





#### **Technical Data**

All information contained herein is solely intended for product description and shall not be interpreted as warranted qualities in a legal sense. Any claims for damages against us regardless for wich legal basis - shall be excluded unless we should be liable for intent or gross negligence.

Subject to technical modification. Minor deviations in colour are possible for printing-technology reasons.



The RAFI flat data entry panels of the Type A series are protected against dirt, dust and splash water by a polyester foil and are easy to clean. They are therefore especially recommended for use in workshops and laboratories as well as for medical technology and food handling applications with high demands on hygiene.

#### **RAFI RF 15 short-travel keys**

The RF15 short-travel keys provide an excellent tactile feedback for the Type A keyboards. In combination with the embossed areas over the keys, high operating comfort and reliable data entry are achieved. The RF15 short-travel keys are provided with gold/gold contacts and offer LED indicators to signalize a switch on/off status.

#### **CE Conformity**

The Type A keyboards comply with the EC Directive 89/336, which includes:

- EN 61000-6-4/EN 55022-B (emitted interference)
- EN 61000-6-2/EN 55024-B (interference immunity)

#### **Resistance to Climate to IEC**

The Type A keyboards are climate-proof according to the following standards:

- Static environment to IEC 600 68-2-3 and 2-30
- Dynamic environment to IEC 600 68-2-14 and 2-33

RAFI RF15
0.5 <sup>+0.2</sup> mm
≥ 1 million actuations
0°C + 55°C
− 25°C + 65°C
N-key roll-over

#### **Symbols Used**



Degree of protection according to DIN 40050. For front panel versions, specified for front side when installed properly.

IP 68 = Protection against dust and continuous submersion in 1 m of water

IP 65 = Protection against dust and water-jets

IP 54 = Protection against dust and splash water

IP 40 = No protection against ingress of water



Suitable for installation in 19" racks or for placing in a 19" drawer with 1HU.

#### Registered Trademarks

IBM is a registered trademark of IBM Corporation.

MouseSystems is a registered trademark of MouseSystems Corporation.

Microsoft is a registered trademark of Microsoft Corporation.

TYPE A SERIES



#### **Type A9 Features**

- Keyboard, mouse button and mini-joystick are water-jet proof IP 65 according to DIN 40050.
- Mouse button and minijoystick are compatible with Microsoft mouse or PS/2 mouse.

#### **Technical Characteristics of Pointing Device**

- The pointing device unit consists of the left and right mouse keys and – depending on the version – the mouse button or minijoystick in the middle.
- When the mouse button or mini-joystick is actuated, the force and direction are detected by a sensor and interpreted for cursor/mouse control by an electronic module.
- The higher the pressure, the faster the movement of the cursor/mouse pointer.
- The device/cursor relation can be configured with the driver software included.

- No moving parts, i.e. long service life and high reliability.
- Service life of mouse button > 10 million actuations
- Service life of left/right mouse key > 1 million actuations

#### **INFO**

#### USB interface



(USB = Universal Serial Bus) Standardised interface for periphery devices. The devices can be connected with the PC running and are automatically detected. Up to 127 periphery devices can be connected to a PC using hubs or devices with hub functionality. The RAFI USB low-speed device types do not have a hub functionality, i.e. it is not possible to connect additional devices to the keyboard.





A9 Metal Housing Desktop Version	Keyboard interface	Mouse interface	Cable	Dimensions (mm)	Layout	Order no.
Without pointing device	USB	-	Straight cable; 1 x USB plug	447 x 213 x 40	German US French UK	3.99.202.934/0100 3.99.202.934/0200 3.99.202.934/0500 3.99.202.934/0300
Without pointing device	PS/2	-	Straight cable; 1 x PS/2 plug	447 x 213 x 40	German US French UK	3.99.202.936/0100 3.99.202.936/0200 3.99.202.936/0500 3.99.202.936/0300
With mouse button	USB	USB, integrated hub	Straight cable; 1 x USB plug	447 x 213 x 40	German US French UK	3.99.202.935/0101 3.99.202.935/0201 3.99.202.935/0501 3.99.202.935/0301
With mouse button	PS/2	PS/2 mouse	Straight cable; 2 x PS/2 plug	447 x 213 x 40	German US French UK	3.99.202.937/0101 3.99.202.937/0201 3.99.202.937/0501 3.99.202.937/0301
With mini-joystick	USB	USB, integrated hub	Straight cable; 1 x USB plug	447 x 213 x 40	German US French UK	3.99.202.935/0102 3.99.202.935/0202 3.99.202.935/0502 3.99.202.935/0302
With mini-joystick	PS/2	PS/2 mouse	Straight cable; 2 x PS/2 plug	447 x 213 x 40	German US French UK	3.99.202.937/0102 3.99.202.937/0202 3.99.202.937/0502 3.99.202.937/0302





