

Series 04

22.5 mm 30.5 mm IP65 10 A 500VAC



Choose one component from each of the coloured sections to assemble a complete switch.

Product Profile

The Series 04 is a high quality switch range that includes standard pushbuttons, indicators, selectors, mushroom headed switches, key switches, and Emergency-stops.

Options include self cleaning, slow-make and snap-action switching elements.

Technical data see page 25

- IP65 Protection
- Switch Rating:
Maximum Voltage, 500VAC
Maximum Thermal Current, I_{th} = 10A
230VAC/6A, 24VDC/10A
- Raised Mounting into 22.5 mm cut out
- Flush Mounting into 30.5 mm cut out
- Illumination using Ba9s Lamps or LED's
- All standard lenses are transparent with translucent diffuser
- Screw terminal or plug-in connections

Indicator



Indicator, round, full face, 22.5 mm mounting

| Colour | Part No. |
|----------|-----------|
| ● Red | 704.000.2 |
| ● Yellow | 704.000.4 |
| ● Green | 704.000.5 |
| ● Blue | 704.000.6 |
| ○ Clear | 704.000.7 |



Indicator, flush mount, aluminium bezel, 30.5 mm mounting

| Colour | Part No. |
|----------|-------------|
| ● Red | 704.006.218 |
| ● Yellow | 704.006.418 |
| ● Green | 704.006.518 |
| ● Blue | 704.006.618 |
| ○ Clear | 704.006.718 |

For complete switch also order

For complete switch also order

Indicator



Indicator, flush mount, silver plastic bezel, 30x30 mm mounting

| Colour | Part No. |
|----------|-------------|
| ● Red | 704.202.208 |
| ● Yellow | 704.202.408 |
| ● Green | 704.202.508 |
| ● Blue | 704.202.608 |
| ○ Clear | 704.202.708 |

Non-Illuminated pushbutton



Non-Illuminated raised pushbutton, grey plastic bezel, 22.5 mm mounting

| Colour | Part No., Momentary | Part No., Maintained |
|----------|---------------------|----------------------|
| ● Red | 704.010.2 | 704.040.2 |
| ● Yellow | 704.010.4 | 704.040.4 |
| ● Green | 704.010.5 | 704.040.5 |
| ● Blue | 704.010.6 | 704.040.6 |
| ○ Clear | 704.010.7 | 704.040.7 |
| ● Black | 704.010.0 | 704.040.0 |



Non-Illuminated raised pushbutton, aluminium bezel, 22.5 mm mounting




| Colour | Part No., Momentary | Part No., Maintained |
|----------|---------------------|----------------------|
| ● Red | 704.012.2 | 704.042.2 |
| ● Yellow | 704.012.4 | 704.042.4 |
| ● Green | 704.012.5 | 704.042.5 |
| ● Blue | 704.012.6 | 704.042.6 |
| ○ Clear | 704.012.7 | 704.042.7 |
| ● Black | 704.012.0 | 704.042.0 |

For complete switch also order

For complete switch also order A

For complete switch also order A

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| | | |
|--|--|--|
|  ELEMENT |  LED |  ACCESSORIES |
|--|--|--|

Non-Illuminated pushbutton | **Illuminated pushbutton**



Non-Illuminated flush mount pushbutton, aluminium bezel, 30.5mm mounting | Non-Illuminated flush mount pushbutton, silver plastic bezel, 30x30mm mounting | Illuminated raised pushbutton, grey plastic bezel, 22.5mm mounting

| Colour | Part No., Momentary | Part No., Maintained | Colour | Part No., Momentary | Part No., Maintained | Colour | Part No., Momentary | Part No., Maintained |
|----------|---------------------|----------------------|----------|---------------------|----------------------|----------|---------------------|----------------------|
| ● Red | 704.012.218 | 704.042.218 | ● Red | 704.210.208 | 704.240.208 | ● Red | 704.030.2 | 704.060.2 |
| ● Yellow | 704.012.418 | 704.042.418 | ● Yellow | 704.210.408 | 704.240.408 | ● Yellow | 704.030.4 | 704.060.4 |
| ● Green | 704.012.518 | 704.042.518 | ● Green | 704.210.508 | 704.240.508 | ● Green | 704.030.5 | 704.060.5 |
| ● Blue | 704.012.618 | 704.042.618 | ● Blue | 704.210.608 | 704.240.608 | ● Blue | 704.030.6 | 704.060.6 |
| ○ Clear | 704.012.718 | 704.042.718 | ○ Clear | 704.210.708 | 704.240.708 | ○ Clear | 704.030.7 | 704.060.7 |
| ● Black | 704.012.018 | 704.042.018 | ● Black | 704.210.008 | 704.240.008 | | | |

For complete switch also order  **A** | For complete switch also order  **A** | For complete switch also order   **A**

Illuminated pushbutton

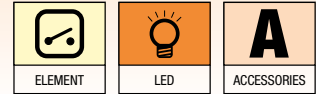


Illuminated raised pushbutton, aluminium bezel, 22.5mm mounting | Illuminated flush mount pushbutton, aluminium bezel, 30.5mm mounting | Illuminated flush mount pushbutton, silver plastic bezel, 30x30mm mounting

| Colour | Part No., Momentary | Part No., Maintained | Colour | Part No., Momentary | Part No., Maintained | Colour | Part No., Momentary | Part No., Maintained |
|----------|---------------------|----------------------|----------|---------------------|----------------------|----------|---------------------|----------------------|
| ● Red | 704.032.2 | 704.062.2 | ● Red | 704.032.218 | 704.062.218 | ● Red | 704.230.208 | 704.260.208 |
| ● Yellow | 704.032.4 | 704.062.4 | ● Yellow | 704.032.418 | 704.062.418 | ● Yellow | 704.230.408 | 704.260.408 |
| ● Green | 704.032.5 | 704.062.5 | ● Green | 704.032.518 | 704.062.518 | ● Green | 704.230.508 | 704.260.508 |
| ● Blue | 704.032.6 | 704.062.6 | ● Blue | 704.032.618 | 704.062.618 | ● Blue | 704.230.608 | 704.260.608 |
| ○ Clear | 704.032.7 | 704.062.7 | ○ Clear | 704.032.718 | 704.062.718 | ○ Clear | 704.230.708 | 704.260.708 |

For complete switch also order   **A** | For complete switch also order   **A** | For complete switch also order   **A**

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Keylock switch

| <p>Keylock switch 2 position, flush mount, 30x30 mm mounting</p> | | | | <p>Keylock switch 3 position, raised, 22.5 mm mounting</p> | | | | <p>Keylock switch 3 position, flush mount, 30.5 mm mounting</p> | | | |
|--|-------------|----------------------------|---------|--|-----------|-----------------------------------|-----------|---|-------------|-----------------------------------|-----------|
| | | <p>Mom. 42° Maint. 90°</p> | | | | <p>Mom./Maint. 42° Maint. 90°</p> | | | | <p>Mom./Maint. 42° Maint. 90°</p> | |
| Graphic | Part No. | Function | Key out | Graphic | Part No. | Function | Key out | Graphic | Part No. | Function | Key out |
| 5 | 704.343.008 | Momentary | A | 7 | 704.115.0 | Momentary | A | 10 | 704.113.018 | Maintained | C + A + B |
| 6 | 704.341.008 | Maintained | C | 7 | 704.114.0 | Maintained | A | 9 | 704.115.018 | Momentary | A |
| 6 | 704.342.008 | Maintained | C + B | 7 | 704.116.0 | Maintained | C + B | 9 | 704.114.018 | Maintained | A |
| | | | | 8 | 704.113.0 | Maintained | C + A + B | 9 | 704.116.018 | Maintained | C + B |

