

Operating manual

High Performance power supply unit

HP5424 (24 V DC, 40 A), HP5448 (48 V DC, 20 A)



Manufacturer details

Interroll Engineering GmbH
Höferhof 16
42929 Wermelskirchen
Germany
Tel.: +49 (0) 2193 23 0
Fax: +49 (0) 2193 2022
www.interroll.com

Content

We strive for the accuracy, timeliness and completeness of the information and have carefully prepared the contents in this document. Regardless of this, errors and changes are expressly reserved.

Copyright/industrial property rights

Any texts, images, graphics and the like, as well as their arrangement, are subject to protection under copyright and other laws of protection. The reproduction, modification, transmission or publication of any part of this document or of the entire document in any form is prohibited.

The document serves the exclusive purposes of information and of operation in accordance with the regulations and does not justify any counterfeiting of the products concerned.

All signs contained in this document (protected marks, such as logos and trade names) are the property of Interroll Holding AG, CH or of third parties and must not be used, copied or distributed without prior written consent.

Online version - only suitable for color printing!

1	About this document	7
1.1	Information about this operating manual	7
1.2	Warning notices in this document	8
1.3	Symbols	9
2	Safety-related information	10
2.1	State of the art	10
2.2	Proper use	10
2.3	Improper use	10
2.4	Qualification of personnel	11
2.5	Dangers	12
	Injury to persons	12
	Electricity	12
	Work environment	12
	Faults in operation	12
	Maintenance	12
	Unintentional start-up	12
2.6	Interface to other devices	13
2.7	Operating modes/operating phases	13
	Standard operation	13
	Special operation	13
2.8	Applicable documentation	13
3	Product information	14
3.1	Product description	14
	Energy recovery / Overvoltage protection / Brake chopper	14
3.2	Components	15
	Overview (HP5424 exploded drawing)	15
	DC on/off switch	16
	HP5424/HP5448 status LED	17
	Power LED flashing cycle	18
3.3	Rating plate	18
3.4	Technical specifications	19
3.5	Dimensions	20

Contents

4	Transport and storage	21
4.1	Transport	21
4.2	Storage	21
5	Assembly and installation	22
5.1	Warning notices for installation	22
5.2	Installation location	22
	The following installation locations are permitted:	23
5.3	Connections and settings	24
	(1) Connection to earth	26
	(2) Connection block 1 – 24/48 V AC	26
	(3) Connection block 2 – 24 V AC	26
	(4) Signal connection	27
	(6) UDC setting potentiometer	27
	(7) Jumper setting, DC cable protection	28
	(5) Connection block 3 – 400 V AC	28
	(8) Connection block 4 – 400 V AC	28
5.4	Electrical installation	29
	Application notes	30
	Mains-side connection and protection	30
	Load-side connection and protection	30
	Conveyors with multiple Interroll power supply units	31
	Electrical connection	31
6	Start-up and operation	32
6.1	Start-up	32
	Check before the initial start-up	32
6.2	Operation	33
	Check before every start-up	33
6.3	Procedure in the event of accidents or faults	33
7	Maintenance and cleaning	34
7.1	Maintenance	34
7.2	Cleaning	34

8	Assistance in the event of faults	35
8.1	Troubleshooting	35
9	Decommissioning and disposal	36
9.1	Decommissioning	36
9.2	Disposal	36
10	Appendix	37
10.1	Accessories	37
10.2	Translation of the original Declaration of Conformity	38

1 About this document

1.1 Information about this operating manual

This operating manual covers the following Interroll power supply units:

- HP 5424
- HP 5448

Throughout this manual, the term "power supply unit" is used in the singular. Unless otherwise specified, the information in this operating manual refers to both variants.

The operating manual is a component of the product and contains important advice and information regarding the different operating phases of the power supply unit. It describes the power supply unit at the time of shipping from Interroll.

The currently applicable version of this operating manual can be found online at: www.interroll.com/support/

All the information and advice in this operating manual has been compiled with respect to applicable standards and regulations as well as the current state of the art.

- To ensure safe and faultless operation and to fulfil any warranty claims that may apply, read this operating manual first and observe its instructions.
- Keep this operating manual within close reach of the power supply unit.
- Pass this operating manual onto every subsequent owner or user.



The manufacturer assumes no liability for damage and malfunctions that occur as a result of non-compliance with this operating manual.



Should you still have any unanswered questions after reading this operating manual, please contact Interroll customer service. Contact details for your region can be found online at www.interroll.com/contact/

Please direct any comments and suggestions regarding our operating manuals to manuals@interroll.com

About this document

1.2 Warning notices in this document

Warning notices are provided in the context in which danger can occur and describe the nature of the danger in question. They are structured according to the following examples:



SIGNAL WORD

Type and source of hazard

Consequence(s) in the event of non-compliance

➤ Measure(s) for avoiding hazard

Signal words indicate the type and severity of the consequences if measures to avoid the hazard are not observed.



DANGER

Denotes an imminent hazard.

If measures to avoid the hazard are not observed, death or severe injury will occur.

➤ Preventive measures



WARNING

Denotes a potentially hazardous situation.

If measures to avoid the hazard are not observed, death or severe injury may occur.

➤ Preventive measures



CAUTION

Denotes the possibility of a hazardous situation.

If measures to avoid the hazard are not observed, minor or moderate injury may occur.

➤ Preventive measures

NOTE

Denotes a situation that can lead to material damage.

- Preventive measures

1.3 Symbols



This symbol indicates useful and important information.



This symbol indicates a requirement that must be fulfilled before carrying out assembly or repair work.



This symbol indicates general information relating to safety.



This symbol warns of hot surfaces.



This symbol indicates an action that needs to be performed.



This symbol indicates a listed item.

Safety-related information

2 Safety-related information

2.1 State of the art

The Interroll power supply units have been constructed with respect to applicable standards and the current state of the art and have been delivered in a condition that is safe to operate. Nevertheless, hazards can occur as a result of use.



Non-compliance with the instructions in this operating manual can result in life-threatening injuries.

In addition, the applicable local accident prevention regulations for the area of application and general safety regulations must be adhered to.

2.2 Proper use

The power supply unit may only be used in an industrial environment for industrial purposes within the stipulated performance limits that are given in the technical specifications.

It must be integrated into a conveyor unit or conveyor system for supplying power to the Interroll RollerDrive before commissioning.

