Installation Instructions

Part No. 2009650986

SAFETY CONSIDERATIONS

Installation of this accessory can be hazardous due to electrical components and equipment location (such as a roof or elevated structure). Only trained, qualified installers and service technicians should install and service this equipment. When installing this accessory, observe precautions in the literature and on labels attached to the equipment, as well as other safety precautions that may apply.

- Follow all safety codes.
- Wear the required Personal Protective Equipment (PPE) including but not limited to safety glasses and work gloves.
- Use care when handling and installing this accessory.

⚠ WARNING

Electrical shock can cause personal injury and death. Shut off all power to this equipment during installation. There may be more than one disconnect switch and power sources. Lock out and tag all disconnect locations to alert others not to restore power until work is completed.

KIT CONTENTS

(1) HT01ZZ576 Step-Down Transformer
(1) Installation instruction sheet

INTRODUCTION

The Heat Pump 30RQM operates at 460V AC, 3 phase 60 Hz. This transformer steps down the incoming supply voltage from 575V to 460V AC. This transformer has a delta primary and a wye secondary. The transformer is rated NEMA Type 4/IP66 for outdoor use and has protection from falling dirt, rain, sleet and/or snow. This transformer will be field-installed at the customer site.

The primary and secondary cables/conduits and terminal ends are not supplied with this accessory. Refer to Table 1 for transformer specifications, primary protection and 30RQM MCA (Minimum Circuit Ampacity) and MOCP (Maximum Overcurrent Protection) values. See Tables 2 and 3 for ILSCO tightening torque.

Table 1 — Transformer Specifications

ITEMS	VALUE
Recommended Primary Protection (A)	45
30RQM MCA(A)	45.6
30RQM MOCP (A)	60
Weight (lb)	471
Transformer Primary Voltage (V)	575
Transformer Secondary Voltage (V)	460
Transformer KVA	34
Center of Gravity (in.)	Y: 13.88 Z: 6.9

Table 2 — Tightening Torque Values for ILSCO Mechanical Screw Connectors

WIRE SIZE	TIGHTENING TORQUE IN INCH POUNDS	
	SCREW DRIVER HEAD	EXTERNAL DRIVE WRENCH
10 AWG	35	75
8 AWG	40	75
6 AWG	45	110
4 AWG	45	110
2 AWG	50	150

Table 3 — Tightening Torque Values for ILSCO Socket Head Screw Connectors

INTERNAL SOCKET SIZE ACROSS FLAT INCHES	TIGHTENING TORQUE IN INCH POUNDS INTERNAL SOCKET
1/8	45
5/32	100
3/16	120
7/32	150
1/4	200
5/16	275
3/8	375
1/2	500
9/16	600

