

4.7 Montage für die TST FUZ2 Serie mit Klartextdisplay

Siehe "Für TST FUZ2 Serie + Klartextdisplay/For TST FUZ2 series + real text display/Pour série TST FUZ2 + affichage en texte clair", Abbildung auf Seite 1.

1. 2 Distanzhalter (E) mit den 2 Schrauben (B) an der einen Seite der Erweiterungsplatine montieren (siehe runde Markierung).
2. Für das Display, die 2 Distanzhalter (E) mit den 2 Distanzbolzen (H) an der anderen Seite der Erweiterungsplatine montieren.
3. Das Display auf die Distanzhalter (H) setzen und mit den 2 Schrauben (C) montieren.
4. Das Anschlusskabel (F) mit dem Anschluss X30a verbinden (siehe Abbildung „Kabel anschließen/Connecting cable/Connecter le câble“, Seite 2).
5. Die Erweiterungsplatine mit der Steuerung verbinden (siehe Montageanleitung der Steuerung Kapitel: TST RFUxIO anschließen).
6. Die Erweiterungsplatine über die Steuerung aktivieren: Parameter P.800 auf 8 stellen.

4.8 Montage für die TST FUF2, TST FU3F Serie, TST FU3H

Siehe "Für TST FUH2, TST FU3F Serie, TST FU3H/For TST FUH2, TST FU3F series, TST FU3H/Pour série TST FUH2, TST FU3F, TST FU3H", Abbildung auf Seite 1.

TST FU2F, TST FUF3:

1. Die 4 Distanzhalter (D) mit den 4 Schrauben (B) an der Erweiterungsplatine montieren. Detailbild TST FUF3: die Montage erfolgt an der dritten Öffnung.

TST FU3H:

1. Die 3 Distanzhalter (D) und den Distanzhalter (I) mit den 4 Schrauben (B) an der Erweiterungsplatine montieren. Detailbild TST FU3H: die Montage erfolgt an der ersten Öffnung.
2. Das Anschlusskabel (F) mit dem Anschluss X30a verbinden ().
3. Die Erweiterungsplatine mit der Steuerung verbinden (siehe Montageanleitung der Steuerung Kapitel „TST RFUxIO anschließen“).
4. Die Erweiterungsplatine über die Steuerung aktivieren: Parameter P.800 auf 8 stellen.

4.9 Montage für die TST FUF mit der Erweiterungsplatine TST RFUxFCOM

Siehe Für TST FUF2, TST FU3F Serie mit TST RFUxFCOM/For TST FUF2, TST FU3F series with TST RFUxFCOM/Pour série TST FUF2, TST FU3F avec TST RFUxFCOM, Seite 2.

1. Die 2 Distanzbolzen (D) mit den 2 Schrauben (B) an der einen Seite der Erweiterungsplatine montieren.
2. Die 2 Distanzhalter (G) mit den 2 Schrauben (B) an der anderen Seite der Erweiterungsplatine montieren (siehe runde Markierung).
3. Das Anschlusskabel (F) mit dem Anschluss X30a verbinden (siehe Abbildung „Kabel anschließen/Connecting cable/Connecter le câble“).
4. Die Erweiterungsplatine mit der Steuerung verbinden (siehe Montageanleitung der Steuerung Kapitel: TST RFUxIO anschließen).
5. Die Erweiterungsplatine über die Steuerung aktivieren: Parameter P.800 auf 8 stellen.

4.10 LED-Anzeige

LED-Anzeige	Beschreibung
Aus	Keine Stromversorgung
Langsames Blinken bei 0,5 Hz	Keine Busverbindung vorhanden kein Kommunikationspartner gefunden
Blinken bei 1 Hz	Erweiterungskarte ist betriebsbereit
Schnelleres Blinken bei 2 Hz	Bootloader-Modus

4 EN - Installation instructions

4.1 Safety instructions



Important instructions for commissioning!

Observe all instructions; incorrect installation can result in serious injuries.

- Use The extension board TST RFUxIO-E only with controllers from FEIG ELECTRONIC GmbH!
- Read the installation manual of the used controller and be sure to observe the safety instructions for the controller.
- These installation instructions shall be available to the service personnel at all times.
- The installation and replacement of accessories may only be carried out by qualified personnel.
- The manufacturer has carefully checked the device hardware and software as well as the product documentation. Mistakes cannot be avoided completely and we will always gratefully accept any information in this respect.



Dispose of the product at the end of its service life in accordance with the valid legal specifications.

4.2 Abbreviations and definitions

Abb./Fig.	Figure
Tab.	Table
Controller (TST)	Door and barrier controller with integrated frequency converter or reversing contactor for triggering a motor.
Qualified specialists	The qualified specialists have been informed concerning possible dangers in case of improper behaviour by working with electrical equipment. The qualified specialists are familiar with the necessary protective measures and devices. Furthermore, due to their professional training and experience, the qualified specialists have the necessary knowledge for testing work equipment.

4.3 Product specification

The TST RFUxIO-E is an accessory of the company FEIG ELECTRONIC GmbH and provides the following functions:

- Output of power signals (e.g. traffic light control).
- All functions are adjustable by parameter via the controller.

