

FTNG SERIES



The 40 mm **FTNG series** of thermoplastic limit switches conforms to EN 50041 and is designed to provide a wide range of switch variants (slow action or snap action basic switches) and a variety of actuating heads and levers suitable also suitable for safety applications.

The thermoplastic bodies have four fixing holes at a distance of 30 × 60 mm and a hole for the cable input/output at the bottom of the switch.

The maximum product versatility is guaranteed by the easy orientation of the actuator heads in 90° steps and the possibility of adjusting the levers every 18° for 360°.

They are particularly suitable **for heavy applications**, thanks to the solidity of the steel parts, head and lid fixed by threaded inserts and metric screws. The fixing is prepared for 4 M5 screws.

They are also suitable for use in the harshest environmental conditions with an **operating temperature range of -25°C to +80°C**.

All models in the series are **IP67-rated**.

The actuators are made of metal or thermoplastic material, while the case is made of thermoplastic glass-filled polybutylene terephthalate.

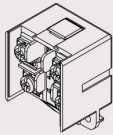

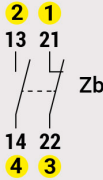

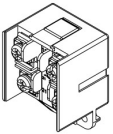

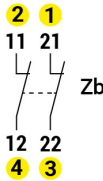

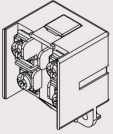
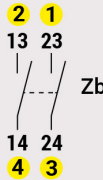

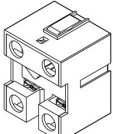

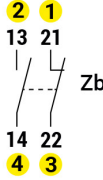

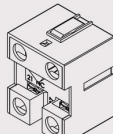

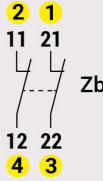

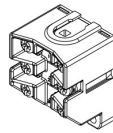

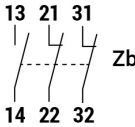
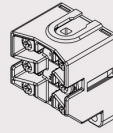

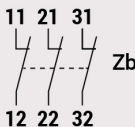
Giovenzana limit switches offer solutions for every need and are suitable for the most varied sectors of use.



SPECIFICATIONS

| | | |
|-----------------------------------|----------------------|---|
| Standards | | EN 60947-5-1, UL 508, EN 50041, EN 1088, EN 60204-1 |
| Approvals | | cULus, EAC, CCC, CE and UKCA marked for all applicable directives |
| Positive opening operation | | NC contacts conforming to IEC /EN 60947-5-1 ☺ |
| Minimum current | | 5 mA - 5 V DC |
| Thermal current | I _{th} | 10 A |
| Rated insulation voltage | U _i | 500 V |
| Rated impulse withstand voltage | U _{imp} | 6 kV |
| Insulation resistance | min | 100 MΩ (DC 500 V) |
| Contact resistance | max | 25 mΩ (initial) |
| Switching speed | max | 250 mm/s |
| Switching frequency | max | 6000 operations per hour |
| Enclosure material | | UL approved glass-filled polybutylene terephthalate |
| Enclosure protection | | IP67 |
| Operating temperature | | -25 ... +80°C (-13 ... +176°F) |
| Pollution degree | | 3 |
| Protection against electric shock | | Class II (double Insulation) ☐ Double insulation makes ground terminal unnecessary |
| Electrical life expectancy | min | 150.000 cycles |
| Mechanical life expectancy | min | 1 × 10 ⁷ cycles |
| Vibration | IEC 68-2-6 excursion | 10-55 Hz ± 1Hz 0.35 mm, 1 octave/min |
| Conduit entry | | Various international conduit sizes (see product selection table pag. 75) |
| Fixing | | 4 × M5 screws |

CONTACT ELEMENT - SPECIFICATIONS

| CONTACT CODE | CONTACT TYPE | ELECTRICAL SCHEME | CONNECTOR PIN ARRANGEMENT |
|---|--|--|---|
| X11  | 1NO+1NC Slow action Zb  |  |  |
| W02  | 2NC Slow action Zb  |  |  |
| W20  | 2NO Slow action Zb Not suitable for safety applications! |  |  |
| Z11  | 1NO+1NC Snap action Zb  |  |  |
| Z02  | 2NC Snap action Zb  |  |  |
| W12  | 1NO+2NC Slow action Zb  |  | No connector |
| W03  | 3NC Slow action Zb  |  | No connector |

