

## MULTIPLEX CONTROLLER QUICK START GUIDE

### STANDARD I/O – WIRED OR WIRELESS – PAGE 1/7

(MULTIPLEX= 2 WAY COMMUNICATIONS)



## 1.2 Hardware and software requirements

- Two ILC 131 ETH Inline controllers (Order No. 2700973)
- Two SD FLASH 512MB MODULAR MUX SD cards (Order No. 2701872) with multiplexer software
- Ethernet cable for directly connecting the two Inline controllers to each other
- Adapter set for wireless communication, e.g., FL BT EPA AIR SET (Order No. 2693091).
- Required Inline input terminals and Inline output terminals
- Web browser



For the ordering data for hardware, software, and additional documentation, please refer to Section "Technical data and ordering data" on page 39.

## 1.3 Description of the SD card

Using two SD FLASH 512MB MODULAR MUX SD cards, it is possible to create a multiplexer system consisting of two ILC 131 ETH Inline controllers. You do not need to program the Inline controllers. Each station of the multiplexer system consists of one Inline controller including the SD card and the connected Inline terminals. Communication between the two stations can either be established using an Ethernet cable or a wireless connection. In order to be able to communicate via a wireless network, an adapter set for wireless communication is required for each station (e.g., the FL BT EPA AIR SET adapter set). Both stations can be integrated into an Ethernet network. The multiplexer software that is installed on the SD card is used to implement the required configuration.

## STANDARD I/O – WIRED OR WIRELESS –PAGE 2/7

### 2.1.2 Inserting SD cards into the Inline controllers

- Lightly push an SD card into the SD card holder of each Inline controller until it snaps into place.

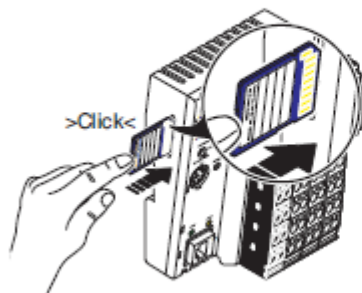


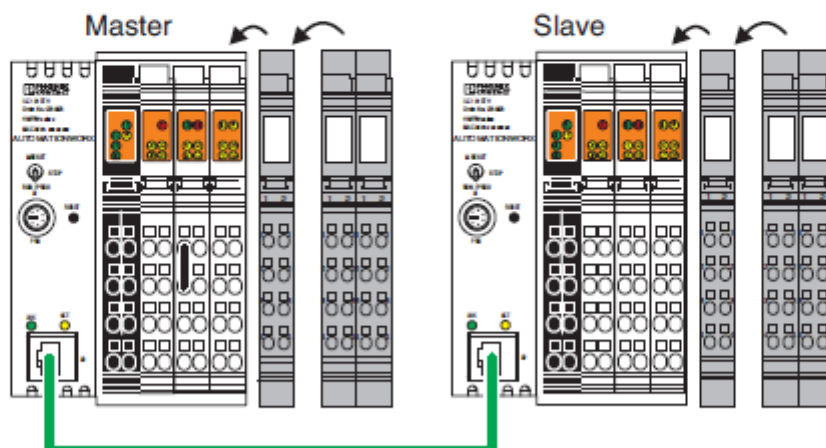
Figure 2-1 Inserting the SD card

**NOTE: PUT BOTH MULTIPLEX SD CARDS (2701872) INTO THE ILC 131 ETH CONTROLLERS AND LEAVE THEM INSERTED – ATTACH THE I/O CARDS YOU REQUIRE TO EACH CONTROLLER BEFORE CONNECTING THE ETHERNET CONNECTIONS – LEAVE WRITE PROTECTION OFF**

- Connect the required I/O terminals side by side to the Inline controllers.



For additional information on mounting and removing the Inline controllers, please refer to the "Installing and operating the ILC 131 ETH, ILC 151 ETH, ILC 171 ETH 2TX, ILC 191 ETH 2TX, ILC 131 ETH/XC and ILC 151 ETH/XC Inline controllers" user manual. For additional information on mounting and removing Inline terminals, please refer to the IB IL SYS PRO UM E user manual (for INTERBUS), the IL SYS INST UM E Inline installation manual, the Inline system manual for your bus system or the corresponding data sheets of the Inline terminals used. The documents can be downloaded at [phoenixcontact.net/products](http://phoenixcontact.net/products).

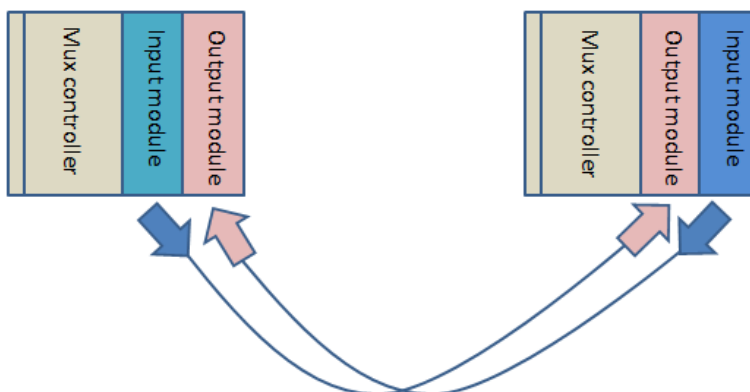


105752A004

Figure 2-6 Connecting I/O terminals side by side to the Inline controllers

## MOUNTING I/O MODULES

### STANDARD I/O – WIRED OR WIRELESS –PAGE 3/7



MAKE SURE THAT EACH I/O MODULE HAS THE OPPOSING CARD IN THE SAME PLACE ON EACH RACK –EG: 4 WAY INPUT ON MASTER RACK AT POSITION 1 / 4 WAY OUPUT ON SLAVE RACK POSITION 1 AND SO ON

See tables below for compatible I/O modules

Table A-4 Possible combinations for complementary terminal arrangement

Outputs	Inputs	IB IL 24 PWR IN/F-D-PAC	IB IL 24 PWR IN/2-F-D-PAC	IB IL 24 SEG/F-D-PAC	IB IL 120 DI 1-PAC	IB IL 230 DI 1-PAC	IB IL 24 DI 2-PAC	IB IL 24 DI 2-NPN-PAC	IB IL 24 DI 4-PAC	IB IL 24 DI 8-PAC	IB IL 24 DI 8 T2-PAC	IB IL 24 DI 16-PAC	IB IL 24 DI 32/HD-PAC	IB IL AI 2/SF-PAC	IB IL AI 2/SF-230-PAC	IB IL 24 SAFE 1-PAC
IB IL DO 1 AC-PAC		(1) <sup>+</sup>	(1) <sup>+</sup>	(1) <sup>+</sup>	1	1	1	1	-	-	-	-	-	-	-	-
IB IL 24 DO 2-PAC		2	2	2	1	1	2	2	-	-	-	-	-	-	-	2
IB IL 24 DO 2-2A-PAC		2	2	2	1	1	2	2	-	-	-	-	-	-	-	2
IB IL 24 DO 2-2A-NPN-PAC		2	2	2	1	1	2	2	-	-	-	-	-	-	-	2
IB IL 24 DO 4-PAC		-	-	-	-	-	-	-	4	-	-	-	-	-	-	-
IB IL 24 DO 8-PAC		-	-	-	-	-	-	-	-	8	8	-	-	-	-	-
IB IL 24 DO 8-2A-PAC		-	-	-	-	-	-	-	-	8	8	-	-	-	-	-
IB IL 24 DO 16-PAC		-	-	-	-	-	-	-	-	-	-	16	-	-	-	-
IB IL 24 DO 32/HD-PAC		-	-	-	-	-	-	-	-	-	-	-	32	-	-	-
IB IL 24/230 DOR 1/W-PAC		(1) <sup>+</sup>	(1) <sup>+</sup>	(1) <sup>+</sup>	1	1	1	1	-	-	-	-	-	-	-	-
IB IL 24/230 DOR 1/W-PC-PAC		(1) <sup>+</sup>	(1) <sup>+</sup>	(1) <sup>+</sup>	1	1	1	1	-	-	-	-	-	-	-	-
IB IL 24/230 DOR 4/W-PAC		-	-	-	-	-	-	-	4	-	-	-	-	-	-	-
IB IL 24/230 DOR 4/W-PC-PAC		-	-	-	-	-	-	-	4	-	-	-	-	-	-	-
2 x IB IL AO 1/SF-PAC		-	-	-	-	-	-	-	-	-	-	-	-	2	2	-