For complete switch also order **A**

For complete switch also order **A**

For complete switch also order **A**

Keylock switch **Selector switch**

| <p>Keylock switch 3 position, flush mount, 30x30 mm mounting</p> | | | | <p>Selector switch short lever 2 position, raised, 22.5 mm mounting</p> | | | | <p>Selector switch short lever 2 position, flush mount, 30.5 mm mounting</p> | | | |
|--|-------------|-----------------------------------|-----------|---|-----------|----------------------------|--------------|--|-------------|----------------------------|-----------|
| | | <p>Mom./Maint. 42° Maint. 90°</p> | | | | <p>Mom. 42° Maint. 90°</p> | | | | <p>Mom. 42° Maint. 90°</p> | |
| Graphic | Part No. | Function | Key out | Graphic | Part No. | Function | Bezel | Graphic | Part No. | Function | Bezel |
| 11 | 704.335.008 | Momentary | A | 13 | 704.412.0 | Momentary | Grey plastic | 15 | 704.413.018 | Momentary | Aluminium |
| 11 | 704.334.008 | Maintained | A | 13 | 704.413.0 | Momentary | Aluminium | 16 | 704.411.018 | Maintained | Aluminium |
| 11 | 704.336.008 | Maintained | C + B | 14 | 704.410.0 | Maintained | Grey plastic | | | | |
| 12 | 704.333.008 | Maintained | C + A + B | 14 | 704.411.0 | Maintained | Aluminium | | | | |

For complete switch also order **A**

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Selector switch

| <p>Selector switch short lever 2 position, flush mount, 30x30mm mounting</p> | | | | <p>Selector switch short lever 3 position, raised, 22.5 mm mounting</p> | | | | <p>Selector switch short lever 3 position, flush mount, 30.5 mm mounting</p> | | | |
|--|-------------|------------|----------------|---|-----------|------------|--------------|--|-------------|------------|-----------|
| | | | | | | | | | | | |
| Graphic | Part No. | Function | Bezel | Graphic | Part No. | Function | Bezel | Graphic | Part No. | Function | Bezel |
| 17 | 704.512.008 | Momentary | Silver plastic | 19 | 704.404.0 | Momentary | Grey plastic | 20 | 704.405.018 | Momentary | Aluminium |
| 18 | 704.510.008 | Maintained | Silver plastic | 19 | 704.405.0 | Momentary | Aluminium | 20 | 704.403.018 | Maintained | Aluminium |
| | | | | 19 | 704.402.0 | Maintained | Grey plastic | | | | |
| | | | | 19 | 704.403.0 | Maintained | Aluminium | | | | |
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For complete switch also order **A**

For complete switch also order **A**

For complete switch also order **A**

Selector switch




| <p>Selector switch short lever 3 position, flush mount, 30x30mm mounting</p> | | | | <p>Selector switch long lever 2 position, raised, 22.5 mm mounting</p> | | | | <p>Selector switch long lever 2 position, flush mount, 30.5 mm mounting</p> | | | |
|--|-------------|------------|----------------|--|-----------|------------|--------------|---|-------------|------------|-----------|
| | | | | | | | | | | | |
| Graphic | Part No. | Function | Bezel | Graphic | Part No. | Function | Bezel | Graphic | Part No. | Function | Bezel |
| 21 | 704.504.008 | Momentary | Silver plastic | 22 | 704.102.0 | Momentary | Grey plastic | 24 | 704.103.018 | Momentary | Aluminium |
| 21 | 704.502.008 | Maintained | Silver plastic | 22 | 704.103.0 | Momentary | Aluminium | 25 | 704.101.018 | Maintained | Aluminium |
| | | | | 23 | 704.100.0 | Maintained | Grey plastic | | | | |
| | | | | 23 | 704.101.0 | Maintained | Aluminium | | | | |
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For complete switch also order **A**




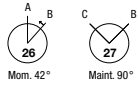


For complete switch also order **A**

For complete switch also order **A**

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| | | |
|--|--|--|
|  ELEMENT |  LED |  ACCESSORIES |
|--|--|--|

 Selector switch

|  | | | |  | | | |  | | | |
|---|-------------|------------|----------------|--|-----------|------------|--------------|---|-------------|------------|-----------|
| Selector switch long lever 2 position, flush mount, 30 x 30 mm mounting | | | | Selector switch long lever 3 position, raised, 22.5 mm mounting | | | | Selector switch long lever 3 position, flush mount, 30.5 mm mounting | | | |
|  | | | |  | | | |  | | | |
| Graphic | Part No. | Function | Bezel | Graphic | Part No. | Function | Bezel | Graphic | Part No. | Function | Bezel |
| 26 | 704.302.008 | Momentary | Silver plastic | 28 | 704.094.0 | Momentary | Grey plastic | 29 | 704.095.018 | Momentary | Aluminium |
| 27 | 704.300.008 | Maintained | Silver plastic | 28 | 704.095.0 | Momentary | Aluminium | 29 | 704.093.018 | Maintained | Aluminium |
| | | | | 28 | 704.092.0 | Maintained | Grey plastic | | | | |
| | | | | 28 | 704.093.0 | Maintained | Aluminium | | | | |
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For complete switch also order  **A**

For complete switch also order  **A**

For complete switch also order  **A**

 Selector switch

 Buzzer

|  | | | |  | | | |  | | | |
|---|-------------|------------|---------------|--|---------------------|------------|-------------------|---|--|--|--|
| Selector switch long lever 3 position, flush mount, 30 x 30 mm mounting | | | | Buzzer, raised, 22.5 mm mounting, IP65, 24VDC, 95dB ±8 at a distance of 0.1m | | | | Buzzer, flush mount, 30.5 mm mounting, IP40, 24VDC, 95dB ±8 at a distance of 0.1m | | | |
|  | | | | | | | | | | | |
| Graphic | Part No. | Function | Bezel | Part No. | Front finish | Part No. | Front finish | | | | |
| 30 | 704.294.008 | Momentary | Black plastic | 14-810.002 | Black plastic | 14-810.910 | Black aluminium | | | | |
| 30 | 704.292.008 | Maintained | Black plastic | 14-810.902 | Nickel-plated brass | 14-810.918 | Natural aluminium | | | | |
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For complete switch also order  **A**

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Switching element



Switching element, screw terminal, snap-action with silver self-cleaning contacts

| Part No. | Contact type |
|---|--------------|
| 704.900.1 | 1NO |
| 704.900.2 | 1NC |
| 704.900.3 | 2NO |
| 704.900.4 | 2NC |
| 704.900.5 | 1NO/1NC |
| Other contact materials and terminals available. Please contact us. | |



Switching element, plug-in terminal, 6.3 mm, snap-action with self-cleaning silver contacts

| Part No. | Contact type |
|---|--------------|
| 704.905.1 | 1NO |
| 704.905.2 | 1NC |
| 704.905.3 | 2NO |
| 704.905.4 | 2NC |
| 704.905.5 | 1NO/1NC |
| Other contact materials and terminals available. Please contact us. | |



Switching element, screw terminal, snap-action with silver self-cleaning contacts

| Part No. | Contact type |
|---|--------------|
| 704.910.1 | 1NO |
| 704.910.2 | 1NC |
| 704.910.3 | 2NO |
| 704.910.4 | 2NC |
| 704.910.5 | 1NO/1NC |
| Other contact materials and terminals available. Please contact us. | |

