

**ABB Drive Products** 

# ACS880-3P Sensia CE Supplemental Manual



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### **Safety Instructions**

#### Contents of this chapter

This chapter contains the safety instructions which you must obey when you install and operate the drive and do maintenance on the drive. If you ignore the safety instructions, injury, death, or damage can occur.

#### Use of warnings and notes

Warnings tell you about conditions which can cause injury or death, or damage to the equipment. They also tell you how to prevent the danger. Notes draw attention to a particular condition or fact, or give information on a subject. The manual uses these warning symbols:



**Electricity warning** tells about hazards from electricity which can cause injury or death, or damage to the equipment.



**General warning** tells about conditions, other than those caused by electricity, which can cause injury or death, or damage to the equipment.



**Electrostatic sensitive devices warning** tells you about the risk of electrostatic discharge which can cause damage to the equipment.

#### General safety in installation, start-up and maintenance

These instructions are for all personnel that install the drive and do maintenance work on it.



**WARNING!** Obey these instructions. If you ignore them, injury or death, or damage to the equipment can occur.

- Use safety shoes with a metal toe cap to avoid foot injury. Wear protective gloves and long sleeves. Some parts have sharp edges.
- Handle the drive carefully.
- Lift the drive with a lifting device. Use the lifting eyes of the drive.
- Do not tilt the drive. The drive is heavy, and its center of gravity is high. An overturning drive can cause physical injury.
- Beware of hot surfaces. Some parts, such as heatsinks of power semiconductors, remain hot for a while after disconnection of the electrical supply.
- Keep the drive in its package or protect it otherwise from dust and burr from drilling and grinding until you install it.
- Also protect the installed drive against dust and burr. Electrically conductive debris inside the drive may cause damage or malfunction.
- Vacuum clean the area below the drive before the start-up to prevent the drive cooling fan from drawing the dust inside the drive.
- Do not cover the air inlet and outlet when the drive runs.
- Make sure that there is sufficient cooling. See Chapter 3, Mechanical Installation.
- Before you connect voltage to the drive, make sure that the drive covers are on. Keep the covers on during the operation.
- Before you adjust the drive operation limits, make sure that the motor and all driven equipment can operate throughout the set operation limits.
- Before you activate the automatic fault reset or automatic restart functions of the drive control program, make sure that no dangerous situations can occur. These functions reset the drive automatically and continue operation after a fault or supply break. If these functions are activated, the installation must be clearly marked as defined in IEC/EN 61800-5-1, subclause 6.5.3, for example, "THIS MACHINE STARTS AUTOMATICALLY".
- If you have connected safety circuits to the drive (for example, emergency stop and Safe torque off), validate them at the start up. For the validation of the Safe torque off, see ACS880 standard control program firmware manual (3AUA0000085967). For the validation of other safety circuits, see the instructions provided with them.

#### Note:

- If you select an external source for start command and it is on, and the start command is level-triggered, the drive will start immediately after fault reset. See parameters 20.02 Ext1 start trigger type and 20.07 Ext2 start trigger type in ACS880 standard control program firmware manual (3AUA0000085967).
- When the control location is not set to Local (text Local is not shown on the top row of the panel and parameter 19.17 Local control disable has value Disabled), the stop key on the control panel will not stop the drive.
- Do not attempt to repair a malfunctioning drive; contact your local representative for replacement or repair by authorized persons.

#### General safety in operation

These instructions are for all personnel that operate the drive.

**WARNING!** Obey these instructions. If you ignore them, injury or death, or damage to the equipment can occur.

- Do not power up the drive more than five times in ten minutes. Too frequent power-ups can damage the charging circuit of the DC capacitors. If you need to start or stop the drive, use the control panel start and stop keys or commands through the I/O terminals of the drive.
- Give a stop command to the drive before you reset a fault. If you have an external source for the start command and the start is on, the drive will start immediately after the fault reset, unless you configure the drive for pulse start. See the firmware manual.
- Before you activate automatic fault reset functions of the drive control program, make sure that no dangerous situations can occur. These functions reset the drive automatically and continue operation after a fault. Note: When the control location is not set to Local, the stop key on the control panel will not stop the drive

#### Electrical safety in installation, start-up and maintenance

#### **Electrical safety precautions**

These warnings are for all personnel who do work on the drive, motor cable or motor.

