Single Ethernet Ext. Card FLX3101

INSTALLATION GUIDE

IG-0017-00 1.5 en-US ENGLISH

14 rue Edouard Petit
42000 St-Etienne

Tel : +33 477 92 03 56
Email : contact@rg2i.com
www.rg2i.com

Important User Information

Disclaimer

The information in this document is for informational purposes only. Please inform HMS Industrial Networks of any inaccuracies or omissions found in this document. HMS Industrial Networks disclaims any responsibility or liability for any errors that may appear in this document.

HMS Industrial Networks reserves the right to modify its products in line with its policy of continuous product development. The information in this document shall therefore not be construed as a commitment on the part of HMS Industrial Networks and is subject to change without notice. HMS Industrial Networks makes no commitment to update or keep current the information in this document.

The data, examples and illustrations found in this document are included for illustrative purposes and are only intended to help improve understanding of the functionality and handling of the product. In view of the wide range of possible applications of the product, and because of the many variables and requirements associated with any particular implementation, HMS Industrial Networks cannot assume responsibility or liability for actual use based on the data, examples or illustrations included in this document nor for any damages incurred during installation of the product. Those responsible for the use of the product must acquire sufficient knowledge in order to ensure that the product is used correctly in their specific application and that the application meets all performance and safety requirements including any applicable laws, regulations, codes and standards. Further, HMS Industrial Networks will under no circumstances assume liability or responsibility for any problems that may arise as a result from the use of undocumented features or functional side effects found outside the documented scope of the product. The effects caused by any direct or indirect use of such aspects of the product are undefined and may include e.g. compatibility issues and stability issues.

Table of Contents

Page

1 Preface 3

1.1 About This Document 3

1.2 Document History 3

1.3 Related Documents 3

1.4 Trademark Information 3

2 Product Summary 4

3 Safety, Environmental & Regulatory Information 5

3.1 Scope 5

3.2 ESD Damage Prevention 5

3.3 Applicable Directives, Standards and Compliances 5

4 Hardware Description 7

4.1 Mechanical Layout and Interfaces 7

4.2 Extension Card Label 7

4.3 Front Panel LEDs 8

4.4 Ewon Flexy Extension Cards Environmental Conditions 9

4.5 Ethernet Port Specifications 9

4.6 Plug the FLX 3101 into the Base Unit 9

4.7 Power Requirements 13

5 Powering on the Base Unit with its Extension Cards 15

6 Check Card Detection on the Embedded Web Page 16

6.1 Connecting to the Embedded Web Server 16

6.2 Detected Cards Displayed in the System Page 16

This page intentionally left blank

1 Preface

1.1 About This Document

This document describes the hardware of the FLX 3101 – single Ethernet port extension card which belongs to the Ewon Flexy family

The Ewon Flexy family is a range of modular industrial gateway/router and as its name *Ewon Flexy* suggests, it has been designed to enable numerous different combinations of base units with extension cards.

For additional related documentation and file downloads, please visit www.ewon.biz/support.

1.2 Document History

Version	Date	Description
1.0	2016-07-05	First release
1.1	2015-11-21	Official product release
1.2	2015-11-18	New template release
1.3	2016-07-27	Update of legal references
1.4	2018-08-03	New template release
1.5	2019-09-03	Changed: *Safety, Environmental & Regulatory Information, p. 5* Changed: *Ewon Flexy Extension Cards Environmental Conditions, p. 9*

1.3 Related Documents

Document	Author	Document ID
Ewon Flexy	HMS	IG-0014-00
EwonFlexy 205	HMS	IG-0028-00

1.4 Trademark Information

Ewon® is a registered trademark of HMS Industrial Networks SA. All other trademarks mentioned in this document are the property of their respective holders.

2 Product Summary

The present Installation Guide is focusing on the FLX 3101 – single Ethernet port extension card which, as such, needs to be inserted in one of the Flexy base units to work.

The base units have their own Installation Guide which can be found in the *Related Documents, p. 3*.

