

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Selected official pages for procurement and maintenance review

PRODUCT BRAND

ABB

PRODUCT MODEL

3HAC13398-2 / DSQC 634

Optional ODVA power supply for documented OmniCore V400XT controller configurations.

OFFICIAL SOURCE

Product manual - OmniCore V400XT, 3HAC081697-001 Rev K, 2026.

Open current manufacturer source

Selected original pages: 34-37, 60-61, 362-363, 366-369, 586 and 629. This package covers safety, DSQC 634 replacement and diagnostics. Consult the complete source for initial installation, functional tests and circuit-diagram references.

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Amikon Limited prepared this independent reference package. Original manufacturer pages follow unchanged.

1.4.2 About the automatic mode

The automatic mode

Automatic mode is an operating mode in which the robot operates in accordance with the task program(s).

Tasks normally performed in automatic mode

The following tasks are typically performed in automatic mode:

- Start and stop of program execution.
- Increase or decrease the speed in between zero and programmed speed.
- Restore backups. Only possible when robot is at stop.
- Load, start, stop, and modify RAPID programs through remote clients.

Safeguard mechanisms

Protective stop function initiated by

- Automatic Stop, AS (the dedicated input, AS, or the dedicated input AS/GS configured to AS, see actual controller)
- General Stop, GS (the dedicated input, GS, or the dedicated input AS/GS configured to GS, see actual controller)



Note

Prior to allowing the robot to operate in automatic mode, ensure that any suspended safeguards, are returned to full functionality.

1.5 Safety during installation and commissioning

National or regional regulations

The integrator of the robot system is responsible for the safety of the robot system.

The integrator is responsible that the robot system is designed and installed in accordance with the safety requirements set forth in the applicable national and regional standards and regulations.

The integrator of the robot system is required to perform a risk assessment.

Layout

The robot integrated to a robot system shall be designed to allow safe access to all spaces during installation, operation, maintenance, and repair.

If robot movement can be initiated from an external control panel then an emergency stop must also be available.

If the manipulator is delivered with mechanical stops (limiting devices), these can be used for reducing the working space. For OmniCore robots, safe supervision can be configured for the working space through software-based limiting.

A perimeter safeguarding, for example a fence, shall be dimensioned to withstand the following:

- The force of the manipulator.
- The force of the load handled by the robot if dropped or released at maximum speed.
- The maximum possible impact caused by a breaking or malfunctioning rotating tool or other device fitted to the robot.

The maximum TCP speed and the maximum velocity of the robot axes are detailed in the section *Robot motion* in the product specification for the respective manipulator.

Consider exposure to hazards, such as slipping, tripping, and falling.

Hazards due to the working position and posture for a person working with or near the robot shall be considered.

Hazards due to noise emission from the robot needs to be considered.

Consider hazards from other equipment in the robot system, for example, that guards remain active until identified hazards are reduced to an acceptable level.

Allergenic material

See [Environmental information on page 496](#) for specification of allergenic materials in the product, if any.

Securing the robot to the foundation

The robot must be properly fixed to its foundation/support, as described in the respective product manual.

When the robot is installed at a height, hanging, or other than mounted directly on the floor, there will be additional hazards.

Continues on next page

1 Safety

1.5 Safety during installation and commissioning

Continued

Using lifting accessories and other external equipment

Ensure that all equipment used during installation, service and all handling of the robot are in correct condition for the intended use.

Electrical safety

Incoming mains must be installed to fulfil national regulations.

The power supply wiring to the robot must be sufficiently fused and if necessary, it must be possible to disconnect it manually from the mains power.

The power to the robot must be turned off with the main switch and the mains power disconnected when performing work inside the controller cabinet. Lock and tag shall be considered.

Hazards due to stored electrical energy in the controller must be considered.

Harnesses between controller and manipulator shall be fixed and protected to avoid tripping and wear.

Wherever possible, power on/off or rebooting the robot controller shall be performed with all persons outside the safeguarded space.



