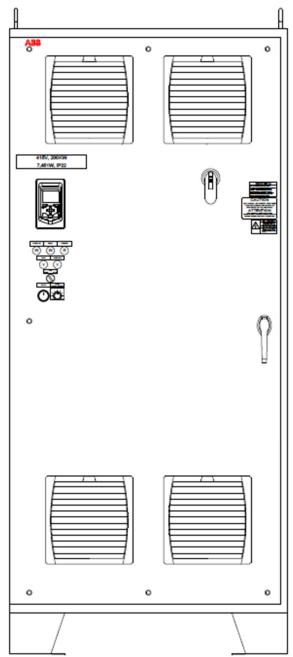


**ABB** Drive Products

# ACS580-OP GE Supplemental Manual



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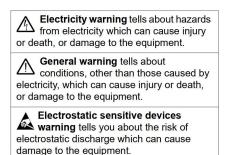
# **Safety Instructions**

These are 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 in this manual

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:



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

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

A 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.

#### A WARNING! Handle and ship floor standing enclosures only in the upright position

These units are not designed to be laid on their backs.

- Use a pallet truck to move the package/ enclosure to the installation site.
- Remove any bolts that secure the cabinet to the shipping pallet.
- Use the lifting lugs/bars at the top of the unit to lift floor-standing enclosures.
- Use a hoist to lift the enclosure. (Do not place enclosure in final position until mounting site is prepared.
- When using lifting eyes, lifting slings should be kept perpendicular (90°) to the roof.



• Beware of hot surfaces. Some parts, such as heatsinks of power semiconductors, remain hot for a while after disconnection of electrical supply.

• Keep the drive in its package or protect it otherwise from dust and burrs from drilling and grinding until you install it.

• 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 the ACS580-01 Hardware Manual (3AXD50000044794) and Quick Start Guide (3AXD50000049129) for more information.
- Before you connect voltage to the drive, make sure that the doors are closed. Keep the doors closed during 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 safe 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".
- The maximum number of drive power- ups is five in ten minutes. Too frequent power-ups can damage the charging circuit of the DC capacitors.
- 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 ACS580 control program firmware manual (3AXD50000016097 [English]). 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 *ACS580 control program firmware manual (3AXD50000016097 [English])*.

- When the control location is not set to Local (text Hand is not shown on the top row of the panel and parameter 19.19 Off mode disable has value Off button 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.

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

#### Precautions before electrical work

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

- WARNING! Frames R1 ... R9: 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.
  - 2. Disconnect all possible voltage sources.

Lock and tag.

- Open the main disconnector at the power supply of the drive.
- Make sure that reconnection is not possible.
- 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.
- Use a multimeter with an impedance of at least 1 Mohm.
- Make sure that the voltage between the drive input power terminals (L1, L2, L3) and the grounding terminal (PE) is close to 0 V.

Frames R1...R3: Measure the voltage between the drive UDC+ terminal and grounding terminal (PE) with one multimeter. As there is no UDC- terminal, measure the voltage between the drive T1/U terminal and grounding terminal (PE) with another multimeter. Make sure that the voltage difference between the multimeters is close to 0 V.

Frames R4...R9: Measure the voltage between the drive DC terminals (UDC+ and UDC-) and the grounding terminal (PE) and make sure that it is close to 0 V.

- 6. Install temporary grounding as required by the local regulations.
- 7. Ask for a permit to work from the person in control of the electrical installation work.

If the drive does not operate according to these steps, refer to the ACS580-01 Hardware Manual

(3AXD50000044794) and Quick Start Guide (3AXD50000049129).

#### Additional instructions and note

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

 If the drive will be connected on an IT system (ungrounded or high-resistance- grounded [over 30 ohms]), make sure neither the EMC filter nor the ground-to- phase varistor are connected (metal screws should not be installed). Connections with metal screws in these systems can cause danger or damage. See section in ACS580-01 Hardware Manual (3AXD50000044794).

Note: For other systems, connecting the internal EMC filter will reduce the conducted emission.

• If the drive will be connected on a corner- grounded TN system, make sure the EMC filter is not connected (metal screws should not be installed). Connections with metal screws in these systems can cause danger or damage. See section in *ACS580-01 Hardware Manual (3AXD50000044794)*.

**Note**: For other systems, connecting the internal EMC filter (using metal screws) will reduce the conducted emission.

- 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.

#### 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-, R+ and R-) 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.
- 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.