This guide also addresses shortly how the extension cards integrate the base units as well as some recommendations on how to mount them. See *Base Unit Slot Compatibility, p. 9* for more details.

3 Safety, Environmental & Regulatory Information

3.1 Scope

The present heading addresses Safety, Environmental & Regulatory Information about the FLX 3101 – single Ethernet port extension card.

This extension card is belonging to the same compliance frame than the base units. In the present case of a telecommunication extension card, additional directives, standards and instructions apply.

3.2 ESD Damage Prevention

> **!** Always use ESD precautions when handling extension cards and / or opened base unit as they contain parts and assemblies susceptible to be damaged by electrostatic discharge (ESD).

The extension card described in this document is a module exposing both sides of an electronic printed circuit board. Therefore, it is packed in an antistatic ESD bag. In order to avoid ESD damage, the product must be handled with the necessary precaution including:

- Grounded ESD protective work surface
- Personnel grounding

3.3 Applicable Directives, Standards and Compliances

TheFLX 3101 inserted in a base unit belongs to class A Information Technology Equipment (ITE). In a domestic environment, this product may cause radio interference in which case the user may be required to take appropriate measures.

3.3.1 Applicable European Directives

The FLX 3101 is in conformity with the following EC directives:

- RoHS Directive 2011/65/EU
- RE Directive 2014/53/EU

3.3.2 Applicable Safety Standards

The FLX 3101 is in conformity with the following safety standards:

- IEC / EN 60950-1
- UL 60950-1
- CSA-C22.2 No 60950-1-07
- EN/IEC 62368-1
- UL 62368-1
- CAN 62368-1

3.3.3 FCC Compliance

The FLX 3101 complies with Part 15 of the FCC Rules. Operating is subject to the following two conditions:

- This product may not cause harmful interference
- This product must accept any interference received, including interference that may cause undesired operation.

3.3.4 Certifications

The FLX 3101 has been certified by authorized bodies:

- UL Certificate of Compliance (COC) # 20190529_E350576
- CB certificate # DK-84039-UL

These certificates can be downloaded as PDF files on the Ewon support web site: www.ewon.biz/support

