

**PCD2.F2610 & PCD3.F261  
DALI interface module**

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## 0.1 Document-History

Version	Published	Changed	Remarks
EN00 V00	21.09.2011	-	Creation of the document
EN00 V01	29.09.2011	2.3	Corrections after reviewing
EN00 V01	16.03.2012		Modifications for Index A
EN01	2012-06-07		First published edition
EN02	2013-08-22		Logo and name changed
EN03	2015-01-20	Ch. 3.3/4.3 Ch. 4.4	Edition 1.0 added to IEC62386-101 Changed maximum voltage from 13.5 to 15 volts

## 0.2 Trademarks

Saia PCD<sup>®</sup> and Saia PG5<sup>®</sup>  
are registered trademarks of Saia-Burgess Controls AG.

Technical changes are subject to the state of technology.

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# 1 Communication ports

## 1.1 Port assignments on the communications interface

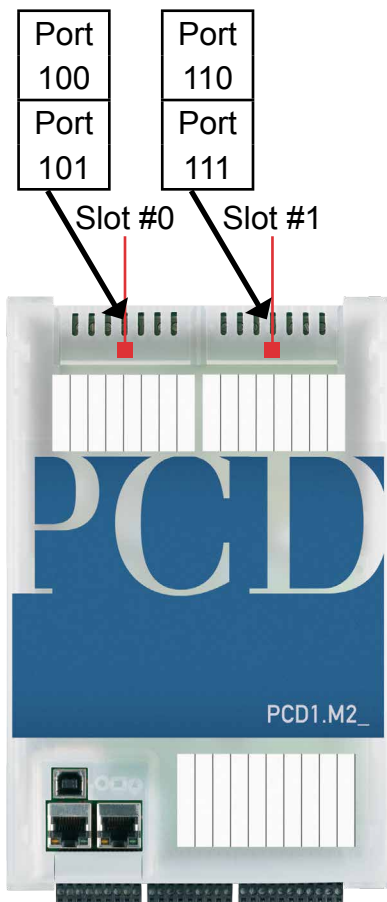
1

I/O slot 0:	Port 100 for the x.0 port on the PCD3.F261 / PCD2.F2610 module
	Port 101 not used
I/O slot 1:	Port 110 for the x.0 port on the PCD3.F261 / PCD2.F2610 module
	Port 111 not used
I/O slot 2:	Port 120 for the x.0 port on the PCD3.F261 / PCD2.F2610 module
	Port 121 not used
I/O slot 3:	Port 130 for the x.0 port on the PCD3.F261 / PCD2.F2610 module
	Port 131 not used

