

## PILZ 777314

# Pilz PNOZ X3P Safety Relay Instruction Manual

Model: 777314 | Brand: PILZ

## 1. INTRODUCTION

This manual provides essential information for the safe installation, operation, and maintenance of the Pilz PNOZ X3P Safety Relay, model 777314. The PNOZ X3P is designed for monitoring E-STOP pushbuttons, safety gates, and light grids in industrial applications, ensuring personnel and machine safety.

## 2. SAFETY INSTRUCTIONS

**WARNING:** Failure to follow these safety instructions can result in serious injury or death, and damage to equipment.

- Only qualified personnel familiar with industrial safety standards and electrical systems should install, operate, or maintain this device.
- Disconnect all power before performing any installation, wiring, or maintenance tasks.
- Ensure all wiring complies with local and national electrical codes.
- Do not bypass or disable safety functions.
- Regularly inspect the device and associated safety components for damage or malfunction.
- Use only genuine PILZ replacement parts.

## 3. PRODUCT OVERVIEW

The Pilz PNOZ X3P (Model 777314) is a safety relay designed for monitoring safety functions. It features:

- **Function:** E-STOP, safety gate, light grid monitoring.
- **Contact Configuration:** 3 Normally Open (NO) safety contacts, 1 Normally Closed (NC) auxiliary contact, 1 Semiconductor Output (SO).
- **Supply Voltage Range:** 24-240VAC/DC (Coil Voltage: 24V AC/DC).
- **Operation Mode:** Automatic reset.

- Width: 45mm.

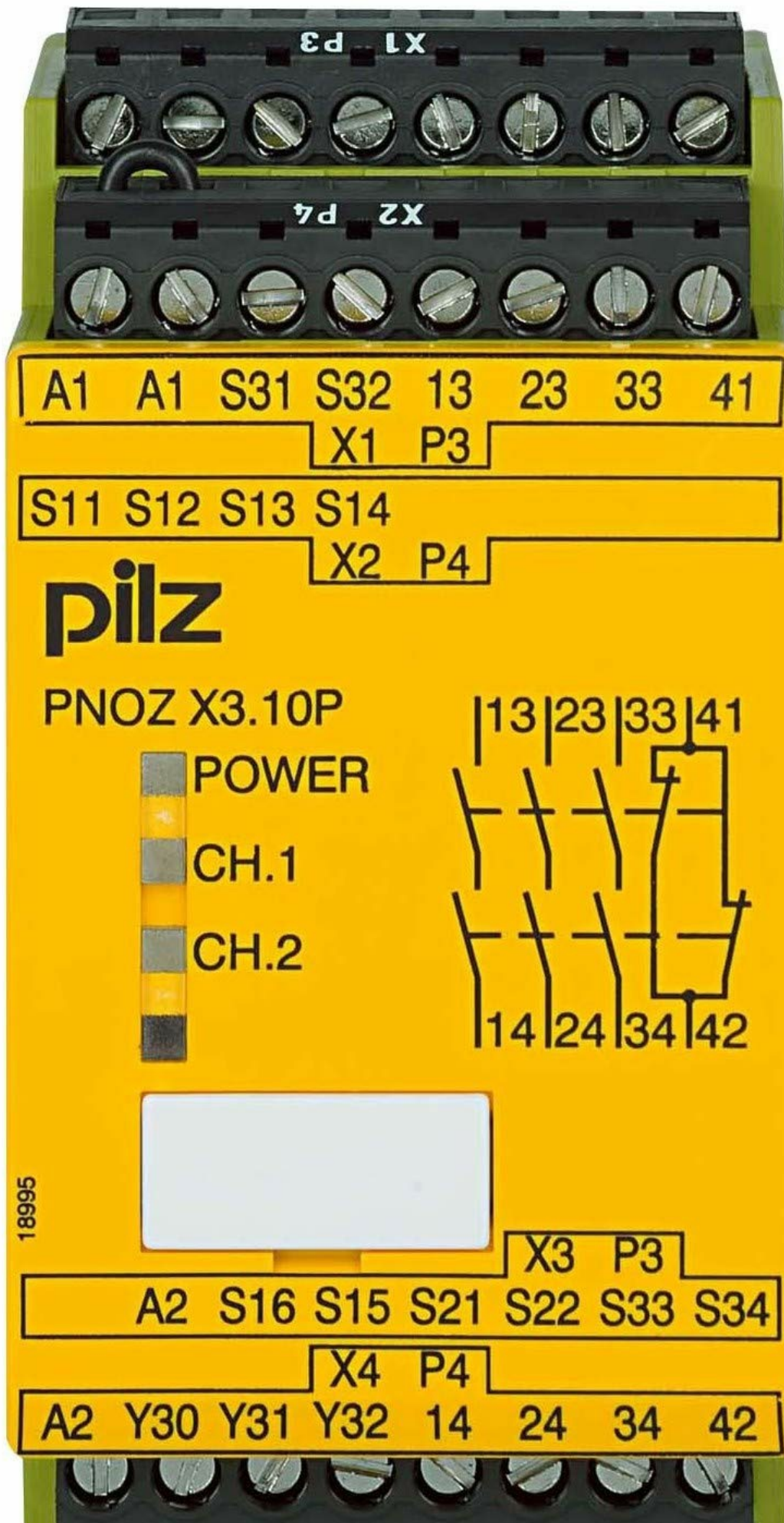




Figure 1: Front view of the Pilz PNOZ X3P Safety Relay, showing terminals and indicators.

