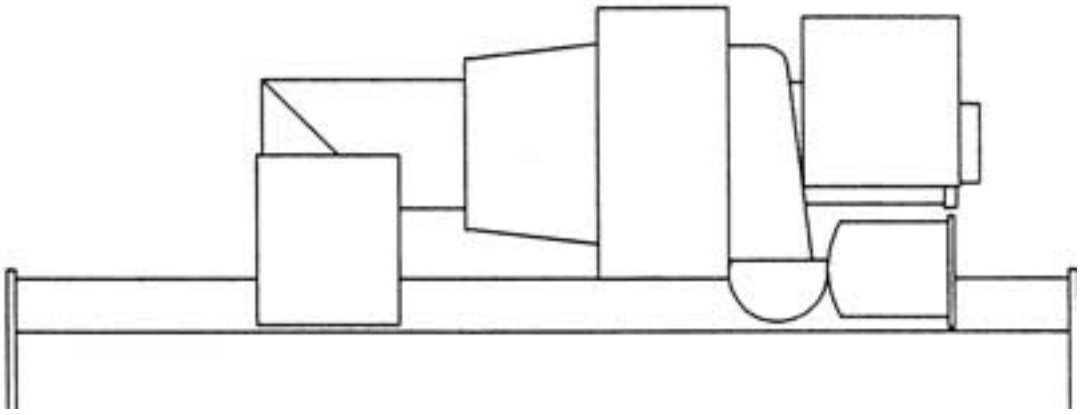
Supplement AFDB-SUPL-1

Library	Service Literature
Product Section	Refrigeration
Product	Centrifugal Liquid Chiller, Water-Cooled
Model	AFDB
Literature Type	Supplement
Sequence	1
Date	March 22, 1999
File No.	SV-RF-CTV- MISC-AFDB-SUPL-1-299
Supersedes	New

Line Reactor Field Installation

Supplement To: AFDB-OM-1 (11/98)



Since the Trane Company has a policy of continuous product improvement, it reserves the right to change specifications and design without notice. Qualified, experienced technicians should do the installation and servicing of the equipment referred to in this booklet.

X39640527-01

Adaptive Frequency Drive Trane Options

THERE ARE THREE AVAILABLE TRANE OPTIONS WHICH CAN SHIP EITHER FACTORY INSTALLED OR FIELD INSTALLED. **THIS SUPPLEMENT DISCUSSES INSTALLATION REQUIREMENTS AND RECOMMENDATIONS FOR AN AFDB LINE REACTOR.**

3-PHASE LINE/LOAD REACTOR

1.1. Physical Characteristics (See Figure 3)

a. **Ratings**

1. 480 volts, 50/60 Hz
   350 HP/262 kw
   5% Impedance

2. 480 volts, 50/60 Hz
   500 HP/375 kw
   5% Impedance

3. 480 volts, 50/60 Hz
   600 Hp/450 kw
   5% Impedance

b. **Enclosure and Dimensions**

All line reactors come in NEMA Type 1 general purpose enclosures. See Figure 3.

1. W x H x D, 17 x 24 x 17 inches – 350 HP

2. W x H x D, 17 x 24 x 17 inches – 500 HP

3. W x H x D, 24 x 30 x 24 inches – 600 HP

c. **Weight**

1. 350 lbs. - 350 HP

2. 350 lbs. - 500 HP

3. 480 lbs. - 600 HP

1.2. Mounting

Following are recommendation guidelines for the mounting of the line reactor. Floor mount design, however, could be wall mounted by the field using proper guidelines. (Brackets, which are required, are not supplied and would have to be field fabricated.) Line Reactor not designed for hanging.

Installer requirements recommended guidelines include:

- The line reactor should be placed at least 6" from any combustible material/surface, at least 2" from any wall/surface so the vents are not blocked and air flow is not hampered, and not on top of any significant heat source.
- Wire size should be per the drive requirements.
- Use metallic conduit/shielded cable in accordance with local codes. **IDEALLY, THE LINE REACTOR SHOULD BE INSTALLED AS CLOSE TO THE AFD AS POSSIBLE.** IF METALLIC CONDUIT IS USED, RECOMMENDED MAXIMUM CABLE DISTANCE BETWEEN THE REACTOR AND INVERTER IS 8-10 FEET. IF METALLIC CONDUIT IS NOT USED, CABLE DISTANCE BEWEEN THE REACTOR AND INVERTER SHOULD NOT EXCEED 5-FEET. If cable does run near other circuitry wire, it is recommended to run cable perpendicular to other wire(s).
- There are no knockouts in the cabinet. Entry/exit openings must be made in the field. RECOMMENDED ENTRY/EXIT OPENINGS ARE THROUGH THE TOP.
- For additional information about the Line Reactor, see Figure 3.