**WARNING!** Obey these instructions. If you ignore them, injury or death, or damage to the equipment can occur.

If you are not a qualified electrical professional, do not do electrical installation or maintenance work.

Go through these steps before you begin any installation or maintenance work.

- 1. Clearly identify the work location and equipment.
- 2. Disconnect all possible voltage sources. Make sure that reconnection is not possible. Lock out and tag out.
  - Open the main disconnector at the power supply of the drive.
  - Disconnect any external power sources from the control circuits.
  - After you disconnect the drive, always wait for 5 minutes to let the intermediate circuit capacitors discharge before you continue.
- 3. Protect any other energized parts in the work location against contact.
- 4. Take special precautions when close to bare conductors.
- 5. Measure that the installation is de-energized.
  - Before and after measuring the installation, verify the operation of the voltage tester on a known voltage source.
  - Make sure that the voltage between the drive input power terminals (L1, L2, L3) and the grounding terminal (PE) is zero.
  - Make sure that the voltage between the drive output terminals (T1/U, T2/V, T3/W) and the grounding terminal (PE) is zero.
  - Make sure that the drive DC voltage is zero.
    - <u>Frame R11</u>: Make sure that the voltage between the drive DC terminals (UDC+ and UDC-) is zero and between the drive DC terminals (UDC+ and UDC-) and the grounding (PE) terminal is zero.
- 6. Install temporary grounding as required by the local regulations.
- 7. Ask from the person in control of the electrical installation work for a permit to work.

#### Additional instructions and notes

**WARNING!** Obey these instructions. If you ignore them, injury or death, or damage to the equipment can occur.

• Drives installed with the Raycap Transient Voltage Surge Suppressors (TVSS) can be installed to a symmetrically grounded TNC system. If you install the drive to another system, you must disconnect the TVSS. Contact factory for other power systems.

• A drive with the internal EMC filter connected can be installed to a symmetrically grounded TN-S system. If you install the drive to another system, check if you must disconnect the EMC filter. See ACS880 frames R1...R11 EMC filter and ground-to-phase varistor disconnecting instructions (3AUA0000125152).

**WARNING!** Do not install a drive with the EMC filter connected to a system that the filter is not suitable for. This can cause danger or damage the drive.

**Note:** When the internal EMC filter is disconnected, the EMC compatibility of the drive is considerably reduced. See section EMC compatibility and motor cable length in the *ACS880-34 Hardware Manual* (3AXD50000035191).

- A drive with the ground-to-phase varistor connected can be installed to a symmetrically grounded TN-S system. If you install the drive to another system, check if you must disconnect the varistor. See sections
- When to connect EMC filter or disconnect ground-to-phase varistor: TN-S, IT, corner-grounded delta and midpoint-grounded delta systems in the ACS880 frames R1...R11 EMC filter and ground-to-phase varistor disconnecting instructions (3AUA0000125152).

**WARNING!** Do not install a drive with the ground-to-phase varistor connected to a system that the varistor is not suitable for. If you do, the varistor circuit can be damaged.

- Use all ELV (extra low voltage) circuits connected to the drive only within a zone of equipotential bonding, that is, within a zone where all simultaneously accessible conductive parts are electrically connected to prevent hazardous voltages appearing between them. You can accomplish this by a proper factory grounding, that is, make sure that all simultaneously accessible conductive parts are grounded to the protective earth (PE) bus of the building.
- Do not do insulation or voltage withstand tests on the drive or drive modules

If you have a cardiac pacemaker or other electronic medical device, keep away from the area near motor, drive, and the drive power cabling when the drive is in operation. There are electromagnetic fields present which can interfere with the function of such devices. This can cause a health hazard.