**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 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 in ACS580-01 Hardware Manual (3AXD50000044794). Obey the local regulations.
- Connect the power cable shields to the protective earth (PE) terminals of the drive.
- Standard IEC/EN & UL 61800-5-1 (section 4.3.5.5.2.) requires 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 7 AWG (10 mm2) Cu, 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 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.
- Use a multimeter with an impedance of at least 1 Mohm.
- Make sure that the voltage between the drive output terminals (T1/U, T2/V, T3/W) and the grounding (PE) busbar is close to 0 V.
- Make sure that the voltage between the drive input power terminals (L1, L2, L3) and the grounding (PE) busbar is close to 0 V.
- Make sure that the voltage between the drive DC terminals (UDC+, UDC-) and the grounding (PE) terminal is close to 0V.
- 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 the motor is not run over the rated speed with dynamic/positive displacement loads.

#### 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 control the motor with the line side disconnect at the drive power supply; instead, 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 ACS580 control program firmware manual (3AXD50000016097 [English]).
- 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 drive is not in the Hand mode, the Off key on the control panel will not stop 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 information.

### Introduction to the supplement

#### Contents of the chapter

This chapter describes the supplement.

#### Applicability

This supplement is applicable to ACH580-OP drives supplied to General Electric Power with an +A012 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 ACS580-0P, 415V/50Hz. drives. This manual is the Installation Manual for the ACS580 drive with bypass. Complete technical details are available in the *ACS580 Hardware manual*, publication number *3AXD50000044794*. Complete programming information is available in the *ACS580 Control program firmware manual*, publication number *3AXD50000016097*.

To determine the type of your drive, refer to its construction code.

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

	<b>IEC 61439-2</b>		E
Enviror	nmental Type	415	Volts
161.6	FLA	3	Phase
90	Largest Motor (KW)	50	Hz
100	SCCR (kA) @ Rated voltage		_
Drawi	- ng:		
	80-0P-180A-4+A012+B056+E205+ 303+G331+K475+L501+L504+P9		
	ABB Technical Support 800-7 UL File: E209528	52-0696	



Job Number: J118392-1-1

 Panel P/N:
 ACS580-0P-034A-4+F255+G310

 Panel S/N:
 22109A0032
 MFG S/N:
 210326ACS580000001

 Drive P/N:
 ACS580-01-034A-4+P940
 Drive S/N:
 2210504910

Panel and Drive Serial Numbers: 2nd through 5th digits represent date of manufacture (yyww).

#### **Related documents**

Drive hardware manuals and guides	Code (English)
ACS580-01 drives (0.75 to 250 kW, 1.0 to 350 hp) hardware manual frames R1 to R9	3AXD50000044794
ACS580 Control program firmware manual	3AXD50000016097
ACS580-01 drives quick installation and start-up guide for frames R1 to R5	3AXD50000044838
ACS580-01 drives quick installation and start-up guide for frames R6 to R9	3AXD50000009286

You can find manuals and other product documents in PDF format on the Internet. For manuals not available in the Document library, contact your local ABB representative. The code below will open an online listing of the manuals applicable to the product



### **Mechanical Installation**

#### Contents of the chapter

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

#### Safety

**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 wall-mount, the installation surface is as close to vertical as possible and strong enough to support the weight of the drive.
- 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 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 ACS580 should only be mounted where all the requirements defined in "Checking the installation Site" are met.

#### Wall-Mount the Drive

- 1. Use a hoist to move the cabinet into position.
- 2. Prepare the enclosure for UNISTRUT® mounting or wall mounting. The cabinet frame sizes are designed to be mounted on a solid vertical surface or using UNISTRUT.

#### **Floor-Mount the Drive**

- 1. The cabinets are free standing and do require bolting in place. The holes in the enclosure foot kit are intended for securing to the floor.
- 2. Install the drive cabinet in an upright vertical position with its back against a wall (a), or back-to-back with another cabinet (b).
- 3. Leave 12in (305 mm) free space above the basic roof level of the cabinet for cooling and fan replacement.
- 4. Leave some space at the side to allow doors to open sufficiently (w). The doors can open 120°. ABB recommends minimum of 1" side to side spacing.

Note: 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 you removed the lifting eyes and the panel is intended for use as a Type 12 installation, it is recommended that you reinstate a UL Type 12 listed solution in their place.

# **Electrical Installation**

#### Contents of the chapter

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

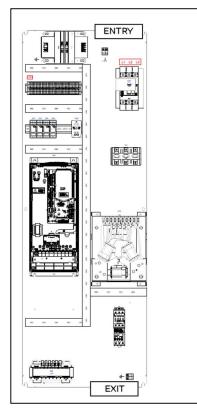
#### **Install Wiring**



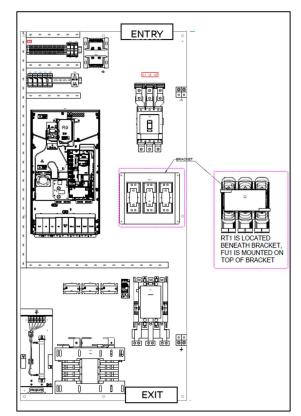
- Metal shavings or debris in the enclosure can damage electrical equipment and create a hazardous condition. Where parts, such as conduit plates require cutting or drilling, first remove the part. If that is not practical, cover nearby electrical components to protect them from all shavings or debris.
- 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**

Units are configured for top entry and bottom exit. The following figures show the layout and connection points. Maintain appropriate separation of control and power wires.