Only indoor use is allowed.

2.3 Improper use

Any use that goes beyond the proper use is considered improper, unless this has been authorised by Interroll Engineering GmbH where applicable.

The equipment must not be installed in areas in which substances could form explosive atmospheres/dust atmospheres or for application in the medical/pharmaceutical sector.

It is considered improper use to install the equipment in exposed spaces that are open to potentially adverse weather conditions, or areas in which the technology would suffer from the prevailing climactic conditions and could potentially malfunction as a result.

The power supply unit is not intended for use by private end users. The equipment must not be used in a residential environment without further examination and without the use of EMC protective measures that have been adapted accordingly.

It must not be used as a safety-relevant component or for performing safety-relevant functions.

2.4 Qualification of personnel

Non-qualified personnel are unable to identify risks and are therefore exposed to higher levels of danger.

- Only qualified personnel may be assigned with the tasks outlined in this operating manual.
- The operating company is responsible for ensuring that personnel adhere to the locally valid rules and regulations for working in a safe and risk-aware manner.

This operating manual is intended for the following target audiences:

Operators

Operators are trained in how to operate and clean the Interroll power supply unit and follow the safety regulations.

Service engineers

The service engineers have a specialist technical education or have successfully completed a training course from the manufacturer. They carry out repair and maintenance work.

Qualified electricians

Qualified electricians have a specialist technical education. Moreover, due to their knowledge and experience as well as knowledge of applicable regulations, they are able to carry out work on electrical equipment in an appropriate manner. They are able to identify hazards independently and prevent electrical damage to persons and property.

All work on electrical equipment must generally only be performed by a qualified electrician.

Safety-related information

2.5 Dangers



Here, you will find information about the different types of dangers or damage that can occur in connection with the operation of the power supply unit.

Injury to persons

- Maintenance, installation and repair work on the unit must only be carried out by authorised technical personnel in compliance with the applicable provisions.
- Before switching on the power supply unit, ensure that no unauthorised personnel are situated in the vicinity of the conveyor/conveying system.

Electricity

- Installation and repair work must only be carried out when the system has been disconnected from the power supply. Switch off the power to the power supply unit and ensure that it cannot be unintentionally switched on again.

Work environment

- Remove any materials and objects that are not required from the working area.

Faults in operation

- Regularly check the power supply unit for visible damage.
- If smoke develops, immediately switch off the power to the power supply unit and ensure that it cannot be unintentionally switched on again.
- Immediately contact specialist personnel to determine the cause of the malfunction.

Maintenance

- Since the product in question requires no maintenance, it is sufficient to simply examine the power supply unit for visible damage on a regular basis.
- Never open the power supply unit.

Unintentional start-up

- Ensure that the power supply unit cannot be switched on unintentionally, particularly during assembly and maintenance work or in the event of a fault.



Use a padlock to prevent the isolating switch of the power supply unit from being switched back on. Remove the key and keep it on your person until maintenance or repair work is complete.

2.6 Interface to other devices

The integration of the power supply unit into a conveyor system can create additional potential hazards. Such potential hazards are not covered by this operating manual and must be analysed during the development, installation and commissioning of the conveyor system as a whole.

- Following the integration of the power supply unit into a conveyor system, the entire system must be checked for any new potential hazards that may be present before the conveyor is switched on.

2.7 Operating modes/operating phases

Standard operation

Operation in the installed condition at the end customer as a component in a conveyor in an overall system.

Special operation

Special operation encompasses all operating modes/operating phases that are necessary to guarantee and maintain safe standard operation.

Special operating mode	Comments
Transport/storage	-
Assembly/commissioning	In de-energised state
Cleaning	In de-energised state
Maintenance/repair	In de-energised state
Fault location	-
Troubleshooting	In de-energised state
Decommissioning	In de-energised state
Disposal	-

2.8 Applicable documentation

Power supply units HP5424 and HP5448 are part of the **Interroll DC Platform**, consisting of:

- Interroll High Performance power supply unit HP5424 or HP 5448 (24 V DC/48 V DC)
- Interroll MultiControl AI/BI
- RollerDrive EC5000 AI/BI (24 V DC/48 V DC)
- Interroll DriveControl 20/54/2048



Also ensure that you adhere to the information given in the operating manuals of the connected devices.

Product information

3 Product information

3.1 Product description

The Interroll DC Platform comprises a RollerDrive with 24 V or 48 V rated voltage.

The Interroll power supply unit converts the three-phase 400 V alternating input voltage into 24 V or 48 V direct voltage for supplying power to the connected Interroll RollerDrive:

- HP5424 – output voltage 24 V DC, output current 40 A continuous,
- HP5448 – output voltage 48 V DC, output current 20 A continuous.

Further distinguishing features include ease of operation, minimal configuration effort ("plug and play") and simple replacement in the event of a defect.

The integrated DC on/off switch enables the connected RollerDrive to be disconnected from the power supply.

The switch can be locked in the Off position to prevent it from being unintentionally switched on again.

