## Selection tables: Inductive proximity switches

### Models and voltage variants

<table>
<thead>
<tr>
<th>Cylindrical models</th>
<th>Dimensions [mm]</th>
<th>Reference</th>
<th>2-wire AC</th>
<th>2-wire DC</th>
<th>3-wire DC</th>
<th>4-wire DC</th>
<th>AC/DC</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Ø 4</td>
<td>IFL(-N-) ...-4-...</td>
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<td>Page 2-19</td>
</tr>
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<td></td>
<td>Ø 6.5</td>
<td>IFL(-N-) ...-6.5-...</td>
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<td></td>
<td></td>
<td>Page 2-20</td>
</tr>
<tr>
<td></td>
<td>Ø 20</td>
<td>IFL ...-200-...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Page 2-50</td>
</tr>
<tr>
<td></td>
<td>Ø 40</td>
<td>IFL ...-400-...</td>
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<td></td>
<td></td>
<td></td>
<td>Page 2-51</td>
</tr>
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<table>
<thead>
<tr>
<th>Threaded models</th>
<th>Dimensions [mm]</th>
<th>Reference</th>
<th>2-wire AC</th>
<th>2-wire DC</th>
<th>3-wire DC</th>
<th>4-wire DC</th>
<th>AC/DC</th>
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<tbody>
<tr>
<td></td>
<td>M 8</td>
<td>IFL(-N-) ...-8-...</td>
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<td></td>
<td>M 12</td>
<td>IFL(-N-) ...-12(0)-...</td>
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<td>M 18</td>
<td>IFL(-N-) ...-18(0)-...</td>
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<td></td>
<td>Page 2-59</td>
</tr>
<tr>
<td></td>
<td>M 30</td>
<td>IFL ...-30(0)-...</td>
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<td>Page 2-54</td>
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</table>

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<thead>
<tr>
<th>Rectangular models</th>
<th>Dimensions [mm]</th>
<th>Reference</th>
<th>2-wire AC</th>
<th>2-wire DC</th>
<th>3-wire DC</th>
<th>4-wire DC</th>
<th>AC/DC</th>
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<tbody>
<tr>
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<td>40 x 25 x 12</td>
<td>IFL ...-250-...</td>
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<td>40 x 26 x 26</td>
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<td>88 x 25 x 13</td>
<td>IFL ...-310-...</td>
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<td></td>
<td>36.5 x 36.5 x 36.5</td>
<td>IFL ...-333E-...</td>
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<tr>
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<td>112 x 40 x 40</td>
<td>IFL ...-333-...</td>
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<td>120 x 55 x 40</td>
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<td>135 x 80 x 40</td>
<td>IFL ...-385-...</td>
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</tbody>
</table>

### Sensors with increased temperature resistance

<table>
<thead>
<tr>
<th>Models</th>
<th>Dimensions [mm]</th>
<th>Reference</th>
<th>2-wire AC</th>
<th>2-wire DC</th>
<th>3-wire DC</th>
<th>4-wire DC</th>
<th>AC/DC</th>
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<tbody>
<tr>
<td></td>
<td>M 18</td>
<td>IFL ...-18L-...-2130</td>
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<tr>
<td></td>
<td>M 30</td>
<td>IFL 15-30L-...-2130</td>
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<tr>
<td></td>
<td>M 30</td>
<td>IFL ...-30L-...-1766</td>
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<td>Page 2-54</td>
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<tr>
<td></td>
<td>M 30</td>
<td>IFL ...-30-...T-1310</td>
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</tr>
<tr>
<td></td>
<td>135 x 80 x 40</td>
<td>IFL 50-385-...-2130</td>
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<td></td>
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<td>Page 2-58</td>
</tr>
</tbody>
</table>
Inductive proximity switches / AC 2-wire

IFL Ø 20 mm

- Thermoplastic enclosure
- Design Ø 20 mm
- Cable
- AC 2-wire
- Clamp H 20 is included in delivery, see accessories

Technical data

Standards: IEC/EN 60947-5-2
VDE 0660-208

Sₜₜ: 10 mm, non-embeddable

Switching element
function: A: normally open contact or
B: normally closed contact

Switching output:
F: 2-wire AC

Uₑ: 15 ... 250 VAC

Iₑ: 500 mA

Iₘ: 10 mA

Iᵣ: 1 mA

Uₒ: approx. 4.5 V

(250 V/200 mA)

Protection circuit: inductive interference protection

Uₑₚ: 4 kV

Ambient temperature: – 25 °C ... + 70 °C

Switching frequency f: approx. 10 Hz

Protection class: IP 67 to EN 60529

Material: housing and clamp H 20: thermoplastic

Connection: cable H03VV-F 2 x 0.5 mm², length 2 m

Contact variants

IFL 10-200-10

IFL 10-200-01

IFL Ø 40 mm

- Thermoplastic enclosure
- Design Ø 40 mm
- Cable with strain relief
- AC 2-wire
- Clamp H 40 is included in delivery, see accessories

Technical data

Standards: IEC/EN 60947-5-2
VDE 0660-208

Sₜₜ: 20 mm, non-embeddable

Switching element
function: A: normally open contact or
B: normally closed contact

Switching output:
F: 2-wire AC

Uₑ: 15 ... 250 VAC

Iₑ: 500 mA

Iₘ: 10 mA

Iᵣ: 1 mA

Uₒ: approx. 4.5 V

(250 V/200 mA)

Protection circuit: inductive interference protection, on request:
Short-circuit and overload-proof (ordering suffix -1522) Iₑ = max. 150 mA,
Uₒ = approx. 7.5 V (150 mA)

Uₑₚ: 4 kV

Ambient temperature: – 25 °C ... + 70 °C

Switching frequency f: approx. 10 Hz

Protection class: IP 67 to EN 60529

Material: housing and clamp H 40: thermoplastic

Connection: cable H03VV-F 2 x 0.5 mm², length 2 m, with strain relief

Contact variants

IFL 20-400-10T

IFL 20-400-01T
## Inductive proximity switches / AC 2-wire

### IFL Ø 40 mm

- Thermoplastic enclosure
- Design Ø 40 mm
- Wiring compartment
- AC 2-wire
- Clamp H 40 is included in delivery, see accessories

Programmable by repositioning the plug-in jumper at the terminal screws

---

### Technical data

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**S**:
- 20 mm, non-embeddable

**Switching element function:**
- P: normally open contact or normally closed contact (Programmable by repositioning the plug-in jumper at the terminal screws)

**Switching output:**
- F: 2-wire AC

**U**:
- 15 ... 250 VAC

**I**:
- 500 mA

**I**:
- 10 mA

**I**:
- 1 mA

**U**:
- approx. 4.5 V

(250 V/200 mA)

**Protection circuit:**
- inductive interference protection

**U**:
- 4 kV

**Ambient temperature:**
- – 25 °C ... + 70 °C

**Switching frequency f:**
- approx. 10 Hz

**Protection class:**
- IP 65 to EN 60529

**Material:**
- housing and clamp H 40: thermoplastic

**Connection:**
- Terminal screws with self-lifting pressure clamps for max. 2 x 1.5 mm², with cable entry M16 x 1.5

### Contact variants

**IFL 20-400-10/01**

---

### IFL M 12

- Metal enclosure
- Design M 12 x 1
- Cable
- AC 2-wire

---

### Technical data

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**S**:
- IFL 2-...: 2 mm, embeddable
- IFL 4-...: 4 mm, non-embeddable

**Switching element function:**
- A: normally open contact or
- B: normally closed contact

**Switching output:**
- F: 2-wire AC

**U**:
- 15 ... 250 VAC

**I**:
- 200 mA

**I**:
- 8 mA

**I**:
- 1 mA

**U**:
- approx. 3.5 V

(250 V/200 mA)

**Protection circuit:**
- inductive interference protection

**U**:
- 4 kV

**Ambient temperature:**
- – 25 °C ... + 70 °C

**Switching frequency f:**
- approx. 10 Hz

**Protection class:**
- IP 67 to EN 60529

**Material:**
- housing and nuts: nickel plated brass

**Connection:**
- cable H03VV-F 2 x 0.5 mm², length 2 m

**Note:**
- Instead of nuts, a mounting clamp can be provided (see accessories).

### Contact variants

**IFL 2-12-01**

---

**IFL 2-12-10**

---

**IFL 4-12-01**

---

**IFL 4-12-10**

---

2-4

SCHMERSAL
Inductive proximity switches / AC 2-wire

**IFL M 12**

- Metal enclosure
- Design M 12 x 1
- Cable with strain relief
- AC 2-wire

**Technical data**

| Standards: | IEC/EN 60947-5-2 | VDE 0660-208 |
| Switching element function: | A: normally open contact or B: normally closed contact |
| Output: | F: 2-wire AC |
| Rated supply frequency: | 45 ... 65 Hz |
| I_e: | 200 mA |
| I_m: | 8 mA |
| I_r: | 1 mA |
| U_d: | approx. 3.5 V (250 V/200 mA) |
| Protection circuit: | inductive interference protection |
| Ambient temperature: | – 25 °C ... + 70 °C |
| Switching frequency f: | approx. 10 Hz |
| Protection class: | IP 67 to EN 60529 |
| Material: | housing and nuts: nickel plated brass |
| Tightening torque for nuts: | A/F 17 max. 1500 Ncm |
| Connection: | cable H03VV-F 2 x 0.5 mm², length 2 m, with strain relief |
| Note: | Instead of nuts, a mounting clamp can be provided (see accessories). |

**Contact variants**

| IFL 2-12-01T |
| IFL 4-12-01T |

**IFL M 12**

- Metal enclosure
- Design M 12 x 1
- Cable
- AC 2-wire
- High switching distance
- Quasi-embeddable (steel: x ≥ 2.4 mm other metal: x ≥ 1.2 mm)

**Technical data**

| Standards: | IEC/EN 60947-5-2 | VDE 0660-208 |
| Switching element function: | A: normally open contact or B: normally closed contact |
| Output: | F: 2-wire AC |
| Rated supply frequency: | 45 ... 65 Hz |
| I_e: | 200 mA |
| I_m: | 8 mA |
| I_r: | 1 mA |
| U_d: | approx. 3.5 V (250 V/200 mA) |
| Protection circuit: | inductive interference protection |
| Ambient temperature: | – 25 °C ... + 70 °C |
| Switching frequency f: | approx. 10 Hz |
| Protection class: | IP 67 to EN 60529 |
| Material: | housing and nuts: nickel plated brass |
| Tightening torque for nuts: | A/F 17 max. 1500 Ncm |
| Connection: | cable H03VV-F 2 x 0.5 mm², length 2 m |
| Note: | Instead of nuts, a mounting clamp can be provided (see accessories). |
Inductive proximity switches / AC 2-wire

IFL M 12

- Thermoplastic enclosure
- Design M 12 x 1
- Cable
- AC 2-wire

Technical data

Standards:
- IEC/EN 60947-5-2
- VDE 0660-208

Sₙₐₜ:\n- 4 mm, non-embeddable

Switching element function:
- A: normally open contact or
- B: normally closed contact

Switching output:
- F: 2-wire AC

Uₚₗₜ:\n- 15 ... 250 VAC

Iₚₗ:\n- 45 ... 65 Hz

Iₘₚ:\n- 200 mA

Iₗₘ:\n- 8 mA

Iₐₗ:\n- 1 mA

Uₜₕₘ:\n- approx. 3.5 V

Protection circuit:
- inductive interference protection

Uₚₗ:\n- 4 kV

Ambient temperature:
- – 25 °C ... + 70 °C

Switching frequency f:\n- approx. 10 Hz

Protection class:
- IP 67 to EN 60529

Protection class:
- II, ☯

Material:
- housing and nuts:
  - thermoplastic (PBTP + PA 12)
- washer: rubber (perbunan)

Tightening torque for nuts:
- A/F 17 max. 90 Ncm

Connection:
- cable H03VV-F 2 x 0.5 mm²,
- length 2 m

Note:
- Instead of nuts, a mounting clamp can be provided (see accessories).

Contact variants

IFL 4-120-01

IFL 4-120-10

IFL M 12

- Thermoplastic enclosure
- Design M 12 x 1
- Cable with strain relief
- AC 2-wire

Technical data

Standards:
- IEC/EN 60947-5-2
- VDE 0660-208

Sₙₐₜ:\n- 4 mm, non-embeddable

Switching element function:
- B: normally closed contact

Switching output:
- F: 2-wire AC

Uₚₗₜ:\n- 15 ... 250 VAC

Iₚₗ:\n- 45 ... 65 Hz

Iₘₚ:\n- 200 mA

Iₗₘ:\n- 8 mA

Iₐₗ:\n- 1 mA

Uₜₕₘ:\n- approx. 3.5 V

Protection circuit:
- inductive interference protection

Uₚₗ:\n- 4 kV

Ambient temperature:
- – 25 °C ... + 70 °C

Switching frequency f:\n- approx. 10 Hz

Protection class:
- IP 67 to EN 60529

Protection class:
- II, ☯

Material:
- housing and nuts:
  - thermoplastic (PBTP + PA 12)
- washer: rubber (perbunan)

Tightening torque for nuts:
- A/F 17 max. 90 Ncm

Connection:
- cable H03VV-F 2 x 0.5 mm²,
- length 2 m, with strain relief

Note:
- Instead of nuts, a mounting clamp can be provided (see accessories).

Contact variants

IFL 4-120-01T

IFL 4-120-10T

SCHMERSAL
Inductive proximity switches / AC 2-wire

**Technical data**

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**Sₙ:**
- IFL 5-...: 5 mm, embeddable
- IFL 8-...: 8 mm, non-embeddable

**Switching element function:**
- A: normally open contact or
- B: normally closed contact

**Switching output:**
- F: 2-wire AC

**Rated supply frequency:**
- 45 ... 65 Hz

**Iₑ:**
- 500 mA

**Iₘ:**
- 10 mA

**Iᵣ:**
- 1 mA

**Uₑ:**
- approx. 4.5 V
  (250 V/200 mA)

**Protection circuit:**
- inductive interference protection

**Uᵢ:**
- 4 kV

**Ambient temperature:**
- – 25 °C ... + 70 °C

**Switching frequency f:**
- approx. 10 Hz

**Protection class:**
- IP 67 to EN 60529

**Protection class:**
- II, Ⅲ

**Material:**
- housing and nuts: nickel plated brass

**Tightening torque for nuts:**
- A/F 24 max. 1800 Ncm

**Connection:**
- cable H03VV-F 2 x 0.5 mm², length 2 m

**Note:**
- Instead of nuts, a mounting clamp can be provided (see accessories).

**IFL M 18**

- Metal enclosure
- Design M 18 x 1
- AC 2-wire

**Contact variants**

- IFL 5-18-01
- IFL 5-18-10
- IFL 8-18-01
- IFL 8-18-10

- Note: Instead of nuts, a mounting clamp can be provided (see accessories).

---

**Technical data**

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**Sₙ:**
- IFL 5-...: 5 mm, embeddable
- IFL 8-...: 8 mm, non-embeddable

**Switching element function:**
- A: normally open contact or
- B: normally closed contact

**Switching output:**
- F: 2-wire AC

**Rated supply frequency:**
- 45 ... 65 Hz

**Iₑ:**
- 500 mA

**Iₘ:**
- 10 mA

**Iᵣ:**
- 1 mA

**Uₑ:**
- approx. 4.5 V
  (250 V/200 mA)

**Protection circuit:**
- inductive interference protection

**Uᵢ:**
- 4 kV

**Ambient temperature:**
- – 25 °C ... + 70 °C

**Switching frequency f:**
- approx. 10 Hz

**Protection class:**
- IP 67 to EN 60529

**Protection class:**
- II, Ⅲ

**Material:**
- housing and nuts: nickel plated brass

**Tightening torque for nuts:**
- A/F 24 max. 1800 Ncm

**Connection:**
- plug-in connector M18 x 1

**Note:**
- Instead of nuts, a mounting clamp can be provided (see accessories).

---

**IFL M 18**

- Metal enclosure
- Design M 18 x 1
- Plug-in connector
- AC 2-wire

**Contact variants**

- IFL 5-18-01ST
- IFL 5-18-10ST
- IFL 8-18-01ST
- IFL 8-18-10ST

- Note: Instead of nuts, a mounting clamp can be provided (see accessories).
Inductive proximity switches / AC 2-wire

**Technical data**

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**Sₘₙ:**
- IFL 5-...: 5 mm, embeddable
- IFL 8-...: 8 mm, non-embeddable

**Switching element function:**
- P: normally open contact or normally closed contact
  (Programmable by repositioning the plug-in jumper at the terminal screws)

**Switching output:**
- F: 2-wire AC
- Uₜₙₚ: 15 ... 250 VAC

**Rated supply frequency:**
- 45 ... 65 Hz
- Iₑ: 500 mA
- Iₑₙ: 10 mA
- Iᵣ: 1 mA
- Uₑ: approx. 4.5 V (250 V/200 mA)

**Protection circuit:**
- inductive interference protection
- Uᵢₚₜ: 4 kV

**Ambient temperature:**
- – 25 °C ... + 70 °C

**Switching frequency f:**
- approx. 10 Hz

**Protection class:**
- IP 67 to EN 60529

**Material:**
- housing and nuts: nickel plated brass
- washer: rubber (perbunan)

**Tightening torque for nuts:**
- A/F 24 max. 1800 Ncm

**Connection:**
- Terminal screws for max. 1.5 mm², with cable entry M16 x 1.5

**Note:**
- Instead of nuts, a mounting clamp can be provided (see accessories).

**Contact variants**

IFL 5-18-10/01

IFL 8-18-10/01

**Contact variants**

IFL 10-180-01

IFL 10-180-10

**Technical data**

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**Sₘₙ:**
- 10 mm, non-embeddable

**Switching element function:**
- A: normally open contact or B: normally closed contact

**Switching output:**
- F: 2-wire AC
- Uₜₙₚ: 15 ... 250 VAC

**Rated supply frequency:**
- 45 ... 65 Hz
- Iₑ: 500 mA
- Iₑₙ: 10 mA
- Iᵣ: 1 mA
- Uₑ: approx. 4.5 V (250 V/200 mA)

**Protection circuit:**
- inductive interference protection
- Uᵢₚₜ: 4 kV

**Ambient temperature:**
- – 25 °C ... + 70 °C

**Switching frequency f:**
- approx. 10 Hz

**Protection class:**
- IP 67 to EN 60529

**Material:**
- housing and nuts: thermoplastic (PBTP + PA 12)
- washer: rubber (perbunan)

**Tightening torque for nuts:**
- A/F 24 max. 300 Ncm

**Connection:**
- cable H03VV-F 2 x 0.5 mm², length 2 m

**Note:**
- Instead of nuts, a mounting clamp can be provided (see accessories).
**Inductive proximity switches / AC 2-wire**

### IFL M 18

- Thermoplastic enclosure
- Design M 18 x 1
- Plug-in connector
- AC 2-wire

### Technical data

- **Standards:** IEC/EN 60947-5-2, VDE 0660-208
- **S_{rs}:** 10 mm, non-embeddable
- **Switching element function:** A: normally open contact or B: normally closed contact
- **Switching output:** F: 2-wire AC
- **U_{bc}:** 15 ... 250 VAC
- **Rated supply frequency:** 45 ... 65 Hz
- **I_e:** 500 mA
- **I_{m}:** 10 mA
- **I_{r}:** 1 mA
- **U_{d}:** approx. 4.5 V (250 V/200 mA)

### Protection circuit:

- Inductive interference protection
- **U_{imp}:** 4 kV

### Ambient temperature:

- – 25 °C ... + 70 ºC

### Switching frequency f:

- approx. 10 Hz

### Protection class:

- IP 67 to EN 60529
- III, X

### Material:

- Housing and nuts: thermoplastic (PBTP + PA 12)
- Washer: rubber (perbunan)

### Tightening torque for nuts:

- A/F 24 max. 300 Ncm

### Connection:

- Terminal screws for max. 1.5 mm², with cable entry M16 x 1.5

### Note:

- Instead of nuts, a mounting clamp can be provided (see accessories).

