User Manual

Interroll Pallet Control

PC 6000
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Contents
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Translation of original instruction manual
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Introduction

Information about the manual
This instruction manual contains important notes and information about the various operating phases of the Pallet Control.

The instruction manual describes the product as it is delivered by Interroll.

In addition to this instruction manual, special contractual agreements and technical documents apply to special versions.

- For trouble-free, safe operation and compliance with possible warranty claims, read the manual first and follow the instructions.
- Keep the manual close to the product.
- Pass the manual on to any subsequent operator or owner.
- **NOTICE!** The manufacturer does not accept any liability for faults or defects due to non-observance of this instruction manual.
- If you have any questions after reading the operating instructions, please contact the Interroll customer service. Contact persons close to you can be found on the Internet under www.interroll.com/contact.

Warning notices in this manual
The warning notices refer to risks that may arise while using the product. They are available in four danger levels identified by the signal word:

<table>
<thead>
<tr>
<th>Signal word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANGER</td>
<td>Identifies a danger with high risk that will result in death or serious injury if it is not avoided.</td>
</tr>
<tr>
<td>WARNING</td>
<td>Identifies a danger with medium risk that could result in death or serious injury if it is not avoided.</td>
</tr>
<tr>
<td>CAUTION</td>
<td>Identifies a danger with low risk that could result in minor or medium injury if it is not avoided.</td>
</tr>
<tr>
<td>NOTICE</td>
<td>Identifies a danger that results in property damage.</td>
</tr>
</tbody>
</table>

Symbols

This symbol marks useful and important information.

Requirement:
- ☐ This symbol represents a prerequisite to be met prior to assembly and maintenance work.
- ☐ This symbol marks the steps to be carried out.
Safety

State of the art
The product has been built to comply with the state of the art and is reliable in operation as delivered. Nevertheless, hazards may arise during its use.

Disregarding the notices in this manual may lead to serious injury.
› Carefully read the manual and follow its content.

Intended use
Pallet Control may only be used for industrial applications and in an industrial environment to control one or two Interroll Pallet Drive.

The product must be integrated into a conveyor module or conveyor system. Any other use is considered inappropriate.

Any modifications that affect the safety of the product are not permitted.

The product may only be operated within the defined operating limits.

Applications outside these limits require the approval of Interroll.
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Safety

Personnel qualification
Unqualified personnel cannot recognize risks and, as a result, is subject to greater dangers.

- Authorize only qualified personnel to perform the activities described in these instructions.
- The operating company must ensure that personnel follow locally applicable regulations and rules about safety and hazards while working.

The following target groups are addressed in these instructions:

Operators
Operators have been instructed in the operation and cleaning of the product, and follow the safety guidelines.

Qualified person
A specialist is a person who, based on his relevant technical training, education and experience, is capable of detecting risks and avoiding dangers that could occur during the use of the product.

Electricians
Persons working on electrical installations must have the pertinent technical training. They require suitable training, suitable education and experience that enables them to detect risks and avoid dangers which could originate from the electricity. (IEC 60204-1)

Dangers

⚠️ The following list informs you about the various types of danger or damage that may occur while operating the product.

- **Bodily injury**
  - Work on the device must be performed only by authorized electricians in accordance with applicable regulations.
  - Before using the product, ensure that no unauthorized personnel is in the vicinity of the conveyor.

- **Electricity**
  - Only perform installation and maintenance work when powered down.
  - Before working on the device, ensure that both voltages (400 V AC and 24 V DC) have been switched off. **DANGER! 400 V could be applied, even though the LEDs are not on, since the device is supplied by two power sources.**
  - Secure the device against inadvertent activation.

- **Working environment**
  - Do not use the product in explosive environments.
  - Remove material that is not required and unnecessary objects from the workspace.

- **Faults during operation**
  - Regularly check the product for visible damage.
  - If you notice smoke, switch off the power immediately and ensure that it cannot be switched on again accidentally.
  - Immediately contact an electrician and have that person determine the cause of the fault.

- **Maintenance**
  - Because the product does not require maintenance, you only need to inspect all components regularly for visible damage and check that all cables and screws are firmly in place.