4 Hardware Description

4.1 Mechanical Layout and Interfaces

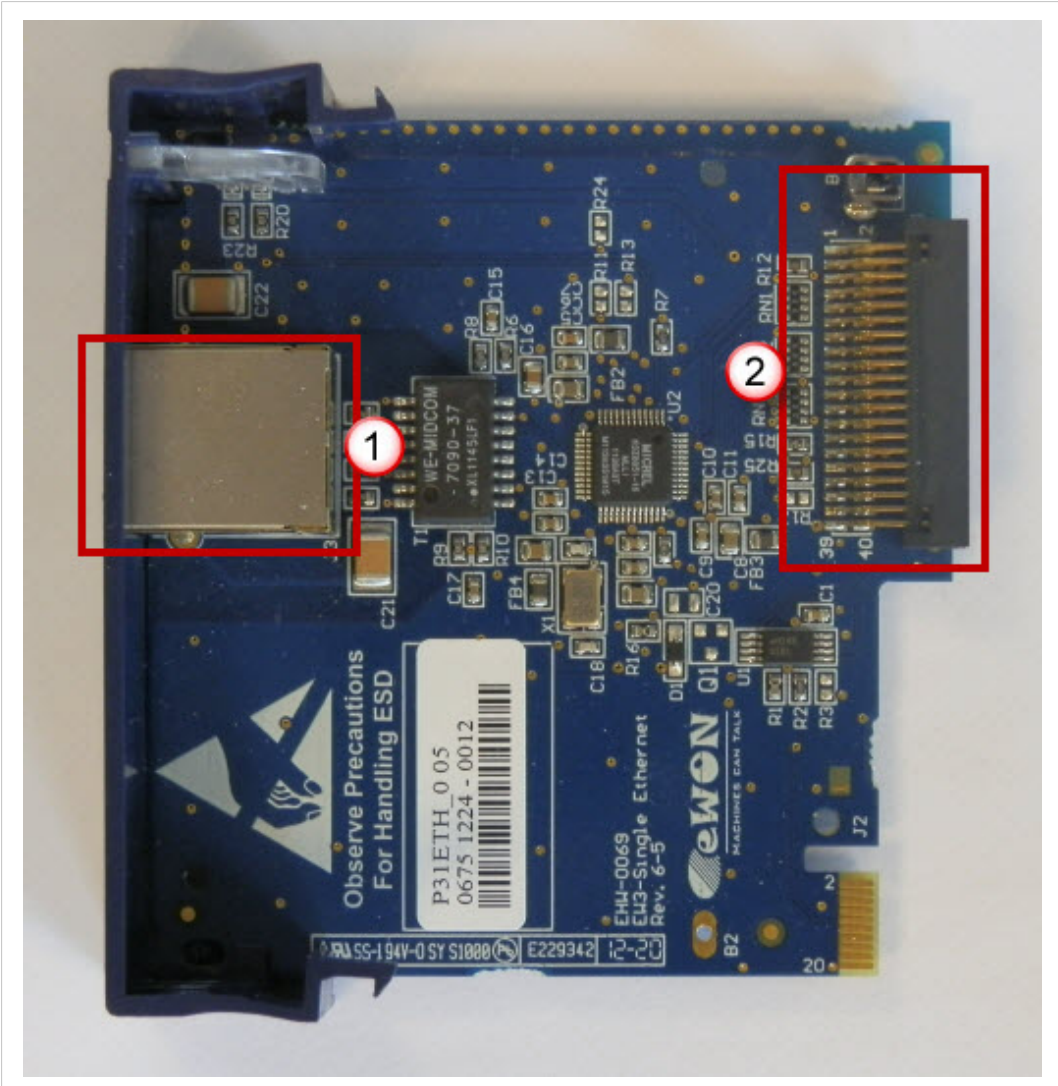

Fig. 1 **Mechanical layout and interfaces**

1	Ethernet Port Connector RJ45 - 10/100 Base-T
2	Back-plane connector

4.2 Extension Card Label

4.2.1 Label Location and Included Information

The identification label of the extension cards is placed on the solder side of the PCB.

The different parts of the label are described below:

Label	Description
PN	Part Number (see syntax table below)
SN	Serial Number in the form: **MMMM-YYWW-SSSS-PP** • MMMM : MTID (product related) • YYWW : Year and week • SSSS : Sequential manufacturing order • PP : Product type
MIN. FW	Minimum firmware version required in the Ewon device
Marks	CE, UL... certification number and logos if applicable

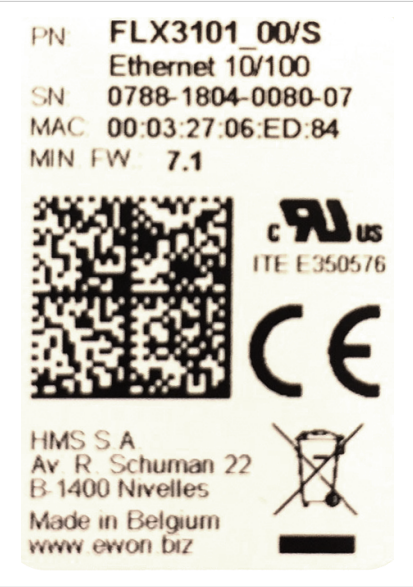

Fig. 2 FLX 3101 label

4.2.2 Part Number Structure for Extension Cards

FLYXXXX_00/S				
FL	FL is the prefix for the extensions of the Ewon Flexy family	Only FL (constant)		
Y	1 alphabetic sign (CAP) Defines the slots of the base module in which the extension card can be inserted.	A	2 first slots only	●●○○
		B	2 last slots only	○○●●
		X	Any slots	●●●●
		C	Any slots. Available for Flexy 205 only.	○○○○
XXXX_00	The extension card type. The suffix _00 is used for software options.			
/S	The suffix might have an optional “/” character It might also be blank or include “S” character => Indicates compliance with the UL/IEC/EN 60950 standard.			

