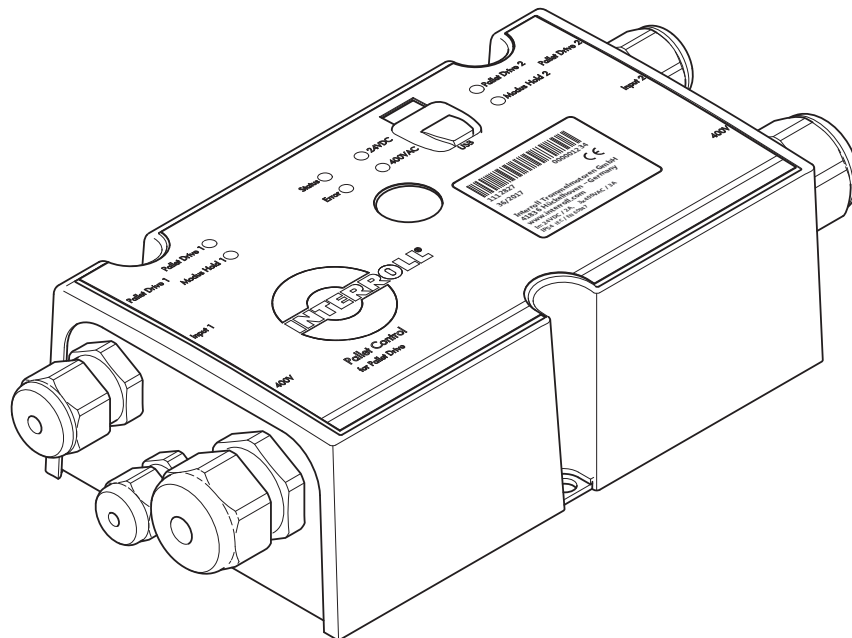


INSPIRED BY EFFICIENCY



User Manual

Interroll Pallet Control

PC 6000 – 3 A

PC 6000 – 10 A

Manufacturer

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Contents

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Introduction

Information about the manual

The following Pallet Control types are described in these operating instructions:

- Interroll Pallet Control PC 6000 max. 3 A
- Interroll Pallet Control PC 6000 max. 10 A

In the rest of this document, the designations "PC 6000" or "control system" will be used as an alternative. For Pallet Drives and gear motors, the designation "drive" will be used as an alternative.

Contents

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.

The manual is part of the product

- ▶ 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

Warning notices refer to risks that may arise while using the product. They are structured according to the following model:

DANGER

Nature and source of the hazard

Possible consequence of not observing the warning

- ▶ Information about how to prevent the hazard.
-

Interroll Pallet Control PC 6000

Introduction

Warning notices are available in four danger levels identified by their signal word. Signal words identify the type and severity of the consequences of a danger if the measures for prevention are not followed:

Signal word	Meaning
DANGER	Identifies a danger with high risk that will result in death or serious injury if it is not avoided.
WARNING	Identifies a danger with medium risk that could result in death or serious injury if it is not avoided.
CAUTION	Identifies a danger with low risk that could result in minor or medium injury if it is not avoided.
NOTICE	Identifies a danger that results in property damage.

Symbols



This symbol marks useful and important information.



This symbol represents general safety-related information.



This symbol represents safety-related information in conjunction with electrical voltage.



This symbol refers to "Conformité Européenne".

Requirement:

- This symbol represents a prerequisite to be met prior to installation and maintenance work.
 - ▶ This symbol marks the steps to be carried out.
 - This symbol refers to listings.

Safety

State of the art

The Pallet Control is constructed in compliance with applicable standards and the state of the art and is safe to operate when delivered.



Disregarding the notices in these installation and operating instructions may lead to life-threatening injuries!

- ▶ Carefully read the installation and operating instructions and follow their content.
- ▶ Observe local accident prevention regulations and general safety regulations that apply in the area of use.

Intended use

Pallet Control may only be used for industrial applications and in an industrial environment to control one or two Interroll Pallet Drives or gear motors.

Pallet Control 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.

Unintended use

Any use beyond the intended use is considered inappropriate or, if required, must be authorized by Interroll Trommelmotoren GmbH.

Installation in rooms in which materials can create explosive or dusty atmospheres as well as use in the medical-pharmaceutical sector is prohibited.

Installation in unprotected rooms exposed to the weather or in areas where the technology deteriorates and can fail due to the prevailing climatic conditions is considered unintended use.

Use of the PC 6000 is not intended for private end customers! Use in a residential area is prohibited without additional assessment and without the use of EMC protective measures that have been adapted accordingly!

Use as a safety-related component or for performing safety-related functions is prohibited.

Interroll Pallet Control PC 6000

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

An electrician has technical training and, based on his or her knowledge and experience, as well as knowledge of relevant provisions, is capable of properly performing work on electrical equipment. He or she can independently recognize potential dangers and avoid personal injury and property damage from electrical voltage.

In principle, all work on electrical equipment may be performed only by a trained electrician.

Dangers



The following list provides information about the various types of danger or damage that may occur while working with the Pallet Control.

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 lit. This occurs if only the 24 V DC control voltage was switched off and the power supply voltage continues to be applied.**
- ▶ 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.

Interroll Pallet Control PC 6000

Safety

- 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.

Interfaces to other devices

By installing the Pallet Control in a conveyor module, danger zones may arise. These danger zones are not part of these operating instructions and must be analyzed during design, setup and startup of the complete system.

- ▶ After installing the Pallet Control in a conveyor module, check the complete system for potential new danger zones switching on the conveyor.

Operating modes

Normal mode Operation of the installed device at the end customer's as a component in a conveyor in a complete system.

Special mode Special operation refers to all operating modes that are required to guarantee and maintain regular operation.

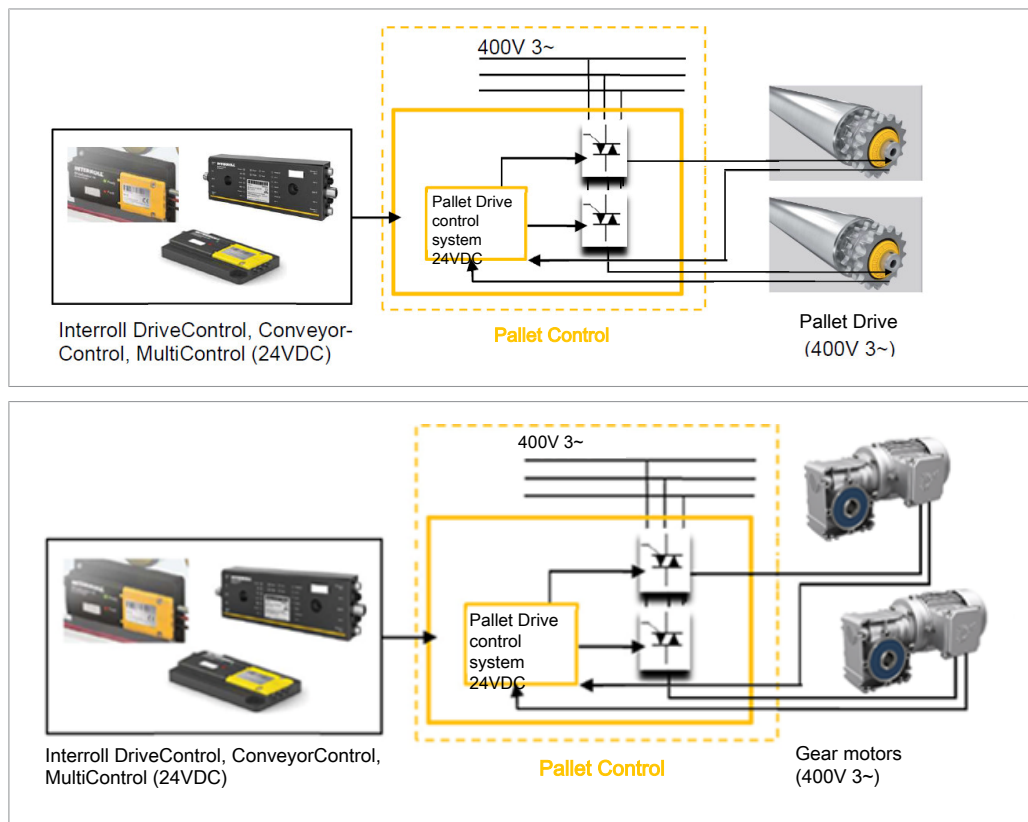
Special operating mode	Explanation	Comment
Transport/storage	Loading and unloading, transport and storage	-
Assembly/initial startup	Installation at the end customer and performing the test run	-
Cleaning	External cleaning without removing protective devices	When powered down
Maintenance/repairs	Maintenance and inspection tasks	When powered down
Troubleshooting	Troubleshooting in the event of a fault	-
Fault elimination	Eliminating the fault	When powered down
Decommissioning	Removal from the complete system	When powered down
Disposal	Removal from the complete system and disassembly	When powered down