- **Accidental motor start**
  - Ensure that a connected motor cannot start accidentally, particularly for assembly, maintenance work and troubleshooting.
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Safety

Interfaces to other devices
Hazard zones may occur while installing the product in a complete system. These zones are not part of this manual and have to be analyzed during the design, installation and startup of the complete system.

- After installing the product in a conveyor system, check the complete system for new potential hazard zones before switching on the conveyor.
- Additional construction measures may be required.

Operating modes

<table>
<thead>
<tr>
<th>Normal mode</th>
<th>Special mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation of the installed device</td>
<td>Special operation refers to all operating modes which are required to guarantee and maintain regular operation.</td>
</tr>
<tr>
<td>at the end customer's as a component in a conveyor in a complete system.</td>
<td></td>
</tr>
</tbody>
</table>

### Special operating mode

<table>
<thead>
<tr>
<th>Special operating mode</th>
<th>Explanation</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport/storage</td>
<td>Loading and unloading, transport and storage</td>
<td>-</td>
</tr>
<tr>
<td>Assembly/Initial start-up</td>
<td>Installation at the end customer and performing the test run</td>
<td>-</td>
</tr>
<tr>
<td>Cleaning</td>
<td>External cleaning without removing protective devices</td>
<td>In the de-energized state</td>
</tr>
<tr>
<td>Maintenance/Repairs</td>
<td>Maintenance and inspection tasks</td>
<td>In the de-energized state</td>
</tr>
<tr>
<td>Troubleshooting</td>
<td>Troubleshooting in the event of a fault</td>
<td>-</td>
</tr>
<tr>
<td>Fault elimination</td>
<td>Eliminating the fault</td>
<td>In the de-energized state</td>
</tr>
<tr>
<td>Decommissioning</td>
<td>Removing from the complete system</td>
<td>In the de-energized state</td>
</tr>
<tr>
<td>Disposal</td>
<td>Removing from the complete system and disassembly</td>
<td>In the de-energized state</td>
</tr>
</tbody>
</table>
Product information

Product description

Pallet Control is a decentralized control for conveyor systems that allows for operating up to two Pallet Drive. Pallet Control can be controlled as follows:

- via a RollerDrive control system, such as MultiControl
- PLC
- directly via the digital inputs

By combining Pallet Control with a RollerDrive control system, it is possible, among other things, to implement zero pressure accumulation conveying of pallets. It is also possible to control Pallet Drive with integrated brakes.

Various protective mechanisms are integrated, such as analysis of the thermal contact and overload detection. Error messages are signaled via LEDs that show different flashing patterns depending on the malfunction.

Overview of the functions

- Simultaneous control of two 400 V Interroll Pallet Drive
- Looping-through of line voltage (400 V AC) possible
- Integrated holding brake control (24 V DC)
- Adapting Interroll RollerDrive control systems possible (MultiControl, ConveyorControl)
- Alternate control via PLC possible
- Soft start and soft stop, parameters can be assigned
- Controlled stopping length of pallet, parameters can be assigned
- Integrated current limit and operating hour counter
- Parameterization via USB port possible
- Parameterization and error acknowledgment with magnetic key possible
- Several parameter sets possible
- Output of error messages via LEDs
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Product information

Structure

1 Pallet Drive output
2 Control input 1
3 Pallet Drive 1 status LEDs
4 Pallet Control status LEDs
5 USB programming port
6 Pallet Drive 2 status LEDs
7 Control input 2
8 Pallet Drive 2 output
9 400 V AC (input or looping through)
10 Type plate
11 Housing screw M5
12 Position for solenoid sensor
13 400 V AC (input or looping through)
Internal connections

X1  Connection for 400 V and Pallet Drive 1  X4  Connection for Pallet Drive 2 control signals
X2  Connection for 400 V and Pallet Drive 2  X5  USB port for Pallet Control configurator
X3  Connection for Pallet Drive 1 control signals

Scope of delivery

The Pallet Control’s scope of delivery contains the following components:

- Pallet Control circuit board and housing
- 2 x PG screw connection M20 (already installed)
- 2 x PG screw connection M16 (already installed)
- 2 x PG screw connection M12 (already installed)
- 2 round cables with M8 coupling (already installed)
- 3 miniature fuses 3A (already inserted)
- 1 dummy plug M20 (required if 400 V output is not used)
- 1 dummy plug M16 (required for operation with one motor only)
- Packaging
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Product information

Type plate
The information on the type plate is used to identify the Pallet Control.