## STANDARD I/O – WIRED OR WIRELESS –PAGE 4/7

Table A-4 Possible combinations for complementary terminal arrangement

Outputs	Inputs	IB IL 24 PWR IN/F-D-PAC	IB IL 24 PWR IN/2-F-D-PAC	IB IL 24 SEG/F-D-PAC	IB IL 120 DI 1-PAC	IB IL 230 DI 1-PAC	IB IL 24 DI 2-PAC	IB IL 24 DI 2-NPN-PAC	IB IL 24 DI 4-PAC	IB IL 24 DI 8-PAC	IB IL 24 DI 8 T2-PAC	IB IL 24 DI 16-PAC	IB IL 24 DI 32/HD-PAC	IB IL AI 2/SF-PAC	IB IL AI 2/SF-230-PAC	IB IL 24 SAFE 1-PAC
2 x IB IL AO 1/U/SF-PAC		-	-	-	-	-	-	-	-	-	-	-	-	2	2	-
1 x IB IL AO 1/SF-PAC 1 x IB IL AO 1/U/SF-PAC		-	-	-	-	-	-	-	-	-	-	-	-	2	2	-
1 x IB IL AO 2/U/BP-PAC		-	-	-	-	-	-	-	-	-	-	-	-	2	2	-

Key:

- 1, 2, 4, 8, 16, 32 Number of available channels
- Combination not possible
- + Should be operated with the IB IL 24 DO 2-PAC terminal, otherwise only the fuse and not the main voltage will be monitored.

The SD cards contain the multiplexer software. They remain in the Inline controllers during operation. The write protection for the SD cards must not be activated, because data needs to be stored on them.

### 2.1.3 Interconnecting the Inline controllers

The two Inline controllers are connected to each other via their respective Ethernet connections. There are two possible connection options:

- Direct connection between the Inline controllers
- Wireless connection between the Inline controllers

#### Direct connection between the Inline controllers

- Connect the two Inline controllers to each other using an Ethernet cable.

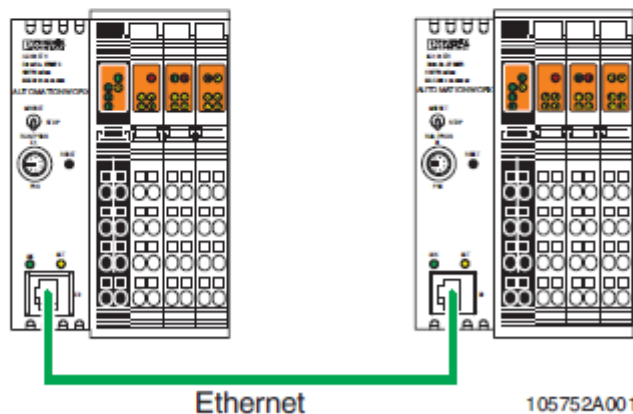


Figure 2-2 Direct connection between the Inline controllers using an Ethernet cable

**FIT THE WIRE LINK INTO ONE OF THE DEVICES TO DESIGNATE THIS AS THE MASTER CONTROLLER**

**2.1.4 Configuring master and slave**

- Configure an Inline controller as master. Wire 24 V DC to input I1 (terminal point 1.1 to 1.2). To do this, insert a wire jumper as shown in Figure 2-4.

The second Inline controller will then automatically be configured as slave. The slave does not receive any signal at input I1.

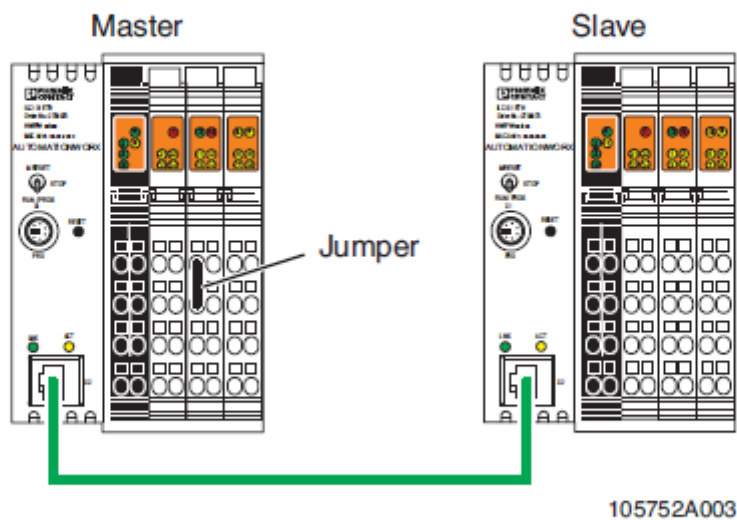


Figure 2-4 Configuring the Inline controllers as master and slave

**MAKE SURE BOTH CONTROLLERS ARE IN RUN MODE**

**2.1.7 Defining the operating state of the application program**

- For each Inline controller, set the mode selector switch to RUN/PROG position.

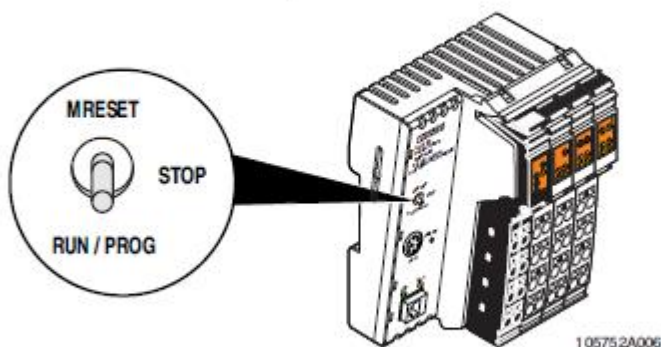


Figure 2-8 Mode selector switch of the Inline controller

## STANDARD I/O – WIRED OR WIRELESS –PAGE 6/7

### MAKE SURE THT THE 24VDC IS CONNECTED AS BELOW

#### 2.1.6 Connecting the supply voltages



Only use power supplies that are suitable for operation with capacitive loads (increased switch-on current). For additional information on the supply voltage, please refer to the "Installing and operating the ILC 131 ETH, ILC 151 ETH, ILC 171 ETH 2TX, ILC 191 ETH 2TX, ILC 131 ETH/XC and ILC 151 ETH/XC Inline controllers" user manual.

- Connect the supply voltage to both Inline controllers, as shown in Figure 2-7.

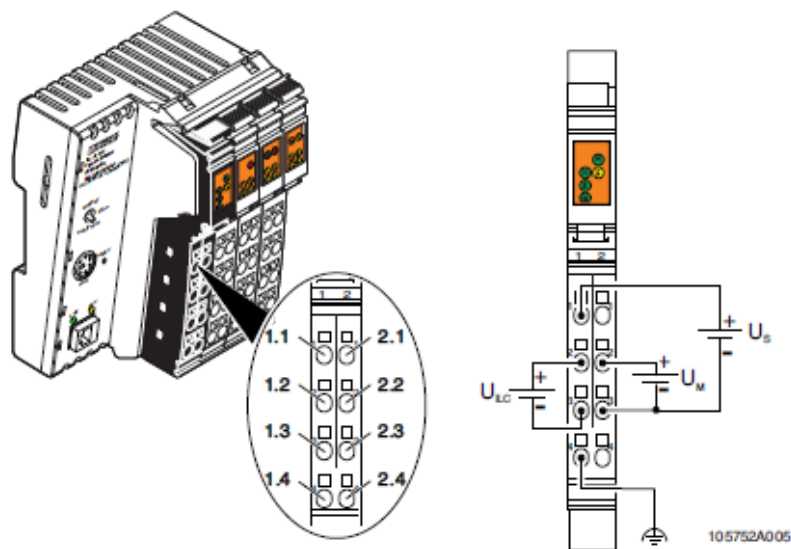


Figure 2-7 Connecting the supply voltages

**POWER UP BOTH CONTROLLERS AND MAKE SURE YOU HAVE A ETHERNET CONNECTION BETWEEN THEM – EITHER WIRED OR WIRELESS**

**REMEMBER IT TAKES AROUND 30-40 SECS TO START UP AFTER APPLYING POWER**

When the system is started up for the first time (approx. 30 - 40 seconds), the Inline controller first indicates a bus error (Fail LED lights up/Q2 output flashes at 4 Hz), because a new bus configuration was detected. The device then automatically reads in the bus configuration. After a short time, the bus error display goes out and both Inline controllers are re-started. The IP addresses are assigned automatically and the connection between the Inline controllers is established automatically.



