Gönnheimer
Elektronic GmbH

Peripherals for Ex – PCs / HMI-Devices

Intrinsically safe Input devices and Interface modules

KI153, TB153, KB153 (*wireless*)

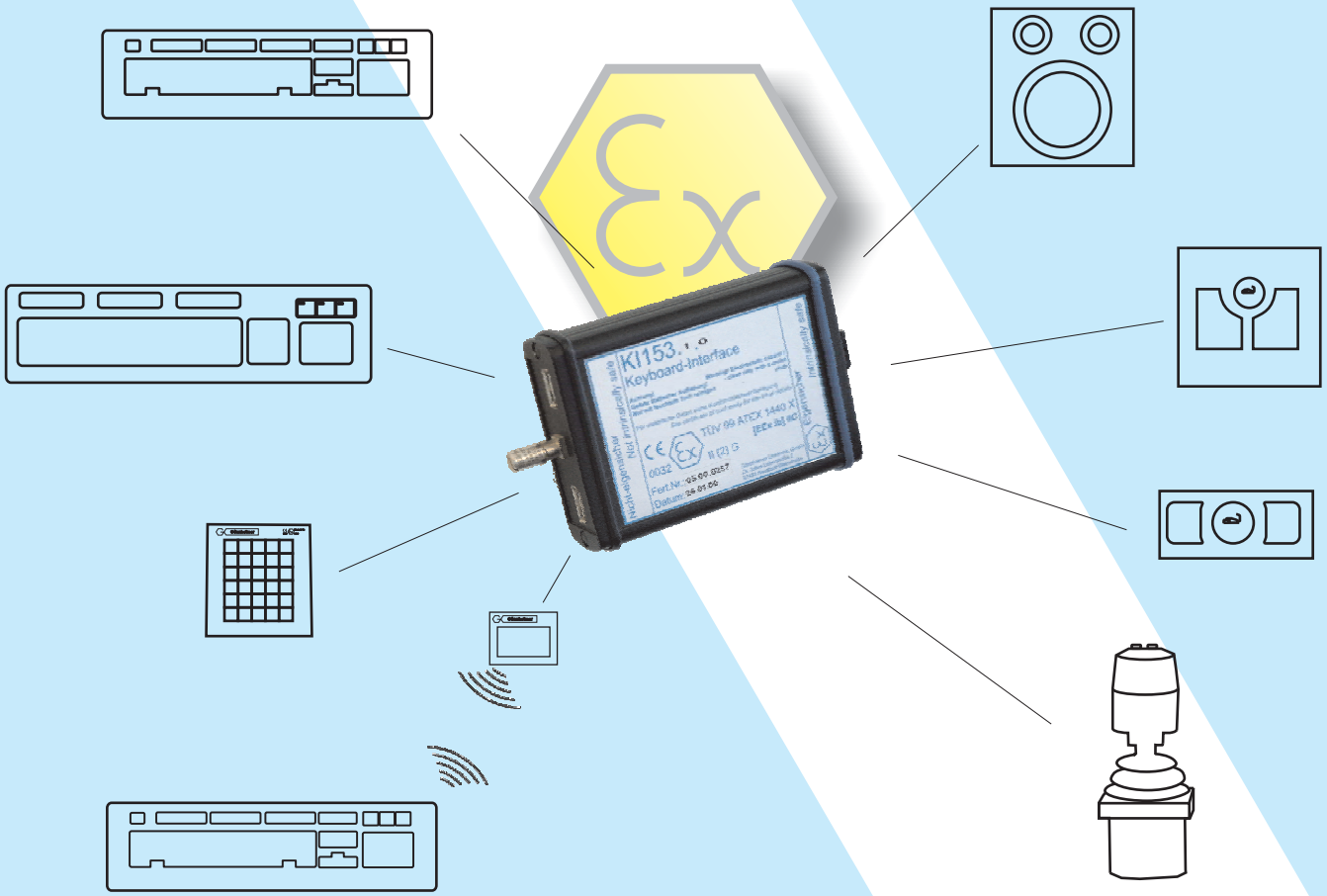
Description

The keyboard interface KI153 enables the operation of input devices, like PC keyboards, trackballs etc. within Ex- areas of Zone 1 and 2. For this, it offers the possibility of converting several PS/2 or USB channels into intrinsically safe circuits which permit a signal transmission into Ex area.

A variety of input devices permits an adaptation to the needs of different applications and places of work.

