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Bytorent

# Bytorent Shield Series Non-Contract Safety Switch


## Specifications

- Compliant up to the standard PLe (ISO13849-1) and SIL3 standard (IEC 62061)
- Proven dual-channel safety monitoring circuit design
- Support up to 2 sets of 1A capacity safety contacts and 2 sets of 300mA transistor PNP synchronous output
- Passive magnetic encoding type, active magnetic encoding type, RFID universal encoding type, RFID independent encoding type, etc.
- Supports actuator tool-less self-pairing configuration
- Bright LED indication clearly shows the current status
- Integrated cables for easy installation and wiring
- The full series of EN products has an IP69 K protection level, suitable for various harsh environments
- Ultra-small size, suitable for tight space installation

## Product Usage Instructions

**Safety** Installation must be performed according to the following steps and must be carried out by personnel with appropriate qualifications.

This device is designed to be part of a safety-related control system for machinery. Before installation, a risk assessment must be conducted to determine whether the specifications of this device are suitable for all foreseeable operations and environmental

characteristics of the machine on which it will be installed. During the machine’s lifespan, regular inspections must be
performed to ensure that the anticipated characteristics remain valid.

Torent assumes no liability for failures of this device if the procedures outlined in this manual are not followed or if the device is used beyond the specifications recommended in this manual.

The device must be protected from exposure to shocks and/or vibrations exceeding those specified in IEC 60068, Part 2-6/7.

Compliance with the recommended inspection and maintenance instructions is a condition of the warranty.

**Integrated and Connection Danger:** Mechanical and Electrical Installation. Voltage and/or accidental machine startup can cause death or serious injury.

**Maintenance and Modifications Danger:** Improper operation on the product or products that have been modified may not provide the intended protection.

**Suitable for Monitoring**

- Safety gate
- Security window
- Safe action parts

**About This Document**

**Product Described**

- Shield EN Series Non-contact Switch

**Version**

- V2.3_2025.3.20_EN

**Legal Information**

**Original Document**

- This document is an original document of Shenzhen Torent Technology Co., Ltd.

## SAFETY NOTES

- Installation must be performed according to the following steps and must be carried out by personnel with appropriate qualifications.
- This device is designed to be part of a safety-related control system for machinery. Before installation, a risk assessment must be conducted to determine whether the specifications of this device are suitable for all foreseeable operations and environmental characteristics of the machine on which it will be installed.
- During the machine’s lifespan, regular inspections must be performed to ensure that the anticipated characteristics remain valid.
- Torent assumes no liability for failures of this device if the procedures outlined in this followed, or if the device is used beyond the specifications recommended in this manual.
- The device must be protected from exposure to shocks and/or vibrations exceeding those specified in IEC 60068, Part 2-6/7.
- Compliance with the recommended inspection and maintenance instructions is a condition of the warranty.

**Integrated and Connection**

**Danger**

If the product is incorrectly integrated, it will not provide the intended protection.

- Design product integration (project planning) according to machine requirements.
- Integrate the product according to the project planning.

**Mechanical and Electrical Installation**

**Danger**

Voltage and/or accidental machine startup can cause death or serious injury.

- Ensure the machine is de-energized and remains de-energized during mechanical and electrical installation.
- Ensure extremely hazardous conditions are removed and remain removed.

**Maintenance and Modifications**

**Danger**

Improper operation on the product or products that have been modified may not provide the intended protection.

- Do not repair, open, tamper with, or otherwise modify the product except as described in this document.

## Shield–EN non-contact safety switch

- Compliant up to the standard PLe (ISO13849-1) and SIL3 standard (IEC 62061)
- Proven dual-channel safety monitoring circuit design
- Support up to 2 sets of 1A capacity safety contacts and 2 sets of 300mA transistor PNP synchronous output
- Passive magnetic encoding type, active magnetic encoding type, RFID universal encoding type, RFID independent encoding type, etc.
- Supports actuator tool-less self-pairing configuration
- Bright LED indication clearly shows the current status
- Integrated cables for easy installation and wiring
- The full series of EN products has Ian P69K protection level, suitable for various harsh environments
- Ultra-small size, suitable for tight space installation

### Suitable for monitoring:

- Safety gate
- Security window
- Safe action parts
- Safety output:
  - 3NO, 1NO+1NC, 2PNP, 2NO+2PNP multi-type output available

### Applicable industry scenarios

- Injection molding machine, CNC machine tool

- Press/hydraulic press, Glass machinery, Filling machinery, Packaging machinery
- Sorting machinery, Woodworking machinery, Papermaking machinery
- Intelligent forklift, AGV, Robot, Elevator
- Wind power, SIS system, etc
- Shield-EN series non-contact safety switch is specially designed and developed for compact applications; it can be used to monitor various safety doors, safety windows, and motion safety components.
- The product is designed according to ISO13849 and GB/T16855 and other related standards, and meets the requirements of functional safety standards
- 4 types of models: Passive magnetic type, active magnetic type, RFID general code type, and RFID unique code type.
- Bright LED indication clearly shows the current status. Integrated cables for easy installation and wiring.g
- Support parallel serial use, active models in series use scenarios do not reduce the safety level.
- Support up to 2 sets of 1A capacity safety contacts and 2 sets of 300mA transistor PNP signal synchronous output at the same time.
- IP69K protection level, meeting the harsh environmental usage requirements of beverage filling and other scenarios

