

INSTRUCTIONS FOR USE

INDUSTRIAL INPUT DEVICES

KEYBOARDS



Read the instructions prior to performing any task!

KEYBOARD



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1 General information

1.1 Information on the user guide

This **translation of the original user guide** is an integral part of the device and provides you with information on the set-up, use, storage and disposal of the device.

Before beginning any work, read the user guide and always keep it in an accessible place.

This user guide is aimed solely at authorized specialists. None of the content of this user guide may be put to practice by anyone other than trained specialists.

Our user guides are updated regularly. Please send us your suggested improvements and other hints by e-mail, phone or fax. This will help us to ensure that our documentation is as intelligible and user-friendly as possible.

You will find our contact information on the inside of the front cover or under "Site information". ↪ *Chapter 9 "Site information" on page 43*

1.2 Copyright notice

This user guide is protected by copyright.

Other than for internal purposes, making this user guide available to third parties, duplicating it in any form, in whole or in part, and utilization or distribution of its contents are permitted only with the written permission of the manufacturer.

Any violation of this requirement will render you liable for damages. The right to make further claims is reserved.





2 Safety

2.1 Designated use

This device is a keyboard that has been optimized for use under clean room conditions. The Keyboard is used to implement control and operating concepts and to manipulate information in industrial and commercial environments.

It is nonetheless possible for improper use to introduce hazards. For correct operation and safe use it is therefore important to comply with the information and instructions in this document.

Have the following work carried out only by **professionals**:

- Installation
- Deinstallation
- Wiring
- Implementing

Have the following work carried out only by **Systec & Solutions GmbH** :

- Repairs
- Servicing
- Maintenance
- Modifications

The device may **not** be used in the following areas:

- areas subject to explosion hazards
- areas subject to harmful radiation
- areas and applications that are subject to vibration and impacts
- for carrying out safety functions such as
 - air traffic control / flight control systems
 - monitoring / controlling nuclear reactions
 - monitoring / controlling mass transportation facilities
 - monitoring / controlling medical systems
 - monitoring / controlling weapons systems

Contravening these instructions voids all warranties and manufacturer's responsibilities.

2.2 Safety notices

Please read these instructions attentively right through. It constitutes a part of the device it describes and must be held available at all times.

Use the device only in accordance with its designated use (see [Chapter 2.1 "Designated use" on page 7](#)).

For your own safety, always comply with the following safety instructions.

Warnings signal safety-related information.



You will find warnings within sequences of procedures prior to a step that involves a hazard to people or material property.

Three levels of warnings appear depending on the seriousness of the hazard:



DANGER!

This signals an unusually hazardous situation. Failure to comply with these instructions will result in serious irreversible injuries or death.



WARNING!

This signals an unusually hazardous situation. Failure to comply with these instructions may result in serious irreversible or fatal injuries.



CAUTION!

This signals a hazardous situation. Failure to comply with these instructions may result in minor or moderate injuries.



NOTICE!

This signals a hazard for material property. Failure to comply with these instructions may cause material damage.



This signals useful hints within a series of work processes.

2.3 Important safety notes



WARNING!

Risk of injury due to sharp edges!

Working on a device with sharp edges can lead to cuts.

- Only work on a device with protective gloves.



WARNING!

Danger of injury due to excessive load.

Working on heavy equipment may lead to serious injuries.

- Always have an adequate number of persons when working with heavy equipment.



NOTICE!

Danger of material damage from improper use of the mounted keyboard!

Handling the keyboard incautiously, e.g. using the keyboard to move the entire system may cause damage to the keyboard and/or the entire system.

- Only use immovable components (handles etc.) to move the system.



NOTICE!

Damage caused by improper bending of the cables!

Strong bending of the cables may cause material damage.

- Only bend the cables with a minimum bending radius of 9.1 cm.



In order to ensure proper use of the keyboard, the USB port of the keyboards should not exceed a maximum cable length of 3 meters. Other lengths on request.





3 Product description

3.1 Overview

Systec & Solutions Keyboard

Systec & Solutions clean room keyboards are installed in a high-quality stainless-steel housing. They are available as built-in, desktop and rack versions with glass or stainless-steel surfaces and different film specifications. All devices have an industrially-suitable design, are particularly suited to harsh conditions in the process industry and, in addition, guarantee IP65 protection.

