RAFIX 30 FS+ CONTROL COMPONENTS

DESIGNED TO PERFECTION
RAFIX 30 FS+ stands out for all the benefits of the control component series RAFIX 22 FS+ plus extra flat lenses and a low overall height. You choose whether you want series key switches customized with SMD LEDs or with a RAFI “MICON 5” tactile switch for even better tactile perception. In short: The flat alternative for users with extremely high design standards.

SLIM
• Designs with PCB contact blocks feature a distance between the front panel and printed circuit board of only 15.8 mm.
• With QC contact blocks, only 33 mm of space is needed behind the front panel.

Combinable with all contact blocks and accessories with RAFIX FS technology
• PCB or QC contact blocks
• Gold contacts from 5 V or silver contacts up to 250 V
• Short-travel adapter enables short-travel actuation (1 mm switching travel) with perceptible key click
• Variable illumination, compatible with 3 mm THT LEDs / SMT LEDs or LED clip

The RAFIX 30 FS+ series has a variety of actuators and signal indicators

Pushbuttons
• Illuminable
• Optional FLEXLAB with exchangeable legend insert

Selector switches
• Rotating angle 40°, 60° or 90°
• Latching or momentary
• Illuminable

Keylock switches
• Rotating angle 40° or 90°
• Latching or momentary

Signal indicators
• Green, yellow, red, blue or white

USB grommet
• USB type A to USB type B
• With protective cap

Approvals
• IEC 60947-5-1/5
• UL
• CCC

Mounting hole
The actuators from the RAFIX 30 FS+ series are suitable for mounting holes of 30.3 mm. All actuators are equipped with a locating pip. This locating pip ensures a perfect fit for actuators and contact blocks with PCB-mounted components and is therefore essential for designs including these contact blocks.

Grid spacing
The design principle makes it possible to use a minimum grid spacing of 35 mm x 35 mm. When choosing the grid spacing, it is recommended to consider any external legending required (for example, using label strips inserted into the front panel).
RAFIX 30 FS⁺

RAFIX 30 FS⁺ with PCB contact block

RAFIX 30 FS⁺ with QC contact block

To find matching switching elements and accessories, see the “RAFIX FS Technology” section of our “Electromechanical Components” catalog online. You can also download the catalog from the download center on our website.
RAFIX 30 FS⁺ Pushbuttons

The RAFIX 30 FS⁺ pushbuttons offer large actuating areas with a low overall height. They are available in different lens colors and with full area illumination. Labeling on request.

Technical Data

General information
- Form of lens: flush
- Color of lens: see order block
- Front ring: stainless steel
- Form of collar: round

Dimensions
- Dimensions of collar: Ø 34.5 mm
- Overall height: 3.45 mm
- Mounting hole: 30.3 mm
- Key grid: min. 35 x 35 mm

Mechanical design
- Mounting: threaded rings + adapters
- Contact function: see order block
- Illuminability: see order block
- Torque for nut ring: 1.2 Nm

Mechanical characteristics
- Operating travel: 4 mm
- Robustness max.: 100 N

Other specifications
- Ambient temp. operating min.: -25 °C
- Ambient temp. operating max.: +70 °C
- Storage temperature min.: -40 °C
- Storage temperature max.: +80 °C
- Operating life: 1,000,000 momentary / 500,000 latching
- B10: 1,300,000 momentary / 650,000 latching
- Degree of protection from front side: IP65 (DIN EN 60529)
- Environmental resistance: acc. to IEC 60068-2-14, -30, -33 and -78
- Salt spray: IEC 60068-2-11
- ROHS compliant: yes
- REACH compliant: yes

Accessories RAFIX 30 FS⁺ - Pushbuttons

- Description
  - RAFIX FS - Contact block PCB gold, Universal
  - RAFIX FS - Contact block PCB gold, Universal, with light conductor
  - RAFIX FS - Contact block PCB silver, Universal
  - RAFIX FS - Contact block PCB silver, Universal, with light conductor