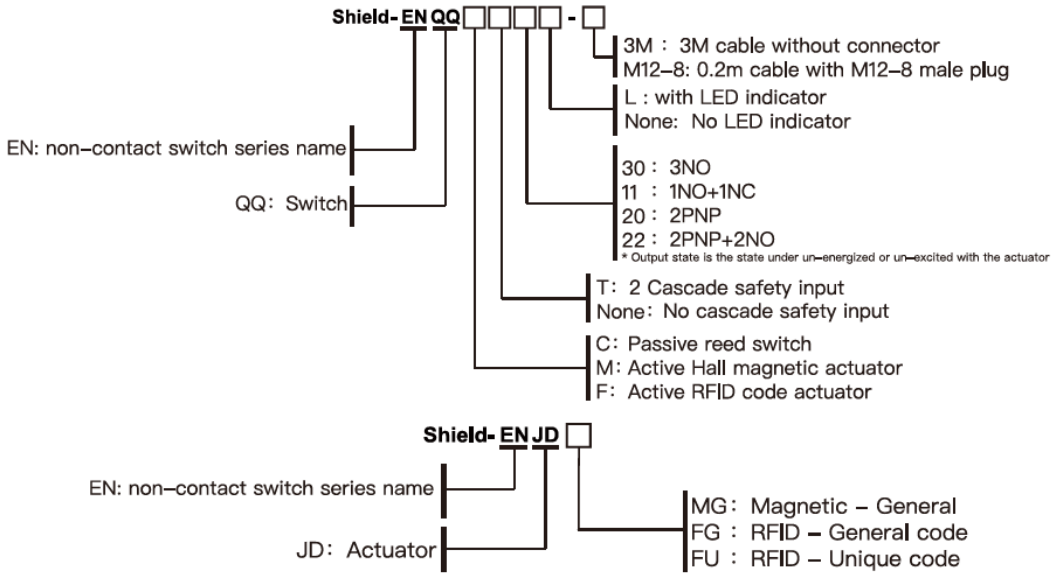
## Function selection

SafetInterlockck Switch Sensor Safety Output

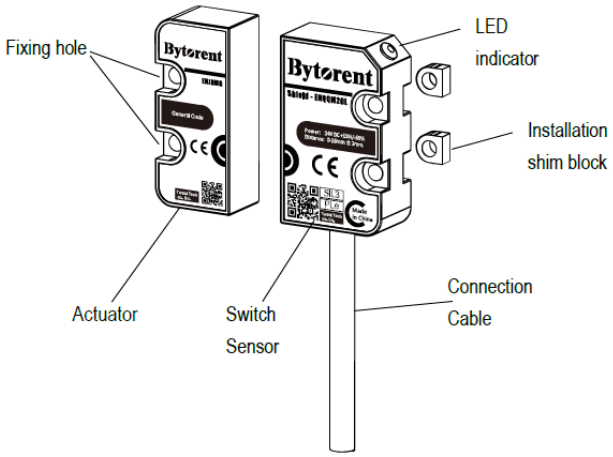
**Safety interlock Switch Actuator code type**

Sensor model and detailed description (the following output states are all states without power or induction excitation)

**Sensor model and detailed description (the following output states are all states without power or induction excitation)**

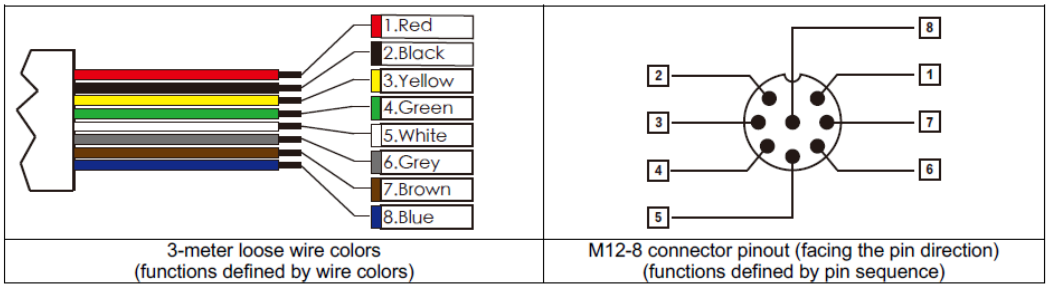



## Structure definition



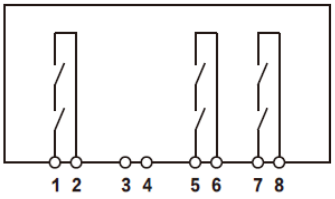

**Switch sensor with Actuator (Front side)**

## Connection Sequence & Function Description

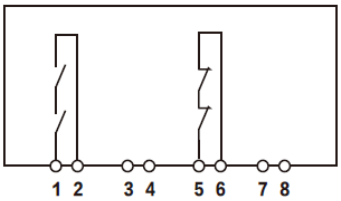



3-meter loose wire colors
(functions defined by wire colors)

M12-8 connector pinout (facing the pin direction)
(functions defined by pin sequence)




**ENQQC30**



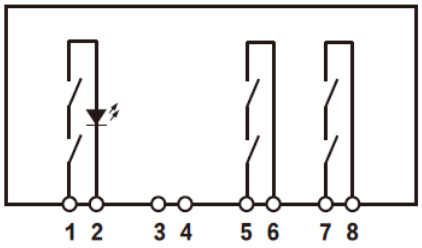

**ENQQC11**

**ENQQC30L**

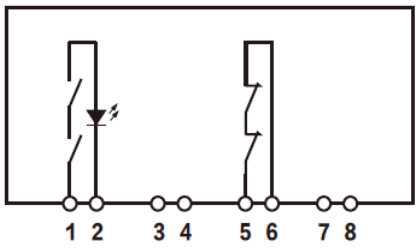
| No. | Define | Remark | Wire Color |
|---|---|---|---|
| 1 | 13 | SO1 contact1 | Red |
| 2 | 14 | SO1 contact2 | Black |
| 3 | NA | | Yellow |
| 4 | NA | | Green |
| 5 | 23 | SO2 contact1 | White |
| 6 | 24 | SO2 contact 2 | Grey |
| 7 | 33 | SO3 contact 1 | Brown |
| 8 | 34 | SO3 contact 2 | Blue |

**ENQQC11L**

| No. | Define | Remark | Wire Color |
|---|---|---|---|
| 1 | 13 | SO1 contact1 | Red |
| 2 | 14 | SO1 contact2 | Black |
| 3 | NA | | Yellow |
| 4 | NA | | Green |
| 5 | 21 | SO2 contact1 | White |
| 6 | 22 | SO2 contact 2 | Grey |
| 7 | NA | | Brown |
| 8 | NA | | Blue |




ENQQC30L




ENQQC11L

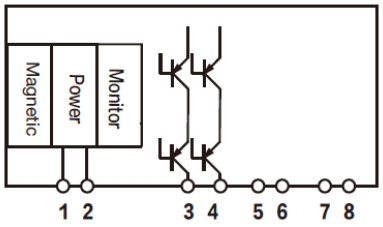
**ENQQC30L**

| No. | Define | Remark | Wire Color |
|---|---|---|---|
| 1 | 24V/13 | 24VDC, SO1 contact1 | Red |
| 2 | 0V/14 | 0V, SO1 contact2 | Black |
| 3 | NA | | Yellow |
| 4 | NA | | Green |
| 5 | 23 | SO2 contact1 | White |
| 6 | 24 | SO2 contact 2 | Grey |
| 7 | 33 | SO3 contact 1 | Brown |
| 8 | 34 | SO3 contact 2 | Blue |

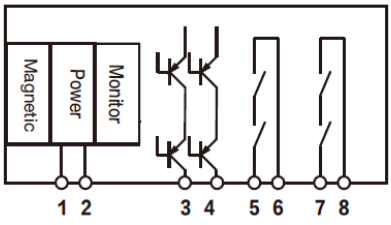
**ENQQC11L**

| No. | Define | Remark | Wire Color |
|---|---|---|---|
| 1 | 24V/13 | 24VDC, SO1 contact1 | Red |
| 2 | 0V/14 | 0V, SO1 contact2 | Black |
| 3 | NA | | Yellow |
| 4 | NA | | Green |
| 5 | 21 | SO2 contact1 | White |

| | | | |
|---|---|---|---|
| 6 | 22 | SO2 contact 2 | Grey |
| 7 | NA | | Brown |
| 8 | NA | | Blue |