Product information

Product description

Pallet Control is a decentralized control for pallet conveyor systems that allows for operating up to two Pallet Drives or gear motors. Two versions are available, which differ by the maximum permissible current. 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 drives 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.

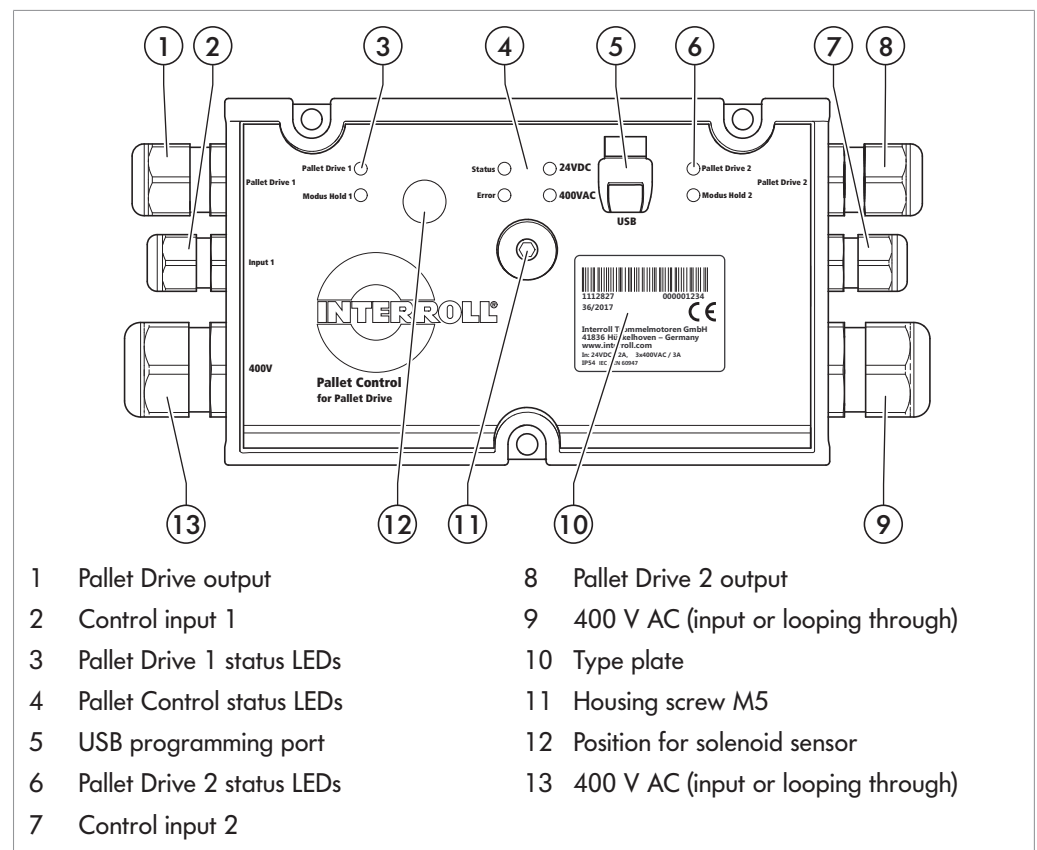
Interroll Pallet Control PC 6000

Product information

Overview of the functions

- Controlling two 400 V Interroll Pallet Drives (3 A) or 400 V gear motors (10 A)
- Looping through of line voltage (400 V AC) is possible (10 A - max. two devices with S1 operation)
- Integrated holding brake control (24 V DC, 0.5 A per output)
- Adapting Interroll RollerDrive control systems possible (MultiControl, ConveyorControl)
- Alternate control via PLC possible
- Soft start and soft stop, 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 and error output

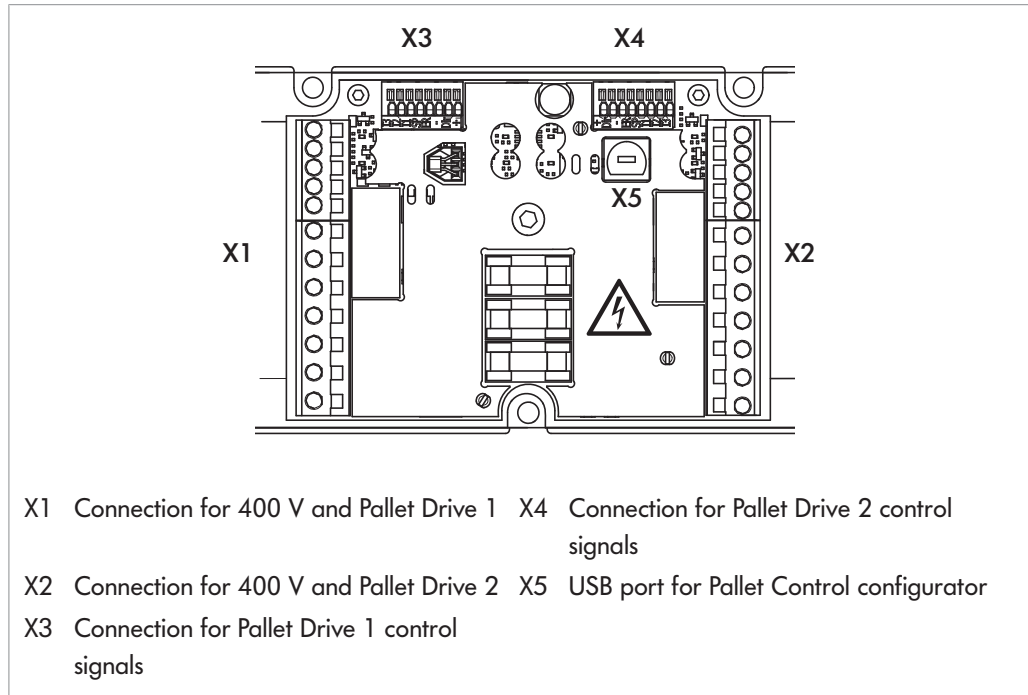
Structure



Interroll Pallet Control PC 6000

Product information

Internal connections



Scope of delivery

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

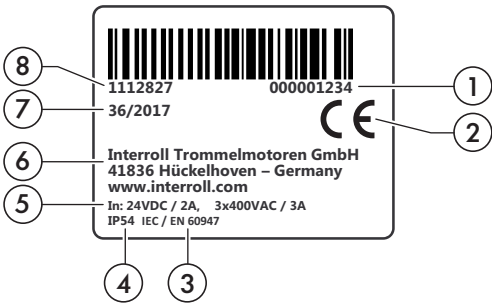
- Pallet Control circuit board and housing
- 2 x PG screw connection M20 (3 A) / M25 (10 A) (already installed)
- 2 x PG screw connection M16 (3 A) / M20 (10 A) (already installed)
- 2 x PG screw connection M12 (already installed)
- 2 round cables with M8 coupling (already installed)
- 3 miniature fuses 3A (already inserted)
- 1 dummy cap M20 (3 A) / M25 (10 A) (required if 400 V output is not used)
- 1 dummy cap M16 (3 A) / M20 (10 A) (required for operation with one motor only)
- Packaging