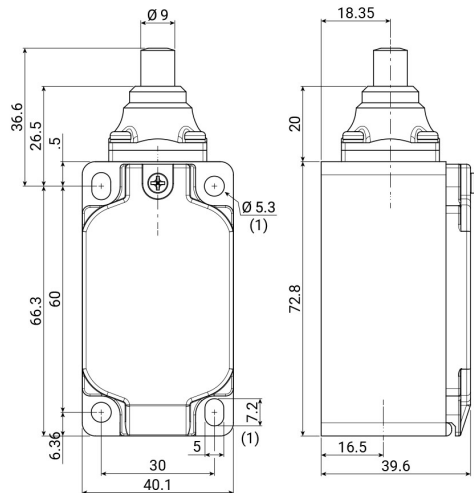


FTNG131

Limit switch with metal end plunger
IP67

| FTNG series | | 1 function | | 31 actuator | | XXX contact type | | XX conduit entry | |
|-------------|---|------------|------------------------|-------------|-------------------|--------------------------------------|------------------|-----------------------|---|
| FTNG | 40 mm thermoplastic limit switches for heavy applications | 1 | without reset function | 31 | metal end plunger | X11: 1NO+1NC W02: 2NC W20: 2NO | slow action (Zb) | blank N G3 C | M20 × 1.5 (standard) 1/2" NPT PG13.5 male connector "A" M12 × 1 |
| | | | | | | Z11: 1NO+1NC Z02: 2NC | snap action (Zb) | | |
| | | | | | | W12: 1NO+2NC W03: 3NC | slow action (Zb) | | |

technical drawing - sizes in mm



(1) mounting holes

| contact type | operation diagrams |
|---------------------------------------|--------------------|
| X11 1NO+1NC slow action (Zb) | |
| W02 2NC slow action (Zb) | |
| W20 2NO slow action (Zb) | |
| Z11 1NO+1NC snap action (Zb) | |
| Z02 2NC snap action (Zb) | |
| W12 1NO+2NC slow action (Zb) | |
| W03 3NC slow action (Zb) | |

| contact type | categories | ratings | operational travel | | operating force | positive opening | | total travel |
|--------------------------------------|------------|--------------------|--------------------|---------------------------------------|-----------------|------------------|-------------|--------------|
| | | | PT1 | PT2 (slow action) RP (snap action) | | POT (travel) | POF (force) | |
| X11: 1NO+1NC W02: 2NC W20: 2NO | A600-Q600 | AC15: 400V - 4A | 2.6 mm | 3.8 mm | 11.6 N | 6.0 mm | 28 N | 7.0 mm |
| Z11: 1NO+1NC Z02: 2NC | B600-Q600 | DC13: 24V - 6A | 2.6 mm | - | 11.6 N | 6.0 mm | 28 N | |
| W12: 1NO+2NC W03: 3NC | A300-Q300 | | 2.6 mm | - | 11.4 N | - | - | |
| | | | 2.5 mm | 1.2 mm | 10.4 N | 4.9 mm | 22 N | |
| | | | 2.5 mm | 1.2 mm | 8.6 N | 4.9 mm | 22 N | |
| | | | 2.8 mm | 3.5 mm | 9.4 N | 5.0 mm | 10 N | |
| | | | 2.8 mm | - | 9.4 N | 5.0 mm | 10 N | |

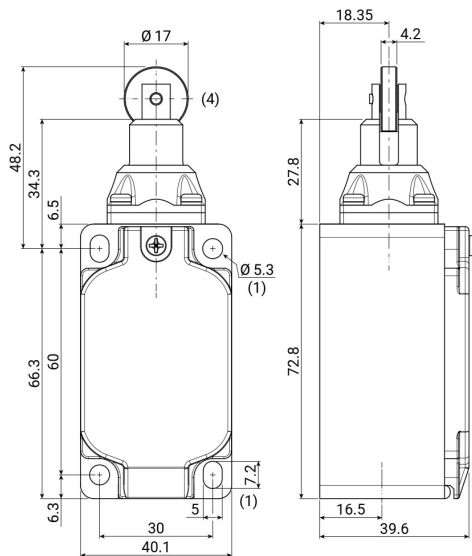


FTNG134

Limit switch with steel roller plunger
IP67

| FTNG series | | 1 function | | 34 actuator | | XXX contact type | | XX conduit entry | |
|-------------|---|------------|------------------------|-------------|----------------------|--------------------------------------|------------------|-----------------------|---|
| FTNG | 40 mm thermoplastic limit switches for heavy applications | 1 | without reset function | 34 | steel roller plunger | X11: 1NO+1NC W02: 2NC W20: 2NO | slow action (Zb) | blank N G3 C | M20 × 1.5 (standard) 1/2" NPT PG13.5 male connector "A" M12 × 1 |
| | | | | | | Z11: 1NO+1NC Z02: 2NC | snap action (Zb) | | |
| | | | | | | W12: 1NO+2NC W03: 3NC | slow action (Zb) | | |