- Photo
- Order no.
- Additional accessories see page
### Accessories RAFIX 30 FS+ - Pushbuttons

<table>
<thead>
<tr>
<th>Description</th>
<th>Photo</th>
<th>Order no.</th>
<th>Additional accessories see page</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAFIX FS - Contact block QC gold, Universal, with light conductor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAFIX FS - Contact block QC silver, Universal, with light conductor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixing spanner for ring nut</td>
<td></td>
<td>5.05.800.062/0000</td>
<td></td>
</tr>
<tr>
<td>Retaining ring for front panel thickness 2.5 ... 4 mm</td>
<td></td>
<td>5.45.201.556/0700</td>
<td></td>
</tr>
</tbody>
</table>

### RAFIX 30 FS+ Pushbutton

Technical data see page 4

- Fig. Lens color stainless steel with ring lighting

<table>
<thead>
<tr>
<th>Color of lens</th>
<th>Illuminability</th>
<th>Order no. Contact function momentary</th>
<th>Order no. Contact function latching</th>
</tr>
</thead>
<tbody>
<tr>
<td>translucent red</td>
<td>yes</td>
<td>1.30.290.021/2300</td>
<td>1.30.290.031/2300</td>
</tr>
<tr>
<td>translucent yellow</td>
<td>yes</td>
<td>1.30.290.021/2400</td>
<td>1.30.290.031/2400</td>
</tr>
<tr>
<td>translucent green</td>
<td>yes</td>
<td>1.30.290.021/2500</td>
<td>1.30.290.031/2500</td>
</tr>
<tr>
<td>translucent blue</td>
<td>yes</td>
<td>1.30.290.021/2600</td>
<td>1.30.290.031/2600</td>
</tr>
<tr>
<td>translucent white</td>
<td>yes</td>
<td>1.30.290.021/2200</td>
<td>1.30.290.031/2200</td>
</tr>
<tr>
<td>opaque black</td>
<td>no</td>
<td>1.30.290.021/0100</td>
<td>1.30.290.031/0100</td>
</tr>
</tbody>
</table>

Legending on request.
RAFIX 30 FS+ Pushbuttons FLEXLAB

The RAFIX 30 FS+ FLEXLAB pushbutton allows individual control component labeling. A DIN A4 label sheet with pre-cut labels which fits in customary office laser printers is available for this option. After the legend inserts are printed, the labels can be detached from the sheet and inserted into the colored lens using the fine stop tabs.

### Technical Data

#### General information
- Form of lens: flush
- Color of lens: see order block
- Front ring: stainless steel
- Form of collar: round

#### Dimensions
- Dimensions of collar: ø 34.5 mm
- Overall height: 3.45 mm
- Mounting hole: 30.3 mm
- Key grid: min. 35 x 35 mm

#### Mechanical design
- Mounting: threaded rings + adapters
- Contact function: see order block
- Illuminability: yes
- Torque for nut ring: 1.2 Nm

#### Mechanical characteristics
- Operating travel: 4 mm
- Robustness max.: 100 N

#### Other specifications
- Ambient temp. operating min.: -25 °C
- Ambient temp. operating max.: +70 °C
- Storage temperature min.: -40 °C
- Storage temperature max.: +80 °C
- Operating life: 1,000,000 momentary / 500,000 latching
- B10: 1,300,000 momentary / 850,000 latching
- Degree of protection from front side: IP65 (DIN EN 60529)
- Environmental resistance: acc. to IEC 60068-2-14, -30, -33 and -78
- Salt spray: IEC 600 68-2-11
- ROHS compliant: yes
- REACH compliant: yes
### Accessories RAFIX 30 FS⁺ - Pushbuttons FLEXLAB

