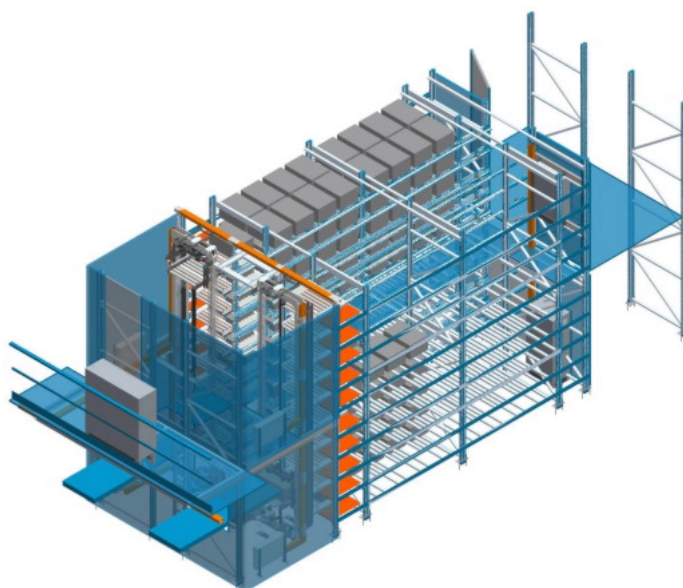


OSR Shuttle™ 35b/50b TL/QL

Troubleshooting Manual



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Technical support in error situations

Customers with a Hotline contract should directly contact the KNAPP Hotline within the contractually agreed hours by dialling the hotline code specific to their warehouse.

Customers without a Hotline contract may contact the KNAPP Helpdesk within KNAPP's business hours:

Monday to Thursday 8.00 a.m. – 4.30 p.m. and Friday 8.00 a.m. – 12.30 p.m. (CET/CEST)

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About this manual

Information

This manual contains all important information about troubleshooting at the OSR Shuttle™.

Series of documents

This Troubleshooting Manual is part of a series of documents on the OSR Shuttle™.

The Technical Manual is the master document. The fundamental safety instructions as well as the instructions for entering a rack line are contained in the document *Safety Guidelines*. Further information on individual components is contained in the following documents on the *Service Client User Manual* and *Maintenance & Repair*. Spare parts are documented in spare part lists. The instructions in the manufacturer's documentation must be observed.




Users

The troubleshooting manual is exclusively aimed at trained and skilled technical staff who are responsible for the operation and servicing of the OSR Shuttle™.

Signal words and symbols



Warning message

The following signal words indicate warning messages:

Symbol	Signal word	Meaning
	DANGER	The signal word indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.
	WARNING	The signal word indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
	CAUTION	The signal word indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

Additional information

The following signal words indicate additional information:

Symbol	Signal word	Meaning
	Important	The signal word indicates a risk of malfunction or damage to property
	Note	Important information and useful advice for smoother operation

Notation

The following notation is used in this manual:

Unit	Representation	Example
Menu text, dialogue text	Quotation marks	"Orders"
Button	Square brackets	[Exit]
Wild card character	Braces	{Storage location}
Key, switch	Angle brackets	<On>
Cross-reference	Italics	See <i>Document</i>

Terms and abbreviations

The OSR Shuttle™ is referred to in this text as the **OSR**.

All other terms are listed in a glossary at the end of the document; abbreviations are explained in the list of abbreviations.

A Safety instructions

Informal safety instructions

- All safety instructions contained in the *Safety Guidelines*, in the *Technical Manual*, and also in the *Service Client User Manual* and Work Station user manuals apply to the Troubleshooting Manual.
- Special attention must be paid to the safety instructions contained in the *Maintenance & Repair* document.
- Furthermore all safety instructions provided in the manufacturer's documentation of installed components such as laser sensors or scanners must be observed.
- Errors or malfunctions which may only be rectified by a KNAPP technician or after consultation with a KNAPP technician are marked in the troubleshooting table as follows:

Contact KNAPP

Requirements for troubleshooting

- Error diagnosis and troubleshooting within the OSR may only be carried out by skilled and trained staff.
- Extensive knowledge of the OSR and of the relevant operating conditions is necessary before undertaking troubleshooting.
- If the error is not automatically detected and indicated by the control system, interventions in the OSR may only be carried out under strict observance of all safety instructions.
- **Deactivating** or suspending a component only relates to the **control status** and does not affect the power supply of the relevant components. Deactivated or suspended components are not available for automatic operation, they can however be controlled and moved using the Service Client.



DANGER

Risk of injury. Moving components in the rack line or the lift area pose risk of injury.

Before entering an OSR rack line, the relevant areas must be switched off according to the safety guidelines. Failure to observe the safety regulations result in irreversible or fatal injuries.

B Faulty operation

The following error situations are considered to be **faulty operation**:

- An error leads to the automatic deactivation or "suspension" of sub-areas or components. In this case, error messages on the Service Client and in the visualization must always be observed.
- Situations may also arise where all **components are active** and an error message is not displayed, yet the **OSR does not function correctly** or as expected (see section *Errors*).
- Errors may occur if the connection between the OSR and the higher-level control computer is interrupted.

C Handling of errors



DANGER

Risk of injury. Moving components in the rack line or the lift area pose risk of injury.

Always comply with the safety regulations when entering the OSR rack line system.

Always permitted

The following activities are permitted with **deactivated components** and in compliance with all safety regulations. The OSR is not disrupted by the intervention, the data in the database remain consistent.

- Removing containers from the shuttle and returning them to the conveyor loop.
- Removing containers from the base import/export conveyors and returning them to the conveyor loop.
- Removing containers from the conveyor loop and returning them to the conveyor loop.
- Releasing containers manually if necessary

Never permitted

The following actions are **never permitted** because the OSR may lose relevant data and cease to function correctly.

- Removing containers from the shuttle and transferring them to a random rack position.
- Removing containers from the rack and transferring them to a different location or to the conveyor loop.
- Removing containers from the conveyor loop, placing them on the floor and not returning them to the conveyor loop.
- Changing the container sequence on the storage container conveyor system.
- Changing the barcode on the container after it has been registered in the OSR.

D Errors

1 Error indicators

General

In the event of errors, the control system suspends or deactivates the defective components or sub-areas and generates corresponding error messages via the user interfaces. The errors are displayed on the various units of the OSR as messages or signalled on indicators according to the type of error. Careful attention must be paid to all monitoring devices and indication elements so that immediate action can be taken.

**DANGER**

Moving components pose risk of injury.

Always comply with the safety regulations when entering the OSR rack line system.

Visualization

The statuses for sensors, reading devices, and components in the OSR are displayed. In addition, all error messages for the OSR system are displayed in the visualization.

Service Client

The Service Client provides detailed error messages on current and past errors. The entries take into account all the errors that were logged since the last start of the Service Client. The error message texts as well as possible causes and measures for correction are described in section *Service Client error messages* in this manual.

2 Error handling procedures

Should components be automatically suspended or deactivated due to an error, the following four steps for error handling apply:

1. Control system automatically suspends or deactivates defective sub-area.
2. In compliance with all safety measures: remove or reposition container that may be in undefined position.
3. Diagnose the cause of error and correct.

**Important**

When troubleshooting using the Service Client: always conduct a visual inspection of the system.

4. Activate level or rack line for operation using the Service Client

3 Incorrect container positions

After a sub-area has been deactivated by the control system, the user must ensure that all containers are located in defined positions. The following table indicates some ways in which containers may be incorrectly positioned and corresponding troubleshooting measures.