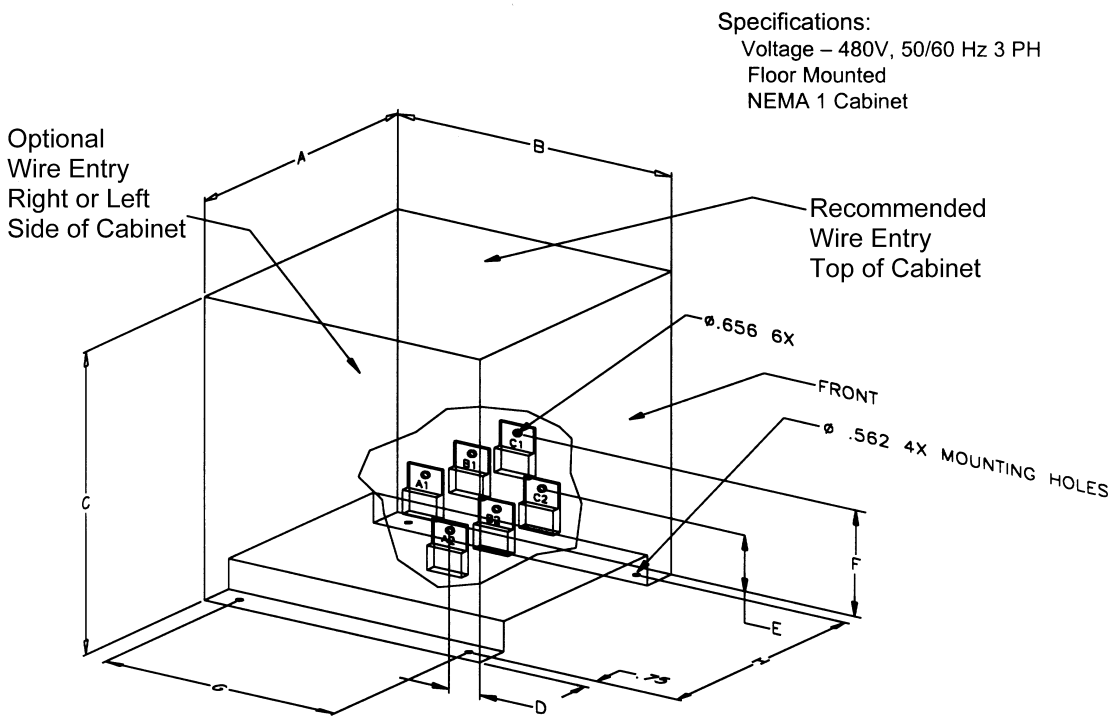
1.3. Wiring

- Size – based on inverter requirements (Running Load Amps). Line side – based on nameplate amps and local code requirements (NEC). See Figure 4.
- Wire termination devices on the primary and secondary of the transformer (for field installed) or primary/line side only (for factory mounted) must be field furnished and installed. Ring-type compression terminal devices are suggested.
- Entry/Exit points are made in the field. Typical entry/exit points are through the top. Avoid getting any enclosure shavings on line reactor. A punch out is recommended to make hole. For Factory Unit Mounted version only entry point is needed.

1.4. Grounding

- The field will have to provide a grounding lug and the proper size wire based on NEC.

Figure 3 – **Typical Line Reactor Showing General Purpose Enclosures**



Ext	Horsepower (HP)	A	B	C	D	E	F	G	H	Weight
01	350	17.00	17.00	2400	N/A	N/A	N/A	N/A	N/A	335 #
02	600	24.00	24.00	30.00	N/A	N/A	N/A	N/A	N/A	483#
03	1000									683#
04	500	17.00	17.00	24.00	N/A	N/A	N/a	N/A	N/A	335#

Figure 4 – Typical Line Wiring Showing Field Connection Point for Inverter