A9 Front Panel Version	Keyboard interface	Mouse interface	Cable	Dimensions (mm)	Layout	Order no.
Without pointing device	USB	-	Straight cable; 1 x USB plug	433.4 x 177 x 15 For drawing, see page 19	German US French UK	3.99.202.914/0100 3.99.202.914/0200 3.99.202.914/0500 3.99.202.914/0300
Without pointing device	PS/2	-	Straight cable; 1 x PS/2 plug	433.4 x 177 x 15 For drawing, see page 19	German US French UK	3.99.202.916/0100 3.99.202.916/0200 3.99.202.916/0500 3.99.202.916/0300
With mouse button	USB	USB, integrated hub	Straight cable; 1 x USB plug	433.4 x 177 x 15 For drawing, see page 19	German US French UK	3.99.202.915/0101 3.99.202.915/0201 3.99.202.915/0501 3.99.202.915/0301
With mouse button	PS/2	PS/2 mouse	Straight cable; 2 x PS/2 plug	433.4 x 177 x 15 For drawing, see page 19	German US French UK	3.99.202.917/0101 3.99.202.917/0201 3.99.202.917/0501 3.99.202.917/0301
With mini-joystick	USB	USB, integrated hub	Straight cable; 1 x USB plug	447 × 213 × 40	German US French UK	3.99.202.915/0102 3.99.202.915/0202 3.99.202.915/0502 3.99.202.915/0302
With mini-joystick	PS/2	PS/2 mouse	Straight cable; 2 x PS/2 plug	433.4 x 177 x 15 For drawing, see page 19	German US French UK	3.99.202.917/0102 3.99.202.917/0202 3.99.202.917/0502 3.99.202.917/0302







A9 Front Panel Version 19" 4HU	Keyboard interface	Mouse interface	Cable	Dimensions (mm)	Layout	Order no.
Without pointing device A9	USB	-	Straight cable; 1 x USB plug	482.6 x 177.8 x 35 For drawing, see page 19	German US French UK	3.99.202.994/0100 3.99.202.994/0200 3.99.202.994/0500 3.99.202.994/0300
Without pointing device	PS/2	-	Straight cable; 1 x PS/2 plug	482.6 x 177.8 x 35 For drawing, see page 19	German US French UK	3.99.202.996/0100 3.99.202.996/0200 3.99.202.996/0500 3.99.202.996/0300
With mouse button	USB	USB, integrated hub	Straight cable; 1 x USB plug	482.6 x 177.8 x 35 For drawing, see page 19	German US French UK	3.99.202.995/0101 3.99.202.995/0201 3.99.202.995/0501 3.99.202.995/0301
With mouse button	PS/2	PS/2 mouse	Straight cable; 2 x PS/2 plug	482.6 x 177.8 x 35	German US French UK	3.99.202.997/0101 3.99.202.997/0201 3.99.202.997/0501 3.99.202.997/0301
With mini-joystick	USB	USB, integrated hub	Straight cable; 1 x USB plug	447 x 213 x 40	German US French UK	3.99.202.995/0102 3.99.202.995/0202 3.99.202.995/0502 3.99.202.995/0302
With mini-joystick	PS/2	PS/2 mouse	Straight cable; 2 x PS/2 plug	482.6 x 177.8 x 35	German US French UK	3.99.202.997/0102 3.99.202.997/0202 3.99.202.997/0502 3.99.202.997/0302

