Instruction Bulletin

Altivar® 61 and 71
Type 1 Conduit Box Kits VW3A9209–VW3A9214

Retain for future use.

INTRODUCTION

This bulletin contains installation instructions for Altivar® 61 and Altivar 71 conduit box kits, VW3A9209–VW3A9214. The conduit box kits provide a Type 1 enclosure rating. These kits are for use only on Altivar 61 and Altivar 71 drive controllers rated 230 V or 460 V. See Table 2 on page 2 for the drive catalog numbers.

Before You Begin

Table 1: Conduit Box Kit Contents

Quantity	Part Description
1	Conduit box
1	Conduit box cover
1	Conduit support frame
1	EMC plate
1	Secondary EMC plate[1]
1	Conduit plate
2	Hardware clip with M5 nut
See note [2]	M4 screws
See note [3]	M6 screws

[1] For use with VW3A9209 only.

[2] M4 screws: VW3A9211 contains 8; VW3A9210 contains 13; VW3A9209 and VW3A9212–VW3A9214 contain 15.

[3] M6 screws: VW3A9209 and VW3A9210 contain 6; VW3A9211–VW3A9214 contain 10.

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Read and understand this bulletin in its entirety before installing or operating the Altivar 61 and 71 drive controllers. Installation, adjustment, repair, and maintenance must be performed by qualified personnel.
- The user is responsible for conforming to all applicable code requirements with respect to grounding all equipment.
- Many parts in this drive controller, including printed wiring boards, operate at line voltage.
- DO NOT touch unshielded components or terminal strip screw connections with voltage present.
- DO NOT short across terminals PA/+ and PC/- or across the DC bus capacitors.
- Before servicing the drive controller:
  - Disconnect all power, including external control power that may be present.
  - Place a “DO NOT TURN ON” label on all power disconnects.
  - Lock all power disconnects in the open position.
  - WAIT 15 MINUTES to allow the DC bus capacitors to discharge. Then follow the “Bus Voltage Measurement Procedure” on page 3 to verify that the DC voltage is less than 45 V. The drive LED is not an indicator of the absence of DC bus voltage.
- Install and close all covers before applying power or starting and stopping the drive controller.

Failure to follow these instructions will result in death or serious injury.

Tools Required

Use the following tools for the procedures in this bulletin:

- #2 Phillips screwdriver
- M5 wrench
- Voltmeter

Figure 1: Altivar 61/71 Drive Controller with Conduit Box Kit Mounted

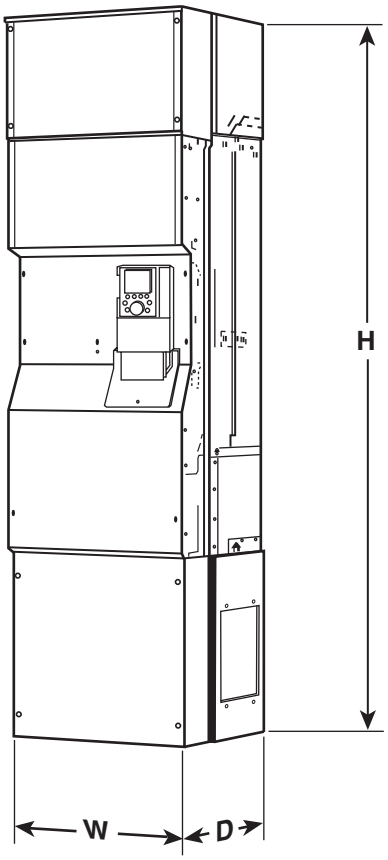


Table 2: Altivar 61/71 Conduit Box Kits

Conduit Kit Number	For Use with Drive Controllers:			
	230 V		460 V	
	ATV61H•••••[1]	ATV71H•••••	ATV61H•••••	ATV71H•••••
VW3A9209	D55M3X D75M3X	D55M3X	D90N4 C11N4	D90N4
VW3A9210	D90M3X	D75M3X	C13N4	C11N4
VW3A9211	—	—	C16N4	C13N4
VW3A9212	—	—	C22N4	C16N4
VW3A9213 VW3A9214[2]	—	—	C25N4 C31N4	C20N4 C25N4 C28N4

[1] The symbol "•" indicates the part of the number that varies with controller size or rating.

[2] Conduit box kit VW3A9214 is intended for use with C20N4, C25N4, C28N4, and C31N4 drive controllers with a mounted braking unit.

