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Technical Documentation

FT-40

Remote Keyboard and Mouse
intrinsically safe and dust proof

FT-40

17.07.2007

Operating Instructions

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General Information

1 In short

- Suitable for hazardous areas zone 1 and 2
- Integrated mouse
- 24 function keys give easy access to most advanced applications
- No installation of cables; longer transmission range than with cable
- Transceiver FR-40I is plugged into the USB port of a PC like a memory stick. Transceiver FR-40E with flying leads.
- Automatic installation (HID = human interface device)
- Can be used as a secondary keyboard and mouse
- Encrypted data transfer for use of several keyboards in the same area
- Well palpable keys, easy to find even with gloves
- Switch point easy to feel
- Case without gaps and edges, easy to clean
- Case material resistant against most chemical fluids
- Dust and water proof, IP65

2 Delivery components

Delivery includes:

- Keyboard FT-40xy (type code see chapter 4)
- Manual FT-40
- Receiver FR-40... (versions for hazardous environments available)

3 Starting up

Initiation:

- Put the receiver FR-40... into a USB port of your PC, and then switch the PC on. The PC will find the receiver automatically.
- Insert the batteries in the keyboard. Suitable types of batteries for hazardous areas see chapter 5. Please wait at least 10 seconds during the first communication between keyboard and receiver.
- FT-40 works like standard PS/2 keyboards/mice, even together with these.

Starting after the first initiation:

- The keyboard is ready for use after your PC has powered up.
- Please remove the batteries during long periods without operation. (Stand-by current consumption ca. 0.12 mA.)

Technical Data

4 Mechanical and Electrical Data

- Weight: 970 g without, 1130 g with handle (including batteries, 74 g)
- Material: polycarbonate (case), coated silicone (keys)
- Radio range: 10 m
- MF2 (116 keys), short travel (1.5 mm, > 10^6 operations); US / DE layout
- Built-in mouse "Hulapoint" to be used like a joystick; 3 mouse keys
- Battery: 3 alkaline cells, size AA (mignon), see list in chapter 5.
  Polarity see drawing below. Watch the safety advices in chapter 7.
- Battery life time at common use: 6 months.
  Battery life while pressing a key 4 h a day and 5 days a week: 2 months.

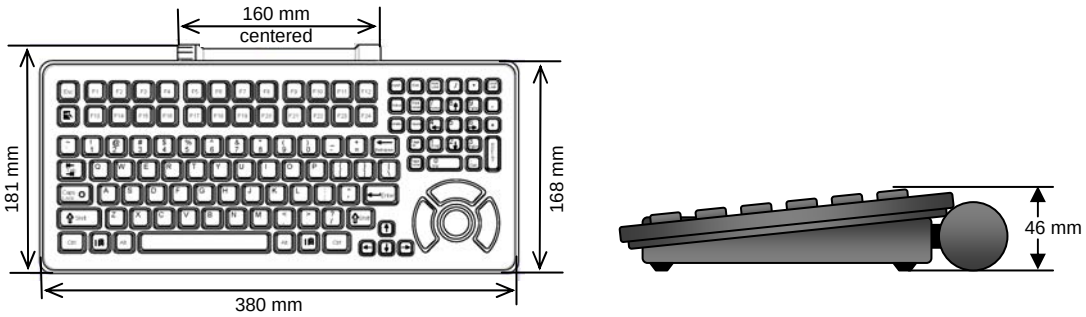
Type Codes for Keyboards:

FT-40xy

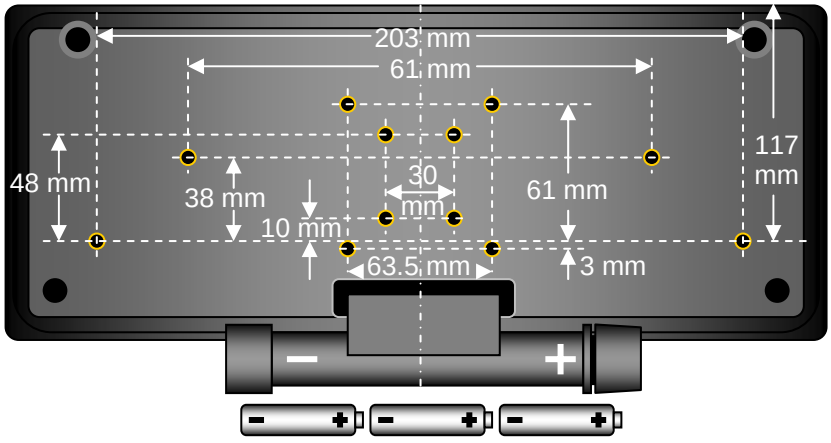
x = P: portable version with handle
x = M: version for mounting

y = DE with German key layout
y = US with US key layout
y = further national key layouts and abbreviations on request