Device



Fig. 1: TNG



Fig. 2: TNGR



Fig. 3: TNFA



Fig. 4: TNFAR



Fig. 5: ING



Fig. 6: INGR



Fig. 7: INFA

RFID (optional)

The integrated RFID technology allows the user to be identified via RFID card automatically and contactlessly. This card is used to transfer user-specific data to the device, e.g. Login data.



If you would like to use a CCID, please contact Systec & Solutions.



Fig. 8: RFID reader position on an TNGR keyboard



- The availability and the position of the RFID reader in the device is indicated by the RFID symbol (Ⓡ).
- Informationen about usage see ↗ *Chapter 5.2 "RFID (optional)" on page 32*.

3.2 Type plate

The product designation and identification will be found on the type plate. This is always located on the rear of the device (standalone devices only: TNG/R, TNFA) and contains the following information:

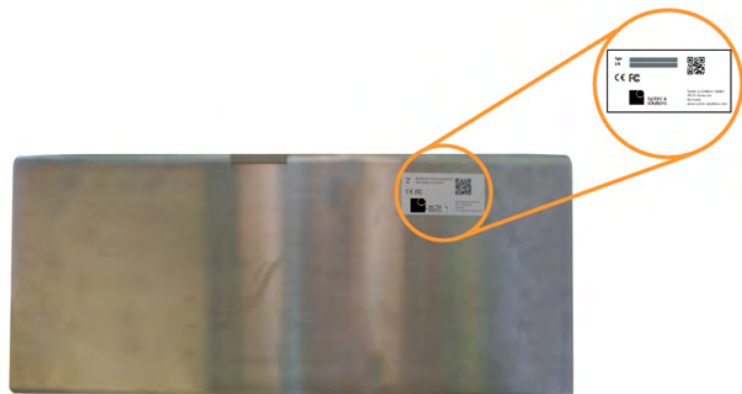


Fig. 9: Position of type plate



Fig. 10: Type plate

No.	Description
1	Product name
2	Serial number
3	Certification labels
4	Manufacturer's logo
5	QR code (S/N + product name)
6	Manufacturer's address



3.3 Technical data



Fig. 11: TNGR with optional RFID-feature

TNG

Device	
Variant	Table-top device / torque hinge
Design	Glass keyboard in stainless steel housing, rounded edges, polished or glass-bead blasted (optional)
Surface	Glass (laminated protection layer optional)

Features	
Touchpad	Capacitive, supports various thicknesses of rubber gloves
Keyboard layout	As per the country specification
Key specification	Capacitive keys with acoustic response, lock function, Auto-Lock (optional)
RFID	Optional: TNGR with integrated RFID reader

Physical features	
Interface	USB
Cable length	ca. 0.8 - 2.0 m (depending on version)
Width	517
Height	30
Depth	230 (284 with wall hinge)



Physical features	
Weight	ca. 4.5 kg
IP protection factor	IP65



Fig. 12: TNFA

TNFA

Device	
Variant	Table-top device / torque hinge
Design	Membrane keyboard with stainless steel housing, rounded edges, polished or glass-bead blasted (optional)
Keyboard	<ul style="list-style-type: none">■ Material: Membrane■ Color: white■ Elevated keys for tactile response

Features	
Touchpad	<ul style="list-style-type: none">■ Capacitive, supports various thicknesses of rubber gloves■ Optional: Resistive, for humid conditions (optional)
Keyboard layout	As per the country specification
Key specification	Short-stroke key with tactile response



Physical features	
Interface	USB
Cable length	ca. 1.6 m
Width	517
Height	30
Depth	230 (284 with wall hinge)
Weight	4.5 kg
IP protection factor	IP65



Fig. 13: TNFAR

TNFAR

Device	
Variant	Table-top device / torque hinge
Design	Membrane keyboard with stainless steel housing, rounded edges, polished or glass-bead blasted (optional)
Keyboard	<ul style="list-style-type: none"> ■ Material: Membrane ■ Color: white ■ Elevated keys for tactile response

Features	
Touchpad	<ul style="list-style-type: none"> ■ Capacitive, supports various thicknesses of rubber gloves ■ Optional: Resistive, for humid conditions (optional)
Keyboard layout	As per the country specification
Key specification	Short-stroke key with tactile response
RFID reader	RFID reader integrated into the keyboard