• The backside of the keyboard is protected by a metal housing

#### **INFO**

19" standard

dimensions specified in DIN The 19" standard is a generic 41494 Part 1–5. Front panel Standard inside dimensions term referring to all standards and width:19"= 482.6 mm. Front panel of a 19" drawer: < 420 mm

height (= HU): 1 HU = 44.45 mm Standard inside dimensions



A9 Drawer Version 19" 1HU	Keyboard interface	Mouse interface	Cable	Dimensions (mm)	Layout	Order no.
Without pointing device	USB	-	Straight cable; 1 x USB plug	482.2 (19") x 44.45 (1HU) x 310	German US French UK	3.99.202.944/0100 3.99.202.944/0200 3.99.202.944/0500 3.99.202.944/0300
Without pointing device	PS/2	-	Straight cable; 1 x PS/2 plug	482.6 (19") x 44.45 (1HU) x 310	German US French UK	3.99.202.946/0100 3.99.202.946/0200 3.99.202.946/0500 3.99.202.946/0300
With mouse button	USB	USB, integrated hub	Straight cable; 1 x USB plug	482.2 (19") x 44.45 (1HU) x 310	German US French UK	3.99.202.945/0101 3.99.202.945/0201 3.99.202.945/0501 3.99.202.945/0301
With mouse button	PS/2	PS/2 mouse	Straight cable; 2 x PS/2 plug	482.6 (19") x 44.45 (1HU) x 310	German US French UK	3.99.202.947/0101 3.99.202.947/0201 3.99.202.947/0501 3.99.202.947/0301
With mini-joystick	USB	USB, integrated hub	Straight cable; 1 x USB plug	447 x 213 x 40	German US French UK	3.99.202.945/0102 3.99.202.945/0202 3.99.202.945/0502 3.99.202.945/0302
With mini-joystick	PS/2	PS/2 mouse	Straight cable; 2 x PS/2 plug	482.6 (19") x 44.45 (1HU) x 310	German US French UK	3.99.202.947/0102 3.99.202.947/0202 3.99.202.947/0502 3.99.202.947/0302





DIN-Layout



19"	front	panel
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					10 Hont paner
Type A6	Keyboard interface	Cable	Dimensions (mm)	Layout	Order no.
Metal housing	USB	Straight cable; 1 x USB plug	475 x 213 x 42	German US	3.99.202.687/0100 3.99.202.687/0200
version	PS/2	Straight cable; 1 x PS/2 plug	475 x 213 x 42	German US	3.99.202.686/0100 3.99.202.686/0200
Front panel	USB	Straight cable; 1 x USB plug	459.6 x 165.6 x 30 For drawing, see page 19	German US	3.99.202.677/0100 3.99.202.677/0200
version	PS/2	Straight cable; 1 x PS/2 plug	459.6 x 165.6 x 30 For drawing, see page 19	German US	3.99.202.676/0100 3.99.202.676/0200
19" front panel	USB	Straight cable; 1 x USB plug	482.6 x 177.8 x 35	German US	3.99.202.697/0100 3.99.202.697/0200
4 HU	PS/2	Straight cable; 1 x PS/2 plug	482.6 x 177.8 x 35	German US	3.99.202.696/0100 3.99.202.696/0200

#### **Type A6 Features**

 Keyboard in DIN layout, key grid 19.05 mm





A5 Metal Housing Desktop Versions	Keyboard interface	Mouse interface	Cable	Dimensions (mm)	Layout	Order no.
Mechanical tracker ball	USB	USB, integrated hub	Straight cable; 1 x USB plug	410 x 213 x 42	German US French UK	3.99.202.538/0100 3.99.202.538/0200 3.99.202.538/0500 3.99.202.538/0300
	PS/2	PS/2 mouse	Straight cable; 2 x PS/2 plug	410 x 213 x 42	German US French UK	3.99.202.537/0100 3.99.202.537/0200 3.99.202.537/0500 3.99.202.537/0300
Touch pad	USB	USB, integrated hub	Straight cable; 1 x USB plug	410 x 213 x 42	German US French UK	3.99.202.534/0100 3.99.202.534/0200 3.99.202.534/0500 3.99.202.534/0300
	PS/2	PS/2 mouse	Straight cable; 2 x PS/2 plug	410 x 213 x 42	German US French UK	3.99.202.533/0100 3.99.202.533/0200 3.99.202.533/0500 3.99.202.533/0300