Type plate for Pallet Drive
1 Serial number 5 Connection data
2 CE mark 6 Manufacturer
3 Product standard 7 Date of manufacture
4 IP protection rate 8 Article number

Technical Data

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>3 x 400 V AC 50 Hz; 24 V DC</td>
</tr>
<tr>
<td>Temporarily permissible voltage range</td>
<td>380 – 420 V AC 50 Hz; 22.8 – 25.2 V DC</td>
</tr>
<tr>
<td>Current consumption</td>
<td>max. 3 A @ 400 V AC; max. 2 A @ 24 V DC</td>
</tr>
<tr>
<td>Protection rate</td>
<td>IP54</td>
</tr>
<tr>
<td>Weight</td>
<td>0.5 kg</td>
</tr>
<tr>
<td>Ambient temperature in operation</td>
<td>-28 °C to +40 °C (-22 °F to +104 °F)</td>
</tr>
<tr>
<td>Ambient temperature during transport and storage</td>
<td>-40 °C to +80 °C (-40 °F to +176 °F)</td>
</tr>
<tr>
<td>Max. temperature change</td>
<td>1 K/min, 3 h, 2 cycles (IEC 60068-2-14)</td>
</tr>
<tr>
<td>Max. relative humidity</td>
<td>Max. 93 % at +40 °C (+104 °F), 14 days, non-condensing (IEC 60068-2-78)</td>
</tr>
<tr>
<td>Max. installation height above sea level</td>
<td>Max. 1,000 m. Installation in systems at an altitude above 1,000 m (3,300 ft) is possible in principle. However, this may result in lower performance values.</td>
</tr>
</tbody>
</table>
Three holes with a diameter of 5.5 mm each for M5 hexagon socket screws are intended for fastening the Pallet Control to the conveyor frame:

Drilled holes for fastening
Transport and storage

Transport

• Every Pallet Control is packaged in its own cardboard box.

**NOTICE**

There is a risk of damage to property if transported incorrectly

› Transport-related tasks should only be carried out by qualified and authorized persons.
› Observe the following notes.

› Do not stack more than 4 cardboard boxes on top of each other.
› Avoid heavy impacts during transport.
› Inspect each Pallet Control for visible damage after transport.
› In the event of damage, take photos of the damaged parts.
› Report any damage caused by transport immediately to the transport company and to the Interroll to maintain warranty.
› Do not expose the Pallet Control to large temperature fluctuations as this could result in condensation.

Storage

**NOTICE**

Risk of damage to property due to improper storage

Do not stack more than 4 cardboard boxes on top of each other.

› Check each Pallet Control for damage after storage.
Assembly and installation

Warning notices for installation

**NOTICE**
Risk of property damage that may cause failure or shortened service life

- Check each Pallet Control for damage before installation.
- Ensure that the Pallet Control is not warped during installation (no bending or torsion).
- Do not drill additional mounting holes in the housing or enlarge the holes provided.
- Do not drop the Pallet Control to prevent internal damage.

**NOTICE**
The protection class IP54 is ensured only with proper installation.

- Close the housing correctly.
- Firmly tighten cable connectors or, if not used, apply dummy caps.
- Close USB cover.

Installation
The rear plate features three holes for M5 screws for fastening the Pallet Control to the conveyor frame.

If possible, install all Pallet Controls only on one side of the conveyor system to simplify the electrical installation.

- Identify a flat area on the conveyor frame where the Pallet Control can be installed.
- Ensure that there is sufficient space for the cable entry on the left and right.
- Hold the Pallet Control to the conveyor frame and mark the center of the installation holes. Observe the correct orientation of the housing.
- Drill three holes with ø 5.5 mm at the markings in the conveyor frame.
- Screw the baseplate onto the conveyor using M5 screws.
- Ensure that the rear plate is not twisted.
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Assembly and installation

Warning notices concerning the electrical installation

⚠️ DANGER

Danger – electrocution

Improper electrical installation can cause life-threatening electric shocks or damage to the Pallet Control.