Physical features	
Interface	USB
Cable length	ca. 1.6 m
Width	663
Height	30
Depth	230 (284 with wall hinge)
Weight	ca. 5 kg
IP protection factor	IP65



Fig. 14: ING

ING

Device	ING
Variant	Integrable
Design	Glass keyboard
Surface	Glass (laminated protection layer optional)

Features	
Touchpad	Capacitive, supports various thicknesses of rubber gloves
Keyboard layout	As per the country specification



Technical data

Features	
Key specification	Capacitive keys with acoustic response
RFID	Optional: INGR with integrated RFID reader

Physical features	
Interface	USB
Cable length	ca. 0.8 m
Width	482
Height	30
Depth	177
Weight	ca. 2 kg
IP protection factor	IP65 on front



Fig. 15: INFA

INFA

Device	INFA
Variant	Integrable / Open Frame
Design	Membrane keyboard
Keyboard	<ul style="list-style-type: none">■ Material: Membrane■ Color: white■ Elevated keys for tactile response

Features	
Touchpad	<ul style="list-style-type: none">■ Capacitive, supports various thicknesses of rubber gloves■ Optional: Resistive, for humid conditions (optional)
Keyboard layout	As per the country specification
Key specification	Short-stroke key with tactile response

Physical features	
Interface	USB
Cable length	ca. 1.6 m
Width	482
Height	20
Depth	177
Weight	ca. 2 kg
IP protection factor	IP65 on front



3.4 Dimensions

TNG/ES COMPACT, TNFA/ES COMPACT

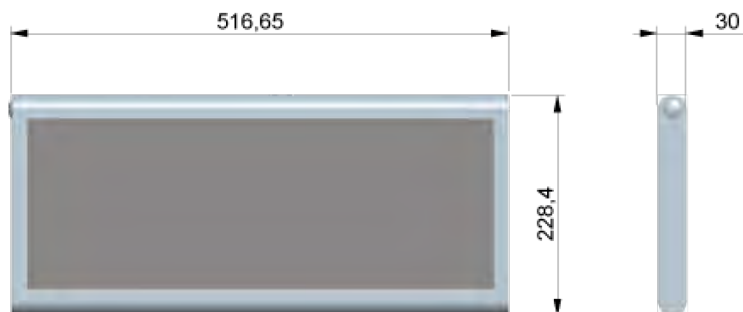


Fig. 16: Dimensions of device

TNFAR/ES COMPACT

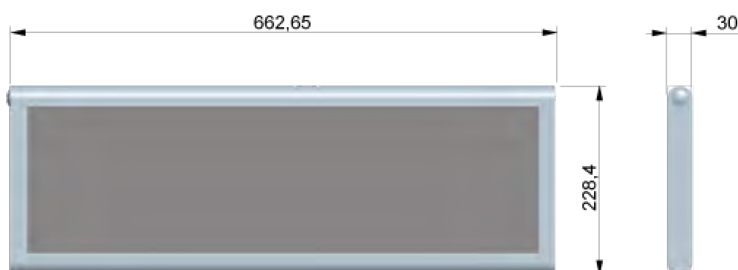
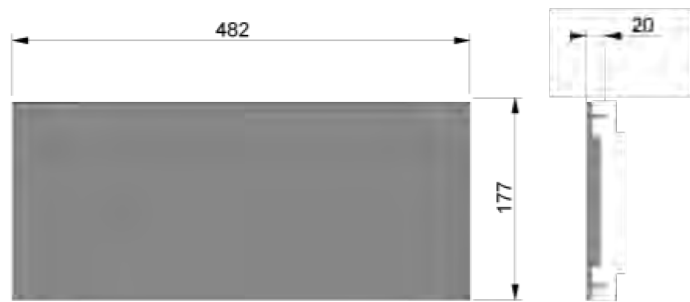
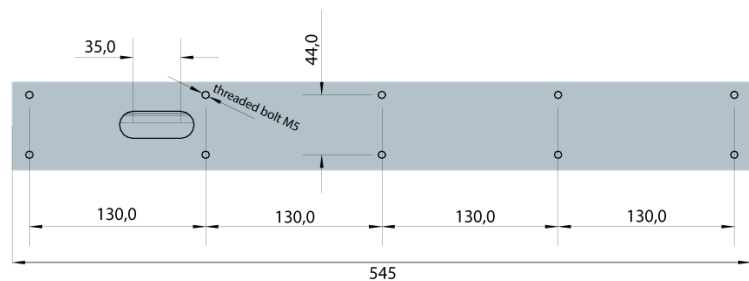
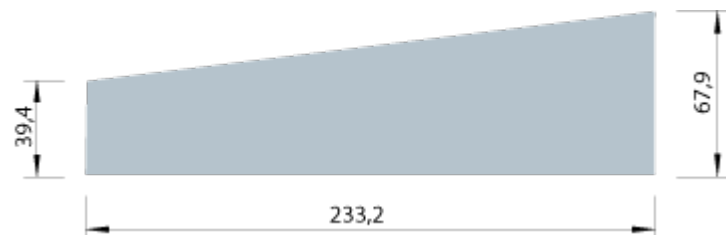