ENQQM20L



ENQQM22L

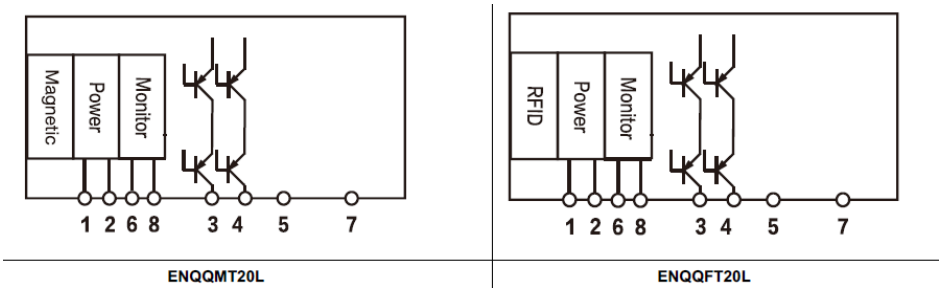
**ENQQM20L**

| No. | Define | Remark | Wire Color | M12 PIN |
|---|---|---|---|---|
| 1 | 24V | 24VDC | Red | 2 |
| 2 | 0V | 0V | Black | 7 |
| 3 | OSSD1 | PNP output1 | Yellow | 1 |
| 4 | OSSD2 | PNP output2 | Green | 6 |
| 5 | NA | | White | 3 |
| 6 | NA | | Grey | 4 |
| 7 | NA | | Brown | 5 |
| 8 | NA | | Blue | 8 |

**ENQQM22L**

| No. | Define | Remark | Wire Color | M12 PIN |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| 1 | 24V | 24VDC | Red | 2 |
| 2 | 0V | 0V | Black | 7 |
| 3 | OSSD1 | PNP output1 | Yellow | 1 |
| 4 | OSSD2 | PNP output2 | Green | 6 |
| 5 | 13 | SO1 contact output1 | White | 3 |
| 6 | 14 | SO1 contact output2 | Grey | 4 |
| 7 | 23 | SO2 contact output1 | Brown | 5 |
| 8 | 24 | SO2 contact output2 | Blue | 8 |



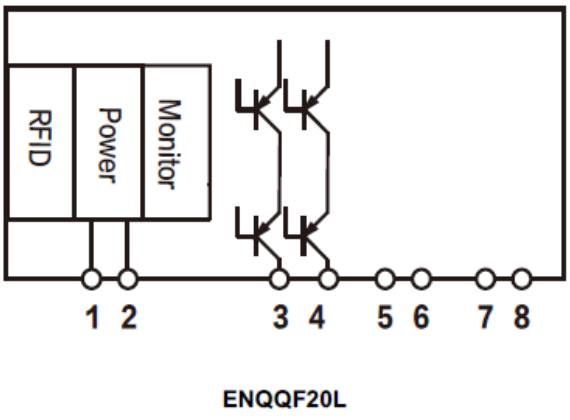

**ENQQMT20L**

| **No.** | **Define** | **Remark** | **Wire Color** | **M12 PIN** |
|---|---|---|---|---|
| 1 | 24V | 24VDC | Red | 2 |
| 2 | 0V | 0V | Black | 7 |
| 3 | OSSD1 | PNP output1<br>/ RFID Actuator pairing enable | Yellow | 1 |
| 4 | OSSD2 | PNP output2 | Green | 6 |
| 5 | NA | | White | 3 |

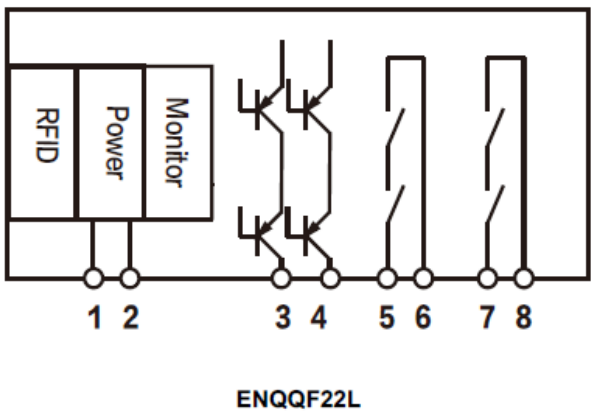
| | | | | |
|---|---|---|---|---|
| 6 | SI1 | PNP Safety Input 1 | Grey | 4 |
| 7 | NA | | Brown | 5 |
| 8 | SI2 | PNP Safety Input 2 | Blue | 8 |

**ENQQFT20L**

| **No.** | **Define** | **Remark** | **Wire Color** | **M12 PIN** |
|---|---|---|---|---|
| 1 | 24V | 24VDC | Red | 2 |
| 2 | 0V | 0V | Black | 7 |
| 3 | OSSD1 /info | PNP output1 / RFID Actuator pairing enable | Yellow | 1 |
| 4 | OSSD2 | PNP output2 | Green | 6 |
| 5 | NA | | White | 3 |
| 6 | SI1 | PNP Safety Input 1 | Grey | 4 |
| 7 | NA | | Brown | 5 |
| 8 | SI2 | PNP Safety Input 2 | Blue | 8 |




ENQQF20L




ENQQF22L

**ENQQF20L**

| No. | Define | Remark | Wire Color | M12 PIN |
|---|---|---|---|---|
| 1 | 24V | 24VDC | Red | 2 |
| 2 | 0V | 0V | Black | 7 |
| 3 | OSSD1<br>/info | PNP output1<br>/ RFID Actuator pairing enable | Yellow | 1 |
| 4 | OSSD2 | PNP output2 | Green | 6 |
| 5 | NA | | White | 3 |
| 6 | NA | | Grey | 4 |
| 7 | NA | | Brown | 5 |
| 8 | NA | | Blue | 8 |

**ENQQF22L**

| No. | Define | Remark | Wire Color | M12 PIN |
|---|---|---|---|---|
| 1 | 24V | 24VDC | Red | 2 |
| 2 | 0V | 0V | Black | 7 |
| 3 | OSSD1<br>/info | PNP output1<br>/ RFID Actuator pairing enable | Yellow | 1 |
| 4 | OSSD2 | PNP output2 | Green | 6 |
| 5 | 13 | SO1 contact output1 | White | 3 |
| 6 | 14 | SO1 contact output2 | Grey | 4 |

| | | | | |
|---|---|---|---|---|
| 7 | 23 | SO2 contact output1 | Brown | 5 |
| 8 | 24 | SO2 contact output2 | Blue | 8 |

## LED indicator status description

| Type | Model | LED indicator status | Description |
|---|---|---|---|
| Magnetic Sensing | ENQQC30 ENQQC11 | N/A | N/A |
| | ENQQC30L ENQQC11L | □ Off | No power/no actuator detected |
| | | ■ Green On | Actuator detected |
| | ENQQM20L ENQQM22L ENQQMT20L | □ Off | No power |
| | | ■ Green On | Actuator detected |
| | | ★☆ Red & Green alternately flashing | No actuator detected |
| | | ★☆ Red flashing | Internal system failure |
| | | ■ Red & Green On (Orange) | Detected acutator, waiting for safety input (ENQQMT20L only) |
| | | □ Off | No power |
| | | ■ Green On | Actuator detected |

| | | | |
|---|---|---|---|
| RFID sensing | ENQQF20L ENQQF22L ENQQFT20L | ★☆ Red & Green alternately flashing | No actuator detected |
| | | ★☆ Red flashing | Internal system failure |
| | | ★☆ Green flashing | Pairing mode |
| | | ■ Red On | Missing paired actuator data (please pair devices) |
| | | ■ Red & Green On (Orange) | Actuator Pairing completed |
| | | | Detected acutator, waiting for safety input (ENQQMT20L only) |