Switching element



Switching element, plug-in terminal, 6.3 mm, slow-make with forced opening silver contacts

| Part No. | Contact type |
|---|--------------|
| 704.915.1 | 1NO |
| 704.915.2 | 1NC |
| 704.915.3 | 2NO |
| 704.915.4 | 2NC |
| 704.915.5 | 1NO/1NC |
| Other contact materials and terminals available. Please contact us. | |

LED



LED, Ba9s, single chip, 6 Volt and 12 Volt

| Colour | Part No. | Voltage |
|--------|--------------|----------------|
| Red | 10-2506.1082 | 6VDC, 10/17mA |
| Yellow | 10-2506.1084 | 6VDC, 10/17mA |
| Green | 10-2506.1085 | 6VDC, 10/17mA |
| Blue | 10-2506.1086 | 6VDC, 10/17mA |
| White | 10-2506.1089 | 6VDC, 10/17mA |
| Red | 10-2509.1142 | 12VAC/DC, 15mA |
| Yellow | 10-2509.1144 | 12VAC/DC, 15mA |
| Green | 10-2509.1145 | 12VAC/DC, 15mA |
| Blue | 10-2509.1146 | 12VAC/DC, 15mA |
| White | 10-2509.1149 | 12VAC/DC, 15mA |




LED, Ba9s, single chip, 24 Volt and 28 Volt

| Colour | Part No. | Voltage |
|--------|--------------|----------------|
| Red | 10-2512.1142 | 24VAC/DC, 15mA |
| Yellow | 10-2512.1144 | 24VAC/DC, 15mA |
| Green | 10-2512.1145 | 24VAC/DC, 15mA |
| Blue | 10-2512.1146 | 24VAC/DC, 15mA |
| White | 10-2512.1149 | 24VAC/DC, 15mA |
| Red | 10-2513.1142 | 28VAC/DC, 15mA |
| Yellow | 10-2513.1144 | 28VAC/DC, 15mA |
| Green | 10-2513.1145 | 28VAC/DC, 15mA |
| Blue | 10-2513.1146 | 28VAC/DC, 15mA |
| White | 10-2513.1149 | 28VAC/DC, 15mA |

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| LED | | | A Accessories | | | | | |
|--|--------------|---------------|---|--------------|--------------|---|--|--|
|  <p>LED, Ba9s, single chip, 48 Volt</p> | | |  <p>LED, Ba9s, single chip, 130 Volt and 230 Volt</p> | | |  <p>Lamp/LED block, screw terminal</p> | | |
| Colour | Part No. | Voltage | Colour | Part No. | Voltage | Part No. | | |
| ● Red | 10-2519.1052 | 48VAC/DC, 6mA | ● Red | 10-2H24.2052 | 130VAC / 5mA | 704.950.0* | | |
| ● Yellow | 10-2519.1054 | 48VAC/DC, 6mA | ● Yellow | 10-2H24.2054 | 130VAC / 5mA | | | |
| ● Green | 10-2519.1055 | 48VAC/DC, 6mA | ● Green | 10-2H24.2055 | 130VAC / 5mA | | | |
| ● Blue | 10-2519.1056 | 48VAC/DC, 6mA | ● Blue | 10-2H24.2056 | 130VAC / 5mA | | | |
| ○ White | 10-2519.1059 | 48VAC/DC, 6mA | ○ White | 10-2H24.2059 | 130VAC / 5mA | | | |
| | | | ● Red | 10-2H24.2042 | 230VAC / 3mA | | | |
| | | | ● Yellow | 10-2H24.2044 | 230VAC / 3mA | | | |
| | | | ● Green | 10-2H24.2045 | 230VAC / 3mA | | | |
| | | | ● Blue | 10-2H24.2046 | 230VAC / 3mA | | | |
| | | | ○ White | 10-2H24.2049 | 230VAC / 3mA | | | |
| | | | | | | * Other terminals available. Please contact us. | | |

| A Accessories | | | | | | | | |
|---|----------|-----------|---|-----------|----------|---|--|--|
|  <p>Lamp/LED block, plug-in terminal, 6.3 mm</p> | | |  <p>Lens cap, round, transparent, plastic for raised and flush indicators with bezel and pushbutton actuators</p> | | |  <p>Lens cap raised, round, transparent, plastic for raised and flush mount pushbutton actuators</p> | | |
| Part No. | Colour | Part No. | Colour | Part No. | Colour | Part No. | | |
| 704.950.1* | ● Red | 704.602.2 | ● Red | 704.611.2 | ● Red | 704.611.2 | | |
| | ● Yellow | 704.602.4 | ● Yellow | 704.611.4 | ● Yellow | 704.611.4 | | |
| | ● Green | 704.602.5 | ● Green | 704.611.5 | ● Green | 704.611.5 | | |
| | ● Blue | 704.602.6 | ● Blue | 704.611.6 | ● Blue | 704.611.6 | | |
| | ○ Clear | 704.602.7 | ○ Clear | 704.611.7 | ○ Clear | 704.611.7 | | |
| | | | For complete lens also order diffuser | | | For complete lens also order diffuser | | |
| * Other terminals available. Please contact us. | | | 704.609.9 (see page 24) | | | 704.610.9 (see page 24) | | |

Series 04

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A Accessories



Lens cap, round, aluminium anodised for raised and flush mount pushbutton actuators



Protective cover, raised pushbutton



Protective front ring with silicon membrane for raised or flush mount pushbutton

| Colour | Part No. | Comment | Part No. | Part No. | Size |
|----------|------------|-------------------------|-----------|----------|--|
| ● Red | 704.601.2 | | 704.925.0 | 1 | 704.600.3 29 mm Ø for raised pushbutton |
| ● Yellow | 704.601.4 | | | 2 | 704.955.3 35 mm Ø for flush mount pushbutton |
| ● Blue | 704.601.6 | | | | |
| ● Silver | 704.601.8 | | | | |
| ● Silver | 704.601.81 | Illuminated central dot | | | |
| ● Black | 704.601.0 | | | | |
| ● Black | 704.601.01 | Illuminated central dot | | | |
| ● Silver | 704.601.9 | Stainless steel | | | |

A Accessories



Emergency-stop protective shroud, yellow painted aluminium with 22.5 mm mounting hole



Emergency-stop switch label, 60 mm Ø



Emergency-stop switch enclosure 94 mm (w) x 94 mm (h) x 81 mm (d), anti twist hole. Cable gland M20, IP66

| Part No. | Part No. | Markings | Part No. |
|-----------|-----------|-----------------|-------------|
| 704.927.4 | 704.963.5 | NOT-AUS | 1 704.945.0 |
| | 704.963.6 | EMERGENCY-STOP | 2 704.945.6 |
| | 704.963.7 | ARRET D'URGENCE | |
| | 704.963.8 | NOT-HALT | |

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A Accessories



Emergency-stop switch enclosure with 22.5 mm \varnothing mounting hole, 65 mm (w) x 65 mm (h) x 81 mm (d), anti twist hole. Cable gland M20, IP66

| | Part No. |
|---|-----------|
| 1 | 704.945.7 |
| 2 | 704.945.6 |
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Emergency-stop switch enclosure, with 22.5 mm \varnothing mounting hole, 94 mm (w) x 65 mm (h) x 81 mm (d), anti twist hole. Cable gland M20, IP66

| | Part No. |
|---|-----------|
| 1 | 704.945.8 |
| 2 | 704.945.6 |
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Blanking plate

| Part No. | Mounting hole |
|-----------|-----------------------|
| 704.960.7 | 22.5 mm \varnothing |
| 704.964.8 | 30.5 mm \varnothing |
| 704.964.9 | 30x30 mm |
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A Accessories