### Contact variants

- **IFL 10-180-01ST**

- **IFL 10-180-10ST**

---

**Programmable by repositioning the plug-in jumper at the terminal screws**
Inductive proximity switches / AC 2-wire

**IFL M 30**

- Metal enclosure
- Design M 30 x 1.5
- Cable with strain relief
- AC 2-wire

**Technical data**

Standards: IEC/EN 60947-5-2
VDE 0660-208

\( S_n \):
- IFL 10-...: 10 mm, embeddable
- IFL 15-...: 15 mm, non-embeddable

**Switching element**

function:
- A: normally open contact or
  B: normally closed contact

**Switching output**:
- F: 2-wire AC

**Rated supply frequency**:
- 45 ... 65 Hz

**\( I_e \)**:
- 500 mA

**\( I_m \)**:
- 10 mA

**\( I_r \)**:
- 1 mA

**\( U_d \)**:
- approx. 4.5 V
  (250 V/200 mA)

**Protection circuit**:
- inductive interference protection, on request:
  Short-circuit and overload-proof
  (ordering suffix -1522)
  \( I_e \) = max. 150 mA,
  \( U_d \) = approx. 7.5 V (150 mA)

**\( U_{imp} \)**:
- 4 kV

**Ambient temperature**:
- – 25 °C ... + 70 °C

**Switching frequency \( f \)**:
- approx. 10 Hz

**Protection class**:
- IP 67 to EN 60529

**Material**:
- housing and nuts:
  nickel plated brass

**Tightening torque**

for nuts:
- A/F 36 max. 3000 Ncm

**Connection**:
- Terminal screws for max. 1.5 mm²,
  with cable entry M16 x 1.5

**Note**:
- Instead of nuts, a mounting clamp can be provided (see accessories).

**Contact variants**

- IFL 10-30-01T
- IFL 10-30-10T
- IFL 15-30-01T
- IFL 15-30-10T

Programmable by repositioning the plug-in jumper at the terminal screws

---

**IFL M 30**

- Metal enclosure
- Design M 30 x 1.5
- Wiring compartment
- AC 2-wire

**Technical data**

Standards: IEC/EN 60947-5-2
VDE 0660-208

\( S_n \):
- IFL 10-...: 10 mm, embeddable
- IFL 15-...: 15 mm, non-embeddable

**Switching element**

function:
- P: normally open contact or
  or normally closed contact
  (Programmable by repositioning the plug-in jumper at the terminal screws)

**Switching output**:
- F: 2-wire AC

**Rated supply frequency**:
- 45 ... 65 Hz

**\( I_e \)**:
- 500 mA

**\( I_m \)**:
- 10 mA

**\( I_r \)**:
- 1 mA

**\( U_d \)**:
- approx. 4.5 V
  (250 V/200 mA)

**Protection circuit**:
- inductive interference protection, on request:
  Short-circuit and overload-proof
  (ordering suffix -1522)
  \( I_e \) = max. 150 mA,
  \( U_d \) = approx. 7.5 V (150 mA)

**\( U_{imp} \)**:
- 4 kV

**Ambient temperature**:
- – 25 °C ... + 70 °C

**Switching frequency \( f \)**:
- approx. 10 Hz

**Protection class**:
- IP 67 to EN 60529

**Material**:
- housing and nuts:
  nickel plated brass

**Tightening torque**

for nuts:
- A/F 36 max. 3000 Ncm

**Connection**:
- Terminal screws for max. 1.5 mm²,
  with cable entry M16 x 1.5

**Note**:
- Instead of nuts, a mounting clamp can be provided (see accessories).
Inductive proximity switches / AC 2-wire

### IFL M 30

#### Technical data
- **Standards:** IEC/EN 60947-5-2, VDE 0660-208
- **$S_n$:** IFL 10-...: 10 mm, embeddable
  IFL 15-...: 15 mm, non-embeddable
- **Switching element function:**
  A: normally open contact or
  B: normally closed contact
- **Switching output:** F: 2-wire AC
- **$U_b$:** 90 ... 250 VAC
- **Rated supply frequency:** 45 ... 65 Hz
- **$I_e$:** ≤ 70 °C: max. 200 mA
  > 70 °C: max. 50 mA
- **$U_d$:** approx. 8 V
- **Protection circuit:** inductive interference protection
- **$U_{imp}$:** 4 kV
- **Ambient temperature:** 0 °C ... + 110 °C (dry heat)
- **Switching frequency $f$:** approx. 10 Hz
- **Protection class:** IP 67 to EN 60529
- **Material:** housing and nuts: nickel plated brass
- **Tightening torque for nuts:** A/F 36 max. 3000 Ncm
- **Connection:** silicone cable 2 x 0.5 mm², length 2 m, with strain relief
- **Note:** Instead of nuts, a mounting clamp can be provided (see accessories).

#### Contact variants
- **IFL 10-30-01T-1310**
- **IFL 10-30-10T-1310**
- **IFL 15-30-01T-1310**
- **IFL 15-30-10T-1310**
- **IFL 15-300-01T**
- **IFL 15-300-10T**

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LED may become defective when operated above 90 °C. Operation of the switch, however, is not affected.

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### IFL M 30

#### Technical data
- **Standards:** IEC/EN 60947-5-2, VDE 0660-208
- **$S_n$:** 15 mm, non-embeddable
- **Switching element function:**
  A: normally open contact or
  B: normally closed contact
- **Switching output:** F: 2-wire AC
- **$U_b$:** 15 ... 250 VAC
- **Rated supply frequency:** 45 ... 65 Hz
- **$I_e$:** 500 mA
- **$I_m$:** 10 mA
- **$I_r$:** 1 mA
- **$U_d$:** approx. 4.5 V (250 V/200 mA)
- **Protection circuit:** inductive interference protection, on request:
  Short-circuit and overload-proof
  (ordering suffix -1522) $I_e$ = max. 150 mA,
  $U_d$ = approx. 7.5 V (150 mA)
- **$U_{imp}$:** 4 kV
- **Ambient temperature:** – 25 °C ... + 70 °C
- **Switching frequency $f$:** approx. 10 Hz
- **Protection class:** IP 67 to EN 60529
- **Material:** housing and nuts: thermoplastic (PBTP + PA 12)
  washer: rubber (perbunan)
- **Tightening torque for nuts:** A/F 36 max. 400 Ncm
- **Connection:** cable H03VV-F 2 x 0.5 mm², length 2 m, with strain relief
- **Note:** Instead of nuts, a mounting clamp can be provided (see accessories).

#### Contact variants
- **IFL 15-300-01T**
- **IFL 15-300-10T**
Inductive proximity switches / AC 2-wire

**IFL M 30**

- Thermoplastic enclosure
- Design M 30 x 1,5
- Wiring compartment
- AC 2-wire

Programmable by repositioning the plug-in jumper at the terminal screws

**Technical data**

- ** Standards:** IEC/EN 60947-5-2  
  VDE 0660-208
- **S_n:** 15 mm, non-embeddable
- **Switching element function:** P: normally open contact or normally closed contact (Programmable by repositioning the plug-in jumper at the terminal screws)
- **Switching output:** F: 2-wire AC
- **U_b:** 15 ... 250 VAC
- **Rated supply frequency:** 45 ... 65 Hz
- **I_e:** 500 mA
- **I_m:** 10 mA
- **I_r:** 1 mA
- **U_d:** approx. 4.5 V (250 V/200 mA)
- **Protection circuit:** inductive interference protection, on request:
  - Short-circuit and overload-proof (ordering suffix -1522) Ie = max. 150 mA, Ud = approx. 7.5 V (150 mA)
- **U_imp:** 4 kV
- **Ambient temperature:** – 25 °C ... + 70 °C
- **Switching frequency f:** approx. 10 Hz
- **Protection class:** IP 67 to EN 60529
- **Protection class:** II, I
- **Material:** housing and nuts: thermoplastic (PBTP + PA 12)
  - washer: rubber (perbunan)
- **Connection:** Terminal screws for max. 1.5 mm², with cable entry M16 x 1.5
- **Note:** Instead of nuts, a mounting clamp can be provided (see accessories).

**Contact variants**

- IFL 15-300-10/01

1) Switches can be mounted adjacent to each other without interference.

---

**IFL 40 x 25 x 12 mm**

- Thermoplastic enclosure
- Rectangular design 250 (40 x 25 x 12 mm)
- Cable
- AC 2-wire

**Technical data**

- ** Standards:** IEC/EN 60947-5-2  
  VDE 0660-208
- **S_n:**  
  - IFL 2-...: 2 mm, embeddable
  - IFL 4-...: 4 mm, non-embeddable
- **Switching element function:** A: normally open contact or normally closed contact (Programmable by repositioning the plug-in jumper at the terminal screws)
- **Switching output:** F: 2-wire AC
- **U_b:** 15 ... 250 VAC
- **Rated supply frequency:** 45 ... 65 Hz
- **I_e:** 500 mA
- **I_m:** 8 mA
- **I_r:** 1 mA
- **U_d:** approx. 4.5 V (250 V/200 mA)
- **Protection circuit:** inductive interference protection
- **U_imp:** 4 kV
- **Ambient temperature:** – 25 °C ... + 70 °C
- **Switching frequency f:** approx. 10 Hz
- **Protection class:** IP 67 to EN 60529
- **Protection class:** II, I
- **Material:** housing: thermoplastic (PBTP), with 2 screws M3 x 6 for rear mounting
- **Connection:** cable H03VV-F 2 x 0.5 mm², length 2 m

**Contact variants**

- IFL 2-250-01
  - IFL 2-250-10

1) Switches can be mounted adjacent to each other without interference.
Inductive proximity switches / AC 2-wire

**IFL 88 x 25 x 13 mm**

- Thermoplastic enclosure
- Rectangular design 310 (88 x 25 x 13 mm)
- Cable
- AC 2-wire

**Technical data**

| Standards: | IEC/EN 60947-5-2
|            | VDE 0660-208 |
| Sₚₕ:       | 4 mm, on metal mountable |
| Switching element function: | A: normally open contact or
|               | B: normally closed contact |
| Switching output: | F: 2-wire AC |
| U₀:          | 15 ... 250 VAC |
| Rated supply frequency: | 45 ... 65 Hz |
| Iₑ:          | 200 mA |
| Iₘ:          | 8 mA |
| U₅:          | 1 mA |
| Protection circuit: | inductive interference protection |
| Uᵢmp:       | 4 kV |
| Ambient temperature: | – 25 °C ... + 70 °C |
| Switching frequency f: | approx. 10 Hz |
| Protection class: | II, II |
| Material:   | housing: thermoplastic (Noryl) |
| Connection: | cable H03VV-F 2 x 0.5 mm², length 2 m |

**Contact variants**

- IFL 4-310-01
- IFL 4-310-10

**IFL 36.5 x 36.5 x 36.5 mm**

- Thermoplastic enclosure
- Rectangular design 333E (36.5 x 36.5 x 36.5 mm)
- Cable
- AC 2-wire
- Mounting bracket HWE-1 to simplify mounting available

**Technical data**

| Standards: | IEC/EN 60947-5-2
|            | VDE 0660-208 |
| Sₚₕ:       | IFL 15-...: 16.5 mm, embeddable
|            | IFL 20-...: 21.5 mm, non-embeddable (36.5 x 36.5 mm opening) |
| Switching element function: | A: normally open contact or
|               | B: normally closed contact |
| Switching output: | F: 2-wire AC |
| U₀:          | 15 ... 250 VAC |
| Rated supply frequency: | 45 ... 65 Hz |
| Iₑ:          | 500 mA |
| Iₘ:          | 10 mA |
| Iₙ:          | 1 mA |
| U₅:          | approx. 4.5 V (250 V/200 mA) |
| Protection circuit: | inductive interference protection |
| Uᵢmp:       | 4 kV |
| Ambient temperature: | – 25 °C ... + 70 °C |
| Switching frequency f: | approx. 10 Hz |
| Protection class: | IP 67 to EN 60529 |
| Protection class: | II, III |
| Material:   | housing: thermoplastic (PBTP) |
| Connection: | cable H03VV-F 2 x 0.5 mm², length 2 m |

**Contact variants**

- IFL 15-333E-01
- IFL 15-333E-10
- IFL 20-333E-01
- IFL 20-333E-10
Inductive proximity switches / AC 2-wire

**IFL 112 x 40 x 40 mm**

- Thermoplastic enclosure
- Rectangular design 333 (112 x 40 x 40 mm)
- Wiring compartment
- AC 2-wire

By repositioning the switch five different actuating directions can be selected. The selected actuating direction can be marked with a sticker.

**Technical data**

- Standards: IEC/EN 60947-5-2, VDE 0660-208
- Switching element function: P: normally open contact or normally closed contact (Programmable by repositioning the plug-in jumper at the terminal screws)
- Switching output: F: 2-wire AC
- $U_b$: 15 ... 250 VAC
- Rated supply frequency: 45 ... 65 Hz
- $I_e$: 500 mA
- $I_m$: 10 mA
- $I_r$: 1 mA
- $U_d$: approx. 4.5 V
  
  (250 V/200 mA)
- Protection circuit: inductive interference protection, on request:
  - Short-circuit and overload-proof (ordering suffix -1522) $I_e = \max. 150 \text{ mA}$, $U_d = \approx 7.5 \text{ V (150 mA)}$
- $U_{imp}$: 4 kV
- Ambient temperature: –25 °C ... +70 °C
- Switching frequency $f$: approx. 10 Hz
- Protection class: IP 65 to EN 60529
- Material: housing: thermoplastic (PBTP), cover: Luran
- Connection: Terminal screws with self-lifting pressure clamps for max. 2 x 1.5 mm², with cable entry M20 x 1.5

**Contact variants**

IFL 15-333-10/01

IFL 20-333-10/01

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**IFL 120 x 55 x 40 mm**

- Thermoplastic enclosure
- Rectangular design 384 (120 x 55 x 40 mm)
- Wiring compartment
- AC 2-wire

**Technical data**

- Standards: IEC/EN 60947-5-2, VDE 0660-208
- Switching element function: P: normally open contact or normally closed contact (Programmable by repositioning the plug-in jumper at the terminal screws)
- Switching output: F: 2-wire AC
- $U_b$: 15 ... 250 VAC
- Rated supply frequency: 45 ... 65 Hz
- $I_e$: 500 mA
- $I_m$: 10 mA
- $I_r$: 1 mA
- $U_d$: approx. 4.5 V
  
  (250 V/200 mA)
- Protection circuit: inductive interference protection, on request:
  - Short-circuit and overload-proof (ordering suffix -1522) $I_e = \max. 150 \text{ mA}$, $U_d = \approx 7.5 \text{ V (150 mA)}$
- $U_{imp}$: 4 kV
- Ambient temperature: –25 °C ... +70 °C
- Switching frequency $f$: approx. 10 Hz
- Protection class: IP 65 to EN 60529
- Material: housing: thermoplastic (Noryl)
- Connection: Terminal screws with self-lifting pressure clamps for max. 2 x 1.5 mm², with cable entries 3 x M20 x 1.5 (break-out)

**Contact variants**

IFL 30-384-10/01

Programmable by repositioning the plug-in jumper at the terminal screws
Inductive proximity switches / AC 2-wire

IFL 135 x 80 x 40 mm

Technical data

Standards: IEC/EN 60947-5-2
VDE 0660-208

Sₙₖ: 50 mm, non-embeddable

Switching element function:
P: normally open contact
or normally closed contact
(Programmable by repositioning the plug-in jumper at the terminal screws)

Switching output: F: 2-wire AC
Uᵦ: 15 ... 250 VAC
Rated supply frequency: 45 ... 65 Hz
Iₑ: 500 mA
Iₘ: 10 mA
Iᵣ: 1 mA
Uᵰ: approx. 4.5 V
(250 V/200 mA)

Protection circuit:
inductive interference protection, on request:
Short-circuit and overload-proof (ordering suffix -1522) Iₑ = max. 150 mA,
Uᵰ = approx. 7.5 V (150 mA)

Uᵦₚ: 4 kV
Ambient temperature: –25 °C ... +70 °C
Switching frequency f: approx. 10 Hz

Protection class: IP 67 to EN 60529

Contact variants

IFL 50-385-10/01

Material: housing: thermoplastic (Noryl)
Connection: Terminal screws with self-lifting pressure clamps for max. 2 x 1.5 mm², with cable entries 3 x M20 x 1.5 (break-out)
Programmable by repositioning the plug-in jumper at the terminal screws

• Thermoplastic enclosure
• Rectangular design 385 (135 x 80 x 40 mm)
• Wiring compartment
• AC 2-wire
• Mounting bracket HW 385-1 to simplify mounting available
Inductive proximity switches / DC 2-wire

### IFL M 18

- Metal enclosure
- Design M 18 x 1
- Cable
- DC 2-wire

#### Technical data

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**S_p:**
- 5 mm, embeddable

**Switching element function:**
- A: normally open contact

**Switching output:**
- D: 2-wire DC

**U_0:**
- 10 ... 40 VDC

**I_e:**
- 200 mA

**I_m:**
- 5 mA

**I_t:**
- approx. 0.5 mA

**U_d:**
- ≤ 6 V (200 mA)
- ≤ 5.5 V (100 mA)

**Protection circuit:**
- wrong polarity,
- inductive interference,
- industrial transients and short-circuit protection

**Ambient temperature:**
- – 25 °C ... + 70 °C

**Switching frequency f:**
- approx. 500 Hz

**Protection class:**
- IP 67 to EN 60529

**Material:**
- housing and nuts: nickel plated brass

**Tightening torque for nuts:**
- A/F 24 max. 1800 Ncm

**Connection:**
- cable H03VV-F 2 x 0.5 mm², length 2 m

**Note:**
- Instead of nuts, a mounting clamp can be provided (see accessories).

### IFL M 30

- Thermoplastic enclosure
- Design M 30 x 1.5
- Wiring compartment
- DC 2-wire

#### Technical data

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**S_p:**
- 15 mm, non-embeddable