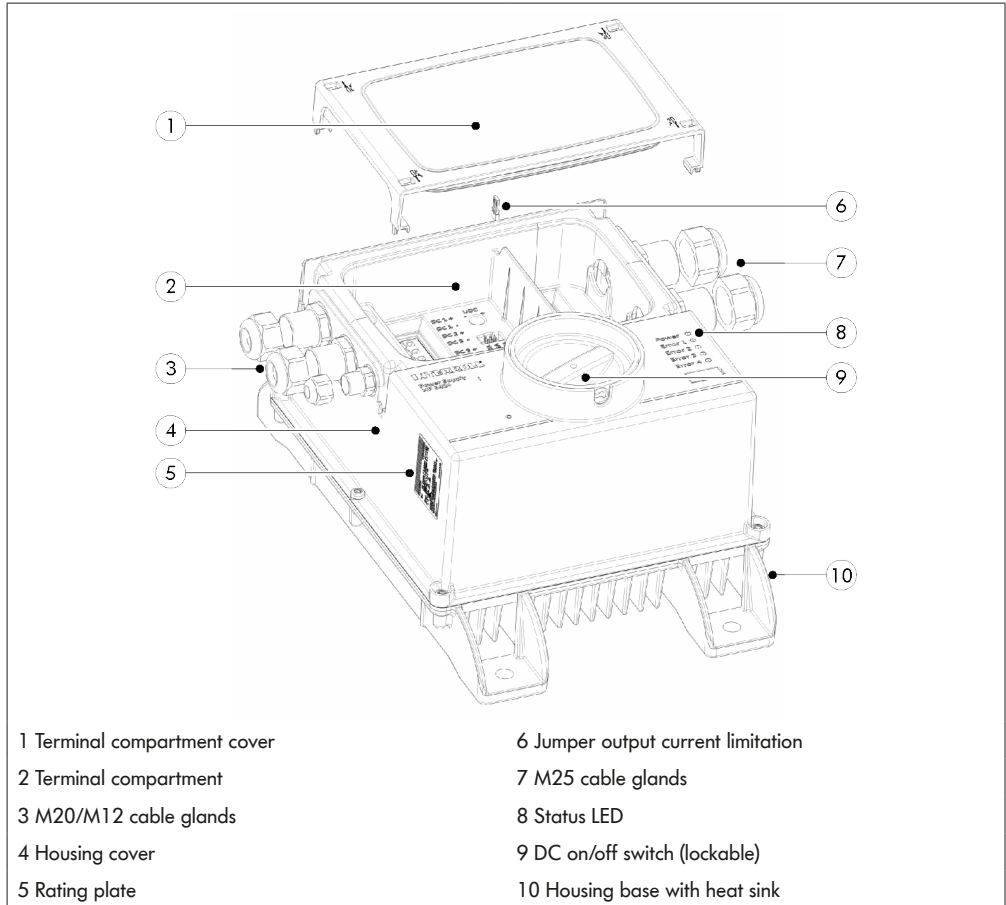
Energy recovery / Overvoltage protection / Brake chopper

If the connected RollerDrives are stopped or their speed is abruptly reduced, the kinetic energy of the conveyed material in the RollerDrive is converted into electrical energy, akin to a generator. This energy is fed back into the system, where it can either be used by other RollerDrives or converted into heat by the braking resistor integrated in the power supply unit.

The chopper is activated when the output voltage set by the potentiometer is exceeded by 1 V (HP5424) / 2 V (HP5448) as a result of the energy recovery process. This prevents excessively high voltages within the system.

3.2 Components

Overview (HP5424 exploded drawing)



Opening the terminal compartment cover possible with a suitable flat-head screwdriver.

Product information

DC on/off switch



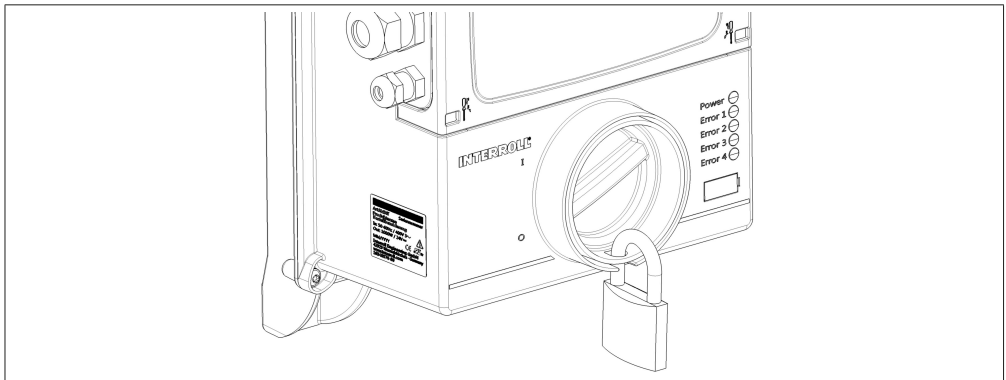
WARNING

Risk of death due to electric shock.

The DC on/off switch on the power supply unit is not a mains isolation device according to STOP category 0.

The on/off switch only switches off the DC supply voltage to the connected RollerDrive.

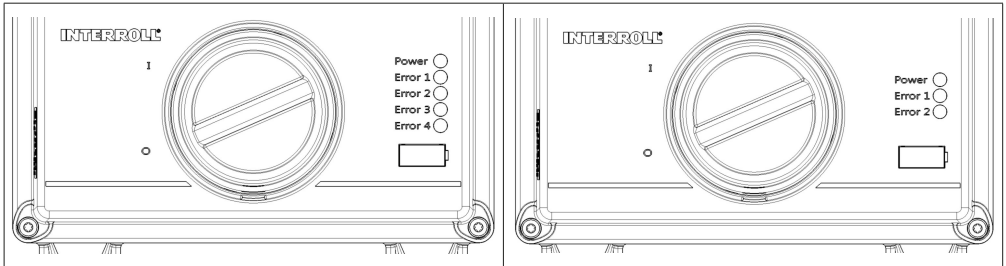
- Electrical work must only be carried out by a qualified electrician.
- When working on the 400 V power supply, disconnect the conveyor system from the mains and ensure that it cannot be unintentionally switched on again.



A contactless switching element is used as the control system.

The isolating switch can be locked in the Off position to prevent the power supply unit from being unintentionally switched on again.

HP5424/HP5448 status LED



	HP5424					HP5448		
	Power	Error 1	Error 2	Error 3	Error 4	Power	Error 1	Error 2
Normal operation	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF
DC output voltage switched off	1 Hz	OFF	OFF	OFF	OFF	1 Hz	OFF	OFF
Shutdown by error condition	Flashes n* times	ON	ON	ON	ON	Flashes n* times	ON	ON
Warning (DC output remains active)	Flashes n* times	OFF	OFF	OFF	OFF	Flashes n* times	OFF	OFF
Overcurrent, DC 1	Flashes 7 times	ON	OFF	OFF	OFF	Flashes 7 times	ON	OFF
Overcurrent, DC 2	Flashes 7 times	OFF	ON	OFF	OFF	Flashes 7 times	OFF	ON
Overcurrent, DC 3	Flashes 7 times	OFF	OFF	ON	OFF			
Overcurrent, DC 4	Flashes 7 times	OFF	OFF	OFF	ON			
System error, overcurrent	Flashes 7 times	ON	ON	ON	ON	Flashes 7 times	ON	ON

* n = see table on the next page

Product information

Power LED flashing cycle







Number n of times power LED flashes	Description
1	Device protection: Critical condition (e.g. overcurrent in the power section)
2	Device protection: Rated power exceeded for too long
3	Device protection: Overload – 1.5 x rated power exceeded
4	Device protection: Excessive temperature
5	Failure of one phase detected
6	Device protection: Chopper resistor overload
7	Overcurrent protection on the output side



Wherever possible, statuses are output as a warning. This enables the DC outputs to remain active. Critical statuses are output as errors and result in the DC outputs being switched off.