## 4. SETUP AND INSTALLATION

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### 4.1 Mounting

Mount the PNOZ X3P on a 35mm DIN rail in a control cabinet. Ensure adequate ventilation around the device to prevent overheating. Maintain proper clearance from heat-generating components.

### 4.2 Electrical Connections

Before making any electrical connections, ensure the main power supply is disconnected and locked out. Refer to the wiring diagrams for correct terminal assignments.

## 5. WIRING

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The PNOZ X3P supports 1-channel or 2-channel wiring for safety inputs. The choice depends on the required safety integrity level (SIL) and performance level (PL).

### 5.1 Input Wiring (E-STOP, Safety Gate, Light Grid)

- **1-Channel Wiring:** Connect the safety device (e.g., E-STOP) to a single input channel. This configuration offers basic safety.
- **2-Channel Wiring:** Connect the safety device to two independent input channels. This configuration provides redundancy and higher fault tolerance, suitable for higher safety requirements.

### 5.2 Output Wiring

The relay provides 3 NO safety contacts for controlling power to hazardous machinery and 1 NC auxiliary contact for signaling purposes. The 1 SO (semiconductor output) can be used for diagnostic feedback to a PLC. Ensure that the load connected to the safety contacts does not exceed the maximum switching current of 15 Amps and maximum switching voltage of 240 Volts.

*Figure 2: Example wiring diagram for a 2-channel E-STOP application. (Actual diagram not provided, refer to product documentation for specific wiring.)*

## 6. OPERATING INSTRUCTIONS

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The PNOZ X3P operates in an automatic reset mode. Once the safety input circuit is closed (e.g., E-STOP released, safety gate closed), the safety relay will automatically energize its output contacts, provided no faults are detected.

### 6.1 Power-Up

Upon applying power, the relay performs an internal self-test. If the safety inputs are closed and no faults are present, the output contacts will close, and the status indicators will illuminate.

### 6.2 Safety Function Activation

When a safety input is opened (e.g., E-STOP pressed, safety gate opened), the PNOZ X3P immediately de-

energizes its safety output contacts, bringing the monitored machine to a safe state.

### 6.3 Resetting

Due to its automatic reset function, the relay will re-energize its outputs as soon as the safety input circuit is restored and no faults are present. Ensure that the machine can only restart safely after a reset.

## 7. MAINTENANCE

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Regular maintenance is crucial to ensure the continued safe operation of the PNOZ X3P safety relay.

- **Periodic Inspection:** Visually inspect the device and its wiring for any signs of damage, loose connections, or contamination.
- **Functional Test:** Periodically test the entire safety circuit, including the PNOZ X3P, by activating the connected safety devices (E-STOP, safety gate, light grid) to verify their proper function.
- **Cleaning:** Keep the device free from dust and debris. Use a dry, soft cloth for cleaning. Do not use abrasive cleaners or solvents.

## 8. TROUBLESHOOTING

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If the safety relay does not function as expected, consider the following common issues:

Problem	Possible Cause	Solution
Outputs do not energize after power-up.	<ul style="list-style-type: none"><li>• No power supply.</li><li>• Safety inputs open (e.g., E-STOP pressed).</li><li>• Internal fault.</li></ul>	<ul style="list-style-type: none"><li>• Check power connections and voltage.</li><li>• Ensure all safety inputs are closed.</li><li>• Contact PILZ technical support.</li></ul>
Outputs de-energize unexpectedly.	<ul style="list-style-type: none"><li>• Safety input opened momentarily.</li><li>• Loose wiring.</li><li>• Interference.</li></ul>	<ul style="list-style-type: none"><li>• Check safety devices for intermittent operation.</li><li>• Inspect all wiring connections.</li><li>• Ensure proper grounding and shielding.</li></ul>

If troubleshooting steps do not resolve the issue, contact PILZ technical support.

## 9. TECHNICAL SPECIFICATIONS

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Parameter	Value
Model	777314
Brand	PILZ
Operation Mode	Automatic
Coil Voltage	24 Volts (AC/DC)
Contact Current Rating	6 Amps
Maximum Switching Current	15 Amps
Maximum Switching Voltage	240 Volts
Item Weight	0.64 Pounds

## 10. WARRANTY AND SUPPORT

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PILZ products are manufactured to high-quality standards and come with a manufacturer's warranty. For specific warranty terms and conditions, please refer to the official PILZ website or contact your local distributor.

For technical assistance, product support, or to report a malfunction, please contact PILZ customer service. Have your product model (777314) and serial number ready when contacting support.

**PILZ Official Website:** [www.pilz.com](http://www.pilz.com)