If you subsequently modify the bus configuration, it must be read in again (see Section 2.1.8).



For information on diagnostics and status indicators of the Inline controllers, please refer to Section A 1 on page 41.

IF YOU NEED TO CHANGE THE I/O CONFIGURATION...

**2.1.8 Reading the bus configuration**

If you subsequently modify an automatically read bus configuration, it must be read in again. The reading process of the bus configuration needs to be initiated manually.

- Apply a 24 V DC pulse to the I8 input of each Inline controller, as shown in Figure 2-9.



The pulse must be applied while the relevant FAIL LED of the Inline controller is flashing, otherwise the software block will be reset automatically.

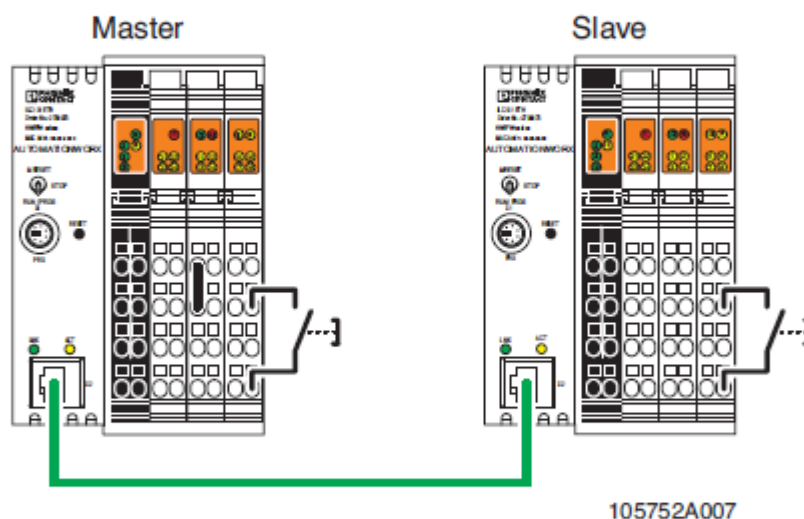


Figure 2-9 Applying a 24 V DC pulse to the I8 input of the Inline controllers

Once you have applied the pulse to both Inline controllers, they will be restarted. The IP addresses are assigned automatically and the connection between the Inline controllers is established automatically. The multiplexer system switches to normal operating state. The pending I/O signals are transmitted. The Q1 to Q4 LEDs are used to indicate possible errors, see Section A 1 on page 41.

**IF YOU ADD OR REMOVE I/O THEN FOLLOW THE ABOVE – THE CONTROLLERS WILL SEE THE CHANGED CONFIGURATION AND THE FAIL LED WILL LIGHT**

**PULSE THE INPUT AS DESCRIBED ABOVE AND THE CONTROLLERS WILL REBOOT**


USING YOU MULTIPLEX SYSTEM WITH SAFETY I/O MODULES – PAGE 1/3

**NOTE : A SAFETY RELAY/CONTROLLER MUST BE USED IN CONJUNCTION WITH THE SAFE OUTPUTS TO EVALUATE LOGIC STATE – SBT ONLY MONITORS THE INPUT TO OUTPUT TRANSMISSION AS A WIRE REPLACEMENT.**



1. WHEN USING SAFETY I/O BOTH THE MASTER UNIT (LPSDO – OUTPUT MODULE) AND THE INPUT MODULE (LPSDI) FOR A MULTIPLEX SYSTEM ONLY THE SPECIFIED UNITS BELOW CAN BE USED.
2. BOTH THE LPSDO AND LPSDI MODULES HAVE DIP SWITCHES THAT HAVE TO BE SET BEFORE BEING CONNECTED TO THE MULTIPLEX SYSTEM – SEE THE FOLLOWING SETTINGS

Table A-5 Suitable terminals for the SafetyBridge system

Safe input and output modules that can be used	
IB IL 24 PSDI 8-PAC	IB IL 24 LPSDO 8-PAC
	or IB IL 24 LPSDO 8 V2-PAC
	Observe the accompanying manual.

**NOTE: Not a safe application**  
In order to ensure correct use, subsequent safety logic (an evaluation unit) is required.



USING YOUR MULTIPLEX SYSTEM WITH SAFETY I/O MODULES – PAGE 2/3

DIP SWITCH SETTINGS ON LPSDO (OUTPUT MODULE) REQUIRED FOR MUX

Table 4-5 Switch position for SafetyBridge multiplexer

SafetyBridge multiplexer										
Mode switch	Address switch									
	Island number							Reserved		
	9	8	7	6	5	4	3	2	1	0
Any	on	off						off	off	off
			1 <sub>dec</sub> to 31 <sub>dec</sub>					0 <sub>dec</sub>		



**NOTE: THE ISLAND NUMBER SET MUST BE THE SAME ON BOTH UNITS**

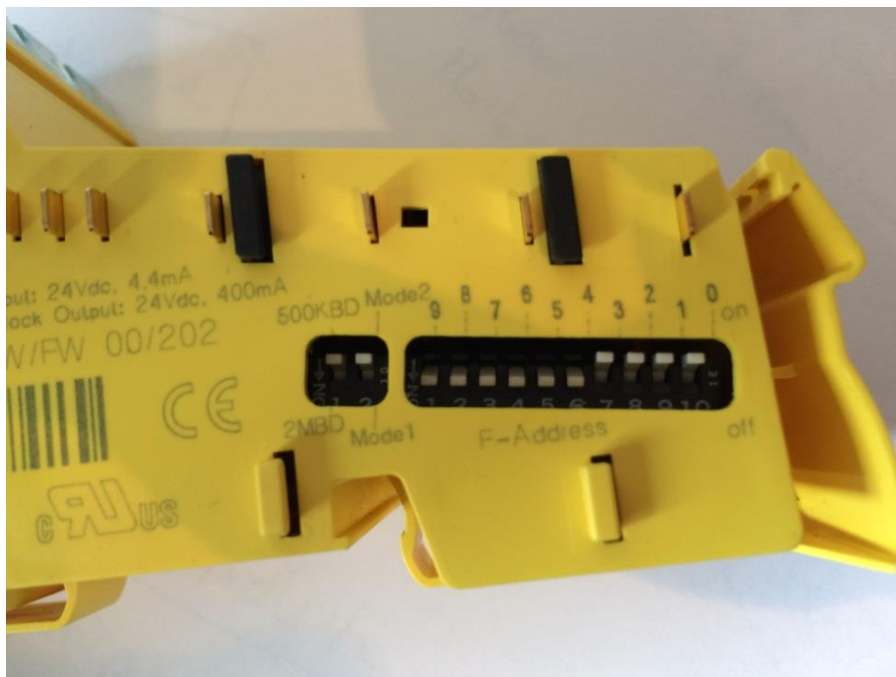
**EXAMPLE: SET DIP SWITCH 3 TO ON FOR ISLAND NUMBER ONE ON BOTH UNITS**

USING YOUR MULTIPLEX SYSTEM WITH SAFETY I/O MODULES – PAGE 3/3

DIP SWITCH SETTINGS ON PSDI8 MODULE REQUIRED FOR MUX

Table 4-4 Switch position for SafetyBridge in **multiplexer** mode

SafetyBridge multiplexer mode										
Mode switch	Address switch									
	Island number							Satellite number		
	9	8	7	6	5	4	3	2	1	0
Mode 2	off	off						on	on	on
			1 <sub>dec</sub> to 31 <sub>dec</sub>				7 <sub>dec</sub>			



ONCE THE DIP SWITCHES HAVE BEEN SET - INSTALL EACH MODULE TO THE REQUIRED CONTROLLER AND FOLLOW THE GUIDE FOR STANDARD I/O

## WIRELESS MUX USING BLUETOOTH ETHERNET ADAPTERS - PAGE 1/9



### Wireless connection between the Inline controllers

For the wireless connection between the Inline controllers, you require an adapter for each Inline controller (e.g., FL BT EPA AIR SET adapter set, Order No. 2693091).