- Only have an electrician undertake electrical installation work.
- Observe national regulations for electrical installation. Within the EU, IEC 60204-1 must be met at a minimum.
- Before installing, wiring or removing the Pallet Control, switch it off and ensure that it cannot be started accidentally.
- The Pallet Control may be operated only with AC voltage at a rated voltage of 400 V 50 Hz and 24 V DC and a maximum permissible deviation of ±5 %.
- Proceed with caution when connecting the Pallet Drive to avoid damaging the magnetic sensor on the printed circuit board.
- Ensure that the control systems, motors and power sources connected to the Pallet Control, as well as the entire conveyor system, are correctly grounded. Incorrect grounding can result in the build-up of a static charge, causing the Pallet Control to malfunction or fail prematurely.
- Ensure that the existing electrical installation does not interfere with the Pallet Control.
- Use only cables that are sufficiently dimensioned for the specific operating conditions.
- Do not forget to observe the calculations for voltage drop on electrical lines.
- Observe the regulations for routing cables.
- Use suitable switching equipment and protective devices to ensure safe operation.
- Only apply operating voltages when all cables have been connected.
- Do not apply too much tension or pressure to the plug. When bending the cable at the plug, the insulation of the cable may be damaged and the Pallet Control may fail.
- Install a suitable protection mechanism so that the Pallet Control and the line are not overloaded.
- Have an electrician undertake the dimensioning of the protection mechanism.
- When selecting the line protection, pay particular attention to the maximum short circuit current of the voltage supply.
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Assembly and installation

Electrical installation

- Loosen the hexagon socket screw (3) located in the center to open the housing. An Allen key size 4 is required.
- Strip lines appropriately and remove the insulation along the appropriate length of the line.
- Feed the lines through the provided cable connectors into the device: Size M20 for the 400 V AC supply (2), size M16 for the Pallet Drive (1).
- Remove unused cable connectors and close the openings with the supplied dummy caps to ensure protection class IP54.
- Connect lines as shown in the terminal diagram. The PE conductor must always be connected. The clamping of the phases must match the labeling on the clamps.

For the Pallet Drive version without integrated brake, the cores 4, 5 and 6 for the star point must be connected with a suitable connecting terminal.

If the power supply connection uses a 5-pole cable with neutral conductor, it must be routed in the device in such a way that no contact to any live or conducting component is possible.
The Pallet Control is equipped with three replaceable slow-acting miniature fuses of type 5 x 20; 3.15 A that are used for device protection (1). Protection of the supply cables must be ensured by the operator.
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Assembly and installation

The printed circuit board features one 12-pin circuit board terminal of type WAGO 739 on each side, left and right. Cores up to 2.5 mm² can be connected here. If wire end sleeves are used, the cross section is limited to 1.5 mm². The M20 cable connectors on the left and right side of the housing are intended for connection or looping through of the 400 V supply. One 4-core cable each with 7-13 mm outer diameter can be fed into the device.

The M16 cable connectors on the left and right side of the housing are intended for connecting the Pallet Drive. One 8-core cable each with 4.5-10 mm outer diameter can be fed into the device from the Pallet Drive.

The terminal designations are printed on the circuit board.

Tab. 1: X1 and X2: Assignment from top to bottom

<table>
<thead>
<tr>
<th>Designation</th>
<th>Function</th>
<th>Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>BR-</td>
<td>Holding brake 1 GND</td>
<td>Output</td>
</tr>
<tr>
<td>BR+</td>
<td>Holding brake 1 +24 V</td>
<td>Output</td>
</tr>
<tr>
<td>T1</td>
<td>Thermal circuit breaker 1 input</td>
<td>Input</td>
</tr>
<tr>
<td>T2</td>
<td>Thermal circuit breaker 1 +24 V</td>
<td>Output</td>
</tr>
<tr>
<td>PE</td>
<td>PE</td>
<td>Grounding</td>
</tr>
<tr>
<td>U</td>
<td>Motor1-U</td>
<td>Output</td>
</tr>
<tr>
<td>V</td>
<td>Motor1-V</td>
<td>Output</td>
</tr>
<tr>
<td>W</td>
<td>Motor1-W</td>
<td>Output</td>
</tr>
<tr>
<td>L1</td>
<td>L1 400 V</td>
<td>Input/output</td>
</tr>
<tr>
<td>L2</td>
<td>L2 400 V</td>
<td>Input/output</td>
</tr>
<tr>
<td>L3</td>
<td>L3 400 V</td>
<td>Input/output</td>
</tr>
<tr>
<td>PE</td>
<td>PE</td>
<td>Grounding</td>
</tr>
</tbody>
</table>
**Interroll Pallet Control PC 6000**