Fig. 17: Dimensions of device

ING



Fig. 18: Dimensions of rear view

**INFA***Fig. 19: Dimensions of rear view***PNFA/ES***Fig. 20: Dimensions of rear view**Fig. 21: Dimensions of side view***3.5 Conformity**

Equipment manufactured by Systec & Solutions GmbH fulfills the requirements of the EC Directive 2004/108/EC.

- "EMC, Immunity for industrial environments" DIN EN 61000-6-2:2006
- "Interference emission for industrial environments" DIN EN 61000-6-4:2011



FCC compliance statement



Note: The FCC compliance statement only applies, if the FCC logo is present on the certification label

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Important: Changes or modifications to this product not authorized by Systec & Solutions could void the electromagnetic compatibility (EMC) and wireless compliance and negate your authority to operate the product.

Responsible Party (*contact for FCC matters only*):

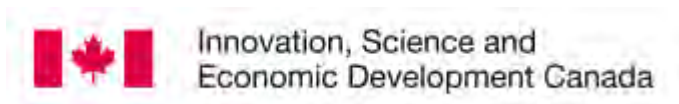
Granttek Systems Integration Corp

903 Commerce Dr., Suite 200

Oak Brook, IL 60523

fcc@systec-solutions.com

ISED Canada compliance statement



Note: The ISED Canada compliance statement only applies, if the FCC logo is present on the certification label



This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations, CAN ICES-3(A)/NMB-3(A). If this device has wireless communication capability like, RFID, WLAN or Bluetooth, the device complies with Innovation, Science and Economic Development Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil numérique de Classe A respecte toutes les exigences des réglementations canadiennes sur les équipements pouvant causer des interférences, CAN ICES-3(A)/NMB-3(A). Si cet appareil est équipé de fonctions de communication so fil, comme RFID, WLAN ou Bluetooth, il est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Responsible Party (*contact for ISED matters only*):

Granttek Systems Ltd, Inc.
4480 Harvester Road, Burlington
Ontario, Canada L7L 4X2
ised@systec-solutions.com

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talk@systec-solutions.com
www.systec-solutions.com

Karlsruhe, January 1, 2017

Philipp Linder
Managing Director (CTO)





4 Starting up

4.1 Unpacking the device

1. ➤ Check the packaging for damage.
2. ➤ Remove the packaging carefully to avoid damaging the contents.
3. ➤ Check the device for damage.



If you find the packaging or the device to be damaged, immediately inform the haulage company and the supplier. Document the damage in some appropriate way (e.g. incoming goods report, photos).

4. ➤ Check the delivered goods against your order and the delivery papers to make sure everything is present and correct.
5. ➤ Retain the original packaging.



Retain the original packaging so that it can be reused for


- storage,
- transport and
- return for disposal

as and when necessary.

If you fail to do this it will no longer be possible to guarantee protection from damage or other harmful influences.

4.2 Setting up the device

Prior to initial commissioning you should consider the following:

- If necessary, disinfect the device (spray or wipe with disinfectant) (refer to the device's chemical resistance data  on page 32).



Adjust your system's character set to the available keyboard layout for your country and make sure it is compatible.

4.3 Connecting the device

For wall mounting

The following tool is required:

- Hex key for M6 x 16



Fig. 22: Drill hole specification

1. ➤ Drill at a desired height horizontally according to the drill hole specification for M6 screws.