4.3.1 Intended use

Operation is only permitted with the following controllers:

CE	UL
TST FUF2-A,-C,-F Series TST FU3F-A,-C,-F Series TST FUH2-C Series TST FU3H-F Series TST FUZ2-A,-B,-C Series TST FUZ2-CX,-G,-L,-P,-S Series	TST FU3F-AU,-CU,-FU Series TST FU3H-FU Series

4.3.2 Technical data for Europe

All inputs shall be connected potential-free or:



- < 4 V: inactive → logical 0
- >16 V: active → logical 1
- min. duration of input control commands: > 100 ms

Dimensions (LxWxH)		112 x 83 x 30 mm
Temperature	Operation	-20 °C to +65 °C
	Storage	-20 °C to +70 °C
Weight		approx. 150 g
Equipment type		Input and output expansion board
Protection type		IP 00
Protection class		--
Supply voltage		24 VDC ± 20 %
Power consumption		(without relays and outputs) max. 2 W
Current carrying capacity		max. 1.8 A
Connection/interface		X30a and X30b: System interface (internal connection to door controller) 1x RS-485 as external interface 1x RS-485 as external interface parallel to X30a e.g. for connection of a diagnostic tool
Other		1 LED (see chapter LED display)

Inputs	
X33 (IN 21), X34 (IN 23), X36 (IN 24 – IN 26)	24 VDC / typ.15 mA, max. 26 VDC / 20 mA

Outputs	
The 24 V outputs and transistor outputs are electronically fused and may be loaded with max. 1.1 A (@23 °C) (resistive loads only)!	
Relays OUT 5 – OUT 8	Normally open contact with common COM port. Max. 230 VAC / 3 A in total are allowed.
Relays OUT 9 – OUT 10	Changeover contact free of potential. The same switching voltage shall be used for both relays!
Relay contact (general)	max. 240 VAC/3 A, min. 10 mA
Digital Output	OUT 11: 1 x 24 V / min. 10 mA / max. 100 mA, normally open, +24 V switching!
+24 V	24 VDC Power supply output

Connection		Cable size		Tightening torque
		Solid	Stranded with wire end ferrule	
X31	310-319	0,2 - 2,5 mm²	0,25 - 1,5 mm²	0,35 - 0,4 Nm
X32	320-325			
X33	330-335	0,2 - 2,5 mm²	0,25 - 1,5 mm²	0,35 - 0,4 Nm
X34	340-342			
X36a	360-363			

EC installation declaration
Machinery Directive: 2006/42/EC EMV: 2014/30/EU Applied harmonized standards: EN 60335-1:2012 / AC:2014 Section: Chapters 7, 10, 11,14,19, 22, 23, 24, 29 EN 60335-2-103:2015 Section: Chapters 7, 10, 11,14,19, 22, 23, 24, 29 EN 61000-6-1:2007 Section: Table 1 item 1.5, Table 2, Table 4 items 4.4 + 4.5 EN 61000-6-2:2005 / AC:2005 Section: Table 1 item 1.5, Table 2, Table 4 items 4.4 + 4.5 Applied national technical specifications: EN 12453:2017 Section 5.3

4.4 UL-Ratings

Supply	24 VDC
Class 2 output	Class 2 output, max. 1.8 A
Maximum surrounding air temperature	65 °C
Pollution degree	For use in an environment with pollution degree 2.
X30a	Supply input, 24 VDC / max. 1.8 A, Class 2, (and internal RS485 bus)
X30b	RS-485 and power interface for diagnostics, Class 2
X33	Input 21, 22; 24 VDC each / max. 20 mA, Class2 2x digital output (OUT 11/2F), 24 VDC / max. 200 mA, Class 2
X34	Input 23; 24 VDC each / max. 20 mA, Class 2
X36/36a ¹	Input 24, 25, 26; 24 VDC each / max. 20 mA, Class 2 3x digital output (OUT 2C/2D/2D/2E), 24 VDC each, 200 mA, Class 2

¹ Note: The maximum load of all Class 2 outputs shall not exceed 0.7 A in any combination.

X31 Relays Outputs ² (OUT 5, OUT 6, OUT 7, OUT 8)	Maximum load for each single output: 250 VAC, max. 3 A G.P. 30 VDC, 3 A G.P. C300, R150 (Pilot Duty) Maximum total load at all four outputs: 250 VAC, max. 3 A G.P. 30 VDC, 3 A G.P. 120 / 240 VAC, 180 VA (Pilot Duty) 125 / 250 VDC, 28 VA (Pilot Duty)
X32 Relays Outputs ² (OUT 9, OUT 10)	Maximum load for each single output: 250 VAC, max. 3 A G.P. 30 VDC, 3 A G.P. C300, R150 (Pilot Duty)

²The relay terminals X31 and X32 can be connected either to the mains voltage, low voltage or class 2 circuits. Mixing different voltage circuits within one terminal is not permitted.

The changeover contacts (OUT9/OUT10) on terminal X32 are also intended for connection to the same voltage circuits. The connection of different voltage circuits is not permitted For voltages above 150 V, it is necessary that the "COMMON" terminals of OUT9 and OUT10 have the same voltage potential.