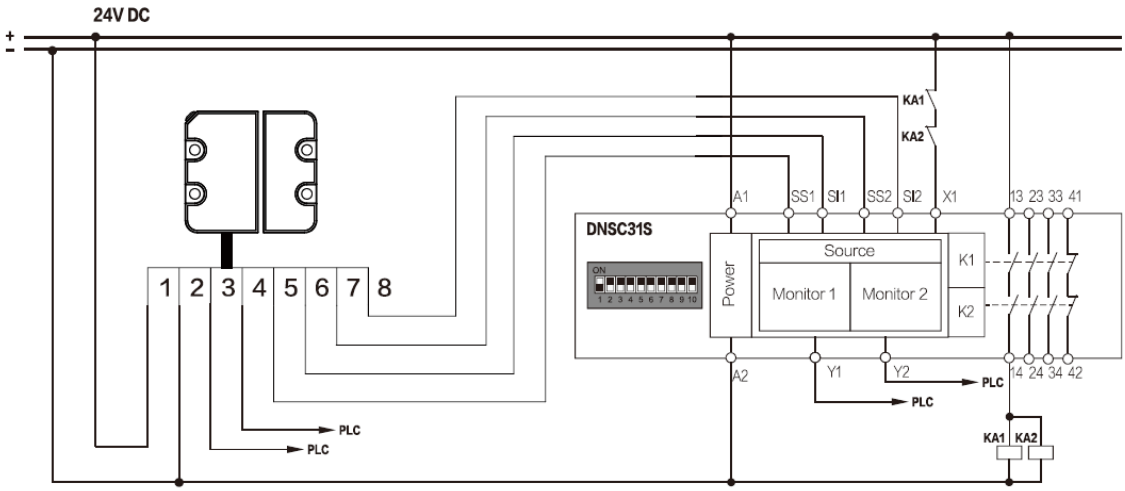
## Cascade Connection

Multiple EN devices (models with cascading functionality) can be connected in a cascaded manner to monitor the opening and closing status of multiple doors, windows, or similar structures on the same machine.

1. Cascading of Passive Models: Multiple passive model devices (ENQQC models) can be directly connected in series and then connected to the safety signal circuit of a safety relay to achieve cascading. The specific connection method can be referred to in the connection example: “Connection Example Diagram 2”.
2. Cascading of Active Models: For the ENQQFT20L or ENQQMT20L models, when cascading, the OSSD1 and OSSD2 of the upper device should be connected to the Safety Input 1 (SI1) and Safety Input 2 (SI2) of the next device, respectively. The OSSD1 and OSSD2 of the last device in the cascade should be connected to the safety inputs SI1 and SI2 of the safety relay or other external devices. The safety inputs SI1 and SI2 of the first device should be connected to the 24VDC supply. The specific connection method can be referred to in the connection example: “Connection Example Diagram 3”.

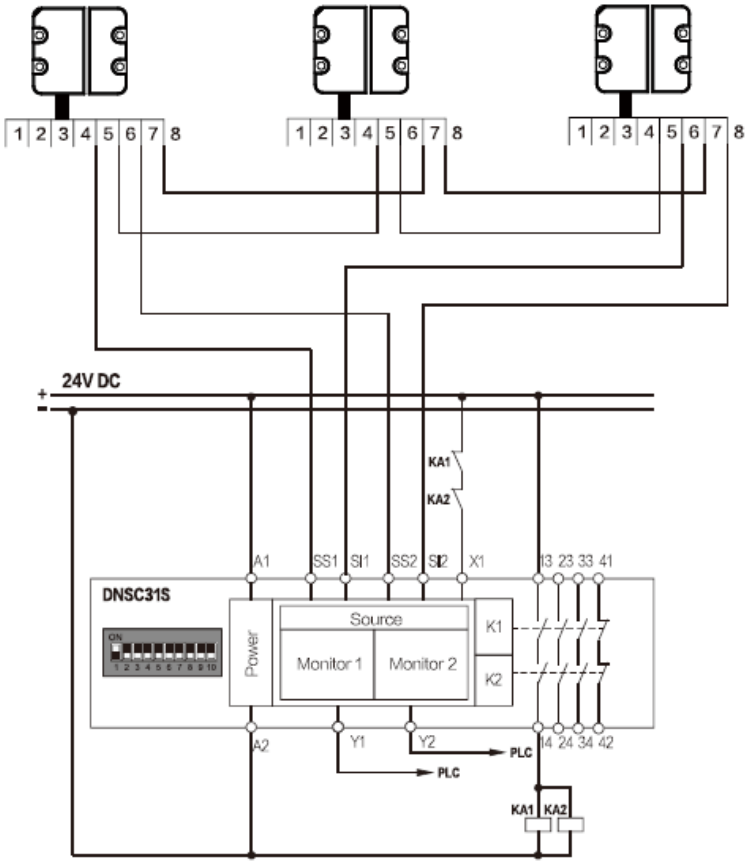
### Connection examples

1. Example 1: Active models connect to the safety relay example



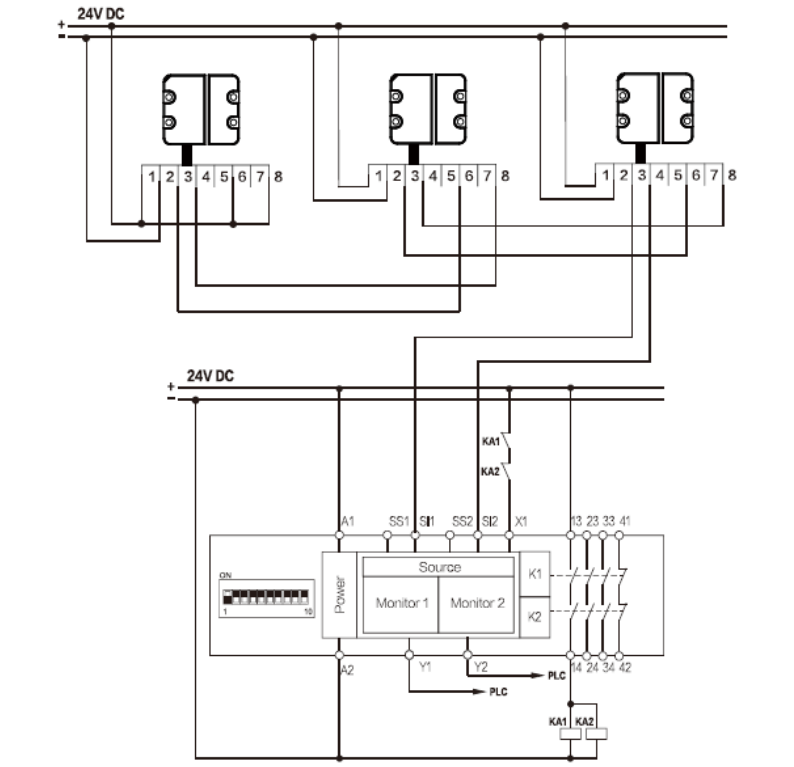

Example Diagram 1: Using ENQQF22L-3m RFID non-contact safety switch with DNSC31S safety relay, dual channels, automatically reset

**Example 2:** passive models cascading connect example




Example Diagram 2: Using multiple ENQQC30-3m non-contact safety switches in series cascade, with DNSC31S safety relay, dual channel detection, automatic reset

**Example 3:** Active Models cascading connect to the example




Example Diagram 3: Using multiple ENQQMT20/ENQQFT20 non-contact safety switches in cascade connect, with DNSC31S safety relay, dual channel detection, automatic reset

**Note:** Different circuit structures have different functional safety levels, which need to be selected according to the actual requirements of the site. For details, please consult our customer service.