<table>
<thead>
<tr>
<th>Description</th>
<th>Photo</th>
<th>Order no.</th>
<th>Additional accessories see page</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAFIX FS - Contact block PCB gold, Universal, with light conductor</td>
<td>![Photo]</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>RAFIX FS - Contact block PCB silver, Universal, with light conductor</td>
<td>![Photo]</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>RAFIX FS - Contact block QC gold, Universal, with light conductor</td>
<td>![Photo]</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>RAFIX FS - Contact block QC silver, Universal, with light conductor</td>
<td>![Photo]</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Fixing spanner for ring nut</td>
<td>![Photo]</td>
<td>5.05.800.062/0000</td>
<td>-</td>
</tr>
<tr>
<td>Retaining ring for front panel thickness 2.5 ... 4 mm</td>
<td>![Photo]</td>
<td>5.45.201.556/0700</td>
<td>-</td>
</tr>
</tbody>
</table>

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### RAFI FLEXLAB

**MONTAGEANLEITUNG | ASSEMBLY INSTRUCTIONS | 安装说明**

1. **MONTAGE ASSEMBLY 安装**
   - ![Image](1.png)
   - ![Image](2.png)
   - ![Image](3.png)
   - ![Image](4.png)

2. **DEMONTEAGE DISASSEMBLY 拆除**
   - ![Image](1.png)
   - ![Image](2.png)
RAFIX 30 FS⁺
Pushbutton FLEXLAB

Technical data see page 6

<table>
<thead>
<tr>
<th>Form of collar</th>
<th>Contact function momentary</th>
<th>Contact function latching</th>
</tr>
</thead>
<tbody>
<tr>
<td>round</td>
<td>1.30.290.921/0000</td>
<td>1.30.290.931/0000</td>
</tr>
</tbody>
</table>

Accessoires:
- Colored lens for RAFIX FS⁺ Pushbuttons FLEXLAB, colorless: 5.49.263.062/1000
- Colored lens for RAFIX FS⁺ Pushbuttons FLEXLAB, red: 5.49.263.062/1300
- Colored lens for RAFIX FS⁺ Pushbuttons FLEXLAB, yellow: 5.49.263.062/1400
- Colored lens for RAFIX FS⁺ Pushbuttons FLEXLAB, green: 5.49.263.062/1500
- Colored lens for RAFIX FS⁺ Pushbuttons FLEXLAB, blue: 5.49.263.062/1600
- DIN A4 label sheet with 6x9 lenses in total utility: 5.70.800.200/0000
RAFIX 30 FS+ Selector switches

- The marks on the selector switch turning handle are translucent and can be illuminated if required. For colored lighting, colored LEDs or LED clips can be used.

Technical Data

- General information
  - Actuator handle
  - Marking of handle translucent white
  - Front ring stainless steel
  - Form of collar round

- Dimensions
  - Dimensions of collar ø 34.5 mm
  - Overall height 17.43 mm
  - Mounting hole 30.3 mm
  - Key grid min. 35 x 35 mm

- Mechanical design
  - Mounting threaded rings + adapters
  - Contact function see order block
  - Illuminability yes
  - Rotating angle see order block
  - Torque for nut ring 1.2 Nm

- Mechanical characteristics
  - Torque max. 1.5 Nm

- Other specifications
  - Ambient temp. operating min. -25 °C
  - Ambient temp. operating max. +70 °C
  - Operating life (operations) 500,000 momentary / 300,000 latching
  - Operating life (operations) 650,000 momentary / 400,000 latching
  - Degree of protection from front side IP65 (DIN EN 60529)
  - Storage temperature min. -40 °C
  - Storage temperature max. +80 °C
  - Environmental restistance acc. to IEC 60068-2-14, -30, -33 and -78
  - Salt spray IEC 60068-2-11
  - ROHS compliant yes
  - REACH compliant yes