**Assembly and installation**

**X3 and X4: Control inputs**

The top of the circuit board features two 8-pin terminal strips for connecting control signals and the 24 V DC supply. They are intended for the power supply and to control the operating behavior of the Pallet Drive.

The terminal designations are printed on the circuit board.

![Terminal designations diagram](image)

<table>
<thead>
<tr>
<th>Designation</th>
<th>Function</th>
<th>Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>+24 V DC input</td>
<td>Supply input</td>
</tr>
<tr>
<td>Dir</td>
<td>Direction of rotation:</td>
<td>Input</td>
</tr>
<tr>
<td></td>
<td>• 0 V – 4.0 V = CCW, counterclockwise</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 7 V – 24 V = CW, clockwise</td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>GND</td>
<td>Supply input</td>
</tr>
<tr>
<td>Err</td>
<td>Error signal:</td>
<td>Output</td>
</tr>
<tr>
<td></td>
<td>• 24 V = High = motor fault</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 0 V = Low = no fault</td>
<td></td>
</tr>
<tr>
<td>Sp</td>
<td>Control input:</td>
<td>Analog input</td>
</tr>
<tr>
<td></td>
<td>• 0 V – 2 V = stop</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 8.5 V – 24 V = start</td>
<td></td>
</tr>
<tr>
<td>I1</td>
<td>Reserve terminal</td>
<td>Input</td>
</tr>
<tr>
<td>I2</td>
<td>Reserve terminal</td>
<td>Input</td>
</tr>
<tr>
<td>I3</td>
<td>Reserve terminal</td>
<td>Input</td>
</tr>
</tbody>
</table>

**Tab. 2: X3 and X4: Assignment from inside to outside**

When delivered, one 0.5 m long cable with a 5-pin connector of type SAL-88-RSS5.1 from Conec is pre-installed at both control inputs. It is intended for connecting to the outputs of a RollerDrive control system. If no RollerDrive control system is used, it can be connected to a PLC or similar control system by using an adapter cable.
The connector features 5 contacts:

**5-pin connector**

<table>
<thead>
<tr>
<th>Pin cable</th>
<th>Core color</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>brown</td>
<td>+24 V</td>
</tr>
<tr>
<td>2</td>
<td>white</td>
<td>Input direction signal</td>
</tr>
<tr>
<td>3</td>
<td>blue</td>
<td>Ground, 0 V</td>
</tr>
<tr>
<td>4</td>
<td>black</td>
<td>Output error signal</td>
</tr>
<tr>
<td>5</td>
<td>gray</td>
<td>Input control signal</td>
</tr>
</tbody>
</table>

*Tab. 3: Pin assignment*
Initial startup and operation

Checks before the initial startup

- Ensure that the base plate of the Pallet Control is correctly fastened to the profile.
- Ensure that the Pallet Control is correctly fastened to the base plate.
- Ensure that all screws are properly tightened.
- Ensure that no additional danger zones have been created due to interfaces to other components.
- Ensure that the wiring is in accordance with the specification and legal requirements.
- Check all protective devices.
- Ensure that there are no persons in the danger zones of the conveyor system.

**NOTICE**

Observe Pallet Drive connection diagrams

Damage to the Pallet Drive or Pallet Control is possible if connections are incorrect.

- Ensure that the holding brake and thermal circuit breaker connections are correct.

- Ensure that the status LEDs are on after the power supply has been switched on.

Start

After a cold start, the Pallet Control requires less than 2 seconds to initialize. During this process the system also checks whether or not holding brakes are connected.

After each restart, the Pallet Control waits for a travel signal from one of the two inputs of each motor.

Avoid frequent changes of direction. At more than 4 changes of direction per minute, the service life of the center zero relay is greatly reduced.
Interroll Pallet Control PC 6000

Initial startup and operation

Startup characteristics
The Pallet Control features a soft start function to reduce starting torques. These startup characteristics can be set by using 3 parameter sets.

