# Remote I/O Com Unit

# Firmware Update

#### **Brief Instructions**





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# **PEPPERL+FUCHS**

# 1 Introduction

#### 1.1 Manufacturer

Pepperl+Fuchs Group Lilienthalstraße 200, 68307 Mannheim, Germany Internet: www.pepperl-fuchs.com

#### 1.2 Contents of the Document

This document describes the steps required to adapt the firmware of an LB/FB com unit to the corresponding application. An adaptation of the firmware is possible starting with com unit version 8X05.

An adaptation to a higher firmware is possible, also an adaptation to a lower firmware. In the following, the term update is used in a simplified way, regardless of whether the existing firmware is replaced by a higher or a lower firmware.

The firmware version number contains of 2 parts. Part 1 contains the main version. Part 2 contains the sub-version. Example: firmware version 09.08 contains the main version 09 and the sub-version 08.

LB/FB com units differ by the supported bus systems and in case of PROFIBUS by the communication strategy. We recommend changing the com unit firmware only within the sub-version (compatible firmware version).

A change of the major version is accompanied by a change of the com unit type. If necessary, the PROFIBUS ID must also be adapted.



#### Caution!

Disturbance of the device function

A change of the firmware version changes the function of the device.

- If the hardware of the com units is different, a change of the com unit type via a firmware change is not permitted.
- Only make changes to the com unit type in cooperation with Pepperl+Fuchs Global Technical Support.
- Before updating the firmware version, make sure that there is no danger to the plant as a result of this change.

# ł

#### Note

Pepperl+Fuchs accepts no responsibility for any damage caused to the device itself, other devices or the plant as a result of changing the firmware version.

The following steps are described:

- Connecting the communication
- Adapting the firmware
- Adapting the device parameters



#### 1.3 Symbols used

This document contains information that you must observe to prevent interference.

#### Warnings



#### Caution!

This symbol indicates a possible fault.

Non-observance could interrupt the device and any connected systems and plants, or result in their complete failure.

#### Information messages



#### Note

This symbol brings important information to your attention.



#### Action

This symbol indicates a paragraph with instructions. You are prompted to perform an action or a sequence of actions.



# 2 Necessary Software

To perform updates for the LB/FB com units, the following components are required:

- LB/FB Remote I/O service tool
- Firmware updates

You can download the service tool and the firmware versions possible for the com unit type from the product detail page of the corresponding com unit type.

	Unicom Com Unit for Pf DP/DP-V1 FB8209H090 Interface between the I/O modules and th PCS/PLC Com unit for 80 analog or 184 digital cha Communication via PROFIBUS DP Installation in suitable enclosures in Zone HART communication via PROFIBUS DP service bus Configuration in suitable enclosures in Zone HART communication via PROFIBUS DP service bus Configuration in run (CiR) for any PCS Non-volatile memory for configuration an parameter settings Self configuration in redundant systems Permanently self-monitoring Outputs drive to safe state in case of failt	ROFIBUS D8.3 ne nnels 2 1 2 V1 or d		(6)
Datasheet Function Docum	nents Approvals+Certificates Software	Associated Products As	k an Expert	]
Please note: All product-related do under the name PepperI+Fuchs G	ocuments, such as certificates, declarations of mbH or Pepperi+Fuchs AG, also apply to Pepp	conformity, etc., which were is perl+Fuchs SE.	ssued prior to	o the conversion
Download the complete datasheet	as a PDF: ENG			
Software: FB8209H0908	3.3			
Firmware				
Firmware for Comm Units 8x09 /	Firmware für Buskoppler 8x09	9.08	ZIP	1649 KB
Firmware for Comm Units 8x09 /	Firmware für Buskoppler 8x09	9.07	ZIP	1648 KB
Service-Tool / Service-Tool		3.00.0002	ZIP	5171 KB

Figure 2.1 Example: download from product detail page

- Install the desired firmware version. The firmware is copied to the correct directory and necessary registry entries are created.
- Only pre-installed firmware versions can be updated with the service tool.