3.3 Rating plate

The information on the rating plate allows the power supply unit to be identified. This is essential to be able to use the power supply unit as intended.

<p>① 1113899 00000000</p> <p>② In: 50-60Hz / 1,625A ($\Sigma \leq 13A$) 220/380 V – 277/480 V; 3~+ PE</p> <p>③ Out: 960W / 24V ~</p> <p>④ CE  LISTED  </p> <p>⑤ Interroll Engineering GmbH 42929 Wermelskirchen · Germany www.interroll.com</p> <p>⑥ ww / yyyy 10347671 00</p>	<p>① 1113900 00000000</p> <p>② In: 50-60Hz / 1,625A ($\Sigma \leq 13A$) 220/380 V – 277/480 V; 3~+ PE</p> <p>③ Out: 960W / 48V ~</p> <p>④ CE  LISTED  </p> <p>⑤ Interroll Engineering GmbH 42929 Wermelskirchen · Germany www.interroll.com</p> <p>⑥ ww / yyyy 10347672 00</p>
--	--

1 Article number

2 Connection values Output

3 Manufacturer

4 Week/year of production

5 Serial number

6 Connection values Input ¹⁾

7 CE- / UL-Marking / Warning symbols

¹⁾ $\Sigma \leq 13 A$ - When looping through the supply line to a maximum of eight power supplies expected maximum total current.

3.4 Technical specifications

	HP5424	HP5448
Connection values	220/380 V - 277/480 V; 3~+PE; 1,625 A ($\Sigma \leq 13$ A)	
Required mains-side protection	3 x 16 A	
Network configurations	TT network TN-C-S network The voltage between L1, L2, L3 and N or PE must not exceed 300 V	
Mains frequency	50–60 Hz, $\pm 6\%$	
Rated output voltage	24 V DC	48 V DC
Control range output voltage (potentiometer)	24–28 V	48–54 V
Output voltage tolerance	$\pm 0.5\%$ when idle	
Residual ripple (peak – peak)	$V_{pp} \leq 600 \text{ mV}^{1)}$	$V_{pp} \leq 400 \text{ mV}^{1)}$
Rated output current at 380–480 V AC	40 A at 24 V DC	20 A at 48 V DC
Nominal Power	960 W	
Boost mode	1440 W for 4 s	
Performance chopper resistance	Continuous power 30 W, peak power 200 W - pulse-resistant version	
Energy recovery capacity	$\leq 35 \text{ V}$	$\leq 60 \text{ V}$
Efficiency	$\geq 92\%$	$\geq 92\%$
Overvoltage category	III	
Protection rate	IP54	
Degree of contamination	2	
Ambient temperature in operation	$-30 \text{ }^{\circ}\text{C}$ to $+40 \text{ }^{\circ}\text{C}^{2)}$	
Ambient temperature during transport and storage	$-40 \text{ }^{\circ}\text{C}$ to $+85 \text{ }^{\circ}\text{C}$	
Altitude of installation site	Max. 1000 m ³⁾	

All data applies to a temperature of 20 °C.

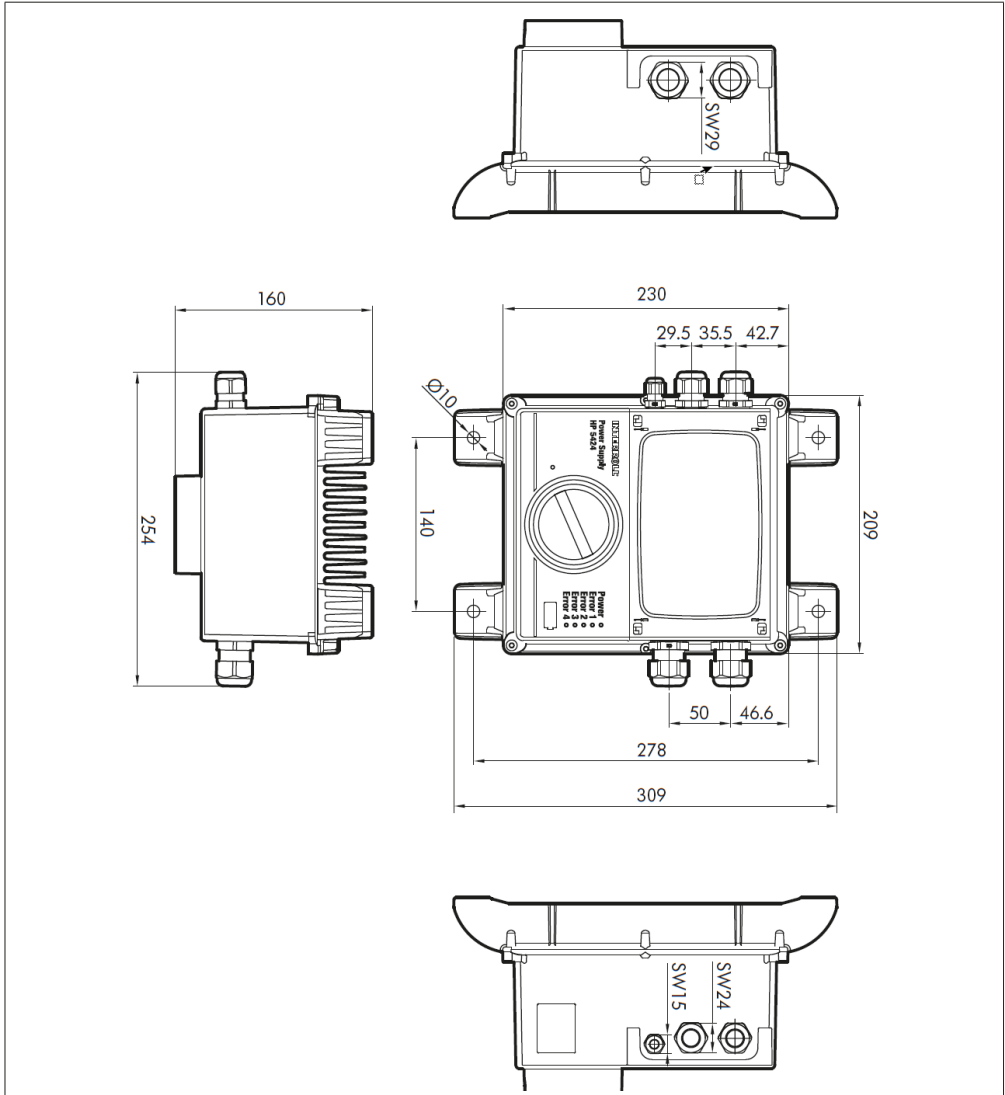
¹⁾ Value in accordance with Interroll Measurement rule Residual ripple in accordance with standards IEEE 1515-2000 and JEITA-RC9131A.