Note

Use a CARBON DIOXIDE (CO₂) extinguisher in the event of a fire in the robot.



ELECTRICAL SHOCK

The controller mains power switch shall be disabled before connecting or disconnecting the controller power cable from the mains supply.



ELECTRICAL SHOCK

This equipment exhibits high earth leakage current. Consequently, a reliable protective bonding connection is mandatory. Installation must be performed in strict accordance with IEC 60204-1.



Note

The system integrator is responsible for the acceptance of the ON/OFF operating means color coding. The integrator shall ensure that the final machine complies with the identification and color coding requirements specified in IEC 60204-1.

Safety devices

The integrator is responsible for that the safety devices necessary to protect people working with the robot system are designed and installed correctly.

When integrating the robot with external devices to a robot system:

- The integrator of the robot system must ensure that emergency stop functions are interlocked in accordance with applicable standards.

Continues on next page

- The integrator of the robot system must ensure that safety functions are interlocked in accordance with applicable standards.

Other hazards

A robot may perform unexpected limited movement.

**WARNING**

Manipulator movements can cause serious injuries on users and may damage equipment.

The risk assessment should also consider other hazards arising from the application, such as, but not limited to:

- Water
- Compressed air
- Hydraulics

End-effector hazards require particular attention for applications which involve close human collaboration with the robot.

Verify the safety functions

Before the robot system is put into operation, verify that the safety functions are working as intended and that any remaining hazards identified in the risk assessment are mitigated to an acceptable level.

2 Controller description

2.5 The unit is sensitive to ESD

2.5 The unit is sensitive to ESD

Description

ESD (electrostatic discharge) is the transfer of electrical static charge between two bodies at different potentials, either through direct contact or through an induced electrical field. When handling parts or their containers, personnel not grounded may potentially transfer high static charges. This discharge may destroy sensitive electronics.

Safe handling

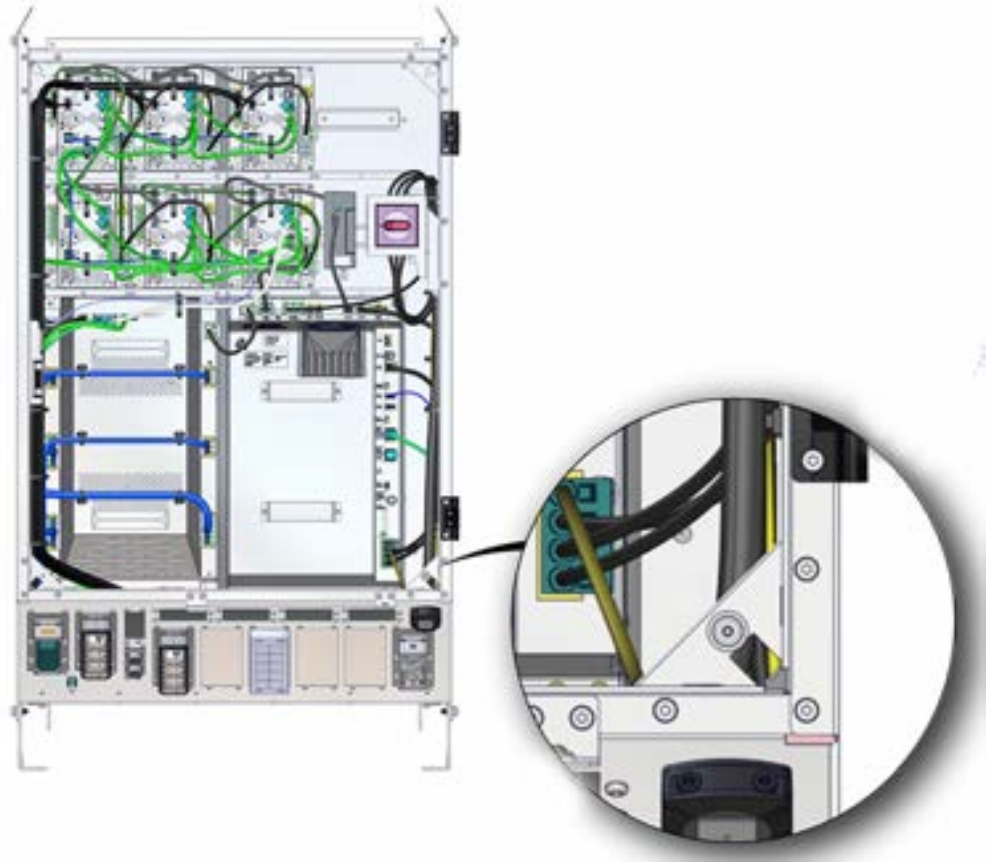
Use one of the following alternatives:

- Use a wrist strap. The wrist strap button is located inside the controller.
Wrist straps must be tested frequently to ensure that they are not damaged and are operating correctly.
- Use an ESD protective floor mat.
The mat must be grounded through a current-limiting resistor.
- Use a dissipative table mat.
The mat should provide a controlled discharge of static voltages and must be grounded.

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Wrist strap button

The location of the wrist strap button is shown in the following illustration.



xx2300001842

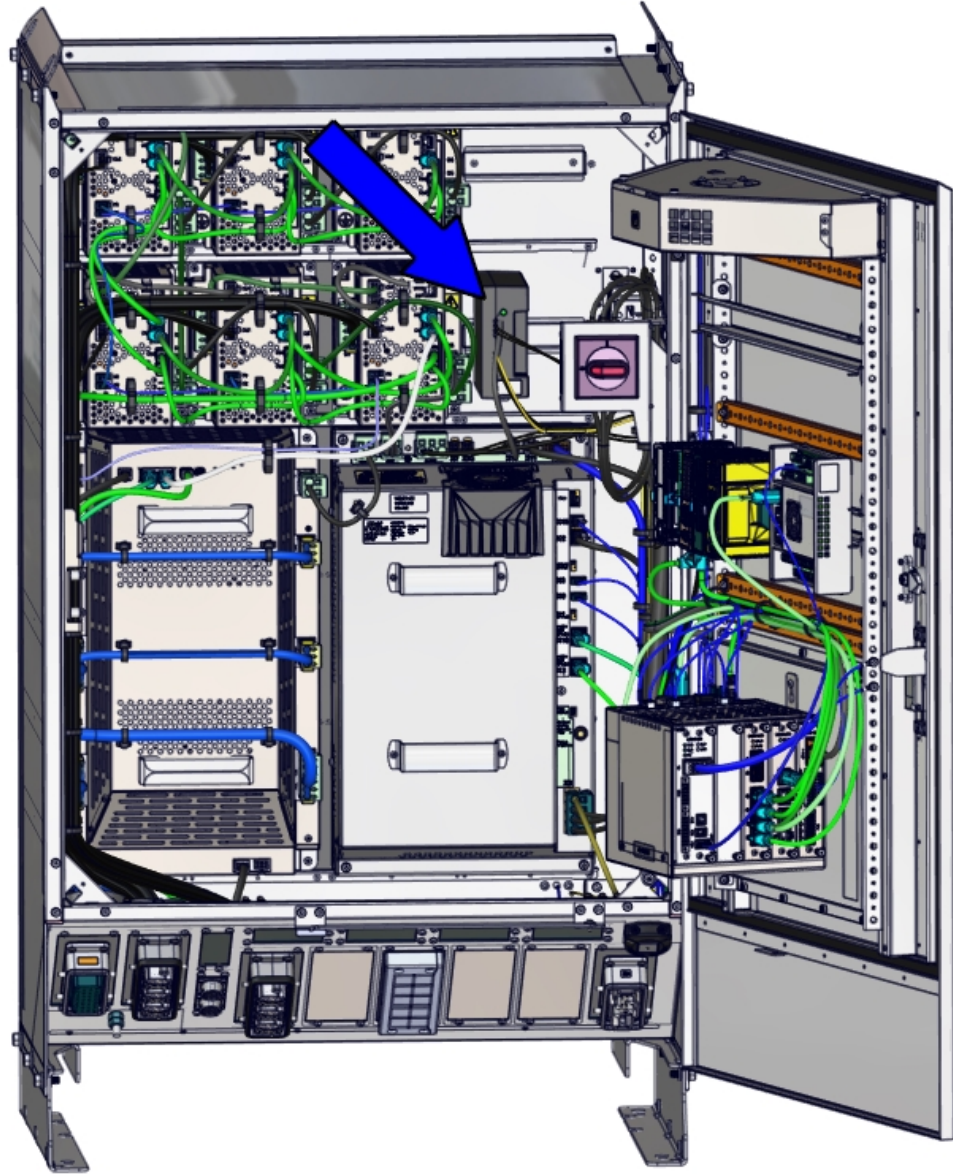
5 Repair

5.2.17 Replacing the power supply

5.2.17 Replacing the power supply

Location

The illustration shows the location of the power supply in the controller.



xx2300001798



WARNING

Do not touch the power supply when the DC OK LED is on.

There is residual voltage in the power supply even if the main switch is in the OFF position.

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Required spare parts



Note

The spare part numbers that are listed in the table can be out of date. See the latest spare parts of the OmniCore V400XT via ABB Robotics One, <https://one.abb.com/en/knowledge-hub>.

Spare part	Article number	Note
DSQC 609 power supply	3HAC14178-1	DSQC 609