#### **Service Tool**

Software	Version	Operating system
LB/FB Remote I/O service tool Valid com unit versions: 8X05, 8X06, 8X07, 8X08, 8X09, 8X11	3.0.0.91	Windows XP, 7/8/10

Table 2.1

#### **Com Unit and Firmware Versions**

Cum unit	Fieldbus	Firmware version	PROFIBUS-ID
LB8105, FB8205	PROFIBUS	6.xy	0x1710
LB8106, FB8206	PROFIBUS (EasyCom)	6.xy	0x1711
LB8107, FB8207	MODBUS RTU	7.xy	-
LB8108, FB8208	PROFIBUS (Timestamp)	8.xy	0x1711
LB8109, FB8209	PROFIBUS (Unicom)	9.xy	0x1710
LB8110, FB8210	FOUNDATION Fieldbus	not supported	•
LB8111, FB8211	MODBUS TCP	7.5y	-

Table 2.2

# 3 Installation

#### 3.1 Connecting the Communication

To establish communication between the LB/FB com unit and the PC, perform the following steps:



**Connecting communication** 

- 1. Plug the com unit into a suitable backplane.
- 2. Connect the backplane to the PC by using the service bus connector.
- 3. Use a suitable interface converter for the connection. See the following table.

Operating system	Interface converter
Windows 95	W&T RS232-RS485
Windows 98 and higher	USB-RS485-CONVERTER I-7561
Windows 10	USB-RS485-CONVERTER I-7561 (new version)

Table 3.1



#### Note

For further information refer to the LB/FB Remote I/O hardware manuals.

## Principle Procedure of the Update Process

To change the firmware version, perform the following steps:



3.2

#### **Changing the Firmware Version**

- 1. Establish a connection between PC and com unit.
- 2. Select the desired firmware version.

 $\rightarrow$  Only firmware versions compatible to the firmware of the com unit type are offered.

- If the com unit type is to be changed, deselect the only matching updates check box.
   → All firmware versions available on the PC are displayed.
- 4. Confirm the selected firmware version.

 $\mapsto$  The update process is started.

#### **Update Process**

- The com unit is restarted and held in the start program. The green LED on the com unit flashes quickly.
- The firmware version is loaded into the com unit automatically.
- The firmware version update is finalized by restarting the com unit.



#### 3.3

# Selection of the Com Unit



Selecting the Com Unit

1. Start the LB/FB Remote I/O service tool.

Livelist	×
Communication settings COM-port CDM8  1 Seek for bus coupler without firmware	Info PepperI+Fuchs SE Copyright 2004 - 2020 Service tool for device scanning, setting of device type ID, bus address, redundancy modes, and to update CDM unit's firmware of types 8k405-9 and 8k411.
From 1 Frimary Station To 100 Start scan	



 $\mapsto$  The **Livelist** window is indicated.

- 2. Select the COM-port (1).
- 3. Select the beginning (2) and the end (3) of the address range to be scanned.

→ The address range is scanned and the com units found are displayed. In the example a com unit at the service bus address 10.

4. Select the desired com unit by using the button next to the address entry (4).

→ The **device administration** window of the selected com unit is opened.



3.4

# Indication of the Firmware Version

#### **Indicating the Firmware Version**

1. Choose the desired com unit from the **Livelist**. See chapter 3.3.

→ The **device administration** window of the chosen com unit is opened.

2. In the **device administration** window the current firmware version of the com unit is indicated.

		DAG
PB-Adresse:	new	LB/FB_RIO set address
PB-ID:	1710 💌	change ID
device type 8109	8105 🗸	Change device type
Redundanzart:	none 💌	change redundancy mode
	PB-Adresse: 2 PB-ID: 1710 device type 8109 Redundanzart: none	PB-Adresse: 2 PB-ID: 1710 1710 device type 8109 8105 Redundanzart: none none None

Figure 3.2 Firmware version indication of the chosen com unit

3. You can start the firmware version update in this window.



# Caution!

Disturbance of the device function

A change of the firmware version changes the function of the device.

Before updating the firmware version, make sure that there is no danger to the plant as a result of this change.

4. If you don't want to change the firmware version, close the **device administration** window by using the **X** button.