Interroll Pallet Control PC 6000

Product information

Type plate PC 6000 3 A

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




The diagram shows a rectangular type plate with a barcode at the top. Below the barcode are two numbers: 1112827 on the left and 000001234 on the right. Below these is the date 36/2017. In the center, there is manufacturer information: Interroll Trommelmotoren GmbH, 41836 Hückelhoven – Germany, and www.interroll.com. Below that is connection data: In: 24VDC / 2A, 3x400VAC / 3A, and IP54 IEC / EN 60947. On the right side, there is a CE mark. Eight callout circles with numbers 1 through 8 point to these specific elements: 1 points to the serial number (000001234), 2 points to the CE mark, 3 points to the product standard (IP54 IEC / EN 60947), 4 points to the IP protection rate (IP54), 5 points to the connection data (In: 24VDC / 2A, 3x400VAC / 3A), 6 points to the manufacturer information, 7 points to the date of manufacture (36/2017), and 8 points to the article number (1112827).

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

Type plate PC 6000 10 A

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



The diagram shows a rectangular type plate with a barcode at the top. Below the barcode are two numbers: 1119924 on the left and 000001234 on the right. Below these is the date 44/2019. In the center, there is manufacturer information: Interroll Trommelmotoren GmbH, 41836 Hückelhoven – Germany, and www.interroll.com. Below that is connection data: In: 24V--- / 2A, 3x400V 3~/ 10A, 50Hz. On the right side, there is a CE mark. Six callout circles with numbers 1 through 6 point to these specific elements: 1 points to the serial number (000001234), 2 points to the CE mark, 3 points to the connection data (In: 24V--- / 2A, 3x400V 3~/ 10A, 50Hz), 4 points to the manufacturer information, 5 points to the date of manufacture (44/2019), and 6 points to the article number (1119924).

Type plate for Pallet Control

1	Serial number	4	Manufacturer
2	CE mark	5	Date of manufacture
3	Connection data	6	Article number



Interroll Pallet Control PC 6000

Product information

Technical Data

Rated voltage	3 x 400 V AC 50 Hz; 24 V DC
Voltage range	380 – 420 V AC 50 Hz; 22 – 26 V DC
Current consumption	max. 3 A @ 400 V AC; max. 2 A @ 24 V DC max. 10 A @ 400 V AC; max. 2 A @ 24 V DC
Fuse	AC: 3 x 16 A; DC: 2 A
Protection rate	IP54
Weight	0,5 kg
Ambient temperature in operation	-28 °C to +40 °C (-22 °F to +104 °F)
Ambient temperature during transport and storage	-40 °C to +80 °C (-40 °F to +176 °F)
Max. temperature change	1 K/min, 3 h, 2 cycles
Max. relative humidity	93 % at +40 °C (+104 °F), 14 days, non-condensing
Max. installation height above sea level	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.



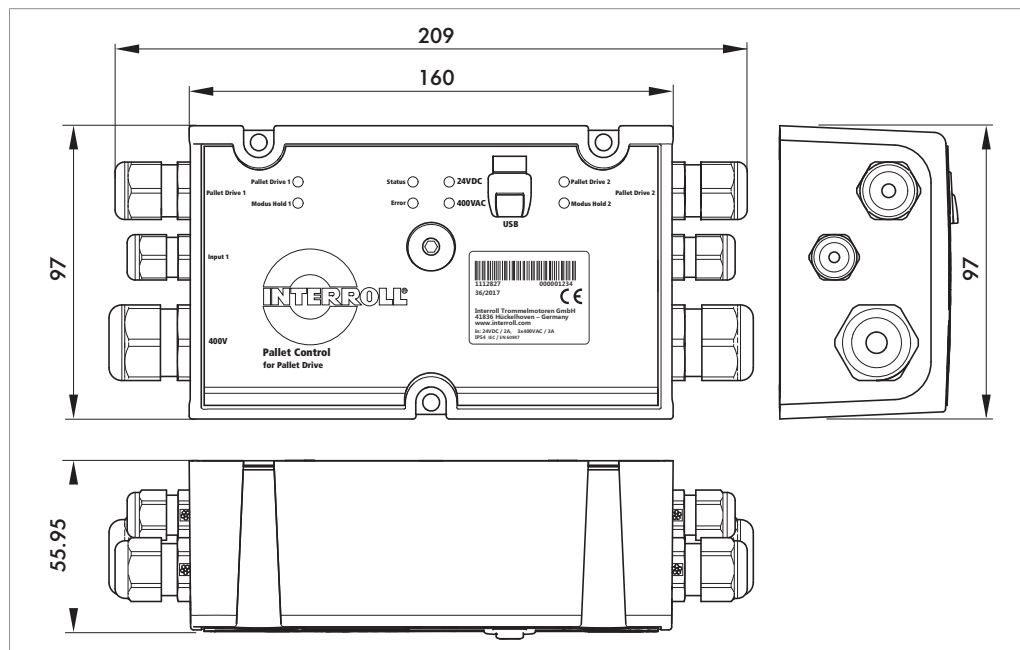
The permissible current for the use of gear motors must be observed.

Number of motors	Operating mode	max. rated current per output
1	Continuous operation	4.0 A
2	Continuous operation	3.0 A
2	Intermittent operation	4.5 A

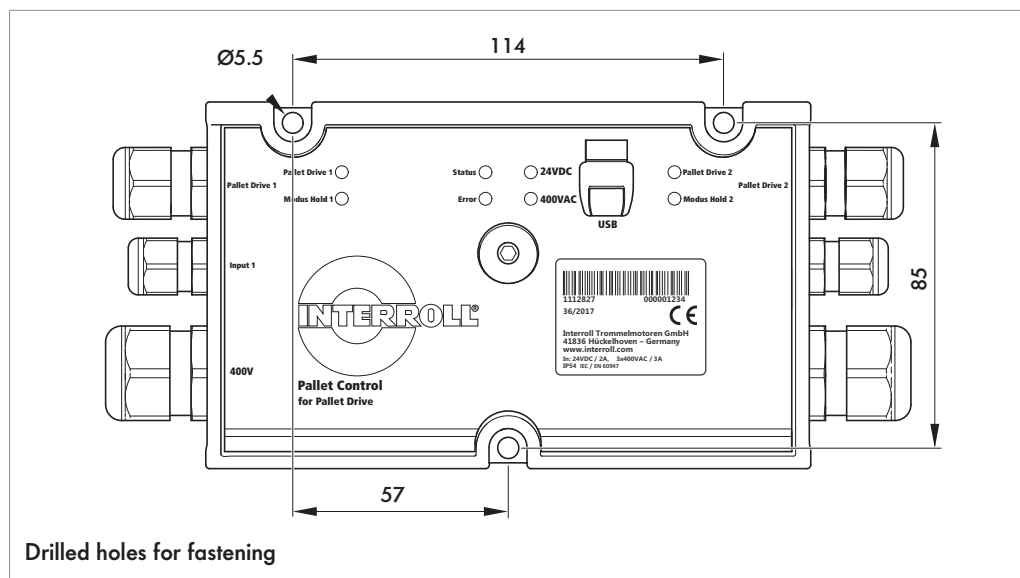
Interroll Pallet Control PC 6000

Product information

Dimensions



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



Interroll Pallet Control PC 6000

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 visible damage before installation.
 - ▶ Ensure that the Pallet Control is not warped during installation (no bending or torsion).
 - ▶ Do not drill additional mounting holes into the housing or enlarge the holes provided.
 - ▶ Do not drop the Pallet Control to prevent internal damage.
 - ▶ Install the Pallet Control only in a horizontal position on the conveyor frame in such a way that the labeling can be read. Other variants are not allowed and require the approval of Interroll.
-

NOTICE

Protection class IP54 is ensured only with proper installation.