Flush mount bezel for 30.5 \varnothing mounting

| Part No. | Product description |
|----------|---|
| 1 | 704.955.0 Aluminium, black anodised |
| 2 | 704.955.1 Aluminium, natural anodised |
| 3 | 704.955.9 Stainless steel |
| 4 | 704.955.3 Alu, natural anodised with seal |
| | |
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Lens remover for round pushbuttons and indicators. LED and lamp remover for round and square pushbuttons and indicators

| Part No. |
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| 700.006.0 |
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Lens remover for square pushbuttons and indicators

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|--------|
| 98-968 |
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A Accessories

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|---|----------|--|-----------|--|-------|-----------|-----------|--------|
| Mounting flange | | Diffuser for raised indicator, diffuser for flat lens indicator and pushbutton, diffuser for raised pushbutton | | Marking plate selfadhesive, aluminium finish or black, for raised and flush mount push buttons | | | | |
| Part No. | Material | Image | Part No. | Product description | Image | Part No. | Size | Colour |
| 704.960.5 | Metal | 1 | 704.608.9 | Diffuser for raised indicator | 1 | 704.968.2 | 22.5 mm Ø | Black |
| 704.950.5 | Plastic | 2 | 704.609.9 | Diffuser for flat lens | 2 | 704.968.3 | 30.5 mm Ø | Black |
| | | 3 | 704.610.9 | Diffuser for raised illum. pushbutton | | | | |
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A Accessories

|  | |  | | | | | |
|--|-----------|--|-----------|-------|-----------|----------|-----------|
| Engraving Label for Marking plate, selfadhesive, natural anodised or black aluminium | | Engraving Label for flat square products, selfadhesive natural anodised or black aluminium | | | | | |
| Image | Part No. | Size | Colour | Image | Part No. | Size | Colour |
| 1 | 704.968.0 | 23.5x14.5 mm | Aluminium | 1 | 704.968.4 | 35x18 mm | Aluminium |
| 2 | 704.968.1 | 23.5x14.5 mm | Black | 2 | 704.968.5 | 35x18 mm | Black |
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Snap-action switching element

Switching system

The double-break, snap-action switching element is equipped with one or two independent contact systems, acting as normally open or normally closed contact. The snap-action switching element is fitted with self-cleaning contacts.

Up to 3 switching elements can be snapped to each actuator.

Snap-action switching elements are not permissible for emergency-stop pushbuttons!

Material

Material of contact

Hard Silver, Gold/Silver, Silver/Palladium (for aggressive atmospheres)

Switch housing

Polycarbonate (PC)

Mechanical characteristics

Terminals

Screw terminals

Plug-in terminals 6.3x0.8mm

max. wire cross-section 2x2.5mm²

max. wire cross-section of stranded cable 2x1.5mm²

For switches with plug-in terminals it is necessary to provide insulation sleeves and to maintain a spacing of 65mm between rows (mounting dimensions)

Tightening torque

Screws at the mounting flange max. 25Ncm

Screws at switching element max. 50Ncm

Actuating force

1 Normally closed 1.9N

1 Normally open 2N

Actuating travel

5.8mm ±0.2mm

Rebound time

≤3ms

Mechanical lifetime

(with 1 switching element)

| | | |
|-----------------------------------|--------------|---------------------|
| Pushbutton, maintained action | 1.5 million | Cycles of operation |
| Pushbutton momentary action | 3 million | Cycles of operation |
| Selector switch maintained action | 1.25 million | Cycles of operation |
| Selector switch momentary action | 2.5 million | Cycles of operation |
| Keylock switch maintained action | 25 000 | Cycles of operation |
| Keylock switch momentary action | 50 000 | Cycles of operation |

Electrical characteristics

Standards

The switches comply with the „Standards for low-voltage switching devices“ EN IEC 60947-5-1

Rated Insulation Voltage Ui

500VAC/600VDC, as per EN IEC 60947-5-1

Contact resistance

New state ≤50mΩ as per DIN IEC 60512-2-4

Conventional free air thermal current Ith

10A, as per EN IEC 60947-5-1

the maximum current in continuous operation and at ambient temperature must not exceed the quoted maximum values.

Isolation resistance

≥10MΩ between open contacts at 500VDC, as per DIN IEC 60512-2-10

Switch rating

At switch rating AC for Gold/Silver, Silver/Palladium and Hard Silver contacts service category AC-15, as per EN IEC 60947-5-1 (cosφ 0.3)

| | | | |
|---------|--------|--------|--------|
| Voltage | 230VAC | 400VAC | 500VAC |
| Current | 6A | 4A | 2.5A |

At switch rating DC for Gold-, Silver- and Hard Silver contacts service category DC-13, as per EN IEC 60947-5-1

| | | | |
|---------|-------|-------|--------|
| Voltage | 24VDC | 60VDC | 110VDC |
| Current | 10A | 3A | 1A |

Recommended minimum operational data

Gold/Silver contacts:

| | | | |
|---------|------|-------|--------|
| Voltage | 5VDC | 24VDC | 110VDC |
| Current | 15mA | 5mA | 2mA |

Hard Silver contacts:

| | | |
|---------|-------|--------|
| Voltage | 24VDC | 110VDC |
| Current | 50mA | 10mA |

Protection class

Indicators and switches, fit for mounting into devices with protection class II

Environmental conditions

Storage temperature

-40°C ... +85°C

Operating temperature

-25°C ... +55°C

Shock resistance

(single impacts, semi-sinusoidal)

300m/s²puls width 11ms, as per EN IEC 60068-2-27

Vibration resistance

(sinusoidal)

100m/s² at 10Hz ... 500Hz, amplitude 0.75mm, as per EN IEC 60068-2-6

Approvals

Approbations

CB (IEC 60947)

CCC

CSA

Germanischer Lloyd

GOST

SEV

UL

Declaration of conformity

CE

NF F16-102

Slow-make switching element

Switching system

The double-break, slow-make switching element is equipped with one or two independent contact systems, acting as normally open or normally closed contact. The normally closed contact has forced opening.

Slow-make contacts with forced action are ideal for high switch ratings.

Up to 3 switching elements can be snapped to each actuator.

For the emergency-stop pushbutton use the slow-make switching element (max. 2).

Material

Material of contact

Hard Silver, Gold/Silver, Silver/Palladium (for aggressive atmospheres)

Switch housing

Polycarbonate (PC)

Mechanical characteristics

Terminals

Screw terminals

Plug-in terminals 6.3x0.8mm

max. wire cross-section 2x2.5mm²

max. wire cross-section of stranded cable 2 x 1.5mm²

For switches with plug-in terminals it is necessary to provide insulation sleeves and to maintain a spacing of 65mm between rows (mounting dimensions)

Tightening torque

Screws at the mounting flange max. 25Ncm

Screws at switching element max. 50Ncm

Actuating force

1 Normally closed 2N

1 Normally open 3.1N

Actuating travel

5.8mm ±0.2mm

Rebound time

≤1 ms

Mechanical lifetime

(with 1 switching element)

Pushbutton, maintained action 1.5 million Cycles of operation

Pushbutton momentary action 3 million Cycles of operation

Selector switch maintained action 1.25 million Cycles of operation

Selector switch momentary action 2.5 million Cycles of operation

Emergency-stop switch 50 000 Cycles of operation

Keylock switch maintained action 25 000 Cycles of operation

Keylock switch momentary action 50 000 Cycles of operation

Electrical characteristics

Standards

The switches comply with the „Standards for low-voltage switching devices“ EN IEC 60947-5-1

Rated Insulation Voltage Ui

500VAC/600VDC, as per EN IEC 60947-5-1

Contact resistance

New state ≤50mΩ as per DIN IEC 60512-2-4

Isolation resistance

≥10MΩ between open contacts at 500VDC, as per DIN IEC 60512-2-10

Conventional free air thermal current Ith

10A, as per EN IEC 60947-5-1

the maximum current in continuous operation and at ambient temperature must not exceed the quoted maximum values.