Please refer to Section "Ordering data" on page 39 for information on further adapters.

- Connect each Inline controller to an adapter for wireless communication using an Ethernet cable.



Please observe the notes and descriptions given in the respective user manuals and package slips for the adapters used.

**THE BLUETOOTH AIR SET ACTS AS A CABLE REPLACEMENT AND PROVIDES A TRANSPARENT ETHERNET BRIDGE – DISTANCES UP TO 150 MTRS WITH CLEAR LINE OF SIGHT BETWEEN BLUETOOTH MODULES**

Starting up the multiplexer system

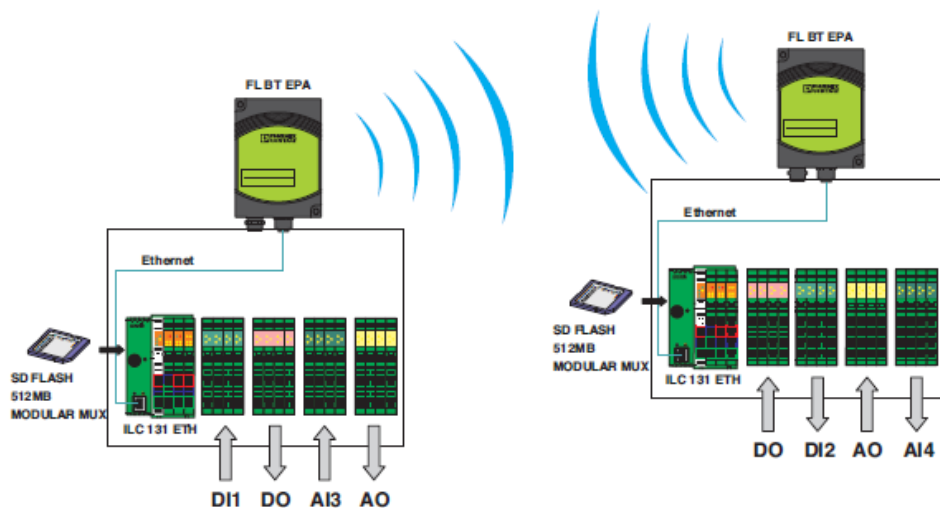
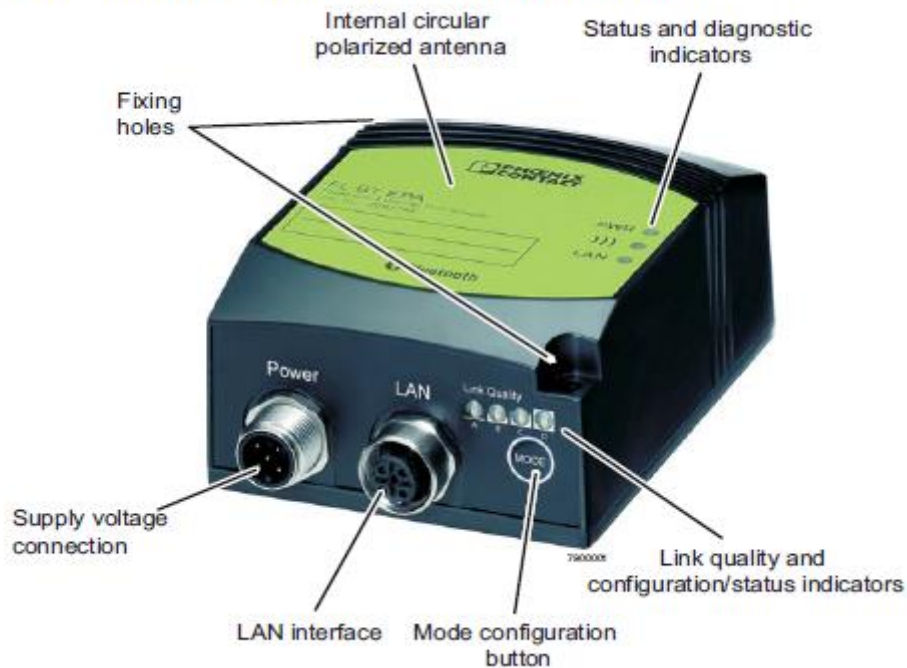


Figure 2-3 Schematic view of the wireless connection

105752A0/02

### 1.7 FL BT EPA MP installation/interfaces



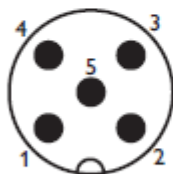
## WIRELESS MUX USING BLUETOOTH ETHERNET ADAPTERS - PAGE 3/9

### 1.7.1 Electrical connection

The supply voltage and the trigger signal are connected via the 5-pos. M12 plug (A-coded) labeled "Power" (see Figure 1-5 on page 8).

#### 1.7.1.1 Pin assignment for the connection of the trigger input DI and the supply voltage

Pin 1	Vin + (9 - 30 V DC)
Pin 2	External trigger ground
Pin 3	Vin GND (0 V)
Pin 4	External trigger + (9 - 30 V DC), responds to a rising edge
Pin 5	n.c.



A-coded Male M12

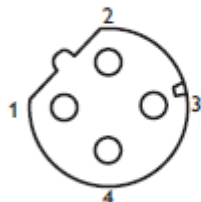
Figure 1-6 View of the supply voltage connection - plug on the device (contact side, not solder side)



Make sure that the trigger input is not permanently connected with VIN +.

#### 1.7.1.2 Assignment of the LAN socket

Pin 1	Transmit +
Pin 2	Receive +
Pin 3	Transmit -
Pin 4	Receive -



D-coded Female M12

Figure 1-7 View of the network connection - socket on the device (contact side, not solder side)

## WIRELESS MUX USING BLUETOOTH ETHERNET ADAPTERS - PAGE 4/9

On the bottom of the device, there are four LEDs which display alternative information depending on the operating mode.

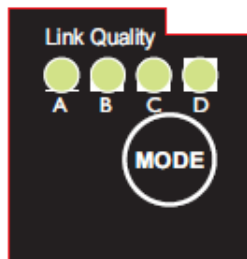


Figure 1-9 LEDs on the bottom of the device



The MODE button is used for configuration. Please observe its function in the user manual. LEDs "A" to "D" are used to indicate the status during configuration (see Section "Configuration using the MODE button" on page 20).

Des.	Color	Status	Meaning
PWR	Green	ON	Supply voltage present
		Flashing	Supply voltage too low
		OFF	Supply voltage not present
)))	Blue/ purple/ red	Lights up blue	A Bluetooth connection has been established
		Purple	Attempt to establish a connection to another Bluetooth device
		Flashing blue	Data transmission
		Red	Error
		OFF	Device waits for connection requests

### 2.1.1 Configuration using the MODE button



Figure 2-1 MODE button on the bottom of the FL WLAN EPA - Above the MODE button are LEDs "A" to "D" for configuration indication

#### General sequence:

- Connect the module to the power supply.
- **Within 5 seconds** of switching on the supply voltage, briefly press the MODE button to access configuration mode.
- Select the desired operating mode by repeatedly pressing the MODE button until the corresponding LED combination lights up. Once you have scrolled through all the LED combinations (operating modes), the selection automatically starts again from the beginning.
- After selecting the desired operating mode, exit the configuration by pressing the MODE button (> 2 seconds) until the LEDs flash or go out (upon reset or when exiting configuration mode).

