KEYBOARDS

**For other options or further information please contact your local sales office.**

## Product Profile

**The W.series mechanical tactile keyboards are designed to operate in hostile environments, making them ideal for applications in industrial and public areas.**

Technical data see page 163

- All metal construction (chromed Zamak keys and brushed stainless steel for the front plate)
- Laser engraving ensuring good and long term legibility
- High resistance to vandalism: up to 10J
- Anti pull-off keys
- Sealed against liquid penetration to IP67
- Top or back mounting
- PS2 or USB connection
- Environment: PS2, Win NT4, 98 SE, ME, 2000 PRO Pack II, XP
- With or without pointing device: Standard or optical trackball and touchpad
- Available in different language layouts with standard or customised markings

## Rugged mechanical keyboard

Alphanumeric keyboard, back mounting, 63 keys, layouts in English, German, French and US English

| Part No. | Layout | Interface |
|---|---|---|
| W.630KW.S10 | English | PS2 |
| W.630DW.S10 | German | PS2 |
| W.630FW.S10 | French | PS2 |
| W.630UW.S10 | US English | PS2 |
| W.630KW.U10 | English | USB |
| W.630DW.U10 | German | USB |
| W.630FW.U10 | French | USB |
| W.630UW.U10 | US English | USB |

Alphanumeric keyboard, top mounting, 63 keys, layouts in English, German, French and US English

| Part No. | Layout | Interface |
|---|---|---|
| W.630KW.S11 | English | PS2 |
| W.630DW.S11 | German | PS2 |
| W.630FW.S11 | French | PS2 |
| W.630UW.S11 | US English | PS2 |
| W.630KW.U11 | English | USB |
| W.630DW.U11 | German | USB |
| W.630FW.U11 | French | USB |
| W.630UW.U11 | US English | USB |

## Rugged mechanical keyboard

Alphanumeric keyboard, stainless steel trackball, 2 clicks, back mounting, 65 keys, layouts English, German, French and US English

| Part No. | Layout | Interface |
|---|---|---|
| W.65BKW.S10 | English | PS2 |
| W.65BDW.S10 | German | PS2 |
| W.65BFW.S10 | French | PS2 |
| W.65BUW.S10 | US English | PS2 |
| W.65BKW.U10 | English | USB |
| W.65BDW.U10 | German | USB |
| W.65BFW.U10 | French | USB |
| W.65BUW.U10 | US English | USB |

Alphanumeric keyboard, stainless steel trackball, 2 clicks, top mounting, 65 keys, layouts English, German, French and US English

| Part No. | Layout | Interface |
|---|---|---|
| W.65BKW.S11 | English | PS2 |
| W.65BDW.S11 | German | PS2 |
| W.65BFW.S11 | French | PS2 |
| W.65BUW.S11 | US English | PS2 |
| W.65BKW.U11 | English | USB |
| W.65BDW.U11 | German | USB |
| W.65BFW.U11 | French | USB |
| W.65BUW.U11 | US English | USB |

**For other options or further information please contact your local sales office.**

KEYBOARDS

## Rugged mechanical keyboard

Alphanumeric keyboard, top mounting, 106 keys, 6 rows/MF2, PS2 and USB output types, English, German, French and US English layouts

| | Part No. | Language | Interface |
|---|---|---|---|
| | W.106FKP.X11 | English | PS2/USB |
| | W.106FDP.X11 | German | PS2/USB |
| | W.106FFP.X11 | French | PS2/USB |
| | W.106FUP.X11 | US English | PS2/USB |

Alphanumeric keyboard, top mounting, 91 keys, stainless steel track ball, 6 rows/MF2, 2 clicks, PS2 and USB output types, English, German, French and US English layouts

| | Part No. | Language | Interface |
|---|---|---|---|
| | W.91BKP.X11 | English | PS2/USB |
| | W.91BDP.X11 | German | PS2/USB |
| | W.91BFP.X11 | French | PS2/USB |
| | W.91BUP.X11 | US English | PS2/USB |

Alphanumeric keyboard, top mounting, 91 keys, phenolic track ball, 6 rows/MF2, 2 clicks, PS2 and USB output types, English, German, French and US English layouts

| | Part No. | Language | Interface |
|---|---|---|---|
| | W.91CKP.X11 | English | PS2/USB |
| | W.91CDP.X11 | German | PS2/USB |
| | W.91CFP.X11 | French | PS2/USB |
| | W.91CUP.X11 | US English | PS2/USB |

## Rugged mechanical keyboard

Alphanumeric keyboard, top mounting, 91 keys, optical trackball, 6 rows/MF2, 2 clicks, PS2 and USB output types, English, German, French and US English layouts

| | Part No. | Language | Interface |
|---|---|---|---|
| | W.91DKP.X11 | English | PS2/USB |
| | W.91DDP.X11 | German | PS2/USB |
| | W.91DFP.X11 | French | PS2/USB |
| | W.91DUP.X11 | US English | PS2/USB |

## Trackball Module

Stainless steel trackball module, 2 clicks, front mounting, 38 mm diameter

| | Part No. | Interface |
|---|---|---|
| | W.02B01.S11 | PS2 |
| | W.02B01.U11 | USB |

KEYBOARDS

**For other options or further information please contact your local sales office.**

## Product Profile

**The W.series is a high quality, vandal resistant keypad range especially designed to meet the needs of banking markets, public environment applications and other industrial applications.**


Technical data see page 163


- High impact resistance up to 10J
- All metal construction (chromed Zamak keys and brushed stainless steel for the front plate)
- Anti pull-off keys
- IP67 sealing when mounted
- 4, 16 or 20 key versions
- Illuminated versions available

## Rugged keypad

Keypad with 4 blank keys

| | Part No. | Contact terminals |
|---|---|---|
| | W.04000.P01 | Pin Header |

Keypad, 4 keys engraved with arrows and black paint in-fill

| | Part No. | Contact terminals |
|---|---|---|
| | W.0400X.038 | Pin Header |

## Rugged keypad

Keypad, 4 yellow illuminated keys, A-D

| | Part No. | Contact terminals |
|---|---|---|
| | W.0400X.016 | Pin Header |

Customised keypad capabilities. Customisation possible for layouts and key markings. For further details please contact your local sales office.