Wall-Mount Panel



Floor-Mount Panel

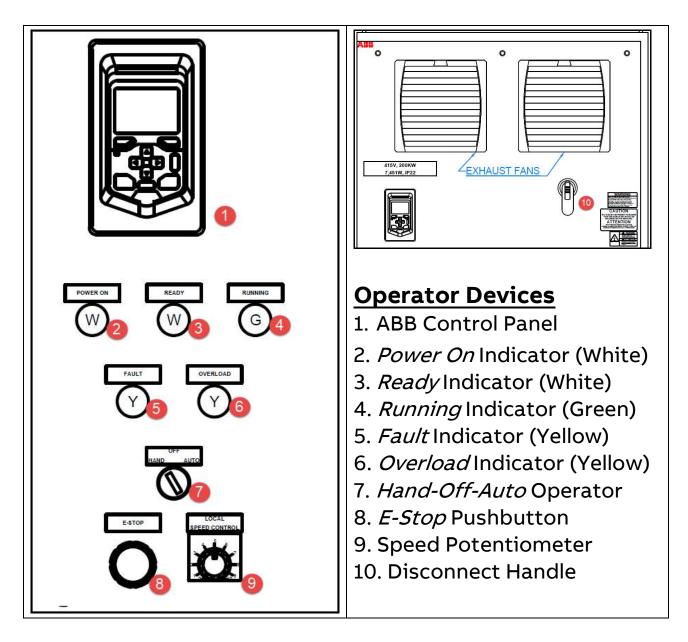
### Operation

#### Contents of the chapter

This chapter provides additional information in understanding on how to operate the drive.

#### Sequence of operation

Refer to the ACS580 Hardware Manual for Operation instructions via the ABB Control Panel. Sequence of operation using the operator devices is contained within this section.



#### Local Control

**Note:** Before attempting to run the drive in local, ensure jumpers or additional E-Stop pushbuttons are installed between terminals CTB1:1 & 2, and between CBT1:2 & 3, CTB1:T1 & T2.

Ensure all necessary parameters are entered into the drive via the ABB Control Panel or Drive Composer.

- Before attempting to start the drive, place Hand-Off-Auto Operator (7) in the OFF position, E-Stop pushbutton (8) is released, and the speed potentiometer (9) is set to Zero.
- Drive Fault Indicator (5) & Overload Indicator (6) should not be illuminated
- Apply power to the drive by turning the Disconnect handle (10) to the ON position. Power On Indicator (2) should illuminate.
- Shortly thereafter, the Drive Ready Indicator (3) should illuminate.
- Turn Hand-Off-Auto Operator (7) to the HAND position. Operator should hear output contactor close.
- Turn Speed Potentiometer (9) to desired speed.
- Running Indicator (4) will illuminate when the Hand-Off-Auto Operator (7) is in the HAND position.
- To Stop the drive, turn the Hand-Off-Auto Operator (7) to the OFF position.

ACS580-0P GE SUPPLEMENT [3AXD50000875047]

• Enclosure Fans are thermostatically controlled and will turn on when interior temperature reaches 32oC [90oF]. Enclosure fans will continue to run until the internal temperature of the enclosure drops below 32oC [90oF] after a normal drive stop. (An E-Stop will remove control voltage, which will disable the cooling fans.)

#### **Remote Control**

**Note:** Before attempting to run the drive in local, ensure jumpers or additional E-Stop pushbuttons are installed between terminals CTB1:1 & 2, and between CBT1:2 & 3, CTB1:T1 & T2.

Ensure all necessary parameters are entered into the drive via the ABB Control Panel or Drive Composer.

Before attempting to start the drive, place Hand-Off-Auto Operator(7) in the OFF position, E-Stop pushbutton (8) is released and the speed potentiometer (9) is set to Zero.

- Drive Fault Indicator (5) & Overload Indicator (6) should not be illuminated
- Apply power to the drive by turning the Disconnect handle (10) to the ON position. Power On Indicator (2) should illuminate.
- Shortly thereafter, the Drive Ready Indicator (3) should illuminate.
- Turn Hand-Off-Auto Operator (7) to the Auto position. Operator should hear output contactor close.
- Close the Remote Start contact wired between terminals CBT1:6 & 7.
- Apply 4-20 mA speed reference signal between terminals CTB1:20 & 21
- Running Indicator (4) will illuminate when the Hand-Off-Auto Operator (7) is in the AUTO position
- To Stop the drive, open the Remote Start contact wired between terminals CBT1:6 & 7.
- Enclosure Fans are thermostatically controlled and will turn on when interior temperature reaches 32oC [90oF]. Enclosure fans will continue to run until the internal temperature of the enclosure drops below 32oC [90oF] after a normal drive stop. (An E-Stop will remove control voltage, which will disable the cooling fans.)