- ▶ Close the housing correctly. The tightening torque of the housing screw is 2.8 Nm.
 - ▶ Firmly tighten cable connections 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. The PC 6000 is intended for installation on a metal 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. Do not use any spacer bushings.
- ▶ 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 \varnothing 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.

Interroll Pallet Control PC 6000

Assembly and installation

Warning notices concerning the electrical installation

DANGER

Danger to life – electrocution

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

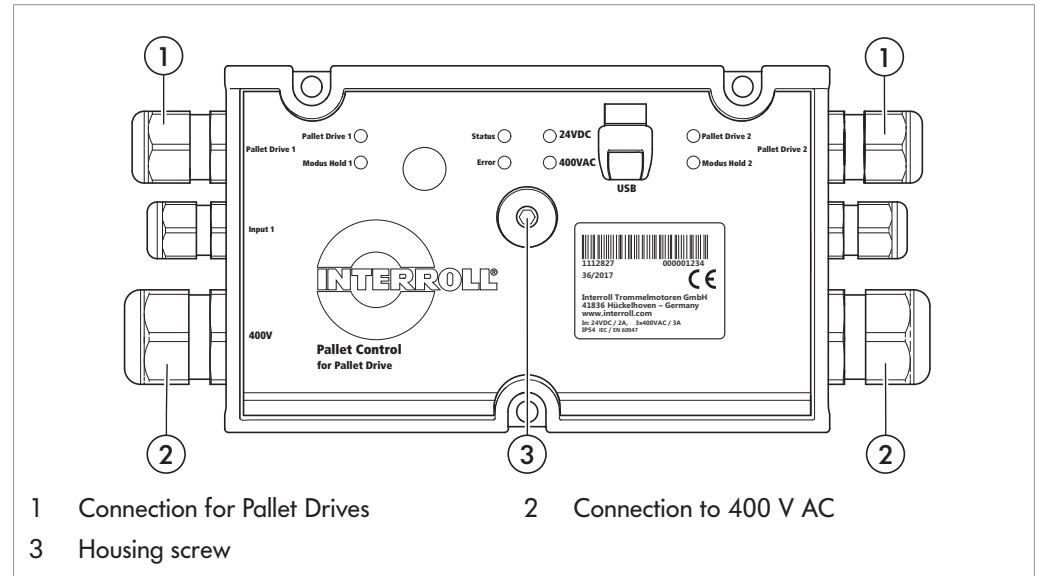
- ▶ Only have an electrician undertake electrical installation work.
- ▶ Observe national regulations for electrical installation. Within the EU, IEC 60204-1 must be met at a minimum.
- ▶ Before installing, wiring or removing the Pallet Control, switch it off and ensure that it cannot be started accidentally.
- ▶ The Pallet Control may be operated only with AC voltage at a nominal voltage of 400 V 50 Hz and 24 V DC and a maximum permissible deviation according to the technical data.
- ▶ 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.
- ▶ The protective mechanism must be arranged in a suitable manner and easily accessible.
- ▶ The protective mechanism must be identified as disconnect device for the PC 6000.
- ▶ Have an electrician undertake the dimensioning of the protection mechanism.
- ▶ Observe the technical specifications!
- ▶ When selecting the circuit protection, pay particular attention to the maximum short circuit current of the voltage supply.



Interroll Pallet Control PC 6000

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 (3 A) / M25 (10 A) for the 400 V AC supply (2), size M16 (3 A) / M20 (10 A) for the Pallet Drives (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.
- ▶ Replace the housing and tighten it again. The tightening torque of the screw is 2.8 Nm.



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.



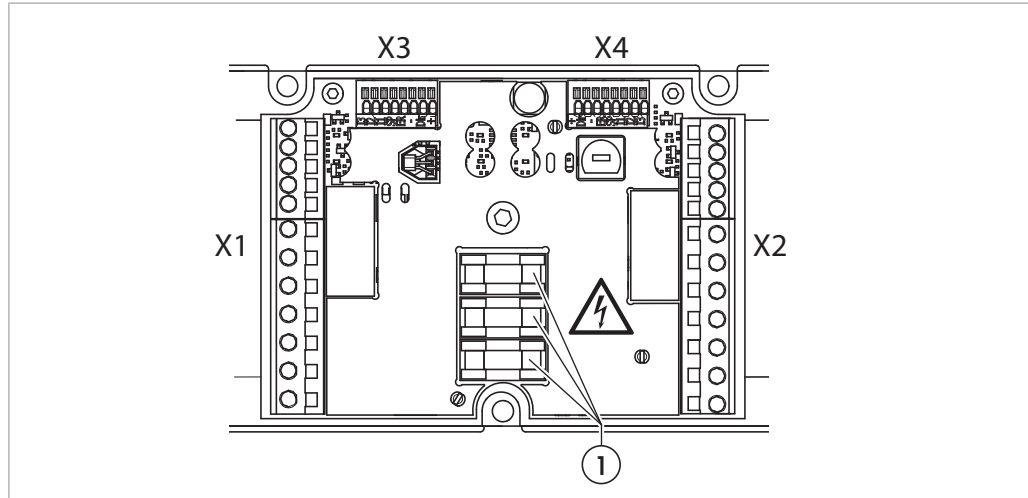
If the power supply connection uses a 5-pole cable with neutral conductor, it must be routed in the device in such a way that no contact to any live or conducting component is possible.

Interroll Pallet Control PC 6000

Assembly and installation



The Pallet Control is equipped with three replaceable miniature fuses of type 5 x 20; 3.15 A time-lag or 10 A medium time-lag that are used for device protection (1). Protection of the supply cables must be ensured by the operator, see "Warning notices concerning the electrical installation", page 18 and see "Technical Data", page 14.



Replacing fuses



⚠ DANGER

Danger to life – electrocution

- ▶ Fuses may be replaced only by an electrician!

- ▶ Observe the safety information.
- ▶ Loosen the hexagon socket screw (3) located in the center to open the housing. An Allen key size 4 is required.
- ▶ Remove the fuses using a suitable tool.
- ▶ Insert the fuses using a suitable tool.
- ▶ Replace the housing and tighten it again. The tightening torque of the screw is 2.8 Nm.

Interroll Pallet Control PC 6000

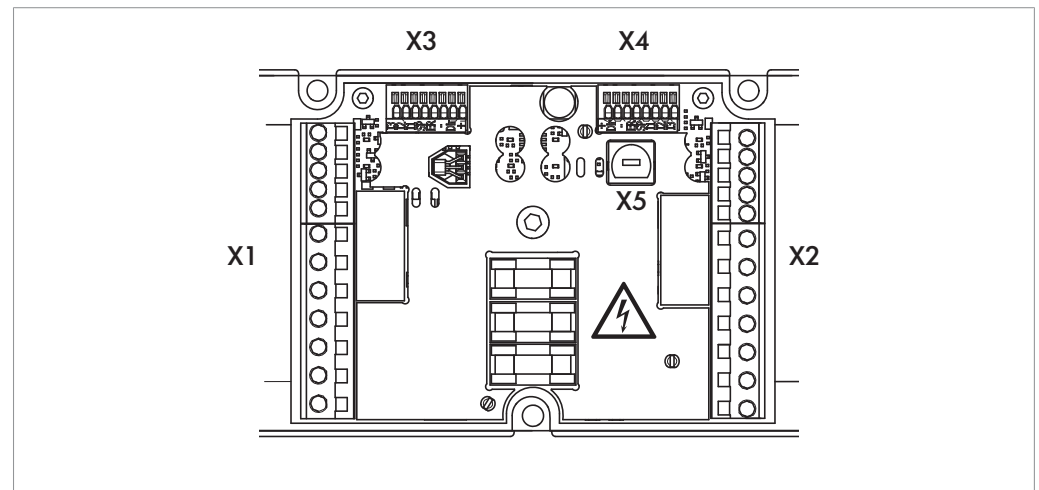
Assembly and installation

X1 and X2: Outputs for 400 V line voltage and motors

The 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 (3 A) or M25 (10 A) cable connectors on the left and right side of the housing are intended for connecting or looping through the 400 V supply. The permissible line diameter is 6 – 13 mm (3 A) or 8 – 17 mm (10 A).