Switch rating

At switch rating AC for Gold/Silver, Silver/Palladium and Hard Silver contacts service category AC-15, as per EN IEC 60947-5-1 (cosφ 0.3)

| | | | |
|---------|--------|--------|--------|
| Voltage | 230VAC | 400VAC | 500VAC |
| Current | 7A | 5A | 4A |

At switch rating DC for Gold-, Silver- and Hard Silver contacts service category DC-13, as per EN IEC 60947-5-1

| | | | | |
|---------|-------|-------|--------|--------|
| Voltage | 24VDC | 60VDC | 110VDC | 250VDC |
| Current | 10A | 5A | 2.5A | 0.6A |

Recommended minimum operational data

Gold/Silver contacts:

| | | |
|---------|-------|--------|
| Voltage | 24VDC | 110VDC |
| Current | 10mA | 2mA |

Hard Silver contacts:

| | | |
|---------|-------|--------|
| Voltage | 24VDC | 110VDC |
| Current | 50mA | 10mA |

Protection class

Indicators and switches, fit for mounting into devices with protection class II

Environmental conditions

Storage temperature

-40 °C ... +85 °C

Operating temperature

-40 °C ... +55 °C

Shock resistance

(single impacts, semi-sinusoidal)

300m/s² puls width 11 ms, as per EN IEC 60068-2-27

Vibration resistance

(sinusoidal)

100m/s² at 10Hz ... 500Hz, amplitude 0.75mm, as per EN IEC 60068-2-6

Approvals

Approbations

CB (IEC 60947)

CCC

CSA

Germanischer Lloyd

GOST

SEV

UL

Declaration of conformity

CE

NF F16-102

Buzzer

Buzzer system

System

Piezo disc

Material

Alarm buzzer case

Polyamide

Front cap

Plastic Polyamide

Metal Nickel-plated brass (sea-water proof)

Mechanical characteristics

Terminals

Plug-in terminal 2.8x0.5mm

Electrical characteristics

Frequency (tone)

approx. 2.8kHz continuous tone only

Sound pressure

95 db (A) ±8dB at a distance of 0.1 m

Operation Voltage/Current

Operation Voltage 24VDC ±10%

Operation Current ≤25 mA

Environmental conditions

Storage temperature

-35 °C ... +85 °C

Operating temperature

-25 °C ... +55 °C

Protection degree

as per EN IEC 60529, frontside

IP40, devices flush mounting

IP65, devices raised mounting

Approvals

Declaration of conformity

CE

NF F16-102

Actuator

Material

Front ring

Polyamide, Aluminium or Stainless steel

Mounting flange

Polyethylene terephthalate

Actuator housing

Polycarbonate, Polyamide

Mechanical characteristics

Actuating force

Mounting style square flush 6.2N

other Mounting styles 8N

Actuating travel

5.8 mm ±0.2 mm

Mechanical lifetime

Pushbutton ≤3 million Cycles of operation

Selector switch ≤2.5 million Cycles of operation

Stop pushbutton ≤50 000 Cycles of operation

Fool proofed E-stop ≥6050 Cycles of operation

Keylock switch ≤50 000 Cycles of operation

Electrical characteristics

Standards

The switches comply with the „Rules for low-voltage switching devices“ EN IEC 60947-5-1