Approvals

Accessories RAFIX 30 FS+ - Selector switches

- Description Photo Order no. Additional accessories see page

<table>
<thead>
<tr>
<th>Description</th>
<th>Photo</th>
<th>Order no.</th>
<th>Additional accessories see page</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAFIX FS - Contact block PCB gold, Universal</td>
<td><img src="image1.jpg" alt="Photo" /></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>RAFIX FS - Contact block PCB gold, Universal, with light conductor</td>
<td><img src="image2.jpg" alt="Photo" /></td>
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<td>-</td>
</tr>
<tr>
<td>RAFIX FS - Contact block PCB silver, Universal</td>
<td><img src="image3.jpg" alt="Photo" /></td>
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<td>-</td>
</tr>
<tr>
<td>RAFIX FS - Contact block PCB silver, Universal, with light conductor</td>
<td><img src="image4.jpg" alt="Photo" /></td>
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</table>
## Table (continued) – Accessories RAFIX 30 FS+ - Selector switches

<table>
<thead>
<tr>
<th>Description</th>
<th>Photo</th>
<th>Order no.</th>
<th>Additional accessories see page</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAFIX FS - Contact block QC gold, Universal, with light conductor</td>
<td></td>
<td>5.05.800.062/0000</td>
<td>-</td>
</tr>
<tr>
<td>RAFIX FS - Contact block QC silver, Universal, with light conductor</td>
<td></td>
<td>5.45.201.556/0700</td>
<td>-</td>
</tr>
<tr>
<td>Fixing spanner for ring nut</td>
<td></td>
<td>5.05.800.062/0000</td>
<td>-</td>
</tr>
<tr>
<td>Retaining ring for front panel thickness 2.5 ... 4 mm</td>
<td></td>
<td>5.45.201.556/0700</td>
<td>-</td>
</tr>
</tbody>
</table>

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### RAFIX 30 FS+ Selector switch

**Technical data see page 9**

<table>
<thead>
<tr>
<th>Illuminability</th>
<th>Contact function</th>
<th>Rotating angle</th>
<th>Order no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>momentary</td>
<td>1 x 40°</td>
<td>1.30.292.002/2200</td>
</tr>
<tr>
<td>yes</td>
<td>momentary</td>
<td>2 x 40°</td>
<td>1.30.292.027/2200</td>
</tr>
<tr>
<td>yes</td>
<td>latching</td>
<td>1 x 90°, L shape</td>
<td>1.30.292.102/2200</td>
</tr>
<tr>
<td>yes</td>
<td>latching</td>
<td>1 x 90°, V shape</td>
<td>1.30.292.202/2200</td>
</tr>
<tr>
<td>yes</td>
<td>latching</td>
<td>2 x 60°</td>
<td>1.30.292.302/2200</td>
</tr>
<tr>
<td>yes</td>
<td>90° latching, 40° momentary</td>
<td>1 x 90° / 1 x 40°</td>
<td>1.30.292.427/2200</td>
</tr>
</tbody>
</table>
RAFIX 30 FS+ Keylock switches

The RAFIX 30 FS+ keylock switches feature an extremely compact design which is consistent with the overall concept of RAFIX 30 FS+. Each supply unit contains two keys. Customer-specific locking positions are available on request.

The locking systems we use were created according to DIN EN 1303 by leading lock manufacturers. They are open, mechanical systems that require occasional maintenance by the operator depending on the ambient conditions.

### Technical Data

#### General information
- Front ring: stainless steel
- Form of collar: round

#### Dimensions
- Dimensions of collar: ø 34.5 mm
- Overall height: 38.70 mm
- Mounting hole: 30.3 mm
- Key grid: min. 35 x 35 mm

#### Mechanical design
- Mounting: threaded rings + adapters
- Contact function: see order block
- Illuminability: no
- Wafers: 5
- Lock type: 001
- Main key: on request
- Rotating angle: see order block
- Key removal position: see order block
- Torque for nut ring: 1.2 Nm