## Keyboard standard layout

### Material

**Front plate**
Brushed stainless steel 304 L

**Keys**
Zamak 5 with matt chrome finish

**Printed circuit board**
Epoxy resin (FR4), as per UL 94 V0

**Contacts**
Carbon pills
Carbon on Cu tracks

**Track ball**
Standard (opto-mechanical) Stainless steel or Phenolic Plastic
Optical Epoxy resin

**Touch pad**
Composite material

### Mechanical characteristics

**Tightening torque**
50 Ncm for studs, front- and back mounting

**Actuating force**
1 N ... 3 N for single key 12 x 12 mm
3 N ... 6 N for double key 12 x 31 mm

**Actuating travel**
1.5 mm ±0.3 mm

**Mechanical lifetime (keys)**
4 Million cycles of operation per key

**Track ball**
Ball diameter 1.5"
Resolution 800 pulses per revolution

**Touch pad**
XY position sensing resolution 40 counts per mm
XY position reporting relative
Tracking speed maximum 1.016 m/s

### Electrical characteristics

**Operating voltage/-current**
Operating voltage 5 VDC ±5%
Current rating 20 mA

**Interface**

| | PS/2 | USB |
|---|---|---|
| Windows | Win NT4 | |
| | 98SE \| ME | 98SE \| ME |
| | 2000 Pack II | 2000 Pack II |
| | XP Pro | XP Pro |

Note:
EAO cannot guarantee a full compatibility with every computer configuration. It is therefore recommended that prior investigation is carried out.

**EMC approved, as per**
EN 50081-1 Emission (residental environment)
EN 50082-1 Immunity (residental environment)
FCC part 15, class B
EN 60950 Safety

**Electric strength**
500 VAC, 50 Hz, 1 min.

### Environmental conditions

**Storage temperature**

| | PS/2 and USB |
|---|---|
| With alpha version | –40 °C ... +85 °C |
| With standard Trackball | –40 °C ... +85 °C |
| With optical Trackball | –25 °C ... +85 °C |
| With Touchpad | –25 °C ... +65 °C |

**Operating temperature**

| | PS/2 | USB |
|---|---|---|
| With alpha version | –20 °C ... +80 °C | 0 °C ... +70 °C |
| With standard Trackball | –10 °C ... +70 °C | 0 °C ... +70 °C |
| With optical Trackball | 0 °C ... +55 °C | 0 °C ... +55 °C |
| With Touchpad | 0 °C ... +55 °C | 0 °C ... +55 °C |

**Front protection**

| | Static | Dynamic |
|---|---|---|
| Alpha version | IP67 | IP67 |
| Standard Trackball | IP65 | IP54 |
| Optical Trackball | IP67 | IP67 |

**Impact resistance**
IK 09 (10 J) for alpha version and Trackball
IK 07 (2 J) for Touchpad

**Shock resistance**
(semi-sinusoidal)
3 axis, 150 m/s², puls width 11 ms, as per EN IEC 60512-4

**Vibration resistance**
(sinusoidal)
5 Hz ... 200 Hz, as per EN IEC 60512-4

**Climate resistance**
as per EN IEC 60512-6
Damp heat 21 days
Dry heat 10 days, +85 °C
Saline mist 96 hours

### Approvals

**Approbations**
FCC

**Declaration of conformity**
CE

## Keyboard MF2 layout

### Material

**Front plate**
Brushed stainless steel 304 L

**Keys**
Zamak 5 with matt chrome finish

**Printed circuit board**
Epoxy resin (FR4), as per UL94 V0

**Contacts**
Carbon pills
Cu tracks on PCB

**Membrane**
Silicone, as per UL94 HB, with carbon pills

**Track ball**
Standard (opto-mechanical) Stainless steel or Phenolic Plastic
Optical Epoxy resin

## Mechanical characteristics

**Tightening torque**
50 Ncm for studs, front mounting

**Actuating force**
~1 N ... 3 N for single key
~3 N ... 6 N for double and triple key

**Actuating travel**
1.5 mm ±0.3 mm

**Mechanical lifetime (keys)**
4 Million cycles of operation per key

**Track ball**
Ball diameter 38 mm

## Electrical characteristics

**Operating voltage/-current**
Operating voltage 5 VDC ±5%, via computer cable
Current rating 20 mA

**Interface**
PS/2 and USB versions Windows XP, XP Pro, 2000, 98SE, Linux

**EMC approved, as per**
EN 50081-1 Emission (residental environment)
EN 50082-1 Immunity (residental environment)
FCC part 15, class B
EN 60950 Safety

**Electric strength**
500 VAC, 50 Hz, 1 min.

## Environmental conditions

**Storage temperature**

| | PS/2 and USB |
|---|---|
| With Pin pad | –40 °C ... +85 °C |
| With standard Trackball | –40 °C ... +85 °C |
| With optical Trackball | –25 °C ... +85 °C |

**Operating temperature**

| | PS/2 and USB |
|---|---|
| With Pin pad | 0 °C ... +70 °C |
| With standard Trackball | 0 °C ... +70 °C |
| With optical Trackball | 0 °C ... +55 °C |

**Front protection**

| | Static | Dynamic |
|---|---|---|
| Pin pad version | IP67 | IP67 |
| Standard Trackball | IP65 | IP54 |
| Optical Trackball | IP67 | IP67 |

**Impact resistance**
IK 09 (10 J)

**Shock resistance**
(semi-sinusoidal)
3 axis, 150 m/s², puls width 11 ms, as per EN IEC 60512-4

**Vibration resistance**
(sinusoidal)
5 Hz ... 200 Hz, as per EN IEC 60512-4

**Climate resistance**
as per EN IEC 60512-6
Damp heat 21 days, +40 °C
Dry heat 10 days, +85 °C
Saline mist 96 hours

## Approvals

**Approbations**
FCC

**Declaration of conformity**
CE

# Track ball module

## Material

**Front plate**
Brushed stainless steel 304 L

**Keys**
Stainless steel

**Track ball**
Standard (opto-mechanical) Stainless steel or Phenolic Plastic
Optical Epoxy resin

## Mechanical characteristics

**Mechanical lifetime**
>2 Million ball revolutions, standard versions
>1 Million ball revolution, optical version
1 Million cycles of operation per key

**Track ball**
Ball diameter 38 mm, 50 mm (optical version)
Resolution 800 pulses per revolution for standard Track ball
Resolution 1256 pulses per revolution for optical Track ball

## Electrical characteristics

**Operating voltage/-current**
Operating voltage (standard version) 5 VDC ±10%
Operating voltage (optical version) 3.6 ... 5.5 V
Current rating 110 mA typical / 150 mA max.