Incorrect container position	Measure
Container not completely on the lift platform	Attempt to move container to a defined position using the button [Load /Unload] in Service Client. If command fails: Enter servicing area (rack line access) and manually position the container on the lift platform
Container positioned between shuttle and rack	Return storage container to previous position using [Undo] button via Service Client. If command fails: enter shuttle servicing area (rack line access) and place the container completely on the shuttle
Lift did not correctly transfer the container either to or from the buffer	Attempt to move container to a defined position using the button [Load /Unload] in Service Client. If command fails: Enter servicing area of lift (rack line access). Manually position container at buffer railing
Container jammed between conveyor system and lift	Enter servicing area of lift (rack line access). Clear jam and position container manually on lift platform
Container positioned between shuttle and buffer	Return storage container to previous position using [Undo] button via Service Client. If command fails: enter lift servicing area (rack line access) and place the container completely on the shuttle

4 Errors in rack line area

Error situation	Possible cause	Measure
After activating the rack line: Shuttles move but lifts do not move	When activating the rack line, the first step is to unload the lift. If the container cannot be transferred (buffer export conveyor blocked or full), the lift waits in this position until transfer is possible.	Rectify possible jams at the buffer export conveyor or wait until a position on the buffer export conveyor is free, and the lift can transfer the container
Containers circulate in the conveyor loop and are not entering a rack line	All rack lines are deactivated	Activate rack lines
	Error in the work station area: Products have not yet been picked from the containers. Containers can therefore not be stored.	Find and correct error in the work station area
	The containers cannot be read at the base or at the diversion point to the picking stations	Check the scanner and whether the barcode label on the containers are damaged.
Containers stand at the last accumulation stop and are not entering a rack line	Optical sensor or drive unit of the base defective	Using the visualization, check whether a container is displayed in front of the base <ul style="list-style-type: none"> • If a conveyor is displayed in front of the base: Reposition, clean or replace optical sensor • If error is not caused by an optical sensor: contact KNAPP
	Rack line / lift is deactivated	Activate rack line/lift

Error situation	Possible cause	Measure
Containers enter and leave a rack line without stopping	Either scanner on the buffer import conveyor or the barcode label on the container is defective	Using the visualization, check to see whether the container number of the displayed container changes when containers pass by <ul style="list-style-type: none"> • If the container IDs change: error was not caused by scanner • No change: <ol style="list-style-type: none"> (1) Reset the scanner: unplug scanner and plug in again (2) If problem persists: replace scanner
	All the rack positions in the shelves of the rack line are occupied. There is no free rack position	Adjust status of rack positions in the rack line with the balance mode-> <i>Function in the SRC Reports</i>
Containers are not leaving the rack line although the lift is occupied and the export conveyor is free	The conveyor loop is too full <i>Note: This situation is not an error state.</i>	Wait until there is space on the conveyor loop. The OSR then automatically diverts the containers.
	Optical sensors for allowing containers to exit are not functioning correctly	Using the visualization, check whether or not containers are displayed in the exit area even though there are no containers located there <ul style="list-style-type: none"> • If containers are displayed: reposition, clean or replace optical sensors • If error not caused by an optical sensor: contact KNAPP

5 Errors in container return conveyor area

Error situation	Possible cause	Measure
Container return conveyor did not correctly transfer the container to shuttle	Motorized roller defective	Check motorized roller, replace if necessary
	Container jammed	Enter shuttle servicing area (rack line access). Clear jam and manually place container in the designated position (starting point).
	Stopper defective or compressed air supply not functioning correctly	Check stopper and compressed air supply, replace stopper if necessary
	Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor
Container has become jammed in container return conveyor area	Container twisted or jammed	Enter shuttle servicing area (rack line access). Clear jam and manually place container in the designated position (starting point).
Container positioned between shuttle and container return conveyor	Container incorrectly positioned (e.g. jammed)	Enter shuttle servicing area (rack line access). Clear jam and position container manually on shuttle
	Stopper not correctly mechanically adjusted (too high)	Correct height position of stopper: Stopper must not stick out from between the rollers when in the lowered position
	Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor

Error situation	Possible cause	Measure
Containers collide instead of accumulating	Motorized roller defective	Check motorized roller, replace if necessary
	Solenoid valve is misadjusted or cylinder is defective	<ul style="list-style-type: none"> Manually activate the cylinder using the solenoid valve and compare its behaviour with that of other picking / storage container bays or conveyor system accumulation stops -> set identical stroke speed for throttle silencers. Check cylinder, replace if necessary
	No signal from trigger sensor	<p>Using the visualization, check whether a container is displayed when a container passes, or manually obstruct the optical sensor to check its function</p> <ul style="list-style-type: none"> If a container is not displayed: clean or replace optical sensor If error is not caused by optical sensor: contact KNAPP

6 Errors in work station area

Error situation	Possible cause	Measure
The conveyor system under the work station is not running	The servicing switch at a work station switch cabinet is locked in the following position: <0> = no air supply	Turn servicing switch to position <1> = air is supplied
	Emergency stop activated	Acknowledge emergency stop
	Motor protective circuit breaker of drive unit is triggered	(1) Check motor (2) Reactivate motor-protective circuit breaker (3) If error persists: check cabling (4) Replace motor
	Motor protective circuit breaker of drive unit is switched off	Switch on motor protective circuit breaker of drive unit
Containers do not respond to a goods-in request.	No error!	Insufficient space in the OSR for the requested container type.
Container jams when entering	Throttle silencer for belt transfer unit is not set correctly	Readjust throttle silencer on the solenoid valve
	Flat belts of belt transfer unit are dirty	Clean flat belts of belt transfer
	Trigger sensor is not adjusted correctly	Correctly adjust trigger sensor
Container jams when exiting	Throttle silencer for belt transfer unit is not set correctly	Readjust throttle silencer on the solenoid valve
	Flat belts of belt transfer unit are dirty	Clean flat belts of belt transfer
Container is raised on the belt transfer and lowered again after approx. 5 seconds (no accumulation).	<ul style="list-style-type: none"> Motor does not turn Servicing switch on work station is set to <Off> Fuse failed 	<ul style="list-style-type: none"> Check fuse in the work station switch cabinet. If error is not caused by a fuse: contact KNAPP Set servicing switch to <On>.

Error situation	Possible cause	Measure
Container remains on the raised belt transfer: container is not diverted to the bay; no containers are located on the take-away conveyor (accumulation function)	Defective trigger sensor for the next position in the bay	<p>Using the visualization, check whether a container is displayed on the conveyor system of the next bay, even though there is no container in this position</p> <ul style="list-style-type: none"> • If a container is displayed: check optical sensor • If a container is not displayed: error is not caused by optical sensor -> contact KNAPP
Containers collide instead of accumulating	Belt transfer does not lift containers because there is no compressed air	If a pressure regulator is not in use: check air supply and pressure
	Motorized roller defective	Check motorized roller, replace if necessary
	Solenoid valve is misadjusted or cylinder is defective	Manually activate the cylinder using the solenoid valve and compare its behaviour with that of other picking / storage container bays -> set identical stroke speed for throttle silencers.
	No signal from trigger sensor	<p>Using the visualization, check whether a container is displayed when a container passes, or manually obstruct the optical sensor to check its function</p> <ul style="list-style-type: none"> • If a container is not displayed: clean or replace optical sensor • If error is not caused by optical sensor: contact KNAPP

Error situation	Possible cause	Measure
Storage container bays are empty because no containers are being diverted.	Optical sensor for triggering <ul style="list-style-type: none"> • Dirty • Defects • Missing 	Check optical sensor and <ul style="list-style-type: none"> • Clean • Replace • Mount
	After manual intervention: LED on monitor illuminated in yellow	Manually divert the container using work station GUI
	Control system detects that a container is being transported to a storage container bay but the container does not arrive because it was removed or has become jammed: no picture of a container on the workstation PC, but yellow LED is lit.	<ul style="list-style-type: none"> • Place container back on the loop • Divert container using work station PC: [Divert container]
Substantial number of containers enter and leave the workstation or the storage container bay without stopping.	No products available	Check products
	Rack line or levels are deactivated	Activate rack line or level using Service Client
	Network error	Check network connection
Container jams when entering	Throttle silencer is not set correctly	Readjust throttle silencer on the solenoid valve
Substantial number of containers pass without being diverted	Trigger sensor is not correctly adjusted	Check trigger sensor and readjust
	No-read in front of the work station	Check barcode scanner; readjust if necessary

Error situation	Possible cause	Measure
Containers do not leave the storage container bay	Control system considers storage container bay empty. Indication on work station GUI: The container is not displayed	Request manual diversion of containers at work station computer: [Divert container]
	No error Indication on work station GUI: No red LED is on	Container is required for another order
	Diversion is not possible - the path is blocked by a container (no error) Indication on work station GUI: <ul style="list-style-type: none"> Red LED is on 	Release jammed container on conveyor
	Trigger sensor is defective or misadjusted Indication on work station GUI: <ul style="list-style-type: none"> Red LED is on 	Check on the visualization system whether a container is displayed in the storage container bay despite there not being one in this position. <ul style="list-style-type: none"> Check optical sensor; clean or replace if necessary If error is not caused by optical sensor: contact KNAPP
	PLC failure Indication on work station GUI: <ul style="list-style-type: none"> Red LED is on 	Check PLC connection
	Container jammed in the bay area Indication on work station GUI: <ul style="list-style-type: none"> Red LED is on 	Switch off compressed air supply via servicing switch in the work station switch cabinet and release the jammed container
Containers stop in front of the bay	Work station PC is switched off	Switch on work station PC
	PLC failure	Check PLC connection
	Container jammed in the bay area	Switch off compressed air supply via servicing switch in the work station switch cabinet and release the jammed container

E Service Client error messages

General information

In the event of recurring errors, a check should be carried out for whether or not changes have been made to the control system.

Servicing work may only be carried out by trained and qualified staff. Errors which contain the comment "Contact KNAPP" may not be rectified alone by the operator of the OSR.