DSQC 634 power supply	3HAC13398-2	DSQC 634
DSQC 1102 power supply	3HAC089463-001	DSQC 1102
Harness PSU 24V	3HAC082083-001	DSQC 609 and DSQC 634
Harness PSU	3HAC082508-001	DSQC 609 and DSQC 634
Harness PSU 24V	3HAC083290-001	DSQC 1102
Harness PSU	3HAC082508-001	DSQC 1102
End clamp	3HAB7983-1	

Required tools and equipment

Equipment	Article number	Note
Standard toolkit	-	Content is defined in section Standard toolkit for controller on page 608 .
ESD protective wrist band	-	

Required documents

Document	Article number	Note
Circuit diagram - OmniCore V400XT	3HAC082020-008	

Removing the DSQC 609 power supply

Preparations

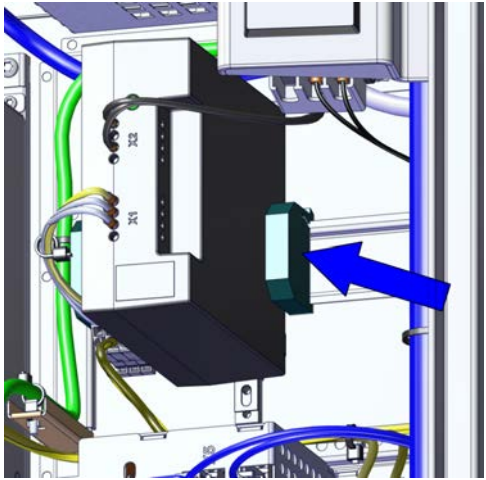
	Action	Note/Illustration
1	 DANGER Before doing any work inside the cabinet, disconnect the mains power and wait 3 minutes. For more information, see Electrical safety on page 36 .	
2	Open the door.	Opening the door on page 259 .

Continues on next page

5 Repair

5.2.17 Replacing the power supply

Continued

	Action	Note/Illustration
5	Refit the end clamp besides the power supply.	 xx1900001907

Concluding procedure

	Action	Note/Illustration
1	Close the door.	Closing the door on page 260.
2	Perform the function tests to verify that the safety features work properly, see Function tests on page 247.	