**EMC approved, as per**
EN 55022 Class B Emission (residental environment)
FCC CFR47 part 15 class B
EN 55024 Immunity (residental environment)
EN UL 60950 Safety

## Environmental conditions

**Storage temperature**
–25 °C ... +85 °C

**Operating temperature**
0 °C ... +55 °C

**Front protection**

| | Static | Dynamic |
|---|---|---|
| Button | IP65 | IP65 |
| Standard Trackball | IP65 | IP54 |
| Optical Trackball | IP67 | IP67 |

**Impact resistance**
IK 09 (~10 J) Track ball 38 mm dia.
IK 08 (~5 J) Track ball 50 mm dia.

**Climate resistance**
as per EN IEC 60512-6
Damp heat 21 days
Dry heat 10 days, +85 °C
Saline mist 96 hours

## Approvals

**Declaration of conformity**
CE

## Keypad 4-keys and 16-keys

### Material

**Front plate**
Brushed stainless steel 304 L

**Keys**
Zamak 5 with matt chrome finish

**Printed circuit board**
Epoxy resin (FR4), as per UL 94 V0

**Contacts**
Carbon pill
Cu tracks on PCB

**Housing (4-key Keypad)**
Acrylnitril-Butadien-Styrol (ABS), as per UL 94 V0

### Mechanical characteristics

**Tightening torque**
50 Ncm for studs

**Actuating force**
1 N ... 3 N for single key 12 x 12 mm
3 N ... 6 N for double key 12 x 31 mm

**Actuating travel**
1.5 mm ±0.3 mm

**Mechanical lifetime (keys)**
4 Million cycles of operation per key

### Environmental conditions

**Storage temperature**
–30 °C ... +85 °C

**Operating temperature**
–25 °C ... +85 °C

**Front protection**
IP67 as per IEC 60529, when mounted

**Climate resistance**
as per EN IEC 60512-6
Damp heat 21 days, +40 °C
Dry heat 10 days, +85 °C
Saline mist 96 hours

**Impact resistance**
IK 09 (10 J)

**Shock resistance**
(semi-sinusoidal)
3 axis, 150 m/s², puls width 11 ms, as per EN IEC 60512-4

**Vibration resistance**
10 Hz, 100 m/s², 1.5 mm, as per EN IEC 60512-4

### Electrical characteristics

**Operating voltage/-current**
Nominal 5 V, 5 mA
Maximum voltage 24 V
Minimum voltage 0.5 V
Minimum current 0.1 mA

**Illumination**
Current consumption for single LED:
20 mA at 2.1 V (yellow and green)
20 mA at 1.9 V (red)
10 mA at 3.4 V (blue)

**Isolation resistance**
≥1000 MΩ at 100 VDC

**Contact resistance**
≤200 Ω

**Electrical life**
4 Million cycles of operation per key

**Electrostatic breakdown value**
5 kV

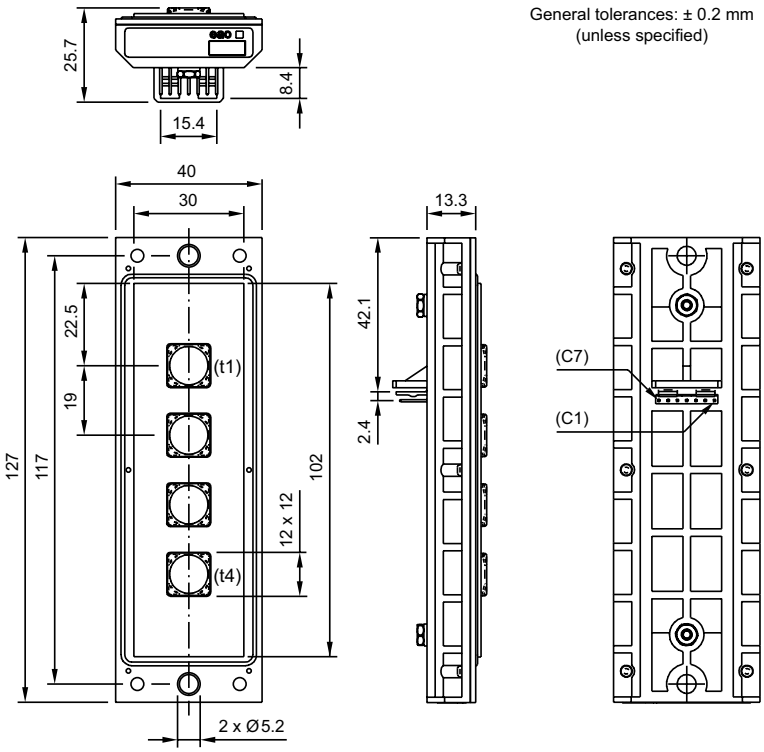
**Electric strength**
1500 Vrms, 50 Hz, 1 min., as per EN IEC 60512-2