The M16 (3 A) or M10 (10 A) cable connectors on the left and right side of the housing are intended for connecting the drives. The permissible line diameter is 4 – 10 mm (3 A) or 6 – 13 mm (10 A).

The terminal designations are printed on the circuit board.



Designation	Function	Direction
BR-	Holding brake 1 GND	Output
BR+	Holding brake 1 +24 V	Output
T1	Thermal circuit breaker 1 input	Input
T2	Thermal circuit breaker 1 +24 V	Output
PE	PE	Grounding
U	Motor1-U	Output
V	Motor1-V	Output
W	Motor1-W	Output
L1	L1 400 V	Input/output
L2	L2 400 V	Input/output
L3	L3 400 V	Input/output
PE	PE	Grounding

X1 and X2: Assignment from top to bottom



The thermal circuit breaker input is intended for use with bimetallic elements (Klixon).

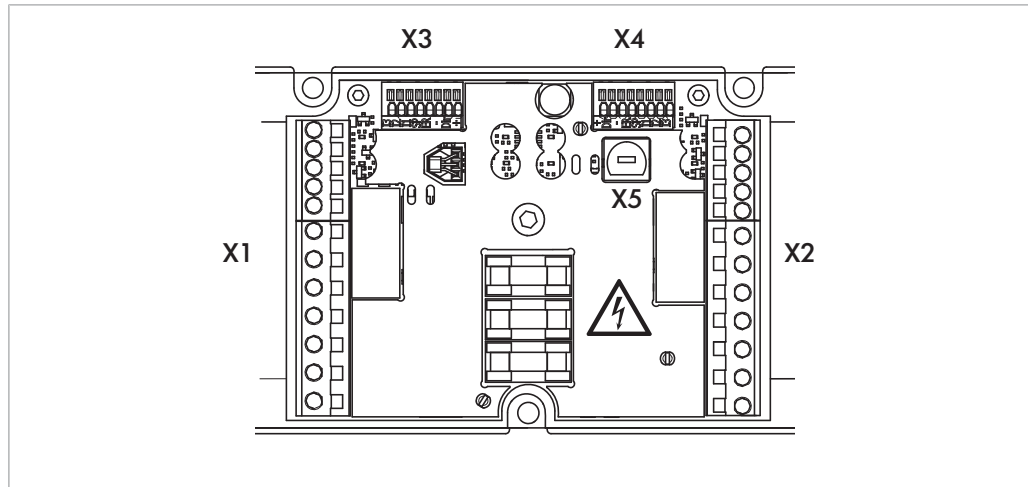
Interroll Pallet Control PC 6000

Assembly and installation

X3 and X4: Control inputs

The top of the circuit board features two 8-pin (3 A) or 5-pin (10 A) terminal strips for connecting control signals and the 24 V DC supply. They are intended to supply power and to control the operating behavior of the Pallet Drive.

The terminal designations are printed on the circuit board.



Designation	Function	Direction
+	+24 V DC input	Supply input
Dir	Direction of rotation: <ul style="list-style-type: none"> • 0 V – 4.0 V = CCW, counterclockwise • 7 V – 24 V = CW, clockwise 	Input
-	GND	Supply input
Err	Error signal: <ul style="list-style-type: none"> • 24 V = High = motor fault • 0 V = Low = no fault 	Output
Sp	Control input: <ul style="list-style-type: none"> • 0 V – 2 V = stop • 8.5 V – 24 V = start 	Input
I1 (3 A version only)	Reserve terminal	Input
I2 (3 A version only)	Reserve terminal	Input
I3 (3 A version only)	Reserve terminal	Input

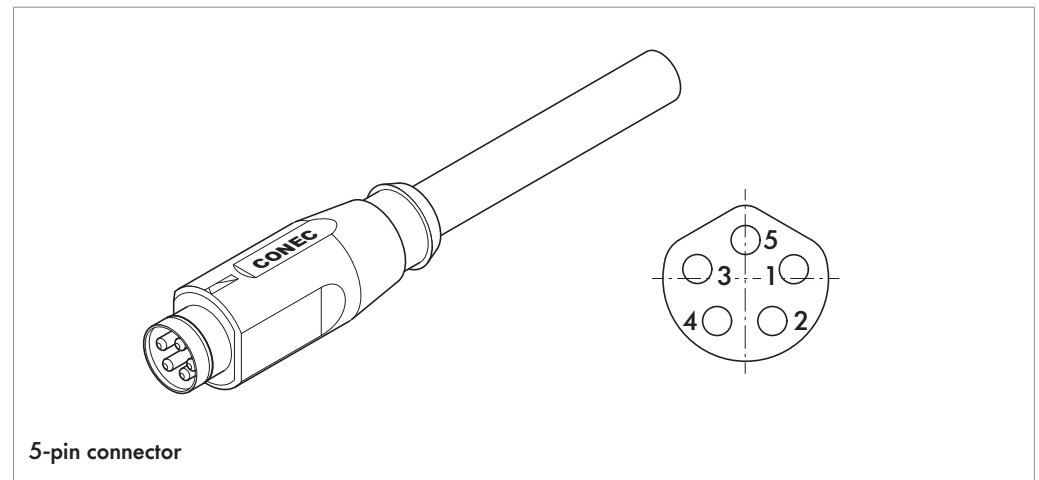
X3 and X4: Assignment from inside to outside






Interroll Pallet Control PC 6000

Assembly and installation

When delivered, a 0.7 m long cable with a 5-pin connector of type SAL-8B-RSS5.1 by 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:



Pin cable	Core color	Function
1	 - brown	+24 V
2	 - white	Input for direction signal
3	 - blue	Ground, 0 V
4	 - black	Output for error signal
5	 - gray	Input for control signal

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.



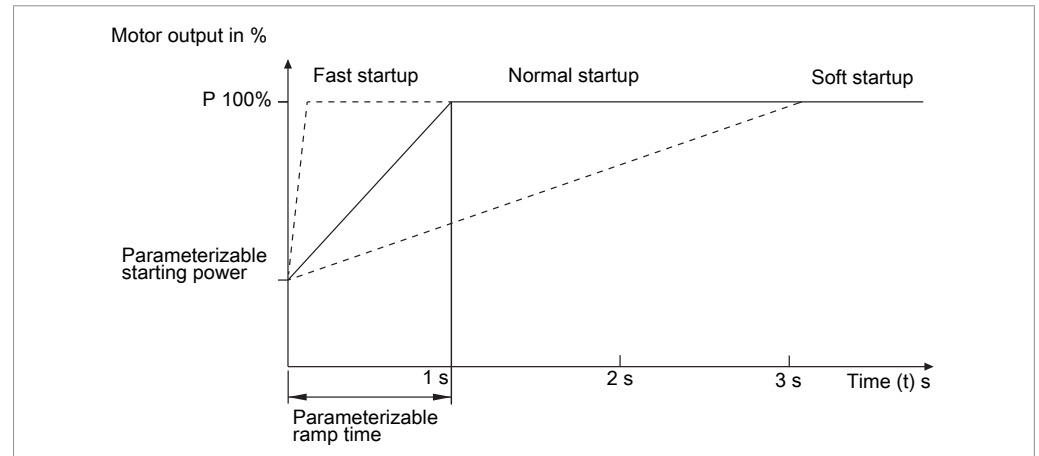
Avoid frequent changes of direction. At more than 4 changes of direction per minute, the service life of the center zero relay is greatly reduced.