#### Note:

- The motor cable terminals of the drive are at a dangerous voltage when the input power is on, regardless of whether the motor is running or not.
- The DC and brake resistor terminals (UDC+, UDC-) are at a dangerous voltage.
- External wiring can supply dangerous voltages to the terminals of relay outputs (RO1, RO2 and RO3).
- The Safe torque off function does not remove the voltage from the main and auxiliary circuits. The function is not effective against deliberate sabotage or misuse.

#### Printed circuit boards

**WARNING!** Use a grounding wrist band when you handle the printed circuit boards. Do not touch the boards unnecessarily. The boards contain components sensitive to electrostatic discharge.

#### Grounding

These instructions are for all personnel who are responsible for the electrical installation, including the grounding of the drive.



**WARNING!** Obey these instructions. If you ignore them, injury or death, or equipment malfunction can occur, and electromagnetic interference can increase.

- If you are not a qualified electrical professional, do not do grounding work.
- Always ground the drive, the motor and adjoining equipment to the protective earth (PE) bus of the power supply. This is necessary for the personnel safety. Proper grounding also reduces electromagnetic emission and interference.
- In a multiple-drive installation, connect each drive separately to the protective earth (PE) bus of the power supply.
- Make sure that the conductivity of the protective earth (PE) conductors is sufficient. See section Selecting the power cables of the ACS880-34 Hardware Manual (3AXD50000035191). Obey the local regulations.
- Connect the power cable shields to the protective earth (PE) terminals of the drive.
- Make a 360° grounding of the power and control cable shields at the cable entries to suppress electromagnetic disturbances.

#### Note:

- You can use power cable shields as grounding conductors only when their conductivity is sufficient.
- Standards IEC/EN 61800-5-1 (section 4.3.5.5.2.) and UL 68100-5-1 require that as the normal touch current of the drive is higher than 3.5 mA AC or 10 mA DC, you must use a fixed protective earth (PE) connection. In addition,
  - install a second protective earth conductor of the same cross-sectional area as the original protective earthing conductor,

or

• install a protective earth conductor with a cross-section of at least 10 mm2 Cu or 16 mm2 Al (when aluminum cables are allowed),

or

• install a device which automatically disconnects the supply if the protective earth conductor breaks.

#### Additional instructions for permanent magnet motor drives

#### Safety in installation, start-up and maintenance

These are additional warnings concerning permanent magnet motor drives. The other safety instructions in this chapter are also valid.

**WARNING!** Obey these instructions. If you ignore them, injury or death and damage to the equipment can occur.

- Do not work on a drive when a rotating permanent magnet motor is connected to it. A rotating permanent magnet motor energizes the drive including its input power terminals. Before installation, start-up and maintenance work on the drive:
- Stop the motor.
- Disconnect the motor from the drive with a safety switch or by other means.
- If you cannot disconnect the motor, make sure that the motor cannot rotate during work. Make sure that no other system, like hydraulic crawling drives, can rotate the motor directly or through any mechanical connection like felt, nip, rope, etc.
- Measure that the installation is de-energized.
  - Before and after measuring the installation, verify the operation of the voltage tester on a known voltage source.
  - Make sure that the voltage between the drive output terminals (T1/U, T2/V, T3/W) and the grounding (PE) busbar is zero.
  - Make sure that the voltage between the drive input power terminals (L1, L2, L3) and the grounding (PE) busbar is zero.
  - Make sure that the voltage between the drive DC terminals (UDC+, UDC-) is zero and between the drive DC terminals (UDC+ and UDC-) and the grounding (PE) terminal is zero if applicable.
- Install temporary grounding to the drive output terminals (T1/U, T2/V, T3/W). Connect the output terminals together as well as to the PE.