<table>
<thead>
<tr>
<th>Parameter sets</th>
<th>Fast startup</th>
<th>Normal startup</th>
<th>Soft startup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor output in %</td>
<td>P 100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parameterizable ramp time</td>
<td>1 s</td>
<td>2 s</td>
<td>3 s</td>
</tr>
<tr>
<td>Parameterizable starting power</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Parameter sets
The Pallet Control features three parameter sets:
- Fast startup
- Normal startup
- Soft startup

Each parameter set has its own values for the following parameters:
- Starting power
- Ramp time

For configuration with a magnet (see "Configuration options", page 24), one of the three preset parameter sets can be selected. For configuration via USB, it is possible to select a preset parameter set, as well as change its individual parameters.

Both motors can use the same parameter set or different parameter sets.

Current measurement
The Pallet Control measures the current flow of each motor during operation. The current measurement is used for overload detection.

Temperature sensor
A temperature sensor is integrated in the Pallet Control to measure the temperature of the printed circuit board. If the internal temperature of 95 °C is exceeded, all functions are disabled and an error signal is output.
LED indicators

The printed circuit board features 8 LEDs that indicate the current operating status. They are transferred to the front via optical conductors. If there is an error, the LEDs Error and Pallet Drive are flashing. The Pallet Drive LED shows the source of the error and the flashing frequency of the LEDs points to the error. For additional information about error detection, see "Troubleshooting", page 32.

Pallet Control LEDs

Configuration options

Configuration via USB

USB service port

The printed circuit board features one USB port type B for connection to a computer. This USB port is used for programming the Pallet Control. It is accessible without opening the housing via a captive rubber cap. During regular operation the rubber cap should be closed since protection class IP54 is met only when it is closed.
Interroll Pallet Control PC 6000

Initial startup and operation

Pallet Control Configurator
The Pallet Control Configurator is a Windows-based software to monitor and parameterize the Pallet Control, as well as the connected Pallet Drive. The connection to the PC is established via the USB service port. The baud rate or other transmission parameters are automatically set. When it is plugged into a new PC for the first time, Windows prompts for the installation of a driver. This driver is supplied by Interroll together with the Pallet Control Configurator. The Pallet Control Configurator is available on the Interroll website in the support section.

The current power, electrical current and direction of rotation are displayed in the main window. In addition, it is possible define the control input used, to change the direction of rotation, and to select the parameter set to be used.

Configurator user interface
Interroll Pallet Control PC 6000

Initial startup and operation

Setting parameter sets

- Select Configuration > Edit Parameter Sets in the menu.
- Select the parameter set to be edited.
- Set the desired starting power or ramp time.
- Click Save to confirm the changes.

Operating hour counter

- Select Configuration > Operating times in the menu.

The following operating times are recorded:
- Total operating hours
- Operating time since last restart
- Total active time motor 1
- Total active time motor 2
- Active time since last restart motor 1
- Active time since last restart motor 2
- Motor 1 start/stop total
- Motor 2 start/stop total
**Interroll Pallet Control PC 6000**

**Initial startup and operation**

**Reset to factory setting**
- Select **Configuration > Set Factory Defaults** in the menu.
  - All settings are returned to the settings at delivery.

**Acknowledging an error**
- Select **Configuration > Reset Pallet Control** in the menu.
  - When the cause of the fault has been removed, the Pallet Control returns to an error-free state.

**Configuration with the magnetic sensor**

The following functions can be executed with the help of the magnetic sensor and a magnet:
- Restart and reset error
- Change the direction of rotation of the motor
- Set switch-off ramps in 3 steps
- Reset Pallet Control to factory settings

Operating the magnetic sensor requires a magnetic key (1), which is available as an accessory. The magnetic sensor (2) is located on the printed circuit board, roughly centered between the Error LED and the Modus Hold 1 LED.

**Requirement:**
- Neither motor is running.
- Hold the magnet to the magnetic sensor for longer than 2 seconds. Configuration starts.
- Navigate through the menu and change the settings by holding the magnet to the sensor for shorter or longer periods of time.