#### **Type A5 Features**

- Key-field is water-jet proof IP 65 according to DIN 40050
- Mechanical tracker ball is protected acc. to IP 65, the optical version acc. to IP 68
- MF II tracker ball compatible with Microsoft mouse or PS/2 mouse
- USB tracker ball and touch pad with integrated hub
- Housing fits into a 19" drawer



A5 in metal housing with mechanical tracker ball, PS/2











Touch Pad

Mechanical tracker ball

tracker ball

A5 Front Panel Versions	Keyboard interface	Mouse interface	Cable	Dimensions (mm)	Layout	Order no.
Mechanical tracker ball	USB	USB, integrated hub	Straight cable; 1 x USB plug	433 x 177 x 25	German US French UK	3.99.202.518/0100 3.99.202.518/0200 3.99.202.518/0500 3.99.202.518/0300
	PS/2	PS/2 mouse	Straight cable; 2 x PS/2 plug	433 x 177 x 25	German US French UK	3.99.202.517/0100 3.99.202.517/0200 3.99.202.517/0500 3.99.202.517/0300
Optical	USB	USB, integrated hub	Straight cable; 1 x USB plug	433 x 177 x 25	German US French UK	3.99.202.516/010x 3.99.202.516/020x 3.99.202.516/050x 3.99.202.516/030x
tracker ball	PS/2	PS/2 mouse	Straight cable; 2 x PS/2 plug	433 x 177 x 25	German US French UK	3.99.202.515/010x 3.99.202.515/020x 3.99.202.515/050x 3.99.202.515/030x
	USB	USB, integrated hub	Straight cable; 1 x USB plug	433 x 177 x 25	German US French UK	3.99.202.514/0100 3.99.202.514/0200 3.99.202.514/0500 3.99.202.514/0300
Touch pad	PS/2	PS/2 mouse	Straight cable; 2 x PS/2 plug	433 x 177 x 25	German US French UK	3.99.202.513/0100 3.99.202.513/0200 3.99.202.513/0500 3.99.202.513/0300

x = 1: removable tracker ball, x = 2: fixed ball sealing

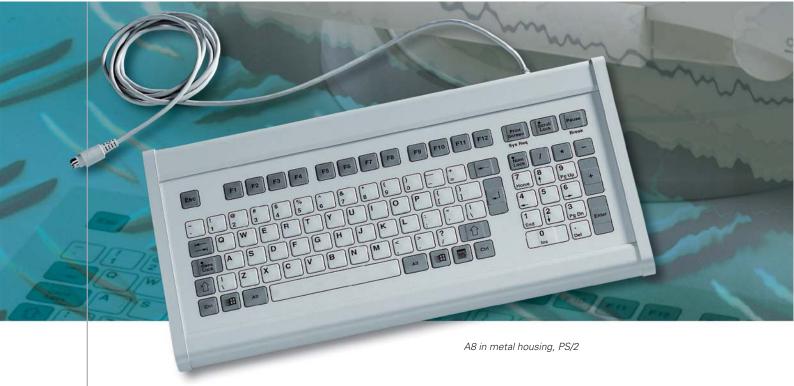


#### **INFO**

#### **Optical tracker ball**

The optical tracker ball used in the A5 keyboard has long service life and high reliability. It is protected against dust and continuous submersion in 1 m

of water (IP 68), and can be removed for cleaning purposes. Optical tracker balls can be used in different mounting postitions, so this keyboard versions can for example be mounted vertically.







