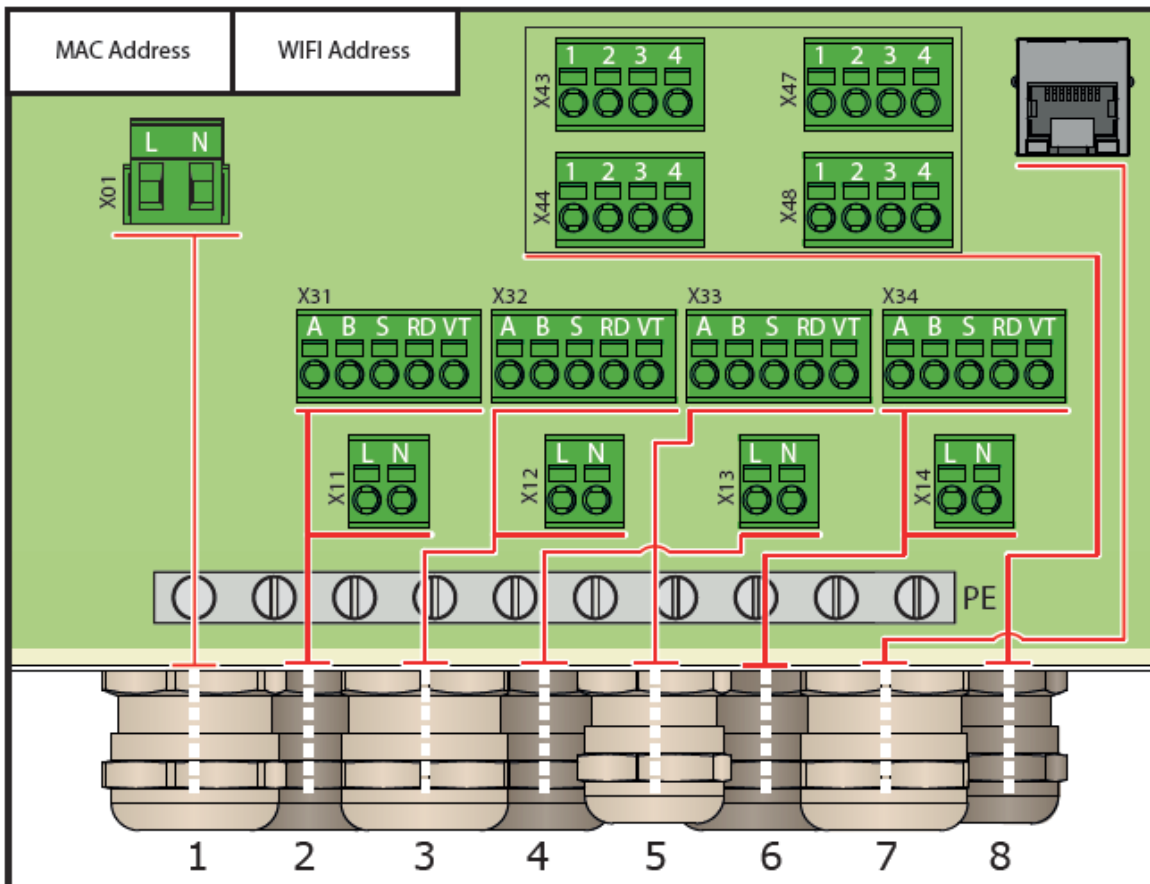
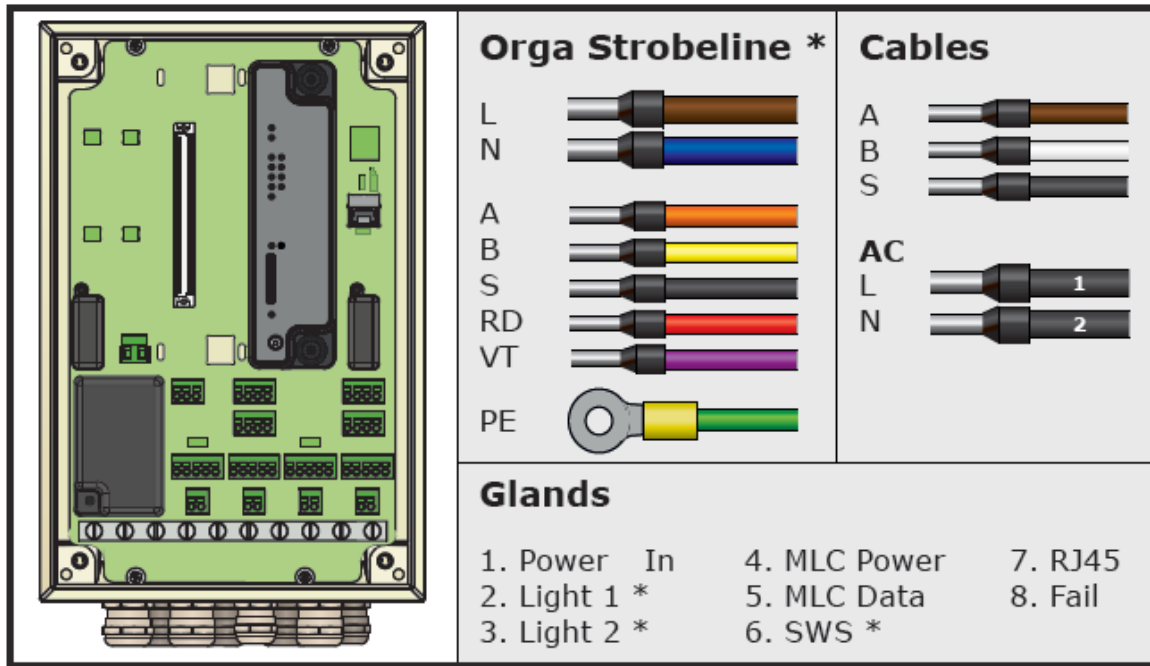
Code	Problem	Possible cause	Solution
0.1 sec on, 0.1 sec off, 0.1 sec on, 1.2 sec off	Ethernet Link Partner No Auto- Negotiate	The IP-address of the computer is not set to Auto- Negotiate.	Change the TCP/IPv4 settings of the computer: 'Obtain an IP address automatically' and 'Obtain DNS server address automatically'.
0.1 sec on, 1.4 sec off	Ethernet No Link Partner	The ethernet cable is broken or not properly installed.	Do a check on the connection of the ethernet cable. Install a new ethernet cable.
Blinks three times	No problem, Ethernet OK	The CIP402 starts the connection.	Wait for the CIP402 to start the connection.