technical drawing - sizes in mm



(1) mounting holes
(4) steel roller

| contact type | operation diagrams |
|---------------------------------------|--------------------|
| X11 1NO+1NC slow action (Zb) | |
| W02 2NC slow action (Zb) | |
| W20 2NO slow action (Zb) | |
| Z11 1NO+1NC snap action (Zb) | |
| Z02 2NC snap action (Zb) | |
| W12 1NO+2NC slow action (Zb) | |
| W03 3NC slow action (Zb) | |

| contact type | categories | ratings | operational travel | | operating force | positive opening | | total travel |
|--------------------------------------|------------|--------------------|--------------------|---------------------------------------|-----------------|------------------|-------------|--------------|
| | | | PT1 | PT2 (slow action) RP (snap action) | | POT (travel) | POF (force) | |
| X11: 1NO+1NC W02: 2NC W20: 2NO | A600-Q600 | AC15: 400V - 4A | 2.6 mm | 3.8 mm | 11.6 N | 6.0 mm | 28 N | 7.0 mm |
| Z11: 1NO+1NC Z02: 2NC | | | 2.6 mm | - | 11.6 N | 6.0 mm | 28 N | |
| W12: 1NO+2NC W03: 3NC | | | 2.6 mm | - | 11.4 N | - | - | |
| | B600-Q600 | DC13: 24V - 6A | 2.5 mm | 1.2 mm | 10.4 N | 4.9 mm | 22 N | 7.0 mm |
| | | | 2.5 mm | 1.2 mm | 8.6 N | 4.9 mm | 22 N | |
| | | | 2.8 mm | 3.5 mm | 9.4 N | 5.0 mm | 10 N | |
| | A300-Q300 | | 2.8 mm | - | 9.4 N | 5.0 mm | 10 N | |
| | | | | | | | | |