#### Mechanical characteristics
- Torque max.: 1.3 Nm

#### Other specifications
- Ambient temp. operating min.: -25 °C
- Ambient temp. operating max.: +70 °C
- Operating life: 300,000 momentary / 50,000 latching / 30,000 with key removal
- B10: 400,000 momentary / 65,000 latching / 40,000 with key removal
- Degree of protection from front side: IP65 (DIN EN 60529)
- Storage temperature min.: -40 °C
- Storage temperature max.: +80 °C
- Environmental resistance: acc. to IEC 60068-2-14, -30, -33 and -78
- ESD-strength lock / contact: 15 kV
- ESD-strength key / front panel: 15 kV
- Salt spray: IEC 600 68-2-11
- ROHS compliant: yes
- REACH compliant: yes

### Approvals

UL, CE
## Accessories RAFIX 30 FS+ - Keylock switches

<table>
<thead>
<tr>
<th>Description</th>
<th>Photo</th>
<th>Order no.</th>
<th>Additional accessories see page</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAFIX FS - Contact block PCB gold, Universal</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>RAFIX FS - Contact block PCB silver, Universal</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>RAFIX FS - Contact block QC gold, Universal, with light conductor</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>RAFIX FS - Contact block QC silver, Universal, with light conductor</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Fixing spanner for ring nut</td>
<td></td>
<td>5.05.800.062/0000</td>
<td>-</td>
</tr>
<tr>
<td>Retaining ring for front panel thickness 2.5 ... 4 mm</td>
<td></td>
<td>5.45.201.556/0700</td>
<td>-</td>
</tr>
<tr>
<td>RAFIX FS - Protective cap for keylock switch</td>
<td></td>
<td>5.55.105.454/0111</td>
<td>-</td>
</tr>
</tbody>
</table>

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### RAFIX 30 FS+

#### Keylock switch

Technical data see page 11

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<table>
<thead>
<tr>
<th>Contact function</th>
<th>Rotating angle</th>
<th>Key removal position</th>
<th>Order no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>momentary</td>
<td>1 x 40°</td>
<td>0</td>
<td>1.30.295.002/0000</td>
</tr>
<tr>
<td>momentary</td>
<td>2 x 40°</td>
<td>0</td>
<td>1.30.295.102/0000</td>
</tr>
<tr>
<td>latching</td>
<td>1 x 90°, L shape</td>
<td>0+1</td>
<td>1.30.295.222/0000</td>
</tr>
<tr>
<td>latching</td>
<td>1 x 90°, V shape</td>
<td>0+1</td>
<td>1.30.295.322/0000</td>
</tr>
</tbody>
</table>
RAFIX 30 FS+ Signal indicators

Technical Data

- General information
  - Form of lens: flush
  - Color of lens: see order block
  - Front ring: stainless steel
  - Form of collar: round

- Dimensions
  - Dimensions of collar: Ø 34.5 mm
  - Overall height: 5.25 mm
  - Mounting hole: 30.3 mm
  - Key grid: min. 35 x 35 mm

- Mechanical design
  - Mounting: threaded rings + adapters
  - Illuminability: yes
  - Torque for nut ring: 1.2 Nm

- Other specifications
  - Degree of protection from front side: IP65 (DIN EN 60529)
  - Ambient temp. operating min.: -25 °C
  - Ambient temp. operating max.: +70 °C
  - Storage temperature min.: -40 °C
  - Storage temperature max.: +80 °C
  - Environmental resistance: acc. to IEC 60068-2-14, -30, -33 and -78
  - Salt spray: IEC 60068-2-11
  - ROHS compliant: yes
  - REACH compliant: yes

Approvals

Accessories RAFIX 30 FS+ - Signal indicators

- Description | Photo | Order no. | Additional accessories see page
---|---|---|---
LED 3 mm |  |  |  |
LED base for 3 mm THT LED, used in signal indicators, for RAFIX FS PCB |  |  |  |
QC LED base for signal indicators |  |  |  |
Fixing spanner for ring nut | 5.05.800.062/0000 |  |  |
Retaining ring for front panel thickness 2.5 ... 4 mm | 5.45.201.556/0700 |  |  |
RAFIX 30 FS+ - INDICATORS