**Switching element function:**
- P: normally open contact
  or normally closed contact
  (Programmable by repositioning the plug-in jumper at the terminal screws)

**Switching output:**
- D: 2-wire DC

**U_0:**
- 10 ... 40 VDC

**I_e:**
- 200 mA

**I_m:**
- 5 mA

**I_t:**
- approx. 0.5 mA

**U_d:**
- ≤ 6 V (200 mA)
- ≤ 5.5 V (100 mA)

**Protection circuit:**
- wrong polarity,
- inductive interference,
- industrial transients and short-circuit protection

**Ambient temperature:**
- – 25 °C ... + 70 °C

**Switching frequency f:**
- approx. 100 Hz

**Protection class:**
- IP 67 to EN 60529

**Protection class:**
- II, X

**Material:**
- housing and nuts: thermoplastic (PBTP + PA 12)
- washer: rubber (perbunan)

**Tightening torque for nuts:**
- A/F 36 max. 400 Ncm

**Connection:**
- Terminal screws for max. 1.5 mm²,
  with cable entry M16 x 1.5

**Note:**
- Instead of nuts, a mounting clamp can be provided (see accessories).
Inductive proximity switches / DC 2-wire

**IFL 40 x 25 x 12 mm**

- Thermoplastic enclosure
- Rectangular design 250 (40 x 25 x 12 mm)
- Cable
- DC 2-wire

**Technical data**

- Standards: IEC/EN 60947-5-2
  VDE 0660-208
- \( S_{n} \): 4 mm, non-embeddable
- Switching element function: A: normally open contact
- Switching output: D: 2-wire DC
- \( U_{b} \): 10 ... 40 VDC
- \( I_{e} \): 200 mA
- \( I_{m} \): 5 mA
- \( I_{r} \): approx. 0.5 mA
- \( U_{d} \): ≤ 6 V (200 mA) ≤ 5.5 V (100 mA)
- Protection circuit: wrong polarity,
  inductive interference,
  industrial transients and
  short-circuit protection
- Ambient temperature: – 25 °C ... + 70 °C
- Switching frequency \( f \): approx. 1 kHz
- Protection class: IP 67 to EN 60529
- Protection class: II,
  X
- Material: housing: thermoplastic (PBTP),
  with 2 screws M3 x 6
  for rear mounting
- Connection: cable H03VV-F 2 x 0.5 mm²,
  length 2 m

**Contact variants**

IFL 4-250-10D

**IFL 112 x 40 x 40 mm**

- Thermoplastic enclosure
- Rectangular design 333 (112 x 40 x 40 mm)
- Wiring compartment
- DC 2-wire

By repositioning the switch five different actuating directions can be selected. The selected actuating direction can be marked with a sticker.

**Technical data**

- Standards: IEC/EN 60947-5-2
  VDE 0660-208
- \( S_{n} \): 20 mm, non-embeddable
- Switching element function: A: normally open contact
- Switching output: D: 2-wire DC
- \( U_{b} \): 15 ... 150 VDC
- \( I_{e} \): 200 mA
- \( I_{m} \): 5 mA
- \( I_{r} \): approx. 1 mA
- \( U_{d} \): approx. 8.5 V
  (200 mA)
- Protection circuit: wrong polarity
  and inductive interference protection
- Ambient temperature: – 25 °C ... + 70 °C
- Switching frequency \( f \): approx. 40 Hz
- Protection class: IP 65 to EN 60529
- Protection class: II,
  X
- Material: housing: thermoplastic (PBTP)
  cover: Luran
- Connection: terminal screws with
  self-lifting pressure clamps
  for max. 2 x 1.5 mm²,
  with cable entry M20 x 1.5

**Contact variants**

IFL 20-333-10D
Inductive proximity switches / DC 2-wire

IFL 135 x 80 x 40 mm

Technical data

- Standards: IEC/EN 60947-5-2
- Sₚₜ: 50 mm, non-embeddable
- Switching element function: P: normally open contact or normally closed contact
  (Programmable by repositioning the plug-in jumper at the terminal screws)
- Switching output: D: 2-wire DC
  - Uᵦ: 10 ... 40 VDC
  - Iₑ: 200 mA
  - Iₘ: 5 mA
  - Iᵢ: approx. 0.5 mA
  - Uᵢ: ≤ 6 V (200 mA)
  - ≤ 5.5 V (100 mA)
- Protection circuit: wrong polarity, inductive interference, industrial transients and short-circuit protection
- Ambient temperature: –25 °C ... +70 °C
- Switching frequency f: approx. 50 Hz
- Protection class: IP 67 to EN 60529
- Protection class: II, X
- Material: housing: thermoplastic (Noryl)
- Connection: Terminal screws with self-lifting pressure clamps for max. 2 x 1.5 mm², with cable entries 3 x M20 x 1.5 (break-out)

Contact variants

IFL 50-385-10/01D

• Thermoplastic enclosure
• Rectangular design 385 (135 x 80 x 40 mm)
• Wiring compartment
• DC 2-wire
• Mounting bracket HW 385-1 to simplify mounting available

Programmable by repositioning the plug-in jumper at the terminal screws
**Inductive proximity switches / DC 3-wire**

**IFL Ø 4 mm**

- Metal enclosure
- Design Ø 4 mm
- Cable
- DC 3-wire

### Technical data

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**Sₜₚ:**
- 0.8 mm, embeddable

**Switching element function:**
- A: normally open contact

**Switching output:**
- P: 3-wire DC

**Uᵢ:**
- 10 ... 30 VDC

**Iₑ:**
- 200 mA

**Iₒ:**
- < 10 mA

**Uᵢ:**
- approx. 2 V (200 mA)

**Protection circuit:**
- suppressed switch-on fault impulse, wrong polarity, inductive interference, industrial transients and short-circuit protection

**Ambient temperature:**
- – 25 °C ... + 70 °C

**Switching frequency f:**
- 5000 Hz

**Protection class:**
- IP 67 to EN 60529

**Material:**
- Housing: stainless steel and clamp H 4: thermoplastic

**Connection:**
- Cable LiYY 3 x 0.14 mm², length 2 m

**Contact variants**

**IFL 0.8-4-10P**

### Technical data

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**Sₜₚ:**
- 0.8 mm, embeddable

**Switching element function:**
- A: normally open contact

**Switching output:**
- P: 3-wire DC

**Uᵢ:**
- 7 ... 35 VDC

**Iₑ:**
- 100 mA

**Iₒ:**
- < 2.5 mA

**Uᵢ:**
- ≤ 2 V (100 mA)

**Protection circuit:**
- wrong polarity, inductive interference, industrial transients and short-circuit protection (pulsed)

**Ambient temperature:**
- – 25 °C ... + 70 °C

**Switching frequency f:**
- approx. 1 kHz

**Protection class:**
- IP 65 to EN 60529

**Material:**
- Housing: stainless steel and clamp H 4: thermoplastic

**Connection:**
- Cable LiYY 3 x 0.14 mm², length 2 m

**Contact variants**

**IFL-N-0.8-4-10P**

- Clamp H 4 is included in delivery, see accessories
Inductive proximity switches / DC 3-wire

### IFL Ø 4 mm

- Metal enclosure
- Design Ø 4 mm
- Plug-in connector
- DC 3-wire
- Clamp H 4 is included in delivery, see accessories

#### Technical data

- **Standards:**
  - IEC/EN 60947-5-2
  - VDE 0660-208
- **Sn:** 0.8 mm, embeddable
- **Switching element function:** A: normally open contact
- **Switching output:**
  - P: 3-wire DC
- **U_p:** 7 ... 35 VDC
- **I_e:** 100 mA
- **I_o:** < 2.5 mA
- **U_d:** ≤ 2 V (100 mA)
- **Protection circuit:**
  - wrong polarity,
  - inductive interference,
  - industrial transients and short-circuit protection (pulsed)
- **Ambient temperature:** – 25 °C ... + 70 °C
- **Switching frequency f:** approx. 1 kHz
- **Protection class:** housing: stainless steel and clamp H 4: thermoplastic
- **Material:**
  - housing: stainless steel
  - clamp H 4: thermoplastic
- **Connection:**
  - plug-in connector M8 x 1, Ø = 6.5 mm

#### Contact variants

- IFL 0.8-4-10ST2P

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### IFL Ø 6.5 mm

- Metal enclosure
- Design Ø 6.5 mm
- Cable
- DC 3-wire

#### Technical data

- **Standards:**
  - IEC/EN 60947-5-2
  - VDE 0660-208
- **Sn:** 1.5 mm, embeddable
- **Switching element function:** A: normally open contact
- **Switching output:**
  - P: 3-wire DC
  - N: 3-wire DC
- **U_p:** 15 ... 34 VDC
- **I_e:**
  - 200 mA (up to 50 °C)
  - 150 mA (up to 85 °C)
- **I_o:**
  - < 17 mA (24 VDC)
  - ≤ 30 mA (34 VDC)
- **U_d:** approx. 2.5 V
- **Protection circuit:**
  - suppressed switch-on fault impulse, wire-breakage monitoring, wrong polarity, inductive interference, industrial transients and short-circuit protection
- **Ambient temperature:** – 25 °C ... + 85 °C
- **Switching frequency f:** approx. 1500 Hz
- **Protection class:** housing: stainless steel and clamp H 4: thermoplastic
- **Material:** stainless steel
- **Connection:**
  - cable PUR 3 x 0.25 mm², length 2 m

#### Contact variants

- IFL-N-2-6,5M-10N
- IFL-N-2-6,5M-10P
Inductive proximity switches / DC 3-wire

IFL Ø 6.5 mm

- Metal enclosure
- Design Ø 6.5 mm
- Cable
- Clamp H 6.5 is included in delivery, see accessories

Technical data

Standards: IEC/EN 60947-5-2, VDE 0660-208
S_n: 2 mm, embeddable
Switching element function: A: normally open contact or B: normally closed contact
Switching output: P: 3-wire DC
N: 3-wire DC
U_b: 10 ... 30 VDC
I_e: 200 mA
I_0: approx. 3.4 mA (24 V)
U_d: approx. 1.2 V (200 mA)
Protection circuit: wrong polarity, inductive interference, industrial transients and short-circuit protection
Ambient temperature: –25 °C ... +70 °C
Switching frequency f: approx. 3 kHz
Protection class: IP 67 to EN 60529
Material: housing: nickel plated brass clamp H 6.5: thermoplastic Connection: cable LiYY 3 x 0.14 mm², length 2 m

Contact variants

IFL-N-2-6,5M-10ST2N

IFL-N-2-6,5M-10ST2P

IFL Ø 6.5 mm

Technical data

Standards: IEC/EN 60947-5-2, VDE 0660-208
S_n: 1.5 mm, embeddable
Switching element function: A: normally open contact
Switching output: P: 3-wire DC
N: 3-wire DC
U_b: 15 ... 34 VDC
I_e: 200 mA (up to 50 °C)
150 mA (up to 85 °C)
I_0: ≤ 17 mA (24 VDC)
≤ 30 mA (34 VDC)
U_d: approx. 2.5 V
Protection circuit: suppressed switch-on fault impulse, wire-breakage monitoring, wrong polarity, inductive interference, industrial transients and short-circuit protection
Ambient temperature: –25 °C ... +85 °C
Switching frequency f: approx. 1500 Hz
Protection class: IP 67 to EN 60529
Material: stainless steel Connection: plug-in connector M8 x 1, Ø = 6.5 mm

Contact variants

IFL-N-2-6,5M-10ST2N

IFL-N-2-6,5M-10ST2P
Inductive proximity switches / DC 3-wire

**IFL Ø 6.5 mm**

- Metal enclosure
- Design Ø 6.5 mm
- Plug-in connector
- DC 3-wire
- Clamp H 6.5 is included in delivery, see accessories

### Technical data

- Standards: IEC/EN 60947-5-2  
  VDE 0660-208
- $s_{m}$: 2 mm, embeddable
- Switching element function:
  - A: normally open contact or
  - B: normally closed contact
- Switching output:  
  - P: 3-wire DC  
  - N: 3-wire DC
- $U_B$: 10 ... 30 VDC
- $I_B$: 200 mA
- $I_C$: approx. 3.4 mA (24 V)
- $U_C$: approx. 1.2 V (200 mA)
- Protection circuit:  
  - wrong polarity, inductive interference, industrial transients and short-circuit protection
- Ambient temperature: – 25 °C ... + 70 ºC
- Switching frequency f: approx. 3 kHz
- Protection class: IP 67 to EN 60529
- Material: housing: nickel plated brass  
  clamp H 6.5: thermoplastic
- Connection: plug-in connector

### Contact variants

- IFL 2-6,5M-01ST2N
- IFL 2-6,5M-01ST2P
- IFL 2-6,5M-10ST2N
- IFL 2-6,5M-10ST2P

**IFL M 8**

- Metal enclosure
- Design M 8 x 1
- Cable
- DC 3-wire

### Technical data

- Standards: IEC/EN 60947-5-2  
  VDE 0660-208
- $s_{m}$: 2 mm, embeddable
- Switching element function:
  - A: normally open contact or
  - B: normally closed contact
- Switching output:  
  - P: 3-wire DC  
  - N: 3-wire DC
- $U_B$: 15 ... 34 VDC
- $I_B$: 200 mA (up to 50 °C)  
  150 mA (up to 85 °C)
- $I_C$:  
  - ≤ 17 mA (24 VDC)  
  - ≤ 30 mA (34 VDC)
- $U_C$: approx. 2.5 V
- Protection circuit:  
  - suppressed switch-on fault impulse, wire-breakage monitoring, wrong polarity, inductive interference, industrial transients and short-circuit protection
- Ambient temperature: – 25 °C ... + 85 °C
- Switching frequency f: approx. 600 Hz
- Protection class: IP 67 to EN 60529
- Material: stainless steel
- Connection: cable PUR 3 x 0.25 mm², length 2 m

### Contact variants

- IFL-N-2-8M-01N
- IFL-N-2-8M-01P
- IFL-N-2-8M-10N
- IFL-N-2-8M-10P
Inductive proximity switches / DC 3-wire

**IFL M 8**

**Technical data**
- Standards: IEC/EN 60947-5-2, VDE 0660-208
- Sₙ: 2 mm, embeddable
- Switching element function: A: normally open contact or B: normally closed contact
- Switching output: P: 3-wire DC, N: 3-wire DC
- Uᵢ: 10 ... 30 VDC
- Iᵢ: 200 mA
- Iᵢ₀: approx. 3.4 mA (24 V), approx. 1.2 V (200 mA)
- Protection circuit: wrong polarity, inductive interference, industrial transients and short-circuit protection
- Ambient temperature: – 25 °C ... + 70 °C
- Switching frequency f: approx. 3 kHz
- Protection class: IP 67 to EN 60529
- Material: nickel plated brass
- Tightening torque for nuts: A/F 13 max. 600 Ncm
- Connection: cable LiYY 3 x 0.14 mm², length 2 m

**Contact variants**
- IFL 2-8M-01N
- IFL 2-8M-01P
- IFL 2-8M-10N
- IFL 2-8M-10P

**IFL M 8**

**Technical data**
- Standards: IEC/EN 60947-5-2, VDE 0660-208
- Sₙ: 2 mm, embeddable
- Switching element function: A: normally open contact or B: normally closed contact
- Switching output: P: 3-wire DC, N: 3-wire DC
- Uᵢ: 15 ... 34 VDC
- Iᵢ: 200 mA (up to 50 °C), 150 mA (up to 85 °C)
- Iᵢ₀: ≤ 17 mA (24 VDC), ≤ 30 mA (34 VDC)
- Uᵢ₀: approx. 2.5 V
- Protection circuit: suppressed switch-on fault impulse, wire-breakage monitoring, wrong polarity, inductive interference, industrial transients and short-circuit protection
- Ambient temperature: – 25 °C ... + 85 °C
- Switching frequency f: approx. 600 Hz
- Protection class: IP 67 to EN 60529
- Material: stainless steel
- Connection: plug-in connector M8 x 1, Ø = 6.5 mm

**Contact variants**
- IFL-N-2-8M-01ST2P
- IFL-N-2-8M-10ST2P
Inductive proximity switches / DC 3-wire

**Technical data**

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**Switching element:**
- Function:
  - A: normally open contact
  - B: normally closed contact

**Switching output:**
- P: 3-wire DC
- N: 3-wire DC
  - $U_p$: 10 ... 30 VDC
  - $I_p$: 200 mA
  - $I_0$: approx. 3.4 mA (24 V)
  - $U_d$: approx. 1.2 V (200 mA)

**Protection circuit:**
- wrong polarity,
- inductive interference,
- industrial transients and
- short-circuit protection

**Ambient temperature:**
- $-25 ^\circ C ... + 70 ^\circ C$

**Switching frequency f:**
- approx. 3 kHz

**Protection class:**
- IP 67 to EN 60529 (only with screw-on plug)

**Material:**
- housing and nuts:
  - nickel plated brass

**tightening torque for nuts:**
- A/F 13 max. 600 Ncm

**Connection:**
- plug-in connector
  - M8 x 1, Ø = 6.5 mm

**Contact variants**

**IFL 2-8M-01ST2N**

**IFL 2-8M-01ST2P**

**IFL 2-8M-10ST2N**

**IFL 2-8M-10ST2P**

**IFL 3B-8M-10P**

**Technical data**

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**Switching element:**
- Function:
  - A: normally open contact

**Switching output:**
- P: 3-wire DC
  - $U_p$: 10 ... 30 VDC
  - $I_p$: 200 mA
  - $I_0$: approx. 1.7 mA (10 V),
    - approx. 4 mA (24 V),
    - approx. 5 mA (30 V)
  - $U_d$: approx. 1.2 V (200 mA)

**Protection circuit:**
- wrong polarity,
- inductive interference,
- industrial transients and
- short-circuit protection

**Ambient temperature:**
- $-10 ^\circ C ... + 70 ^\circ C$

**Switching frequency f:**
- approx. 1500 Hz

**Protection class:**
- IP 67 to EN 60529

**Material:**
- housing and nuts:
  - nickel plated brass

**tightening torque for nuts:**
- A/F 13 max. 600 Ncm

**Connection:**
- cable LiYY 3 x 0.14 mm²,
  - length 2 m

**Contact variants**

**IFL 3B-8M-10P**

---

**IFL M 8**

- Metal enclosure
- Design M 8 x 1
- Plug-in connector
- DC 3-wire
- High switching distance
- Quasi-embeddable
  - ($x = 0.6$ mm)
Inductive proximity switches / DC 3-wire