KNAPP-assisted troubleshooting

The user should contact the KNAPP Hotline/Helpdesk if an error cannot be rectified using the instructions provided in the following tables. The following information should always be kept ready for prompt assistance:

- Container ID
- Type of product load
- Date/time that error occurred
- Short error description
- Entire error message
- Generate system snapshot if possible (> via SRC reports) and send to KNAPP with time/date

**Note**

Always use the error report form when contacting KNAPP for troubleshooting. Complete, correct particulars facilitate prompt assistance.

Structure

General information

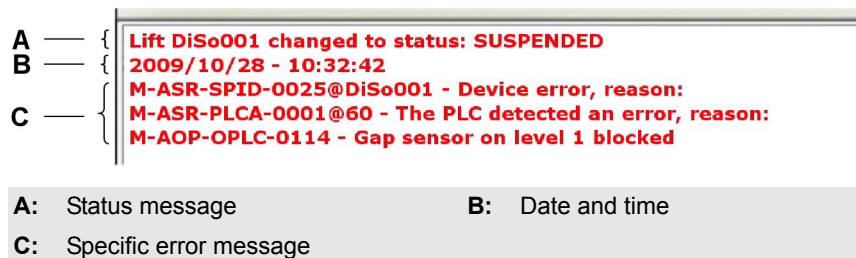


Figure 1: Structure of the error message

An error message is composed of several lines. The first line is the status of the OSR components. The second line is the date and time the error occurred. The remaining lines have specific error messages. The last line of the specific error messages always shows the cause of the error. The lines above the original error display the higher-level component parts which, because of the original error, also failed.

Structure of specific error messages

Specific error messages contain the following information:

- Error code, e.g. M-ASR-SPID-0025
- Information on position where error occurred, e.g. @LIFT0011
- Message text, e.g. technical error

Error classes

The specific error messages are categorized into error classes. Each error class is assigned to a specific group of component parts.

Error class	Name	Description
M-AOP-OPLC	PLC error	PLC reported error
M-AOS-S35B	Shuttle errors	Shuttle reported error
M-ASR-PLCA	PLC adapter error	Software component for the connection between SRC and PLC reports error

Error class	Name	Description
M-ASR-SPID	Control unit error	Software component for the control of the lift and the unloading position of shuttle reports error
M-ASR-S35B	Shuttle manager error	Software component for the control of the shuttles reports error
M-XOP-OSIN	Lift drive unit error	Lift drive unit reports error

Position information

The position where a component error has taken place is indicated after the @-symbol. The following positions are possible.

Position	Description
LIFTXXXY	<ul style="list-style-type: none"> Lift XXX: Number of the rack line where the lift is located Y = 1: left lift Y = 2: right lift
SHUTXXYY	<ul style="list-style-type: none"> Shuttle XX: Number of the rack line where the shuttle is located YY: Number of the level where the shuttle is located
PLATFORM 1	Lower lift platform (only OSR Shuttle™ 35 QL)
PLATFORM 2	Upper lift platform (only OSR Shuttle™ 35 QL)

The positions in the error messages are always given in the English language.

Troubleshooting procedure

During troubleshooting, only the cause of the error must be rectified. In the end, the rack line must be activated again.

Working with the troubleshooting tables

The tables in the following section hold all the error codes that are displayed on the Service Client (information field) and in the visualization.

M-AOP-OPLC

Error code	Message	Possible cause	Measure
M-AOP-OPLC-0101	Emergency stop rack line	Emergency stop for the rack line is active	(1) Determine and rectify cause of emergency stop (2) Deactivate emergency stop button (3) Acknowledge emergency stop with momentary key switch
		Error in emergency circuit	Check cabling
M-AOP-OPLC-0102	Requested lift position not valid	Internal error: lift outside of valid area	Contact KNAPP
M-AOP-OPLC-0103	Safety programme invalid mode	Dummy plug on main switch cabinet missing or not properly connected	Correctly insert dummy plug in main switch cabinet If error persists: contact KNAPP
M-AOP-OPLC-0104	Converter could not be activated. Error code {0}	Internal error of drive inverter	(1) Determine and rectify error using the <i>manufacturer's documentation</i> for drive inverter (2) Activate lift via Service Client, acknowledging the error (3) If error continues to persist: contact KNAPP
M-AOP-OPLC-0105	All optical sensors on platform 1 are blocked.	<ul style="list-style-type: none"> Power supply interrupted due to defective cabling Loose cabling Cable defective 	Check cabling; If necessary: replace cabling
		Optical sensors are blocked by a jammed container or a foreign object	(1) Remove object (2) Use Service Client to correctly position container If necessary: manually reposition container
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor

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Error code	Message	Possible cause	Measure
M-AOP-OPLC-0106	Front gap sensor on lift platform 1 is blocked.	Container incorrectly positioned (jammed, etc.)	Use Service Client to correctly position container If necessary: manually reposition container
		Optical sensors are blocked by a jammed container or a foreign object	(1) Remove object (2) Use Service Client to correctly position container If necessary: manually reposition container
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor
		Drive of lift platform defective	Check drive unit, replace if necessary
M-AOP-OPLC-107	Rear gap sensor on lift platform 1 is blocked.	Container incorrectly positioned (jammed, etc.)	Use Service Client to correctly position container If necessary: manually reposition container
		Optical sensors are blocked by a jammed container or a foreign object	(1) Remove object (2) Use Service Client to correctly position container If necessary: manually reposition container
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor
		Drive of lift platform defective	Check drive unit, replace if necessary
M-AOP-OPLC-0115	All optical sensors on platform 2 are blocked.	<ul style="list-style-type: none"> Power supply interrupted due to defective cabling Loose cabling Cable defective 	Check cabling; If necessary: replace cabling
		Optical sensors are blocked by a jammed container or a foreign object	(1) Remove object (2) Use Service Client to correctly position container If necessary: manually reposition container
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor

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Error code	Message	Possible cause	Measure
M-AOP-OPLC-0116	Front gap sensor on lift platform 2 is blocked.	Container incorrectly positioned (jammed, etc.)	Use Service Client to correctly position container If necessary: manually reposition container
		Optical sensors are blocked by a jammed container or a foreign object	(1) Remove object (2) Use Service Client to correctly position container If necessary: manually reposition container
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor
		Drive of lift platform defective	Check drive unit, replace if necessary
M-AOP-OPLC-117	Rear gap sensor on lift platform 2 is blocked.	Container incorrectly positioned (jammed, etc.)	Use Service Client to correctly position container If necessary: manually reposition container
		Optical sensors are blocked by a jammed container or a foreign object	(1) Remove object (2) Use Service Client to correctly position container If necessary: manually reposition container
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor
		Drive of lift platform defective	Check drive unit, replace if necessary
M-AOP-OPLC-0118	Gap sensor at Lift In {0} blocked.	Object (container, product) blocking gap sensor	Remove object from travel area
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor
M-AOP-OPLC-0119	Gap sensor at Lift Out {0} blocked.	Object (container, product) blocking gap sensor	Remove object from travel area
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor
M-AOP-OPLC-0120	Error at Siemens SINAMICS S frequency converter. Error ID: {0}	Internal error of drive inverter	(1) Determine and rectify error using the <i>manufacturer's documentation</i> for drive inverter (2) Activate lift via Service Client, acknowledging the error (3) If error continues to persist: contact KNAPP

Error code	Message	Possible cause	Measure
M-AOP-OPLC-0121	Access door for lift servicing area open	Safety door open	Close safety door
		Safety switch defective	Check safety switch; If necessary: replace safety switch
		<ul style="list-style-type: none"> Power supply interrupted due to defective cabling Loose cabling Cable defective 	Check cabling; If necessary: replace cabling
M-AOP-OPLC-0124	Profibus error SEW drive inverter	Cable or socket to Profibus defective	Check cable and connector
		<ul style="list-style-type: none"> Profibus card error (observe LED) Incorrect Profibus address 	For Profibus error: contact KNAPP
M-AOP-OPLC-0125	SEW drive inverter error	Internal error of drive inverter	(1) Determine and rectify error using the <i>manufacturer's documentation</i> for drive inverter (2) Activate lift via Service Client, acknowledging the error (3) If error continues to persist: contact KNAPP
M-AOP-OPLC-0126	Lift enable switch on lift switch cabinet is off	The mode selector switch on the main switch cabinet is in the position <Hand>	Set mode selector switch on the main switch cabinet to position <Automatic>
		<ul style="list-style-type: none"> Power supply interrupted due to defective cabling Loose cabling Cable defective 	Check cabling; If necessary: replace cabling
M-AOP-OPLC-0127	Error lift belt tension	Toothed lift belt is not tightened correctly	(1) Contact KNAPP (2) Tension toothed lift belt according to instructions by KNAPP or have KNAPP tension the belt