### Approvals

**Declaration of conformity**
CE

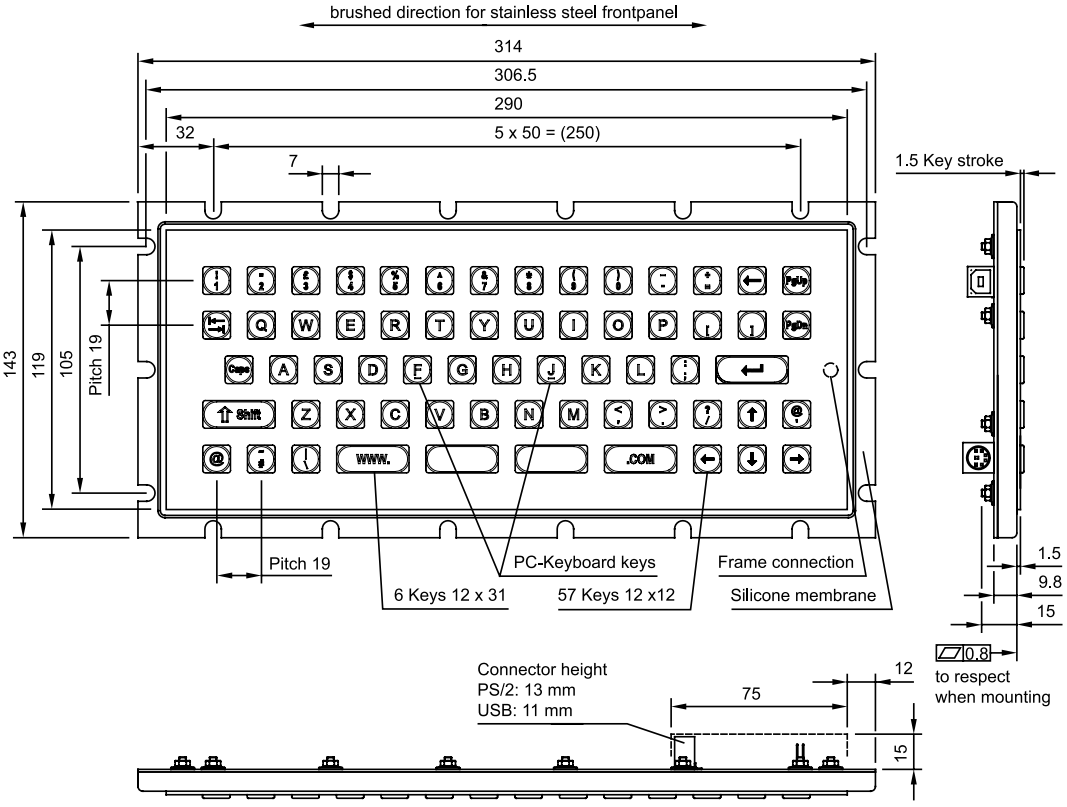
## Keypad

Keypad 4 Keys Blank, 4 Keys Arrows, 4 Keys Illuminated A-D



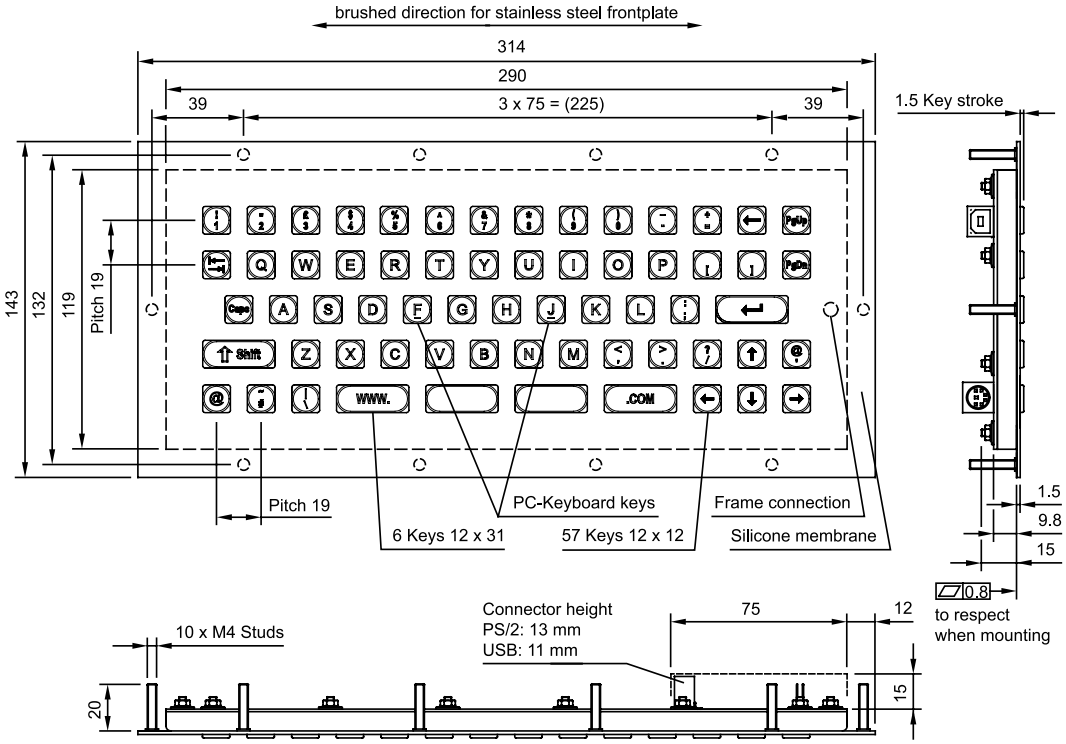

## Keyboard

Alphanumeric Mechanical 63 Keys Back Mount