#### Start-up and operation:

Make sure that the motor cannot be run into overspeed, e.g. driven by the load. Motor overspeed causes
overvoltage that can damage or destroy the capacitors in the intermediate circuit of the drive

### Cybersecurity disclaimer

This product is designed to be connected to and to communicate information and data via a network interface. It is Customer's sole responsibility to provide and continuously ensure a secure connection between the product and Customer network or any other network (as the case may be). Customer shall establish and maintain any appropriate measures (such as but not limited to the installation of firewalls, application of authentication measures, encryption of data, installation of anti-virus programs, etc.) to protect the product, the network, its system and the interface against any kind of security breaches, unauthorized access, interference, intrusion, leakage and/or theft of data or information. ABB and its affiliates are not liable for damages and/or losses related to such security breaches, any unauthorized access, interference, intrusion, leakage and/or theft of data or information.



### Introduction to the supplement

#### Contents of the chapter

The chapter describes applicability, target audience and purpose of this manual. It describes the contents of this manual and refers to a list of related manuals for more information.

#### **Applicability**

This supplement is applicable to ACS880-3P drives supplied to Sensia with a +P967 in the type code.

#### **Target Audience**

This supplement is intended for people who plan the installation and install the drive. Read the supplement before you work on the drive. You are expected to know the fundamentals of electricity, wiring, electrical components and electrical schematic symbols.

#### Purpose of the document

This supplement provides technical data and other information for the ACS880-3P, 690V 50/60Hz. drives. Complete base drive technical details are available in the ACS880-34 Hardware Manual publication number 3AXD50000035191. Complete programming information is available in the ACS880 Primary control program firmware manual, publication number 3AUA0000085967.

To determine the type of your drive, refer to its Panel P/N.

Rating nameplate, type code (Panel P/N), job number and serial number labels are attached to the outside and inside of the enclosure door.

#### **INSTRUCT E20P**

Intelligent Variable Speed Drive Part No.: 9S-VSD SEN 00xxA

Serial No.: 22227G0001 Total Mass: 1225kg **Enclosure Type: IP55** Voltage: 690Vac

Current: 420A SCC Rating: 65kA rms Sym

Rating (kVA): 502 Manufacturing Year: 2022 Country of Origin: USA Frequency: 50Hz

SENSIAGLOBAL.COM



**ABB MODEL #:** 

ACS880-3P-0430A-7+A012+B058+C136+C181 +F254+F263+G306+G323+G324+0J400+N5600

IEC 61439-2

+N8019+P967+X1659

#### **Enclosure IP55**

Base Drive: Input Frequency (F1):3PH 50Hz Output Frequency (F2) 3PH 0...120Hz Input Voltage(U1): Output Voltage (U2): 0...690Vac 690Vac Input Current (I1): 375A Current (ILD): 420A Power (PLD) 502 kVA Panel FLA

383A Short Circuit:

65kA rms Sym, 690V Max

Torques & Conductors: See Documentation

ABB Technical Support 1-800-752-0696;Option 1 us-drivessupport@abb.com

365-097-Test Schematic: D22246

3AUD0000003835

10/12/2022

\*22241G0003\* SN: 22241G0003

ABB Inc.

Mfg Date:

Spec:

Order:

Made in USA of foreign parts

Manufacturer: E67322W

#### Related documents

Drive hardware manuals and guides	Code (English)		
ACS880-34 drive modules (132 to 400 kW, 200 to 450 hp) hardware manual	3AXD50000035191		
ACS880 Primary control program firmware manual	3AUA0000085967		
ACS880-34 drive modules (132 to 400 kW, 200 to 450 hp) quick installation guide	3AXD50000212453		

Manuals and other product documents in PDF format are available on the Internet. For manuals not available in the Document library, contact your local ABB representative.

### **Mechanical Installation**

#### Contents of the chapter

This chapter describes the actions needed to assist while installing the drive.

#### Safety

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**WARNING!** Lift the drive with a lifting device. Use the lifting eyes of the enclosure.

Do not tilt the enclosure.