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Error code	Message	Possible cause	Measure
M-AOP-OPLC-0128	No feedback signal for access door locking system lift	Safety door in lift area incorrectly closed	Correctly close safety door in the lift area
		Safety switch defective	Check safety switch; If necessary: replace safety switch
		<ul style="list-style-type: none"> Power supply interrupted due to defective cabling Loose cabling Cable defective 	Check cabling; If necessary: replace cabling
			IMPORTANT! Acknowledge error after rectifying it using the push button on the main switch cabinet
M-AOP-OPLC-0129	No feedback signal for contactor power supply lift platform and buffers	Contactor switches incorrectly	Check contactor, replace if necessary
		<ul style="list-style-type: none"> Power supply interrupted due to defective cabling Loose cabling Cable defective 	Check cabling; If necessary: replace cabling
			IMPORTANT! Acknowledge error after rectifying it using the push button on the main switch cabinet
M-AOP-OPLC-0130	Positioning timeout	Error at drive unit	Check drive unit
		Toothed lift belt defective	(1) Contact KNAPP (2) Have toothed belt lift replaced by KNAPP
M-AOP-OPLC-0131	Reference run timeout	Upper fork sensor defective, dirty or incorrectly positioned	Check upper fork sensor; if necessary: clean, readjust or replace (see <i>manufacturer's documentation</i>).
		Error at drive unit	Check drive unit
		Toothed lift belt defective	(1) Contact KNAPP (2) Have toothed belt lift replaced by KNAPP

Error code	Message	Possible cause	Measure
M-AOP-OPLC-0132	Invalid move command to lift during reference run	<ul style="list-style-type: none"> Lift receives a move command via Service Client while performing a reference run Rack line is enabled while lift is performing a calibration run 	Wait until the lift has completed the calibration run
M-AOP-OPLC-0133	Reference run stopped. Upper fork sensor error	Upper fork sensor defective or dirty	Clean upper fork sensor, replace if necessary.
		Fork sensor not adjusted correctly	Check position of fork sensor (see document <i>Maintenance & Repair</i> and <i>manufacturer's documentation for the sensor</i>).
M-AOP-OPLC-0135	Servicing switch {0} is off	Servicing switch is set to <0 = OFF>	Set servicing switch to position <1 = ON>
M-AOP-OPLC-0136	Vertical gap sensor blocked: LEFT REAR	Object (container, product) blocking gap sensor	Remove object from travel area
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor
M-AOP-OPLC-0137	Vertical gap sensor blocked: RIGHT REAR	Object (container, product) blocking gap sensor	Remove object from travel area
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor
M-AOP-OPLC-0138	Vertical gap sensor blocked: LEFT FRONT	Object (container, product) blocking gap sensor	Remove object from travel area
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor
M-AOP-OPLC-0139	Vertical gap sensor blocked: RIGHT FRONT	Object (container, product) blocking gap sensor	Remove object from travel area
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor
M-AOP-OPLC-0140	Lift not referenced	<ul style="list-style-type: none"> Lift has not completed the reference run correctly Reference position (lower fork sensor) was not reached or optical sensor defective 	<p>(1) Check sensor and replace if necessary.</p> <p>(2) After correcting error: Acknowledge error using the push button on the main switch cabinet</p>

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Error code	Message	Possible cause	Measure
M-AOP-OPLC-0142	CAUTION: Insufficient tension of toothed lift belt	Upper fork sensor is dirty or defective	Clean upper fork sensor, replace if necessary.
		Toothed lift belt is not tensioned correctly (too loose)	(1) Contact KNAPP (2) Tension toothed lift belt according to instructions by KNAPP or have KNAPP tension the belt
M-AOP-OPLC-0143	CAUTION: error lift platform drive	Overload (e.g. container jammed)	(1) Release container using the Service Client If necessary: manually place container in the previous position (starting point) (2) Activate lift via Service Client, acknowledging the error (3) If error persists: contact KNAPP
		Internal error	Activate rack line via Service Client If error persists: contact KNAPP
M-AOP-OPLC-0144	WARNING: critical temperature in switch cabinet	Ventilator defective	Check ventilator; If necessary: replace ventilator
		Air filter extremely dirty	Replace filter mat
			If error persists: contact KNAPP
M-AOP-OPLC-0145	CAUTION: Lift motor fan is OFF.	Ventilator defective	Check ventilator; If necessary: replace ventilator
		<ul style="list-style-type: none"> Power supply interrupted due to defective cabling Loose cabling Cable defective 	Check cabling; If necessary: replace cabling
M-AOP-OPLC-0150	CAUTION Rack line access lift area active	Rack line access in progress in lift servicing area	(1) Properly conclude rack line access (see <i>Safety Guidelines</i>) (2) Activate rack line
M-AOP-OPLC-0151	WARNING: aisle access in shuttle area active	Rack line access in progress in shuttle servicing area	(1) Properly conclude rack line access (see <i>Safety Guidelines</i>) (2) Activate rack line
M-AOP-OPLC-0152	WARNING: aisle access in lift and shuttle area active	Rack line access in lift servicing area and shuttle servicing area active	(1) Properly conclude rack line access (see <i>Safety Guidelines</i>) (2) Activate rack line

Error code	Message	Possible cause	Measure
M-AOP-OPLC-0155	Error during test of lift motor brake	Error during check of lift motor <ul style="list-style-type: none"> The holding brake in lift motor no longer holds the torque: brake no longer completely opens (mechanical defect) Contact error of brake cabling Control of motor brake defective 	Repeat brake test If error persists: replace lift motor and check cabling Note: The brake functions correctly if a clicking sound is heard while opening and closing the brake
M-AOP-OPLC-0156	Unexpected lift movement after registering aisle access.	Failure of lift brake: holding brake in lift motor no longer holds the torque	Repeat brake test If error persists: replace lift motor and check cabling Note: The brake functions correctly if a clicking sound is heard while opening and closing the brake
M-AOP-OPLC-0157	Error: control voltage is turned off	Control voltage for lift is switched off	(1) Check whether or not electronic components of installation are switched on (2) Check whether or not lift switch cabinet is switched on (3) Check fuses and voltage of power supply unit in lift switch cabinet
M-AOP-OPLC-0201	Rear sensor on lift platform blocked	Lift platform not clear	Manually place container in the previous position (starting point)
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
M-AOP-OPLC-0203	Front sensor on lift platform blocked	Lift platform not clear	Manually place container in the previous position (starting point)
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
M-AOP-OPLC-0204	Lift platform occupied	Error in sequence of processes	Reactivate lift (container is then diverted to a level)
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
M-AOP-OPLC-0205	Gap sensor at feeding conveyor blocked	Object (container, product) blocking gap sensor	Remove object from travel area
		Gap sensor dirty, positioned incorrectly or defective	Clean, reposition or replace gap sensor

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Error code	Message	Possible cause	Measure
M-AOP-OPLC-0206	All sensors on lift platform blocked	Container is not straight	Position container using the Service Client If necessary: Manually place container in the previous position (starting point)
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
M-AOP-OPLC-0207	Timeout: presence sensor on feeding conveyor still blocked	Container jammed	Release container using the Service Client If necessary: Manually place container in the previous position (starting point)
		Motor of base not running	Check motor of base
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
M-AOP-OPLC-0208	Timeout: gap sensor on feeding conveyor still blocked	Container incorrectly positioned or jammed	Release container using the Service Client If necessary: Manually place container in the previous position (starting point)
		Motor of base not running	Check motor of base
		Gap sensor dirty, positioned incorrectly or defective	Clean, reposition or replace gap sensor
M-AOP-OPLC-0209	Timeout: front sensor on lift platform blocked	Container jammed	Release container using the Service Client If necessary: Manually place container in the previous position (starting point)
		Positioning error	Position container using the Service Client If necessary: Manually place container in the previous position (starting point)
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor

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Error code	Message	Possible cause	Measure
M-AOP-OPLC-0211	Timeout: centre sensor on lift platform not blocked	Container jammed	Release container using the Service Client If necessary: Manually place container in the previous position (starting point)
		Positioning error	Position container using the Service Client If necessary: Manually place container in the previous position (starting point)
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
M-AOP-OPLC-0213	Aisle access lift area active	Rack line access in lift servicing area active	(1) Properly conclude rack line access (see <i>Safety Guidelines</i>) (2) Activate rack line
M-AOP-OPLC-0214	Error lift platform drive 1	Overload (e.g. container jammed)	(1) Release container using the Service Client If necessary: Manually place container in the previous position (starting point) (2) Activate lift via Service Client, acknowledging the error (3) If error continues to persist: contact KNAPP
		Internal error	Activate rack line via Service Client If error persists: contact KNAPP
M-AOP-OPLC-0215	Error feeding conveyor drive (feeding conveyor = buffer in conveyor = base)	Overload (e.g. container jammed)	(1) Release container using the Service Client If necessary: Manually place container in the previous position (starting point) (2) Activate lift via Service Client, acknowledging the error (3) If error continues to persist: contact KNAPP
		Internal error	Activate rack line via Service Client If error persists: contact KNAPP