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.



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 26), 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

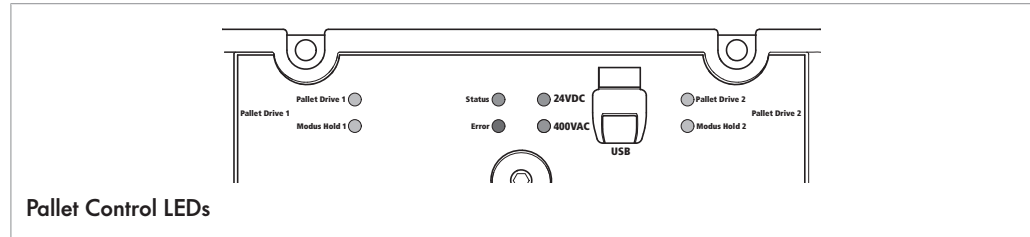
A temperature sensor is integrated in the Pallet Control to measure the temperature of the circuit board. In addition, the temperature of the power semiconductors is also monitored in the 10-A version. If the internal temperature of 90 °C is exceeded, all functions are disabled and an error signal is triggered.

Interroll Pallet Control PC 6000

Initial startup and operation

LED indicators

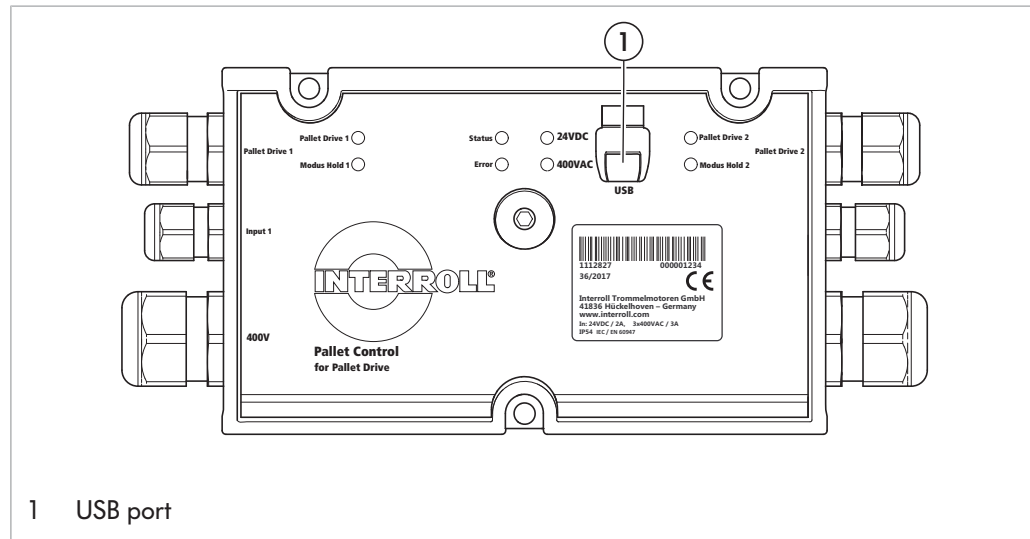
The printed circuit board features 8 LEDs that indicate the current operating status. They are transferred to the front via optical conductors. If there is an error, the LEDs *Error* and *Pallet Drive* are flashing. The *Pallet Drive* LED shows the source of the error and the flashing frequency of the LEDs points to the error. For additional information about error detection, see see "*Troubleshooting*", page 35.



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.

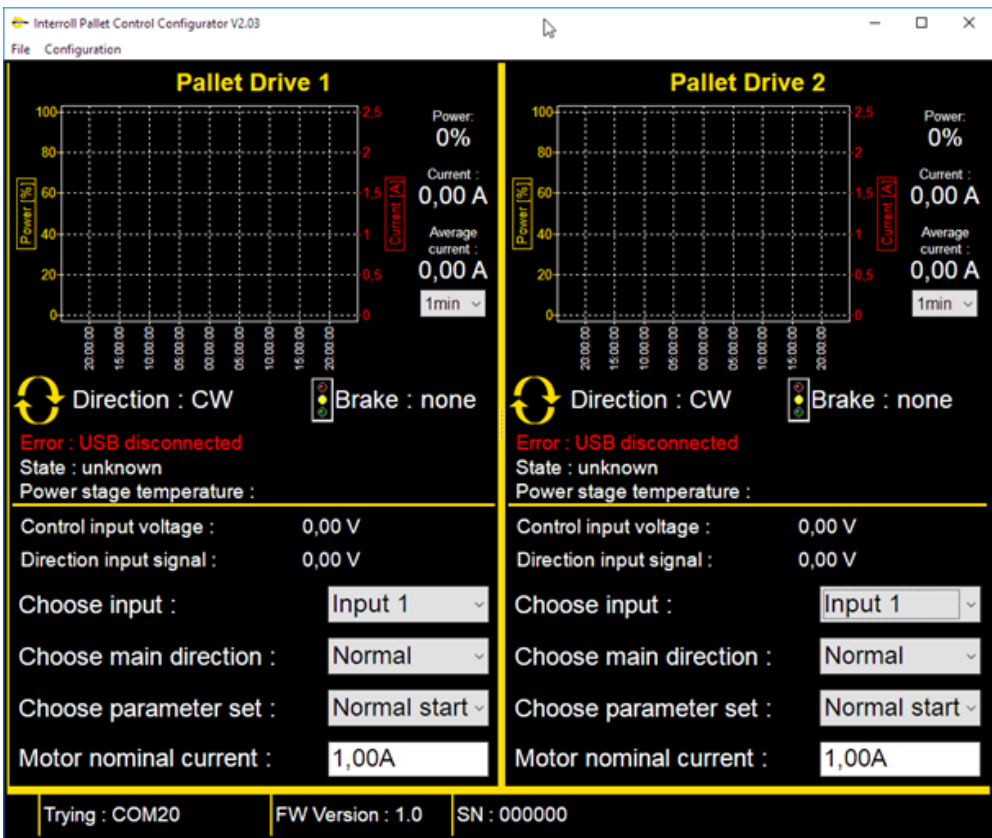
Interroll Pallet Control PC 6000

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 connected Pallet Drives. 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 with the Pallet Control Configurator. The Pallet Control Configurator is available on the Interroll website in the support section.

The current performance, electrical current and direction of rotation are displayed in the main window. In addition, it is possible to define the control input used, to change the direction of rotation, to select the parameter set to be used and also to set the motor nominal current in the 10-A version.