Metal housing

Type A8	Keyboard interface	Cable	Dimensions (mm)	Layout	Order no.
Metal housing	USB	Straight cable; 1 x USB plug	410 x 213 x 42	German US	3.99.202.887/0100 3.99.202.887/0200
version	PS/2	Straight cable; 1 x PS/2 plug	410 x 213 x 42	German US	3.99.202.886/0100 3.99.202.886/0200
Front panel	USB	Straight cable; 1 x USB plug	395.85 x 159.85 x 30 For drawing, see page 19	German US	3.99.202.877/0100 3.99.202.877/0200
version	PS/2	Straight cable; 1 x PS/2 plug	395.85 x 159.85 x 30 For drawing, see page 19	German US	3.99.202.876/0100 3.99.202.876/0200

#### Type A8 Features

 Housing fits into 19" drawer 1 HU









Type A4 (plus)	Keyboard interface	Cable	Dimensions (mm)	Layout	Order no.
Plastic housing	USB	Straight cable; 1 x USB plug	125 x 150 x 30	German US	3.99.202.467/0100 3.99.202.467/0200
version	PS/2	Straight cable; 1 x PS/2 plug	125 x 150 x 30	German US	3.99.202.466/0100 3.99.202.466/0200
Front panel	USB	Straight cable; 1 x USB plug	137.3 x 154 x 24.25 For drawing, see page 19	German US	3.99.202.457/0100 3.99.202.457/0200
version	PS/2	Straight cable; 1 x PS/2 plug	137.3 x 154 x 24.25 For drawing, see page 19	German US	3.99.202.456/0100 3.99.202.456/0200

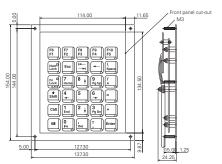
#### Type A4 Features

- Provides entry of all alphanumerical characters and control codes
- Auto-repeat can be switched off
- N-key roll-over, can be set to 2-key roll-over
- Housing version protection: IP 54 Front panel version protection: IP 65

#### Accessories:

- Adapter box for connecting 2 keyboards to a PC: 3.60.100.195/0000, details see page 20
- Adapter cable, PS/2 USB:
   5.03.771.761/0000, details
   see page 20

#### **Type A4 Front Panel Version**







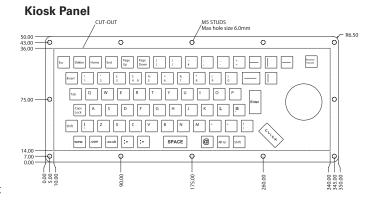
Kiosk Keyboard Front Panel Versions	Keyboard interface	Mouse interface	Cable	Dimensions (mm)	Layout	Order no.
With	USB	USB, integrated hub	Straight cable; 1 x USB plug	250 x 150 x 30.5	US	3.60.100.932/0000
tracker ball	PS/2	PS/2 mouse	Straight cable; 2 x PS/2 plug	250 x 150 x 30.5	US	3.60.100.933/0000

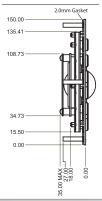
#### **Kiosk Keyboard Features**

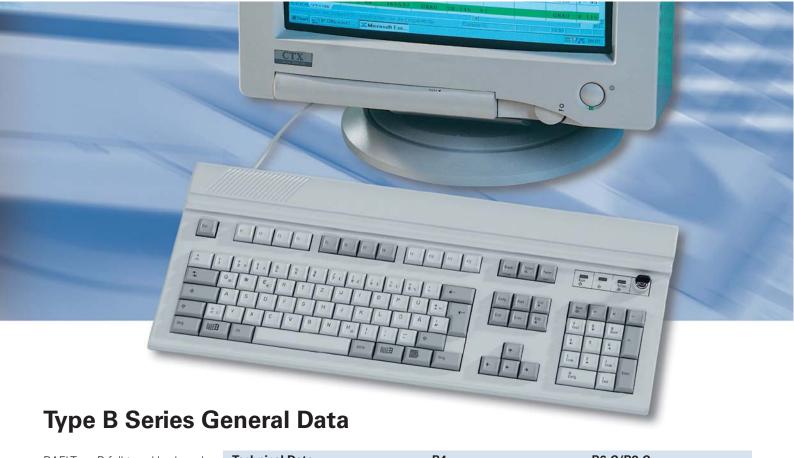
- Vandal resistant for public access terminals
- Stainless steel frontpanel, key caps and tracker ball
- Sealed to IP 65
- Switches: RAFI RACON 12 with 2.5N operating force
- Switch operating life > 1 million operations
- Front plate 2 mm Mild Steel
- Keytops: stainless steel keytops with laser engraved legends
- Ambient Temperature:
   Operating 0°C to + 70°C
   Storage -25°C to + 80°C
- Robustness 750N load on front face (EN 45001). 10
   Joules impact on front face.
   Sealed to IP 65 on front face
- Supply Voltage + 5Vdc +/- 5%
- Supply Current approx 100mA
- Dimensions 350 mm x 150 mm x 35 mm, Panel cut-out 330 mm x 122 mm