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Error code	Message	Possible cause	Measure
M-AOP-OPLC-0217	Lift in manual mode.	Mode selector switch on the main switch cabinet is not in the <Automatic> position	Set mode selector switch on the main switch cabinet to position <Automatic>
		<ul style="list-style-type: none"> Power supply interrupted due to defective cabling Loose cabling Cable defective 	Check cabling; If necessary: replace cabling
M-AOP-OPLC-0218	Command cannot be carried out at current level	Internal error	Contact KNAPP
M-AOP-OPLC-0219	Timeout: Rear optical sensor on lift platform blocked	Container jammed	Release container using the Service Client If necessary: Manually place container in the previous position (starting point)
		Positioning error	Position container using the Service Client If necessary: Manually place container in the previous position (starting point)
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
M-AOP-OPLC-0220	Drive unit error at buffer	Overload (e.g. container jammed)	(1) Release container using the Service Client If necessary: Manually place container in the previous position (starting point) (2) Activate lift via Service Client, acknowledging the error (3) If error continues to persist: contact KNAPP
		Supply voltage failure for motorized roller	Check supply voltage for motorized roller
M-AOP-OPLC-0221	Lift not in requested level	<ul style="list-style-type: none"> Malfunction of drive inverter Internal error 	Contact KNAPP
M-AOP-OPLC-0222	Gap sensor between lift and buffer blocked	Container jammed	Release container using the Service Client If necessary: Manually place container in the previous position (starting point)
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor

Error code	Message	Possible cause	Measure
M-AOP-OPLC-0223	Timeout: Gap sensor between lift and buffer still blocked	Container incorrectly positioned (jammed, etc.)	Release container using the Service Client If necessary: Manually place container in the previous position (starting point)
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor
		Drive unit for the buffer is defective	Check drive unit, replace if necessary
M-AOP-OPLC-0224	Timeout: Occupation sensor at buffer still blocked	Container incorrectly positioned (jammed, etc.)	Release container using the Service Client If necessary: Manually place container in the previous position (starting point)
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor
		Drive unit for the buffer is defective	Check drive unit, replace if necessary
M-AOP-OPLC-0226	Error: control voltage is turned off	Control voltage for lift is switched off	(1) Check whether or not electronic components of installation are switched on (2) Check whether or not lift switch cabinet is switched on (3) Check fuses and voltage of power supply unit in lift switch cabinet
M-AOP-OPLC-0301	Container not correctly positioned on lift platform	Container incorrectly positioned	Use Service Client to correctly position container If necessary: manually reposition container
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
M-AOP-OPLC-0303	Gap sensor at Lift Out blocked	Object (container, product) blocking gap sensor	Remove object from travel area
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor
M-AOP-OPLC-0304	Gap sensor between lift and buffer blocked	Container jammed	Release container using the Service Client If necessary: Manually place container in the previous position (starting point)
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor

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Error code	Message	Possible cause	Measure
M-AOP-OPLC-0305	Timeout: Gap sensor at Lift Out still blocked	Container incorrectly positioned (jammed, etc.)	Release container using the Service Client If necessary: Manually place container in the previous position (starting point)
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor
		Drive unit for the buffer is defective	Check drive unit, replace if necessary
		Drive of the buffer export conveyor is defective	Check drive unit, replace if necessary
M-AOP-OPLC-0306	Timeout: Gap sensor between lift and buffer still blocked	Container incorrectly positioned (jammed, etc.)	Release container using the Service Client If necessary: Manually place container in the previous position (starting point)
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor
		Drive unit for the buffer is defective	Check drive unit, replace if necessary
M-AOP-OPLC-0308	Timeout: rear sensor on lift platform blocked	Container incorrectly positioned (jammed, etc.)	Release container using the Service Client If necessary: Manually place container in the previous position (starting point)
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor
		Drive unit for the buffer is defective	Check drive unit, replace if necessary
		Drive of the buffer export conveyor is defective	Check drive unit, replace if necessary
M-AOP-OPLC-0309	Timeout: centre sensor on lift platform blocked	Container incorrectly positioned (jammed, etc.)	Release container using the Service Client If necessary: Manually place container in the previous position (starting point)
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor
		Drive unit for the buffer is defective	Check drive unit, replace if necessary
		Drive of the buffer export conveyor is defective	Check drive unit, replace if necessary

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Error code	Message	Possible cause	Measure
M-AOP-OPLC-0310	Timeout: front sensor on lift platform blocked	Container incorrectly positioned (jammed, etc.)	Release container using the Service Client If necessary: Manually place container in the previous position (starting point)
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor
		Drive unit for the buffer is defective	Check drive unit, replace if necessary
		Drive of the buffer export conveyor is defective	Check drive unit, replace if necessary
M-AOP-OPLC-0311	Drive unit error at buffer	Overload (e.g. container jammed)	(1) Release container using the Service Client If necessary: Manually place container in the previous position (starting point) (2) Activate lift via Service Client, acknowledging the error (3) If error continues to persist: contact KNAPP
		Supply voltage failure for motorized roller	Check supply voltage for motorized roller
M-AOP-OPLC-0312	Drive unit error at Lift Out	Overload (e.g. container jammed)	(1) Release container using the Service Client If necessary: Manually place container in the previous position (starting point) (2) Activate lift via Service Client, acknowledging the error (3) If error continues to persist: contact KNAPP
M-AOP-OPLC-0313	Aisle access lift area active	Rack line access in lift servicing area active	(1) Properly conclude rack line access (see <i>Safety Guide- lines</i>) (2) Activate rack line

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Error code	Message	Possible cause	Measure
M-AOP-OPLC-0314	Error lift platform drive 1	Overload (e.g. container jammed)	(1) Release container using the Service Client If necessary: Manually place container in the previous position (starting point) (2) Activate lift via Service Client, acknowledging the error (3) If error continues to persist: contact KNAPP
		Internal error	Activate rack line via Service Client If error persists: contact KNAPP
M-AOP-OPLC-0316	Lift not in requested level	<ul style="list-style-type: none"> Malfunction of drive inverter Internal error 	Contact KNAPP
M-AOP-OPLC-0317	Lift in manual mode	Mode selector switch on the main switch cabinet is not in the <Automatic> position	Set mode selector switch on the main switch cabinet to position <Automatic>
		<ul style="list-style-type: none"> Power supply interrupted due to defective cabling Loose cabling Cable defective 	Check cabling; If necessary: replace cabling
M-AOP-OPLC-0318	Command cannot be carried out at current level	Internal error	Contact KNAPP
M-AOP-OPLC-0319	Timeout: Measuring optical sensor {0} blocked 0 = number of optical sensor	Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor
M-AOP-OPLC-0320	Timeout: Measuring optical sensor {0} not cleared 0 = number of optical sensor	Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor
M-AOP-OPLC-0322	Error: control voltage is turned off	Control voltage for lift is switched off	(1) Check whether or not electronic components of installation are switched on (2) Check whether or not lift switch cabinet is switched on (3) Check fuses and voltage of power supply unit in lift switch cabinet

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Error code	Message	Possible cause	Measure
M-AOP-OPLC-0328	Conveyor emergency stop active	Emergency stop for the system conveyors is active	(1) Determine and rectify cause of emergency stop (2) Deactivate emergency stop button (3) Acknowledge emergency stop
		Error in emergency circuit	Check cabling
M-AOP-OPLC-0516	Error: control voltage is turned off	Control voltage for lift is switched off	(1) Check whether or not electronic components of installation are switched on (2) Check whether or not lift switch cabinet is switched on (3) Check fuses and voltage of power supply unit in lift switch cabinet
M-AOP-OPLC-0601	No container present	No container present (not an error situation).	Activate affected component
M-AOP-OPLC-0602	Target position occupied	Target position occupied by container; movement cannot be carried out	Move container to a defined position using the button [Load platform] in Service Client. If error continues to persist: manually position on lift platform and activate lift
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor
		Foreign object blocks the movement area	Remove foreign object
M-AOP-OPLC-0603	Lift platform occupied	Platform occupied by container; movement cannot be carried out	Use the button [Unload platform] on Service Client to move the container to a defined position If error continues to persist: position container on buffer conveyor manually and activate lift
		Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor
		Foreign object blocks the movement area	Remove foreign object
M-AOP-OPLC-0604	Lift not in requested level	<ul style="list-style-type: none"> Lift not in a valid level Internal error: lift outside of valid area 	(1) Approach level again via Service Client (2) If error persists: contact KNAPP