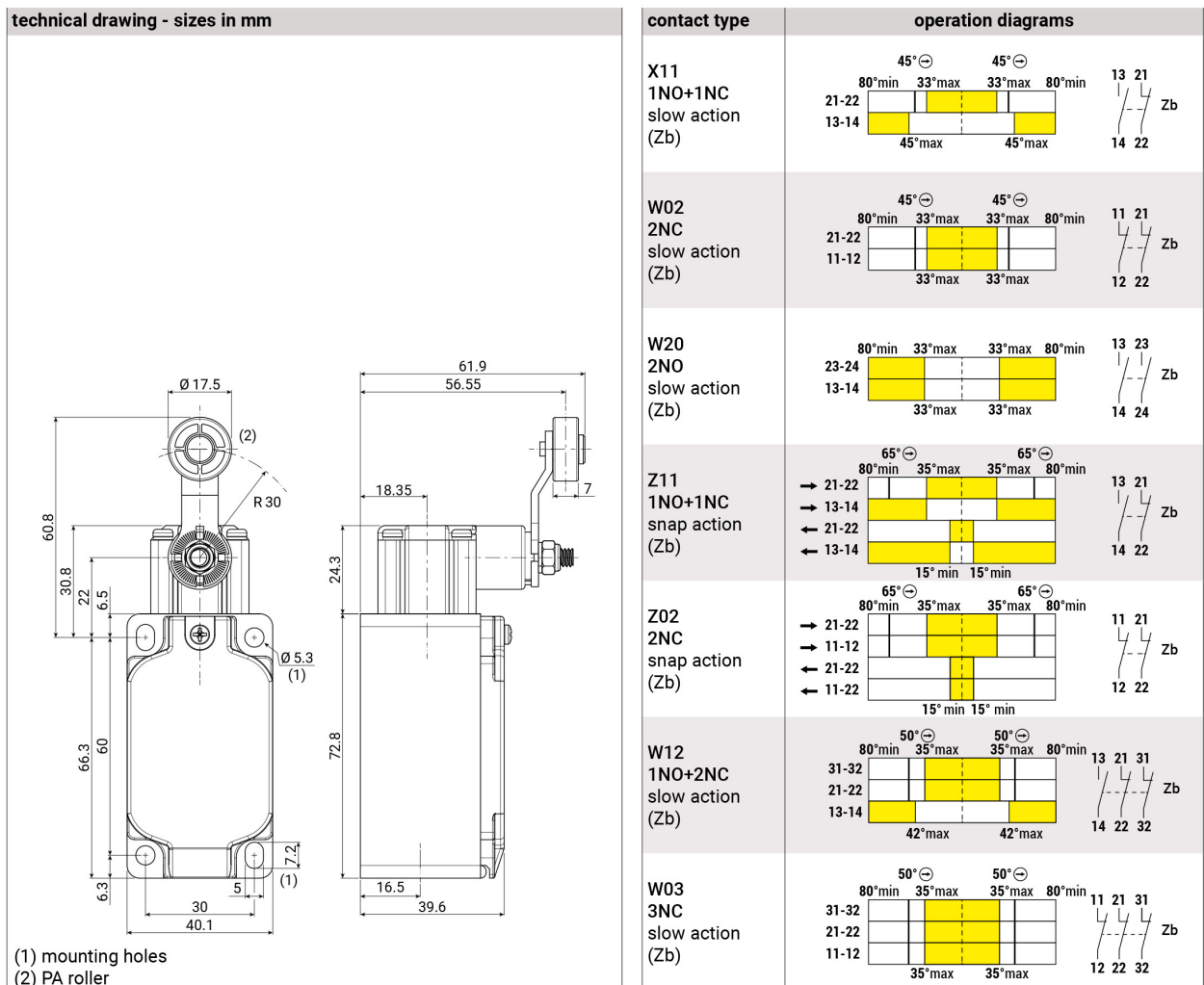


FTNG138

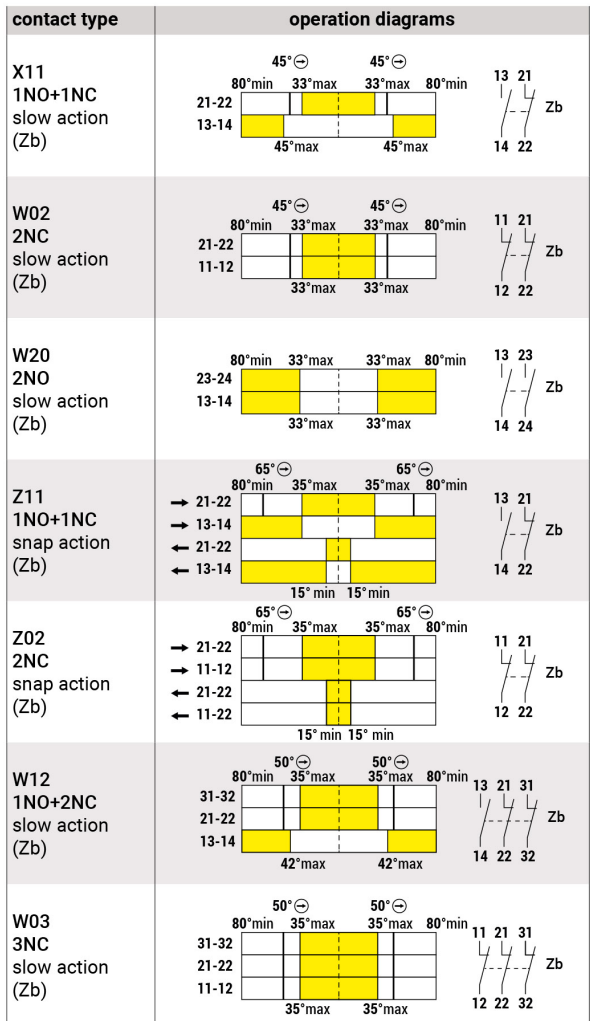
Limit switch with Ø18 PA roller lever
IP67

| FTNG series | | 1 function | | 38 actuator | | XXX contact type | | XX conduit entry | |
|-------------|---|------------|------------------------|-------------|---------------------|--------------------------------------|------------------|-----------------------|---|
| FTNG | 40 mm thermoplastic limit switches for heavy applications | 1 | without reset function | 38 | Ø18 PA roller lever | X11: 1NO+1NC W02: 2NC W20: 2NO | slow action (Zb) | blank N G3 C | M20 x 1.5 (standard) 1/2" NPT PG13.5 male connector "A" M12 x 1 |
| | | | | | | Z11: 1NO+1NC Z02: 2NC | snap action (Zb) | | |
| | | | | | | W12: 1NO+2NC W03: 3NC | slow action (Zb) | | |