#### Checking the installation site

Check the installation site:

- The installation site is sufficiently ventilated or cooled to remove heat away from the drive.
- The ambient conditions of the drive meet the specifications.
- There is enough free space above and around the drive to enable cooling, service, and maintenance.
- For floor-mount, the floor that the drive cabinet is installed on is of non-flammable material, as smooth
  as possible, and strong enough to support the weight of the unit. Check the floor flatness with a spirit
  level. The maximum allowed deviation from the surface level is 5 mm in every 3 meters. Level the
  installation site, if necessary, as the cabinet is not equipped with adjustable feet.

#### Checking the delivery

The drive delivery contains:

- Drive cabinet
- Option modules (if ordered) installed onto the control unit or into the cabinet at the factory
- · Appropriate drive, accessories, and option module manuals
- Delivery documents

Verify there are no signs of damage. Before attempting installation and operation, check the information on the type designation labels of the drive to verify that the delivery is of the correct type.

#### Required tools

The tools required for moving the unit to its final position and completing the mechanical installation are listed ACS880-3P SENSIA CE SUPPLEMENT [3AXD50000909087] 12

#### below:

- Crane, fork-lift or pallet truck
- Industry standard tools, such as but not limited to: screwdrivers (flat, Philips, Torx), wrenches, sockets, torque wrenches, tape measure, level and other tools used in standard electrical installations
- Metal shims (optional)

#### Moving and unpacking the drive

Move the drive to the installation site, preferably in the original package to avoid damaging the cabinet surfaces and door devices. If using a pallet truck, check its load capacity before you move the drive.



#### Lifting the cabinet

Lift the drive cabinet to its position using its lifting eyes.

Allowed angle of the lifting slings is 90° to the roof.

#### Moving the cabinet after unpacking

Move the drive cabinet carefully in the upright position. Avoid tilting. The cabinet's center of gravity can be high.

#### Installing the drive

#### **General rules**

The ACS880 should only be mounted where all the requirements defined in "Checking the installation Site" are met.

#### Floor-Mount the Drive

- 1. The cabinets are free standing and do require bolting in place.
- 2. Leave some space at the side to allow doors to open sufficiently. The doors can open 120°. ABB recommends minimum of 3 feet on each side of the cabinet.

**Note:** For leveling make height adjustments with metal shims between the cabinet bottom and the floor.

**Note:** It is recommended that you do NOT remove the lifting eyes of the cabinet. If the lifting eyes are removed in order to maintain the IP55 rating the holes need to be sealed with IP55 closing plug.

### **Electrical Installation**

#### Contents of the chapter

This chapter provides additional information when preparing for the electrical installation.

#### **Install Wiring**

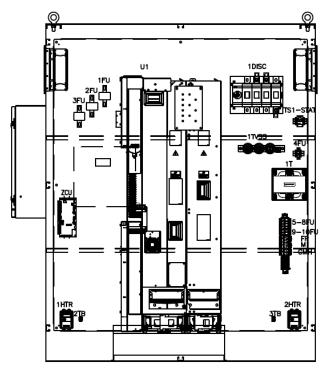


#### WARNING!

- Metal shavings or debris in the enclosure can damage electrical equipment and create a hazardous condition. Where parts, such as conduit plates require cutting or drilling, first remove the part. If that is not practical, cover nearby electrical components to protect them from all shavings or debris.
- Do not connect or disconnect input or output power wiring, or control wires, when power is applied.
- Never connect line voltage to drive output Terminals T1, T2, and T3.
- Do not make any voltage tolerance tests (Hi Pot or Megger) on any part of the unit. Disconnect motor wires before taking any measurements in the motor or motor wires.
- Make sure that power factor correction capacitors are not connected between the drive and the motor.