Configurator user interface

Setting the nominal current when gear motors are used

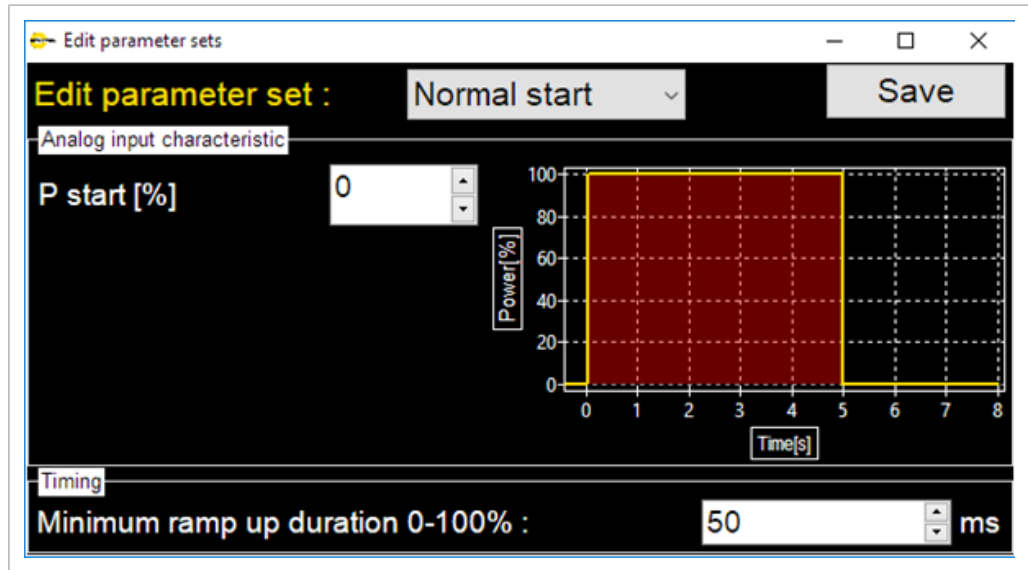
- ▶ In the main window, under "Motor nominal current", set the nominal current of the electric motor according to the data sheet.

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.



Interroll Pallet Control PC 6000

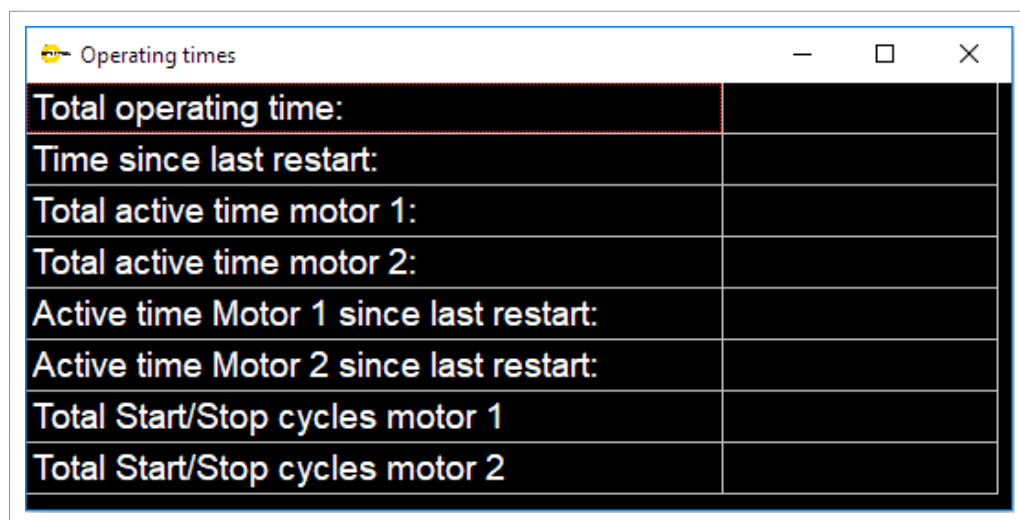
Initial startup and operation

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



Operating times	
Total operating time:	
Time since last restart:	
Total active time motor 1:	
Total active time motor 2:	
Active time Motor 1 since last restart:	
Active time Motor 2 since last restart:	
Total Start/Stop cycles motor 1	
Total Start/Stop cycles motor 2	

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.

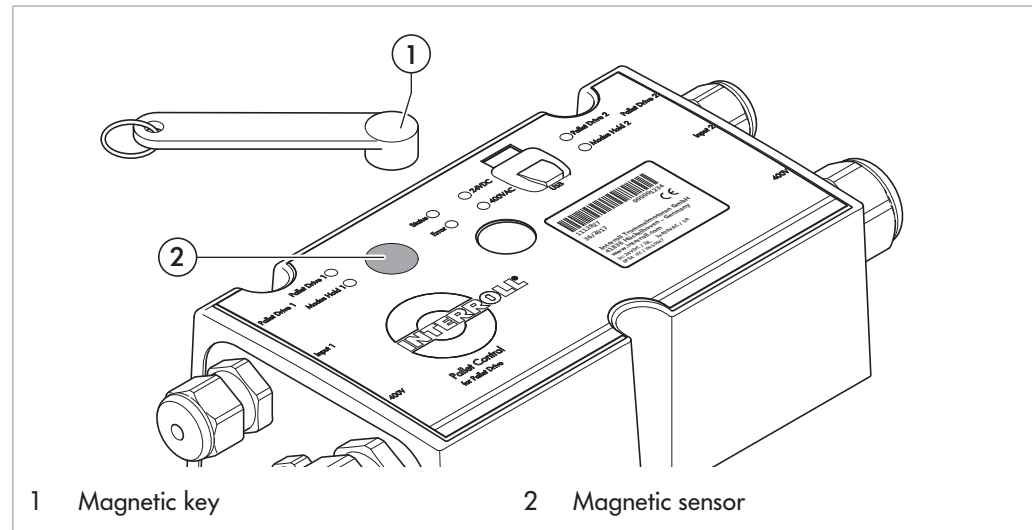
Acknowledging an error

- ▶ 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 using 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 circuit board, roughly centered between the *Error* LED and the *Modus Hold 1* LED.



By default, the magnetic sensor is deactivated and must be turned on in the Pallet Control Configurator.

Requirement:

- Neither motor is running.
 - ▶ Select *Configuration > Enable magnetic sensor* in the menu. Pallet Control Configurator is turned on.
 - ▶ 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.