technical drawing - sizes in mm



(1) mounting holes
(2) PA roller



| contact type | categories | ratings | operational travel | | operating force | positive opening | | total travel | |
|--------------------------------------|---------------------|-----------|--------------------|---------------------------------------|-----------------|------------------|-------------|--------------|-----|
| | | | PT1 | PT2 (slow action) RP (snap action) | | POT (travel) | POF (force) | | TT |
| X11: 1NO+1NC W02: 2NC W20: 2NO | slow action (Zb) | A600-Q600 | AC15: 400V - 4A | 33° | 45° | 6.5 N | 45° | 8.5 N | 80° |
| Z11: 1NO+1NC Z02: 2NC | snap action (Zb) | B600-Q600 | DC13: 24V - 6A | 33° | - | 6.5 N | 45° | 8.5 N | |
| W12: 1NO+2NC W03: 3NC | slow action (Zb) | A300-Q300 | | 33° | - | 6.5 N | - | - | |
| | | | | 35° | 15° | 5.5 N | 65° | 13.2 N | |
| | | | | 35° | 15° | 5.5 N | 65° | 13.2 N | |
| | | | | 35° | 42° | 6.5 N | 50° | 8 N | |
| | | | | 35° | - | 6.5 N | 50° | 8 N | |

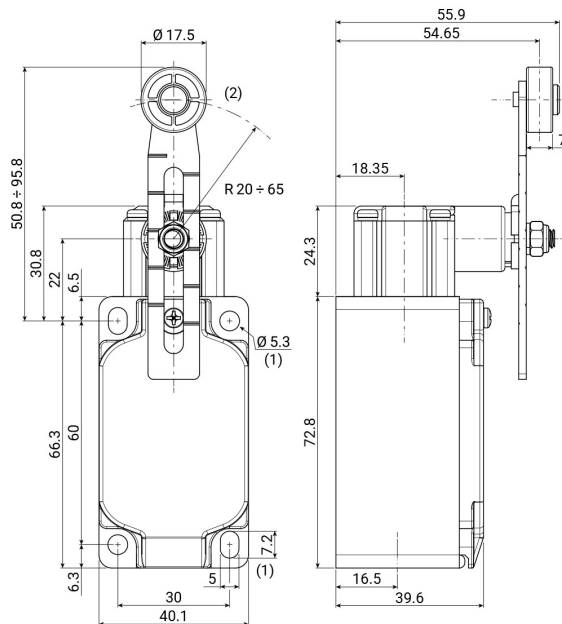


FTNG139

Limit switch with Ø18 PA roller lever with variable length
IP67

| FTNG series | | 1 | function | 39 | actuator | XXX | contact type | XX | conduit entry |
|-------------|---|---|------------------------|----|--|--|--|-----------------------|---|
| FTNG | 40 mm thermoplastic limit switches for heavy applications | 1 | without reset function | 39 | Ø18 PA roller lever with variable length | X11: 1NO+1NC W02: 2NC W20: 2NO Z11: 1NO+1NC Z02: 2NC W12: 1NO+2NC W03: 3NC | slow action (Zb) snap action (Zb) slow action (Zb) | blank N G3 C | M20 x 1.5 (standard) 1/2" NPT PG13.5 male connector "A" M12 x 1 |

technical drawing - sizes in mm



(1) mounting holes
(2) PA roller

| contact type | operation diagrams |
|---------------------------------------|--------------------|
| X11 1NO+1NC slow action (Zb) | |
| W02 2NC slow action (Zb) | |
| W20 2NO slow action (Zb) | |
| Z11 1NO+1NC snap action (Zb) | |
| Z02 2NC snap action (Zb) | |
| W12 1NO+2NC slow action (Zb) | |
| W03 3NC slow action (Zb) | |