**IFL M 8**

- Metal enclosure
- Design M 8 x 1
- Plug-in connector
- DC 3-wire

**Technical data**

- **Standards:**
  - IEC/EN 60947-5-2
  - VDE 0660-208
- **$S_n$:** 2 mm, embeddable
- **Switching element function:**
  - A: normally open contact
  - B: normally closed contact
- **Switching output:**
  - P: 3-wire DC
  - N: 3-wire DC
- **$U_{bb}$:** 10 ... 30 VDC
- **$I_e$:** 200 mA
- **$I_0$:** approx. 3.4 mA (24 V)
- **$U_d$:** approx. 1.2 V (200 mA)
- **Protection circuit:**
  - wrong polarity,
  - inductive interference,
  - industrial transients and short-circuit protection
- **Ambient temperature:**
  - – 25 °C ... + 70 °C
- **Switching frequency $f$:**
  - approx. 3 kHz
- **Protection class:** IP 67 to EN 60529
- **Material:** housing and nuts: nickel plated brass
- **Tightening torque for nuts:** A/F 13 max. 600 Ncm
- **Connection:** Plug-in connector M12 x 1

**Contact variants**

- IFL 2-8-01STN
- IFL 2-8-01STP
- IFL 2-8-10STN
- IFL 2-8-10STP

**IFL M 12**

- Metal enclosure
- Design M 12 x 1
- Cable
- DC 3-wire

**Technical data**

- **Standards:**
  - IEC/EN 60947-5-2
  - VDE 0660-208
- **$S_n$:** IFL 2-...: 2 mm, embeddable
  - IFL 4-...: 4 mm, non-embeddable
- **Switching element function:**
  - A: normally open contact
  - B: normally closed contact
- **Switching output:**
  - P: 3-wire DC
  - N: 3-wire DC
- **$U_{bb}$:** 10 ... 30 VDC
- **$I_e$:** 200 mA
- **$I_0$:** approx. 3 mA (24 V)
- **$U_d$:** approx. 1.2 V (200 mA)
- **Protection circuit:**
  - wrong polarity,
  - inductive interference,
  - industrial transients and short-circuit protection
- **Ambient temperature:**
  - – 25 °C ... + 70 °C
- **Switching frequency $f$:**
  - approx. 1 kHz (embeddable);
  - approx. 500 Hz (non-embeddable)
- **Protection class:** IP 67 to EN 60529
- **Material:** housing and nuts: nickel plated brass
- **Tightening torque for nuts:** A/F 17 max. 1500 Ncm
  - in the shell core area: max. 500 Ncm
- **Connection:** cable LiYY 3 x 0.14 mm², length 2 m

**Note:** Instead of nuts, a mounting clamp can be provided (see accessories).
Inductive proximity switches / DC 3-wire

**IFL M 12**

- Metal enclosure
- Design M 12 x 1
- Plug-in connector
- DC 3-wire

**Technical data**

| Standards: | IEC/EN 60947-5-2  
| VDE 0660-208 |
| S₁₁: | IFL 2-...: 2 mm, embeddable  
| IFL 4-...: 4 mm, non-embeddable |
| Switching element function: | A: normally open contact or  
| B: normally closed contact |
| Switching output: | P: 3-wire DC  
| N: 3-wire DC |
| U₉₅: | 10 ... 30 VDC |
| Iₑ: | 200 mA |
| Iₒ: | approx. 3 mA (24 V) |
| Uₜ: | approx. 1.2 V (200 mA) |
| Protection circuit: | wrong polarity,  
| inductive interference,  
| industrial transients and  
| short-circuit protection |
| Ambient temperature: | – 25 °C ... + 70 °C |
| Switching frequency f: |  
| P: approx. 1 kHz,  
| N: approx. 800 Hz (embeddable);  
| P: approx. 500 Hz,  
| N: approx. 330 Hz (non-embeddable) |
| Protection class: | IP 67 to EN 60529  
| Material: | housing and nuts:  
| thermoplastic (PBTP + PA 12)  
| washer: rubber (perbunan) |
| Tightening torque for nuts: | A/F 17 max. 1500 Ncm  
| * in the shell core area: max. 500 Ncm |
| Connection: | Plug-in connector M12 x 1 |
| Note: | Instead of nuts, a mounting clamp can be provided (see accessories). |

**Contact variants**

- IFL 2-12M-01STN
- IFL 4-12M-01STN
- IFL 2-12M-01STP
- IFL 4-12M-01STP
- IFL 2-12M-10STN
- IFL 4-12M-10STN
- IFL 2-12M-10STP
- IFL 4-12M-10STP

---

**IFL M 12**

- Thermoplastic enclosure
- Design M 12 x 1
- Cable
- DC 3-wire

**Technical data**

| Standards: | IEC/EN 60947-5-2  
| VDE 0660-208 |
| S₁₁: | 4 mm, non-embeddable |
| Switching element function: | A: normally open contact or  
| B: normally closed contact |
| Switching output: | P: 3-wire DC  
| N: 3-wire DC |
| U₉₅: | 10 ... 30 VDC |
| Iₑ: | 200 mA |
| Iₒ: | approx. 3 mA (24 V) |
| Uₜ: | approx. 1.2 V (200 mA) |
| Protection circuit: | wrong polarity,  
| inductive interference,  
| industrial transients and  
| short-circuit protection |
| Ambient temperature: | – 25 °C ... + 70 °C |
| Switching frequency f: |  
| P: approx. 1 kHz,  
| N: approx. 800 Hz |
| Protection class: | IP 67 to EN 60529  
| Protection class: | I, II |
| Material: | housing and nuts:  
| thermoplastic (PBTP + PA 12)  
| washer: rubber (perbunan) |
| Tightening torque for nuts: | A/F 17 max. 90 Ncm |
| Connection: | cable LiYY 3 x 0.14 mm², length 2 m |
| Note: | Instead of nuts, a mounting clamp can be provided (see accessories). |
Inductive proximity switches / DC 3-wire

**IFL M 12**

- Thermoplastic enclosure
- Design M 12 x 1
- Plug-in connector
- DC 3-wire

**Technical data**

| Standards: | IEC/EN 60947-5-2  
|            | VDE 0660-208 |
| Sₙ:        | 4 mm, non-embeddable |
| Switching element function: | A: normally open contact or  
|            | B: normally closed contact |
| Switching output: | P: 3-wire DC  
|            | N: 3-wire DC |
| Uᵦ:        | 10 ... 30 VDC |
| Iₑ:        | 200 mA |
| Iₒ:        | approx. 3 mA (24 V) |
| Uᵣ:        | approx. 1.2 V (200 mA) |
| Protection circuit: | wrong polarity,  
|            | inductive interference,  
|            | industrial transients and  
|            | short-circuit protection |
| Ambient temperature: | – 25 °C … + 70 ºC |
| Switching frequency f: | P: approx. 1 kHz,  
|            | N: approx. 800 Hz |
| Protection class: | IP 67 to EN 60529 |
| Protection class: | II, III |
| Material: | housing and nuts:  
|            | thermoplastic (PBTP + PA 12)  
|            | washer: rubber (perbunan) |

**Contact variants**

<table>
<thead>
<tr>
<th>Contact variants</th>
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</thead>
<tbody>
<tr>
<td>IFL 4-120M-01STN</td>
</tr>
</tbody>
</table>

| Connection: | Plug-in connector M12 x 1 |

**Note:** Instead of nuts, a mounting clamp can be provided (see accessories).

**IFL M 12**

- Metal enclosure
- Design M 12 x 1
- Cable
- DC 3-wire

**Technical data**

| Standards: | IEC/EN 60947-5-2  
|            | VDE 0660-208 |
| Sₙ:        | IFL 2-...: 2 mm, embeddable  
|            | IFL 4-...: 4 mm, non-embeddable |
| Switching element function: | A: normally open contact or  
|            | B: normally closed contact |
| Switching output: | P: 3-wire DC  
|            | N: 3-wire DC |
| Uᵦ:        | 10 ... 30 VDC |
| Iₑ:        | 200 mA |
| Iₒ:        | approx. 3 mA (24 V) |
| Uᵣ:        | approx. 1.2 V (200 mA) |
| Protection circuit: | wrong polarity,  
|            | inductive interference,  
|            | industrial transients and  
|            | short-circuit protection |
| Ambient temperature: | – 25 °C … + 70 ºC |
| Switching frequency f: | P: approx. 1 kHz,  
|            | N: approx. 800 Hz  
|            | (embeddable);  
|            | P: approx. 500 Hz,  
|            | N: approx. 330 Hz  
|            | (non-embeddable) |
| Protection class: | IP 67 to EN 60529 |
| Material: | housing and nuts:  
|            | nickel plated brass |

**Contact variants**

<table>
<thead>
<tr>
<th>Contact variants</th>
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</thead>
<tbody>
<tr>
<td>IFL 2-12-01N</td>
</tr>
<tr>
<td>IFL 4-12-01N</td>
</tr>
</tbody>
</table>

| Note: | Instead of nuts, a mounting clamp can be provided (see accessories).
Inductive proximity switches / DC 3-wire

**Technical data**

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**S\text{\textsubscript{n}}:**
- IFL 2-...: 2 mm, embeddable
- IFL 4-...: 4 mm, non-embeddable

**Switching element function:**
- A: normally open contact or
- B: normally closed contact

**Switching output:**
- P: 3-wire DC
- N: 3-wire DC

**U\text{\textsubscript{b}}:**
- 15 ... 34 VDC

**I\text{\textsubscript{e}}:**
- 200 mA (up to 50 °C)
- 150 mA (up to 85 °C)

**I\text{\textsubscript{0}}:**
- ≤ 17 mA (24 VDC)
- ≤ 30 mA (34 VDC)

**U\text{\textsubscript{d}}:**
- approx. 2.5 V

**Protection circuit:**
- suppressed switch-on fault impulse, wire-breakage monitoring, wrong polarity, inductive interference, industrial transients and short-circuit protection

**Ambient temperature:**
- – 25 °C ... + 85 °C

**Switching frequency f:**
- P: approx. 1200 Hz
  - (embeddable)
  - approx. 800 Hz
  - (non-embeddable)

**Protection class:**
- IP 67 to EN 60529

**Material:**
- housing and nuts:
  - nickel plated brass

**Connection:**
- cable PUR 3 x 0.25 mm², length 2 m

**Contact variants**

**IFL-N-2-12-01N**

**IFL-N-4-12-01N**

**IFL-N-2-12-01P**

**IFL-N-4-12-01P**

**IFL-N-2-12-10N**

**IFL-N-4-12-10N**

**IFL-N-2-12-10P**

**IFL-N-4-12-10P**

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**IFL M 12**

- Metal enclosure
- Design M 12 x 1
- Cable
- DC 3-wire

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**IFL M 12**

- Metal enclosure
- Design M 12 x 1
- Plug-in connector
- DC 3-wire

---

**Contact variants**

**IFL-2-12-01STN**

**IFL-2-12-01STP**

**IFL-2-12-10STN**

**IFL-2-12-10STP**

**IFL-2-12-10P**

**IFL-2-12-10P**

**Note:**
Instead of nuts, a mounting clamp can be provided (see accessories).
Inductive proximity switches / DC 3-wire

IFL M 12

**Technical data**

Standards:
- IEC/EN 60947-5-2
- VDE 0660-208

S_{2}:
- 4 mm, non-embeddable

Switching element function:
- A: normally open contact
- B: normally closed contact

Switching output:
- P: 3-wire DC
- N: 3-wire DC

U_{p}:
- 10 ... 30 VDC

I_{e}:
- 200 mA

I_{0}:
- approx. 3 mA (24 V)

U_{d}:
- approx. 1.2 V (200 mA)

Protection circuit:
- wrong polarity,
- inductive interference,
- industrial transients and short-circuit protection

Ambient temperature:
- – 25 °C ... + 70 ºC

Switching frequency f:
- approx. 500 Hz (embeddable)
- approx. 330 Hz (non-embeddable)

Protection class:
- IP 67 to EN 60529

Material:
- housing and nuts: nickel plated brass

Tightening torque for nuts:
- A/F 17 max. 1500 Ncm
- in the shell core area: max. 500 Ncm

Connection:
- Plug-in connector M12 x 1

Note:
- Instead of nuts, a mounting clamp can be provided (see accessories).

Contact variants

IFL 4-12-01STN

IFL 4-12-01STP

IFL 4-12-10STN

IFL 4-12-10STP

Contact variants

IFL-N-2-12-01STN

IFL-N-4-12-01STN

IFL-N-2-12-01STP

IFL-N-4-12-01STP

IFL-N-2-12-10STN

IFL-N-4-12-10STN

IFL-N-2-12-10STP

IFL-N-4-12-10STP

Contact variants

**Contact variants**

IFL 4-12-01STN

IFL 4-12-01STP

IFL 4-12-10STN

IFL 4-12-10STP

**Contact variants**

IFL-N-2-12-01STN

IFL-N-4-12-01STN

IFL-N-2-12-01STP

IFL-N-4-12-01STP

IFL-N-2-12-10STN

IFL-N-4-12-10STN

IFL-N-2-12-10STP

IFL-N-4-12-10STP

**Contact variants**

IFL-N-2-12-01STN

IFL-N-4-12-01STN

IFL-N-2-12-01STP

IFL-N-4-12-01STP

IFL-N-2-12-10STN

IFL-N-4-12-10STN

IFL-N-2-12-10STP

IFL-N-4-12-10STP

- Metal enclosure
- Design M 12 x 1
- Plug-in connector
- DC 3-wire
Inductive proximity switches / DC 3-wire

**IFL M 12**

- Metal enclosure
- Design M 12 x 1
- Plug-in connector
- DC 3-wire
- Stainless steel

**Technical data**

| Standards: | IEC/EN 60947-5-2  VDE 0660-208 |
| Switching element function: | A: normally open contact |
| Switching output: | P: 3-wire DC |
| Uᵦ: | 10 ... 30 VDC |
| Iₑ: | 200 mA |
| Iₒ: | approx. 3 mA (24 V) |
| Uₒ: | approx. 1.2 V (200 mA) |
| Protection circuit: | wrong polarity, inductive interference, industrial transients and short-circuit protection |
| Ambient temperature: | – 25 °C ... + 70 °C |
| Switching frequency f: | approx. 1 kHz |
| Protection class: | IP 67 to EN 60529 |
| Material: | housing and nuts: stainless steel |
| Tightening torque for nuts: | A/F 17 max. 1500 Ncm |
| Connection: | Plug-in connector M12 x 1 |
| Note: | Instead of nuts, a mounting clamp can be provided (see accessories). |

**Contact variants**

IFL 2-12-10STP-2033

![IFL 2-12-10STP-2033](image)

**IFL M 12**

- Metal enclosure
- Design M 12 x 1
- Plug-in connector
- DC 3-wire
- Stainless steel

**Technical data**

| Standards: | IEC/EN 60947-5-2  VDE 0660-208 |
| Switching element function: | A: normally open contact |
| Switching output: | P: 3-wire DC |
| Uᵦ: | 10 ... 30 VDC |
| Iₑ: | 200 mA |
| Iₒ: | approx. 3 mA (24 V) |
| Uₒ: | approx. 1.2 V (200 mA) |
| Protection circuit: | wrong polarity, inductive interference, industrial transients and short-circuit protection |
| Ambient temperature: | – 25 °C ... + 70 °C |
| Switching frequency f: | approx. 500 Hz |
| Protection class: | IP 67 to EN 60529 |
| Material: | housing and nuts: stainless steel |
| Tightening torque for nuts: | A/F 17 max. 1500 Ncm |
| Connection: | Plug-in connector M12 x 1 |
| Note: | Instead of nuts, a mounting clamp can be provided (see accessories). |

**Contact variants**

IFL 4-12-10STP-2033

![IFL 4-12-10STP-2033](image)
Inductive proximity switches / DC 3-wire

**IFL M 12**

- Metal enclosure
- Design M 12 x 1
- Cable
- DC 3-wire
- High switching distance
- Quasi-embeddable
  - (steel: x ≥ 2.4 mm)
  - (other metal: x ≥ 1.2 mm)

**Technical data**

- Standards: IEC/EN 60947-5-2
  - VDE 0660-208
- $S_n$: 4 mm, quasi-embeddable
  - (steel: x ≥ 2.4 mm)
  - (other metal: x ≥ 1.2 mm)
- Switching element function:
  - A: normally open contact
  - B: normally closed contact
- Switching output:
  - P: 3-wire DC
    - $U_{bc}$: 5 ... 40 VDC
    - $I_e$: 200 mA
    - $I_0$: approx. 0.5 mA (24 V)
    - $U_d$: approx. 1.3 V (200 mA)
- Protection circuit:
  - wrong polarity,
  - inductive interference,
  - industrial transients and
  - short-circuit protection (pulsed)
- Ambient temperature:
  - – 25 °C ... + 70 °C
- Switching frequency $f$:
  - approx. 600 Hz
    - (NO contact)
  - approx. 550 Hz
    - (NC contact)
- Protection class:
  - IP 67 to EN 60529
- Material:
  - housing and nuts:
    - nickel plated brass
- Tightening torque for nuts:
  - A/F 17 max. 1500 Ncm
  - *in the shell core area: max. 500 Ncm
- Connection:
  - cable LiYY 3 x 0.14 mm²
  - length 2 m
- Note:
  - Instead of nuts, a mounting clamp can be provided (see accessories).