The EC- Type certificates of the KI153 as well as the input components are matched and guarantee a problem-free interconnection of all components with a system certificate from one hand. Verifications of intrinsic safety of all interconnections are provided, so the user saves initialization of application specific acceptance.

The KI153 also offers the possibility to use front-sided input devices in pressurized enclosure housings (Ex-p) for which intrinsically safe controls are necessary. (E.g. due to insufficient flushing of the contact areas and/or insufficient impact strength)



Input devices - components

Keyboards

KB153.0
Standard keyboard
Short-stroke keys
IP65, 105 keys,
country-specific layouts

KB153.2
Touchpad keyboard

Like standard,
with additional Touchpad

KB153.4
Compact keyboard

Like standard,
only 30 keys
with full function range!

KB153.1
Stainless steel housing
Short-stroke keys
IP65, 105 keys,
country-specific layouts

KB153.7
“Wireless” Keyboard

Wireless keyboard with short-stroke
keys such as standard type,
water and dust proof IP65!

Input devices

TB153.0.0
Stainless
steel trackball
Intrinsically safe trackball
with 2 or 3 keys and
stainless steel ball 38 mm
with PTFE sealing IP65!

TB153.0.1
Stainless steel trackball

Intrinsically safe trackball
with 2 or 3 keys and
stainless steel ball 50 mm
with PTFE sealing IP65!

TB153.0.0/1
Plastics trackball
Intrinsically safe trackball
with 2 or 3 keys, reinforced
plastics ball 38 (50) mm
with PTFE sealing IP65!

TB153.0.2
Industry Mouse
Alternative intrinsically safe
pointing device without
moving parts
Protection class IP65!

TB153.0.3
Miniature Mouse
Alternative intrinsically safe
pointing device without
moving parts
Protection class IP65!

Standard USB or PS/2
connection to PC

TB153.0.4
Industry Joystick
Multifunction joystick
2 Axis
USB + PS/2 support

TB153.0.5
Industry Joystick
Multifunction joysticks
2 Axis
2 buttons on the head
USB + PS/2 support

Technical Details

Keyboard KB153.0-5:

Connector	USB or PS/2 plug
Ex- protection	EEx ib IIC T4
Device group	II 2 G
EC type certification	TÜV 99 ATEX 1441
Mounting	Hazardous area, Zone 1
Electrical Details	See EC type certification
Ambient temperature	-10°C .. 50°C
Housing protection	IP65
Dimensions (H x W x D [mm])	.0 459 x 147 x 30 .2 483 x 178 x 30 .4 154 x 137 x 25

Keyboard KB153.6-7 (wireless):

Connector Receiver	USB or PS/2 plug
Ex- protection	EEx ib IIB T4
Device group	II 2 G
EC type certification	TÜV 99 ATEX 1441
Mounting	Hazardous area, Zone 1
Electrical Details	U_i = 5,8 V, I_i = 204 mA, P_i = 392 mW, C_i = 25 µF, L_i is negligible
Battery life time keyboard	> 10000 h (Stand-by)
Range	~ 10m (free field)
Frequency	433 MHz
Ambient temperature	-10°C .. 50°C
Housing protection	Keyboard: IP65 (Receiver: IP54)
Dimensions (H x B x T [mm])	.7 Keyboard: 480 x 182 x 45 Receiver: 79 x 51 x 10

Trackball TB153:

Connector	USB or PS/2 Standard plug
Ex- protection	EEx ib IIC T4
Device group	II 2 G
EC type certification	TÜV 99 ATEX 1442
Mounting	Hazardous area, Zone 1
Electrical Details	U_i = 5,8 V, I_i = 204 mA, P_i = 392 mW, C_i = 25 µF, L_i = 3 µH
Ambient temperature	-10°C .. 50°C
Housing protection	IP 65
Dimensions (H x B x T [mm])	.0.0 74 x 57 x 29 .0.1 80 x 78 x 43 .0.2 129 x 84 x 44 .0.3 128 x 108 x 25 .0.4-5 97 x 41 x 41

Keyboard interface KI153:

Connector	USB socket Type A (Optional: Adapter kit for PS/2-connection)
Ex- protection	[Ex ib] IIC
Device group	II (2) G D
EC type certification	TÜV 99 ATEX 1440 X
Mounting	Safe area or inside Ex-p, Ex-q or Ex-d enclosures
Non intrinsically safe side	KI153.0/1: Um = 253 V AC KI153.2/4: Um = 50VAC resp. 70VDC
Intrinsically safe side	See EC type certificate
Ambient temperature	-20°C .. 40°C
Housing protection	IP40
Housing material	Aluminum, powder coated
Fixing	35 mm rail, acc. EN 50022 Further mounting options on demand