1. Keyboard FT-40My for mounting (without handle):
Dimensions:



Position of mounting holes and battery cells:

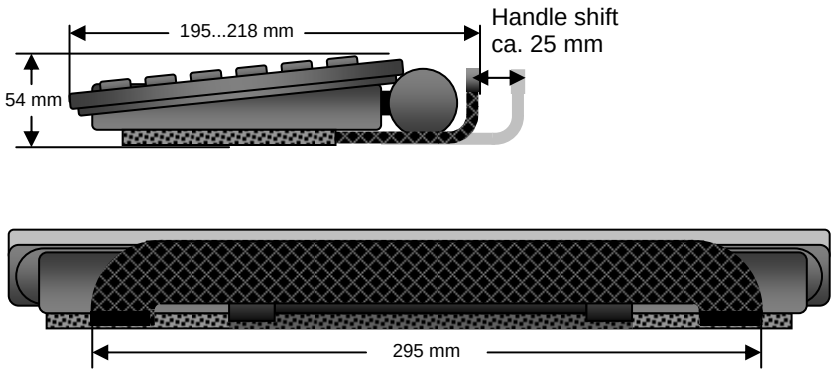


Thread:
6BA
(Ø ca. 4.1mm,
pitch ca. 1 mm;
M4 fits well, too)

Depth of thread hole:
3/8" (9.5 mm)

2. Portable keyboard FT-40Py (with handle):

Dimensions:



Type Codes for explosion protected USB sticks:

FR-40E nnn z
FR-40I nnn z

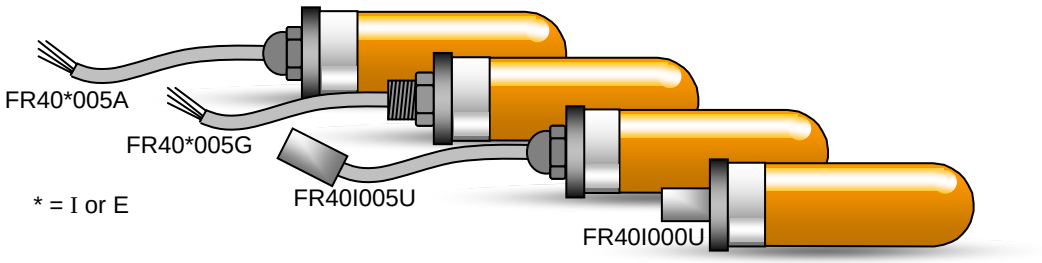
E = Transceiver for connection with „Ex e“ components („Ex e“ clamps in an „Ex e“ junction box) inside of hazardous areas, or directly with a PC outside of hazardous areas

I = Intrinsically safe transceiver, only for connection with an „Ex i“ supply

nnn = Cable length in dm. Standard length: 005 = 0.5 m

y = A: flying leads; G: flying leads + thread for easy mounting; U: USB plug, not possible for FR40E...

Transceiver examples (details see transceiver manual):



5 Data for Hazardous Areas

- Type: FT-40...
- - 20°C ≤ T_{amb} ≤ +50°C
- II 2 G Ex ia IIC T4
- IBExU 07 ATEX 1079 X
- II 2 D Ex iaD T107°C IP65

Meanings of the Marking for Hazardous Areas:

II	2	G	Ex ia	IIC	T4
Group II = all areas without mining	Category 2 = zone 1 (frequent or long lasting explosive atmosphere)	Gas atmosphere	Protection by intrinsic safety i = intrinsically safe a = two-failure safety	Hydrogen (the most ignitable gas)	Surface temp. less than 135°C