**Contact variants**

**IFL 4B-12-01PK1**

**IFL 4B-12-10PK1**

**IFL-N-4B-12-10PK1**

- Metal enclosure
- Design M 12 x 1
- Cable
- DC 3-wire
- High switching distance
Inductive proximity switches / DC 3-wire

**Technical data**

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**Sₚ:**
- 4 mm, quasi-embeddable
  - (steel: x ≥ 2.4 mm)
  - (other metal: x ≥ 1.2 mm)

**Switching element function:**
- A: normally open contact or
- B: normally closed contact

**Switching output:**
- P: 3-wire DC
  - $U_p$: 5 ... 40 VDC
  - $I_p$: 200 mA

**Protection circuit:**
- wrong polarity,
- inductive interference,
- industrial transients and
- short-circuit protection (pulsed)

**Ambient temperature:**
- – 25 °C ... + 70 ºC

**Switching frequency f:**
- approx. 600 Hz
  - (NO contact)
  - approx. 550 Hz
  - (NC contact)

**Protection class:**
- IP 67 to EN 60529

**Material:**
- housing and nuts:
  - nickel plated brass

**Connection:**
- Plug-in connector M12 x 1

**Connection:**
- A/F 17 max. 1500 Ncm
  - * in the shell core area: max. 500 Ncm

**Contact variants**

**IFL 4B-12-01STPK1**

**IFL-N-4B-12-10STPK1**

---

**Technical data**

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**Sₚ:**
- 4 mm, embeddable

**Switching element function:**
- A: normally open contact

**Switching output:**
- P: 3-wire DC
  - $U_p$: 15 ... 34 VDC
  - $I_p$: 200 mA (up to 50 °C)
  - 150 mA (up to 85 °C)

  - $I_0$: ≤ 17 mA (24 VDC)
  - ≤ 30 mA (34 VDC)

  - $U_c$: approx. 2.5 V

**Protection circuit:**
- suppressed switch-on
  - fault impulse, wire-breakage
  - monitoring, wrong polarity,
  - inductive interference,
  - industrial transients and
  - short-circuit protection

**Ambient temperature:**
- – 25 °C ... + 85 ºC

**Switching frequency f:**
- approx. 800 Hz

**Protection class:**
- IP 67 to EN 60529

**Material:**
- housing and nuts:
  - nickel plated brass

**Connection:**
- Plug-in connector M12 x 1

---

**IFL M 12**

- • Metal enclosure
- • Design M 12 x 1
- • Plug-in connector
- • DC 3-wire
- • High switching distance

- • Quasi-embeddable
  - (steel: x ≥ 2.4 mm)
  - (other metal: x ≥ 1.2 mm)
Inductive proximity switches / DC 3-wire

**IFL M 12**

- Thermoplastic enclosure
- Design M 12 x 1
- Plug-in connector
- DC 3-wire

### Technical data

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**Switching element:**
- 4 mm, non-embeddable

**Function:**
- A: normally open contact

**Output:**
- P: 3-wire DC
- N: 3-wire DC

**U_{DC}:**
- 10 ... 30 VDC

**I_{P}:**
- 200 mA

**I_{N}:**
- approx. 3 mA (24 V)

**U_{D}:**
- approx. 1.2 V (200 mA)

**Protection circuit:**
- wrong polarity, inductive interference, industrial transients and short-circuit protection

**Ambient temperature:**
- – 25 °C ... + 70 ºC

**Switching frequency f:**
- P: approx. 700 Hz
- N: approx. 440 Hz

**Protection class:**
- IP 67 to EN 60529

**Material:**
- housing and nuts: thermoplastic (PBTP + PA 12)
- washer: rubber (perbunan)

**Tightening torque for nuts:**
- A/F 17 max. 90 Ncm

**Connection:**
- Plug-in connector M12 x 1

**Note:**
- Instead of nuts, a mounting clamp can be provided (see accessories).

### Contact variants

- IFL 4-120-10STN
- IFL 4-120-10STP

---

**IFL M 12**

- Metal enclosure
- Design M 12 x 1
- Cable
- DC 3-wire

### Technical data

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**Switching element:**
- 2 mm, embeddable

**Function:**
- A: normally open contact or
- B: normally closed contact

**Output:**
- P: 3-wire DC
- N: 3-wire DC

**U_{DC}:**
- 10 ... 30 VDC

**I_{P}:**
- 200 mA

**I_{N}:**
- approx. 3 mA (24 V)

**U_{D}:**
- approx. 1.2 V (200 mA)

**Protection circuit:**
- wrong polarity, inductive interference, industrial transients and short-circuit protection

**Ambient temperature:**
- – 25 °C ... + 70 ºC

**Switching frequency f:**
- P: approx. 1 kHz
- N: approx. 800 Hz

**Protection class:**
- IP 67 to EN 60529

**Material:**
- housing and nuts: nickel plated brass

**Tightening torque for nuts:**
- A/F 17 max. 1500 Ncm

**Connection:**
- Cable LiYY 3 x 0.34 mm², length 2 m

**Note:**
- Instead of nuts, a mounting clamp can be provided (see accessories).
Inductive proximity switches / DC 3-wire

**IFL M 12**

- Metal enclosure
- Design M 12 x 1
- Cable
- DC 3-wire

**Technical data**

- Standards: IEC/EN 60947-5-2
- VDE 0660-208
- Sₜₑₜ: 4 mm, non-embeddable
- Switching element function: A: normally open contact or B: normally closed contact
- Switching output: P: 3-wire DC
- N: 3-wire DC
- Uᵦₑ: 10 ... 30 VDC
- Iₑ: 200 mA
- I₀: approx. 3 mA (24 V)
- Uᵦₑ: approx. 1.2 V (200 mA)
- Protection circuit: wrong polarity, inductive interference, industrial transients and short-circuit protection
- Ambient temperature: –25 °C ... +70 °C
- Switching frequency f: P: approx. 500 Hz
- N: approx. 330 Hz
- Protection class: IP 67 to EN 60529
- Material: housing and nuts: nickel plated brass
- Tightening torque for nuts: A/F 17 max. 1500 Ncm
- * in the shell core area: max. 500 Ncm
- Connection: cable LiYY 3 x 0.34 mm², length 2 m
- Note: Instead of nuts, a mounting clamp can be provided (see accessories).

**Contact variants**

- IFL 4-12L-01N
- IFL 4-12L-01P
- IFL 4-12L-10N
- IFL 4-12L-10P

---

2-34

SCHMERSAL
Inductive proximity switches / DC 3-wire

**IFL M 12**

**Technical data**
- Standards: IEC/EN 60947-5-2
  - VDE 0660-208
- $S_n$: 2 mm, embeddable
- Switching element function:
  - A: normally open contact
  - B: normally closed contact
- Switching output:
  - P: 3-wire DC
  - N: 3-wire DC
- $U_b$: 10 ... 30 VDC
- $I_e$: 200 mA
- $I_0$: approx. 3 mA (24 V)
- $U_d$: approx. 1.2 V (200 mA)
- Protection circuit:
  - wrong polarity, inductive interference, industrial transients and short-circuit protection
- Ambient temperature: $-25 \, ^\circ C \ldots +70 \, ^\circ C$
- Switching frequency $f$:
  - P: approx. 1 kHz
  - N: approx. 800 Hz
- Protection class: IP 67 to EN 60529
- Material: housing and nuts:
  - nickel plated brass
- Tightening torque for nuts:
  - A/F 17 max. 1500 Ncm
- Connection: Plug-in connector M12 x 1
- Note: Instead of nuts, a mounting clamp can be provided (see accessories).

**Contact variants**

<table>
<thead>
<tr>
<th>Contact variants</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFL 2-12L-01STN</td>
<td><img src="image1" alt="Diagram" /></td>
</tr>
<tr>
<td>IFL 2-12L-01STP</td>
<td><img src="image2" alt="Diagram" /></td>
</tr>
<tr>
<td>IFL 2-12L-10STN</td>
<td><img src="image3" alt="Diagram" /></td>
</tr>
<tr>
<td>IFL 2-12L-10STP</td>
<td><img src="image4" alt="Diagram" /></td>
</tr>
</tbody>
</table>

**IFL M 12**

**Technical data**
- Standards: IEC/EN 60947-5-2
  - VDE 0660-208
- $S_n$: 4 mm, non-embeddable
- Switching element function:
  - A: normally open contact
  - B: normally closed contact
- Switching output:
  - P: 3-wire DC
  - N: 3-wire DC
- $U_b$: 10 ... 30 VDC
- $I_e$: 200 mA
- $I_0$: approx. 3 mA (24 V)
- $U_d$: approx. 1.2 V (200 mA)
- Protection circuit:
  - wrong polarity, inductive interference, industrial transients and short-circuit protection
- Ambient temperature: $-25 \, ^\circ C \ldots +70 \, ^\circ C$
- Switching frequency $f$:
  - P: approx. 500 Hz
  - N: approx. 330 Hz
- Protection class: IP 67 to EN 60529
- Material: housing and nuts:
  - nickel plated brass
- Tightening torque for nuts:
  - A/F 17 max. 1500 Ncm
  - * in the shell core area: max. 500 Ncm
- Connection: Plug-in connector M12 x 1
- Note: Instead of nuts, a mounting clamp can be provided (see accessories).

**Contact variants**

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<tbody>
<tr>
<td>IFL 4-12L-01STN</td>
<td><img src="image5" alt="Diagram" /></td>
</tr>
<tr>
<td>IFL 4-12L-01STP</td>
<td><img src="image6" alt="Diagram" /></td>
</tr>
<tr>
<td>IFL 4-12L-10STN</td>
<td><img src="image7" alt="Diagram" /></td>
</tr>
<tr>
<td>IFL 4-12L-10STP</td>
<td><img src="image8" alt="Diagram" /></td>
</tr>
</tbody>
</table>
Inductive proximity switches / DC 3-wire

### IFL M 12

- Thermoplastic enclosure
- Design M 12 x 1
- Cable
- DC 3-wire

#### Technical data

- **Standards:**
  - IEC/EN 60947-5-2
  - VDE 0660-208

- **Sn:**
  - 4 mm, non-embeddable

- **Switching element**
  - Function: A: normally open contact or B: normally closed contact

- **Switching output**
  - P: 3-wire DC
  - N: 3-wire DC

  - $U_p$: 10 ... 30 VDC
  - $I_p$: 200 mA

  - $U_n$: approx. 1.2 V (200 mA)

- **Protection circuit:**
  - wrong polarity, inductive interference, industrial transients and short-circuit protection

- **Ambient temperature:**
  - – 25 °C ... + 70 °C

- **Switching frequency f:**
  - P: approx. 700 Hz
  - N: approx. 400 Hz

- **Protection class:**
  - IP 67 to EN 60529

- **Material:**
  - Housing and nuts:
    - Thermoplastic (PBTP + PA 12)
  - Washer:
    - Rubber (perbunan)

- **Tightening torque for nuts:**
  - A/F 17 max. 90 Ncm

- **Connection:**
  - Cable LiYY 3 x 0.34 mm²

- **Length:** 2 m

#### Note:
- Instead of nuts, a mounting clamp can be provided (see accessories).

### IFL M 18

- Metal enclosure
- Design M 18 x 1
- Cable
- DC 3-wire

#### Technical data

- **Standards:**
  - IEC/EN 60947-5-2
  - VDE 0660-208

- **Sn:**
  - IFL 5-...: 5 mm, embeddable
  - IFL 8-...: 8 mm, non-embeddable

- **Switching element**
  - Function: A: normally open contact or B: normally closed contact

- **Switching output**
  - P: 3-wire DC
  - N: 3-wire DC

  - $U_p$: 10 ... 30 VDC
  - $I_p$: 200 mA

  - $U_n$: approx. 1.2 V (200 mA)

- **Protection circuit:**
  - wrong polarity, inductive interference, industrial transients and short-circuit protection

- **Ambient temperature:**
  - – 25 °C ... + 70 °C

- **Switching frequency f:**
  - (Embeddable) approx. 700 Hz
  - (Non-embeddable) approx. 400 Hz

- **Protection class:**
  - IP 67 to EN 60529

- **Material:**
  - Housing and nuts:
    - Nickel plated brass

- **Tightening torque for nuts:**
  - A/F 24 max. 1800 Ncm

- **Connection:**
  - Cable LiYY 3 x 0.34 mm²

- **Length:** 2 m

#### Note:
- Instead of nuts, a mounting clamp can be provided (see accessories).

### Contact variants

#### IFL M 12

- **IFL 4-120L-01N**
- **IFL 4-120L-01P**
- **IFL 4-120L-10N**
- **IFL 4-120L-10P**

#### IFL M 18

- **IFL 5-18M-01N**
- **IFL 5-18M-01P**
- **IFL 5-18M-10N**
- **IFL 5-18M-10P**

- **IFL 8-18M-01N**
- **IFL 8-18M-01P**
- **IFL 8-18M-10N**
- **IFL 8-18M-10P**

Contact variants for IFL M 12 and IFL M 18 are listed with diagrams showing the pin configurations for different models.
## Inductive proximity switches / DC 3-wire

### IFL M 18

![Image](image1.jpg)

- Metal enclosure
- Design M 18 x 1
- Plug-in connector
- DC 3-wire

### Technical data

- **Standards:** IEC/EN 60947-5-2, VDE 0660-208
- **Sₙ:**
  - IFL 5-...: 5 mm, embeddable
  - IFL 8-...: 8 mm, non-embeddable
- **Switching element function:**
  - A: normally open contact or
  - B: normally closed contact
- **Switching output:**
  - P: 3-wire DC
  - N: 3-wire DC
  - Uᵦ: 10...30 VDC
  - Iₑ: 200 mA
  - Iₒ: approx. 3 mA (24 V)
  - Uᵰ: approx. 1.2 V (200 mA)
- **Protection circuit:**
  - wrong polarity, inductive interference, industrial transients and short-circuit protection
- **Ambient temperature:** – 25 °C ... + 70 °C
- **Switching frequency f:** approx. 700 Hz (embeddable)
  - approx. 400 Hz (non-embeddable)
- **Protection class:** IP 67 to EN 60529
- **Material:** housing and nuts: nickel plated brass
- **Tightening torque for nuts:** A/F 24 max. 1800 Ncm
- **Connection:** Plug-in connector M12 x 1
- **Note:** Instead of nuts, a mounting clamp can be provided (see accessories).

### Contact variants

<table>
<thead>
<tr>
<th>Variant</th>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFL 5-18M-01STN</td>
<td><img src="image2.png" alt="Diagram" /></td>
</tr>
<tr>
<td>IFL 5-18M-01STP</td>
<td><img src="image3.png" alt="Diagram" /></td>
</tr>
<tr>
<td>IFL 5-18M-10STN</td>
<td><img src="image4.png" alt="Diagram" /></td>
</tr>
<tr>
<td>IFL 5-18M-10STP</td>
<td><img src="image5.png" alt="Diagram" /></td>
</tr>
</tbody>
</table>

### IFL M 18

![Image](image6.jpg)

- Thermoplastic enclosure
- Design M 18 x 1
- Cable
- DC 3-wire

### Technical data

- **Standards:** IEC/EN 60947-5-2, VDE 0660-208
- **Sₙ:** 8 mm, non-embeddable
- **Switching element function:**
  - A: normally open contact
- **Switching output:**
  - P: 3-wire DC
  - N: 3-wire DC
  - Uᵦ: 10...30 VDC
  - Iₑ: 200 mA
  - Iₒ: approx. 3 mA (24 V)
  - Uᵰ: approx. 1.2 V (200 mA)
- **Protection circuit:**
  - wrong polarity, inductive interference, industrial transients and short-circuit protection
- **Ambient temperature:** – 25 °C ... + 70 °C
- **Switching frequency f:** approx. 400 Hz
- **Protection class:** IP 67 to EN 60529
- **Protection class:** II, X
- **Material:** housing and nuts: thermoplastic (PBTP + PA 12)
  - washer: rubber (perbunan)
- **Tightening torque for nuts:** A/F 24 max. 300 Ncm
- **Connection:** cable LiYY 3 x 0.34 mm² length 2 m
- **Note:** Instead of nuts, a mounting clamp can be provided (see accessories).

### Contact variants

<table>
<thead>
<tr>
<th>Variant</th>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFL 8-180M-10N</td>
<td><img src="image7.png" alt="Diagram" /></td>
</tr>
<tr>
<td>IFL 8-180M-10P</td>
<td><img src="image8.png" alt="Diagram" /></td>
</tr>
</tbody>
</table>
Inductive proximity switches / DC 3-wire

**IFL M 18**

**Technical data**

- Standards: IEC/EN 60947-5-2, VDE 0660-208
- $S_{m}$: 8 mm, non-embeddable
- Switching element function: A: normally open contact
- Switching output: P: 3-wire DC
- $U_{b}$: 10 ... 30 VDC
- $I_{e}$: 200 mA
- $I_{0}$: approx. 3 mA (24 V)
- $U_{d}$: approx. 1.2 V (200 mA)
- Protection circuit: wrong polarity, inductive interference, industrial transients and short-circuit protection
- Ambient temperature: – 25 °C ... + 70 ºC
- Switching frequency $f$: approx. 400 Hz
- Protection class: IP 67 to EN 60529
- Material: housing and nuts: thermoplastic (PBTP + PA 12)
  - washer: rubber (perbunan)
- Tightening torque for nuts: A/F 24 max. 300 Ncm
- Connection: Plug-in connector M18 x 1
- Note: Instead of nuts, a mounting clamp can be provided (see accessories).