## RFID Actuator Matching

RFID actuators come in two types: universal coding and independent coding. Universal coding switches are pre-matched with actuators at the factory, and typically do not require re-matching when replacing different actuators. However, for independent coding non-contact switch kits, the switch body will only work with the matched independent coding actuator during operation.

If the actuator code does not match the previously matched code, the switch body will fail to operate. To replace with another independently coded actuator, the switch body and the new actuator must be matched.

**RFID Actuator Matching Method:**

1. Connect the switch body to the power supply (-3M: Red wire to 24VDC, Black wire to 0V; -M12-8: PIN2 to 24VDC, PIN7 to 0V). Connect the actuator pairing enable (-3M: Yellow wire; -M12-8: PIN1) to 24VDC.
2. After powering on the switch, the green LED will flash, indicating that the pairing mode

has been entered. Bring the actuator close to the switch body to complete the matching.

3. Once the pairing is complete, the LED indicator on the switch will display a steady orange light, indicating that the pairing is successful.
4. Remove the actuator, disconnect the power and actuator pairing enable lines, restore the normal working wiring, and power on again to use. After rebooting, if the switch does not detect the actuator, the LED indicator will display alternating red and green flashes. When the actuator is brought within the detection range, the switch's LED light will turn to a steady
   green light, indicating that the actuator has been detected and the switch is operating normally.
5. After rebooting, if the switch does not detect an actuator, the LED indicator will display alternating red and green flashes. When the actuator is brought within the detection range, the switch's LED light will turn to a steady green light, indicating that the actuator has been detected and the switch is operating normally

## Technology Parameter

| Power supply | | ENQQC | ENQQM | ENQQF |
|---|---|---|---|---|
| Power supply | | 24V DC | | |
| Voltage tolerance | | N/A | +15%/-50% | +15%/-50% |
| Power consumption | | ≤0.1W | ≤0.72W | ≤0.96W |
| Input & Output | | ENQQC | ENQQM | ENQQF |
| Read the contact Output | 13/14(-LED) | NO, < 15 mA | | |
| | 13/14 | NO, < 200 mA | | |
| | 23/24 | NO, < 200 mA | | |
| | 33/34 | NO, < 200 mA | | |
| | 21/22 | NC, < 100 mA | | |

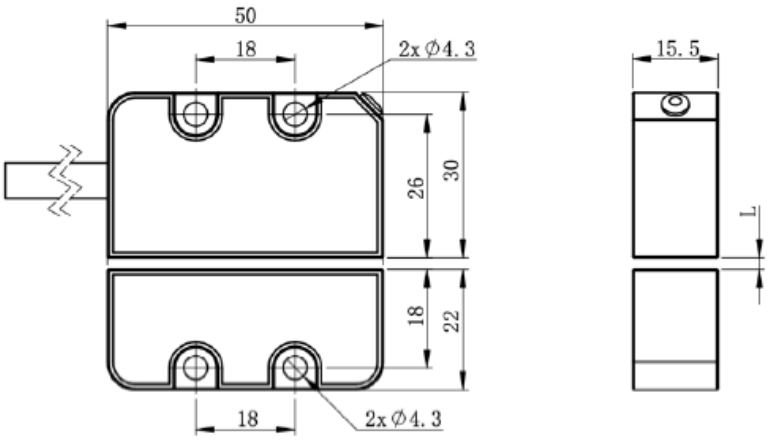
| | | | |
|---|---|---|---|
| Safety Output – Relay contact | | 2 NO, 1A @ 24V DC<br>(Resistive load) | 2 NO, 1A @ 24VDC<br>(Resistive load) |
| Safety Output – OSSD | | OSSD, < 300mA PNP<br>signal synchronization | OSSD, < 300mA PNP<br>signal synchronization |
| Safety Input | | OSSD safety input, PNP | OSSD safety input, PNP |
| Action Parameters | ENQQC | ENQQM | ENQQF |
| Action distance (off -> on) | 11mm±2mm (NO)<br>13mm±2mm (NC) | 13mm±2mm | 15mm±2mm |
| Action distance (on -> off) | 13mm±2mm (NO)<br>17mm±2mm (NC) | 17mm±2mm | 19mm±2mm |
| Action accuracy | Within 10% of the action distance | | |
| Response time (off -> on) | 1ms | 50ms | 130ms |
| Response time (on -> off) | 1ms | 60ms | 60ms |

| General parameters | ENQQC | ENQQM | ENQQF |
|---|---|---|---|
| Electrical lifespan (times) | $1\times10^5$ (Test curren t 0.2A) | $1\times10^5$ (Test curren t 0.3A) | $1\times10^5$ (Test curren t 0.3A) |
| Mechanical lifespan (ti mes) | $5\times10^6$ | $1\times10^8$ | $1\times10^8$ |
| Working temperature | -25℃:90℃ | -25℃:70℃ | |
| Working humidity | 10%-90% (No frozen or Condensation) | | |
| Impulse withstand volt age | 2kV | | |
| Vibration resistance | 10~150Hz, Amplitude 1.5mm, 3-axis, 60 minutes | | |
| Impact Resistance | 15G acceleration, 11ms duration, 3-axis, 3 times per axis. | | |
| Insulation impedance | 100MΩ | | |
| Insulation withstands v oltage | 1500VAC (1min) | | |

| Pulse withstand voltage | 6kV (1.2/50us), 5 pulses, duration 20s (Between signal and relay o utput (unpowered)) |
|---|---|
| | 4kV (1.2/50us), 5 pulses, duration 20s (Between signal output (unp owered)) |
| Rated insulation voltage | 125V AC |
| Overvoltage cat egory | II |
| Pollution degree | 3 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Protection level | | IP69K | | | | |
| Storage temperature | | -40℃:105℃ | | | | |
| Shell material | | PBT V0 Flame retardant | | | | |
| Installation method | | M4 screw | | | | |
| Size | | H50mm×D30mm×W15.5mm (Sensor); H50mm×D22mm×W15.5mm (actuator) | | | | |
| Weight | | ENQQC11 | ENQQC30 | ENQQM | ENQQF20 | ENQQF22 |
| | -3M set | 205g | 197g | 228g | 221g | |
| | -3M sensor | 177g | 169g | 200g | 200g | |
| | -M12-8 senser | N/A | | 55g | 55g | |
| | Actuator | ENJDMG 28g | | ENJDMG 28g | ENJDFG/ENJDFU 21g | |
| Connection parameters | | | | | | |
| Connecting cable length | | 3m (-3M loose cable) or 0.2m (-M12-8 with connector) | | | | |
| Interface Type | | No connector (-3M model) or M12-8 male connector (-M12-8 model) | | | | |
| Standard application | | | | | | |

| | | | | |
|---|---|---|---|---|
| Conform to | EN 60947-1 | | | |
| | EN 60947-5-1 | | | |
| | EN ISO 13849-1 | | | |
| | EN 62061 | | | |
| | CE | | | |
| Safety characteristics | | ENQQC | ENQQM | ENQQF |
| PL Level | EN ISO 13849-1 | When used together with safety relays, it can reach up to PLe (EN ISO 13849-1) and SIL.3<br>(IEC61508) Safety level requirements. | PLe | PLe |
| Category | EN ISO 13849-1 | | Cat.4 | Cat.4 |
| DCavg | EN ISO 13849-1 | | High | High |
| Mission Time | EN ISO 13849-1 | | 20 Years | 20 Years |
| CCF | EN ISO 13849-1 | | Meet requirement | Meet requirement |
| MTTFd | EN ISO 13849-1 | | 870 Years | 870 Years |
| SIL CL | EN 62061 | | SIL CL 3 | SIL CL 3 |
| PFHd[1/h] | EN 62061 | | 2.6E-09 | 2.6E-09 |