| contact type | categories | ratings | operational travel | | operating force | positive opening | | total travel |
|--------------------------------------|------------|--------------------|--------------------|---------------------------------------|-----------------|------------------|-------------|--------------|
| | | | PT1 | PT2 (slow action) RP (snap action) | | POT (travel) | POF (force) | |
| X11: 1NO+1NC W02: 2NC W20: 2NO | A600-Q600 | AC15: 400V - 4A | 33° | 45° | 6.5 N | 45° | 8.5 N | 80° |
| | | | 33° | - | 6.5 N | 45° | 8.5 N | |
| | | | 33° | - | 6.5 N | - | - | |
| Z11: 1NO+1NC Z02: 2NC | B600-Q600 | DC13: 24V - 6A | 35° | 15° | 5.5 N | 65° | 13.2 N | |
| | | | 35° | 15° | 5.5 N | 65° | 13.2 N | |
| W12: 1NO+2NC W03: 3NC | A300-Q300 | | 35° | 42° | 6.5 N | 50° | 8 N | |
| | | | 35° | - | 6.5 N | 50° | 8 N | |

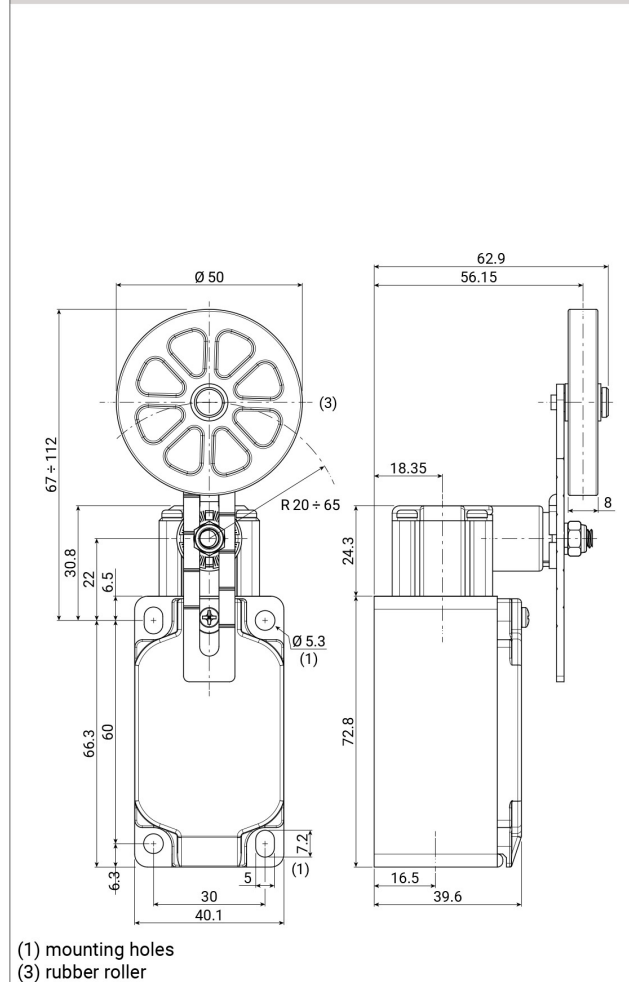


FTNG140

Limit switch with Ø50 rubber roller lever with variable length
IP67

| FTNG series | 1 function | 40 actuator | XXX contact type | XX conduit entry | |
|-------------|---|------------------------|---|--|--|
| FTNG | 40 mm thermoplastic limit switches for heavy applications | without reset function | 40 Ø50 rubber roller lever with variable length | X11: 1NO+1NC W02: 2NC Z11: 1NO+1NC Z02: 2NC W12: 1NO+2NC W03: 3NC | blank N G3 C M20 x 1.5 (standard) 1/2" NPT PG13.5 male connector "A" M12 x 1 |

technical drawing - sizes in mm



| contact type | operation diagrams |
|---------------------------------------|--------------------|
| X11 1NO+1NC slow action (Zb) | |
| W02 2NC slow action (Zb) | |
| W20 2NO slow action (Zb) | |
| Z11 1NO+1NC snap action (Zb) | |
| Z02 2NC snap action (Zb) | |
| W12 1NO+2NC slow action (Zb) | |
| W03 3NC slow action (Zb) | |