- Standards: CE approved. This product conforms to the following standards. EN55022 Class B Part 2 (full compliance is conditioned by the adequate integration into the complete machine system by the user). All major components are to UL specification
- Other language variants and customer specific options available upon request

This keyboard has been designed for use by the public. Its purpose is to be durable yet still provide a good quality user interface. However, sustained attacks from screwdrivers, hammers, glue etc. may cause damage to the unit.







RAFI Type B full-travel keyboards are top-quality products. Specifically the B6-C keyboard offers highly comfortable data entry for continuous-duty

## Full-Travel Keys RS 76 M and RS 76 C

professional use.

The Type B series keyboards are based on the RS 76 M full-travel keys (mechanical contacts) or the RS 76 C keys (solid state switch with Hall-IC).

Technical Data	B4	B6-C/B8-C
Contact system	Gold/gold contacts	Solid state
	mechanical	
Operating force	≤ 0.9 N	≤ 0.7 N
Actuating travel	4 mm	4 mm
Switching travel	2 ±0.5 mm	1,52,8 mm
Robustness of actuator	≥ 100 N	≥ 100 N
Bouncing time	≤ 5 ms	-
Operating life	≥ 10 million	≥ 100 million
Operating temperature	– 0°C + 55°C	– 0°C + 55°C
Storage temperature	– 25°C + 70°C	– 25°C + 70°C
Degree of protection	IP 40	IP 40

#### Keycaps

The keycaps of the B6-C and B8-C keyboards are twoshot moulded. The symbols form an integral component of the keycap, thereby excluding any abrasion.

The keycaps of the other keyboards are laser engraved. In this process, a laser is used for burning the symbols into the keycaps after keyboard assembly. In this way, customerspecific layout variants can be produced without any problem.

#### **CE Conformity**

The Type B keyboards comply with the EC Directive 89/336, which includes:

- EN 61000-6-4/EN 55022-B (emitted interference)
- EN 61000-6-2/EN 55024-B (interference immunity)

#### Resistance to climate to IEC

The Type B keyboards are climate-proof according to the following standards:

- Static environment to IEC 600 68-2-3 and 2-30
- Dynamic environment to IEC 600 68-2-14 and 2-33

#### Symbols Used



Degree of protection according to DIN 40050. For front panel versions, specified for front side when installed properly.

IP 65 = Protection against dust and water-jets

IP 54 = Protection against dust and splash water

IP 40 = No protection against ingress of water



Suitable for installation in 19" racks or for placing in a 19" drawer with 1HU.

TYPE B SERIES











Type B8-C	Keyboard interface	Mouse Interface	Cable	Dimensions (mm)	Layout	Order no.
Mechanical	USB	USB integrated hub	Straight cable; 1 x USB plug	410 x 225 x 43	German US French UK	3.93.105.859/0100 3.93.105.859/0200 3.93.105.859/0500 3.93.105.859/0300
tracker ball	PS/2	PS/2 mouse	Straight cable; 1 x PS/2 plug	410 x 225 x 43	German US French UK	3.93.105.855/0100 3.93.105.855/0200 3.93.105.855/0500 3.93.105.855/0300

#### **Type B8 Features**

- RS 76 C keyswitches
- Tracker ball built in
- Auto-repeat can be switched off
- N-key roll-over
- Degree of protection IP 40
- The tracker ball can be used as USB or PS/2 mouse
- Housing fits into a 19" drawer 1HU

This keyboard is designed to operate in hostile dirty environments with an operating life of more than 100 million operations and a sealed tracker ball.

#### **INFO**

#### N-key roll-over

All key codes of all simultaneously pressed keys are sent to the PC.