## 1.2 Communications interface PCD2.F2610 for the PCD1.M2xx0 and the PCD2.M5xx0

### 1.2.1 PCD1.M2xx0

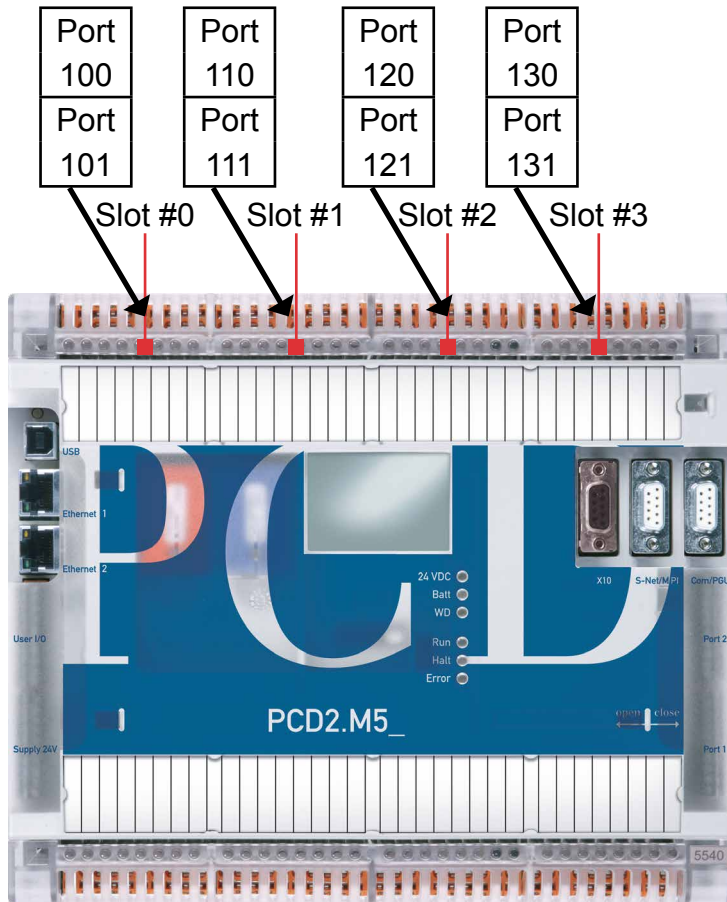
The DALI module PCD2.F2610 is pluggable in the I/O slots 0 and 1 of the PCD1.M2xx0:



1.2.2 PCD2.M5xx0

The DALI module PCD2.F2610 is pluggable in the I/O slots #0...#3 of the PCD2.M5xx0:

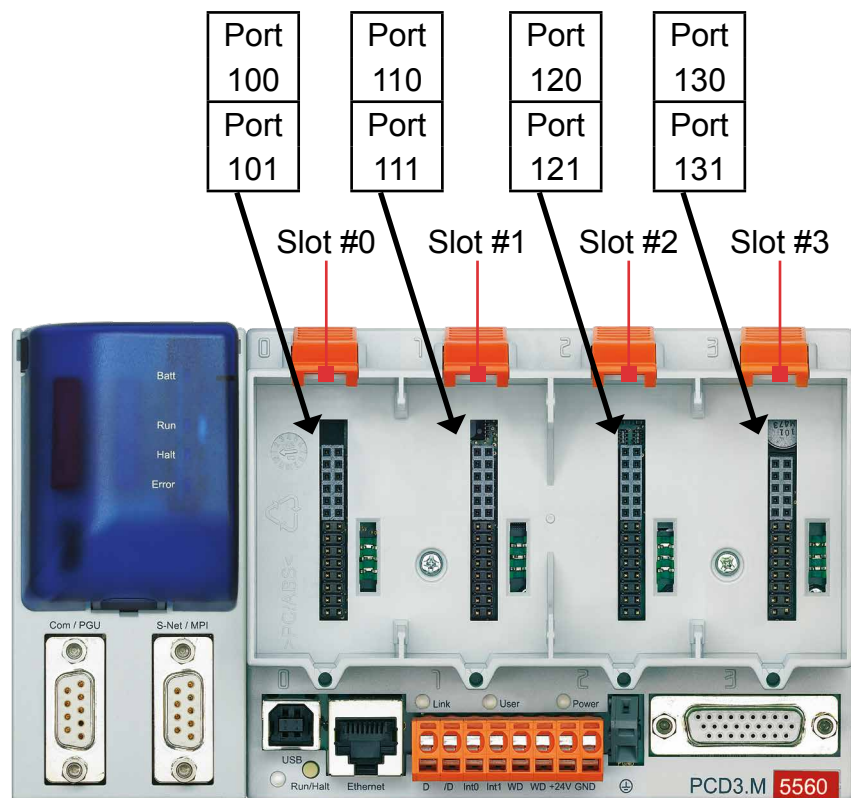
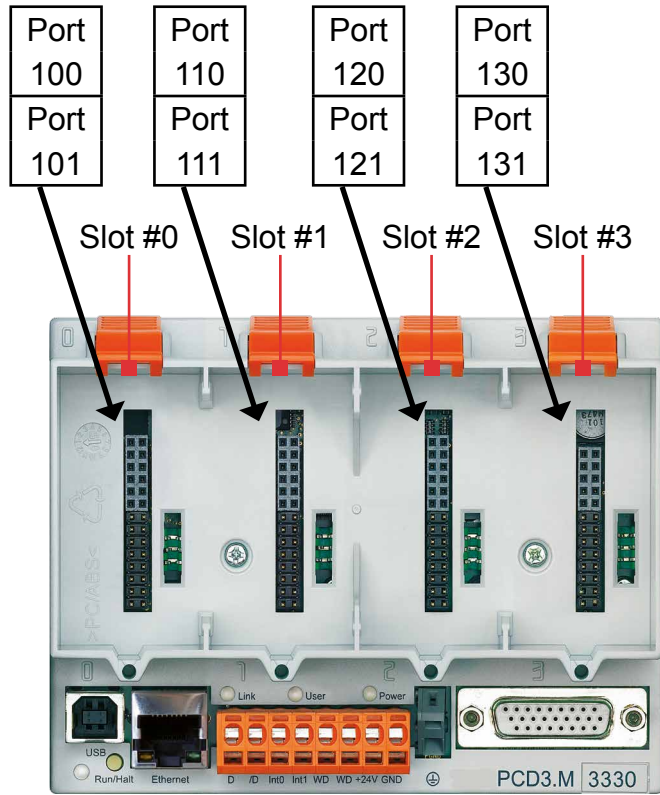
1