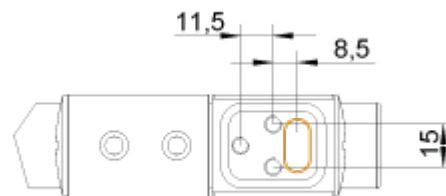


Fig. 23: Drill hole specification each side

2. ➤ Drill each hinge side according to the drill hole specification.
3. ➤ Drill the opening (orange) for the cable entry.
4. ➤ Mount the device to the wall.
⇒ Device is mounted.

5 Operation

5.1 TNG/R, ING/R

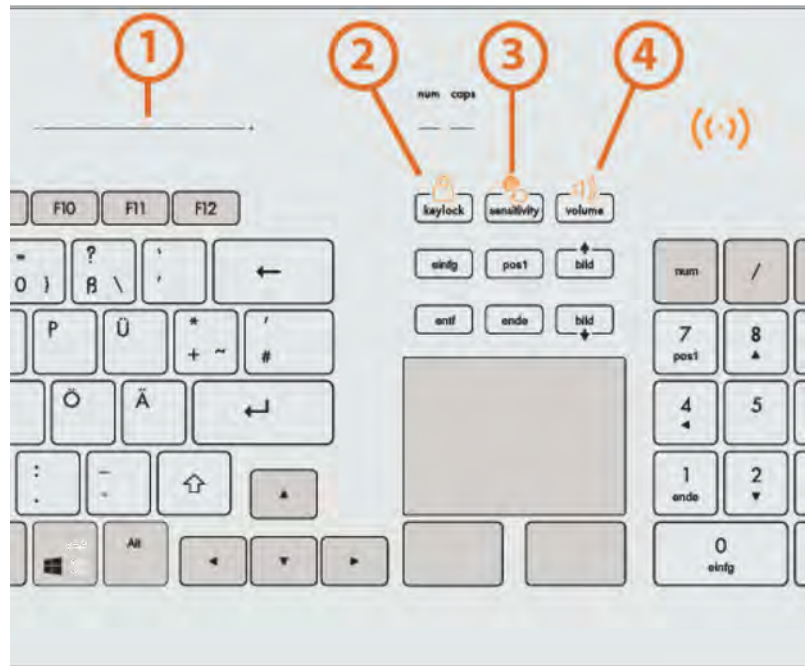


Fig. 24: Detailed view of the function keys

Keylock

The keyboard has a **lock function (2)** to lock and unlock the keyboard.

- 1.** To lock: Press the **keylock button (2)** for 4 seconds.
 - ⇒ The **Status display (1)** lights up completely. After an acoustic signal the keyboard is locked.
- 2.** To unlock: Press the **keylock button (2)** for 4 seconds.
 - ⇒ The **Status display (1)** turns dark. After an acoustic signal the keyboards is unlocked.

Optionally, the keyboard provides an auto-keylock that prevents inputs when the keyboard has not been operated for 30 seconds.

- To activate/deactivate the auto-keylock feature press **CTRL + Keylock (2)**.
 - ⇒ After an acoustic signal (3 rapid beeps) the auto-keylock function is switched on/off.

Touch sensitivity

The touch sensitivity of the keys on the keyboard can be selected by pressing the **sensitivity button (3)** until the desired sensitivity has been reached.



Volume

The keyboard has an acoustic feedback during operation. The volume of this feedback can be adjusted variably up to silent by pressing the **Volume button (4)** until the desired volume has been reached.

5.2 RFID (optional)

Use RFID

In the standard configuration, the RFID reader is in emulation mode. The data on the card is transferred to the reader as keyboard input.

- ➔ Hold the RFID card with a maximum distance of 2 cm in front of the (••) symbol.
- ⇒ The RFID reader receives data. This data is transmitted like keyboard input.

5.3 Cleaning the device

To ensure proper and correct functionality of the device, we recommend cleaning the device at regular intervals as described below.



NOTICE!

Damage caused by cleaning.

Cleaning the device may cause material damage.

- Firmly close all screw connections.
- Do not use high-pressure or steam cleaning equipment.
- Do not use any abrasives or hard materials.
- Clean the keyboard foil without applying any excessive pressure.

1. ➔ Regularly clean the surface of the device using a soft, moist, lint-free cloth.
2. ➔ For more significant soiling: Use isopropanol as cleaning agent.