4.3 Front Panel LEDs

Item	Mark	Function
1	LNK	ON Link ETH 10/100 present Speed indication: Green = 100 Mbps Amber = 10 Mbps
2	ACT	Flashing Green Packets transfer activity

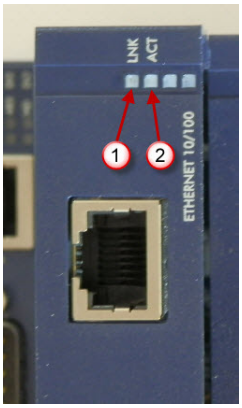

Fig. 3 Front panel LEDs

4.4 Ewon Flexy Extension Cards Environmental Conditions

Characteristic	Value
Operating temperature	-25 to +60 °C
Storage temperature	-40 to +70 °C
Relative humidity	10 to 95% non-condensing
Operating altitude	Up to maximum 2000m
Storage altitude	Up to maximum 3000m

4.5 Ethernet Port Specifications

Characteristic	**Value**
Ethernet Port	10/100Mbps
Default IP mode	Static
Default IP address (WAN)	10.1.0.53
Default Subnet Mask	255.255.255.0

4.6 Plug the FLX 3101 into the Base Unit

4.6.1 Base Unit Slot Compatibility

The FLX 3101 must be inserted in one of the “Type X” slots of the base unit.

The reference code of the extension cards includes a letter defining their compatibility:

- FL**X** xxxx: designate cards that fit into “Type X” slots.

In addition to the card reference, each type of extension card bears a visual compatibility symbol on its front panel:

Design	**Slot Type**	**Flexy 205 Location**	**Flexy 10x & 20x**
●●●●	Type X	Any slot	Any slot

Ewon Flexy 205

As the Flexy 205 has room for 2 slots, the type slot compatibility rule doesn’t apply. The FLX 3101 can be inserted in both slots.

Fig. 4 Position of the “Type X” Slots on a Flexy 205.

Ewon Flexy 10x & 20x

The FLX 3101 must be inserted in the “Type X” slots which means each slot possible of the Flexy 10x & 20x.

Fig. 5 Position of the “Type X” Slots on a Flexy 10x & 20x.

4.6.2 How to Insert into the Flexy Base Unit

Wait 30 seconds after turning off the equipment before inserting (or removing) an extension card to avoid possible damage to the base unit and the extension cards.

Remove the slot filler of the location the new card will be inserted. To do so, press on both ends of the cover, note that the hooks are off-centered.

Fig. 6 Remove the slot fillers

1	Hooks to be pressed are off-centered. Press while pulling upwards
2	This metal tag soldered on the PCB acts as mistake-proof security (mating stop in housing). Doesn't apply on Flexy 205.

Insert the extension card carefully and slide it down until the hook clicks. Make sure the card is completely inserted.

DO NOT insist if a resistance is felt when trying to insert the card. This can occur if the extension card is inserted in a wrong slot type. In such case, check slot compatibility of the relevant extension card.

Boot the unit for the inserted extension cards to be detected. The web interface of the Flexy base unit has a diagnostic page showing the extension cards in their order of detection (from left to right).

> **!** If an extension card is inadvertently forced in a wrong slot, the base unit will detect the misplaced card and will not complete its boot process. Therefore, the unit will not be accessible through its LAN interface. The slot error is returned by the USR LED. (red ON 1 sec, OFF 0.5 sec).

4.6.3 Insertion of Multiple FLX 3101

Detection Order

The boot sequence of the base unit includes an automated detection of the inserted extension cards. This detection is done sequentially, slot per slot starting from left to right (when holding the base unit with its logo on the right side).

Software Compatibility

The base unit allows the insertion of multiple extension cards, sometimes of the same type. Some configurations including multiple extension cards, even if mechanically acceptable, are not supported by the embedded software. Cards in excess are ignored during the automated

detection process which means that the base unit and its running extension cards will operate normally.