### **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 cooling fans. Reset the running time signal after fan replacement. View the ACS580-01 Hardware Manual for fan replacement instructions. See the enclosure filter fan manual for replacement instructions.

Component	Years From Start-Up								
Component		5	6	9	10	12	15	18	21
Main Cooling Fan (R1 -									
R5)			R			R		R	
Main Cooling Fan (R6 -									
R9)				R				R	
Auxillary Cooling Fan				R				R	
Control Panel Battery				R				R	
Enclosure Filter Fans		R			R		R		

R = Replace

# **Appendix A: Ratings**

	ACS580-0P-034A-4	ACS580-0P-052A-4	ACS580-0P-078A-4	ACS580-0P-096A-4	ACS580-0P-0156A-4	ACS580-0P-0180A-4	ACS580-0P-0414A-4	
Invertor Frame Size	R3	R4	R5	R5	R7	R7	R9	
Voltage Ratings								
Rated Voltage (Un)(VAC)				415				
Rated Operational Voltage (Ue)(VAC)				415				
Rated Insulation Voltage (Ui)(VAC)				415				
Rated Impulse Withstand Voltage (Uimp)			415\	/AC = 4	.0kVAC			
Current Ratings								
Rated Current FLA (InA)(A)	33.2	46.6	73.6	88.8	146.6	161.6	366.6	
Rated Peak Withstand Current (Ipk)(kA)				220				
Rated Conditional Short-Circuit Current (Icc)(kA)		100						
Rated Diversity Factor (RDF)		1						
Rated Frequency (fn)(Hz)	50							
Other Characteristics								
Pollution Degree	3							
Type of System Earthing			TN	-C-S Ne	twork			
Installation Type	Indoor							
Stationary or Movable		Stationary						
Degree of Protection	IP22							
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)	100kA at 480VAC							
Measures for Protection Against Electric Shock		Prote	ective Eart	hing Plu	s Basic Ins	sulation	1	
Overall Dimensions (H x W x D) (in)	62 x 22 x 19 80 x 36 x 21 94 x 40 x 24						94 x 40 x 24	
Weight (lb)	325	375	375	375	625	650	1135	

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)	40
Altitude	Derate above 1000m

## **Appendix B: Declaration of Conformity**

	ABB
·	
EU Declaratio	on of Conformity
We	
Manufacturer: ABB Drive Produc Address: 16250 W. Giendale Dr. Nev Phone: +1 262 785 3200 declare under our sole responsibility	w Berlin, WI. 53151 USA
Object of the Declaration:	
Product: Motor Control Panels	
xx, AC\$580-0P-180A-xx, and AC\$580	-xx, ACS580-0P-052A-xx, ACS580-0P-078A-xx, ACS580-0P-096A-xx, ACS580-0P-156A- )-0P-414A-xx; where suffix xx is: 269+G303+G331+K475+L501+L504+P939+P979
The object of the declaration descri	ibed above is in conformity with the relevant Union harmonization legislation:
Electromagnetic Compatibility Direc	tive (EMCD) 2014/30/EU
Low Voltage Directive (LVD) 2014/35	5/EU
The following harmonized standard	ds and/or other normative documents were applied:
	Standard(s) Applied in Full
EMC Directive (2014/30/EU)	<ul> <li>EN 61439-1:2011 - Low-voltage switchgear and controlgear assemblies - Part 1: General rules</li> </ul>
	<ul> <li>EN 61439-2:2011 - Low-voltage switchgear and controlgear assemblies - Part 2: Power switchgear and controlgear assemblies</li> </ul>
LVD Directive (2014/35/EU)	<ul> <li>EN 61439-1:2011 - Low-voltage switchgear and controlgear assemblies - Part 1: General rules</li> </ul>
	<ul> <li>EN 61439-2:2011 - Low-voltage switchgear and controlgear assemblies - Part 2: Power switchgear and controlgear assemblies</li> </ul>
The Technical Construction File rea Hiomotie 13, 00380 Helsink	quired by this Directive is maintained at the Office of ABB Oy. ci, Finland.
New Berlin, 22 April 2022	
Signed for and on behalf of: Multur fully Petri Sullstrom	Katul o Cam
Local Division Manager, ABB US Di	P Director of Engineering, ABB US DP



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3AXD50000875047 REVB Effective: 04-22-2022 Supersedes: 3AXD50000875047 REVA