II	2	D	Ex ia	T107°C	IP65
Group II = all areas without mining	Category 2 = zone 1 (frequent or long lasting explosive atmosphere)	Conductive / explosive dust,	Protection by intrinsic safety i = intrinsically safe a = two-failure safety	Maximum possible surface temperature	Dust and water proof, details see below

IBExU	07	ATEX	1079	X
Marking of the test board	Year of approval	Tested according to ATEX	Certificate number	"X" for special conditions, see below

Meaning of the "X" in the marking

FT-40 cannot be charged by friction but by a sparking electrode, so in explosive gas atmospheres this keyboard must not be used close to electrically charging processes.

FT-40 must only be used in explosive dust atmospheres with the mechanical danger "low". (Impact energy according to EN 61241-0, table 5: „high" = 7 J; „low" = 4 J.)

IP codes

IP6...: Dust proof, complete contact protection

IP...5: Water proof against water beam

The wall thickness of the case is more than 3 mm. The thickness of the key foil is over 2.5 mm, but much less around the keys and the lamps. Even hardly visible damages may decrease the IP protection here and make the dust protection become invalid. Please watch these areas.

Battery:

3 cells type Duracell MN 1500 AA, capacity: 2850 mAh

Further cell types approved according to EN50020, §10.9:

Hersteller:	Typ:
Daimon	Alkaline
Double	Alkaline Battery
Duracell	Alkaline
Duracell	Alkaline Ultra
Duracell	Professional Alkaline Battery Procell
Eveready	Alkaline Energizer
GP	Super Alkaline Battery 15 A

Hersteller:	Typ:
Panasonic	Alkaline Power Line Industrial Battery
Rayovac	Maximum Alkaline Battery
RS	Alkaline
Varta	Alkaline Electric Power No. 8006
Varta	Alkaline Extra Longlife No. 4006
Varta	Alkaline Maxi Tech No. 4706
Varta	Alkaline No. 4806

6 Cleaning

Please clean the keyboard with a damp cloth or a soft brush. Cleaning only outside of hazardous areas because of possible charging of the cleaning tool !

Appendix

7 Safety advice

Battery exchange only outside of hazardous areas. Only cells type Duracell MN 1500 AA or from the table in chapter 5 with the same capacity may be used.

The carrying handle of the portable version "H" version must not be removed. The keyboard must not be situated inside of hazardous areas, if the handle or components, which fix the handle to the keyboard or isolate it, are defective or lost.

The mounted version "M" must be mounted if situated inside of hazardous areas.

Make sure, that the edges of the keys and the LED windows (on the keys CAPS LOCK, Fn and F24/BIND) are not torn. Please check this only outside of hazardous areas by shifting the keys horizontally with your finger.

The marking “X” on the type label of the potable version means: Do not use close to electrically charging processes.

Cleaning only outside of hazardous areas because of possible charging of the cleaning tool.

Read the manual completely and carefully before operation. Only the latest documentation is valid.

Installation, maintenance and cleaning of the units must only be performed by persons trained and authorized for this purpose, insofar as they are familiar with the units.

If it can be assumed that safe operation is no longer possible, switch off the unit and secure it against being used again.

It is prohibited for the operator or his staff to open the units in a way that is not described in this manual. This may only be done by specifically authorized personnel of E.L.B. Ex-Geraete GmbH & Co. KG.

Modifications and conversions to the units are not permissible and will cause the Ex protection and the guarantee to become void.

E.L.B. Ex-Geraete GmbH & Co. KG is not liable for any consequential damage.

Further advice see chapter 5: "data for hazardous areas".

The technical data specified for hazardous areas comply with the values certified in the European EEx approval. The user bears the sole responsibility of examining the equipment with regard to its suitability for the intended application and environmental conditions. E.L.B. Ex-Geraete GmbH & Co. KG accepts no liability for any lack of suitability.

For the installation, maintenance and cleaning of the units, it is absolutely necessary to observe the applicable ordinances and provisions concerned with explosion protection as well as the Accident Prevention Regulations and codes of practice in your region.