If the module has been previously configured, we recommend restoring the device's default settings before configuring the device via the MODE button. This action is also performed via the MODE button.

If the MODE button is not pressed in the active configuration mode for an extended period, the configuration mode is automatically exited and the EPA is started in its previous setting.

## WIRELESS MUX USING BLUETOOTH ETHERNET ADAPTERS - PAGE 5/9

WHEN USING THE WIRELESS BLUETOOTH ADAPTERS FOR TRANSMITTING NON SAFE SIGNALS FOLLOW THE INSTRUCTIONS BELOW USING MODE 4 & 5

(NO FURTHER CONFIGURATION IS REQUIRED)

WHEN USING SAFE I/O USE MODE 4 AND 6 – OBSERVE THE FOLLOWING INSTRUCTIONS ON SWITCHING THE WEB BROWSER OFF IN PROFIsafe MODE

Mode	Operating mode	Configuration setting	LEDs	A	B	C	D
4	PANU	<p><b>EPA-to-EPA bridge: wait for configuration</b></p> <p>Step 1 for establishing a direct connection (PANU-PANU) between two EPAs. As long as the LED flashes, the module waits for a connection request.</p> <p>After connection establishment the module accepts IP address 10.0.0.99. Another address can be assigned via DHCP.</p>	C			●	
5	PANU	<p><b>EPA-to-EPA bridge: connection establishment</b></p> <p>Step 2 for establishing a direct connection (PANU-PANU) between two EPAs. The module initializes connection to a module in mode 4 - "Wait".</p> <p>After connection establishment the module accepts IP address 10.0.0.100. Another address can be assigned via DHCP.</p>	A+C	●		●	
6	PANU	<p><b>EPA-to-EPA bridge with PROFINET optimization:</b></p> <p>Connection establishment</p> <p>Step 2 for establishing a direct connection (PANU-PANU) between two EPAs. The module initializes connection to a module in mode 4 - "Wait". SafetyBridge transmission requires the settings page of the web interface to be switched off.</p> <p>After connection establishment the module accepts IP address 10.0.0.100. Another address can be assigned via DHCP.</p>	B+C		●	●	

ONCE YOU HAVE CONFIGURED ONE UNIT TO "WAIT" AND THE OTHER TO "ESTABLISH" IT TAKES AROUND 5-10 SECS TO PAIR THE UNITS – THE BLUE LED WILL BE LIT STEADY ON BOTH UNITS WHEN THIS IS DONE FOR ALL CONFIGURATIONS

### 4.2 PROFINET/PROFIsafe via Bluetooth

The PROFIBUS user organization has specified PROFIsafe for wireless transmission paths. Positive concept assessments have also been obtained from the BGIA (Professional Institute for Safety at Work) and TÜV (German Technical Inspectorate). The version of the PROFIsafe profile (version 2.4) describes the marginal conditions for the functionally safe transmission of data via WLAN and Bluetooth. In particular, security aspects for the configuration of wireless components and for safeguarding cyclic data exchange are specified. The FL BT EPA (MP) meets these requirements when it is operated in "4 / 6" or "8 / 9" oper-

## WIRELESS MUX USING BLUETOOTH ETHERNET ADAPTERS - PAGE 6/9

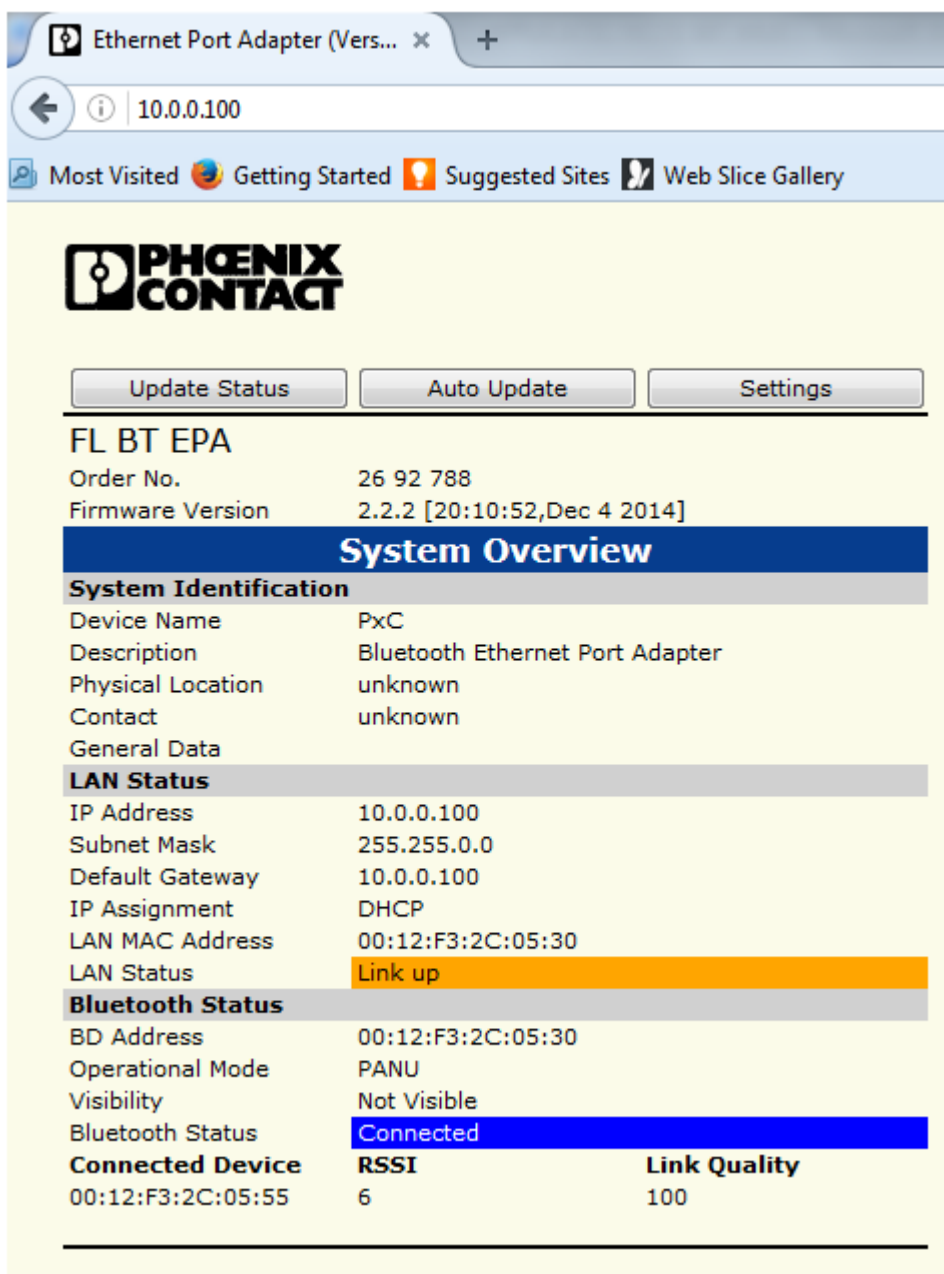
THE BLUETOOTH EPA UNITS WILL ADOPT AN IP ADDRESS AS FOLLOWS:

EPA UNIT SET TO WAIT = 10.0.0.99 (MODE 4)

EPA UNIT SET TO ESTABLISH = 10.0.0.100 (MODE 6)

Once the link is operational you will need to connect to each EPA in turn and switch off the web browser in each case in order to conform with applicable standards

### 1- Select settings tab



[Update Status](#)
[Auto Update](#)
[Settings](#)

**FL BT EPA**

Order No. 26 92 788  
 Firmware Version 2.2.2 [20:10:52,Dec 4 2014]