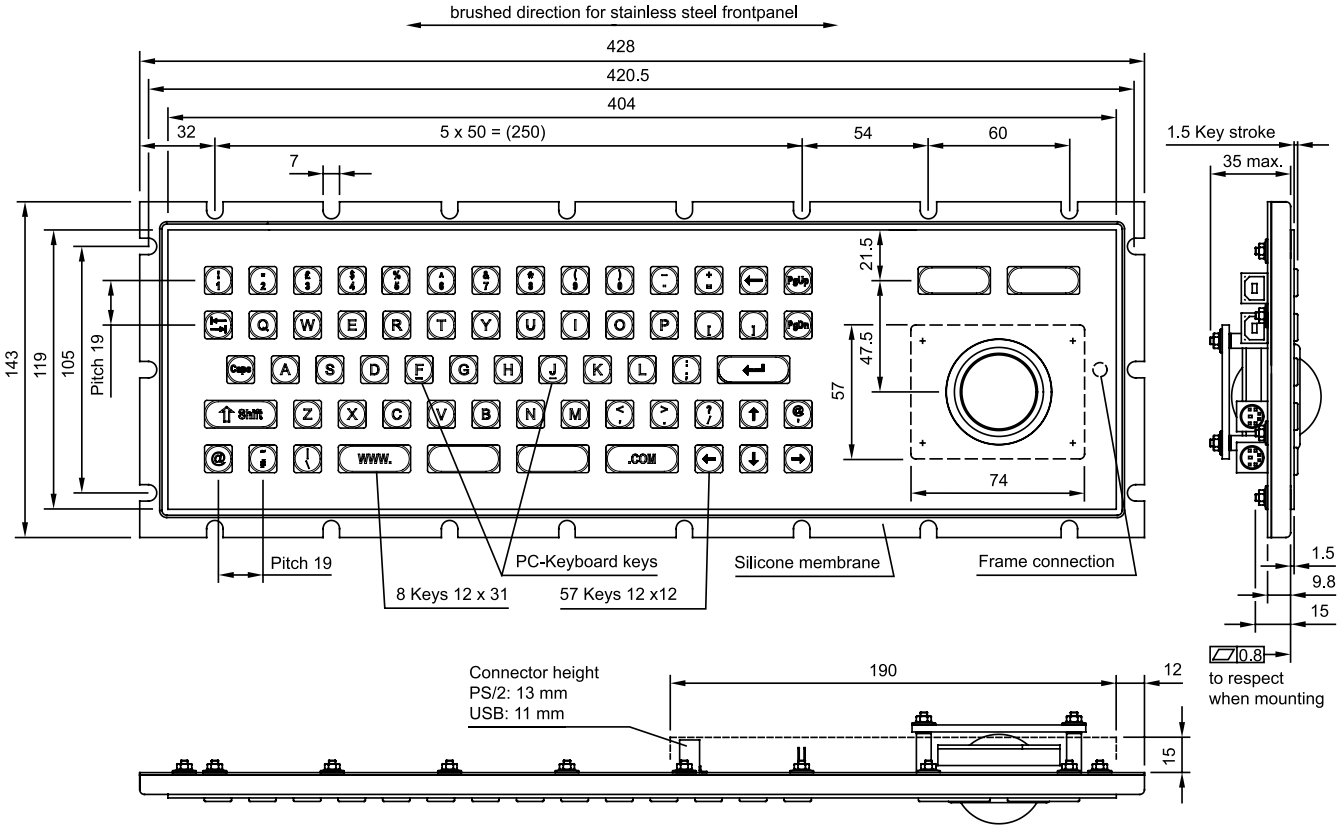
## Keyboard

Alphanumeric Mechanical 63 Keys Top Mount



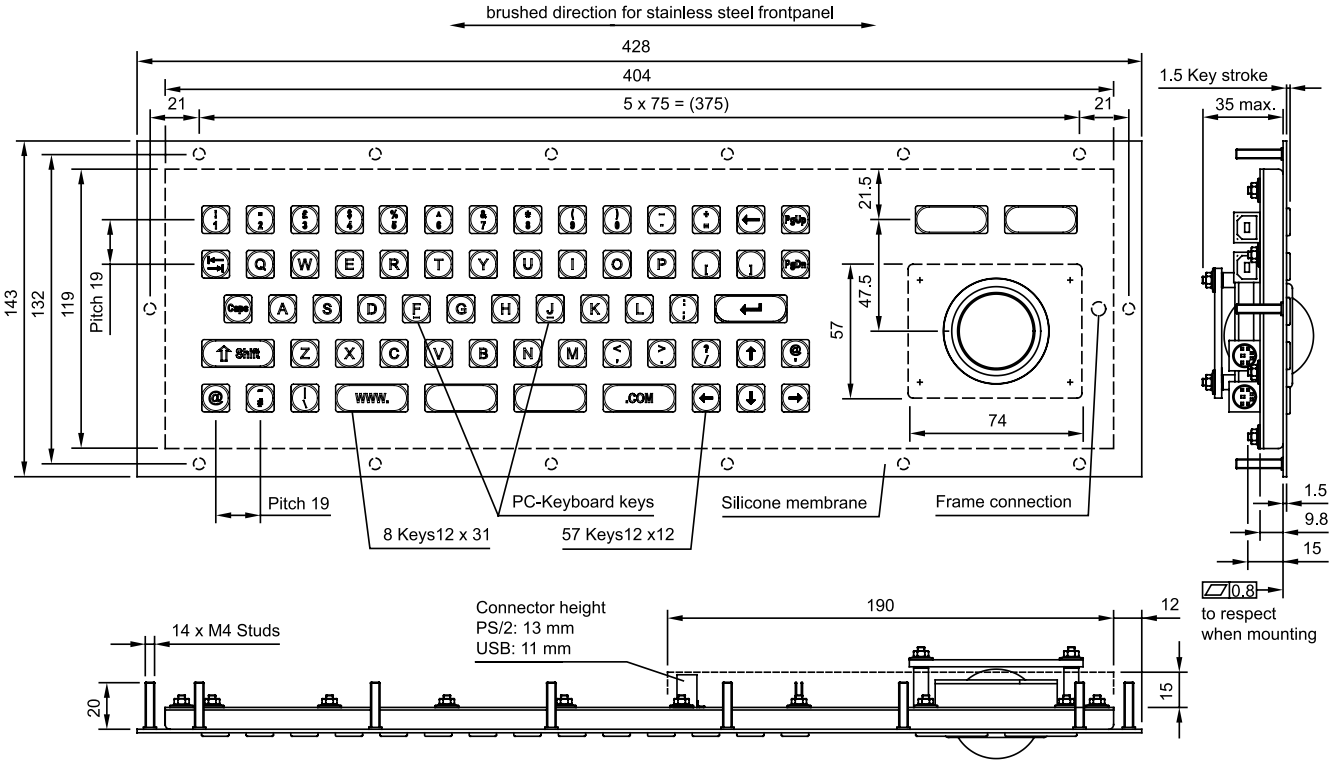

## Keyboard

Alphanumeric Mechanical 65 Keys Back Mount



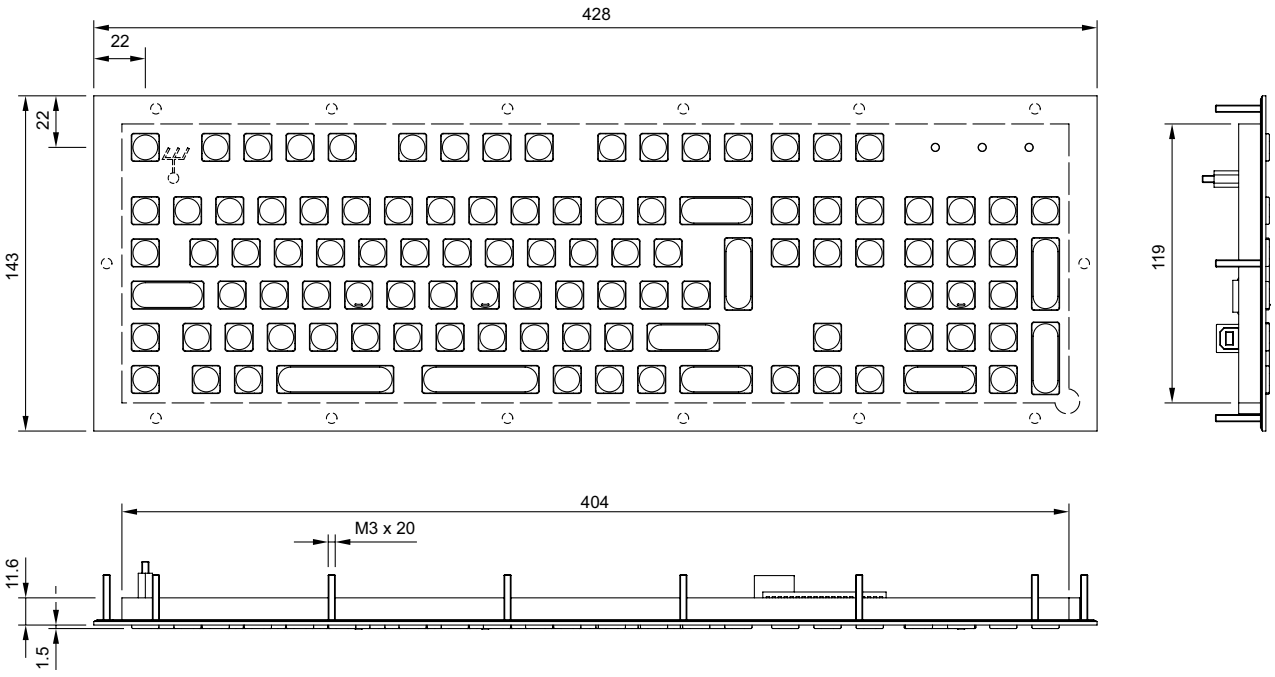
## Keyboard

Alphanumeric Mechanical 65 Keys Top Mount