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Error code	Message	Possible cause	Measure
M-AOP-OPLC-0605	Manual command cannot be executed	Movement via Service Client not allowed	Manually reposition container
M-AOP-OPLC-0607	Timeout: manual command	Container jammed	Release container using the Service Client If necessary: Manually place container in the previous position (starting point)
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
M-AOP-OPLC-0614	Error lift platform drive 1	Overload (e.g. container jammed)	(1) Release container using the Service Client If necessary: Manually place container in the previous position (starting point) (2) Activate lift via Service Client, acknowledging the error (3) If error persists: contact KNAPP
		Internal error	Activate rack line via Service Client If error persists: contact KNAPP
M-AOP-OPLC-0615	Drive error in loading position	Overload (e.g. container jammed)	(1) Release container using the Service Client If necessary: Manually place container in the previous position (starting point) (2) Activate lift via Service Client, acknowledging the error (3) If error persists: contact KNAPP
		24 V voltage supply failure for drive unit	(1) Check fuse, replace if necessary (2) Check cabling (3) If error persists: contact KNAPP
		Internal error	Activate rack line via Service Client If error persists: contact KNAPP

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Error code	Message	Possible cause	Measure
M-AOP-OPLC-0617	Error: control voltage is turned off	Control voltage for lift is switched off	(1) Check whether or not electronic components of installation are switched on (2) Check whether or not lift switch cabinet is switched on (3) Check fuses and voltage of power supply unit in lift switch cabinet
M-AOP-OPLC-0701	Could not determine location occupancy	Sensor positioned incorrectly, dirty or defective	Reposition, clean or replace sensor

M-AOS-S35B

Error code	Message	Possible cause	Measure
M-AOS-S35B-0001	Unknown command (function code {0})	Software error	Contact KNAPP
M-AOS-S35B-0002	Unknown command (sub-function code {0})	Software error	Contact KNAPP
M-AOS-S35B-0003	Subfunction version unknown {0}	Software error	Contact KNAPP
M-AOS-S35B-0004	Invalid length of datagram {0}	Software error	Contact KNAPP
M-AOS-S35B-0005	Invalid data in datagram	Software error	Contact KNAPP
M-AOS-S35B-0010	Error during power up	Software error	(1) Deactivate shuttle (2) Activate shuttle
M-AOS-S35B-0011	Software error {0}	Software error	(1) Deactivate shuttle (2) Activate shuttle
M-AOS-S35B-0012	Hardware error {0}	Hardware error	(1) Deactivate shuttle (2) Activate shuttle If necessary: replace shuttle printed circuit board (see document <i>Maintenance & Repair</i>)
M-AOS-S35B-0013	Error: voltage supply	External voltage supply failure	Check external voltage supply
		Fuse failed	Check voltage supply, if necessary: replace fuse

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Error code	Message	Possible cause	Measure
M-AOS-S35B-0014	Sensor error {0}	Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
		Shuttle printed circuit board defective	Replace shuttle printed circuit board (see document <i>Maintenance & Repair</i>)
M-AOS-S35B-0015	Excessive temperature	Shuttle printed circuit board overheated	Contact KNAPP
M-AOS-S35B-0016	Error in communication with subsystem {0}	Shuttle component defective	Replace defective component
		<ul style="list-style-type: none"> Power supply interrupted due to defective cabling Loose cabling Cable defective 	Check cabling; If necessary: replace cabling
M-AOS-S35B-0017	No centring unit.	Shuttle incorrectly configured	(1) Deactivate shuttle (2) Activate shuttle If necessary: contact KNAPP
M-AOS-S35B-0020	No pulses from motor {0}	Motor blocked	Remove obstruction from motor
		<ul style="list-style-type: none"> Power supply interrupted due to defective cabling Loose cabling Cable defective 	Check cabling; If necessary: replace cabling
		Motor defective	Replace motor
M-AOS-S35B-0021	Jam at motor {0}	Motor blocked	Remove obstruction from motor
		<ul style="list-style-type: none"> Power supply interrupted due to defective cabling Loose cabling Cable defective 	Check cabling; If necessary: replace cabling
		Motor defective	Replace motor
M-AOS-S35B-0022	Timeout in movement - motor {0}	Motor blocked	Remove obstruction from motor
		<ul style="list-style-type: none"> Power supply interrupted due to defective cabling Loose cabling Cable defective 	Check cabling; If necessary: replace cabling
		Motor defective	Replace motor

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Error code	Message	Possible cause	Measure
M-AOS-S35B-0023	Overcurrent - motor {0}	Motor blocked	Remove obstruction from motor
		<ul style="list-style-type: none"> Power supply interrupted due to defective cabling Loose cabling Cable defective 	Check cabling; If necessary: replace cabling
		Motor defective	Replace motor
M-AOS-S35B-0024	Error in HW control - motor {0}	Motor blocked	Remove obstruction from motor
		<ul style="list-style-type: none"> Power supply interrupted due to defective cabling Loose cabling Cable defective 	Check cabling; If necessary: replace cabling
		Motor defective	Replace motor
M-AOS-S35B-0025	Error in motor control - motor {0}	Motor parameters incorrectly set	Contact KNAPP
		Belt tension at shuttle toothed drive belt too low	Tighten toothed drive belt
M-AOS-S35B-0026	Motor {0} not referenced	Shuttle not referenced	Activate shuttle
M-AOS-S35B-0030	Command ignored - another action already active.	Order or positioning is already active	Wait until shuttle ends order or positioning
M-AOS-S35B-0032	Command terminated	Command terminated by master control system	Activate shuttle
M-AOS-S35B-0033	Timeout during order	Shuttle blocked	Visual inspection of shuttle
		Shuttle parameters incorrectly set	Contact KNAPP
M-AOS-S35B-0034	Rack line access active	Rack line access in lift or shuttle servicing area active	(1) Properly conclude rack line access (see <i>Safety Guidelines</i>) (2) Activate rack line
		Fuse failed	Check voltage supply, if necessary: replace fuse
M-AOS-S35B-0040	Invalid position	Shuttle parameters incorrectly set	Contact KNAPP
		Incorrect calibration run	Perform calibration run

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Error code	Message	Possible cause	Measure
M-AOS-S35B-0041	Incorrect reference run	Shuttle blocked	(1) Visual inspection of level in question (2) Remove all foreign objects (3) If necessary: position container correctly
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
M-AOS-S35B-0043	Shuttle not positioned correctly.	Positioning process during loading/unloading not successful	Activate shuttle
M-AOS-S35B-0044	Reference marker outside of permitted range	Belt tension at shuttle toothed drive belt too low	Tighten toothed drive belt
		Encoder of positioning motor defective	Check positioning motor, replace if necessary
		Coupling element defective	Check coupling element, replace if necessary
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
M-AOS-S35B-0045	Channel marker outside of permitted range	Shuttle not correctly scaled	Carry out learning run
		Defective rotary encoder	Replace rotary encoder
M-AOS-S35B-0046	EBG shuttle: no learning run or error during learning run	<ul style="list-style-type: none"> Shuttle did not carry out learning run Error during learning run 	(1) Carry out learning run (2) Check position encoder (shuttle motor) (3) Check sensors (4) If error persists: contact KNAPP
M-AOS-S35B-0050	Shuttle is clear	Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
M-AOS-S35B-0051	Shuttle is occupied	Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
M-AOS-S35B-0052	LHD not in idle mode	Container or LHD not centred	Use button [Recentre container] at the Service Client to centre container and LHD
M-AOS-S35B-0053	Container jammed	Container jammed	Release container using the Service Client If necessary: Manually place container in the previous position (starting point)
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor

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Error code	Message	Possible cause	Measure
M-AOS-S35B-0054	Container not detected	Container jammed	Release container using the Service Client If necessary: Manually place container in the previous position (starting point)
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
M-AOS-S35B-0055	Location is clear	Container is not on rack position	Contact KNAPP
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
M-AOS-S35B-0056	Location is occupied	Different container at rack position	Contact KNAPP
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
M-AOS-S35B-0057	Location is blocked	Another container is blocking the entry to the rack position	Contact KNAPP
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
M-AOS-S35B-0058	Width different from data base value.	Database error	Transfer container to conveyor (loop) via Service Client
M-AOS-S35B-0059	Loading/unloading not possible at this storage location.	Incorrect system configuration	Contact KNAPP
M-AOS-S35B-0100	Error while updating. Bootloader is not active.	Error during firmware update at shuttle	(1) Repeat firmware update (2) Contact KNAPP
M-AOS-S35B-0101	Error while updating the shuttle firmware: not initialized	Error during firmware update at shuttle	(1) Repeat firmware update (2) Contact KNAPP
M-AOS-S35B-0102	Error while updating. Memory could not be deleted.	Error during firmware update at shuttle	(1) Repeat firmware update (2) Contact KNAPP
M-AOS-S35B-0103	Error while updating. Download cancelled.	Error during firmware update at shuttle	(1) Repeat firmware update (2) Contact KNAPP
M-AOS-S35B-0104	Error while updating. Incorrect length of datagram data.	Error during firmware update at shuttle	(1) Repeat firmware update (2) Contact KNAPP
M-AOS-S35B-0105	Error while updating. Incorrect memory address.	Error during firmware update at shuttle	(1) Repeat firmware update (2) Contact KNAPP