**System Overview**

**System Identification**

Device Name	PxC
Description	Bluetooth Ethernet Port Adapter
Physical Location	unknown
Contact	unknown

General Data

**LAN Status**

IP Address	10.0.0.100
Subnet Mask	255.255.0.0
Default Gateway	10.0.0.100
IP Assignment	DHCP
LAN MAC Address	00:12:F3:2C:05:30
LAN Status	Link up

**Bluetooth Status**

BD Address	00:12:F3:2C:05:30
Operational Mode	PANU
Visibility	Not Visible
Bluetooth Status	Connected

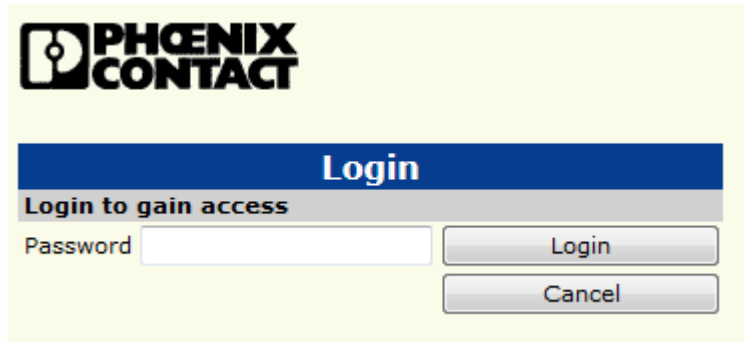
Connected Device	RSSI	Link Quality
00:12:F3:2C:05:55	6	100



## WIRELESS MUX USING BLUETOOTH ETHERNET ADAPTERS - PAGE 7/9

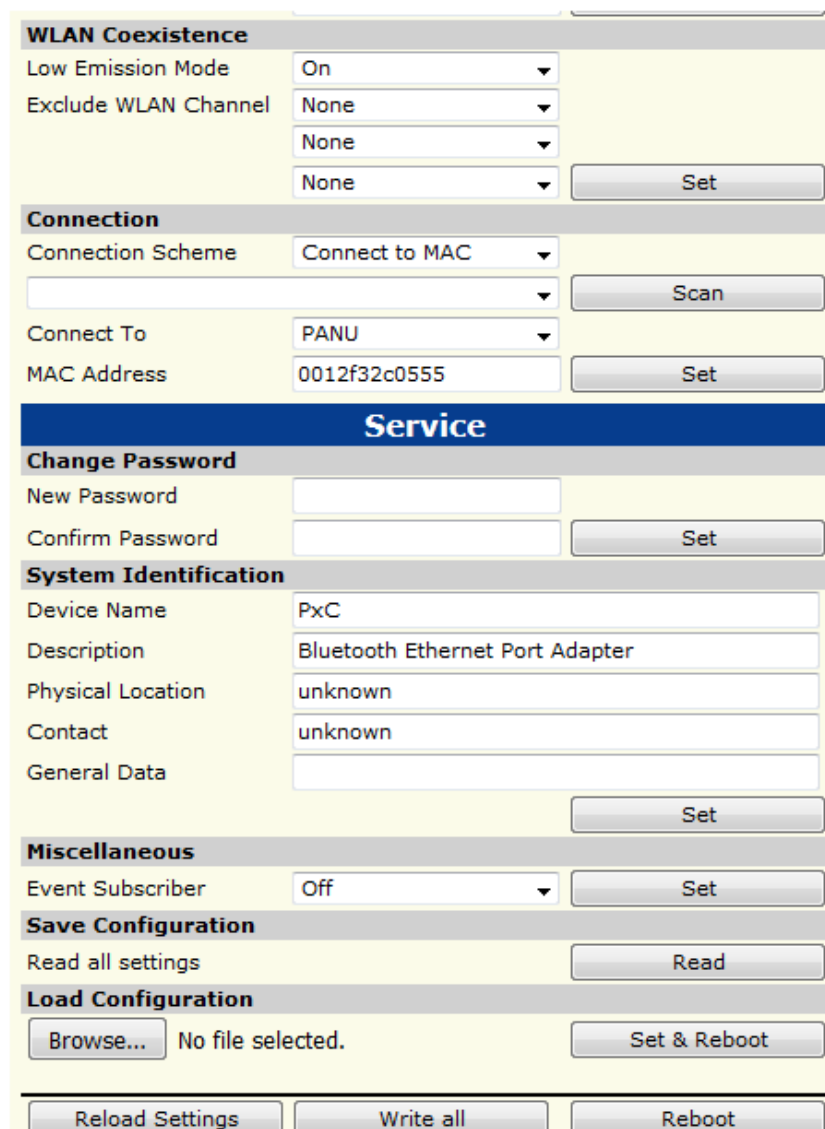
3. The prompt will appear as below

4. Enter the default password “admin” and then “Login”



The image shows a login prompt from Phoenix Contact. At the top left is the Phoenix Contact logo. Below it is a blue header with the word "Login" in white. Underneath is a grey bar with the text "Login to gain access". There is a text input field labeled "Password" and two buttons: "Login" and "Cancel".

3. It is recommended to change the default password at this stage under the SERVICE tab

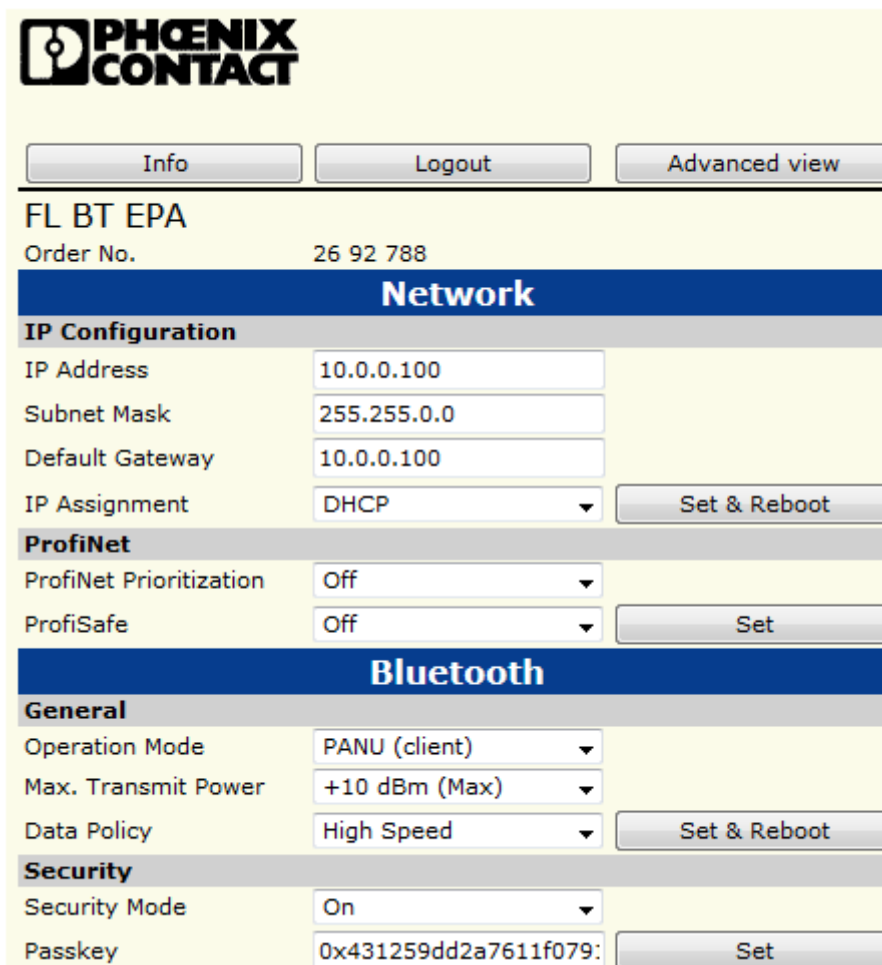


The image shows the "Service" configuration page in the Phoenix Contact interface. It is divided into several sections:

- WLAN Coexistence:** Includes "Low Emission Mode" (set to On), "Exclude WLAN Channel" (set to None), and a "Set" button.
- Connection:** Includes "Connection Scheme" (set to Connect to MAC), "Connect To" (set to PANU), "MAC Address" (0012f32c0555), and "Scan" and "Set" buttons.
- Service:** A blue header.
- Change Password:** Includes "New Password" and "Confirm Password" input fields, and a "Set" button.
- System Identification:** Includes "Device Name" (PxC), "Description" (Bluetooth Ethernet Port Adapter), "Physical Location" (unknown), "Contact" (unknown), and "General Data" input fields, with a "Set" button.
- Miscellaneous:** Includes "Event Subscriber" (set to Off) and a "Set" button.
- Save Configuration:** Includes a "Read all settings" button labeled "Read".
- Load Configuration:** Includes a "Browse..." button, the text "No file selected.", and a "Set & Reboot" button.