**EN Non-contact safety interlock switch dimensions** **Unit in mm*

## Safety Precautions

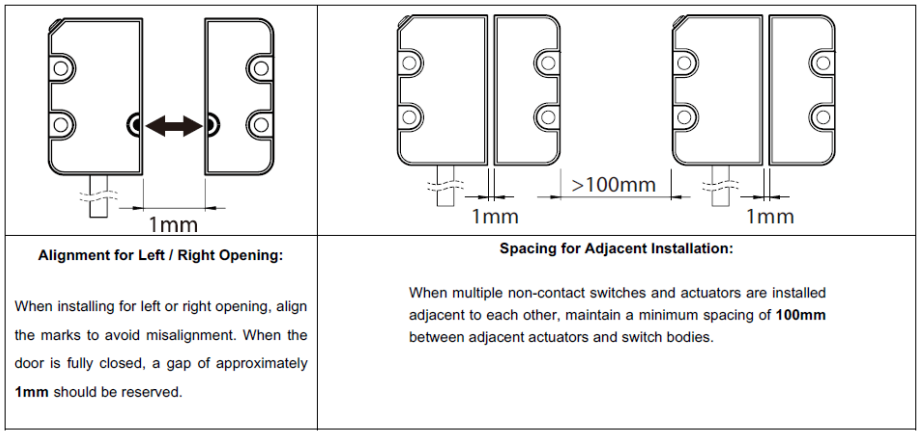
- Professional Handling: The design, installation, commissioning, and maintenance of the product should be carried out by qualified technical personnel. Failure to do so may result in personal injury or equipment damage.
- Electrical Safety: To avoid electric shock or fire, ensure the equipment power is turned off before installation, removal, wiring, maintenance, or inspection of the switch.
- Installation Location: Do not install the actuator in locations where it may come into contact with the human body to prevent potential injury.

### Installation Instructions

- Safety Level: By using a safety relay module (with a dual-channel safety relay configuration), the product can meet the safety level requirements of CAT 4 (EN ISO 13849-1).
- Matching Components: The non-contact switch and the actuator are designed for use together. During installation, configuration, use, and maintenance, ensure that the corresponding matching actuator model is used. Do not use non-matching models.
- Power and Load: Do not install or remove the encoded magnetic switch while the power is on. Do not exceed the rated load limits for the corresponding switch model. It is recommended to use a fuse in series to prevent damage due to misuse.
- Impact Protection: If the impact force during door closure exceeds 300 $m/s^2$ (approximately 30G), it may cause switch failure. It is recommended to install a door stop mechanism (e.g., a door bolt) to prevent direct impact between the non-contact switch and the
  actuator.

- Product Integrity: To ensure the protective performance of the product, do not disassemble it after purchase. If mechanical damage to the enclosure is detected, especially in damp environments, stop using the product immediately and replace it.
- Storage Conditions: Do not store the switch in dusty, damp, or organic gas environments, or areas exposed to direct sunlight.
- Magnetic Interference: Do not install magnetic encoded switches (ENQQC, ENQQM series) in environments with strong magnetic interference. For such environments, consider using
- RFID-enabled contact switches (ENQQF series) or consult a sales advisor for alternative solutions.

## Installation Notes

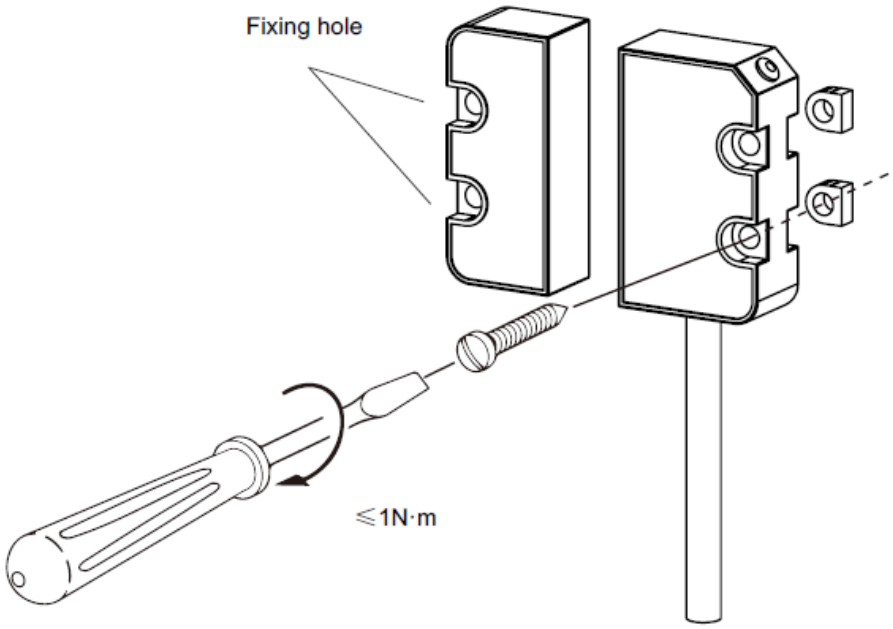



| Alignment for Left / Right Opening: | Spacing for Adjacent Installation: |
| --- | --- |
| When installing for left or right opening, align the marks to avoid misalignment. When the door is fully closed, a gap of approximately **1mm** should be reserved. | When multiple non-contact switches and actuators are installed adjacent to each other, maintain a minimum spacing of **100mm** between adjacent actuators and switch bodies. |

## Installation Torque

**Shim Block Usage:** The product is equipped with four Shim blocks for fixing holes. It is recommended to use these blocks when tightening the screws to ensure that the switch and actuator are installed horizontally and securely.

**Tool and Torque Requirements:** Use a non-magnetic screwdriver during installation to avoid interference with the product. The tightening torque should not exceed 1 Newton meter (1 N·m).