²⁾ The cable feedthroughs used can only carry a static load at temperatures below $-20 \text{ }^{\circ}\text{C}$.

³⁾ From 1000 m, a significant derating is to be expected.

Product information

3.5 Dimensions



4 Transport and storage

4.1 Transport



WARNING

Danger to life due to damage to the housing!

- Check each power supply unit after transport for any visible damage.
- If any damage has been identified, photograph the damaged parts.
- In the event that damage has been incurred during transport, inform the shipping agent or Interroll immediately to ensure that you do not lose any potential damage claims.



CAUTION

Risk of injury from improper transport.

- Transport operations must only be carried out by authorised, qualified personnel.

Please note the following:

- Do not stack pallets on top of one another.
- Prior to transport, check whether the Interroll power supply units are correctly attached.
- Avoid heavy impacts during transport.
- Do not expose the power supply units to any strong fluctuations in temperature, since this can lead to condensation forming.

4.2 Storage



CAUTION

Risk of injury due to improper storage.

- Ensure that the power supply units are stored safely.

Please note the following:

- Do not stack pallets on top of one another.

Assembly and installation

5 Assembly and installation

5.1 Warning notices for installation



WARNING

Danger to life due to damage to the housing!

- Check each power supply unit before assembly for any visible damage.
- Do not mount damaged power supply units!
- In case of damage inform the supplier or Interroll immediately.

NOTE

An improper approach to installing the Interroll power supply unit can lead to material damage or reduce the service life of the power supply unit.

- To preserve the interior of the power supply unit, do not allow the power supply unit to fall or for it to be used in an improper fashion.
- Do not install the power supply unit above heat sources and ensure that natural air circulation is maintained around the power supply unit.
- Do not drill any additional mount holes into the housing and do not enlarge any existing holes.

5.2 Installation location



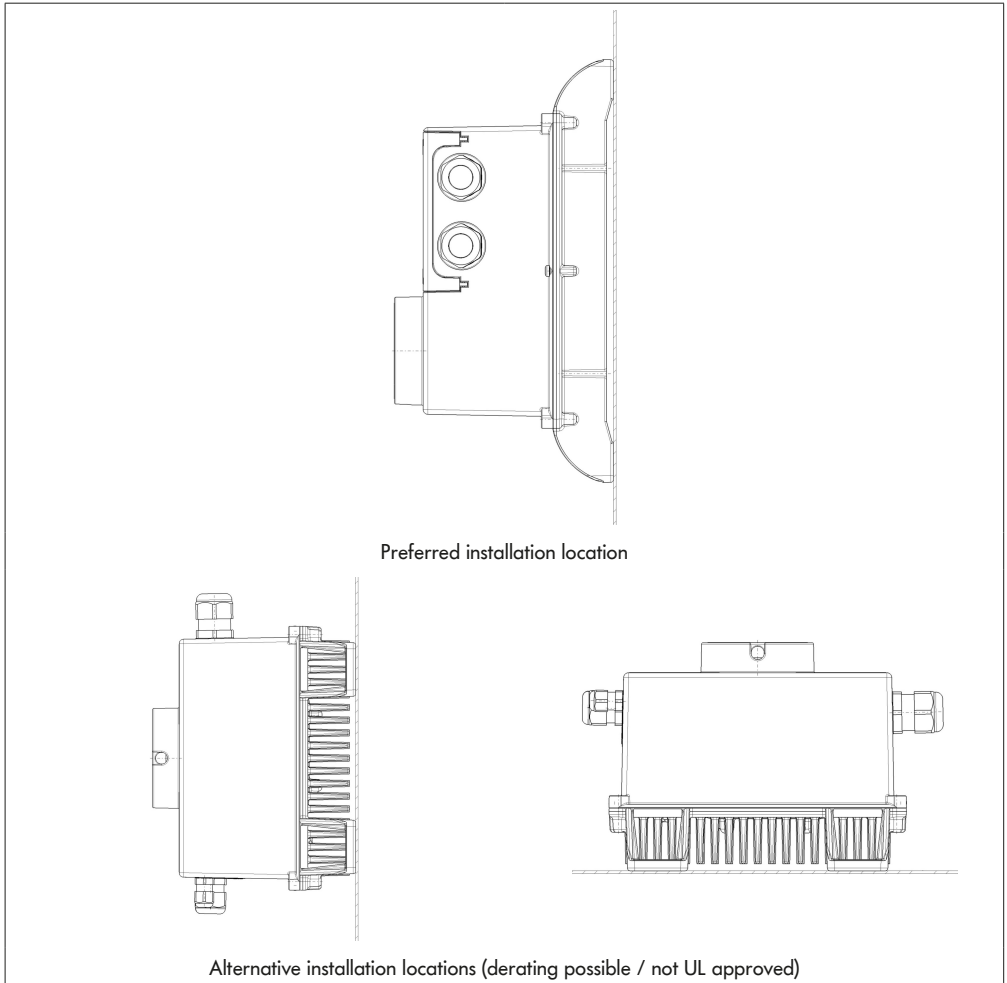
To minimise cable losses, install the power supply unit close to Interroll control systems.

Install the power supply unit in the preferred installation location (see figure on the following page).

If installed in alternative installation locations, derating can be expected.