At the bottom of the page are three buttons: "Reload Settings", "Write all", and "Reboot".

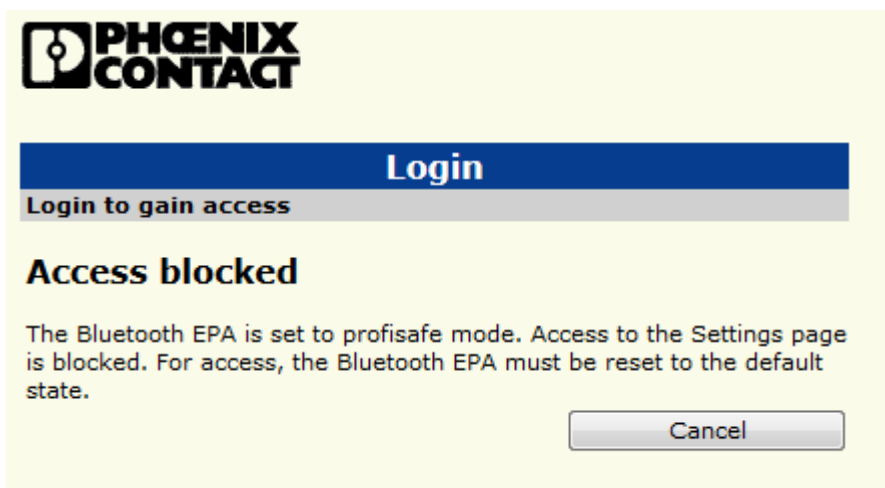
4. Change the setting of Profisafe to on and then select “Set”



The screenshot shows the Phoenix Contact web interface for device configuration. At the top, there is a navigation bar with buttons for 'Info', 'Logout', and 'Advanced view'. Below this, the device model 'FL BT EPA' and its 'Order No.' (26 92 788) are displayed. The interface is divided into several sections:

- Network Section:**
  - IP Configuration:** Fields for IP Address (10.0.0.100), Subnet Mask (255.255.0.0), and Default Gateway (10.0.0.100). The IP Assignment is set to 'DHCP'. A 'Set & Reboot' button is present.
  - ProfiNet:**
    - ProfiNet Prioritization: Off
    - ProfiSafe: Off (This is the setting to be changed according to the instruction). A 'Set' button is next to it.
- Bluetooth Section:**
  - General:**
    - Operation Mode: PANU (client)
    - Max. Transmit Power: +10 dBm (Max)
    - Data Policy: High Speed
    - A 'Set & Reboot' button is present.
  - Security:**
    - Security Mode: On
    - Passkey: 0x431259dd2a7611f079: (A 'Set' button is next to it).

5. The prompt below now appears, once you press OK the web browser is no longer available and can only be accessed by setting to default via the “MODE” button

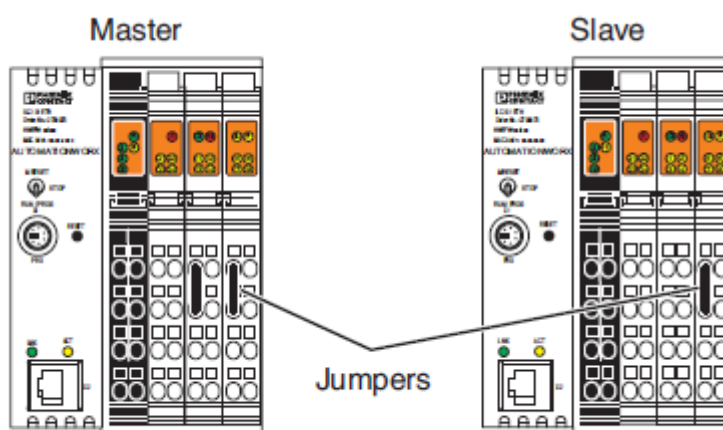


6. Repeat with the 2<sup>nd</sup> EPA as above. Once Both units have been set to PROFIsafe mode your wireless multiplex system will be ready to use.

## USING YOUR MULTIPLEX SYSTEM OVER A NETWORK – PAGE 1/4

IF YOU WANT TO USE YOUR MULTIPLEX SYSTEM IN A NETWORK AND NEED TO CHANGE THE IP ADDRESS THEN LINK TERMINAL POINT 3.1 AND 3.2 WITH JUMPERS AS SHOWN BELOW ON BOTH CONTROLLERS

BY DOING THIS A TAB IN THE WEB BROWSER WILL BE MADE AVAILABLE TO CHANGE THE STATIONS IP ADDRESS



**DEFAULT MASTER IP= 192.168.0.2/ SLAVE=192.168.0.3**

### 2.3.5 Connecting the Inline controllers to a PC

- First connect the Inline controller that has been configured as master to a PC using an Ethernet cable (see Figure 2-14).
- Then follow the instructions given in Section 2.3.6 to 2.3.7.

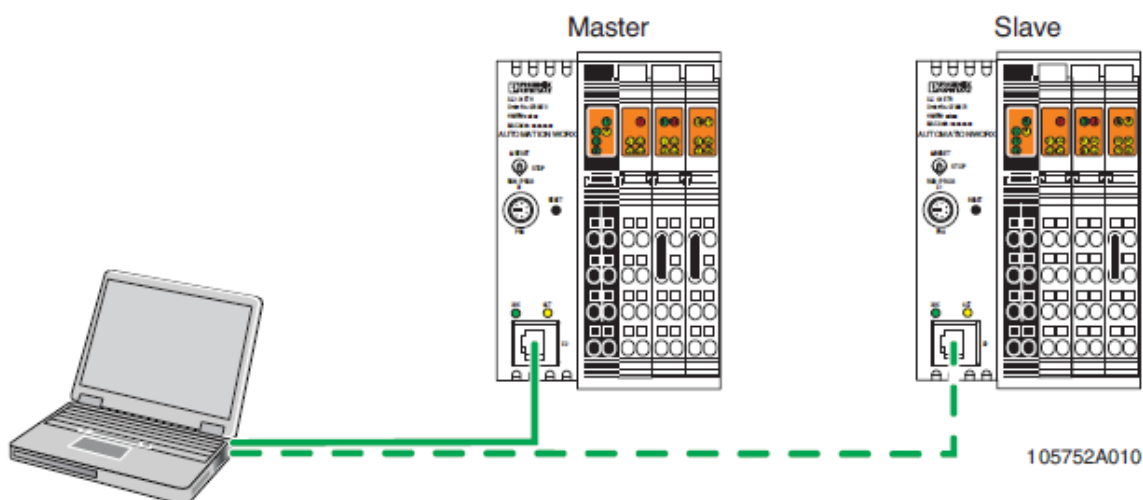


Figure 2-14 Connecting the Inline controllers to a PC

- When you have assigned the master IP address according to Sections 2.3.6 to 2.3.7, go back to Section 2.3.5 and repeat the instructions given in Sections 2.3.5 to 2.3.7 for the slave.

## USING YOUR MULTIPLEX SYSTEM OVER A NETWORK – PAGE 2/4

In order to assign the IP address to the Inline controller in the network, the web interface of the multiplexer system is used.