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Error code	Message	Possible cause	Measure
M-AOS-S35B-0106	Error while updating. Incorrect number of lines.	Error during firmware update at shuttle	(1) Repeat firmware update (2) Contact KNAPP
M-AOS-S35B-0107	Error while updating. Error while writing firmware to flash memory.	Error during firmware update at shuttle	(1) Repeat firmware update (2) Contact KNAPP
M-AOS-S35B-0108	Error while updating. Download already started.	Error during firmware update at shuttle	(1) Repeat firmware update (2) Contact KNAPP
M-AOS-S35B-0109	Error while updating. Invalid firmware.	Error during firmware update at shuttle	(1) Repeat firmware update (2) Contact KNAPP

M-ASR-PLCA

Error code	Message	Possible cause	Measure
M-ASR-PLCA-0001	The PLC detected an error	-	Information on this error is found on the Service Client or in the following error lines

M-ASR-S35B

Error code	Message	Possible cause	Measure
M-ASR-S35B-0001	IO error	<ul style="list-style-type: none"> Internal error Hardware error 	(1) Check fuse and whether level control switch is switched on (2) Check cabling
		Level power supply missing	Switch level off and on via level control switch If error persists: replace shuttle printed circuit board (see document <i>Maintenance & Repair</i>)
M-ASR-S35B-0002	Max. number of transmission attempts exceeded	The shuttle still does not answer after 5 attempts	Switch level control switch on and off, then activate level via Service Client
		WLAN adapter defective or incorrectly configured	Replace WLAN adapter (see document <i>Maintenance & Repair</i>) If error continues to persist: contact KNAPP
M-ASR-S35B-0003	Protocol error	<ul style="list-style-type: none"> Shuttle printed circuit board defective Internal error 	Replace shuttle printed circuit board (see document <i>Maintenance & Repair</i>) If error persists: contact KNAPP
M-ASR-S35B-0004	Checksum error	Error in data transmission	Activate component If error continues to persist: contact KNAPP
M-ASR-S35B-0005	Error in command sequence	Logical error in command string	Contact KNAPP
M-ASR-S35B-0010	Power up during operation	The shuttle was restarted during ongoing operation (power off/on) This is permitted between two operations, but not during an ongoing operation	Activate level via Service Client If error continues to persist: contact KNAPP
M-ASR-S35B-0011	Device error	<ul style="list-style-type: none"> Shuttle printed circuit board defective Internal error 	Replace shuttle printed circuit board (see document <i>Maintenance & Repair</i>) If error persists: contact KNAPP
M-ASR-S35B-0020	Command terminated by external system	Ongoing action aborted	Activate level via Service Client
M-ASR-S35B-0021	Configuration error	Incorrect configuration	Contact KNAPP

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Error code	Message	Possible cause	Measure
M-ASR-S35B-0022	Configuration error: unknown location type	<ul style="list-style-type: none"> Incorrect system configuration Obsolete shuttle firmware 	Contact KNAPP
M-ASR-S35B-0023	Configuration error: unknown container type	<ul style="list-style-type: none"> Incorrect system configuration Obsolete shuttle firmware 	Contact KNAPP
M-ASR-S35B-0024	Configuration error: invalid coordinates	<ul style="list-style-type: none"> Use of incorrect coordinates (position in rack) Keying error or software error 	Configuration of rack positions must be corrected: Contact KNAPP
M-ASR-S35B-0025	Configuration error: unknown conveyor	A command for a conveyor (lift, shuttle) unknown or unconfigured for this system was activated.	Configuration of conveyor must be corrected: Contact KNAPP
M-ASR-S35B-0030	Timeout while performing command	Shuttle does not answer within the desired time	(1) Switch level control switch on and off, then activate level via Service Client (2) Replace shuttle printed circuit board (see document <i>Maintenance & Repair</i>) (3) If error persists: contact KNAPP
M-ASR-S35B-0031	Internal error	Shuttle does not answer within the desired time	(1) Switch level control switch on and off, then activate level via Service Client (2) Replace shuttle printed circuit board (see document <i>Maintenance & Repair</i>) (3) If error persists: contact KNAPP
M-ASR-S35B-0032	Unknown error	Defective shuttle	Contact KNAPP

M-ASR-SPID

Error code	Message	Possible cause	Measure
M-ASR-SPID-0001	Location {0} empty	Container may have been removed by hand	Activate rack line via Service Client
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
M-ASR-SPID-0003	Location {0} occupied	Container may have been placed in location by hand	Activate rack line via Service Client
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
M-ASR-SPID-0005	Internal communication error	<ul style="list-style-type: none"> Execution, completion or synchronization of a movement order not possible Software error 	Activate rack line via Service Client If error continues to persist: contact KNAPP
M-ASR-SPID-0006	Communication error due to interruption of power supply or restart of communication process	Component or software process restarted	Activate rack line via Service Client If error continues to persist: contact KNAPP
M-ASR-SPID-0007	Unexpected occupation state of location {0}	Container manually placed	Activate rack line via Service Client
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
M-ASR-SPID-0008	Unexpected activity status of transporter	Internal error	Activate rack line via Service Client If error continues to persist: contact KNAPP
M-ASR-SPID-0009	Container movement not completed correctly (after SW restarted)	Container movement could not be carried out or was impossible	(1) Manually reposition container or use Service Client (2) Activate rack line or component via Service Client
M-ASR-SPID-0010	User action	No error	No measures necessary.
M-ASR-SPID-0011	Internal error	Internal error	Activate rack line via Service Client If error continues to persist: contact KNAPP
M-ASR-SPID-0014	Error while checking occupancy of location {0}	<ul style="list-style-type: none"> Error when checking whether lift or shuttle is occupied It cannot be determined whether the location is free or occupied Communication error 	(1) Manually reposition container or use Service Client (2) Reposition, clean or replace sensor (3) If error persists: contact KNAPP

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Error code	Message	Possible cause	Measure
M-ASR-SPID-0015	Location {1} check with coordinates {0} incorrect	<ul style="list-style-type: none"> Error checking occupancy (base, loading or unloading position) It cannot be determined whether the location is free or occupied Communication error 	(1) Manually reposition container or use Service Client (2) Reposition, clean or replace sensor (3) If error persists: contact KNAPP
M-ASR-SPID-0017	Transporter movement to location {1} with coordinates {0} incorrect	<ul style="list-style-type: none"> Movement error triggered by lift or shuttle Position not reached 	Information on this error is found on the Service Client or in the following error lines
M-ASR-SPID-0018	Error loading container from base to lift	Container jammed or motors not moving	Manually reposition container or use Service Client
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
			Information on this error is found on the Service Client or in the following error lines
M-ASR-SPID-0021	Error unloading container from lift to level {0} (location {1})	Container jammed or motors not moving	Manually reposition container or use Service Client
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
			Information on this error is found on the Service Client or in the following error lines
M-ASR-SPID-0025	Device error	<ul style="list-style-type: none"> Internal error Device error 	Activate rack line via Service Client If error continues to persist: contact KNAPP
M-ASR-SPID-0026	Activity timeout	Network error	Eradicate network error If error continues to persist: contact KNAPP

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Error code	Message	Possible cause	Measure
M-ASR-SPID-0027	Error loading container onto transporter from location {1} with coordinates {0}	Container incorrectly positioned (jammed, etc.)	Position container using the Service Client If necessary: Manually place container in the previous position (starting point)
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
		Motor failure	Eradicate motor failure
			Information on this error is found on the Service Client or in the following error lines
M-ASR-SPID-0028	Error unloading container from transporter to location {1} with coordinates {0}	Container incorrectly positioned (jammed, etc.)	Position container using the Service Client If necessary: Manually place container in the previous position (starting point)
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
		Motor failure	Eradicate motor failure
			Information on this error is found on the Service Client or in the following error lines
M-ASR-SPID-0029	Lift not at base position.	Lift platform is not in base level	Reference lift using reference run push button on main switch cabinet If error continues to persist: contact KNAPP
M-ASR-SPID-0030	Error unloading container from transporter	Container incorrectly positioned (jammed, etc.)	Manually correct position of container or use Service Client If necessary: Manually place container in the previous position (starting point)
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
		Motor failure	Eradicate motor failure
			Information on this error is found on the Service Client or in the following error lines
M-ASR-SPID-0031	Action unexpectedly ended.	Internal error	Contact KNAPP
M-ASR-SPID-0032	Error at Lift Out.	-	Information on this error is found on the Service Client or in the following error lines