Table 3: Overall Drive Controller Dimensions with Conduit Kit Mounted

Conduit Kit Number	Dimensions in. (mm)		
	Depth (D)	Width (W)	Height (H)
VW3A9209	14.56 (369.82)	12.59 (319.79)	44.80 (1137.92)
VW3A9210	14.56 (369.82)	14.17 (359.92)	52.00 (1320.80)
VW3A9211	14.56 (369.82)	13.38 (339.85)	59.33 (1506.98)
VW3A9212	16.61 (421.89)	17.32 (439.93)	61.55 (1563.37)
VW3A9213	18.46 (468.88)	23.22 (589.79)	61.61 (1564.89)
VW3A9214[1]	18.50 (469.90)	26.16 (664.46)	61.61 (1564.89)

[1] Conduit box kit VW3A9214 s intended for use with C20N4, C25N4, C28N4, and C31N4 drive controllers with a mounted braking unit.

CAUTION

IMPROPER DRIVE OPERATION

- If the drive controller is turned off for a long period, the performance of the electrolytic capacitors will be reduced.
- Turn the drive controller on every two years for a least 5 hours to restore the performance of the capacitors, then check its operation.
- During this procedure, do not connect the drive controller directly to the line voltage. Gradually increase the voltage using an adjustable AC source.

Failure to follow these instructions can result in equipment damage.

BUS VOLTAGE MEASUREMENT PROCEDURE

Before working on the drive controller, remove all power and wait 15 minutes to allow the DC bus to discharge. Then measure the DC bus voltage between the PA/+ and PC/- terminals.

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Read and understand the safety instructions “Before You Begin” on page 1 before performing this procedure.

Failure to follow this instruction will result in death or serious injury.

The DC bus voltage can exceed 1000 Vdc. Use a properly rated voltage sensing device when performing this procedure.

To measure the DC bus voltage:

1. Disconnect the drive controller’s power supply.
2. Wait 15 minutes to allow the DC bus capacitors to discharge.
3. Measure the voltage of the DC bus between the PA/+ and the PC/- terminals to verify that the voltage is less than 45 Vdc.

   NOTE: The PA/+ and the PC/- terminals are marked on the power terminal block. For additional information about the location of these terminals, refer to the Altivar 61 or Altivar 71 installation manual, 30072-451-57 and atv71e_installation_manual_en_v3, respectively.
4. If the DC bus capacitors do not discharge completely, contact your local Schneider Electric representative. **Do not operate the drive controller and do not attempt to replace component parts.**

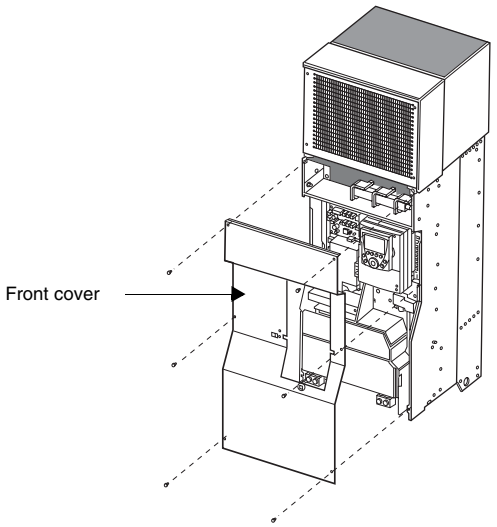
INSTALLATION

Before installing the conduit box kit, perform the bus voltage measurement procedure described in “Bus Voltage Measurement Procedure” above.

To install the conduit kit:

1. Remove the front cover from the drive controller. See Figure 2.

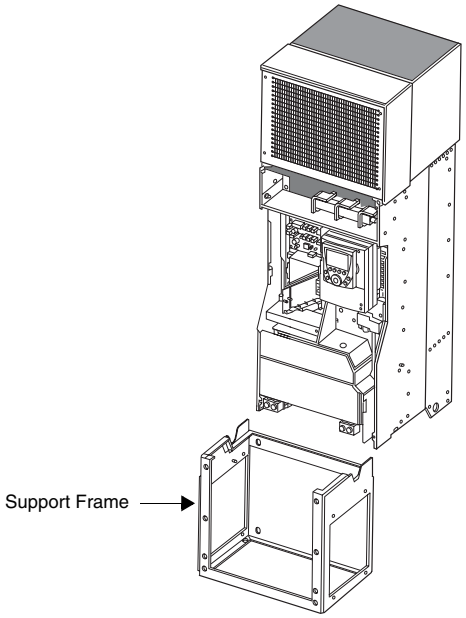
Figure 2: Removing the Front Cover



2. Place the support frame for the conduit box under the drive controller, aligning it with the chassis of the drive controller. See Figure 3.