**RAFIX 30 FS+**

Signal indicator

Technical data see page 13

<table>
<thead>
<tr>
<th>Illuminability</th>
<th>Color of lens</th>
<th>Order no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>translucent red</td>
<td>1.74.510.011/2300</td>
</tr>
<tr>
<td>yes</td>
<td>translucent yellow</td>
<td>1.74.510.011/2400</td>
</tr>
<tr>
<td>yes</td>
<td>translucent green</td>
<td>1.74.510.011/2500</td>
</tr>
<tr>
<td>yes</td>
<td>translucent blue</td>
<td>1.74.510.011/2600</td>
</tr>
<tr>
<td>yes</td>
<td>translucent white</td>
<td>1.74.510.011/2200</td>
</tr>
</tbody>
</table>
RAFIX 30 FS+ USB feedthroughs

The USB feedthrough ensures sturdy installation of an easily accessible USB slot in the front panels of controllers and IPCs. The port on the rear accommodates commercially available USB cables with B-type connectors. A sealing cap protects the slot and ensures a degree of protection to IP65. For assembly, simply insert the feedthrough from the front side into the mounting hole and fasten it by means of a ring nut from the rear.

### Technical Data

#### General information
- Front ring color: stainless steel
- Form of collar: round

#### Dimensions
- Dimensions of collar: ø 34.5 mm
- Overall height: 5.17 mm
- Mounting depth: 35.5
- Mounting hole: 30.3 mm
- Key grid: min. 35 x 35 mm

#### Mechanical design
- Mounting: threaded rings + adapters
- Front connection: USB Type A
- Rear connection: USB Type B
- Torque for nut ring: 1.2 Nm

#### Other specifications
- Ambient temp. operating min.: -25 °C
- Ambient temp. operating max.: +70 °C
- Storage temperature min.: -40 °C
- Storage temperature max.: +80 °C
- Operating life: 1500 operations
- Degree of protection from front side: IP65 (DIN EN 60529) with closed sealing cap
- Relative humidity: 5 bis 95% (non condensed)
- Shock resistance to IEC 60068-2-27 (EN 61131-2): 50 g at 11 ms half sine amplitude
- Vibration resistance according to IEC 600 68-2-6 (EN 61131-2): 5 g at 10...500 Hz
- ROHS compliant: yes
- REACH compliant: yes

### Approvals

![Approvals](image)

### Accessories RAFIX 30 FS+ - USB feedthroughs

<table>
<thead>
<tr>
<th>Description</th>
<th>Photo</th>
<th>Order no.</th>
<th>Additional accessories see page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixing spanner for ring nut</td>
<td><img src="image" alt="Photo" /></td>
<td>5.05.800.062/0000</td>
<td>-</td>
</tr>
<tr>
<td>Retaining ring for front panel thickness 2.5 ... 4 mm</td>
<td><img src="image" alt="Photo" /></td>
<td>5.45.201.556/0700</td>
<td>-</td>
</tr>
</tbody>
</table>
RAFIX 30 FS+ - USB feedthrough

Technical data see page 15

<table>
<thead>
<tr>
<th>Description</th>
<th>Order no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAFIX 30 FS+ - USB feedthrough</td>
<td>1.30.299.021/0700</td>
</tr>
</tbody>
</table>

The information in this brochure only contains general descriptions and / or performance features, which may not apply precisely as described to the respective application, and which may change due to further product enhancements. The technical data, illustrations and other information about our products are the mere results of individual technical testing. These descriptions and other product features are only binding if they expressly agreed upon at the time of the conclusion of a binding contract. In all other cases, we reserve the right to make technical changes as well as changes of availability. Pictures and other graphic illustrations are approximations only. All product names may be trademarks or brand names of the RAFI Group or any other sub-supplier of RAFI. The use of such by any third parties for their own purposes may infringe the rights of the respective entity holding those rights.