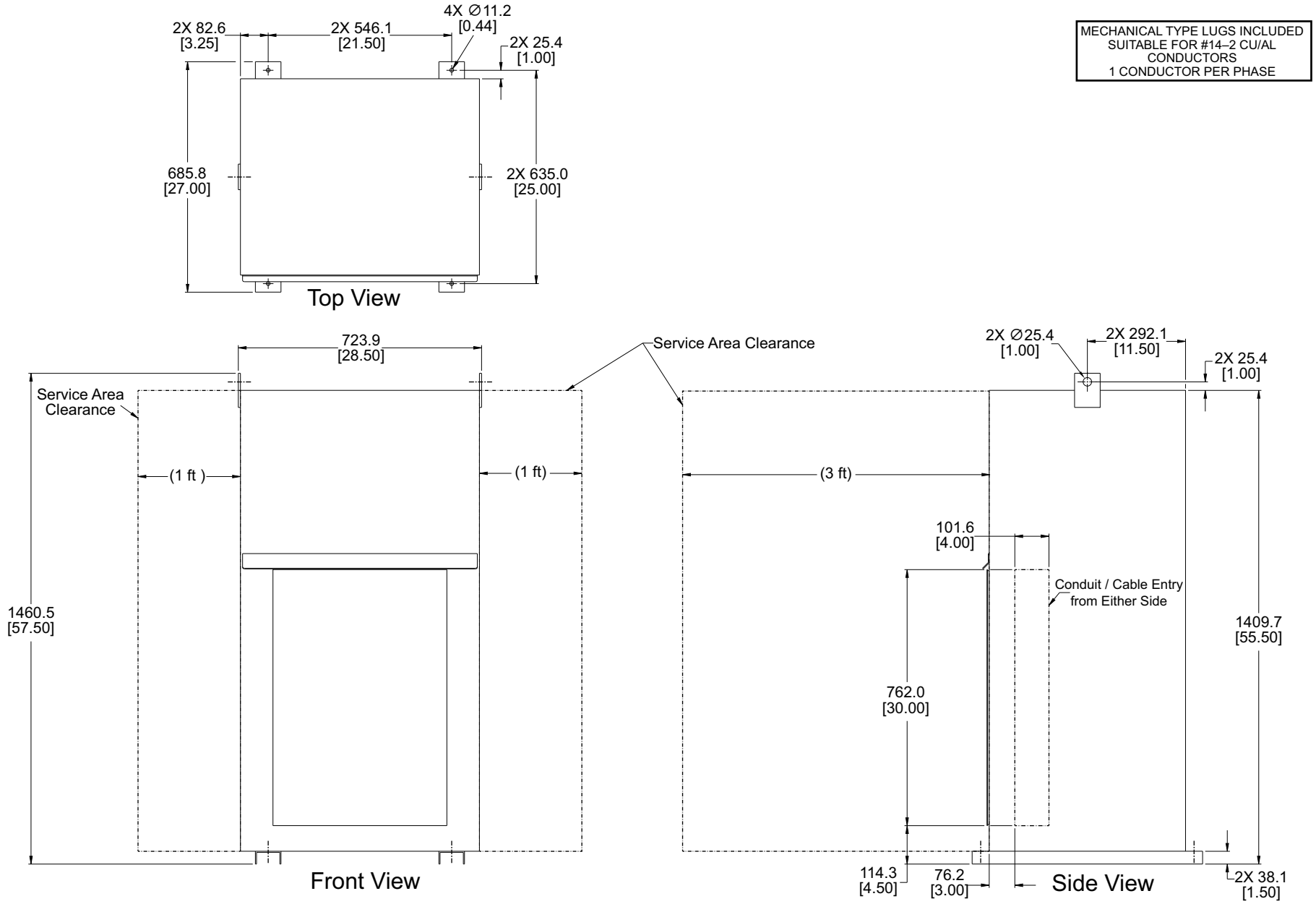

Fig. 1 — Dimensions Front, Side and Top Views[1]

1. Dimensions are shown in mm [in.].

INSTALLATION

1. Inspect package contents for missing or damaged parts. File a claim with the shipping agency if parts are damaged and notify your Carrier representative if any item is missing.
2. When considering location for the transformer, be sure to consult National Electrical Code (NEC) and local code requirements. Allow sufficient space for wiring and service. See Fig. 1. Be sure surface beneath the transformer is level and is capable of supporting the weight of the transformer. See Fig. 1 and Table 1 for transformer lifting points and mounting and weights.

IMPORTANT: The pallet needs to be removed when installing the transformer.

3. Open and tag all electrical disconnects, following Lock Out-Tag Out procedures.
4. Handle the transformer with care using a crane or similar equipment and place it in the designated area. This transformer is meant to be installed next to the 30RQM within line of sight. Refer to the mounting clearances. See Fig. 1.

- Mounting Clearances:
  - Minimum of 3 ft clearance from the front.
  - Minimum of 1 ft clearance from the side of the cable/ conduit entry.

5. Open the transformer (i.e., box, cover) and locate the primary and secondary leads. Refer to the manufacturers specifications to locate the leads and the best place for the cable entry. See Fig. 2 as a reference.

NOTE: High Voltage (575V) terminated at top front of transformer. Low Voltage (460V) terminated at bottom front of transformer.

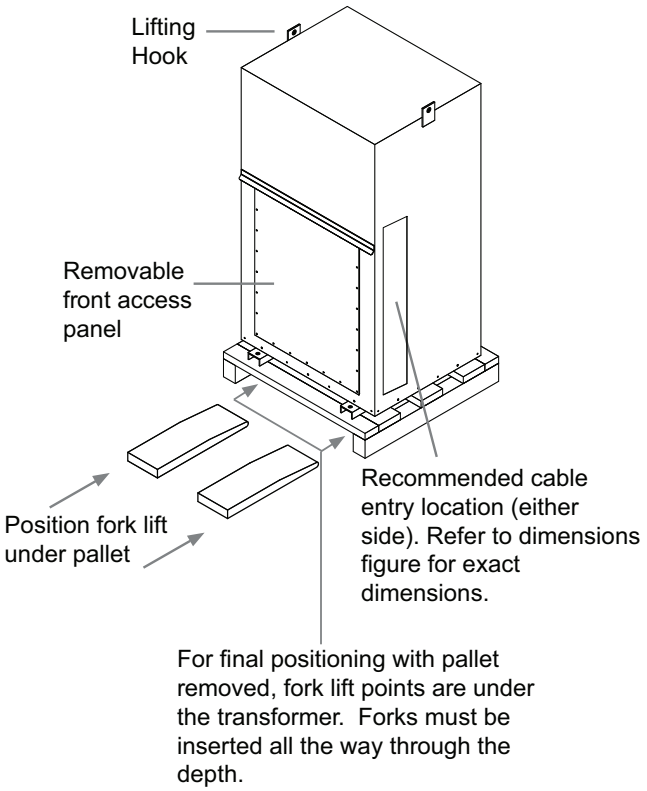

Fig. 2 — Recommended Cable Routing

6. Connectors should be sized, installed, and connected to cables in accordance with the local electrical code requirements using the best practices to ensure safe and reliable operation. Cable surfaces should be properly cleaned, and electrical compound should be used for all connections.
7. Cables should be sized, installed, and connected to the transformer in accordance with the local electrical code requirements using the best practices to ensure safe and reliable operation.
8. Connect the incoming power feed (575V) to the primary side connection on the transformer according to Fig. 5. The recommended primary protection size is 45A.
9. Provide a ground wire that connects from the main feeder panel to the transformer enclosure ground.
10. Connect 3-phase cables to the secondary side connection of the transformer according to Fig. 5.