**Contact variants**

- IFL 8-180M-10STP
- IFL 5-18-01N
- IFL 8-18-01N
- IFL 5-18-01P
- IFL 8-18-01P
- IFL 5-18-10N
- IFL 8-18-10N
- IFL 5-18-10P
- IFL 8-18-10P

**IFL M 18**

**Technical data**

- Standards: IEC/EN 60947-5-2, VDE 0660-208
- $S_{m}$: IFL 5-...: 5 mm, embeddable
  - IFL 8-...: 8 mm, non-embeddable
- Switching element function: A: normally open contact or B: normally closed contact
- Switching output: P: 3-wire DC
  - N: 3-wire DC
- $U_{b}$: 10 ... 30 VDC
- $I_{e}$: 200 mA
- $I_{0}$: approx. 3 mA (24 V)
- $U_{d}$: approx. 1.2 V (200 mA)
- Protection circuit: wrong polarity, inductive interference, industrial transients and short-circuit protection
- Ambient temperature: – 25 °C ... + 70 ºC
- Switching frequency $f$: approx. 400 Hz
- Protection class: IP 67 to EN 60529
- Material: housing and nuts: nickel plated brass
- Tightening torque for nuts: A/F 24 max. 1800 Ncm
- Connection: cable LiYY 3 x 0.14 mm² length 2 m
- Note: Instead of nuts, a mounting clamp can be provided (see accessories).
Inductive proximity switches / DC 3-wire

**Technical data**

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**Sₙ:**
- IFL 5-...: 5 mm, embeddable
- IFL 8-...: 8 mm, non-embeddable

**Switching element function:**
- A: normally open contact or
- B: normally closed contact

**Switching output:**
- P: 3-wire DC
- N: 3-wire DC

**Uₑ:**
- 15...34 VDC
- 10...30 VDC

**Iₑ:**
- 200 mA (up to 50 °C)
- 150 mA (up to 85 °C)
- ≤ 17 mA (24 VDC)
- ≤ 30 mA (34 VDC)

**Uₒ:**
- approx. 2.5 V

**Protection circuit:**
- suppressed switch-on fault impulse, wire-breakage monitoring, wrong polarity, inductive interference, industrial transients and short-circuit protection

**Ambient temperature:**
- –25 °C ... + 70 °C

**Switching frequency f:**
- approx. 400 Hz

**Protection class:**
- IP 67 to EN 60529

**Material:**
- housing and nuts: nickel plated brass

**Connection:**
- cable PUR 3 x 0.25 mm², length 2 m

**Contact variants**

- IFL-N-5-18-01P
- IFL-N-8-18-01P
- IFL-N-5-18-10P
- IFL-N-8-18-10P

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**Technical data**

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**Sₙ:**
- IFL 5-...: 5 mm, embeddable
- IFL 8-...: 8 mm, non-embeddable

**Switching element function:**
- A: normally open contact or
- B: normally closed contact

**Switching output:**
- P: 3-wire DC
- N: 3-wire DC

**Uₑ:**
- 10...30 VDC

**Iₑ:**
- 200 mA

**Uₒ:**
- approx. 1.2 V (200 mA)

**Protection circuit:**
- wrong polarity, inductive interference, industrial transients and short-circuit protection

**Ambient temperature:**
- – 25 °C ... + 70 °C

**Switching frequency f:**
- approx. 400 Hz

**Protection class:**
- IP 67 to EN 60529

**Material:**
- housing and nuts: nickel plated brass

**Connection:**
- Plug-in connector M12 x 1

**Note:**
- Instead of nuts, a mounting clamp can be provided (see accessories).
Inductive proximity switches / DC 3-wire

**IFL M 18**

- Metal enclosure
- Design M 18 x 1
- Plug-in connector
- DC 3-wire

**Technical data**

- Standards: IEC/EN 60947-5-2, VDE 0660-208
- $S_n$: IFL 5-...: 5 mm, embeddable
  IFL 8-...: 8 mm, non-embeddable
- Switching element function: A: normally open contact or
  B: normally closed contact
- Switching output: $P$: 3-wire DC
  $U_b$: 15 ... 34 VDC
  $I_e$: 200 mA (up to 50 °C)
  150 mA (up to 85 °C)
- $I_0$: 200 mA (up to 50 °C)
  150 mA (up to 85 °C)
- $U_d$: approx. 2.5 V
- Protection circuit: suppressed switch-on fault impulse, wire-breakage monitoring, wrong polarity, inductive interference, industrial transients and short-circuit protection
- Ambient temperature: – 25 °C ... + 85 °C
- Switching frequency $f$: approx. 800 Hz (embeddable)
  approx. 500 Hz (non-embeddable)
- Protection class: IP 67 to EN 60529
- Material: housing and nuts: nickel plated brass
- Connection: Plug-in connector M12 x 1

**Contact variants**

- IFL-N-5-18-01STP
- IFL-N-8-18-01STP
- IFL-N-5-18-10STP
- IFL-N-8-18-10STP

**IFL M 18**

- Metal enclosure
- Design M 18 x 1
- Plug-in connector
- DC 3-wire
- Stainless steel

**Technical data**

- Standards: IEC/EN 60947-5-2, VDE 0660-208
- $S_n$: 5 mm, embeddable
- Switching element function: A: normally open contact
- Switching output: $P$: 3-wire DC
  $U_b$: 10 ... 30 VDC
  $I_e$: 200 mA
- $I_0$: approx. 3 mA (24 V)
- $U_d$: approx. 1.2 V (200 mA)
- Protection circuit: wrong polarity, inductive interference, industrial transients and short-circuit protection
- Ambient temperature: – 25 °C ... + 70 °C
- Switching frequency $f$: approx. 600 Hz
- Protection class: IP 67 to EN 60529
- Material: housing and nuts: stainless steel
- Tightening torque for nuts: A/F 24 max. 5000 Ncm
- Connection: Plug-in connector M12 x 1
- Note: Instead of nuts, a mounting clamp can be provided (see accessories).
Inductive proximity switches / DC 3-wire

IFL M 18

Technical data
Standards: IEC/EN 60947-5-2
VDE 0660-208
Sₜₙ: 5 mm, embeddable
Switching element function: A: normally open contact or B: normally closed contact
Switching output: P: 3-wire DC
N: 3-wire DC
Uᵦ: 10 ... 30 VDC
Iₑ: 200 mA
I₀: approx. 3 mA (24 V)
Uᵰ: approx. 1.2 V (200 mA)
Protection circuit: wrong polarity, inductive interference, industrial transients and short-circuit protection
Ambient temperature: – 25 °C ... + 70 °C
Switching frequency f: approx. 400 Hz
Protection class: IP 67 to EN 60529
Material: housing and nuts: nickel plated brass
Tightening torque for nuts: A/F 24 max. 1800 Ncm
Connection: cable LiYY 3 x 0.34 mm², length 2 m
Note: Instead of nuts, a mounting clamp can be provided (see accessories).

Contact variants
IFL 5-18L-01N
IFL 5-18L-01P
IFL 5-18L-10N
IFL 5-18L-10P

IFL M 18

Technical data
Standards: IEC/EN 60947-5-2
VDE 0660-208
Sₜₙ: IFL 5-...: 5 mm, embeddable
IFL 8-...: 8 mm, non-embeddable
Switching element function: A: normally open contact
Switching output: P: 3-wire DC
N: 3-wire DC
Uᵦ: 10 ... 30 VDC
Iₑ: 200 mA
I₀: approx. 1.8 mA (24 V)
Uᵰ: approx. 1.2 V (200 mA)
Protection circuit: wrong polarity and inductive interference protection
Ambient temperature: – 25 °C ... + 130 °C (dry heat)
Index -2130-1: with silicon cable for humid environments
Switching frequency f: approx. 200 Hz
Protection class: IP 67 to EN 60529
Material: housing: nickel plated brass
clamp H 18: thermoplastic
Tightening torque for nuts: A/F 24 max. 1800 Ncm
Connection: silicone cable 155 3 x 0.34 mm², length 2 m, with strain relief
Note: Normally supplied with clamp (version with nuts: ordering suffix -2130-2).

Contact variants
IFL 5-18L-10TP-2130
IFL 8-18L-10TP-2130

• Metal enclosure
• Design M 18 x 1
• Cable
• DC 3-wire
• Max. + 130 °C
• Without LED
• Clamp H 18 is included in delivery, see accessories
Inductive proximity switches / DC 3-wire

IFL M 18

Technical data

- Standards: IEC/EN 60947-5-2, VDE 0660-208
- Sn: 5 mm, embeddable
- Switching element:
  - function: A: normally open contact or B: normally closed contact
- Switching output:
  - P: 3-wire DC
  - N: 3-wire DC
  - UP: 10 ... 30 VDC
  - IP: 200 mA
  - IU: approx. 1.2 V (200 mA)
- Protection circuit:
  - wrong polarity, inductive interference, industrial transients and short-circuit protection
- Ambient temperature: – 25 °C ... + 70 °C
- Switching frequency f: approx. 400 Hz
- Protection class: IP 67 to EN 60529
- Material:
  - housing and nuts: nickel plated brass
- Tightening torque for nuts: A/F 24 max. 1800 Ncm

Contact variants

IFL 5-18L-01STN

IFL 5-18L-01STP

IFL 5-18L-10STN

IFL 5-18L-10STP

Contact variants

IFL 5-18L-10/01N

IFL 5-18L-10/01P

IFL 8-18L-10/01N

IFL 8-18L-10/01P

Contact variants

Programmable by repositioning the plug-in jumper at the terminal screws

IFL M 18

Technical data

- Standards: IEC/EN 60947-5-2, VDE 0660-208
- Sn: IFL 5-...: 5 mm, embeddable
  IFL 8-...: 8 mm, non-embeddable
- Switching element:
  - function: P: normally open contact or normally closed contact
  (Programmable by repositioning the plug-in jumper at the terminal screws)
- Switching output:
  - P: 3-wire DC, N: 3-wire DC
  - UP: 10 ... 60 VDC
  - IP: 400 mA
  - IU: approx. 5.5 mA (24 V)
  - Ud: approx. 1.5 V (400 mA)
- Protection circuit:
  - wrong polarity and inductive interference protection,
  on request: short-circuit and overload proof (Index -1665-1) Ie = 300 mA,
  Ud = approx. 1 V (300 mA)
- Ambient temperature: – 25 °C ... + 70 °C
- Switching frequency f: approx. 500 Hz
  (embeddable) approx. 350 Hz
  (non-embeddable)
- Protection class: IP 67 to EN 60529
- Material:
  - housing and nuts: nickel plated brass
- Tightening torque for nuts: A/F 24 max. 1800 Ncm

Contact variants

IFL 5-18L-10/01N

IFL 5-18L-10/01P

IFL 8-18L-10/01N

IFL 8-18L-10/01P

Contact variants

Programmable by repositioning the plug-in jumper at the terminal screws

Note: Instead of nuts, a mounting clamp can be provided (see accessories).
### Technical data

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**Sₚ:**
- 8 mm, non-embeddable

**Switching element function:**
- A: normally open contact

**Switching output:**
- P: 3-wire DC
- N: 3-wire DC

**Uₚ:**
- 10 ... 30 VDC

**Iₑ:**
- 200 mA

**Iₒ:**
- approx. 3.5 mA (24 V)

**Uₒ:**
- approx. 1.2 V (200 mA)

**Protection circuit:**
- wrong polarity, inductive interference, industrial transients and short-circuit protection

**Ambient temperature:**
- –25 °C ... +70 °C

**Switching frequency f:**
- approx. 400 Hz

**Protection class:**
- IP 67 to EN 60529

**Protection class:**
- II, [ ][ ]

**Material:**
- housing and nuts: thermoplastic (PBTP + PA 12)
- washer: rubber (perbunan)

**Tightening torque for nuts:**
- A/F 24 max. 300 Ncm

**Connection:**
- cable LiYY 3 x 0.34 mm², length 2 m

**Note:** Instead of nuts, a mounting clamp can be provided (see accessories).

### Contact variants

#### IFL 8-180L-10N

![Contact variant](IFL_8-180L-10N)

- IFL 8-180L-10N

#### IFL 8-180L-10P

![Contact variant](IFL_8-180L-10P)

- IFL 8-180L-10P

#### IFL 8-180L-10STP

![Contact variant](IFL_8-180L-10STP)

- IFL 8-180L-10STP

---

**Notes:**
- Thermoplastic enclosure
- Design M 18 x 1
- Cable
- DC 3-wire

---

**Technical data**

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**Sₚ:**
- 8 mm, non-embeddable

**Switching element function:**
- A: normally open contact

**Switching output:**
- P: 3-wire DC
- N: 3-wire DC

**Uₚ:**
- 10 ... 30 VDC

**Iₑ:**
- 200 mA

**Iₒ:**
- approx. 3.5 mA (24 V)

**Uₒ:**
- approx. 1.2 V (200 mA)

**Protection circuit:**
- wrong polarity, inductive interference, industrial transients and short-circuit protection

**Ambient temperature:**
- –25 °C ... +70 °C

**Switching frequency f:**
- approx. 400 Hz

**Protection class:**
- IP 67 to EN 60529

**Protection class:**
- II, [ ][ ]

**Material:**
- housing and nuts: thermoplastic (PBTP + PA 12)
- washer: rubber (perbunan)

**Tightening torque for nuts:**
- A/F 24 max. 300 Ncm

**Connection:**
- Plug-in connector M18 x 1

**Note:** Instead of nuts, a mounting clamp can be provided (see accessories).
Inductive proximity switches / DC 3-wire

### IFL M 18

- Thermoplastic enclosure
- Design M 18 x 1
- Wiring compartment
- DC 3-wire

#### Technical data

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**S:**
- 10 mm, non-embeddable

**Switching element function:**
- P: normally open contact
- or normally closed contact

(Programmable by repositioning the plug-in jumper at the terminal screws)

**Switching output:**
- P: 3-wire DC
- N: 3-wire DC

**U:**
- 10 ... 60 VDC

**I:**
- 400 mA
- approx. 5.5 mA (24 V)
- approx. 1.5 V (400 mA)

**Protection circuit:**
- wrong polarity and inductive interference protection, on request:
  - short-circuit and overload proof
  - (Index -1665-1) Ie = 300 mA, Ud = approx. 1 V (300 mA)

**Ambient temperature:**
- – 25 °C ... + 70 °C

**Switching frequency f:**
- approx. 350 Hz

**Protection class:**
- IP 67 to EN 60529

**Material:**
- housing and nuts: thermoplastic (PBTP + PA 12)
- washer: rubber (perbunan)

**Tightening torque for nuts:**
- A/F 24 max. 300 Ncm

**Connection:**
- Terminal screws

**Note:**
- Instead of nuts, a mounting clamp can be provided (see accessories).

### IFL M 30

- Metal enclosure
- Design M 30 x 1.5
- Cable
- DC 3-wire

#### Technical data

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**S:**
- IFL 10-...: 10 mm, embeddable
- IFL 15-...: 15 mm, non-embeddable

**Switching element function:**
- A: normally open contact

**Switching output:**
- P: 3-wire DC
- N: 3-wire DC

**U:**
- 10 ... 30 VDC
- 10 ... 20 VDC

**I:**
- 200 mA
- approx. 3.5 mA (24 V)
- approx. 1.2 V (200 mA)

**Protection circuit:**
- wrong polarity, inductive interference, industrial transients and short-circuit protection

**Ambient temperature:**
- – 25 °C ... + 70 °C

**Switching frequency f:**
- approx. 200 Hz (embeddable)
- approx. 100 Hz (non-embeddable)

**Protection class:**
- IP 67 to EN 60529

**Material:**
- housing and nuts:
  - nickel plated brass

**Tightening torque for nuts:**
- A/F 36 max. 3000 Ncm

**Connection:**
- cable LiYY 3 x 0.34 mm², length 2 m

**Note:**
- Instead of nuts, a mounting clamp can be provided (see accessories).
Inductive proximity switches / DC 3-wire

**Contact variants**

**IFL 10-30M-10ST1P**

```
IFL 10-30M-10ST1P

1
0
```  

**IFL 15-30M-10ST1P**

```
IFL 15-30M-10ST1P

1
0
```  

**Technical data**

Standards: IEC/EN 60947-5-2
            VDE 0660-208

$S_{w}$: IFL 10-...: 10 mm, embeddable
        IFL 15-...: 15 mm, non-embeddable

Switching element function:
A: normally open contact

Switching output:
P: 3-wire DC
N: 3-wire DC

$U_{b}$: 10 ... 30 VDC
$I_{e}$: 200 mA
$I_{0}$: approx. 3.5 mA (24 V)
$U_{d}$: approx. 1.2 V (200 mA)

Protection circuit:
wrong polarity, inductive interference, industrial transients and short-circuit protection

Ambient temperature: – 25 °C ... + 70 °C

Switching frequency $f$:
approx. 200 Hz (embeddable)
approx. 100 Hz (non-embeddable)

Protection class: IP 67 to EN 60529

Material:
housing and nuts: nickel plated brass

Tightening torque:
for nuts: A/F 36 max. 3000 Ncm
Connection: Plug-in connector M12 x 1

Note: Instead of nuts, a mounting clamp can be provided (see accessories).

**Contact variants**

**IFL 15-300M-10N**

```
IFL 15-300M-10N

1
0
```  

**IFL 15-300M-10P**

```
IFL 15-300M-10P

1
0
```  

**Technical data**

Standards: IEC/EN 60947-5-2
            VDE 0660-208

$S_{w}$: 15 mm, non-embeddable

Switching element function:
A: normally open contact

Switching output:
P: 3-wire DC
N: 3-wire DC

$U_{b}$: 10 ... 30 VDC
$I_{e}$: 200 mA
$I_{0}$: approx. 3.5 mA (24 V)
$U_{d}$: approx. 1.2 V (200 mA)

Protection circuit:
wrong polarity, inductive interference, industrial transients and short-circuit protection

Ambient temperature: – 25 °C ... + 70 °C

Switching frequency $f$:
approx. 100 Hz

Protection class: IP 67 to EN 60529

Protection class: II, III

Material:
housing and nuts: thermoplastic (PBTP + PA 12)
washer: rubber (perbunan)

Tightening torque:
for nuts: A/F 36 max. 400 Ncm
Connection: cable LiYY 3 x 0.34 mm², length 2 m

Note: Instead of nuts, a mounting clamp can be provided (see accessories).

**IFL M 30**

```
IFL M 30

1
0
```  

• Metal enclosure
• Design M 30 x 1.5
• Plug-in connector
• DC 3-wire

**Technical data**

Standards: IEC/EN 60947-5-2
            VDE 0660-208

$S_{w}$: IFL 10-...: 10 mm, embeddable
        IFL 15-...: 15 mm, non-embeddable

Switching element function:
A: normally open contact

Switching output:
P: 3-wire DC

$U_{b}$: 10 ... 30 VDC
$I_{e}$: 200 mA
$I_{0}$: approx. 3.5 mA (24 V)
$U_{d}$: approx. 1.2 V (200 mA)

Protection circuit:
wrong polarity, inductive interference, industrial transients and short-circuit protection

Ambient temperature: – 25 °C ... + 70 °C

Switching frequency $f$:
approx. 200 Hz (embeddable)
approx. 100 Hz (non-embeddable)

Protection class: IP 67 to EN 60529

Material:
housing and nuts: nickel plated brass

Tightening torque:
for nuts: A/F 36 max. 3000 Ncm
Connection: Plug-in connector M12 x 1

Note: Instead of nuts, a mounting clamp can be provided (see accessories).

**Contact variants**

**IFL M 30**

```
IFL M 30

1
0
```  

• Thermoplastic enclosure
• Design M 30 x 1.5
• Cable
• DC 3-wire

**Technical data**

Standards: IEC/EN 60947-5-2
            VDE 0660-208

$S_{w}$: 15 mm, non-embeddable

Switching element function:
A: normally open contact

Switching output:
P: 3-wire DC
N: 3-wire DC

$U_{b}$: 10 ... 30 VDC
$I_{e}$: 200 mA
$I_{0}$: approx. 3.5 mA (24 V)
$U_{d}$: approx. 1.2 V (200 mA)

Protection circuit:
wrong polarity, inductive interference, industrial transients and short-circuit protection

Ambient temperature: – 25 °C ... + 70 °C

Switching frequency $f$:
approx. 100 Hz

Protection class: IP 67 to EN 60529

Protection class: II

Material:
housing and nuts: thermoplastic (PBTP + PA 12)
washer: rubber (perbunan)

Tightening torque:
for nuts: A/F 36 max. 400 Ncm
Connection: cable LiYY 3 x 0.34 mm², length 2 m

Note: Instead of nuts, a mounting clamp can be provided (see accessories).
**Inductive proximity switches / DC 3-wire**

**IFL M 30**

- Metal enclosure
- Design M 30 x 1.5
- Cable with strain relief
- DC 3-wire
- Max. + 130 °C
- Without LED
- Clamp H 30 is included in delivery, see accessories

**Technical data**

Standards: IEC/EN 60947-5-2  
VDE 0660-208

$S_n$:  
IFL 10-...: 10 mm, embeddable  
IFL 15-...: 15 mm, non-embeddable

Switching element  
function: A: normally open contact  
Switching output: P: 3-wire DC  
N: 3-wire DC

$U_p$:  
10 ... 30 VDC

$I_e$:  
200 mA

$I_0$:  
approx. 3.5 mA (24 V)

$U_d$:  
approx. 1.2 V (200 mA)

Protection circuit:  
wrong polarity, inductive interference, industrial transients and short-circuit protection

Ambient temperature: – 25 °C ... + 70 °C

Switching frequency $f$:  
approx. 200 Hz (embeddable)  
approx. 100 Hz (non-embeddable)

Protection class: IP 67 to EN 60529

Material:  
housing and nuts: nickel plated brass

Tightening torque for nuts: A/F 36 max. 3000 Ncm

Connection: silicone cable 155 3 x 0.34 mm², length 2 m, with strain relief

Note: Instead of nuts, a mounting clamp can be provided (see accessories).