After every long magnet signal, the magnet must be removed briefly once. After 30 seconds without magnet detection, the Pallet Control returns to normal mode.
The menu structure for configuration with a magnet is schematically represented below.

Menu structure for configuration with a magnetic key
Interroll Pallet Control PC 6000

Initial startup and operation

Operation

⚠️ CAUTION

Accidental startup of Pallet Drive

Danger of crushing of limbs and damage to material

- Ensure that there are no persons in the danger zones of the conveyor system before switching on the power supply.

Checks before each startup

- Check all Pallet Controls for visible damage.
- Check all protection devices.
- Ensure that no Pallet Drive connected to the Pallet Control is blocked.
- Precisely specify and monitor the placement of the material.
- Ensure that there are no persons in the danger zones of the conveyor system.

Start

- Ensure that ambient conditions are met during operation.
- Switch on the power supply.
- Send the corresponding signal to the Pallet Control.

Stop

Conveying stops in the following cases:

- If the power supply is switched off.
- If no signal for the start is present.
- If there is an error in a corresponding error class.
Maintenance and cleaning

Warning notices concerning maintenance and cleaning

⚠️ CAUTION

Risk of injuries due to incorrect handling

- Maintenance and cleaning work must only be performed by qualified and authorized persons.
- Perform maintenance work only after switching off power.
- Ensure that the Pallet Control cannot be turned on accidentally.
- Set up signs indicating that maintenance work is in progress.

Maintenance

The Pallet Control itself is maintenance-free. To prevent faults however, connections and fastening must be checked in the course of regular inspection and maintenance work:

- Ensure that the screws of the Pallet Control are still firmly tightened.
- Ensure that the cables are still routed correctly.
- Ensure that the connections are still connected correctly.

If a Pallet Control is damaged, it has to be replaced.

Cleaning

Dust and dirt in combination with humidity may bridge the electric circuit. In dirty environments, periodic cleaning therefore will help to avoid short circuits that could damage the Pallet Control.

NOTICE

Damage to the Pallet Control due to incorrect cleaning

- Do not immerse the Pallet Control in liquids.
- Vacuum off dust and dirt, if necessary.
- For more thorough cleaning, disconnect the Pallet Control from the power supply, remove it, and wipe it with a damp cloth.
Decommissioning and disposal

- When disposing the motor oil, observe the disposal documents of the motor manufacturer.
- The packaging must be recycled to provide environmental relief.

Shutdown

⚠️ CAUTION

Risk of injuries due to incorrect handling

- Shut-down may only be executed by qualified and authorized persons.
- Only shut down the Pallet Control after switching off the power.
- Ensure that the Pallet Control cannot be turned on accidentally.

- Remove all cables from the Pallet Control.
- Unscrew the screws that fasten the Pallet Control to the conveyor.
- Remove the Pallet Control.

Disposal

The operating company is responsible for the proper disposal of the Pallet Control.

- In doing so, industry-specific and local provisions for the disposal of the Pallet Control and its packaging must be observed.
- The packaging must be recycled to reduce the pressure on the environment.
### Troubleshooting

#### Meaning of the LEDs

LEDs on the front inform about the operating state of the Pallet Control and the connected Pallet Drive.

<table>
<thead>
<tr>
<th>Labeling</th>
<th>Function</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pallet Drive 1</strong></td>
<td>On: Motor 1 is controlled. Off: Motor 1 is not controlled.</td>
<td>Yellow</td>
</tr>
<tr>
<td><strong>Modus Hold 1</strong></td>
<td>On: Holding brake at motor output 1 is not controlled and therefore closed. Off: No holding brake connected at motor output 1 or holding brake is controlled and therefore is open.</td>
<td>Yellow</td>
</tr>
<tr>
<td><strong>Status</strong></td>
<td>On: The system is ready for operation, 24 V are applied, 400 V were detected, no other error is present. Flashes briefly 3 times: At every restart. Flashes: During USB connection for configuration. Off: In all other cases.</td>
<td>Green</td>
</tr>
<tr>
<td><strong>Error</strong></td>
<td>On: Error. Off: No error.</td>
<td>Red</td>
</tr>
<tr>
<td><strong>24VDC</strong></td>
<td>On: 24 V supply voltage connected. Off: No 24 V supply.</td>
<td>Green</td>
</tr>
<tr>
<td><strong>400VAC</strong></td>
<td>On: L1, L2 and L3 are connected to the 400 V input and valid phase crossings with 50 Hz have been detected. Flashing: L1, L2 and L3 are connected to the 400 V input. Off: Only one or no 400 V line is connected and therefore no phase crossings have been detected.</td>
<td>Green</td>
</tr>
<tr>
<td><strong>Pallet Drive 2</strong></td>
<td>On: Motor 2 is controlled. Off: Motor 2 is not controlled.</td>
<td>Yellow</td>
</tr>
<tr>
<td><strong>Modus Hold 2</strong></td>
<td>On: Holding brake at motor output 2 is not controlled. Off: No holding brake connected at motor output 2 or holding brake is controlled and therefore is open.</td>
<td>Yellow</td>
</tr>
</tbody>
</table>
Interroll Pallet Control PC 6000