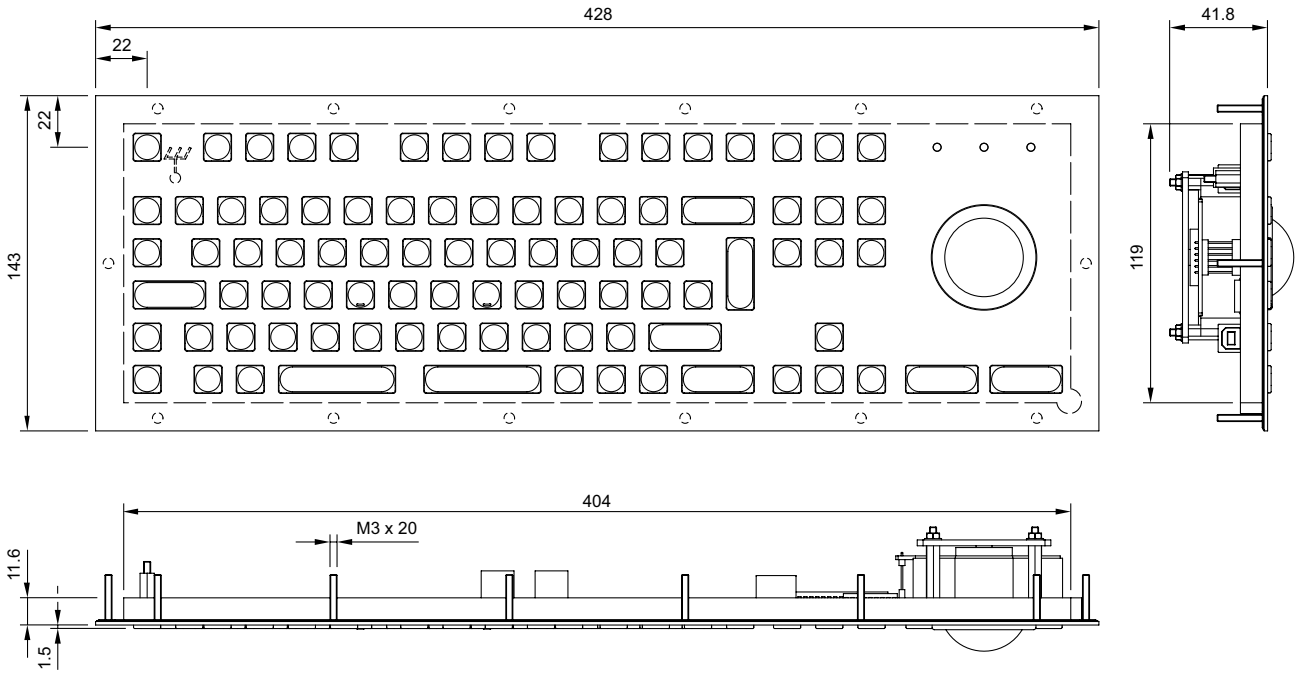

## Keyboard

Alphanumeric Mechanical 106 Keys Top Mount



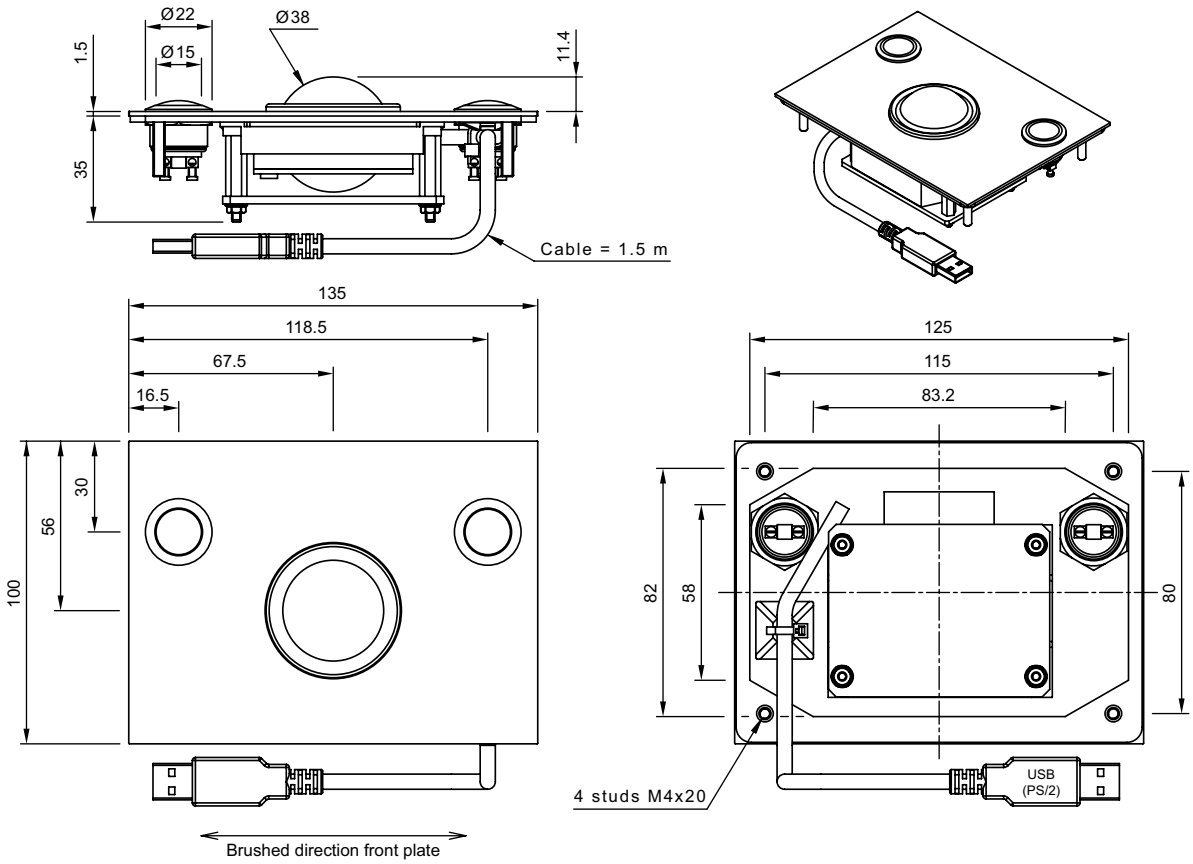
## Keyboard

Alphanumeric Mechanical 91 Keys Top Mount, Stainless Steel Trackball. Phenolic Trackball Optical Trackball