Note the information in the following chemical resistance data:



Systec & Solutions

KEYBOARD membrane keyboard

Chemical resistance

■ RESISTANCE

to solvents and environmental influences.



The front fascia is based on a polyester film with biaxial orientation, which therefore has a better resistance to solvents than ordinary films. It is stronger and more durable than e.g. polycarbonate or PVC, and is therefore optimally suitable for the manufacture of fascias and membrane keyboards.

As per DIN 42 115 Part 2, the front fascia is able to withstand over 24 hours exposure to the following chemicals without any visible effects. Concentration 100% (except where otherwise stated):

Acetaldehyde	Diethylether	Sodium carbonate
Acetone	Diocetyl phthalate	Caustic soda <40%
Acetonitrile	Dioxane	Paraffin oil
Aliphatic hydrocarbons	Dowandol DRM/PM	Phosphoric acid >30%
Alkaline carbonate	Ferrous chloride (FeCl ²)	Castor oil
Formic acid < 50%	Ferric chloride (FeCl ³)	Nitric acid 10%
Ammonia <40%	Glacial acetic acid <1 hour's exposure	Hydrochloric acid <36%
Amyl acetate	Acetic acid <50%	Salt water
Ethanol	Ethyl acetate	Sulfuric acid <10%
Ether	Varnish	Silicone oil
Gasoline	Aviation fuel	Tensides
Bichromate	Formaldehyde 37% - 42%	Turpentine substitute
Ferrocyanide salts	Glycol	Toluol
Drilling emulsion	Glycerine	Triacetin
Brake fluid	Isophorone	Trichlorethane
Butyl cellosolve	Isopropanol	Trichloroacetic acid <50%
Sodium hypochlorite <20%	Potash soap	Thinner
Cyclohexanol	Potassium hydroxide	Detergent
Cyclohexanon	Methanol	Water
Decon foam	Methyl ethyl ketone	Hydrogen peroxide <25%
Diacetone alcohol	MIBK	Fabric softener
Dibutyl phthalate	N-butyl acetate	Xylene
Diesel oil	Sodium bisulfate	



The front fascia is not able to withstand the following chemicals:

Benzyl alcohol	Concentrated mineral acids	Methylene chloride
High pressure steam above 100°C	Concentrated alkaline solutions	

Able to withstand 24 hours' exposure to household chemicals at 50°C without visible damage:

Ariel	Gumtion	Grape juice
Ajax	Jet Dry	Vim
Domestos	Lenor	Vortex
Downey	Milk	Wisk
Fantastic	Persil	Windex
Formula 409	Top Job	

Slight discoloration was detected with the following materials:

Mustard	Tomato ketchup	
Tomato juice	Lemon juice	

Environmental values

1. ➤ Lowest temperature of use: No loss of function was detected over half a million activations at -40°C.
2. ➤ Highest temperature of use: Low or moderate humidity: 85°C, high humidity (>90% relative humidity): 40°C
3. ➤ Outdoor use: Like any other films based on polyester materials, these Systec & Solutions fascias are not suitable for long-term exposure to direct sunlight.



■ **SCOPE**

This customer information applies to the following devices manufactured by Systec & Solutions GmbH:

- TNG
- TNGR
- TNFA
- TNFAR
- INFA
- ING
- INGR

■ **PURPOSE**

This document serves to inform customers about product attributes. The information is provided by the manufacturer or supplier. The information and recommendations it contains are made to the best of our knowledge and belief. Users should carry out their own investigations to establish usage and application recommendations relating to products' suitability for their particular purpose.