Troubleshooting

Error signaling

The Pallet Control features integrated error detection that monitors the operating behavior of the Pallet Control and the connected Pallet Drive.

The following options are available to reset an error:
• Using the software (see "Configuration via USB", page 24)
• Using the magnetic key (see "Configuration with the magnetic sensor", page 27)
• By briefly switching off the 24 V DC control voltage

The following error codes are possible:

<table>
<thead>
<tr>
<th>Error</th>
<th>Possible cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error LED flashes 1x</td>
<td>Pallet Drive thermal circuit breaker tripped</td>
<td>• Allow motor to cool off.</td>
</tr>
<tr>
<td>Error LED flashes 2x</td>
<td>400 V not detected</td>
<td>• Check 400 V power supply.</td>
</tr>
<tr>
<td>Error LED flashes 3x</td>
<td>Excessive current detected</td>
<td>• Check whether an overload is present.</td>
</tr>
<tr>
<td>Error LED flashes 4x</td>
<td>Holding brake defective</td>
<td>• Check holding brake connections.</td>
</tr>
<tr>
<td>Error LED flashes 5x</td>
<td>Excessive temperature on the printed circuit board</td>
<td>• Call Interroll service.</td>
</tr>
<tr>
<td>Error LED flashes 6x</td>
<td>Triac detected as defective</td>
<td>• Call Interroll service.</td>
</tr>
<tr>
<td>Error LED flashes 7x</td>
<td>24 V outside tolerance</td>
<td>• Check DC supply voltage.</td>
</tr>
<tr>
<td>Motor does not turn, Status LED is off</td>
<td>Power supply not connected correctly</td>
<td>• Check power supply.</td>
</tr>
<tr>
<td>Motor does not turn, Error LED is off</td>
<td>• Motor connections or holding brake cabled incorrectly • Polarity of holding brake reversed</td>
<td>• Check motor connections. • Check holding brake connections.</td>
</tr>
<tr>
<td>Magnetic sensor no longer responds</td>
<td>Magnetic sensor damaged</td>
<td>• Switch 24 V off and on again. • Call Interroll service.</td>
</tr>
<tr>
<td>Only Modus Hold 1 and Modus Hold 2 are on</td>
<td>Pallet Control constantly in configuration mode</td>
<td>• Call Interroll service.</td>
</tr>
</tbody>
</table>

The error "400 V not detected" is deleted automatically after the first occurrence after a reset. After the second occurrence, it is retained and must be deleted manually.
Appendix

Declaration of Conformity
In accordance with EU Directive 2014/30/EU (Electromagnetic Compatibility) dated February 26, 2014

The manufacturer:
Interroll Trommelmotoren GmbH
Opelstr. 3
D - 41836 Hueckelhoven/Baal
Germany

hereby declares that the product

• Pallet Control

meets the requirements of the directives and standards listed below:

Applied EU Directives:
• 2014/35/EU EMC
• 2011/65/EU RoHS Directive

Person authorized to prepare the technical documents:
Holger Hoefer, Interroll Trommelmotoren GmbH, Opelstr. 3, D - 41836 Hueckelhoven, Germany

Hueckelhoven – October 04, 2017

Dr. Hauke Tiedemann
(managing director)

(This declaration of conformity can be obtained at www.interroll.com, if needed.)