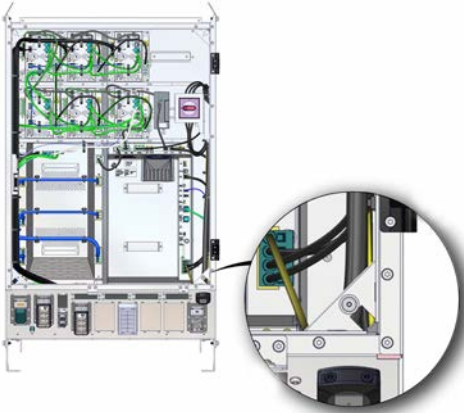
Removing the DSQC 634 power supply

Preparations

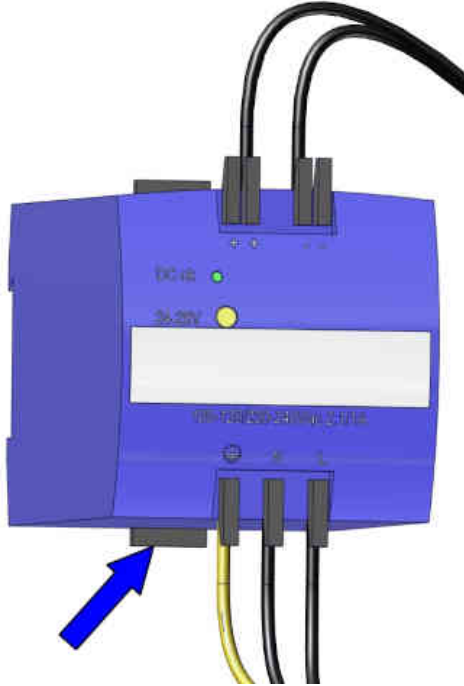
	Action	Note/Illustration
1	 DANGER Before doing any work inside the cabinet, disconnect the mains power and wait 3 minutes. For more information, see Electrical safety on page 36.	
2	Open the door.	Opening the door on page 259.

Continues on next page

5.2.17 Replacing the power supply
Continued

	Action	Note/Illustration
3	 ELECTROSTATIC DISCHARGE (ESD) The unit is sensitive to ESD. Before handling the unit read the safety information in section <i>The unit is sensitive to ESD on page 60.</i>	Location of wrist strap button:  xx2300001842

Removing the power supply

	Action	Note/Illustration
1	Disconnect all connectors from the unit to be replaced.	
2	Press the lower buckle to release and remove the power supply.	 xx2400000607

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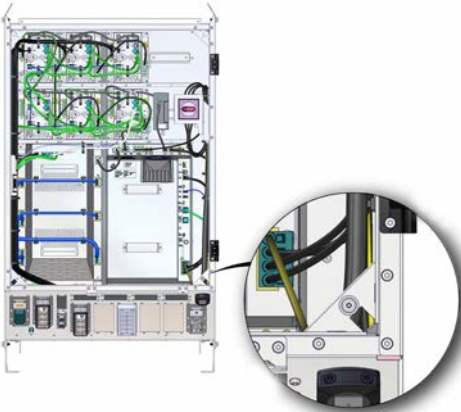
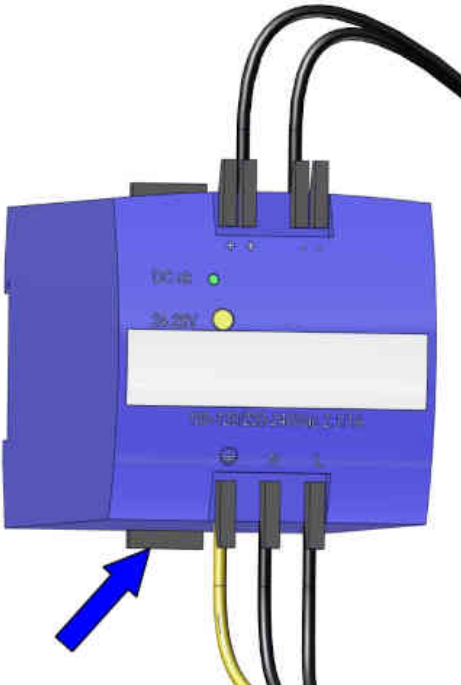
5 Repair