 $\rightarrow$  The **Livelist** window is indicated.

5. If you want to indicate the firmware version of another com unit, repeat the steps 1 to 4.

#### Update of the Firmware Version



3.5

#### Updating the Firmware

- 1. Choose the desired com unit from the **Livelist**. See chapter 3.3.
  - → The **device administration** window of the chosen com unit is opened.
- 2. In the device administration window the current firmware version of the com unit is indicated.

			P+F
Servicebus	current	new	SIR PD
10 <u>▼</u> Change	PB-Adresse:	-	LB/FB - RO
Firmware:	PB-ID:	1710 🔹	change ID
Change1	device type	8105 -	Change device time
serial no.:	Redundanzart:		change redundancy

Figure 3.3 Firmware version indication of the chosen com unit

**3.** Start the update tool by using the **Change** button (1).

ound com un	uits	F	e	Communication settings
SB-Addr. Typ	pe TAG	_	Start scan	Start update
10 810	09 LB-8109	-0		Search for com units without
can finished				iii
evice data fo	or com unit upda	ite		
Devie data o	of the selected s	lave		Available updates
102000000000000000000000000000000000000				
TAG	LB-8109			Version Build Date
TAG Type	LB-8109 8109	- PB address	2	Version         Build         Date           9.05         1231         vom 7.11.2011, 11 Uhr 2           9.07         1101         vom 9.9.2015, 12 Uhr 50           9.08         1093         vom 7.22019, 18 Uhr 34
TAG Type firmware	LB-8109 8109 09.05	PB address PB CPU	2 SPC 4-2	Version         Build         Date           9.05         1231         vom 7.11.2011, 11 Uhr 2           9.07         1101         vom 9.9.2015, 12 Uhr 50           9.08         1093         vom 7.2.2019, 18 Uhr 34
TAG Type firmware PIC version	LB-8109 8109 09.05 07.36	PB address PB CPU Build	2 SPC 4-2 1231	Version         Build         Date           9.05         1231         vom 7.11.2011, 11 Uhr 2           9.07         1101         vom 9.9.2015, 12 Uhr 50           9.08         1093         vom 7.2.2019, 18 Uhr 34

Figure 3.4 Update tool – firmware parameter overview

→ The LB/FB RIO Update Tool window is indicated. Information about the current firmware version of the com unit is indicated in the left area. A list of matching firmware versions is indicated (2). 4. Mark the new firmware version in the selection list.

Junia Com un	iits			Communication	settings-	
B-Addr. Tyr	pe TAG		Start scan	Sta	art update	
0 810	)9 LB-8109	)		Search for	com units	without
can finished				tirr	nware	
evice data fo	or com unit upd	ate				
Devie data o	of the selected	slave		Availab	le updates	
TAG	LB-8109			Version	Build	Date
Туре	8109	PB address	2	9.05	1231 1101	vom 7.11.2011, 11 Uhr 2 vom 9.9.2015, 12 Uhr 50
	09.05	PB CPU	SPC 4-2	3.00	1033	Voli 1.2.2013, 10 Oni 34
irmware		- n.1.	1231			
irmware PIC version	07.36	Build	1.201			

Figure 3.5 Update tool – selection of the appropriate firmware versions

5. Start the firmware version update tool by using the Start update button (1).

 $\mapsto$  The **Updating...** window is indicated.

6. Confirm the firmware version change by using the Start button.

Update of slave	SB-Addr.:10	Type:8109	TAG:LB-8109
actual state			intended state
09.05 (1231) 07.11.11; 11.02 Uhr		==>	09.08 (1093) vom 7.2.2019, 18 Uhr 34
SI	art 1		Cancel

Figure 3.6 Update tool – starting update

7. After a successful update, the new firmware version is indicated highlighted in green.

Update of slave	SB-Addr.:249	Type:8X05/6/7	TAG:Bootloadversion: 06.02 (00.02)
actual state		intend	ed state
09.08 (1093) vom 7.2.2019, 18 L		==> 09.08	(1093) vom 7.2.2019, 18 Uhr 34
Sta	art		Close
Undate successful		F9 15 8E	06 04 17 7F 40 00 42 62 5A 5B F1 1

Figure 3.7 Update tool – update finished

 $\mapsto$  The new firmware version is installed.