### 1.3 Communication interface PCD3.F261 for the PCD3.Mxxx0

The DALI module PCD3.F261 is pluggable in the I/O slots #0...#3 of the PCD3.Mxxx0:

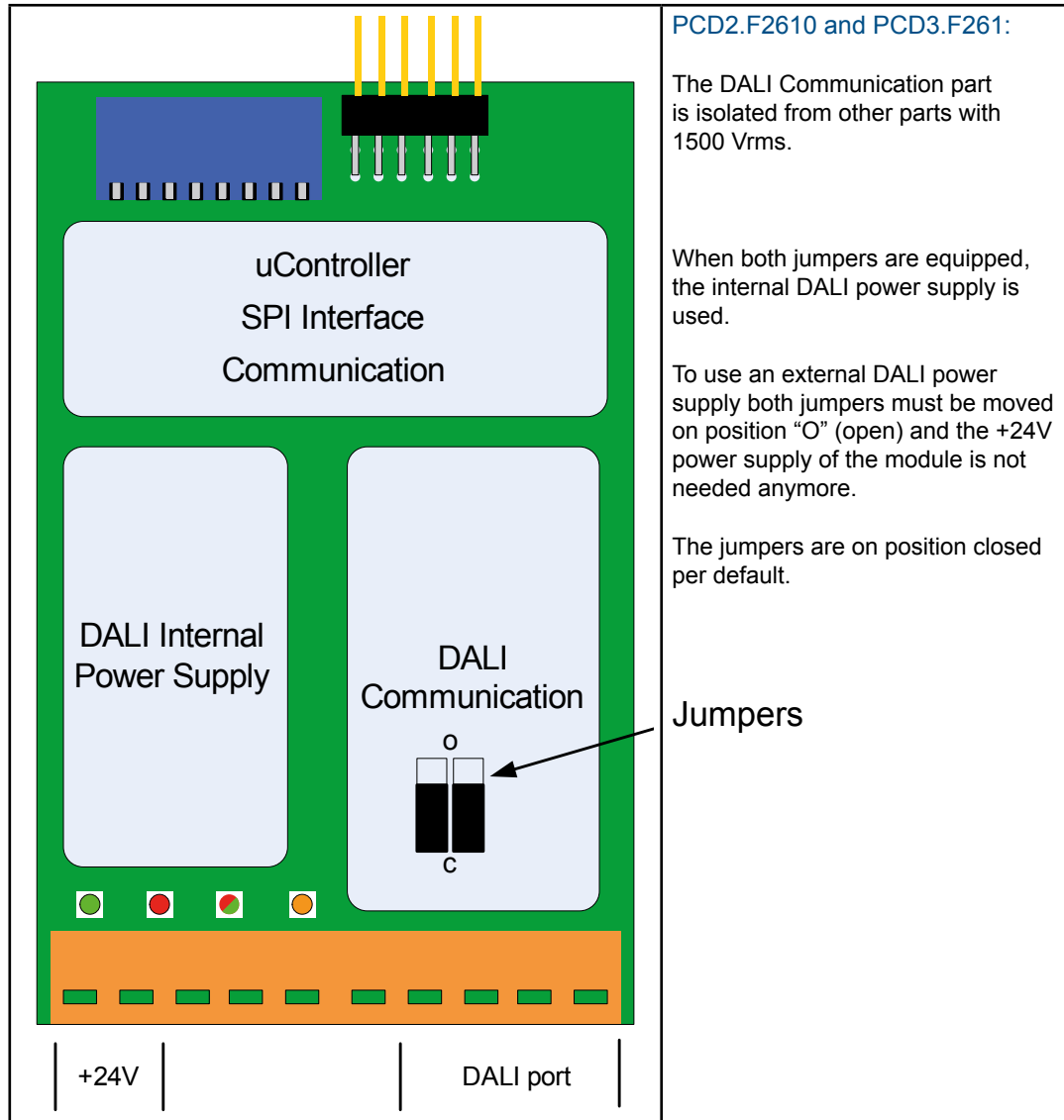
1



## 2 Module overview

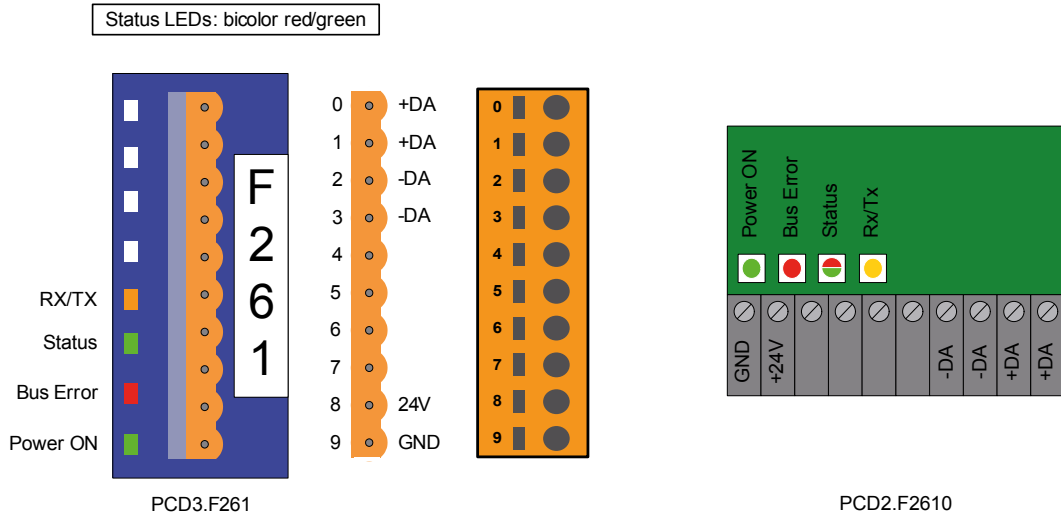
The PCD2/3.F261x DALI modules are designed for the PCD3.Mxxx0, PCD2.M5xx0 and PCD1.M2xx0 systems. Each module has one port and can support up to 64 individually addressable control gear/devices on one interface.