5.2.17 Replacing the power supply

Continued

Refitting the DSQC 634 power supply

Refitting the power supply

	Action	Note/Illustration
1	 DANGER Before doing any work inside the cabinet, disconnect the mains power and wait 3 minutes. For more information, see Electrical safety on page 36 .	
2	 ELECTROSTATIC DISCHARGE (ESD) The unit is sensitive to ESD. Before handling the unit read the safety information in section The unit is sensitive to ESD on page 60 .	Location of wrist strap button:  xx2300001842
3	Hang the power supply into the bracket and push the lower of it until you hear a clear clicking sound.	 xx2400000607
4	Reconnect any connectors disconnected at removal.	

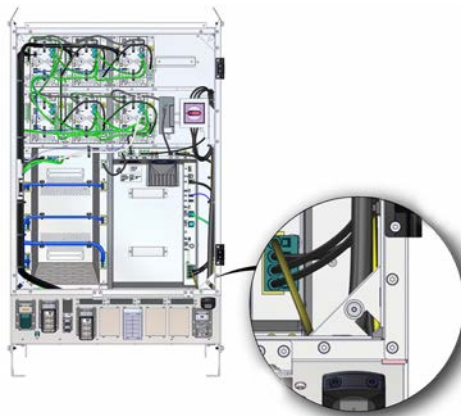
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Concluding procedure

	Action	Note/Illustration
1	Close the door.	Closing the door on page 260.
2	Perform the function tests to verify that the safety features work properly, see Function tests on page 247.	

Removing the DSQC 1102 power supply

Preparations

	Action	Note/Illustration
1	 DANGER Before doing any work inside the cabinet, disconnect the mains power and wait 3 minutes. For more information, see Electrical safety on page 36.	
2	Open the door.	Opening the door on page 259.
3	 ELECTROSTATIC DISCHARGE (ESD) The unit is sensitive to ESD. Before handling the unit read the safety information in section The unit is sensitive to ESD on page 60.	Location of wrist strap button:  xx2300001842
4	Make records about the sequence that cables are removed. The cables need to be installed in the same position.	

Removing the power supply

	Action	Note/Illustration
1	Remove the cable ties and the cables from the clips in the cabinet carefully.	
2	Disconnect all connectors from the unit to be replaced.	

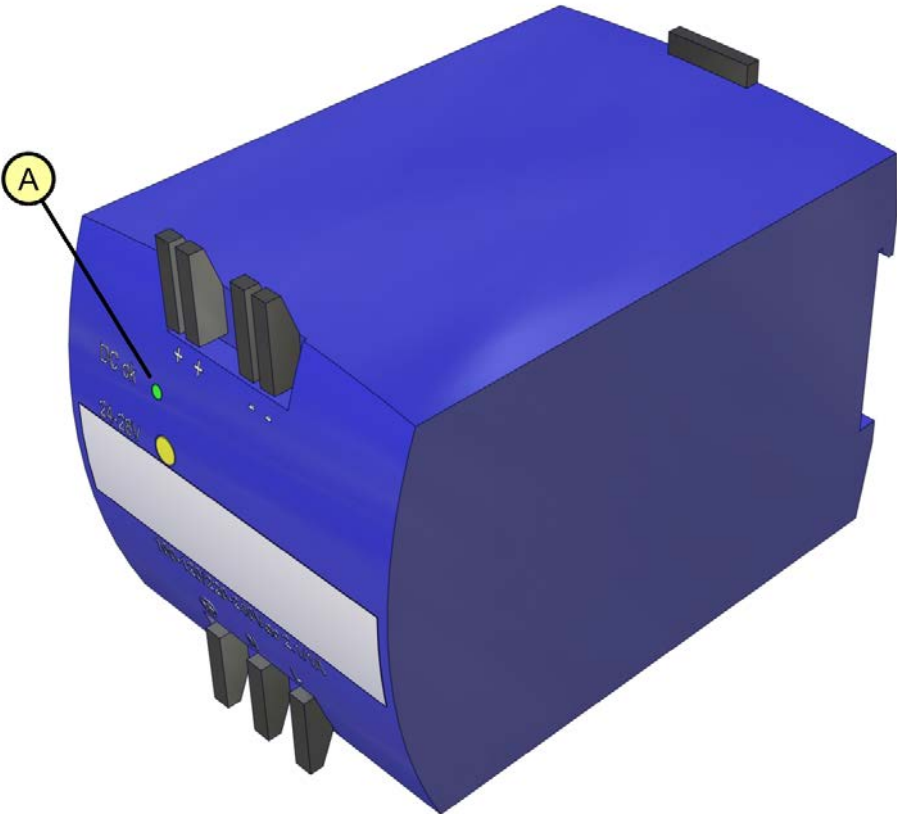
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7 Troubleshooting