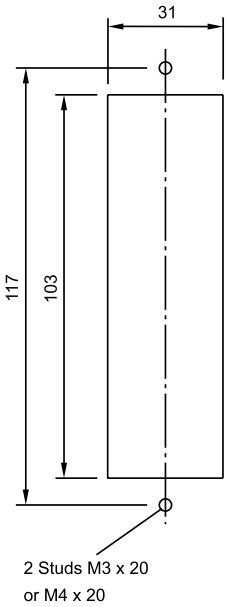

## Trackball Module

Stainless Steel Trackball Top Mount



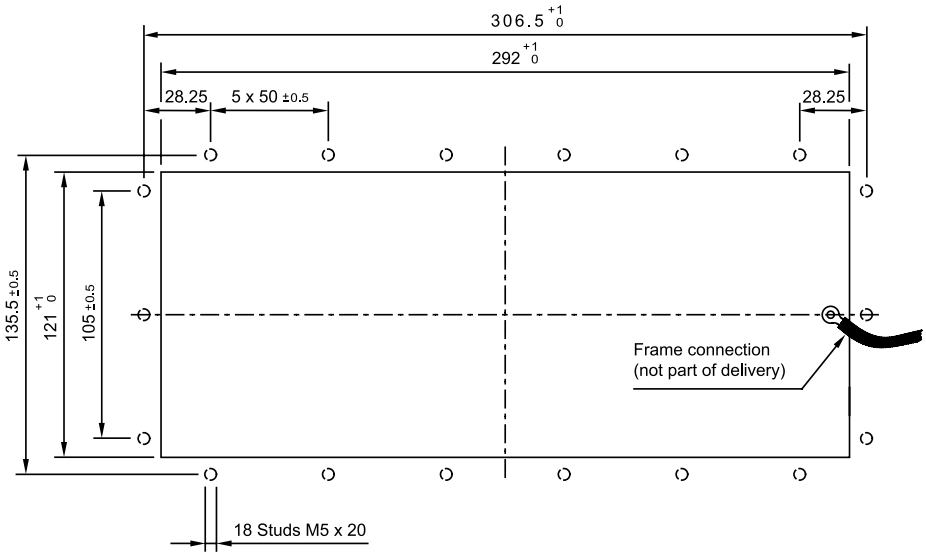
## Cut-outs, Keypad

1 x 4 keypad



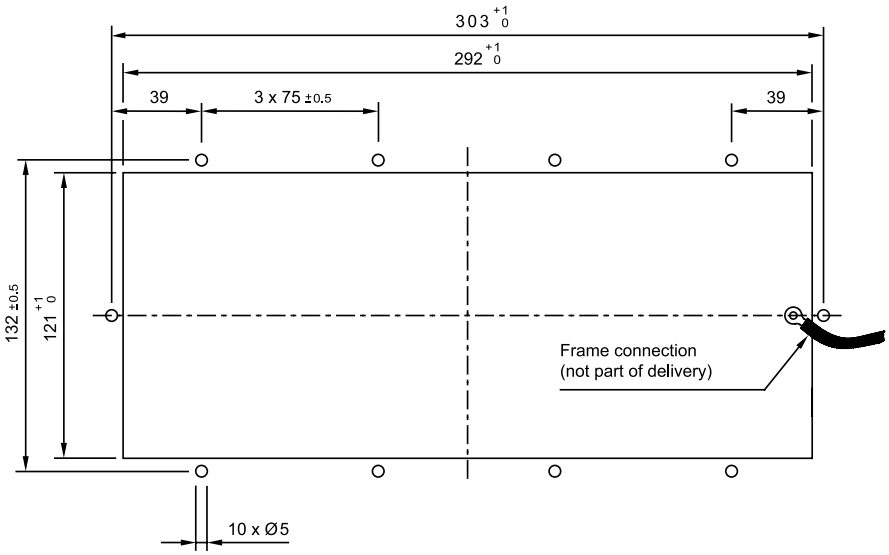

## Cut-outs, Keyboard

Alphanumeric Mechanical 63 Keys Back Mount



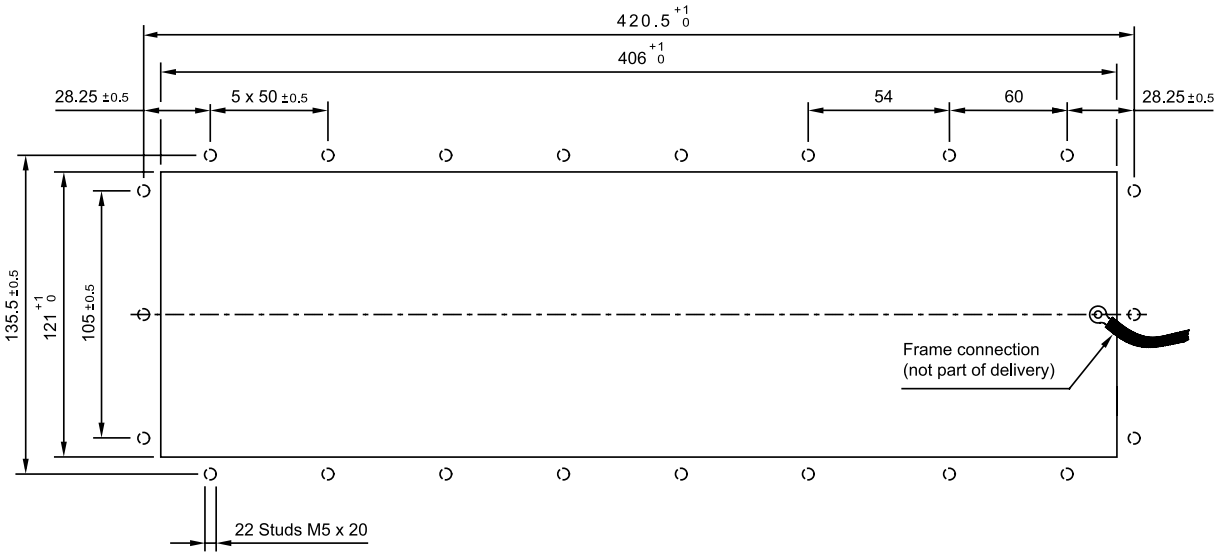
## Cut-outs, Keyboard

Alphanumeric Mechanical 63 Keys Top Mount



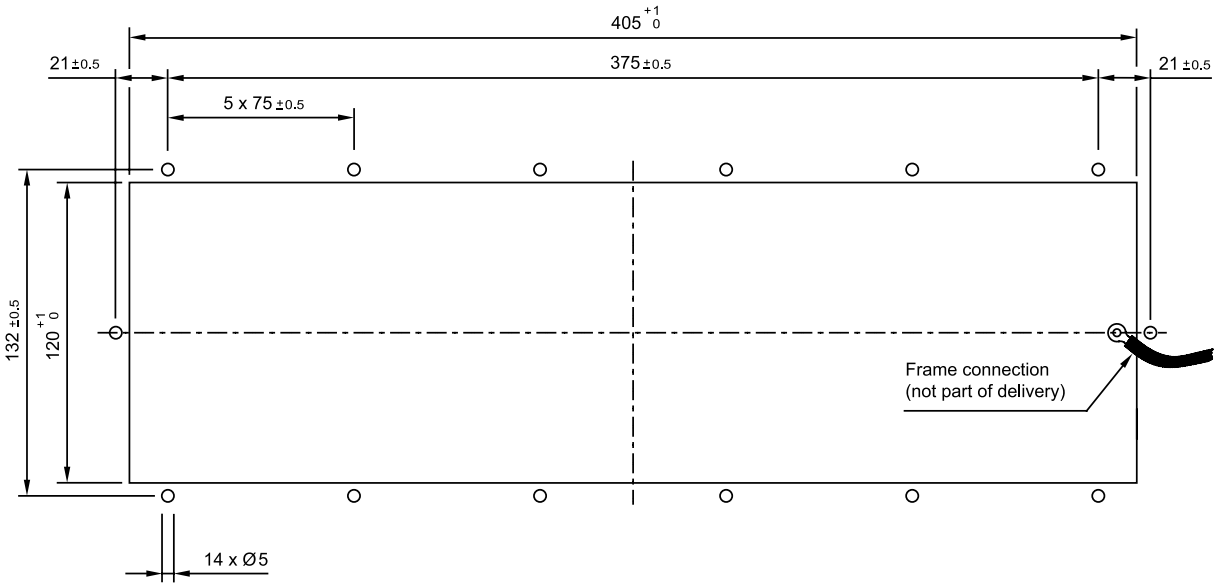