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### 3 Module Function

#### 3.1. Connections and LEDs



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**RX/TX:** Shows the activity on the DALI Bus

**Status:** Displays the status of Port 0, green means that the port is working properly.

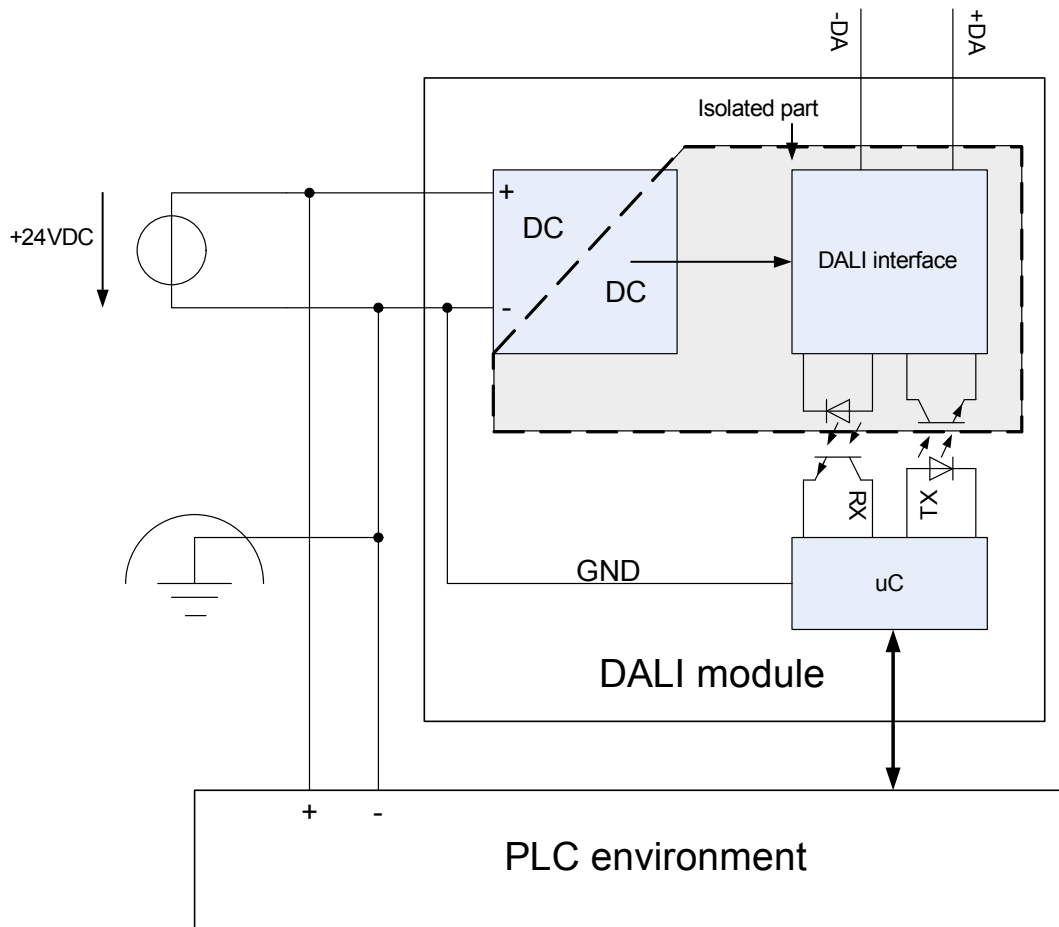
- |                                 |   |
|---------------------------------|---|
| Status LED permanently red:     | F261x not running                               |
| Status LED green 25% / red 75%: | F261x start-up procedure                        |
| Status LED green 50% / red 50%: | F261x running,<br>but no communication with PCD |
| Status LED green 75% / red 25%: | F261x running, channel closed                   |
| Status LED green 90% / red 10%: | F261x running, channel open with error          |
| Status LED green 100%:          | F261x running, channel open OK                  |

**Bus error:** A short-circuit, problem with the DALI power supply (not present or insufficient voltage) or an error in the transmission (red in case of error)

**Power ON:** DALI internal power supply is OK (green)



### 3.2 Isolation



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The insulation voltage between the DALI interface and the PLC environment is 1500 Vrms

### 3.3 External DALI power supply

The DALI module can be used with an external DALI power supply conformed to IEC-62386-101 edition 1.0. Both jumpers must be moved on position "O" (Opened) before the use of an external DALI power supply. The interface is polarity sensitive.