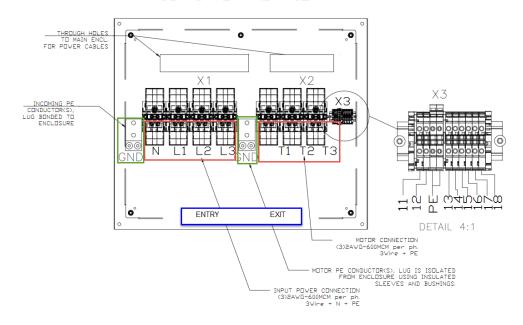
#### **Connection diagrams**

The connections points vary depending on if the Power Junction Box (+H361) option is selected. The following figures show the layout and connection points. Maintain appropriate separation of control and power wires. See user manual for guidance.



R11 Enclosure, Internal View

### POWER JUNCTION BOX (PJB) INTERNAL VIEW



R11 Enclosure, Power Junction Box (+H361)

## **Operation**

#### Sequence of operation

Sequence of operation per the customer. The Instruct controller is programmed to control the drive.

Note: The SO Ethernet port is a maintenance/ diagnostic port. Power Outlet 100VA max.

The unit is designed for the ambient air temperature not to exceed +40°C. The installation site altitude standard is ≤ 1000m. Above 1000m derate of current required. Relative humidity 5...95%. No condensation allowed.

The fan(s) are thermostatically controlled and will turn on when interior temperature reaches 32°C [90°F].

### **Maintenance Schedule**

#### Contents of the chapter

This chapter provides a recommended maintenance schedule.

#### **Maintenance Intervals**

The lifespan of the cooling fans of the drive depends on the running time, ambient temperature and dust concentration. See the firmware manual for the actual signal which indicates the running time of the Main drive cooling fans. Reset the running time signal after fan replacement. View the ACS880-34 Hardware Manuals for fan replacement instructions. See the enclosure filter fan manual for replacement instructions.

Component	Years From Start-Up									
	3	5	6	9	10	12	15	18	20	21
Main Drive Cooling Fan										
(R11)				R				R		
Auxiliary Cooling Fan				R				R		
Control Panel Battery				R				R		
Enclosure Filter Fans		R			R		R		R	_

R = Replace

# **Appendix A: Ratings**

	ACS880-3P-0142A-7	ACS880-3P-0174A-7	ACS880-3P-0210A-7	ACS880-3P-0271A-7	ACS880-3P-0330A-7	ACS880-3P-0370A-7	ACS880-3P-0430A-7
Invertor Frame Size	R11	R11	R11	R11	R11	R11	R11
Voltage Ratings							
Rated Voltage (Un)(VAC)				690			
Rated Operational Voltage (Ue)(VAC)	690						
Rated Insulation Voltage (Ui)(VAC)				690			
Rated Impulse Withstand Voltage (Uimp)			690V	AC = 6.0k\	/AC		
Current Ratings							
Rated Current FLA (InA)(A)	131	158	194	240	301	338	383
Rated Peak Withstand Current (lpk)(kA)	220						
Rated Conditional Short-Circuit Current (Icc)(kA)	65						
Rated Diversity Factor (RDF)	1						
Rated Frequency (fn)(Hz)				50/60			
Other Characteristics							
Pollution Degree				3			
Type of System Earthing	TNC Network						
Installation Type	Outdoor						
Stationary or Movable			;	Stationary			
Degree of Protection	IP55						
Intended For Use By Skilled or ordinary Persons	Skilled						
Electromagnetic Compatibility (EMC) Classification	Class A						
Special Service Conditions (°C)	40						
External Design	Cubicle-Type Assemblies						
Mechanical Impact Protection	No IK Rating Declared						
Type of Construction	Fixed Parts						
Nature of Short-Circuit Protective Device(s)	65kA at 690VAC						
Measures for Protection Against Electric Shock	Protective Earthing Plus Basic Insulation						