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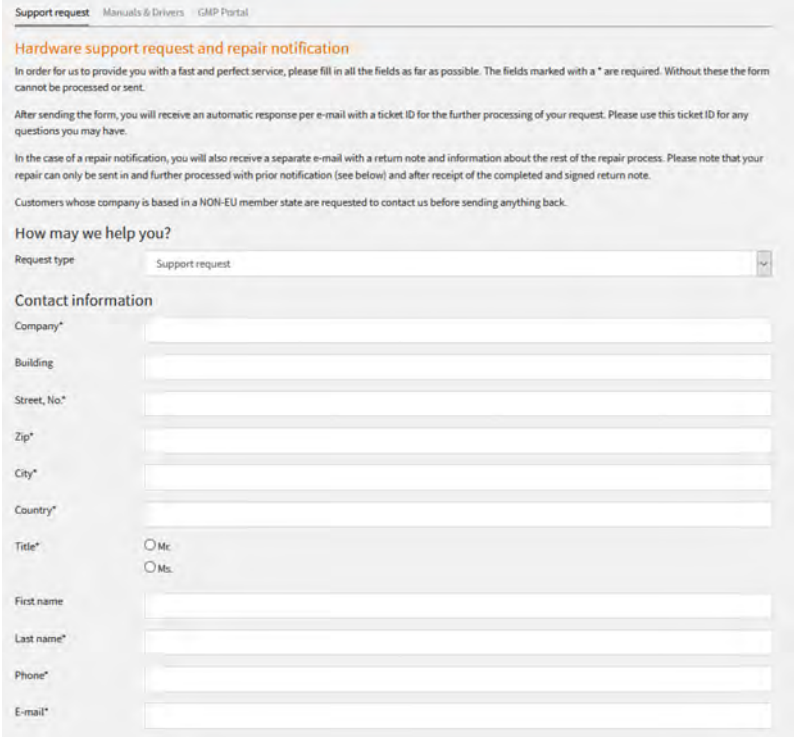


6 Repairs

6.1 Repairing the device

The device is defective.

1. ➤ Send an e-mail to support@systec-solutions.com or



The screenshot shows a web form titled "Support request" with navigation links for "Manuals & Drivers" and "GMP Portal". The form is for a "Hardware support request and repair notification". It includes instructions for users, a section for "How may we help you?" with a dropdown menu set to "Support request", and a "Contact information" section with fields for Company, Building, Street, No., Zip, City, Country, Title (with radio buttons for Mr. and Ms.), First name, Last name, Phone, and E-mail. All fields are currently empty.

2. ➤ Fill out a support form at <https://www.systec-solutions.com/en/nc/support/>.





7 Storage

7.1 Unmounting the device

The following tool is required:

- Hex key for M6 x 16

1. ➤ Clean the device (see ↗ *Chapter 5.3 "Cleaning the device" on page 32*).
2. ➤ Disconnect the USB connection.
3. ➤ Firmly hold the keyboard to avoid damage while dismounting.
4. ➤ Remove the M6 screws from the hinge.
⇒ The Keyboard is dismantled.

7.2 Storing the device



NOTICE!

Material damage caused by incorrect storage.

Incorrect storage can damage the device.

- Pay attention to the handling symbols on the packaging.
- Comply with the stated storage conditions (see ↗ *Chapter 7.2 "Storing the device" on page 39*).

Storage conditions

When storing the device, comply with the following requirements:

- Use the original packaging.
- Do not store in the open air.
- Always store in a dry, non-dusty place.
- Always shield the equipment from solar radiation.
- Avoid mechanical vibration and shocks.
- Avoid cold weather and extreme temperature fluctuations.
- Refer to section "Environmental conditions" in the "Technical data" chapter. ↗ *Chapter 3.3 "Technical data" on page 16*





8 Packaging and transport

8.1 Packaging the device

The packaging protects the contents from damage or other deleterious effects that could adversely affect their quality.



Retain the original packaging so that it can be reused for

- *storage,*
- *transport and*
- *return for disposal*

as and when necessary.

If you fail to do this it will no longer be possible to guarantee protection from damage or other harmful influences.


8.2 Transporting the device



NOTICE!

Material damage caused by inappropriate transport.

Inappropriate transport may damage the device.

- Pay attention to the handling symbols on the transport packaging.
- Comply with the stated transport requirements (see  “Transport requirements” on page 41).

Transport requirements

When transporting the device you should comply with the following requirements:

- Always shield the equipment from solar radiation.
- Avoid mechanical vibration and shocks.
- Avoid extreme temperature fluctuations.
- Pay attention to the information in the “Technical data” section.



When the consignment is delivered, immediately check it for possible transport damage and deal appropriately with any detected transport damage or non-obvious defects.





9 Site information

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Support form: <https://www.systec-solutions.com/en/support/>

Authorized representatives and directors

- Andreas König
- Philipp M. Linder

Court of registration: Mannheim District Court

Registration number: HRB 717236

VAT ID no. as per §27a Value Added Tax Act:

- DE 815434969

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