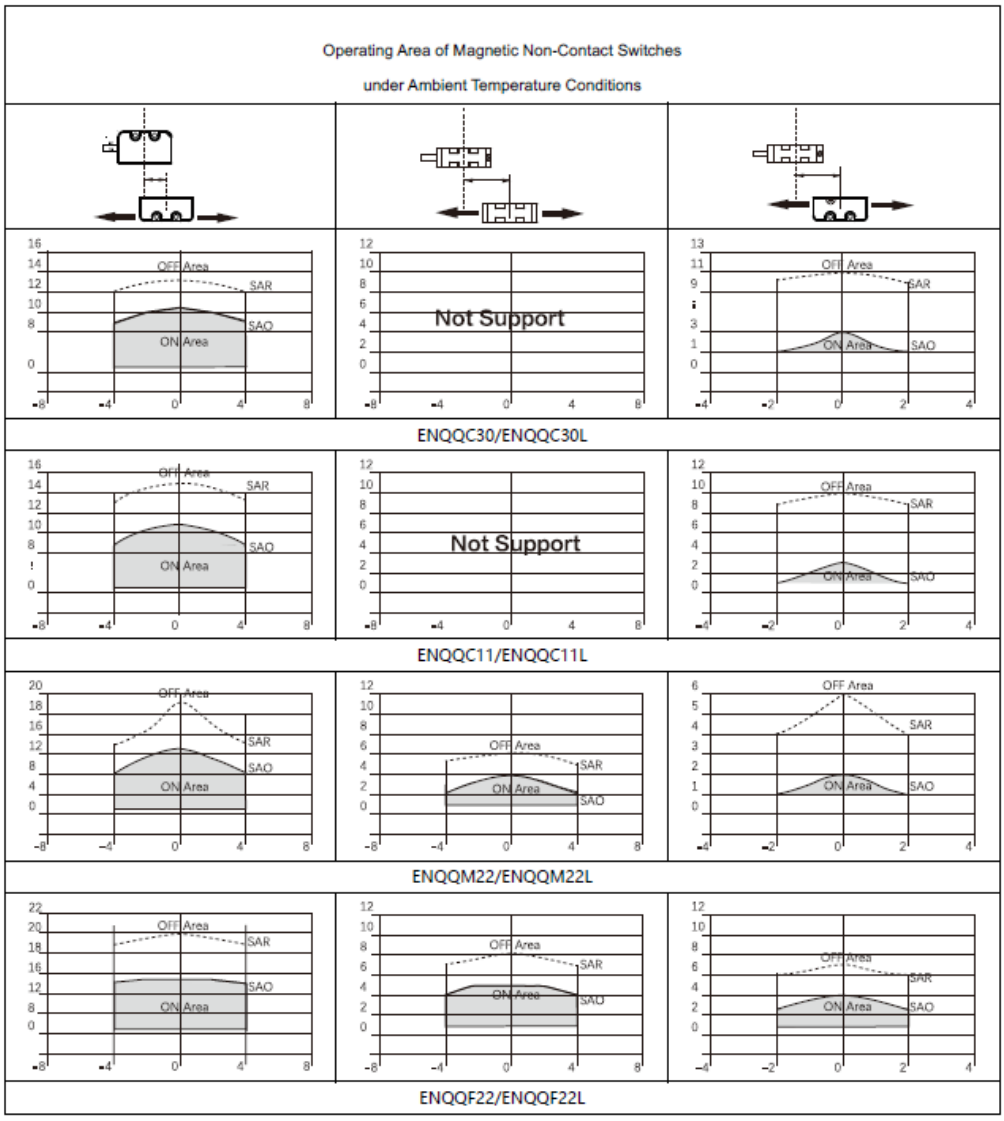



### Cable Wiring Precautions

- Avoid Excessive Tension: Excessive tension during wiring can cause the cable to break. When routing and securing the cable, allow for a small amount of slack to accommodate movement.
- Handle Cables with Care: Do not pull the cable forcefully, especially at the switch connection point. Doing so may cause the cable to break or the cable sheath to dislodge, which could compromise the protective performance and lead to other failures.

### Magnetic Non-Contact Switch Operating Area

- SAO (Safe Operating Distance for Activation): The distance at which the safety output is guaranteed to be activated.
- SAR (Safe Operating Distance for Release): The distance at which the safety output is guaranteed to be deactivated




## Ordering information

### Sensor & Actuator (KIT)

| Model | Code | Qty | Power Supply | Description | Output |
|---|---|---|---|---|---|
| ENQQC11-3m / ENJDMG | 011206 11101 | 1 | Passive | Kit, magnetic encoding type (with safety magnetic encoding actuator), no indicator light, cable length 3m | 1NO/1NC |
| ENQQC30L-3m / ENJDMG | 011206 11102 | 1 | Passive | Kit, magnetic encoding type (with safety magnetic encoding actuator), with indicator light, cable length 3m | 2NO/1NO (LED) |

| | | | | | |
|---|---|---|---|---|---|
| ENQQC11L-3m / ENJDMG | 011206 11103 | 1 | Passive | Kit, magnetic encoding type (with safety magnetic encoding actuator), with indicator light, cable length 3m | 1NO(LED)/1NC |
| ENQQC30-3m / ENJDMG | 011206 11104 | 1 | Passive | Kit, magnetic encoding type (with safety magnetic encoding actuator), no indicator light, cable length 3m | 3NO |
| ENQQM20L-3m / ENJDMG | 011206 11111 | 1 | 24V DC | Kit, magnetic encoding type (with safety magnetic encoding actuator), with indicator light, cable length 3m | 2PNP |
| ENQQMT20L-3m / ENJDMG | 011206 12132 | 1 | 24V DC | Kit, magnetic encoding type, supports 2 OSSD safety inputs (with safety magnetic encoding actuator), with indicator light, cable length 3m | 2PNP |
| ENQQM22L-3m/ ENJDMG | 011206 11112 | 1 | 24V DC | Kit, magnetic encoding type (with safety magnetic encoding actuator), with indicator light, cable length 3m | 2PNP+2NO |
| ENQQF20L-3m/ ENJDFG | 011206 11221 | 1 | 24V DC | Kit, RFID universal encoding type (with safety RFID universal encoding actuator), with indicator light, cable length 3m | 2PNP |

| | | | | | |
|---|---|---|---|---|---|
| ENQQFT20L-3m / ENJDFG | 011206 12133 | 1 | 24V DC | Kit, RFID universal encoding type, supports 2 OSSD safety inputs (with safety RFID universal encoding actuator), with<br>indicator light, cable length 3m | 2PNP |
| ENQQF22L-3m / ENJDFG | 011206 11222 | 1 | 24V DC | Kit, RFID universal encoding type (with safety RFID universal encoding actuator), with indicator light, cable length 3m | 2PNP+2NO |
| ENQQF20L-3m / ENJDFU | 011206 11323 | 1 | 24V DC | Kit, RFID independent encoding type (with safety RFID<br>Independent encoding actuator, with indicator light, cable length 3m | 2PNP |
| ENQQFT20L-3m / ENJDFU | 011206 12134 | 1 | 24V DC | Kit, RFID independent encoding type, supports 2 OSSD safety inputs (with safety RFID independent encoding actuator), with indicator light, cable length 3m | 2PNP |
| ENQQF22L-3m / ENJDFU | 011206 11324 | 1 | 24V DC | Kit, RFID independent encoding type (with safety RFID independent encoding actuator), with indicator light, cable<br>length 3m | 2PNP+2NO |

| | | | | | |
|---|---|---|---|---|---|
| ENQQM20L-M12-8 / ENJDMG | 01120612111 | 1 | 24V DC | Kit, magnetic encoding type switch ( with safety magnetic encoding actuator), with indicator light, cable length 0.2m, with M12-8 core connector | 2PNP |
| ENQQMT20L-M12-8 / ENJDMG | 01120612135 | 1 | 24V DC | Kit, magnetic encoding type switch, supports 2 OSSD safety inputs (with safety magnetic encoding actuator), with indicator light, cable length 0.2m, with M12-8 core connector | 2PNP |
| ENQQM22L-M12-8 / ENJDMG | 01120612112 | 1 | 24V DC | Kit, magnetic encoding type switch ( with safety magnetic encoding actuator), with indicator light, cable length 0.2m, with M12-8 core connector | 2PNP+2NO |
| ENQQF20L-M12-8 / ENJDFG | 01120612221 | 1 | 24V DC | Kit, RFID encoding type switch (with safety RFID universal encoding actuator), with indicator light, cable length 0.2m, with M12-8 core connector | 2PNP |