Assembly and installation

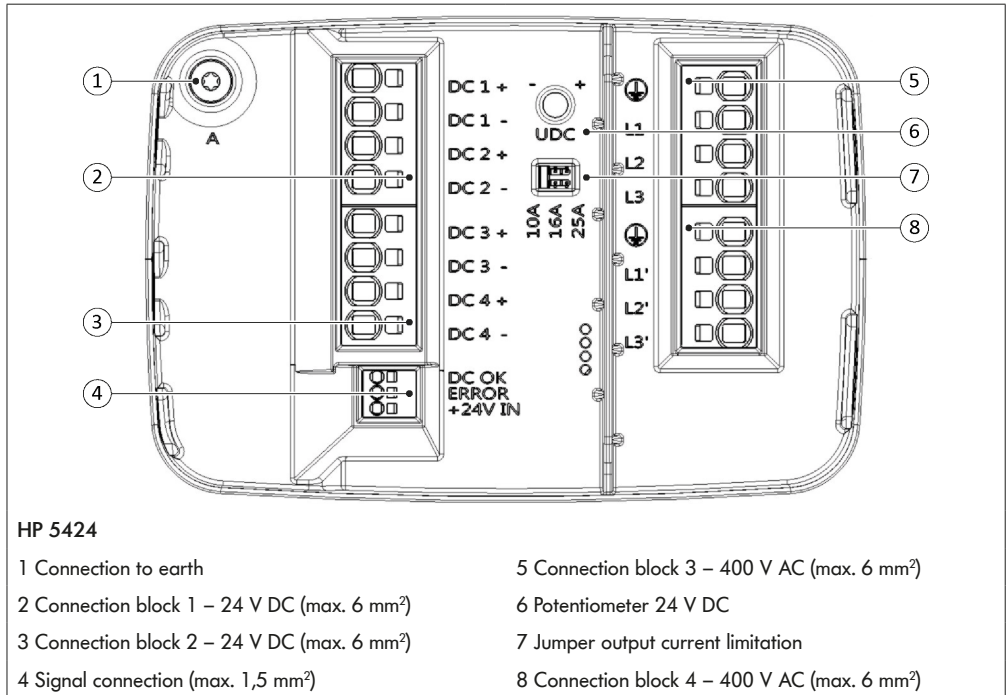
The following installation locations are permitted:



- Install the Interroll power supply unit on a level surface of the conveyor frame.
- Ensure that the screws cannot come loose as a result of vibration or impact and make sure the housing has not been distorted.

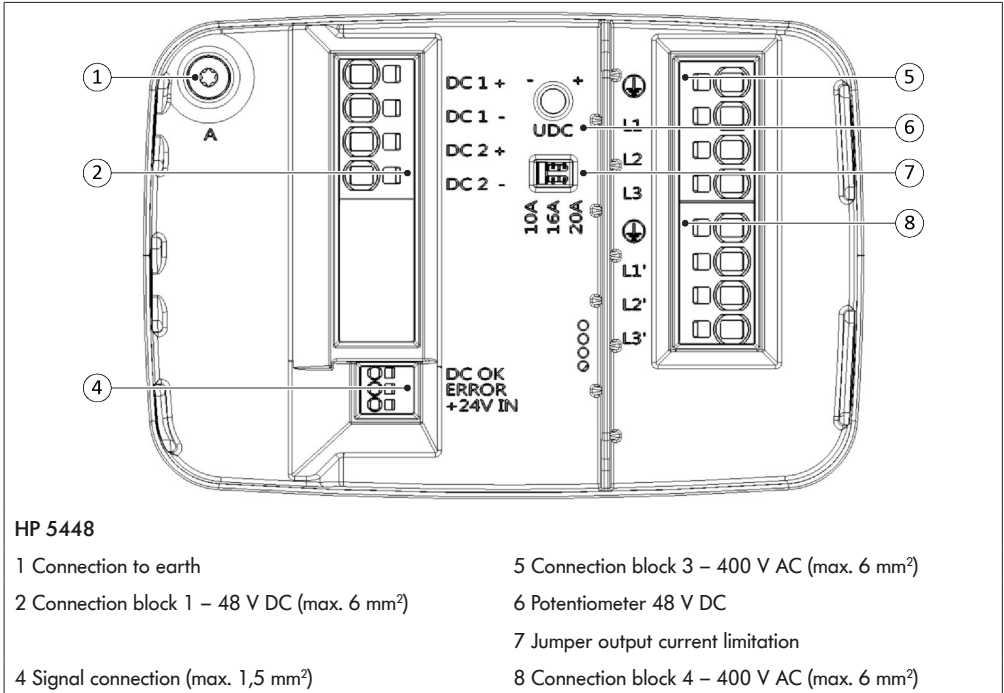
Assembly and installation

5.3 Connections and settings



If the jumper is not connected, an error message appears (overcurrent protection).

Assembly and installation



If the jumper is not connected, an error message appears (overcurrent protection).

Assembly and installation

(1) Connection to earth

The screw marked with "A" establishes the PELV protective earth conductor connection for the DC power supply.



For the insulation test (secondary side to PE), the "A" screw must be removed. The screw must then be reinserted.

(2) Connection block 1 – 24/48 V AC

	HP5424	HP5448
DC 1 +	+ 24 V DC	+ 48 V DC
DC 1 -	0 V	0 V
DC 2 +	+ 24 V DC	+ 48 V DC
DC 2 -	0 V	0 V

(3) Connection block 2 – 24 V AC

	HP5424
DC 3 +	+ 24 V DC
DC 3 -	0 V
DC 4 +	+ 24 V DC
DC 4 -	0 V



To avoid overloading the output terminals, we recommend arranging the connected devices symmetrically.

NOTE

Loss of cable protection due to incorrect connection

- The outputs must not be connected in series or parallel.

(4) Signal connection

Signal outputs for readiness of the DC power supply and a group error signal.

	DC OK	ERROR
DC off; no error (possibly no supply)	L	H
DC on; no error	H	H
DC on; warning (e.g. phase failure, etc.)	H	L
DC off; error (e.g. overcurrent, overload, etc.)	L	L



The ERROR output is fail-safe.

The 24 V control voltage must be routed separately.

(6) UDC setting potentiometer

Fine adjustment of the DC output voltage

	HP5424	HP5448
Adjustment range	24–28 V DC	48–54 V DC

NOTE

Irreparable damage to the built-in potentiometer.

- Do not turn past the end position of the potentiometer (this is not an endless control potentiometer).