Environmental conditions

Storage temperature

-40 °C ... +85 °C

Operating temperature

-25 °C ... +55 °C

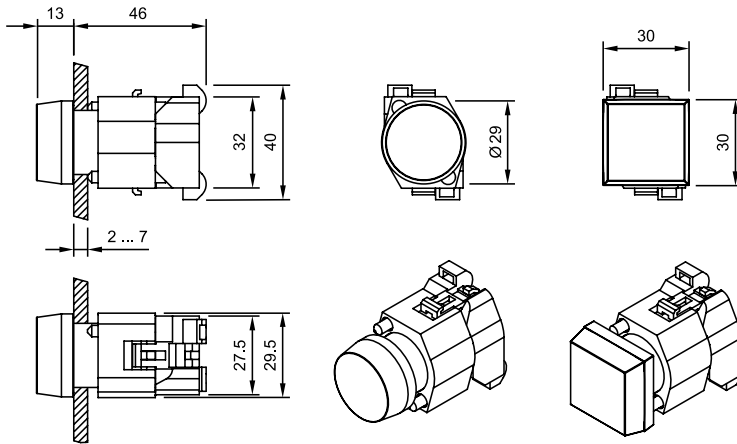
Protection degree

as per EN IEC 60529

Frontside IP65

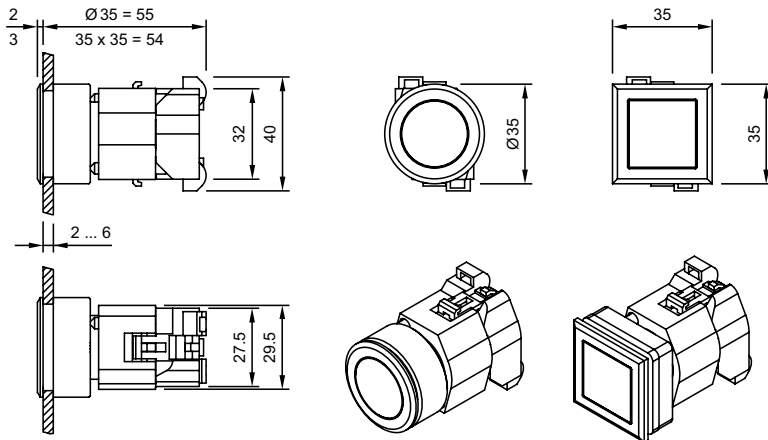
04 Indicator

Raised



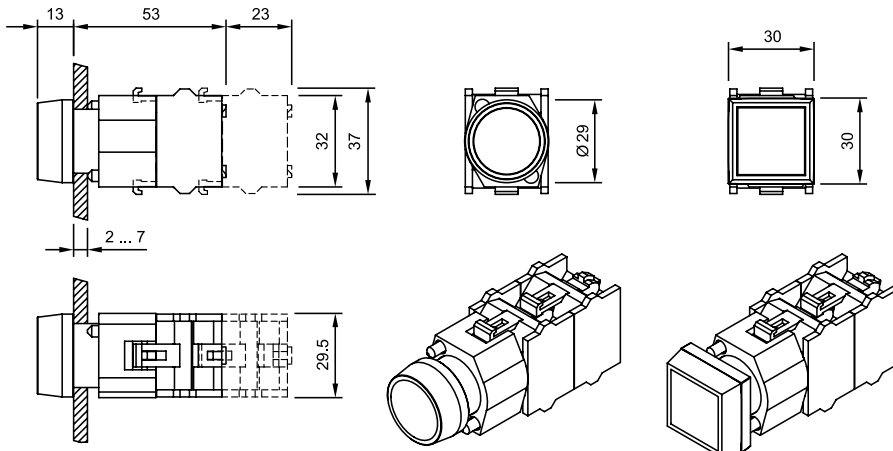
04 Indicator

Flush



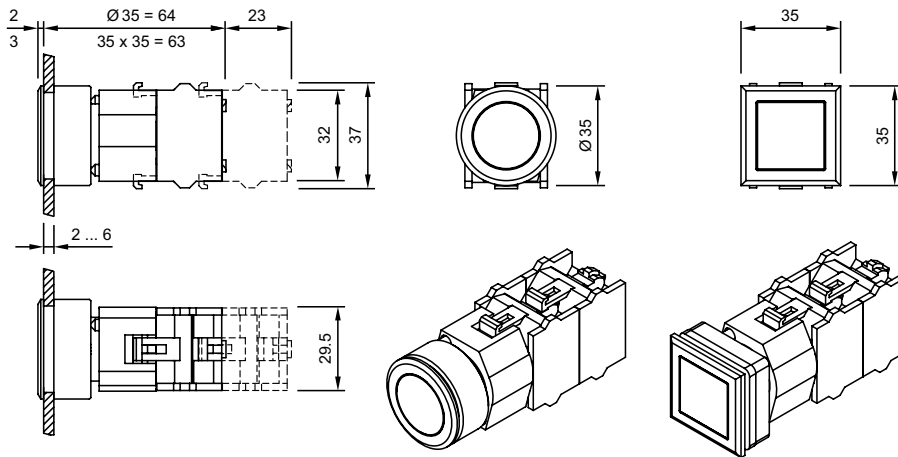
04 Non-Illuminated Pushbutton

Raised



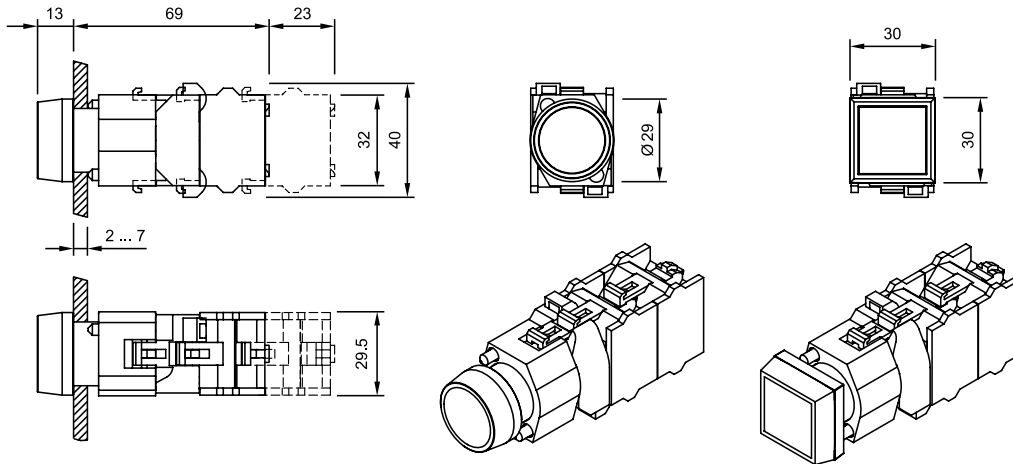
04 Non-Illuminated Pushbutton

Flush



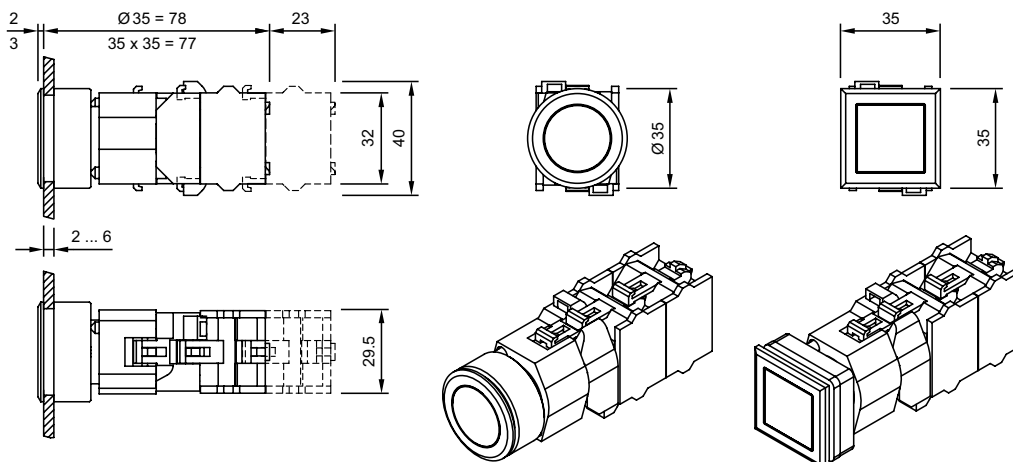
04 Illuminated Pushbutton

Raised



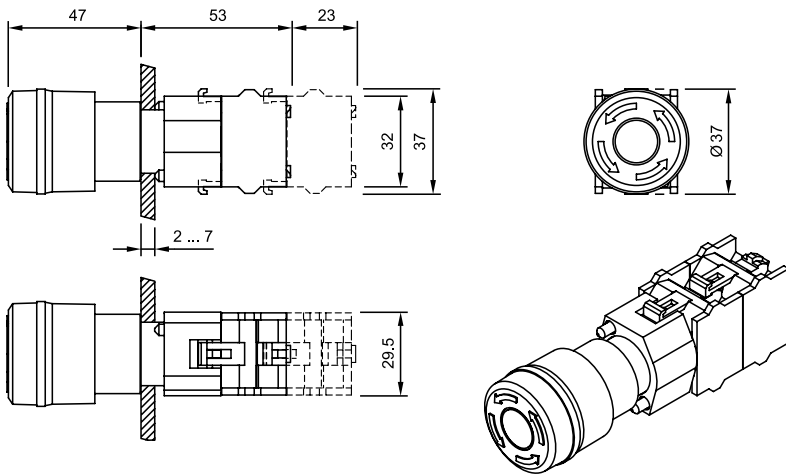
04 Illuminated Pushbutton

Flush



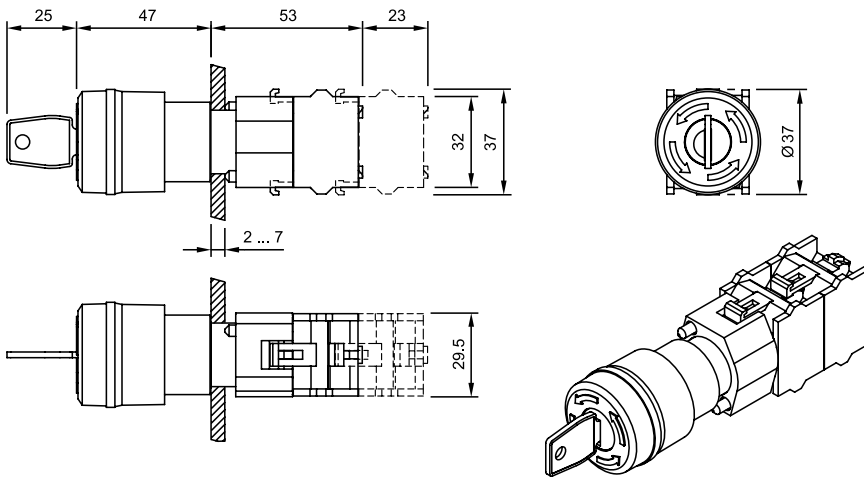
04 Emergency-stop switch

ISO 13850, Twist to release