| contact type | categories | ratings | operational travel | | operating force | positive opening | | total travel | |
|--------------------------------------|---------------------|-----------|--------------------|---------------------------------------|-----------------|------------------|-------------|--------------|-----|
| | | | PT1 | PT2 (slow action) RP (snap action) | | POT (travel) | POF (force) | | |
| X11: 1NO+1NC W02: 2NC W20: 2NO | slow action (Zb) | A600-Q600 | AC15: | 33° | 45° | 6.5 N | 45° | 8.5 N | 80° |
| | | | 400V - 4A | 33° | - | 6.5 N | 45° | 8.5 N | |
| | | | 33° | - | 6.5 N | - | - | | |
| Z11: 1NO+1NC Z02: 2NC | snap action (Zb) | B600-Q600 | DC13: | 35° | 15° | 5.5 N | 65° | 13.2 N | |
| | | | 24V - 6A | 35° | 15° | 5.5 N | 65° | 13.2 N | |
| W12: 1NO+2NC W03: 3NC | slow action (Zb) | A300-Q300 | 35° | 42° | 6.5 N | 50° | 8 N | | |
| | | | 35° | - | 6.5 N | 50° | 8 N | | |

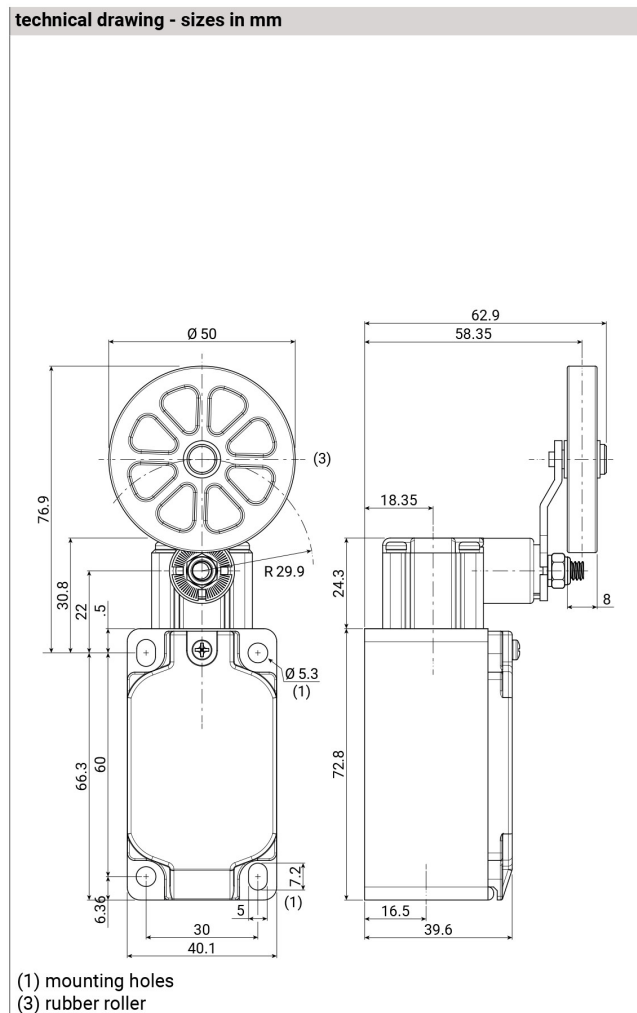


FTNG141

Limit switch with Ø50 rubber roller lever
IP67

| FTNG | | 1 | | 41 | | XXX | | XX | |
|--------|---|----------|------------------------|----------|-------------------------|--|--|-----------------------|---|
| series | function | function | | actuator | | contact type | | conduit entry | |
| FTNG | 40 mm thermoplastic limit switches for heavy applications | 1 | without reset function | 41 | Ø50 rubber roller lever | X11: 1NO+1NC W02: 2NC Z11: 1NO+1NC Z02: 2NC W12: 1NO+2NC W03: 3NC | slow action (Zb) snap action (Zb) slow action (Zb) | blank N G3 C | M20 x 1.5 (standard) 1/2" NPT PG13.5 male connector "A" M12 x 1 |

technical drawing - sizes in mm



| contact type | operation diagrams |
|---------------------------------------|--------------------|
| X11 1NO+1NC slow action (Zb) | |
| W02 2NC slow action (Zb) | |
| W20 2NO slow action (Zb) | |
| Z11 1NO+1NC snap action (Zb) | |
| Z02 2NC snap action (Zb) | |
| W12 1NO+2NC slow action (Zb) | |
| W03 3NC slow action (Zb) | |