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Error code	Message	Possible cause	Measure
M-ASR-SPID-0033	Hardware error during power up cycle	Internal error	Contact KNAPP
M-ASR-SPID-0034	Rack line access active	Rack line access active	(1) Properly conclude rack line access (see <i>Safety Guidelines</i>) (2) Activate rack line
M-ASR-SPID-0035	Error during shuttle reference run.	Container not correctly positioned on rack position	Place container correctly on the rack position
		Separator tips missing or broken	Replace separator tips
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
M-ASR-SPID-0036	Rack position check faulty. LEFT: [{0} / {1}] RIGHT: [{2} / {3}], first error: [Pos: {4} side: {5}]	Container not correctly positioned on rack position	Place container correctly on the rack position
		Separator tips missing or broken	Replace separator tips
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
M-ASR-SPID-0037	Occupancy of storage locations deviates from database by too much. {0}	Database inconsistency	Contact KNAPP
		Sensor dirty, positioned incorrectly or defective	Clean, reposition or replace sensor
M-ASR-SPID-0038	Error resequencing containers	Internal error	Contact KNAPP

M-XOP-OSIN

Error code	Message	Possible cause	Measure
M-XOP-OSIN-0001	Error at Siemens SINAMICS S frequency converter. Error ID: {0}	Malfunction at frequency converter Note: The error message is displayed at the frequency converter	Determine and rectify error using the <i>manufacturer's documentation</i>

F Standard procedures in the event of an error situation

The following sections describe some of the standard procedures for troubleshooting in the event of an error situation.

Operational states described in the standard processes are displayed in English on the Service Client

Operational states	Operational states in English
Enable	Enable
Enabled	Enabled
Suspend	Suspend
Suspended	Suspended
Disable	Disable
Disabled	Disabled

The operational state of OSR components are described in detail in the *Service Client User Manual*.

1 Error transferring container between the lift platform and rack (buffer)

Error description	Container is not positioned correctly on the lift platform or buffer
Rack line status	Suspended or disabled
Procedure	Troubleshooting via Service Client If the container can be moved via the Service Client, troubleshooting can be carried out via Service Client. (1) Use the Service Client to try to position the container on the lift platform or buffer: with the button [Unload platform] or [Load platform] move the container to a valid position. (2) If no other errors are present: activate rack line
	Troubleshooting with rack line access If the container cannot be moved via the Service Client, or if products protrude over the container lip, the troubleshooting must be carried out by rack line access. (1) Register rack line access for the lift servicing area (2) Enter the lift servicing area (3) Climb onto the servicing level from which the lift platform can be reached (4) Close trap doors and servicing flaps (5) Position container correctly and arrange products in the containers (6) Open up servicing flaps (7) Exit the rack line (8) Activate rack line via Service Client

2 Error transferring container between the lift platform and conveyor

Error description	<ul style="list-style-type: none">• Misaligned or jammed containers• Containers are not correctly positioned on the lift platform
Rack line status	Suspended or disabled
Procedure	Troubleshooting with rack line access (1) Register rack line access for the lift servicing area (2) Enter the lift servicing area (3) Correctly position or remove the container (4) Exit the rack line (5) Activate rack line via Service Client

3 Error in handling container on the lift

Error description	<p>Lift is not ready as a container is not correctly positioned on the lift platform</p> <p>The following procedure may only be selected for an error description as mentioned below if there has been no mechanical collision:</p> <ul style="list-style-type: none"> • Container cannot be loaded onto the lift platform as e.g. container is jammed or servo-controller is defective/faulty • Another defect is present, e.g. at sensor
Rack line status	Suspended or disabled
Procedure	<p>Troubleshooting via Service Client</p> <p>If the container can be moved via the Service Client, troubleshooting can be carried out via Service Client.</p> <p>(1) Use the Service Client to try to position the container on a lift platform or buffer: with the button [Unload platform] or [Load platform] move the container to a valid position.</p> <p>(2) If no other errors are present: activate rack line</p> <p>Troubleshooting with rack line access</p> <p>If the container cannot be moved via the Service Client, or if products protrude over the container lip, the troubleshooting must be carried out by rack line access.</p> <ol style="list-style-type: none"> (1) Register rack line access for the lift servicing area (2) Enter the lift servicing area (3) Climb onto the servicing level from which the lift platform can be reached (4) Close trap doors and servicing flaps (5) Position container correctly and arrange products in the containers (6) Open up servicing flaps (7) Exit the rack line (8) Activate rack line via Service Client

4 Error in rack area

Error description	<ul style="list-style-type: none"> • Products are protruding above the edges of a container • Products have fallen out onto an empty rack position • Container handled incorrectly on shuttle
Level status	Relevant level is deactivated or suspended
Procedure	<p>Troubleshooting via Service Client with rack line access</p> <ol style="list-style-type: none"> (1) Deactivate all levels of the affected servicing level and move the shuttles to the zero position (on lift side) via Service Client (2) Wait until all shuttles are stationary in the zero position (on lift side) -> observe message on Service Client (3) Enter the shuttle servicing area and access the servicing level via ladders (4) Close trap door of servicing level (5) Register rack line access (6) Enter the rack line and rectify the error (7) Exit the rack line (8) Reactivate all previously suspended levels via Service Client

5 Error at the shuttle

Error description	Shuttle malfunction
Rack line status	Activated
Level status	Relevant level is deactivated or suspended
Procedure	<p>Troubleshooting via Service Client with rack line access</p> <p>(1) Via Service Client, deactivate and move all shuttles of the servicing level, apart from the defective shuttle, to the zero position (on lift side)</p> <p>(2) Wait until all shuttles are stationary in the zero position</p> <p>Note Check messages on Service Client</p> <p>(3) If the defective shuttle can be moved via Service Client:</p> <ul style="list-style-type: none"> • Move shuttle to the servicing position at the end of rack line • Wait until defective shuttle is in servicing position <p>Note Check messages on Service Client</p> <p>(4) Register rack line access for the shuttle servicing area</p> <p>(5) Enter the shuttle servicing area</p> <p>(6) Switch off the level of the defective shuttle via the shuttle level control switch</p> <p>(7) Protect level control switch against unauthorized use</p> <p>(8) If the defective shuttle cannot be moved via Service Client: enter the rack line and pull the defective shuttle to the servicing position at the end of the line</p> <p>(9) Replace defective shuttle (see document <i>Maintenance & Repair</i>)</p> <p>(10) Switch on the level of the defective shuttle via the shuttle level control switch</p> <p>(11) Exit the rack line</p> <p>(12) Reactivate all previously suspended levels via Service Client</p>

KNAPP error report form

Sender

Company: Branch:
Contact person:
Tel.: Fax: Em@il:

OSR system data

Number of rack lines/levels: Version of control software:
Number of OSR work stations: Service Client version:

First occurrence of error

Date Container ID
Time Tray ID

Load/products

- | | |
|---|---|
| <input type="radio"/> Heavy | <input type="radio"/> Light |
| <input type="radio"/> Even distribution | <input type="radio"/> Uneven distribution |
| <input type="radio"/> Front | <input type="radio"/> Rear |

Other product features (e.g. round, square)

Error message on GUI

.....

Error description

.....

Checks carried out

.....

Measures

.....

Current condition

.....

Error report for shipment

Sender

Company: Branch:

Contact person:

Tel: Fax: Em@il:

OSR system data

Number of rack lines/levels: Version of control software:

Number of work stations: Service Client version:

Error description

.....
.....

Checks carried out

.....
.....
.....

Solution:

.....
.....
.....

Troubleshooting by KNAPP Helpdesk/Hotline:

No ☐ Yes ☐

Reference number:

Glossary

Calibration run	Slow run to calibrate the OSR rack line
Container	Generic term for all kinds of containers e.g. cartons or totes into which the picked products are placed
Level	Horizontal rack line area
Lift	Lifting unit for the vertical transport of containers
Load-handling device (LHD)	Unit for receiving and transporting load carriers
Module	Smallest assembly (unit) of a rack line A module consists of the area between two rack supports, covering several levels and including the aisle
Rack line	Unit consisting of several levels including a lift and connected to the conveyor
Reference position	Zero position of a moving component; point from which physical coordinates are defined
Reference run	Run of an OSR component or all components to reference position(s).
Servicing position	Defined position of a component for servicing work
Shuttle	Unit for the horizontal transport of containers within one level
Zero position	Position of a component for calculating the initial position

List of abbreviations

EBG	<i>de</i> Ebenenbediengerät, <i>en</i> EBG shuttle
GUI	<i>en</i> Graphical User Interface
LHD	<i>en</i> Load-handling device
OSR	<i>en</i> Order Storage and Retrieval
PLC	<i>en</i> Programmable Logic Controller
SRC	<i>en</i> Storage and Retrieval Controller
WLAN	<i>en</i> Wireless Local Area Network