- Open your web browser.
- Enter one of the following addresses, depending on for which Inline controller you want to assign the IP address in the network:
  - <http://192.168.0.2> (default IP address for the master)
  - <http://192.168.0.3> (default IP address for the slave)

The web interface of the multiplexer system is opened.

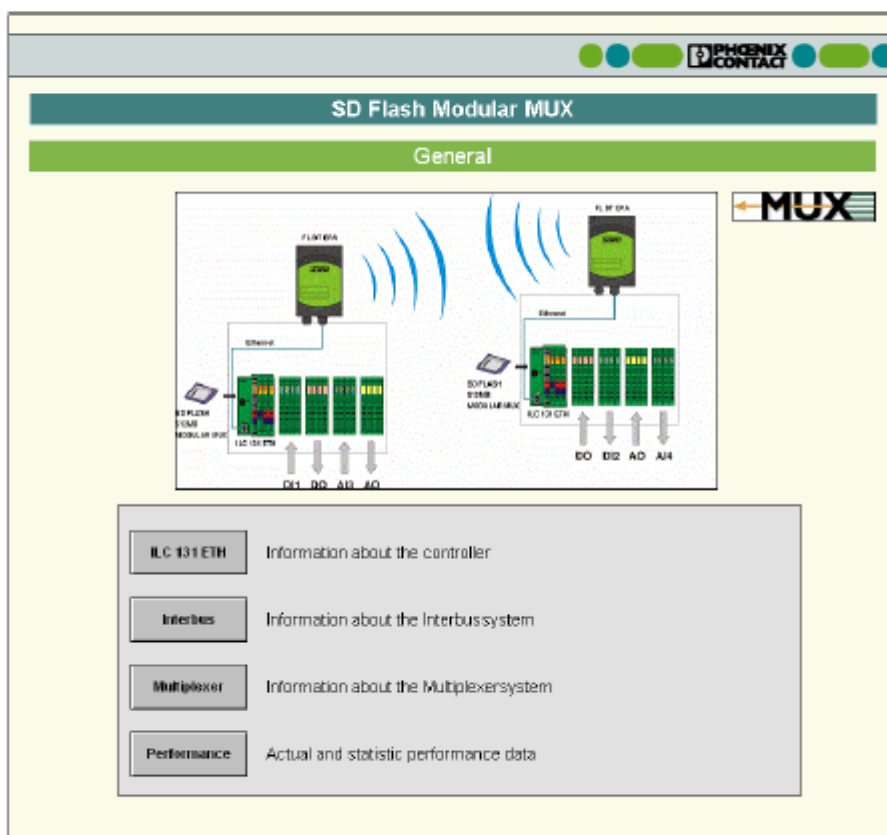


Figure 2-16 Web interface start page (master window)

- Click the "ILC 131 ETH" button.
- In the window that opens, click the "Set IP Address" button.

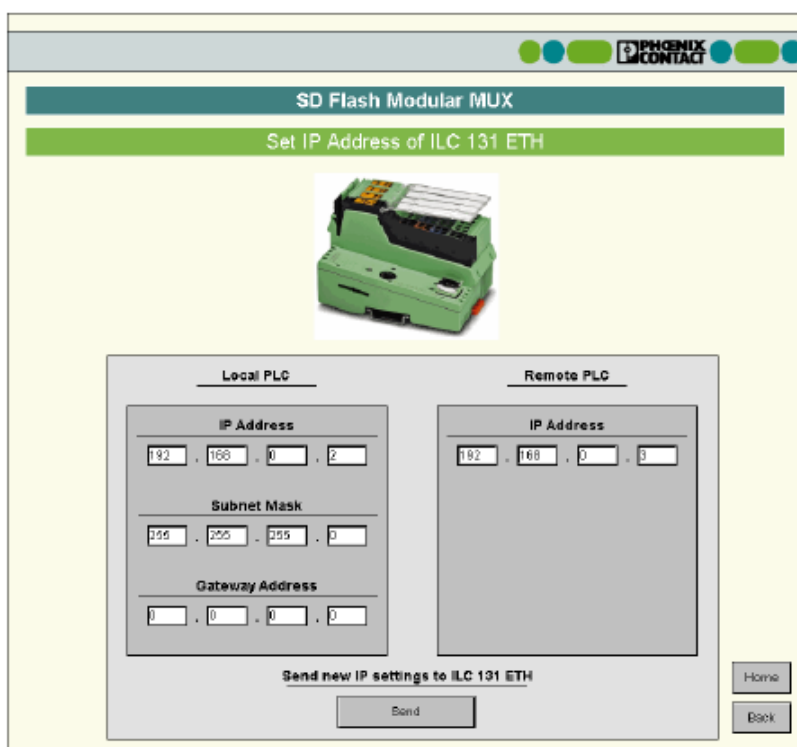


Figure 2-17 "Set IP Address" page

- In the "Local PLC" field, set the IP address, the subnet mask and the gateway address for the Inline controller for which you have opened the multiplexer web interface.
- In the "Remote PLC" field, enter the IP address of the other Inline controller.
- Click the "Send" button in order to transfer the modified IP address to the Inline controller.

**MAKE SURE YOU DO THE SAME FOR BOTH MASTER AND SLAVE DEVICES**

### 2.3.9 Connecting the Inline controllers to the network

After assigning the IP addresses to the Inline controllers (see Section 2.3.5 to 2.3.7), you can connect the Inline controllers to the network.

- Connect each Inline controller to the network using an Ethernet cable (Figure 2-19).

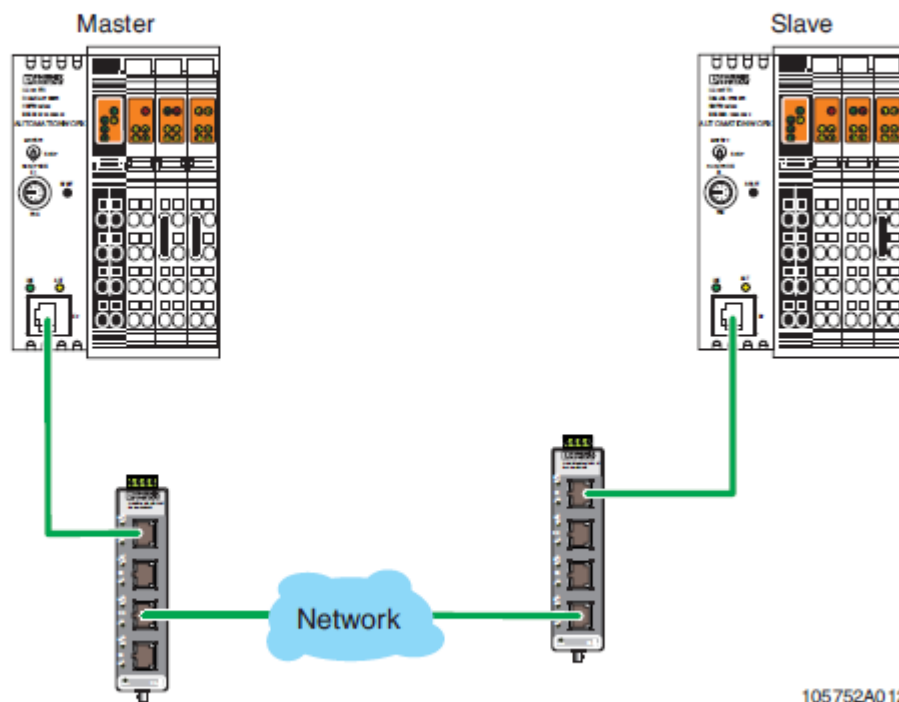


Figure 2-19 Inline controllers in the network

105752A0 12

- Switch on power for the Inline controllers.

These guides have been produced locally in the UK to provide a quick start guide only. Please refer to the individual product datasheets for more detailed information where required. Visit our website at:

<http://www.phoenixcontact.co.uk>

ANDREW MASKELL – PRODUCT MANAGER

(SAFETY I/O & NETWORKS)