IMPORTANT: All three phases need to be in correct sequence or else the 3 phase pumps/fans can run in reversed direction.

11. Route the secondary side cables from the transformer to the power panel to the knockout holes located on the bottom of the panel as shown in Fig. 3. Cables should be secured per local electrical code requirements.
12. Install the wires L1, L2, and L3 to the terminal block located inside the panel, see Fig. 3. Label all the wires. Ensure that electrical connections are tightened to specified torque 5.9 lbf (8 Nm).
13. Connect ground wire from the transformer enclosure to the 30 RQM panel using the M8 bolt provided as shown on Fig. 4.

IMPORTANT: Before applying power make sure the transformer enclosure and the 30RQM panel are grounded. Make sure to connect X0 to the transformer enclosure ground.

14. After all the connections are completed and secured close and secure the control box door and transformer.
15. Remove all tags from disconnects and restore power to the unit.
16. Test that the unit powers on and functions as required.

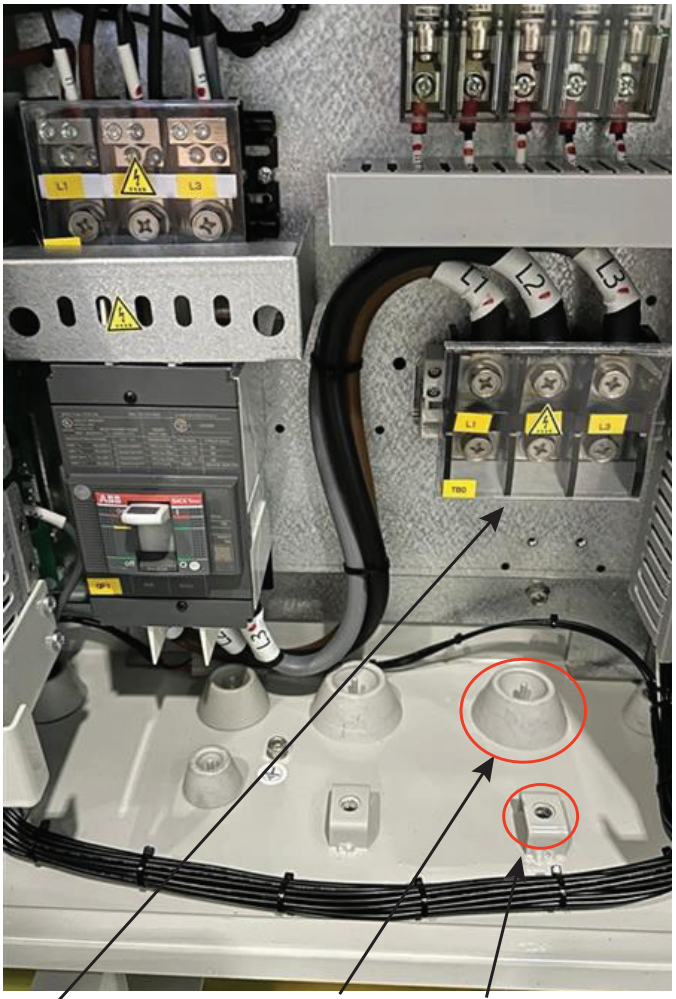

Fig. 3 — 30RQM Incoming Power Location

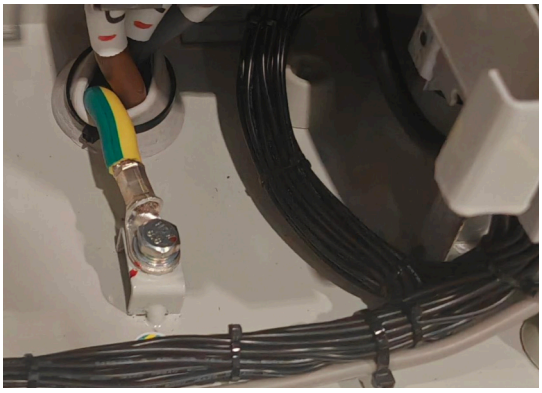

Fig. 4 — 30RQM Panel Grounding

Schematic	Connections											
	Primary Volts										Connect lines to	Inter-connect
	208	218	242	252	437	480	483	504	604	630	H1,H2,H3	1
	198	208	230	240	416	456	460	480	575	600	H1,H2,H3	2
	187	198	219	228	395	432	437	456	546	570	H1,H2,H3	3
	Secondary Volts										Connect lines to	
		208	230	240	380	416	460	480	600		X1,X2,X3	
		120	133	139	220	240	265	277	347		X1,X0 X2,X0 X3,X0	

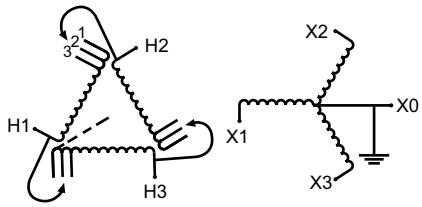

Fig. 5 — Electrical Connections