Assembly and installation

(7) Jumper setting, DC cable protection

The DC cable protection is adjusted to match the connected RollerDrive.

	HP5424	HP5448
Selection	10 A*/16 A/25 A	10 A*/16 A/20 A

*Factory setting

NOTE

Overload on the connected RollerDrive.

- Ensure that the DC cable protection is adjusted correctly.



The DC cable protection features a common cutout element for all four outputs. In the event of overcurrent or overload on a single output, all four outputs are switched off.

(5) Connection block 3 – 400 V AC

Input terminals for the 400 V power supply.



A four-wire connection cable without neutral conductor is sufficient when connecting Interroll power supply units.

(8) Connection block 4 – 400 V AC

Output terminals for looping through the 400 V power supply to a further Interroll power supply unit.



To prevent incorrect routing between the DC and AC voltage range, a partition is installed in the terminal compartment.

Type M25 cable glands are used for the supply cable and the cable for looping through the supply cable.

Manufacturer / Type: Jacob GmbH - Perfect 50.625 PA/SW UL-File: QCRV2.E140310

Type M20 cable glands are used for the cables to the Interroll control systems.

Manufacturer / Type: Jacob GmbH - Perfect 50.620 PA/SW UL-File: QCRV2.E140310

A type M12 cable gland is used for the signal cable.

Manufacturer / Type: Jacob GmbH - Perfect 50.612 PA/SW UL-File: QCRV2.E140310

All cable glands are sealed with a round stopper on delivery.

5.4 Electrical installation



WARNING

Risk of death due to electric shock.

- Check each power supply unit before assembly for any visible damage.
- Do not mount damaged power supply units!
- In case of damage inform the supplier or Interroll immediately.
- Electrical installation work must only be carried out by a qualified electrician.
- Before installing, removing or connecting the Interroll power supply unit, switch off the power to the conveyor system and ensure that it cannot be unintentionally switched on again.
- Do not switch on the operating voltage until all cables are connected and the cover is fitted on the power supply unit.

NOTE

Damage to the power supply unit.

- For the supply cable to the power supply unit, only use cables that are adequately dimensioned for the specific operating conditions, particularly with regard to cross-section and insulation.
- Since the temperature in the terminal compartment can exceed 60 °C at nominal load, make sure that the connection cables used are approved for temperatures > 80 °C.
- Ensure that no dust or dirt deposits can penetrate into the housing when it is opened.
- Ensure that all connected components are correctly earthed

NOTE

Professional installation!

- Before you can start connecting the cables, the device must be mounted on the intended mounting surface!
- The cables must be routed and secured in such a way that the cable glands or the electrical connection points are not mechanically stressed!
- Use bunched conductors. These can be clamped directly without using ferrule terminals.

Assembly and installation

Application notes

The following notes are designed to support the operator when using the Interroll power supply unit. These notes do not claim to be exhaustive. The extent to which the specific operating conditions permit the notes to be followed must be reviewed on a case-by-case basis. The safety and installation regulations applicable at the respective place of operation take priority.

Mains-side connection and protection

The Interroll power supply unit does not contain any internal device fuses. Due to the operating principle of the power supply unit, load-side overloads are not transferred to the mains connection. Mains-side protective devices would therefore be ineffective.

Mains-side fuses can be dimensioned according to the cable protection.



To guarantee the full performance of the power supply unit, the use of phase monitoring or linked fuses is recommended on the mains side.

NOTE

Professional installation!

- Extended/permanent operation of the power supply unit with just two phases is not permitted.

Load-side connection and protection

The power supply unit is equipped with electronic DC cable protection.

Depending on the jumper setting for output current limitation (see „Connections and settings“ on page 24), the output current and the total current are evaluated and, when the corresponding value is exceeded, a shutdown is initiated.

The total power of 1 kW or an overload of 1.5 kW for 4 seconds is also independently monitored.

The shutdown interrupts the flow of energy.

The shutdown is monitored in the integrated controller. If the secondary-side flow of energy is not stopped within the expected response time, a forced shutdown is initiated. This ensures that the defined response time for the safety function is never exceeded.



The error is reset by switching the DC on/off switch off and back on.

Conveyors with multiple Interroll power supply units

If a conveyor requires a higher connected load than can be provided by an Interroll power supply unit, the conveyor must be divided into supply areas. Each of these areas must be supplied by a separate power supply unit.



The loads of two or more power supply units may not be connected in series or parallel.

If the conveyor is to be divided into supply areas, the required simultaneous activation of the areas must be taken into account when designing the switching mechanism (see the notes in the operating manual for the connected Interroll control system).

It is possible to loop through the mains connection to simplify installation. Every Interroll power supply unit has an additional terminal point and an additional M20 cable gland for connecting a further power supply unit. The requirements regarding the loading capacity of the supply cable, fuse protection and switching requirements must be taken into account in the design.

Electrical connection

- Replace the round stoppers in the cable glands to be used with suitable seal inserts.
- Guide the cable through the gland next to the respective terminal.
- Ensure that all glands are present and fitted with suitable seals.
- Strip the cables with a suitable tool and remove the insulation to a sufficient length.
- Connect the cables according to the terminal diagram (see „Connections and settings“ on page 24).



The supply cable of the Interroll power supply unit does not require a clockwise rotating field. To make the connections easier to identify, however, we recommend using the corresponding wire colour.

NOTE

Do not open the housing.

- With the exception of the terminal compartment, the housing must not be opened. Opening the housing renders the test certificate null and void and also, therefore, the Interroll warranty.
- The looping of the supply line is limited to a maximum of eight power supplies!

Start-up and operation

6 Start-up and operation

6.1 Start-up

Check before the initial start-up

- Ensure that the power supply unit has been correctly attached to the conveyor frame and that all screws have been properly tightened.
- Ensure that no additional hazards are formed through the interfaces to other components.
- Ensure that the wiring conforms to the specifications and legal provisions.
- Check all protective equipment.
- Carry out insulation tests.

NOTE

Damage to the power supply unit.

- As the power supply unit features varistors on the housing, an insulation test (primary side PE) in the system must be performed with no more than 500 V.



The PELV switching status must be disabled during an insulation test. The operator is responsible for ensuring that the correct switching status is restored once the test is complete (see „Connections and settings“ on page 24).