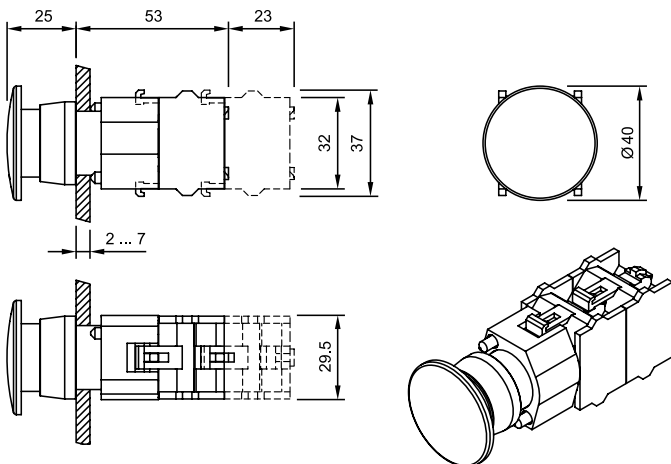


04 Emergency-stop switch

ISO 13850, Key to release

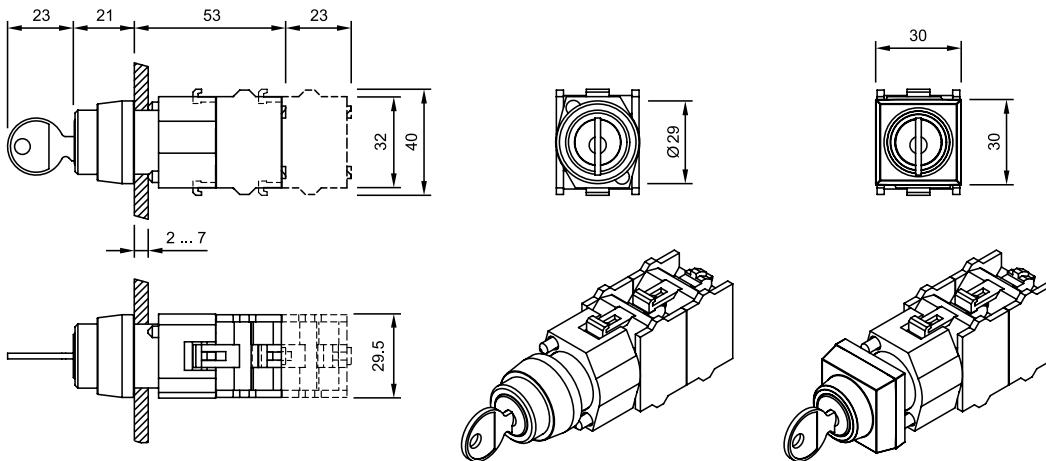


04 Head Pushbutton Mushroom



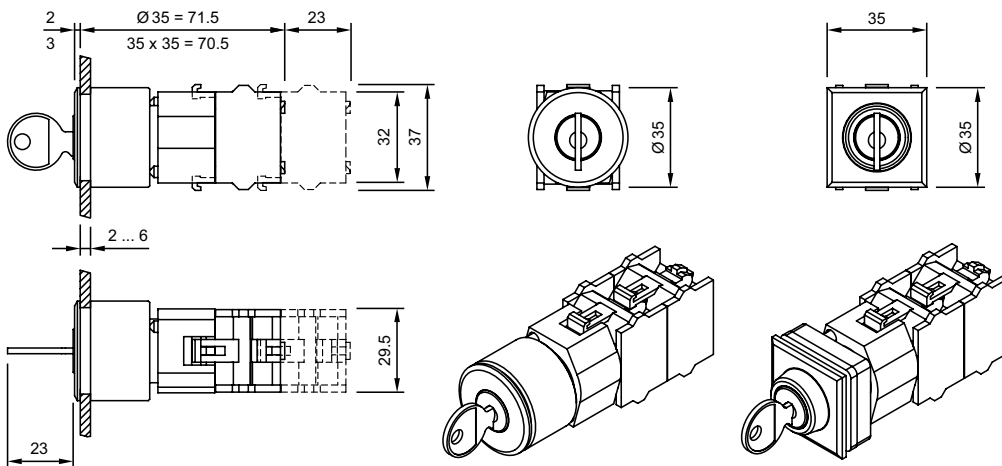
04 Keylock switch

2-Position, 3-Position, Raised



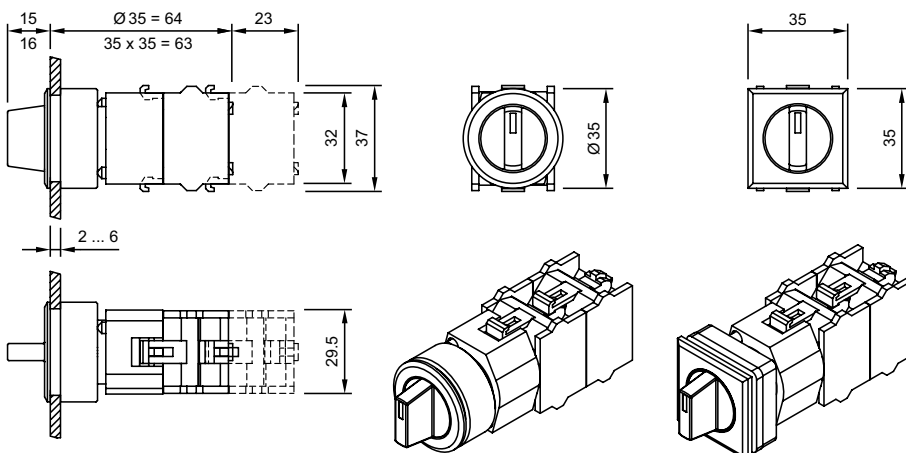
04 Keylock switch

2-Position, 3-Position, Flush



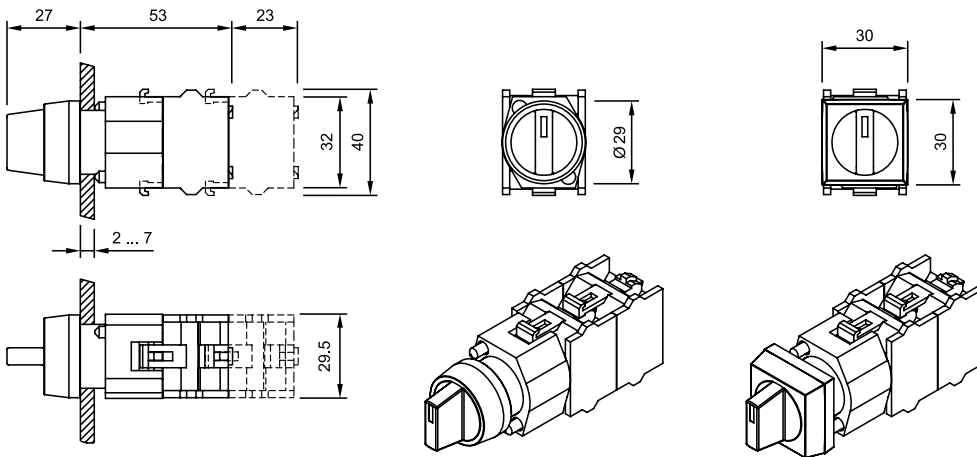
04 Selector switch

2-Position, 3-Position, Short lever, Flush



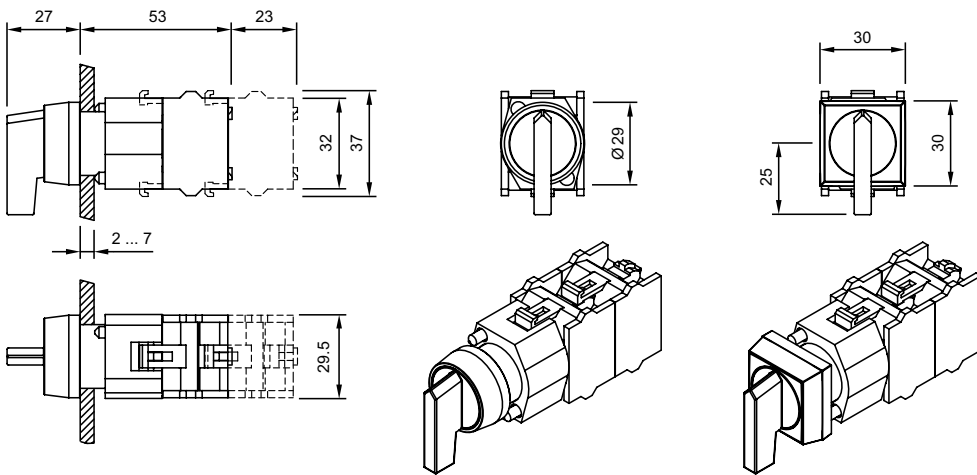
04 Selector switch

2-Position, 3-Position, Short lever, Raised



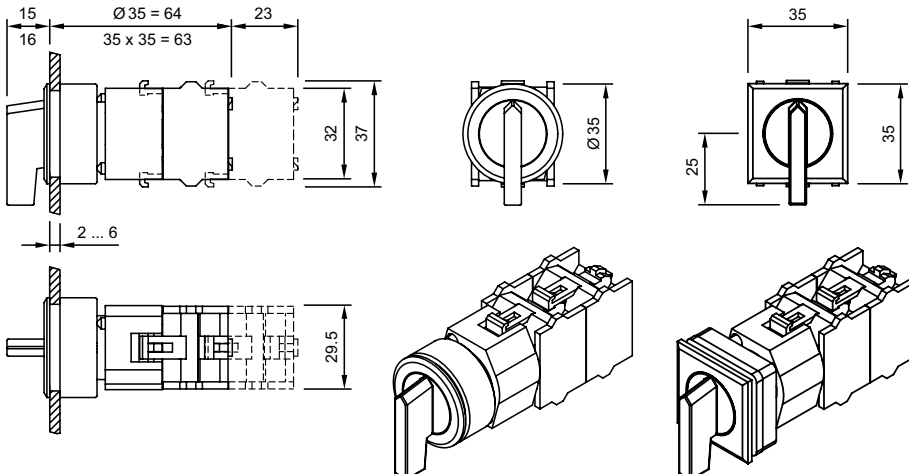
04 Selector switch

2-Position, 3-Position, Long lever, Raised



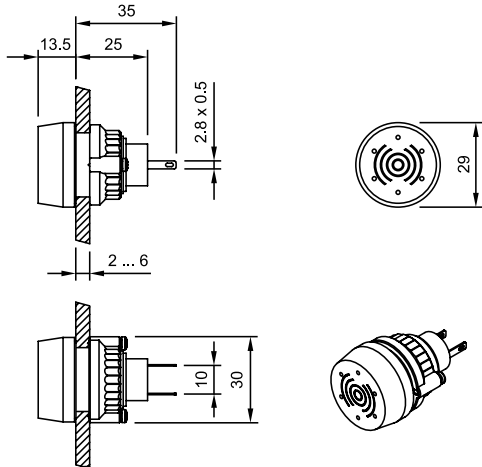
04 Selector switch

2-Position, 3-Position, Long lever, Flush