The Flexy firmware currently supports up to **1** FLX 3101.

The ignored card(s) will appear in the **Diagnostic** > **Status** > **System Info** > **System** but they will not be functional.

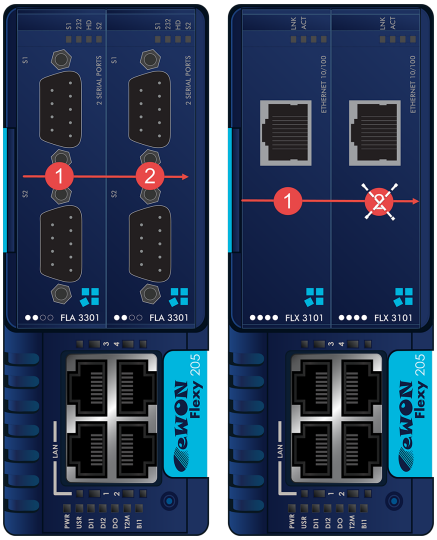

Fig. 7 Order of the Extension Cards

The picture above shows an example of a configuration that would be OK mechanically and power wise but would not be supported by the firmware.

During the boot process, the first 2 serial port extension cards are detected and both can be used.

In case of 2 single Ethernet cards, these 2 cards are also detected but the second Ethernet card is not supported by the firmware and cannot be used. The presence of this “ignored” card in the base unit does not alter the operation of the base unit itself nor does it alter its “accepted” extension cards.

4.7 Power Requirements

> **!** The “Power Requirements” concept doesn’t apply to Flexy 205 and its inserted extension cards.

The internal power converter of the Flexy base units has been dimensioned to cover a broad range of different combinations of extension cards. Users should make sure the total power demand of the extension cards does not exceed the capabilities of the base unit. That is why the notion of “Energy Points” has been introduced.

The Installation Guide “eWON Flexy - Base Units” includes a section giving the **Available Energy Points** of each type of base unit.

The power requirements of each extension card is expressed in **Energy Demand Points.** This number is meant to check whether the balance with the **Available Energy Points** of a given base unit with extension cards is OK or not.

The Energy Demand Points of the FLX 3101 is **1**

The Installation Guide of the “eWON Flexy - Base Units” also includes examples of practical power balance calculations.

5 Powering on the Base Unit with its Extension Cards

When the base unit is powered on, it takes approximately 25 seconds for the unit to go through its self-test procedure. The slots in which the extension cards have been inserted and their type are detected during this process.

If the boot process completes normally, the following LED status should be observed:

- Base unit : **USR** LED flashing green slowly
- Extension card : None

> **!** If the **USR** LED of the base unit is flashing red, it might be because the extension card was improperly inserted (for example in a wrong slot).

6 Check Card Detection on the Embedded Web Page

The Flexy extension cards require no software configuration. They are automatically detected by the base unit when the device boots.

6.1 Connecting to the Embedded Web Server

Configure the network parameters to set the computer being used to reach the web interface on the same IP range than the LAN of the Ewon device.

Once both devices are in the same IP range, connect the PC to one of the LAN port of the Ewon device.

Open an Internet browser and access the homepage of the Ewon device by typing the LAN IP address in the URL field (the default address is http://10.0.0.53).

A dialog box will pop-up asking for credentials. Default ones are:

- login: adm
- password: adm

> **!** For security reasons, changing the default password *adm* is an absolute requirement. To change it, from the menu bar, click on ***Setup > Users*** and double click on the *adm* entry to edit and save its password.

6.2 Detected Cards Displayed in the System Page

Once connected to the embedded web pages of the Ewon device, the homepage displays the system status including detected extension cards.

To access in details the system status summary, click on ***Diagnostic > Status > System Info > System***.

This page intentionally left blank

14 rue Edouard Petit
42000 St-Etienne

Tel : +33 477 92 03 56
Email : contact@rg2i.com

www.rg2i.com