Type code

Keyboard	**KB153**	**.x**	**.x**	**.x**
Type of the housing:				
Standard keyboard (panel mounting)	.0			
Standard keyboard (with housing)	.1			
Touchpad keyb. (panel mounting)	.2			
Touchpad keyboard (with housing)	.3			
Compact keyboard (panel mounting)	.4			
Compact keyboard (with housing)	.5			
Wireless keyboard (panel mounting)	.6			
Wireless keyboard (with housing)	.7			
Type of the keyboard layout:				
German Layout		.000		
US- Layout		.001		
Customized.....		.009		
Interface				
USB				.0
PS/2.....				.1

Trackball	**TB153**	**.x**	**.x**	**.x**
Housing type:				
Trackball panel mounting	.0			
Trackball with housing.....	.1			
Trackball type:				
38 mm ball	.0			
50 mm ball	.1			
Industry mouse	.2			
Miniature mouse	.3			
Joystick 2Axis; PS/2+USB	.4			
Joystick 2Axis+2 buttons; PS/2+USB	.5			
Interface				
USB				.0
PS/2.....				.1

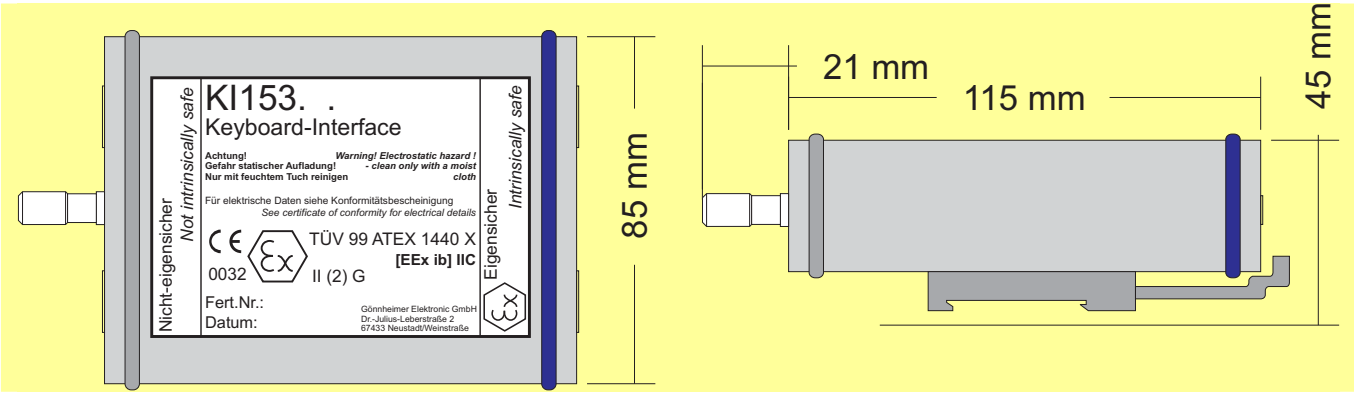
The trackball is also available with a reinforced plastics ball (phenolic resin) for extremely acidly environments.

Keyboard interface	KI153	.x	.x
Type + amount of channels (chn.)			
One USB1.1-chn. for KB/TB153		.0	
Two USB1.1-chn. for KB/TB153		.1	
One USB2.0-chn. for FD153		.2	
One USB1.1-chn. + one USB2.0-chn.		.3	
Two USB2.0-chn. for FD153		.4	
Despatch			
Mounted on 35mm rail			.0
Wall mounting			.1
Table housing			.2
Inside PC100			.3

Adapter cables

USB plug (A) – PS/2 socket:	Kabel.US.PB
USB plug (A) – PS/2 plug:	Kabel.US.PS

Dimensions KI153:



Keyboard interface KI153

Input devices options

Customized keyboards and layouts

The keyboards of the KB153 - series can be supplied in different languages.

An adjustment to customer requirements, like OEM front foils, changed construction of the mechanical structure as well as specific programming of the keyboard controllers are possible on request.

Key switch

Key switch for blocking of the input devices (FDA compliant).

Customized connection technology

Customized plugs, leads and interface converters (e.g. PS/2 ⇔ USB) for optimal adjustment of the input systems to the application specific requirements.

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