Overall Dimensions (H x W x D) mm [in]	2286[90] x 2235[88] x 1192[46.9]
Weight kg (lb)	1225(2700)
Service Conditions	
Ambient Air Temperature (°C)	40
Atmospheric Conditions (Humidity)	5 95%  No condensation allowed. Maximum allowed relative humidity is 60% in the presence of corrosive gases.
Storage Temperature (°C)	-40 +70
Operating Temperature (°C)	-15+40
Altitude	Derate above 1000m



### **Declaration of Conformity**

Manufacturer: ABB Drive Products

Address:

16250 W. Glendale Dr. New Berlin, WI. 53151 USA.

Phone:

+1 262 785 3200

declare under our sole responsibility that the following products:

#### Object of the Declaration:

Product:

Motor Control Panels

Model(s):

ACS880-3P-xxxxA-7+A012+B058+C136+C181+F254

+F263+G306+...+G324+...+0J400+N5600 +N8019+P967+X1659

where xxxx could be: 0142, 0174, 0210, 0271, 0330, 0370 or 0430 and additional option codes could be: +G323, +H361, +H384 or +H385.

The object of the declaration described above is in conformity with the relevant Union harmonization legislation:

Electromagnetic Compatibility Directive (EMCD) 2014/30/EU

Low Voltage Directive (LVD) 2014/35/EU

The following harmonized standards and/or other normative documents were applied:

#### Standard(s) Applied in Full

EMC Directive (2014/30/EU)

- EN 61439-1:2021 Low-voltage switchgear and controlgear assemblies - Part 1: General rules
- EN 61439-2:2021 Low-voltage switchgear and controlgear assemblies - Part 2: Power switchgear and controlgear assemblies

LVD Directive (2014/35/EU)

- EN 61439-1:2021 Low-voltage switchgear and controlgear assemblies - Part 1: General rules
- EN 61439-2:2021 Low-voltage switchgear and controlgear assemblies - Part 2: Power switchgear and controlgear assemblies

The Technical Construction File required by this Directive is maintained at the Office of ABB Oy. Hiomotie 13, 00380 Helsinki, Finland.

New Berlin, 11 November 2022

Local Division Manager, ABB US DP

Patrick O'Connor

Director of Engineering, ABB US DP



# **EU Declaration of Conformity**

We

Manufacturer: ABB Drive Products

Address: 16250 W. Glendale Dr. New Berlin, WI. 53151 USA

Phone: +1 262 785 3200

declare under our sole responsibility that the following products:

Object of the Declaration:

Product:

Motor Control Panels

Model(s):

ACS880-3P-xxxxA-7+A012+B058+C136+C181+F254

+F263+G306+...+G324+...+0J400+N5600 +N8019+P967+X1659

where xxxx could be: 0142, 0174, 0210, 0271, 0330, 0370 or 0430 and additional option codes could be:

+G323, +H361, +H384 or +H385.

The object of the declaration described above is in conformity with the relevant Union harmonization legislation:

Electromagnetic Compatibility Directive (EMCD) 2014/30/EU

Low Voltage Directive (LVD) 2014/35/EU

The following harmonized standards and/or other normative documents were applied:

Standard(s) Applied in Full

EMC Directive (2014/30/EU)

- EN 61439-1:2011 Low-voltage switchgear and controlgear assemblies - Part 1: General rules
- EN 61439-2:2011 Low-voltage switchgear and controlgear assemblies - Part 2: Power switchgear and controlgear assemblies

LVD Directive (2014/35/EU)

- EN 61439-1:2011 Low-voltage switchgear and controlgear assemblies - Part 1: General rules
- EN 61439-2:2011 Low-voltage switchgear and controlgear assemblies - Part 2: Power switchgear and controlgear assemblies

The Technical Construction File required by this Directive is maintained at the Office of ABB Oy. Hiomotic 13, 00380 Helsinki, Finland.

New Berlin, 11 November 2022

Signed for and on behalf of:

111thu 2111/1

Petri Sullstrom

Local Division Manager, ABB US DP

Patrick O'Connor

Director of Engineering, ABB US DP



3AXD5000909087 REVA Effective: 11-18-2022 Supersedes:

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