- If necessary, carry out further tests after assembly and installation and before switching the system on for the first time in accordance with the regulations applicable at the place of operation.

6.2 Operation



WARNING

Risk of crushing and potential hazards from rotating parts due to uncontrolled start-up of the RollerDrive.

- Before switching on the operating voltage, ensure that no persons are present in the hazardous areas surrounding the conveyor.



CAUTION

Risk of burns!

- Depending on the load and the ambient temperature, temperatures $> 65^{\circ}\text{C}$ are possible on the heat sink of the power supply unit.


Check before every start-up

- Check the power supply unit for any visible damage.



WARNING

Danger to life due to damage to the housing!

- Immediately switch off damaged power supply units and secure against being switched on again!
 - Inform responsible supervisor and electrician.
-
- Check all protective equipment.
-  Take the ambient conditions into account during operation (see „Technical specifications“ on page 19).
- Switch on the DC power supply for the Interroll RollerDrive by turning the DC on/off switch to position "I".

6.3 Procedure in the event of accidents or faults

- Stop the conveyor system immediately, switch off the power supply and ensure that it cannot be unintentionally switched on again.
- In the event of an accident: Perform first aid and call for the emergency services.
- Inform the relevant supervisor.
- Have specialist personnel rectify the fault.
- Only resume operating the conveyor system once this has been approved by the specialist personnel.

Maintenance and cleaning

7 Maintenance and cleaning



WARNING

Risk of injury from following incorrect procedure.

- Maintenance and repair work must only be carried out by authorised and trained (specialist) personnel.
 - Maintenance and repair work must only be carried out when the system has been disconnected from the power supply. Switch off the power to the power supply unit and ensure that it cannot be unintentionally switched on again.
 - Put up signs to indicate that maintenance or cleaning work is being carried out.
-



CAUTION

Risk of burns!

- Depending on the load and the ambient temperature, temperatures $> 65\text{ °C}$ are possible on the heat sink of the power supply unit.
-

7.1 Maintenance

The power supply unit itself requires no maintenance.

- Check connections and fixings regularly (visual inspection).
- Check that all components are generally intact (visual inspection).

A check of the insulation and DC cable protection can be carried out if necessary.

The housing must be cleaned if necessary.



Do not attempt to open the power supply unit (with the exception of the terminal compartment).

7.2 Cleaning

- Remove any foreign bodies and coarse impurities from the surface of the housing.
- Minor impurities can be removed using a cloth.
- Do not use any sharp-edged tools to clean the power supply unit.

8 Assistance in the event of faults



WARNING

Risk of injury from following incorrect procedure.

- Troubleshooting must only be carried out by authorised, qualified personnel.
 - Troubleshooting must only be carried out when the system has been disconnected from the power supply.
 - Switch off the power to the power supply unit and ensure that it cannot be unintentionally switched on again.
-



CAUTION

Risk of burns!

- Depending on the load and the ambient temperature, temperatures $> 65\text{ °C}$ are possible on the heat sink of the power supply unit.
-

8.1 Troubleshooting

- For a description of the status LEDs, see „HP5424/HP5448 status LED“ on page 17.
- See also table „(4) Signal connection“ on page 27.

Decommissioning and disposal

9 Decommissioning and disposal



WARNING

Risk of injury from following incorrect procedure.

- Decommissioning must only be carried out by authorised, qualified personnel.
- Only decommission the power supply unit when the system has been disconnected from the power supply.
- Switch off the power to the power supply unit and ensure that it cannot be unintentionally switched on again.



CAUTION

Risk of burns!

- Depending on the load and the ambient temperature, temperatures $> 65\text{ °C}$ are possible on the heat sink of the power supply unit.

9.1 Decommissioning

- Switch off the DC power supply for the Interroll control systems by turning the DC on/off switch to position "0".
- Disconnect all cables from the power supply unit.
- Loosen the screws that have been used to attach the power supply unit to the conveyor frame.
- Remove the power supply unit from the conveyor frame.

9.2 Disposal



The operating company is responsible for disposing of the power supply unit according to correct procedure. In doing so, the industry-specific and local provisions for disposing of the power supply unit and its packaging must be observed.

10 Appendix

10.1 Accessories

Article	Article number
Ribbon cable for power supply (25 m)	S-1004030
Sealing inserts for power supply unit – accessories kit, round*	S-1115405
Sealing inserts for power supply unit – accessories kit, for one ASI-cable*	S-1115406
Sealing inserts for power supply unit – accessories kit, for two ASI-cables*	S-1115407

* Cable diameter in connection with the associated sealing inserts of the company Jacob GmbH:

Sealing insert	Cable Ø [mm]	
	VDE / EN	UL
M12 Sealing insert „WJ-RD 7“	2 - 5	3,1 - 5
M20 Sealing insert „WJ-RDM 20/T“	5 - 13	9 - 13
M25 Sealing insert „WJ-RDM 25/T“	8 - 17	11 - 17
1 x ASI 2,5 mm ² „WJ-DM 20/ASI/1“	For one ribbon cable 2 x 2,5mm ²	
2 x ASI 2,5 mm ² „WJ-DM 20/ASI/2“	For two ribbon cables 2 x 2,5mm ²	

Appendix

10.2 Translation of the original Declaration of Conformity

EU Declaration of Conformity

Low Voltage Directive 2014/35/EU

EMC Directive 2014/30/EU

RoHS Directive 2011/65/EU

The manufacturer

Interroll Engineering GmbH
Höferhof 16
42929 Wermelskirchen
Germany

hereby declares that the

- **Interroll High Performance power supply units HP5424 – model number 1113899**
- **Interroll High Performance power supply units HP5448 – model number 1113900**

conform to the applicable provisions and the associated CE marking in accordance with the aforementioned Directives.

List of the coordinated standards that have been applied:

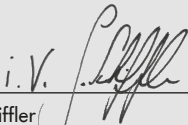
EN 61010-2-201:2013 / AC: 2013

EN 61326-1:2013

EN 50581:2012

Authorised for compiling technical documentation:

Interroll Engineering GmbH, Höferhof 16, 42929 Wermelskirchen, Germany



Jörg Schiffler
Product Compliance Officer Interroll Engineering GmbH
Wermelskirchen, 13.02.2019

INSPIRED BY EFFICIENCY

EN | 10/2019 | Version 1.7