NOTE

Connecting Class 2 outputs is prohibited.

Connection		Cable size		Tightening torque		NEC wiring
		AWG	(mm²)	Lb-in	(Nm)	
X31	310-319	24 - 12	(0,2 – 3,3)	3,5	(0,4)	Class 1
X32	320-325					
X33	330-335	24 - 12	(0,2 – 3,3)	3,5	(0,4)	Class 2
X34	340-342					
X36a	360-363					

In the field-wiring area, provisions for wiring for Class 2 and Class 3 circuits shall meet the requirements for separation from Class 1 circuits in accordance with Section 725 of the National Electrical Code, ANSI/NFPA 70 and Section 16 of the Canadian Electrical Code. Separation from power and lighting circuits is required for Class 2 by one of the following means:

- A permanent barrier shall be provided to separate the field installed Class 2 conductors of secondary circuits from all other circuits or;
- Provisions need to be made to route the Class 1 or power circuit conductors in order to maintain a minimum 1/4-in (6.35 mm) separation from the conductors of the Class 2 circuits.



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4.5 Assembly and connection

See chapter 2 Montage/Assembly/Montage on page 1.



Risk of electric shock!

Before connecting the accessories, switch off the supply voltage of the controller!

- Do not switch on the supply voltage of the controller again until the installation of the accessories has been completed, the controller is covered and no live parts can be touched.

ATTENTION

First connect the terminals and then plug them onto the pin header of the controller! This is the only way to ensure safe contact between the terminal and the pin header.

NOTE

Use only 75 °C copper cable to connect to the expansion board.



The description of the connection to the controller can be found in the assembly instructions of the respective controller.

Required tools: Cross screwdriver PH 1

4.6 Mounting for the TSTFU22 Series

See "Für TST FU22 Serie/For TST FU22 Series/Pour Série TST FU22", figure on page 1.

- Mount the 4 spacers (E) on the expansion board using the 4 screws (B).
- Connect the cable (F) to the connection X30a (see figure „Kabel anschließen/Connecting cable/Connecter le câble“, page 2).
- Connect the expansion board to the controller (see installation instructions for the controller, chapter „Mounting TST RFUxIO“).
- Activate the expansion board via the controller:
Set parameter P.800 to 8.

4.7 Mounting for TSTFU22 series with LCD display

See "Für TST FU22 Serie + Klartextdisplay/For TST FU22 series + real text display/Pour série TST FU22 + affichage en texte clair", figure on page 1.

- Mount 2 spacers (E) on one side of the expansion board using the 2 screws (B) (see round marking).
- For the display, mount the 2 spacers (E) on the other side of the expansion board using with the 2 spacer bolts (H).
- Place the display on the spacers (H) and mount it using the 2 screws (C).
- Connect the cable (F) to the connection X30a (see figure „Kabel anschließen/Connecting cable/Connecter le câble“, page 2).
- Connect the expansion board to the controller (see installation instructions for the controller: "Mounting TST RFUxIO").
- Activate the expansion board via the controller: Set parameter P.800 to 8.

4.8 Mounting for TST FUF2, TST FU3F, FU3H series, TST FU3H

See "Für TST FUH2, TST FU3F Serie, TST FU3H/For TST FUH2, TST FU3F series, TST FU3H/Pour série TST FUH2, TST FU3F, TST FU3H", figure on page 1.

TST FU2F, TST FU3F:

- Mount the 4 spacers (D) on the expansion board using the 4 screws (B). Detail picture TST FUF: the assembly is done at the third opening.

TST FU3H:

- Mount the 3 spacers (D) and spacer (I) on the expansion board using the 4 screws (B). Detail figure TST FU3H: the assembly is done at the first opening.
- Connect the cable (F) to the connection plug X30a (I).
- Connect the expansion board to the controller (see installation instructions for the controller, chapter „Mounting TST RFUxIO“).
- Activate the expansion board via the controller: Set parameter P.800 to 8.

4.9 Mounting for TST FUF with the expansion board TST RFUxFCOM

See chapter 2.4 Für TST FUF2, TST FU3F Serie mit TST RFUxFCOM/For TST FUF2, TST FU3F series with TST RFUxFCOM/Pour série TST FUF2, TST FU3F avec TST RFUxFCOM on page 2.

- Mount the 2 spacers (D) on one side of the expansion board using the 2 screws (B).
- Mount the 2 spacers (G) on the other side of the expansion board using the 2 screws (B) (see round marking).
- Connect the cable (F) to connection X30a (see figure „Kabel anschließen/Connecting cable/Connecter le câble“).
- Connect the expansion board to the controller (see installation instructions for the controller: "Mounting TST RFUxIO").
- Activate the expansion board via the controller: Set parameter P.800 to 8.

4.10 LED display

LED display	Description
OFF	No power supply
Slow flashing at 0.5 Hz	No bus connection available no communication partner found
Flashing at 1 Hz	Expansion card is ready for operation
Faster flashing at 2 Hz	Bootloader mode