### 3.4 Internal DALI power supply

Both jumpers must be on position "C" (Closed). Using a of a second DALI power supply on the DALI network is not allowed.

### 3.5 Safety instructions

- Installation of this module may only be carried out by specialist staff who have provided proof of their skills.



Caution : The DALI Bus is not conform to SELV (Safety Extra Low Voltage).

## 4 Technical data

### 4.1 Minimum Firmware and Software Versions:

FW for Classic CPUs	from 1.16.52
FW for PCD3.T66x	from 1.16.52
PG5 1.4	not supported
PG5 2.0	from version 2.0.220
DALI FBox library	from version 2.6.220
FW for xx7 CPUs	not supported

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### 4.2 Wire recommended

distance	diameter
up to 100 m	0.5 mm <sup>2</sup>
100...150 m	0.75 mm <sup>2</sup>
150 m...300 m	1.5 mm <sup>2</sup>

A maximum of 2 Volts difference is allowed between 2 DALI devices. Therefore the diameter depends on cable length and the current in the DALI bus.

### 4.3 DALI Standard

The module is conform to IEC-62386-101 edition 1.0. Refer to this standard for details.

### 4.4 DALI output voltage

$U_{DALI}$ [V]
12...15 V

## 4.5 Current

### 4.5.1 Current consumption

Module (same for PCD2)	+5V Bus [mA]	V+ [mA]	+24 Vext (19.2 V to 30 V) [mA]		
			at Vmin	at Vnominal	at Vmax
PCD2/3.F261x	90	0	30	25	22
PCD2/3.F261x <sup>(2)</sup>			200	160	140

<sup>(2)</sup> tested with a current of 200 mA on the DALI bus.

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### 4.5.2 Current consumption (master)

The maximum current consumption of the master on the DALI bus is maximum 4 mA. Take in account this current if you use an external DALI power supply.

### 4.5.3 Current consumption (slaves)

The DALI norm specifies a current consumption of maximum 2 mA per slave. The internal DALI power supply can source a current up to 200 mA. So it remains  $200 \text{ mA} - (64 \times 2 \text{ mA}) - (4 \text{ mA [master]}) = 68 \text{ mA}$  for devices with higher current consumption.

### 4.5.4 Short on bus

If a short occurs, the LED „Bus error ■ is red and when short is removed, the LED „Bus error ■ is off.

The DALI module is protected against a permanent short-circuit on the DALI Bus.

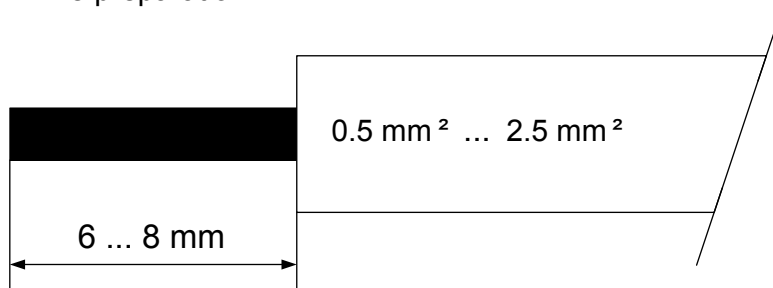
## 4.6 Multi-master

The DALI module cannot be used in a true multi-master mode but permits the presence of other masters on the Bus. Before the sent of data, the DALI bus is polled and if it's free, data can be sent. In case of conflict, the module shows an error reported by a FBox.