8.4 Do a check for correct dip switch settings

1. Make sure that the dip switches are set correctly.

Items connected	Dip switch	Setting
1 Obstacle light	Dip switch 1	on
2 Obstacle lights	Dip switch 1	off
1 item: MLC or Visibility sensor	Dip switch 2	on
2 items: MLC and/or Visibility sensor	Dip switch 2	off
1 item: HSS or HHS/SRO light	Dip switch 3	on
2 items: HSS and/or HHS/SRO light	Dip switch 3	off

10 Terminal layout





EU-Declaration of Conformity

Orga BV
Strickledeweg 13
3125 AT Schiedam
The Netherlands

Postal address
P.O. Box 3046
3101 EA Schiedam
The Netherlands

+31 (0)10 208 5555
+31 (0)10 437 8445

info@orga.nl
www.orga.nl

Deze conformiteitsverklaring wordt afgegeven onder volledige verantwoordelijkheid van de fabrikant Orga B.V..
This declaration of conformity is issued under the sole responsibility of the manufacturer Orga B.V..

Voorwerp van de verklaring:
Object of the declaration:

Obstruction Light System Controller type CIP402

Het hierboven beschreven voorwerp van de verklaring is in overeenstemming met de desbetreffende harmonisatiewetgeving van de Unie:
The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

EMC-RICHTLIJN: 2014/30/EU

EMC-DIRECTIVE: 2014/30/EU

LOW VOLTAGE DIRECTIVE: 2014/35/EU

LOW VOLTAGE DIRECTIVE 2014/35/EU

RoHS-RICHTLIJN: 2011/65/EU

ROHS-DIRECTIVE: 2011/65/EU

Relevante geharmoniseerde norm(en) en andere normatieve documenten:
Relevant harmonised standard(s) or other normative document(s):

EN 61000-6-2 : 2005 + AC : 2005
EN 61000-6-4 : 2007 + A1 : 2011
EN 61439-1 : 2011
EN IEC 63000 : 2018

Schiedam, 22/11/2021



P. Voorwald-Snijder
Compliance Manager

UK Declaration of Conformity

Orga BV
Strickledeweg 13
3125 AT Schiedam
The Netherlands

Postal address
P.O. Box 3046
3101 EA Schiedam
The Netherlands

+31 (0)10 208 5555
+31 (0)10 437 8445

info@orga.nl
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Deze conformiteitsverklaring wordt afgegeven onder volledige verantwoordelijkheid van de fabrikant Orga B.V..

This declaration of conformity is issued under the sole responsibility of the manufacturer Orga B.V..

Voorwerp van de verklaring:
Object of the declaration:

OBSTRUCTION LIGHT SYSTEM CONTROLLER type CIP402

Het hierboven beschreven voorwerp van de verklaring is in overeenstemming met de desbetreffende Britse wettelijke instrumenten:

The object of the declaration described above is in conformity with the relevant UK statutory instruments:

EMC REGULATION: 2016 No. 1091

ELECTRICAL EQUIPMENT SAFETY REGULATION: 2016 No. 1101

RoHS REGULATION: 2012 No. 3032

Relevante geharmoniseerde norm(en) en andere normatieve documenten:
Relevant harmonised standard(s) or other normative document(s):

EN 61000-6-2 : 2005 + AC : 2005

EN 61000-6-4 : 2007 + A1 : 2011

EN 61439-1 : 2011

EN IEC 63000 : 2018

Schiedam, 22/11/2021



P. Voorwald-Snijder
Compliance Manager

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