## Cut-outs, Keyboard

Alphanumeric Mechanical 65 keys Back Mount



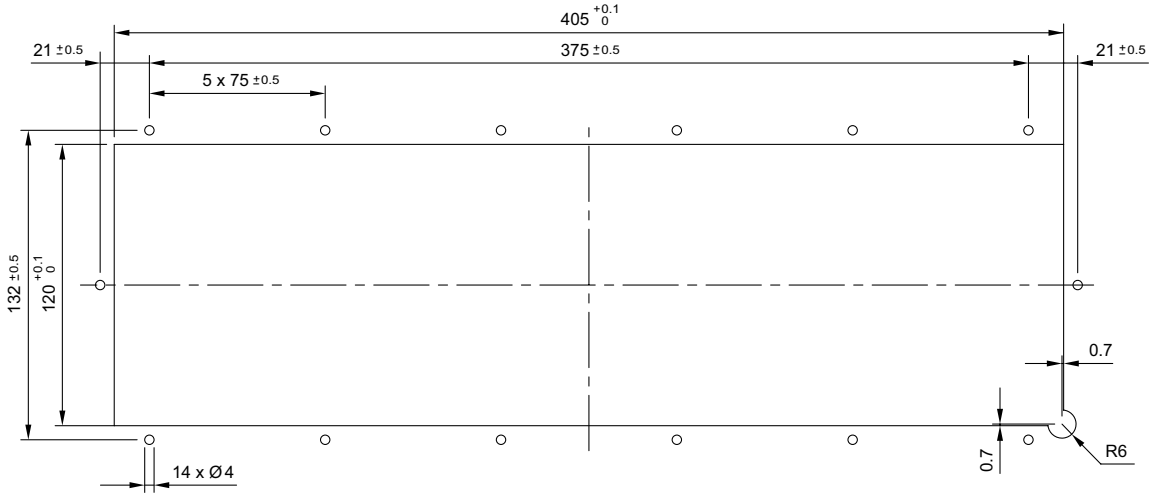
## Cut-outs, Keyboard

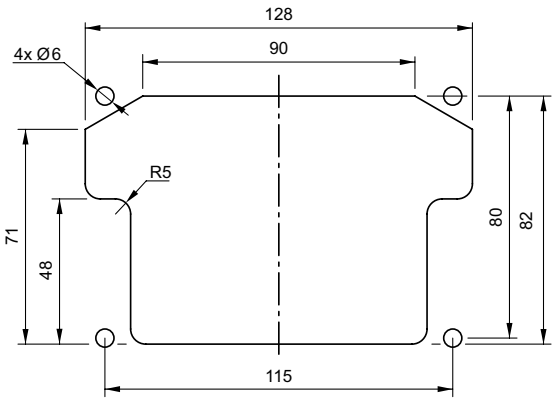
Alphanumeric Mechanical 65 keys Top Mount




## Cut-outs, Keyboard

Alphanumeric Mechanical 91 Keys Top Mount, Stainless Steel Trackball. Phenolic Trackball Optical Trackball
Alphanumeric Mechanical 106 keys Top Mount



## Cut-outs, Trackball

Stainless Steel Trackball Top Mount