7.3.14 Troubleshooting the power supply, ODVA

7.3.14 Troubleshooting the power supply, ODVA

Location	The ODVA power supply, DSQC 634, is located as shown in the figure below.
LEDs	The illustration below shows the LEDs on the ODVA power supply module:

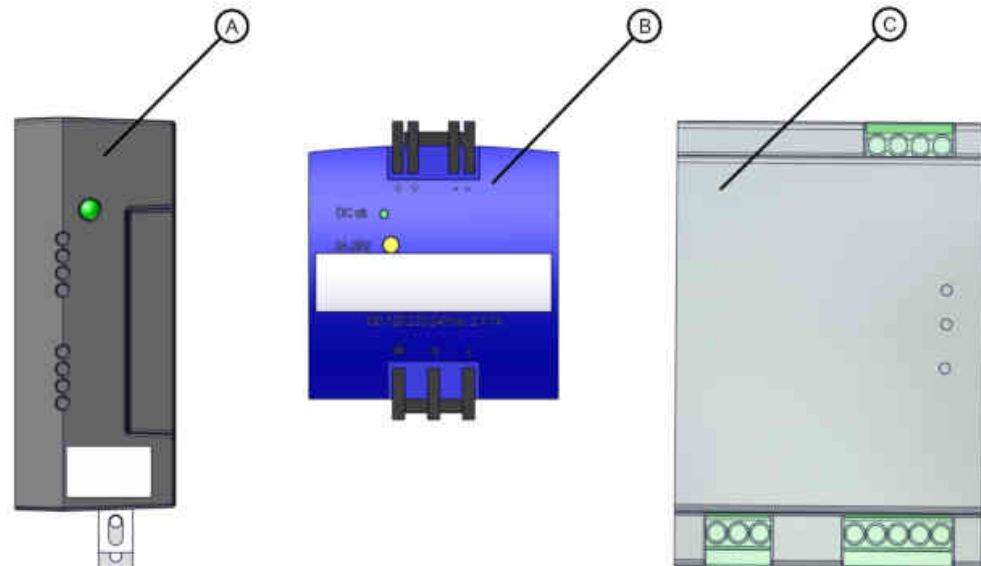


xx2100001077

	Description	Significance
A	DC OK	Green: When all DC outputs are within the specified output voltage levels. Off: When DC output voltage is outside the specified voltage levels or turned off due to short circuit or overload.

	Spare part number	Description	Type	Spare part level
A	3HAC059187-001	Ethernet Extension switch [3014-1] (option)	DSQC1035	L1
-	3HAC084152-001	Ethernet Harness		L1

Power supply device



xx2400000742

	Spare part number	Description	Type	Spare part level
A	3HAC14178-1	DSQC 609 power supply	DSQC 609	L2
B	3HAC13398-2	DSQC 634 power supply	DSQC 634	L2
C	3HAC089463-001	DSQC 1102 power supply	DSQC 1102	L2

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