| | | | | | |
|---|---|---|---|---|---|
| ENQQFT20L-M12-8 / ENJDFG | 01120612136 | 1 | 24V DC | Kit, RFID encoding type switch, supports 2 OSSD safety inputs (with safety RFID universal encoding actuator), with indicator light, cable length 0.2m, with M12-8 core connector | 2PNP |
| ENQQF22L-M12-8 / ENJDFG | 01120612222 | 1 | 24V DC | Kit, RFID encoding type switch (with safety RFID universal encoding actuator), with indicator light, cable length 0.2m, with M12-8 core connector | 2PNP+2NO |
| ENQQF20L-M12-8 / ENJDFU | 01120612323 | 1 | 24V DC | Kit, RFID encoding type switch (with safety RFID independent encoding actuator), with indicator light, cable length 0.2m, with M12-8 core connector | 2PNP |
| ENQQFT20L-M12-8 / ENJDFU | 01120612137 | 1 | 24V DC | Kit, RFID encoding type switch, supports 2 OSSD safety inputs (with safety RFID independent encoding actuator), with indicator light, cable length 0.2m, with M12-8 core connector | 2PNP |

| | | | | | |
|---|---|---|---|---|---|
| ENQQF22L-M12-8 / ENJDFU | 011206 12324 | 1 | 24V DC | Kit, RFID encoding type switch (with safety RFID independent encoding actuator), with indicator light, cable length 0.2m, with M12-8 core connector | 2PNP+2NO |

| **Model** | **Code** | **Qty** | **Power Supply** | **Description** | **Output** |
|---|---|---|---|---|---|
| ENQQC11-3m | 011206 11001 | 1 | Passive | Magnetic Encoding Sensor, no indicator light, cable length 3m | 1NO/1NC |
| ENQQC30L-3m | 011206 11002 | 1 | Passive | Magnetic Encoding Sensor, no indicator light, cable length 3m | 2NO/1NO (LED) |
| ENQQC11L-3m | 011206 11003 | 1 | Passive | Magnetic Encoding Sensor, with indicator light, cable length 3m | 1NO/1NC (LED) |
| ENQQC30-3m | 011206 11004 | 1 | Passive | Magnetic Encoding Sensor, with indicator light, cable length 3m | 3NO |

| | | | | | |
|---|---|---|---|---|---|
| ENQQM20L-3m | 011206 11011 | 1 | 24V DC | Magnetic Encoding Sensor, with in dicator light, cable length 3m | 2PNP |
| ENQQMT20 L-3m | 011206 12032 | 1 | 24V DC | Magnetic Encoding Sensor, supports 2 OSSD safety inputs, wit h indicator light, cable length 3m | 2PNP |
| ENQQM22L-3m | 011206 11012 | 1 | 24V DC | Magnetic Encoding Sensor, with in dicator light, cable length 3m | 2PNP+2N O |
| ENQQF20L-3m | 011206 11021 | 1 | 24V DC | RFID Universal Encoding Sensor, with indicator light, cable length 3m | 2PNP |
| ENQQFT20 L-3m | 011206 12033 | 1 | 24V DC | RFID Universal Encoding Sensor, s upports 2 OSSD safety inputs, with indicator light, cable length 3m | 2PNP |
| ENQQF22L-3m | 011206 11022 | 1 | 24V DC | RFID Universal Encoding Sensor, with indicator light, cable length 3m | 2PNP+2N O |
| ENQQM20L-M12-8 | 011206 12011 | 1 | 24V DC | Magnetic Encoding Sensor, with in dicator light, cable length 0.2m, wit h M12-8 core connector | 2PNP |

| | | | | | |
|---|---|---|---|---|---|
| ENQQMT20L-M12-8 | 011206 12034 | 1 | 24V DC | Magnetic Encoding Sensor, supports 2 OSSD safety inputs, with indicator light, cable length 0.2m, with M12-8 core connector | 2PNP |
| ENQQM22L-M12-8 | 011206 12012 | 1 | 24V DC | Magnetic Encoding Sensor, with indicator light, cable length 0.2m, with M12-8 core connector | 2PNP+2NO |
| ENQQF20L-M12-8 | 011206 12021 | 1 | 24V DC | RFID Encoding Sensor, with indicator light, cable length 0.2m, with M12-8 core connector | 2PNP |
| ENQQFT20L-M12-8 | 011206 12035 | 1 | 24V DC | RFID Encoding Sensor, supports 2 OSSD safety inputs, with indicator light, cable length 0.2m, with M12-8 core connector | 2PNP |
| ENQQF22L-M12-8 | 011206 12022 | 1 | 24V DC | RFID Encoding Sensor, with indicator light, cable length 0.2m, with M12-8 core connector | 2PNP+2NO |
| ENJDMG | 011206 11031 | 1 | | Safety Magnetic Encoding Actuator | |

| | | | | | |
|---|---|---|---|---|---|
| ENJDFG | 011206 11032 | 1 | | Safety RFID Universal Encoding A ctuator | |
| ENJDFU | 011206 11033 | 1 | | Safety RFID Independent Encoding Actuator | |

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- Website: http://www.bytorent.net
- E-mail: info@bytorent.net

## FCC Warning:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuan t to part 15 of the FCC Rules. These limits are designed to provide reasonable protection againstharmful interference in a residential installation. This equipment generates, uses and can radiateradio frequency energy and, if not installed and used in accordance with the instructions, maycause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**Caution:** Any changes or modifications to this device not explicitly approved by the manufacturer could void your authority to operate this equipment.
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body.

## ISED Statement

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s).

**Operation is subject to the following two conditions:**

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

- This equipment complies with Canada's radiation exposure limits set forth for an uncontrolled environment.
- This equipment should be installed and operated with a minimum distance of 20cm between the radiator & your body.

## FAQS

**Q: What should I do if I encounter issues with the LED indication?**

A: If you encounter any issues with the LED indication, please refer to the troubleshooting section in the user manual for possible solutions. If the issue persists, contact customer support for further assistance.

**Q: Can I modify the device for a different application?**
A: It is not recommended to modify the device for a different application as it may compromise the safety features and protection provided by the original design. Any modifications should only be performed by qualified personnel following the manufacturer's guidelines.

**Q: How often should I perform maintenance on the safety switch?**
A: Regular maintenance checks should be conducted as per the recommended schedule in the user manual. This ensures that the safety switch functions properly and provides the intended protection. Any signs of wear or damage should be addressed immediately.

# Documents / Resources

| | |
|---|---|
|  | Bytorent Shield Series Non Contract Safety Switch [pdf] Instruction Manual<br>Shield Series, Shield Series Non Contract Safety Switch, Non Contract Safety Switch, Safety Switch, Switch |

## References

- User Manual

Bytorent

Bytorent, Non Contract Safety Switch, Safety Switch, Shield Series, Shield Series Non Contract Safety Switch, switch

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