8 Liability

The technical data specified for hazardous areas comply with the values certified in the European EEx approval. The user bears the sole responsibility of examining the equipment with regard to its suitability for the intended application and environmental conditions. E.L.B. Ex-Geraete GmbH & Co. KG accepts no liability for any lack of suitability.

9 EC Declaration of Conformity

We hereby confirm the conformity of the equipment listed below with the directives of the Council of the European Community. The safety and installation instructions of the product documentation must be observed.

Model:	Remote keyboard / mouse FT-40
Directive:	EMC Directive 98/336/EC
European Standards:	EN 55022: 1998, class B EN 55024: May 1999
Directive:	Low Voltage Directive 73/23/EC
European Standards:	EN 60950
Directive:	94/9/EC
European Standards:	EN 60079-0 EN 60079-11 EN 61241-0 EN 61241-11

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IBExU Institut für Sicherheitstechnik GmbH
An-Institut der TU Bergakademie Freiberg

[1] **EC-TYPE EXAMINATION CERTIFICATE**
according to Directive 94/9/EC, Annex III
(Translation)

[2] Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres, Directive 94/9/EC

[3] EC-Type Examination Certificate Number: **IBExU07ATEX1079 X**

[4] Equipment: Radio keyboard FT-40

[5] Manufacturer: E.L.B. Ex-Geräte Bachmann GmbH & Co. KG

[6] Address: An der Hartbrücke 8
64625 Bensheim
Germany

[7] The equipment mentioned under [4] and any acceptable variation there to are specified in the schedule to this EC-Type Examination Certificate.

[8] IBExU Institut für Sicherheitstechnik GmbH, NOTIFIED BODY number 0637 in accordance with article 9 of the Council Directive 94/9/EC of 23rd March 1994, certifies that the under [4] mentioned equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of the equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in test report IB-06-3-137 of 25th June 2007.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0:2004, EN 60079-11:2007, EN 61241-0:2006 and EN 61241-11:2006.

[10] If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified under [17] in the schedule to this EC-Type Examination Certificate.

[11] This EC-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

[12] The marking of the equipment mentioned under [4] shall include the following:

Ex II 2G Ex ia IIC T4
Ex II 2D Ex iaD 21 T 107 °C
-20 °C ≤ Ta ≤ +50 °C

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Authorised for certifications
- Explosion protection -

By order

(Dr. Lösch)

Zertifizierungsstelle Explosionsschutz IBExU Institut für Sicherheitstechnik GmbH Kenn-Nr. 0637
- Seal -
(ID no. 0637)

Freiberg, 26tht June 2007

Certificates without signature and seal are not valid.
Certificates may only be duplicated completely and unchanged.
In case of dispute, the German text shall prevail.

Schedule

[13] **Schedule**

[14] **to EC-TYPE EXAMINATION CERTIFICATE IBExU06ATEX1079 X**

[15] **Description of the equipment**

FT 40 serves as radio keyboard for PCs. The equipment is intended for the use in explosive areas which require 2G or 2D apparatus. It is supplied by 3 alkaline cells. The circuitry is built into a plastic enclosure.

Type code

FT-40xy

x=P: portable version with handle
x=M: version for mounting

y=DE: with German key layout
y=US: with U.S. key layout
y= further national key layouts possible

Ambient temperature range:	-20 °C to +50 °C
Degree of protection of the enclosure:	≥ IP 65

Electrical data

internal supply circuitry
Operating voltage 3 x 1.5 V -primary alkaline cell, size AA (Mignon)

[16] **Test report**

The test results are detailed recorded in the test report IB-06-3-137. The test documents are part of the test report and listed there.

Summary of the test results:

The radio keyboard fulfills the requirements of explosion protection for the Equipment Group II and Category 2G respectively 2D in type of protection Intrinsic safety for gases of the Explosion Group IIC and Temperature Class T4 respectively for dust with a maximum surface temperature of 107 °C.

[17] **Special conditions**

- Equipments for dust atmosphere must only be used in areas with low risk of mechanical danger.
- Equipments for gas atmosphere must only be cleaned damply to prevent electrostatic charging. Do not use in areas with electrostatic charging processes.

[18] **Essential health and safety requirements**

Confirmed by compliance of standards (see [9]).

By order

Freiberg, 26th June 2007

(Dr. Lösch)