   The support frame may vary in size and shape depending on the kit catalog number. The openings in the support frame are provided to facilitate air flow through heat sinks.

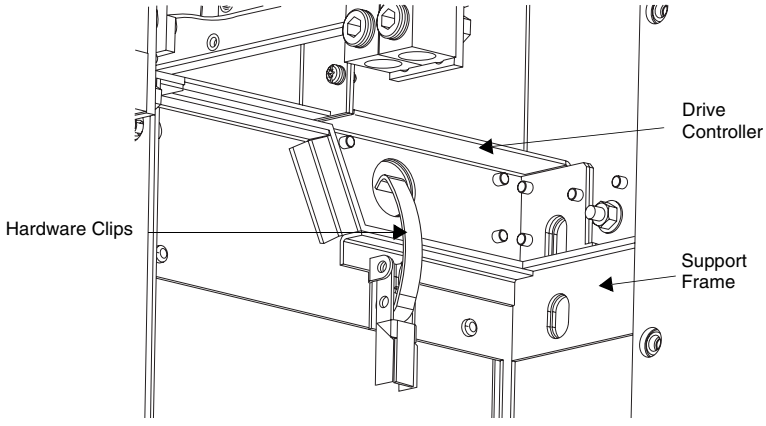
Figure 3: Aligning the Support Frame to the Drive Controller's Chassis



3. Attach the hardware clips to the side of the support frame using the M5-0.8 nut and captive conical washer (see Figure 4). Torque the nut to 26 lb-in (2.94 N•m).

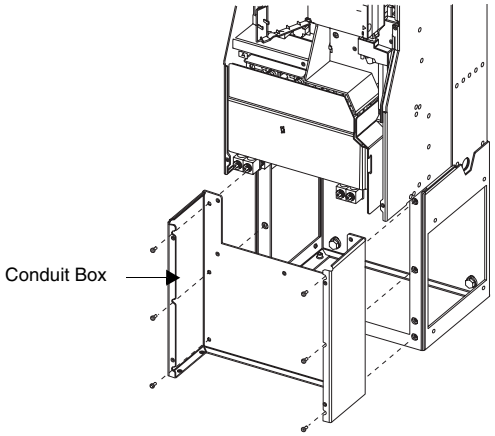
   Clip the support frame in place using the hardware clip.

Figure 4: Attaching the Hardware Clip



4. Attach the conduit box to the support frame using the M6 screws provided. See Figure 5. Torque the screws to 48 lb-in (5.42 N•m).

Figure 5: Attaching the Conduit Box to the Support Frame



5. The EMC plate varies in size and shape depending on the kit catalog number.

⚠ CAUTION

IMPROPER EQUIPMENT OPERATION

- Be sure to install the EMC plate as directed in these instructions.
- Do not operate the drive controller without the EMC plate properly in place.

Failure to follow this instruction can result in injury or equipment damage.

Mount the EMC plate into both the conduit box and drive controller using the M6 screws as shown in Figure 6. Torque the screws to the values shown in Table 4 on page 6. For kits VW3A9210–VW3A9214, skip to Step 7 on page 6.