**Contact variants**

**IFL 10-30L-10TN**

**IFL 10-30L-10TP**

**IFL 15-30L-10TN**

**IFL 15-30L-10TP**

---

**IFL M 30**

- Metal enclosure
- Design M 30 x 1.5
- Cable with strain relief
- DC 3-wire
- Max. + 130 °C
- Without LED
- Clamp H 30 is included in delivery, see accessories

**Technical data**

Standards: IEC/EN 60947-5-2  
VDE 0660-208

$S_n$:  
IFL 10-...: 10 mm, embeddable  
IFL 15-...: 15 mm, non-embeddable

Switching element  
function: A: normally open contact  
Switching output: P: 3-wire DC  
N: 3-wire DC

$U_p$:  
10 ... 30 VDC

$I_e$:  
200 mA

$I_0$:  
approx. 1.8 mA (24 V)

$U_d$:  
approx. 1.2 V (200 mA)

Protection circuit:  
wrong polarity, inductive interference protection

Ambient temperature: – 25 °C ... + 130 °C (dry heat)

Switching frequency $f$:  
approx. 60 Hz

Protection class: IP 67 to EN 60529

Material:  
housing: nickel plated brass  
clamp H 30: thermoplastic

Tightening torque for nuts: A/F 36 max. 3000 Ncm

Connection: silicone cable 155 3 x 0.34 mm², length 2 m, with strain relief

Note: Normally supplied with clamp (version with nuts: ordering suffix -2130-2).
Inductive proximity switches / DC 3-wire

**IFL M 30**

- Metal enclosure
- Design M 30 x 1.5
- Wiring compartment
- DC 3-wire

Programmable by repositioning the plug-in jumper at the terminal screws

**Technical data**

- Standards: IEC/EN 60947-5-2, VDE 0660-208
- Switching element function:
  - P: normally open contact or normally closed contact
  - (Programmable by repositioning the plug-in jumper at the terminal screws)
- Switching output: P: 3-wire DC, N: 3-wire DC
- **U_2:** 10 ... 60 VDC
- **I_e:** 400 mA
- **I_0:** approx. 5.5 mA (24 V)
- **U_d:** approx. 1.5 V (400 mA)
- Protection circuit: wrong polarity and inductive interference protection, on request: short-circuit and overload proof

**Standards:** IEC/EN 60947-5-2, VDE 0660-208

**S_n:**
- IFL 10-...: 10 mm, embeddable
- IFL 15-...: 15 mm, non-embeddable

**Switching element function:**
- A: normally open contact or
- B: normally closed contact

**Switching output:**
- P: 3-wire DC
- N: 3-wire DC

**U_2:** 10 ... 30 VDC

**I_e:** 200 mA

**I_0:** approx. 3 mA (24 V)

**U_d:** approx. 1.2 V (200 mA)

**Protection circuit:** wrong polarity, inductive interference, industrial transients and short-circuit protection

**Ambient temperature:** –25 °C ... + 70 °C

**Switching frequency f:** approx. 200 Hz

**Protection class:** IP 65 to EN 60529

**Material:**
- Housing and nuts: nickel plated brass
- Washer: rubber (perbunan)

**Connection:**
- Terminal screws for max. 1.5 mm², with cable entry M16 x 1.5

**Note:** Instead of nuts, a mounting clamp can be provided (see accessories).

**IFL 10-30L-10/01N**

**IFL 10-30L-10/01P**

**IFL 15-30L-10/01N**

**IFL 15-30L-10/01P**

**Contact variants**

**IFL 10-30L-10/01P**

**IFL 10-30L-10/01P**

**IFL 15-30L-10/01P**

**IFL 15-300L-10TP**
Inductive proximity switches / DC 3-wire

**IFL M 30**

- Thermoplastic enclosure
- Design M 30 x 1.5
- Wiring compartment
- DC 3-wire

Programmable by repositioning the plug-in jumper at the terminal screws

**Technical data**

- Standards: IEC/EN 60947-5-2
  VDE 0660-208
- $S_n$: 15 mm, non-embeddable
- Switching element function: P: normally open contact or normally closed contact (Programmable by repositioning the plug-in jumper at the terminal screws)
- Switching output: P: 3-wire DC
  N: 3-wire DC
- $U_b$: 10 ... 60 VDC
- $I_e$: 400 mA
- $I_0$: approx. 5.5 mA (24 V)
- $U_d$: approx. 1.5 V (400 mA)
- Protection circuit: wrong polarity and inductive interference protection, on request: short-circuit and overload proof (Index -1665-1) $I_e = 300$ mA, $U_d = $ approx. 1 V (300 mA)
- Ambient temperature: $–25 \degree C ... +70 \degree C$
- Switching frequency $f$: approx. 100 Hz
- Protection class: IP 67 to EN 60529
- Protection class: II, X
- Material: housing and nuts: thermoplastic (PBTP + PA 12)
  washer: rubber (perbunan)
- Tightening torque for nuts: A/F 36 max. 400 Ncm
- Connection: Terminal screws for max. 1.5 mm$^2$, with cable entry M16 x 1.5
- Connection for cables: LiYY 3 x 0.34 mm$^2$, length 2 m
- Note: Instead of nuts, a mounting clamp can be provided (see accessories).

**Contact variants**

- **IFL 15-300L-10/01N**
- **IFL 15-300L-10/01P**

**IFL 40 x 25 x 12 mm**

- Thermoplastic enclosure
- Rectangular design 250 (40 x 25 x 12 mm)
- Cable
- DC 3-wire

Switches can be mounted adjacent to each other without interference.

**Technical data**

- Standards: IEC/EN 60947-5-2
  VDE 0660-208
- $S_n$: IFL 2-...: 2 mm, embeddable
  IFL 4-...: 4 mm, non-embeddable
- Switching element function: A: normally open contact (on request: normally closed contact (-01) is available)
- Switching output: P: 3-wire DC
  N: 3-wire DC
- $U_b$: 10 ... 30 VDC
- $I_e$: 200 mA
- $I_0$: approx. 3 mA (24 V)
- $U_d$: approx. 1.2 V (200 mA)
- Protection circuit: wrong polarity, inductive interference, industrial transients and short-circuit protection
- Ambient temperature: $–25 \degree C ... +70 \degree C$
- Switching frequency $f$: P: approx. 1 kHz,
  N: approx. 800 Hz
- Protection class: IP 67 to EN 60529
- Protection class: II, X
- Material: housing: thermoplastic (PBTP), with 2 screws M3 x 6 for rear mounting
- Connection: cable LiYY 3 x 0.34 mm$^2$, length 2 m
- Note: * maximum screwing depth: 6 mm

**Contact variants**

- **IFL 2-250-10N**
- **IFL 2-250-10P**
- **IFL 4-250-10N**
- **IFL 4-250-10P**
### Inductive proximity switches / DC 3-wire

**IFL 40 x 25 x 12 mm**

- Thermoplastic enclosure
- Rectangular design 250 (40 x 25 x 12 mm)
- Cable (sideways)
- DC 3-wire

![Image of IFL 40 x 25 x 12 mm](image)

**Technical data**

<table>
<thead>
<tr>
<th>Standards</th>
<th>IEC/EN 60947-5-2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VDE 0660-208</td>
</tr>
<tr>
<td>IFL 2-...: 2 mm, embeddable</td>
<td>S&lt;sub&gt;n&lt;/sub&gt;:</td>
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<tr>
<td>IFL 4-...: 4 mm, non-embeddable</td>
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<tr>
<td>Switching element</td>
<td></td>
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<tr>
<td>function:</td>
<td>A: normally open contact</td>
</tr>
<tr>
<td>(on request: normally closed contact (-01) is available)</td>
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<tr>
<td>Switching output:</td>
<td>P: 3-wire DC</td>
</tr>
<tr>
<td></td>
<td>N: 3-wire DC</td>
</tr>
<tr>
<td>U&lt;sub&gt;B&lt;/sub&gt;:</td>
<td>10 ... 30 VDC</td>
</tr>
<tr>
<td>I&lt;sub&gt;E&lt;/sub&gt;:</td>
<td>200 mA</td>
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<tr>
<td>I&lt;sub&gt;0&lt;/sub&gt;:</td>
<td>approx. 3 mA (24 V)</td>
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<tr>
<td>U&lt;sub&gt;D&lt;/sub&gt;:</td>
<td>approx. 1.2 V (200 mA)</td>
</tr>
<tr>
<td>Protection circuit:</td>
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</tr>
<tr>
<td></td>
<td>inductive interference,</td>
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<tr>
<td></td>
<td>industrial transients and</td>
</tr>
<tr>
<td></td>
<td>short-circuit protection</td>
</tr>
<tr>
<td>Ambient temperature:</td>
<td>– 25 °C ... + 70 °C</td>
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<td>Switching frequency f:</td>
<td>P: approx. 1 kHz,</td>
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<td></td>
<td>N: approx. 800 Hz</td>
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<td>IP 67 to EN 60529</td>
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<tr>
<td></td>
<td>II, X</td>
</tr>
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<td>Material:</td>
<td>housing: thermoplastic (PBTP),</td>
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<tr>
<td></td>
<td>with 2 screws M3 x 6</td>
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<tr>
<td></td>
<td>for rear mounting</td>
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<tr>
<td>Connection:</td>
<td>cable LiYY 3 x 0.34 mm²,</td>
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<tr>
<td></td>
<td>length 2 m</td>
</tr>
<tr>
<td>Note:</td>
<td>* maximum screwing depth: 6 mm</td>
</tr>
</tbody>
</table>

**Contact variants**

| IFL 2-250-10N-1716                  | ![Contact variant 1](image)       |
| IFL 2-250-10P-1716                 | ![Contact variant 2](image)       |
| IFL 4-250-10N-1716                 | ![Contact variant 3](image)       |
| IFL 4-250-10P-1716                 | ![Contact variant 4](image)       |

**Contact variants**

| IFL 2-250-10N-1716                  | ![Contact variant 1](image)       |
| IFL 2-250-10P-1716                 | ![Contact variant 2](image)       |
| IFL 4-250-10N-1716                 | ![Contact variant 3](image)       |
| IFL 4-250-10P-1716                 | ![Contact variant 4](image)       |
Inductive proximity switches / DC 4-wire

**IFL Ø 20 mm**

- Thermoplastic enclosure
- Design Ø 20 mm
- Cable
- DC 4-wire
- Clamp H 20 is included in delivery, see accessories

**Technical data**

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**Sₚ:**
- 10 mm, non-embeddable

**Switching element function:**
- A: normally open contact
- B: normally closed contact (antivalent)

**Switching output:**
- P: 4-wire DC

**Uᵦ:**
- 10 ... 60 VDC

**Iₑ:**
- 400 mA

**Iₒ:**
- approx. 5.5 mA (24 V)

**Uᵦ:**
- approx. 1.5 V (400 mA)

**Protection circuit:**
- wrong polarity and inductive interference protection, on request:
  - short-circuit and overload proof
    - (Index -1665-1) Iₑ = 300 mA,
    - Ud = approx. 1 V (300 mA)

**Ambient temperature:**
- – 25 °C ... + 70 °C

**Switching frequency f:**
- approx. 350 Hz

**Protection class:**
- IP 67 to EN 60529

**Protection class:**
- II, III

**Material:**
- housing and clamp H 20:
  - thermoplastic

**Connection:**
- cable LiYY 4 x 0.25 mm²,
  - length 2 m

**Contact variants**

- IFL 10-200L-11P

**IFL Ø 20 mm**

- Thermoplastic enclosure
- Design Ø 20 mm
- Plug-in connector
- DC 4-wire
- Clamp H 20 is included in delivery, see accessories

**Technical data**

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**Sₚ:**
- 10 mm, non-embeddable

**Switching element function:**
- A: normally open contact
- B: normally closed contact (antivalent)

**Switching output:**
- P: 4-wire DC

**Uᵦ:**
- 10 ... 60 VDC

**Iₑ:**
- 400 mA

**Iₒ:**
- approx. 5.5 mA (24 V)

**Uᵦ:**
- approx. 1.5 V (400 mA)

**Protection circuit:**
- wrong polarity and inductive interference protection, on request:
  - short-circuit and overload proof
    - (Index -1665-1) Iₑ = 300 mA,
    - Ud = approx. 1 V (300 mA)

**Ambient temperature:**
- – 25 °C ... + 70 °C

**Switching frequency f:**
- approx. 350 Hz

**Protection class:**
- IP 67 to EN 60529

**Protection class:**
- II, III

**Material:**
- housing and clamp H 20:
  - thermoplastic

**Connection:**
- Plug-in connector M18 x 1

**Contact variants**

- IFL 10-200L-11STP
Inductive proximity switches / DC 4-wire

**Technical data**

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**Sn:**
- 20 mm, non-embeddable

**Switching element function:**
- A: normally open contact
- B: normally closed contact
  (antivalent)

**Switching output:**
- P: 4-wire DC
- N: 4-wire DC

**Ue:**
- 10 ... 60 VDC

**Ie:**
- 400 mA

**I0:**
- approx. 5.5 mA (24 V)

**Ud:**
- approx. 1.5 V (400 mA)

**Protection circuit:**
- wrong polarity and inductive interference protection, on request:
  - short-circuit and overload proof
    (Index -1665-1) Ie = 300 mA,
    Ud = approx. 1 V (300 mA)

**Ambient temperature:**
- – 25 °C ... + 70 ºC

**Switching frequency f:**
- approx. 100 Hz

**Protection class:**
- IP 65 to EN 60529
- II, X

**Material:**
- housing and clamp H 40:
  - thermoplastic

**Connection:**
- cable LiYY 4 x 0.25 mm²,
  - length 2 m

**Contact variants**

**IFL 20-400-11TN**

**IFL 20-400-11TP**

---

**Inductive proximity switches / DC 4-wire**

**IFL Ø 40 mm**

**Technical data**

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**Sn:**
- 20 mm, non-embeddable

**Switching element function:**
- A: normally open contact
- B: normally closed contact
  (antivalent)

**Switching output:**
- P: 4-wire DC
- N: 4-wire DC

**Ue:**
- 10 ... 60 VDC

**Ie:**
- 400 mA

**I0:**
- approx. 5.5 mA (24 V)

**Ud:**
- approx. 1.5 V (400 mA)

**Protection circuit:**
- wrong polarity and inductive interference protection, on request:
  - short-circuit and overload proof
    (Index -1665-1) Ie = 300 mA,
    Ud = approx. 1 V (300 mA)

**Ambient temperature:**
- – 25 °C ... + 70 ºC

**Switching frequency f:**
- approx. 100 Hz

**Protection class:**
- IP 65 to EN 60529
- II, X

**Material:**
- housing and clamp H 40:
  - thermoplastic

**Connection:**
- Terminal screws with self-lifting pressure clamps
  - for max. 2 x 1.5 mm²,
  - with cable entry M16 x 1.5

---

**Contact variants**

**IFL 20-400-11N**

**IFL 20-400-11P**
Inductive proximity switches / DC 4-wire

**IFL M 18**

- Metal enclosure
- Design M 18 x 1
- Cable
- DC 4-wire

**Technical data**

- Standards: IEC/EN 60947-5-2  
  VDE 0660-208
- $S_n$:  
  IFL 5-...: 5 mm, embeddable  
  IFL 8-...: 8 mm, non-embeddable
- Switching element function:  
  A: normally open contact  
  and B: normally closed contact  
  (antivalent), on request also available as NO contact (-10)  
  or NC contact (-01).
- Switching output:  
  P: 4-wire DC, N: 4-wire DC  
  $U_b$: 10 ... 60 VDC  
  $I_e$: 400 mA  
  $I_0$: approx. 5.5 mA (24 V)  
  $U_d$: approx. 1.5 V (400 mA)
- Protection circuit:  
  wrong polarity and inductive interference protection,  
  on request: short-circuit and overload proof  
  (Index -1665-1) $I_e = 300$ mA,  
  $U_d = \text{approx. } 1$ V (300 mA)
- Ambient temperature: $– 25^\circ C … + 70 ^\circ C$
- Switching frequency $f$: approx. 500 Hz (embeddable)  
  approx. 350 Hz (non-embeddable)
- Protection class: IP 67 to EN 60529
- Material: housing and nuts:  
  nickel plated brass
- Tightening torque for nuts: A/F 24 max. 1800 Ncm
- Connection: cable LiYY 4 x 0.25 mm²,  
  length 2 m
- Note: Instead of nuts, a mounting clamp can be provided (see accessories).