8. Complete the update by using the **Close** button.

# 4 Troubleshooting

## 4.1 Com Unit is not found in the Selection List

Check the following points:

- 1. Is the com unit found with another tool that is used for service bus communication (e. g. DTM)?
- 2. Are all mechanical connections tightly connected?
- 3. Is the COM port for the communication settings correct?

## 4.2 Update Fails

After a failed update, the firmware version is indicated highlighted in red.

Update of slave	SB-Addr.:10	Type:8109	TAG:LB-8109	
actual state			intended state	
222222222		==>	09.08 (1093) vom 7.2.2019, 18 Uh	134
Sta	t		Close	1

#### Figure 4.1

Cause may be: The communication between com unit and update tool has been briefly disturbed and the update process was aborted.

#### The green LED on the Com Unit lights up.

If the update process has been interrupted before the memory was cleared, the green LED of the com unit lights up.



#### **Restarting the Com Unit's Firmware Update Process**

- 1. Restart the update process, see chapter 3.5.
- 2. After a successful update, the new firmware version is indicated highlighted in green.

 $\mapsto$  The new firmware version is installed.



#### The green LED on the Com Unit flashes quickly.

If the update process has been interrupted after the memory has been cleared, the green LED flashes quickly and the com unit is ready to load a new firmware version.



#### **Restarting the Com Unit's Firmware Update Process**

1. Restart the LB/FB Remote I/O service tool.

 $\mapsto$  The Livelist window is indicated.

2. Click the Seek for bus coupler without firmware button.

COM-port	Seek for bus coupler without firmware	Info PepperI+Fuchs SE Copyright 2004 - 2020 Service tool for devic bus address, redunda firmware of types 8×00
From 1 IV Prima To 1 Start scan IV Prima	y Station ndary Station	

#### Figure 4.2

ound com units		Communication settings
SB-Addr. Type T	Start scan	Start update
Scan finished!		Search for com units without firmware
levice data for com un	it update	
Devie data of the sele	cted slave	Available updates
TAG		Version Build Date
Туре	PB address	
	PB CPU	
firmware		
Firmware PIC version	Build	
firmware   PIC version   Serial no.	Date	

Figure 4.3

3. Choose the com unit with the address 249 or 250. Com units without firmware always have one of these two addresses by default.

ound com units	Start scan	Communication settings
SB-Addr. Type Ta	4G	Start update
249 8×05/6/7Bo	otloadversion: 06.02 (00.02)	Search for com units without
Scan finished!		firmware
evice data for com un	t update	
Devie data of the sele	cted slave	Available updates
TAG		Version Build Date
Туре	PB address	
firmware	PB CPU	
PIC version	Build	
Serial no.	Date	
		✓ only matching updates

Figure 4.4

- 4. Restart the update process, see chapter 3.5.
- 5. Mark the desired firmware version in the selection list. Since no firmware is assigned to the com unit, no suitable firmware version can be offered.

	inits		Communication settings
B-Addr. Ty	ype TAG	Startiscan	Start update
249 8×	(05/6/7Bootloadv	ersion: 06.02 (00.02)	Search for com units without
6can finishe	d		
evice data	for com unit updat	e	
Devie data	of the selected sla	ive	Available updates
TAG	Bootloadversi	on: 06.02 (00.02)	Version Build Date
_	8×05/6/7	PB address 0	9.05 1231 vom 7.11.2011, 11 Uhr 2 9.07 1101 vom 9.9.2015, 12 Uhr 50 9.08 1093 vom 7.2 2019, 18 Uhr 34
Туре		-	Toto Toto Toto Toto Toto Toto
Type firmware		PB CPU	
Type firmware PIC version		PB CPU	

Figure 4.5

6. Start the update process by using the Start update button.

7. After a successful update, the new firmware version is indicated highlighted in green.



Figure 4.6 Update tool – update finished

 $\mapsto$  The new firmware version is installed.



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