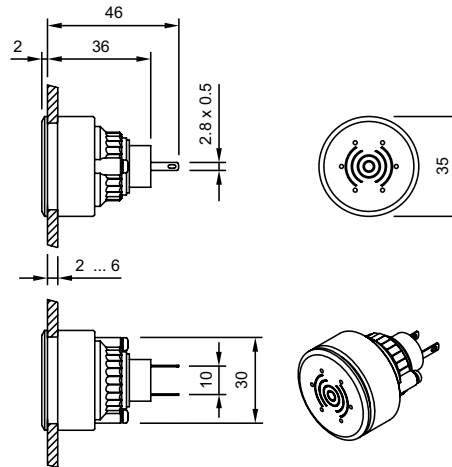
04 Buzzer

Raised



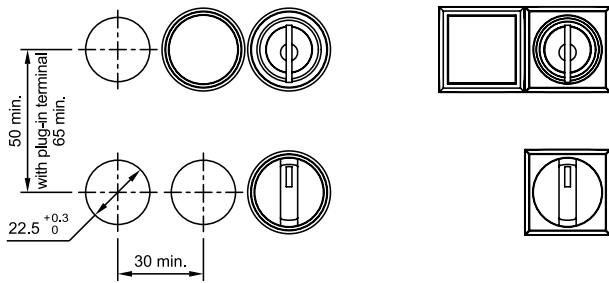
04 Buzzer

Flush



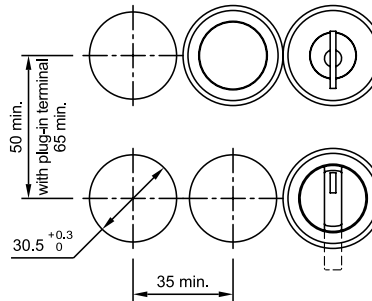
04 Cut-outs, Raised Mounting

(All but long lever)



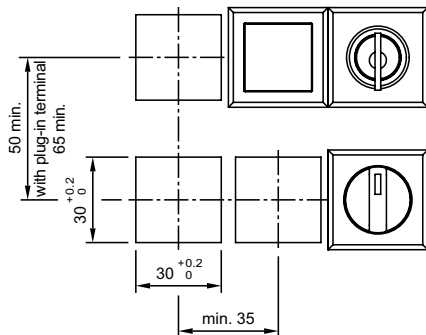
04 Cut-outs, Flush Mounting

(All but long lever)



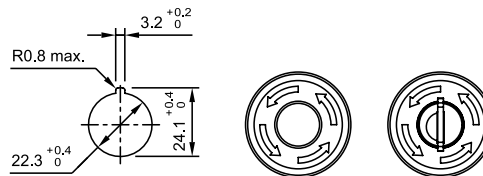
04 Cut-outs, Flush Mounting

(All but long lever)

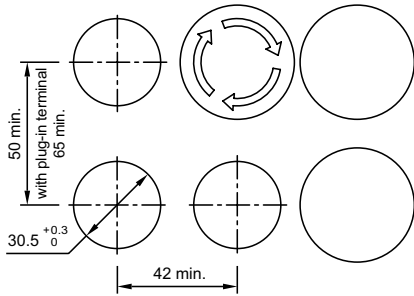


04 Cut-outs, Emergency-Stop

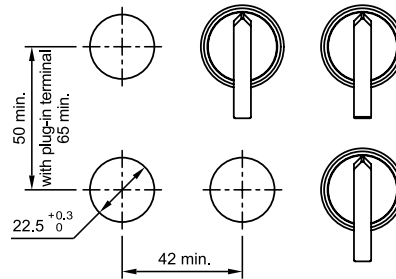
ISO 13850, Twist release, Key release



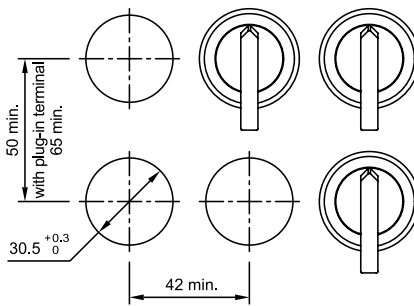
04 Cut-outs, Mushroom head



04 Cut-outs, Long Lever, Raised Mounting



04 Cut-outs, Long Lever, Flush Mounting



04 Cut-outs, Long Lever, Flush Mounting