**Contact variants**

<table>
<thead>
<tr>
<th>Model</th>
<th>Contact Variant</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFL 5-18L-11N</td>
<td><img src="image1" alt="Contact Variant" /></td>
</tr>
<tr>
<td>IFL 5-18L-11P</td>
<td><img src="image2" alt="Contact Variant" /></td>
</tr>
<tr>
<td>IFL 8-18L-11N</td>
<td><img src="image3" alt="Contact Variant" /></td>
</tr>
<tr>
<td>IFL 8-18L-11P</td>
<td><img src="image4" alt="Contact Variant" /></td>
</tr>
</tbody>
</table>

**IFL M 18**

- Metal enclosure
- Design M 18 x 1
- Plug-in connector
- DC 4-wire

**Technical data**

- Standards: IEC/EN 60947-5-2  
  VDE 0660-208
- $S_n$:  
  IFL 5-...: 5 mm, embeddable  
  IFL 8-...: 8 mm, non-embeddable
- Switching element function:  
  A: normally open contact  
  and B: normally closed contact  
  (antivalent), on request also available as NO contact (-10)  
  or NC contact (-01).
- Switching output:  
  P: 4-wire DC, N: 4-wire DC  
  $U_b$: 10 ... 60 VDC  
  $I_e$: 400 mA  
  $I_0$: approx. 5.5 mA (24 V)  
  $U_d$: approx. 1.5 V (400 mA)
- Protection circuit:  
  wrong polarity and inductive interference protection,  
  on request: short-circuit and overload proof  
  (Index -1665-1) $I_e = 300$ mA,  
  $U_d = \text{approx. } 1$ V (300 mA)
- Ambient temperature: $– 25^\circ C … + 70 ^\circ C$
- Switching frequency $f$: approx. 500 Hz (embeddable)  
  approx. 350 Hz (non-embeddable)
- Protection class: IP 67 to EN 60529
- Material: housing and nuts:  
  nickel plated brass
- Tightening torque for nuts: A/F 24 max. 1800 Ncm
- Connection: Plug-in connector M12 x 1
- Note: Instead of nuts, a mounting clamp can be provided (see accessories).
### Inductive proximity switches / DC 4-wire

**IFL M 18**

- Thermoplastic enclosure
- Design M 18 x 1
- Cable
- DC 4-wire

**Technical data**

<table>
<thead>
<tr>
<th>Standards:</th>
<th>IEC/EN 60947-5-2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VDE 0660-208</td>
</tr>
<tr>
<td>Sₙ:</td>
<td>10 mm, non-embeddable</td>
</tr>
<tr>
<td>Switching element function:</td>
<td>A: normally open contact and B: normally closed contact (antivalent)</td>
</tr>
<tr>
<td>Switching output:</td>
<td>P: 4-wire DC</td>
</tr>
<tr>
<td></td>
<td>N: 4-wire DC</td>
</tr>
<tr>
<td>Uᵦ:</td>
<td>10 ... 60 VDC</td>
</tr>
<tr>
<td>Iₑ:</td>
<td>400 mA</td>
</tr>
<tr>
<td>I₀:</td>
<td>approx. 5.5 mA (24 V)</td>
</tr>
<tr>
<td>Uᵈ:</td>
<td>approx. 1.5 V (400 mA)</td>
</tr>
<tr>
<td>Protection circuit:</td>
<td>wrong polarity and inductive interference protection, on request: short-circuit and overload proof (Index -1665-1) Iₑ = 300 mA, Uᵈ = approx. 1 V (300 mA)</td>
</tr>
<tr>
<td>Ambient temperature:</td>
<td>– 25 °C ... + 70 °C</td>
</tr>
<tr>
<td>Switching frequency f:</td>
<td>approx. 350 Hz</td>
</tr>
<tr>
<td>Protection class:</td>
<td>IP 67 to EN 60529</td>
</tr>
<tr>
<td>Protection class:</td>
<td>II, X</td>
</tr>
<tr>
<td>Material:</td>
<td>housing and nuts: thermoplastic (PBTP + PA 12)</td>
</tr>
<tr>
<td></td>
<td>washer: rubber (perbunan)</td>
</tr>
<tr>
<td>Tightening torque for nuts:</td>
<td>A/F 24 max. 300 Ncm</td>
</tr>
<tr>
<td>Connection:</td>
<td>Plug-in connector</td>
</tr>
<tr>
<td>Note:</td>
<td>Instead of nuts, a mounting clamp can be provided (see accessories).</td>
</tr>
</tbody>
</table>

**Contact variants**

**IFL 10-180L-11N**

**IFL 10-180L-11P**

**IFL M 18**

- Thermoplastic enclosure
- Design M 18 x 1
- Plug-in connector
- DC 4-wire

**Technical data**

<table>
<thead>
<tr>
<th>Standards:</th>
<th>IEC/EN 60947-5-2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VDE 0660-208</td>
</tr>
<tr>
<td>Sₙ:</td>
<td>10 mm, non-embeddable</td>
</tr>
<tr>
<td>Switching element function:</td>
<td>A: normally open contact and B: normally closed contact (antivalent)</td>
</tr>
<tr>
<td>Switching output:</td>
<td>P: 4-wire DC</td>
</tr>
<tr>
<td></td>
<td>N: 4-wire DC</td>
</tr>
<tr>
<td>Uᵦ:</td>
<td>10 ... 60 VDC</td>
</tr>
<tr>
<td>Iₑ:</td>
<td>400 mA</td>
</tr>
<tr>
<td>I₀:</td>
<td>approx. 5.5 mA (24 V)</td>
</tr>
<tr>
<td>Uᵈ:</td>
<td>approx. 1.5 V (400 mA)</td>
</tr>
<tr>
<td>Protection circuit:</td>
<td>wrong polarity and inductive interference protection, on request: short-circuit and overload proof (Index -1665-1) Iₑ = 300 mA, Uᵈ = approx. 1 V (300 mA)</td>
</tr>
<tr>
<td>Ambient temperature:</td>
<td>– 25 °C ... + 70 °C</td>
</tr>
<tr>
<td>Switching frequency f:</td>
<td>approx. 350 Hz</td>
</tr>
<tr>
<td>Protection class:</td>
<td>IP 67 to EN 60529</td>
</tr>
<tr>
<td>Protection class:</td>
<td>II, X</td>
</tr>
<tr>
<td>Material:</td>
<td>housing and nuts: thermoplastic (PBTP + PA 12)</td>
</tr>
<tr>
<td></td>
<td>washer: rubber (perbunan)</td>
</tr>
<tr>
<td>Tightening torque for nuts:</td>
<td>A/F 24 max. 300 Ncm</td>
</tr>
<tr>
<td>Connection:</td>
<td>Plug-in connector</td>
</tr>
<tr>
<td>Note:</td>
<td>Instead of nuts, a mounting clamp can be provided (see accessories).</td>
</tr>
</tbody>
</table>

**Contact variants**

**IFL 10-180L-11STP**
**Inductive proximity switches / DC 4-wire**

**IFL M 30**

- Metal enclosure
- Design M 30 x 1.5
- Cable with strain relief
- DC 4-wire

---

**Technical data**

**Standards:**
- IEC/EN 60947-5-2
- VDE 0660-208

**S₀:**
- IFL 10-...: 10 mm, embeddable
- IFL 15-...: 15 mm, non-embeddable

**Switching element function:**
- A: normally open contact
- B: normally closed contact (antivalent)

**Switching output:**
- P: 4-wire DC
- N: 4-wire DC

**Uₑ:**
- 10 ... 60 VDC

**Iₑ:**
- 400 mA

**Iₒ:**
- approx. 5.5 mA (24 V)

**Uₒ:**
- approx. 1.5 V (400 mA)

**Protection circuit:**
- wrong polarity and inductive interference protection
- on request: short-circuit and overload proof

**Ambient temperature:**
- approx. 200 Hz (embeddable)
- approx. 100 Hz (non-embeddable)

**Protection class:**
- IP 67 to EN 60529

**Material:**
- housing and nuts: nickel plated brass

**Tightening torque for nuts:**
- A/F 36 max. 3000 Ncm

**Connection:**
- cable LYY 4 x 0.25 mm², length 2 m, with strain relief

**Note:** Instead of nuts, a mounting clamp can be provided (see accessories).

---

**Contact variants**

**IFL 10-30L-11TN**

**IFL 10-30L-11TP**

**IFL 15-30L-11TN**

**IFL 15-30L-11TP**

---

**IFL M 30**

- Metal enclosure
- Design M 30 x 1.5
- Cable with strain relief
- DC 4-wire
- Max. + 110 °C (230 °F)

LED may become defective when operated above 90 °C. Operation of the switch, however, is not affected.
Inductive proximity switches / DC 4-wire

**IFL M 30**

- Thermoplastic enclosure
- Design M 30 x 1.5
- Cable with strain relief
- DC 4-wire

### Technical data

#### Standards:
- IEC/EN 60947-5-2
- VDE 0660-208

#### Switching element function:
- A: normally open contact
- B: normally closed contact (antivalent)

#### Switching output:
- P: 4-wire DC
- N: 4-wire DC

#### Switching frequency:
- approx. 100 Hz

#### Ambient temperature:
- – 25 °C ... + 70 °C

#### Protection class:
- IP 67 to EN 60529

#### Protection class:
- II, III

#### Material:
- housing and nuts: thermoplastic (PBTP + PA 12)
- washer: rubber (perbunan)

#### Tightening torque for nuts:
- A/F 36 max. 400 Ncm

#### Connection:
- cable LiYY 4 x 0.25 mm², length 2 m, with strain relief

#### Note:
- Instead of nuts, a mounting clamp can be provided (see accessories).

### Contact variants

- IFL 15-300L-11TN
- IFL 15-300L-11TP

**IFL 40 x 26 x 26 mm**

- Thermoplastic enclosure
- Rectangular design 255 (40 x 26 x 26 mm)
- Plug-in connector
- DC 4-wire

### Technical data

#### Standards:
- IEC/EN 60947-5-2
- VDE 0660-208

#### Switching element function:
- A1: normally open contact
- A2: normally open contact

#### Switching output:
- P: 4-wire DC
- 10 ... 40 VDC

#### Ie:
- 200 mA per output

#### I₀:
- approx. 2.7 mA (24 V)

#### U₀:
- approx. 1.2 V (200 mA)

#### Protection circuit:
- wrong polarity, inductive interference, industrial transients and short-circuit protection

#### Ambient temperature:
- – 25 °C ... + 70 °C

#### Switching frequency:
- approx. 650 Hz

#### Protection class:
- IP 67 to EN 60529

#### Protection class:
- II, III

#### Material:
- housing: thermoplastic (Noryl), with 2 screws M5 x ...

#### Connection:
- Plug-in connector M12 x 1

### Contact variants

- IFL 4/4-255–20STP
Inductive proximity switches / DC 4-wire

**IFL 36.5 x 36.5 x 36.5 mm**

- Thermoplastic enclosure
- Rectangular design 333E (36.5 x 36.5 x 36.5 mm)
- Cable
- DC 4-wire
- Mounting bracket HWE-1 to simplify mounting available

### Technical data

**Standards:**
IEC/EN 60947-5-2  
VDE 0660-208

**S<sub>n</sub>:**
- IFL 15-...: 15 mm, embeddable
- IFL 20-...: 21.5 mm, non-embeddable
  
(36.5 x 36.5 mm opening)

**Switching element function:**
- A: normally open contact
- B: normally closed contact
  
(antivalent)

**Switching output:**
- P: 4-wire DC
- N: 4-wire DC

**U<sub>b</sub>:**
- 10 ... 60 VDC

**I<sub>e</sub>:**
- 400 mA

**I<sub>0</sub>:**
- approx. 5.5 mA (24 V)

**U<sub>d</sub>:**
- approx. 1.5 V (400 mA)

**Protection circuit:**
- wrong polarity and inductive interference protection, on request:
- short-circuit and overload proof

(Index -1665-1)

**Ambient temperature:**
- – 25 °C ... + 70 °C

**Switching frequency f:**
- approx. 100 Hz

**Protection class:**
- IP 67 to EN 60529

**Material:**
- housing: thermoplastic (PBTP)
- cover: Luran

**Connection:**
- cable LiYY 4 x 0.25 mm²,
  
length 2 m

### Contact variants

**IFL 15-333E-11N**

**IFL 15-333E-11P**

**IFL 20-333E-11N**

**IFL 20-333E-11P**

**IFL 15-333-11N**

**IFL 15-333-11P**

**IFL 20-333-11N**

**IFL 20-333-11P**

---

**IFL 112 x 40 x 40 mm**

- Thermoplastic enclosure
- Rectangular design 333 (112 x 40 x 40 mm)
- Wiring compartment
- DC 4-wire

By repositioning the switch five different actuating directions can be selected. The selected actuating direction can be marked with a sticker.

### Technical data

**Standards:**
IEC/EN 60947-5-2  
VDE 0660-208

**S<sub>n</sub>:**
- IFL 15-...: 15 mm, embeddable
- IFL 20-...: 20 mm, non-embeddable

(36.5 x 36.5 mm opening)

**Switching element function:**
- A: normally open contact
- B: normally closed contact
  
(antivalent)

**Switching output:**
- P: 4-wire DC
- N: 4-wire DC

**U<sub>b</sub>:**
- 10 ... 60 VDC

**I<sub>e</sub>:**
- 400 mA

**I<sub>0</sub>:**
- approx. 5.5 mA (24 V)

**U<sub>d</sub>:**
- approx. 1.5 V (400 mA)

**Protection circuit:**
- wrong polarity and inductive interference protection, on request:
- short-circuit and overload proof

(Index -1665-1)

**Ambient temperature:**
- – 25 °C ... + 70 °C

**Switching frequency f:**
- approx. 100 Hz

**Protection class:**
- IP 65 to EN 60529

**Material:**
- housing: thermoplastic (PBTP)
- cover: Luran

**Connection:**
- Terminal screws with self-lifting pressure clamps for max. 2 x 1.5 mm²,
  
with cable entry M20 x 1.5

---

SCHMERSAL
Inductive proximity switches / DC 4-wire

**IFL 120 x 55 x 40 mm**

- Thermoplastic enclosure
- Rectangular design 384 (120 x 55 x 40 mm)
- Wiring compartment
- DC 4-wire

**Technical data**

Standards:  
- IEC/EN 60947-5-2  
- VDE 0660-208

S_{n}: 30 mm, non-embeddable

Switching element function:  
- A: normally open contact  
- B: normally closed contact (antivalent)

Switching output:  
- P: 4-wire DC  
- N: 4-wire DC

U_{b}: 10 ... 60 VDC

I_{e}: 400 mA

I_{0}: approx. 5.5 mA (24 V)

U_{d}: approx. 1.5 V (400 mA)

Protection circuit:  
- wrong polarity and inductive interference protection, on request:  
- short-circuit and overload proof

(Index -1665-1) I_{e} = 300 mA,  
U_{d} = approx. 1 V (300 mA)

Ambient temperature:  
- – 25 °C ... + 70 °C

Switching frequency f:  
- approx. 25 Hz

Protection class:  
- IP 67 to EN 60529

Protection class:  
- II, X

Material: housing: thermoplastic (Noryl)

Connection: Terminal screws with self-lifting pressure clamps for max. 2 x 1.5 mm², with cable entries 3 x M20 x 1.5 (break-out)

**Contact variants**

- IFL 30-384-11N
- IFL 30-384-11P

**IFL 135 x 80 x 40 mm**

- Thermoplastic enclosure
- Rectangular design 385 (135 x 80 x 40 mm)
- Wiring compartment
- DC 4-wire
- Mounting bracket HW 385-1 to simplify mounting available

**Technical data**

Standards:  
- IEC/EN 60947-5-2  
- VDE 0660-208

S_{n}: 50 mm, non-embeddable  
(on request: switching distance 70 mm)

Switching element function:  
- A: normally open contact  
- B: normally closed contact (antivalent)

Switching output:  
- P: 4-wire DC  
- N: 4-wire DC

U_{b}: 10 ... 60 VDC

I_{e}: 400 mA

I_{0}: approx. 5.5 mA (24 V)

U_{d}: approx. 1.5 V (400 mA)

Protection circuit:  
- wrong polarity and inductive interference protection, on request:  
- short-circuit and overload proof

(Index -1665-1) I_{e} = 300 mA,  
U_{d} = approx. 1 V (300 mA)

Ambient temperature:  
- – 25 °C ... + 70 °C

Switching frequency f:  
- approx. 25 Hz

Protection class:  
- IP 67 to EN 60529

Protection class:  
- II, X

Material: housing: thermoplastic (Noryl)

Connection: Terminal screws with self-lifting pressure clamps for max. 2 x 1.5 mm², with cable entries 3 x M20 x 1.5 (break-out)

**Contact variants**

- IFL 50-385-11ZNG
- IFL 50-385-11ZPG
Inductive proximity switches / DC 4-wire

IFL 135 x 80 x 40 mm

- Thermoplastic enclosure
- Rectangular design 385 (135 x 80 x 40 mm)
- Wiring compartment
- DC 4-wire
- Max. + 130 °C
- Without LED
- Mounting bracket HW 385-1 to simplify mounting available

Technical data

Standards: IEC/EN 60947-5-2
VDE 0660-208
Sₙ: 50 mm, non-embeddable
Switching element function: A: normally open contact and B: normally closed contact (antivalent)
Switching output: P: 4-wire DC
Uᵦ: 10 ... 40 VDC
Iₑ: 200 mA
I₀: approx. 4 mA (24 V)
Uᵥ: approx. 1.5 V (200 mA)
Protection circuit: wrong polarity and inductive interference protection
Ambient temperature: –25 °C ... +130 °C
Switching frequency f: approx. 50 Hz
Protection class: IP 67 to EN 60529
Protection class: II, III
Material: housing: thermoplastic (Noryl)
Connection: Terminal screws with self-lifting pressure clamps for max. 2 x 1.5 mm², with cable entries 3 x M20 x 1.5 (break-out)

Contact variants

IFL 50-385-11P-2130

Contact variants
### IFL M 18

**Technical data**

- **Standards:** IEC/EN 60947-5-2, VDE 0660-208
- **Sn:** 5 mm, embeddable
- **Switching element function:**
  - A: normally open contact or
  - B: normally closed contact
- **Switching output:**
  - U: 2-wire AC/DC
  - $U_o$: 15 ... 250 VAC/DC
  - $I_o$: 300 mA
  - approx. 0.3 mA (24 V)
  - approx. 0.5 mA (220 V)
  - $U_d$: approx. 4 V
- **Protection circuit:**
  - wrong polarity and inductive interference protection
- **Ambient temperature:** – 25 °C ... + 70 °C
- **Switching frequency f:** approx. 15 Hz
- **Protection class:** IP 67 to EN 60529
- **Material:**
  - housing and nuts: nickel plated brass
  - cover: Luran
- **Connection:**
  - cable H03VV-F 2 x 0.5 mm², length 2 m
- **Note:** Instead of nuts, a mounting clamp can be provided (see accessories).

**Contact variants**

- IFL 5-18-01A
- IFL 5-18-10A

### IFL 112 x 40 x 40 mm

**Technical data**

- **Standards:** IEC/EN 60947-5-2, VDE 0660-208
- **Sn:** 15 mm, embeddable
- **Switching element function:**
  - P: normally open contact or
  - normally closed contact
  (Programmable by repositioning the plug-in jumper at the terminal screws)
- **Switching output:**
  - U: 2-wire AC/DC
  - $U_o$: 15 ... 250 VAC/DC
  - $I_o$: 300 mA
  - approx. 0.3 mA (24 V)
  - approx. 4 V (300 mA)
- **Protection circuit:**
  - wrong polarity and inductive interference protection
- **Ambient temperature:** – 25 °C ... + 70 °C
- **Switching frequency f:** approx. 15 Hz
- **Protection class:** IP 65 to EN 60529
- **Protection class:** II, X
- **Material:**
  - housing: thermoplastic (PBTP)
  - cover: Luran
- **Connection:**
  - Terminal screws with self-lifting pressure clamps for max. 2 x 1.5 mm², with cable entry M20 x 1.5

**Contact variants**

- IFL 15-333-10/01A

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**By repositioning the switch five different actuating directions can be selected. The selected actuating direction can be marked with a sticker.**