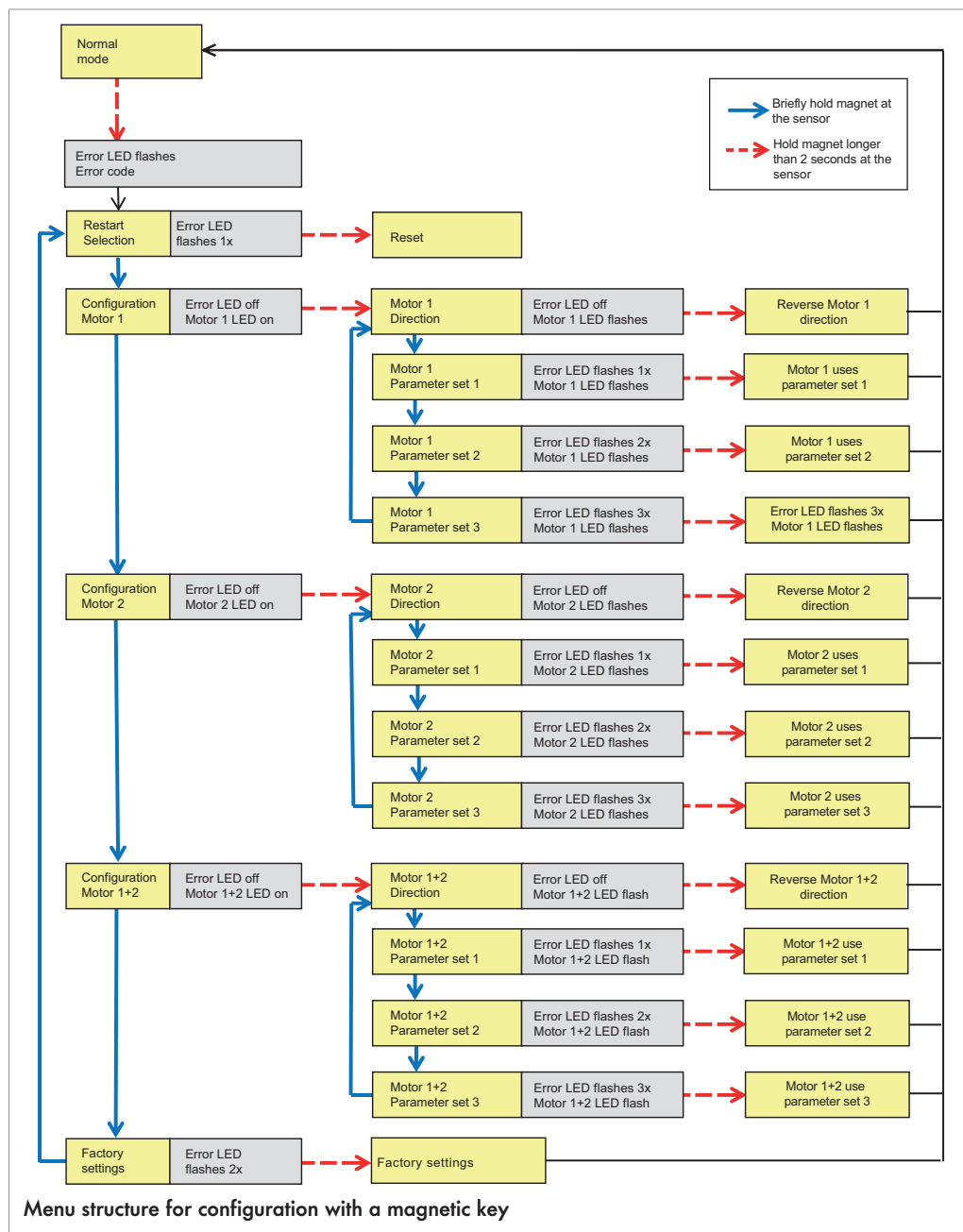
Interroll Pallet Control PC 6000

Initial startup and operation



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.



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 protective devices.
- ▶ Ensure that no drive connected to the Pallet Control is blocked.
- ▶ Precisely specify and monitor placement of the conveying goods.
- ▶ 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

Checking the Pallet Control

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.

Replacing the Pallet Control

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 Drives.

Labeling	Function	Color
<i>Pallet Drive 1</i>	<p>On: Motor 1 is controlled.</p> <p>Flashing: Motor 1 has an error. Flashes alternately with Error LED.</p> <p>Off: Motor 1 is not controlled.</p>	Yellow
<i>Modus Hold 1</i>	<p>On: Holding brake at motor output 1 is not controlled and therefore closed.</p> <p>Off: No holding brake connected to motor output 1 or holding brake is controlled and therefore is open.</p>	Yellow
<i>Status</i>	<p>On: The system is ready for operation, 24 V are applied, 400 V were detected, no other error is present.</p> <p>Flashes briefly 3 times: During each restart.</p> <p>Flashes: During USB connection for configuration.</p> <p>Off: In all other cases.</p>	Green
<i>Error</i>	<p>On: Error at one or both outputs.</p> <p>Off: No error.</p>	Red
<i>24VDC</i>	<p>On: 24 V supply voltage connected.</p> <p>Off: No 24 V supply.</p>	Green
<i>400VAC</i>	<p>On: L1, L2 and L3 are connected to the 400 V input and valid phase crossings at 50 Hz have been detected.</p> <p>Flashing: L1, L2 and L3 connected to the 400 V input, but phase position was not detected, e.g., if phase 1 is missing.</p> <p>Off: Only one or no 400 V line is connected and therefore no phase crossings have been detected.</p>	Green
<i>Pallet Drive 2</i>	<p>On: Motor 2 is controlled.</p> <p>Flashing: Motor 2 has an error. Flashes alternately with Error LED.</p> <p>Off: Motor 2 is not controlled.</p>	Yellow
<i>Modus Hold 2</i>	<p>On: Holding brake at motor output 2 is not controlled.</p> <p>Off: No holding brake connected to motor output 2 or holding brake is controlled and therefore is open.</p>	Yellow

During configuration via magnetic sensor, the LEDs have additional indicator functions, see "Configuration with the magnetic sensor", page 30.

Interroll Pallet Control PC 6000

Troubleshooting

Error signaling

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

The following options are available to reset an error:

- Using the software (see "Configuration via USB", page 26)
- Using the magnetic key (see "Configuration with the magnetic sensor", page 30)
- By briefly switching off the 24 V DC control voltage

The following error codes are possible:

Error	Possible cause	Solution	Comment/error acknowledgment
Error LED flashes 1x	Pallet Drive or gear motor thermal circuit breaker tripped	▶ Allow motor to cool off.	<ul style="list-style-type: none"> • Error is not tripped until a travel signal for the relevant motor is also applied. • Error is canceled automatically if there is no longer an error and 10 min have elapsed.
Error LED flashes 2x	400 V not detected	<ul style="list-style-type: none"> ▶ Check the 400 V power supply. ▶ Checking the miniature fuses 	<ul style="list-style-type: none"> • Error stops both motors. • Error is canceled automatically as soon as there is no longer an error.
Error LED flashes 3x	Excessive current detected	▶ Check whether there is an overload.	• Error stops only the relevant motor.
Error LED flashes 4x	Holding brake defective	▶ Check holding brake connections.	• Error must be canceled manually after removing the cause of the error.
Error LED flashes 5x	Excessive temperature on the circuit board	▶ Call Interroll service.	• Error stops both motors.
Error LED flashes 6x	Triac detected as defective	▶ Call Interroll service.	
Error LED flashes 7x	24 V outside tolerance	▶ Check DC supply voltage.	<ul style="list-style-type: none"> • Error stops both motors. • Error is canceled automatically after the first occurrence following a reset when the voltage is back within the tolerance. Only after the second occurrence does it remain and must be canceled manually.
Error LED flashes 8x	<ul style="list-style-type: none"> • Excess temperature of power semiconductor detected • Possibly excessive motor output 	<ul style="list-style-type: none"> ▶ Check whether there is an overload ▶ Allow motor to cool off. 	<ul style="list-style-type: none"> • Error stops only the relevant motor. • Error must be canceled manually after removing the cause of the error.

Interroll Pallet Control PC 6000

Troubleshooting

Error	Possible cause	Solution	Comment/error acknowledgment
Motor does not turn, <i>Status</i> LED is off	Power supply not connected correctly	<ul style="list-style-type: none"> ▶ Check power supply. ▶ Checking the miniature fuses 	
Motor does not turn, <i>Error</i> LED is off	<ul style="list-style-type: none"> • Motor connections or holding brakes cabled incorrectly • Polarity of holding brake reversed 	<ul style="list-style-type: none"> ▶ Check motor connections. ▶ Check holding brake connections. 	
Magnetic sensor no longer responds	Magnetic sensor damaged	<ul style="list-style-type: none"> ▶ Switch 24 V off and on again. ▶ Call Interroll service. 	
Only <i>Modus Hold 1</i> and <i>Modus Hold 2</i> are on	Pallet Control constantly in configuration mode	<ul style="list-style-type: none"> ▶ Call Interroll service. 	



Interroll Pallet Control PC 6000

Appendix

Declaration of Conformity

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

hereby declares that the product

- Pallet Control 3 A (1112827)
- Pallet Control 10 A (1119924)

meets the requirements of the directives and standards listed below:

Applied EU Directives:

- 2014/35/EU Low-voltage directive
- 2014/30/EU EMC
- 2011/65/EU RoHS Directive

Applied harmonized standards:

- EN 61010-2:201:2013/AC: 2013
- EN 61326-1:2013
- EN 50581:2012

Person authorized to prepare the technical documents:

Holger Hoefler, Interroll Trommelmotoren GmbH, Opelstr. 3, D - 41836 Hueckelhoven, Germany

Hueckelhoven – February 19, 2020

Dr. Hauke Tiedemann
(managing director)

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



Interroll Pallet Control PC 6000