B8-C







Type B6-C	Keyboard interface	Cable	Dimensions (mm)	Layout	Order no.
Plastic housing version B6-C	USB	Straight cable; 1 x USB plug	496 x 255 x 43	German US French	3.93.105.637/0100 3.93.105.637/0200 3.93.105.637/0500
	PS/2	Straight cable; 1 x PS/2 plug	496 x 255 x 43	German US French	3.93.105.636/0100 3.93.105.636/0200 3.93.105.636/0500

#### INFO

# Contact design of the RS 76 C full-travel keys with Hall-IC

The solid state Hall-IC integrated circuit technology guarantees bounce-free and wear-free switching and an extremely long service life. Function: When the key is pressed, a permanent magnet changes its position relative to the Hall-IC and thereby produces an output signal. Advanteges: Withstands hostile environments (dust etc.) and provides smooth typing for continuous-duty professional applications.

#### **Type B6-C Features**

- RS 76 C keyswitches
- Top-quality keybord for professional data entry requirements
- Solid state Hall effect keys
- Soft tryping
- Keycaps two-shot moulded (abrasion-proof and glare-free)
- N-key roll-over
- Operating life > 100 million actuations



Type B4	Keyboard interface	Cable	Dimensions (mm)	Layout	Order no.
Plastic housing version	USB	Straight cable; 1 x USB plug	125 × 150 × 33	German US	3.93.105.437/0100 3.93.105.437/0200
	PS/2	Straight cable; 1 x PS/2 plug	125 x 150 x 33	German US	3.93.105.436/0100 3.93.105.436/0200
Front panel version	USB	Straight cable; 1 x USB plug	137.3 × 154.0 × 24.25	German US	3.93.105.417/0100 3.93.105.417/0200
	PS/2	Straight cable; 1 x PS/2 plug	137.3 × 154.0 × 24.25	German US	3.93.105.416/0100 3.93.105.416/0200

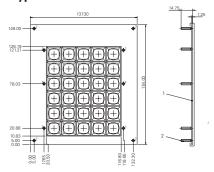
#### Type B4 Features

- Provides entry of all alphanumerical characters and control codes
- Auto-repeat can be switched off
- N-key roll-over, can be set to 2-key roll-over
- Degree of protection: IP 40

#### Accessories:

- Adapter box for connecting 2 keyboards to a PC: 3.60.100.195/0000, details see page 20
- Adapter cable, PS/2 USB: 5.03.771.761/0000, details see page 22

#### **Type B4 Front Panel Version**



#### INFO

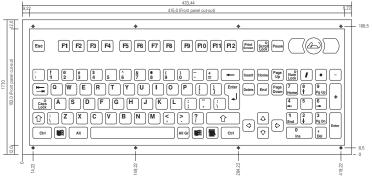
#### **Auto-repeat**

In the default setting, the keyboard after a delay repeats a character as long as the finger keeps pressing the key.

**B4** 

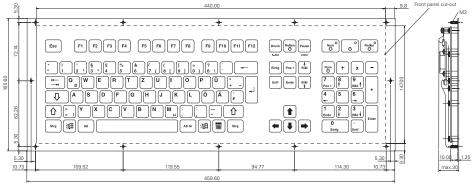
### **Drawings for Front Panel Versions**

#### **Type A9 Front Panel Version**

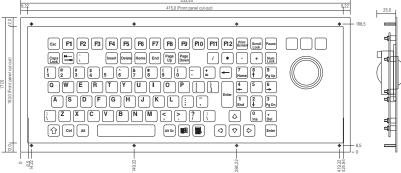


# Type A8 Front Panel Version | Second |

#### **Type A6 Front Panel Version**



#### **Type A5 Front Panel Version**



DRAWINGS

# Accessories



Mini-DIN/USB connector adapter.

Order no. 5.03.771.761/0000



The RAFI adapter box for connecting two keyboards to a PC makes it possible to supplement an existing keyboard with a second one. The box switches automatically

to the currently used keyboard. Cable with PS/2 plug, 2 x PS/2 socket

Order no. 3.60.100.195/0000

Your RAFI Partner

03/2007

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