| contact type | categories | ratings | operational travel | | operating force | positive opening | | total travel |
|--------------------------------------|------------|--------------------|--------------------|---------------------------------------|-----------------|------------------|-------------|--------------|
| | | | PT1 | PT2 (slow action) RP (snap action) | | POT (travel) | POF (force) | |
| X11: 1NO+1NC W02: 2NC W20: 2NO | A600-Q600 | AC15: 400V - 4A | 33° | 45° | 6.5 N | 45° | 8.5 N | 80° |
| Z11: 1NO+1NC Z02: 2NC | B600-Q600 | DC13: 24V - 6A | 35° | 15° | 5.5 N | 65° | 13.2 N | |
| W12: 1NO+2NC W03: 3NC | A300-Q300 | | 35° | 42° | 6.5 N | 50° | 8 N | |
| | | | 35° | - | 6.5 N | 50° | 8 N | |
| | | | 33° | - | 6.5 N | 45° | 8.5 N | |
| | | | 33° | - | 6.5 N | - | - | |

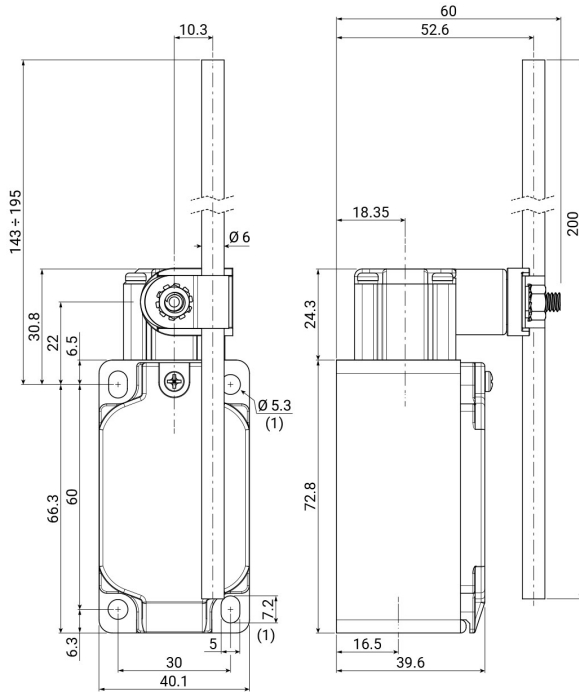


FTNG172

Limit switch with adjustable PA rod lever
IP67

| FTNG series | 1 function | 72 actuator | XXX contact type | XX conduit entry |
|-------------|---|--------------------------|--------------------------------------|---|
| FTNG | 40 mm thermoplastic limit switches for heavy applications | 1 without reset function | 72 adjustable PA rod lever | |
| | | | X11: 1NO+1NC W02: 2NC W20: 2NO | blank N G3 |
| | | | Z11: 1NO+1NC Z02: 2NC | C |
| | | | W12: 1NO+2NC W03: 3NC | M20 × 1.5 (standard) 1/2" NPT PG13.5 male connector "A" M12 × 1 |

technical drawing - sizes in mm



(1) mounting holes

| contact type | operation diagrams |
|---------------------------------------|--------------------|
| X11 1NO+1NC slow action (Zb) | |
| W02 2NC slow action (Zb) | |
| W20 2NO slow action (Zb) | |
| Z11 1NO+1NC snap action (Zb) | |
| Z02 2NC snap action (Zb) | |
| W12 1NO+2NC slow action (Zb) | |
| W03 3NC slow action (Zb) | |

| contact type | categories | ratings | operational travel | | operating force | positive opening | | total travel |
|--------------|------------|--------------------|--------------------|---------------------------------------|-----------------|------------------|-------------|--------------|
| | | | PT1 | PT2 (slow action) RP (snap action) | | POT (travel) | POF (force) | |
| X11: 1NO+1NC | A600-Q600 | AC15: 400V - 4A | 33° | 45° | 6.5 N | 45° | 8.5 N | 80° |
| W02: 2NC | | | 33° | - | 6.5 N | 45° | 8.5 N | |
| W20: 2NO | | | 33° | - | 6.5 N | - | - | |
| Z11: 1NO+1NC | B600-Q600 | DC13: 24V - 6A | 35° | 15° | 5.5 N | 65° | 13.2 N | 80° |
| Z02: 2NC | | | 35° | 15° | 5.5 N | 65° | 13.2 N | |
| W12: 1NO+2NC | A300-Q300 | | 35° | 42° | 6.5 N | 50° | 8 N | |
| W03: 3NC | | | 35° | - | 6.5 N | 50° | 8 N | |