Figure 6: Installing the EMC Plate

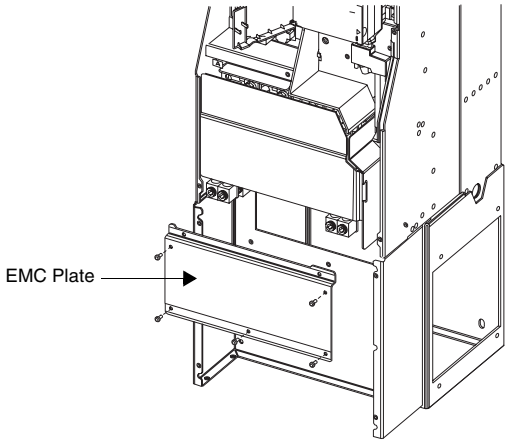
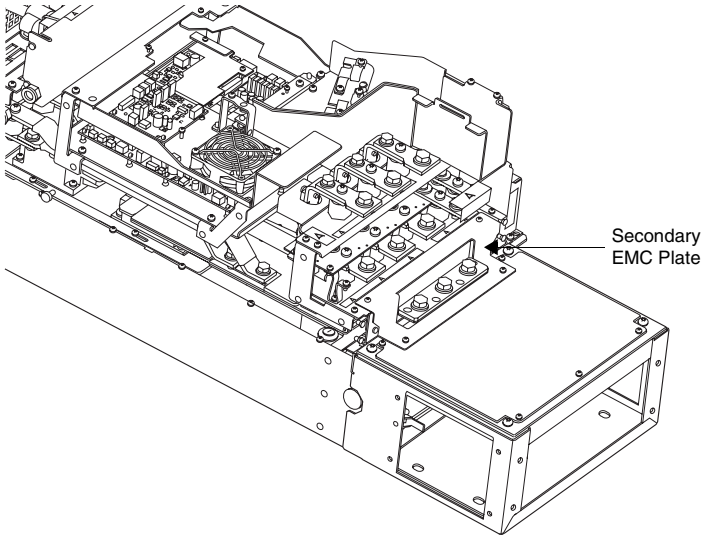


Table 4: Torque Values

Kit Number	Screw Size	Torque
VW3A9209	M4	13 lb-in (1.47 N•m)
VW3A9210		
VW3A9211	M6	48 lb-in (5.42 N•m)
VW3A9212		
VW3A9213		
VW3A9214		

6. For kit VW3A9209, use the M4 screws to install the secondary EMC plate. See Figure 7.
   - — Thread two M4 screws into the conduit box assembly.
   - — Thread two M4 screws into the drive controller.
   - — Torque the screws to 13 lb-in (1.47 N•m).

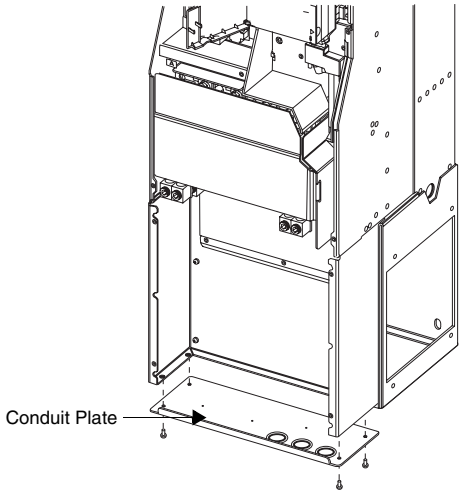
Figure 7: Installing the Secondary EMC Plate



NOTE: For clarity, the walls of the conduit box are not shown.

7. Install the conduit plate using the M4 screws provided. Torque the screws to 13 lb-in (1.47 N•m). See Figure 8.

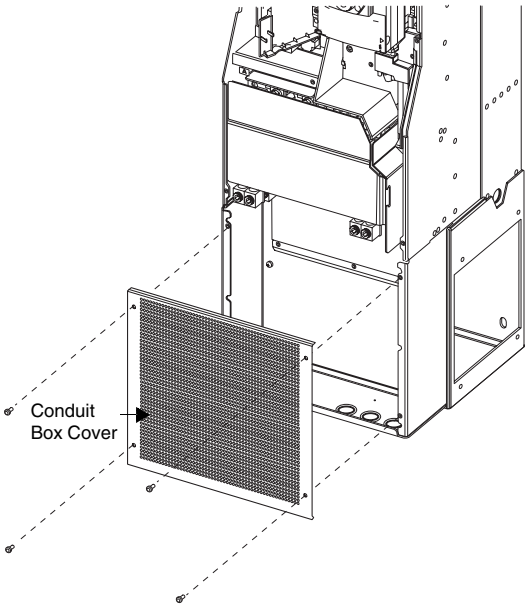
Figure 8: Installing the Conduit Plate



8. Knockouts are provided for the control cables. Use either a hole saw or a punch to cut entries for power conduit passage.

9. Install the conduit box cover using the M4 screws provided. Torque the screws to 13 lb-in (1.47 N•m). See Figure 9.

Figure 9: Installing the Conduit Box Cover



10. Replace the front cover (see Figure 2 on page 3) onto the drive controller.

PRODUCT SUPPORT

For assistance with Altivar 61 and 71 conduit kit installation, contact the Product Support Group. The Product Support Group is staffed from 8:00 am until 6:00 pm Eastern time to assist with product selection, start-up, and diagnosis of product or application problems. Emergency phone support is available 24 hours a day, 365 days year.

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