## 5 Installation instructions

### 5.1 Wire strip length for the module's connector

Wire preparation:



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### 5.2 Module installation

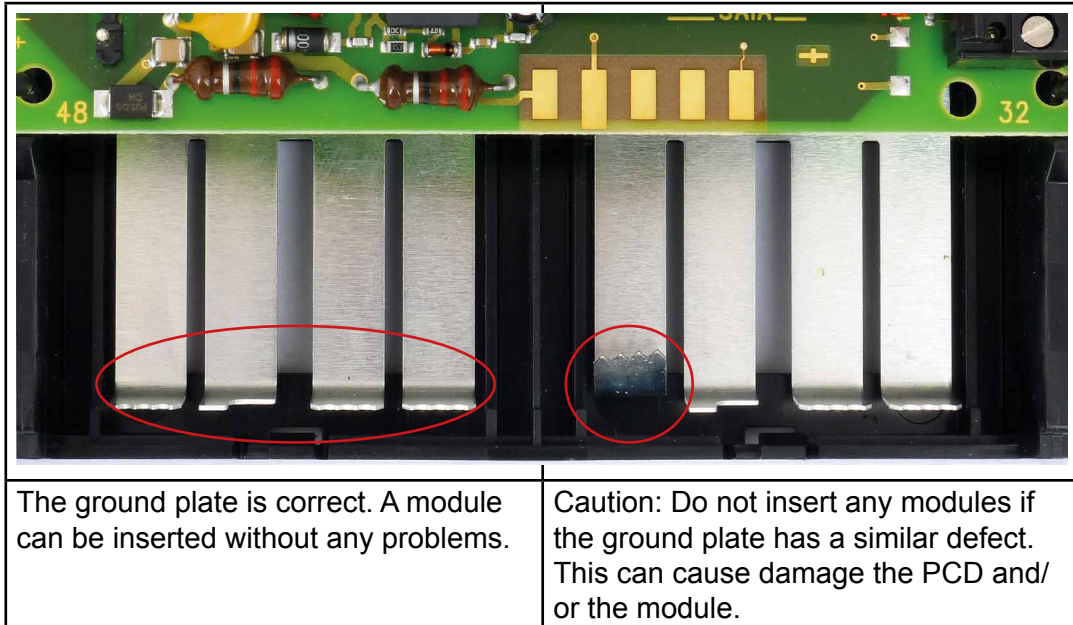
#### 5.2.1 Jumpers installation

Before inserting the module in a PLC, check and if necessary change the jumpers position. With a PCD3.F261, you have to open the housing to access the jumpers.

<p>Place jumpers on “C” to use the internal power supply for the DALI Bus. To use this mode a +24V input voltage must be supplied to the module. (Pin 8 + 9)</p>	<p>Place jumpers on “O” to use an external source to power the DALI Bus. To use this mode a +24V input voltage is not supplied to the module. (Pin 8 + 9)</p>






### 5.2.2 Module insertion

Before the insertion of a PCD2.F2610 in a PCD1.M2xx0 or in a PCD2.M5xx0, check that the prongs of the ground plate has no damage or defect.



## A Appendix

### A.1 Icons

	<p>In manuals, this symbol refers the reader to further information in this manual or other manuals or technical information documents.</p> <p>As a rule there is no direct link to such documents.</p>
	<p>This symbol warns the reader of the risk to components from electrostatic discharges caused by touch.</p> <p><b>Recommendation</b> : at least touch the Minus of the system (cabinet of PGU connector) before coming in contact with the electronic parts. Better is to use a grounding wrist strap with its cable attached to the Minus of the system.</p>
	<p>This sign accompanies instructions that must always be followed.</p>
	<p>Explanations beside this sign are valid only for the Saia PCD® Classic series</p>
	<p>Explanations beside this sign are valid only for the Saia PCD® xx7 series.</p>

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