



SERVICE BULLETIN

Title: Starter Optional Kilowatt Meter Calibrations
Models Affected: All Models with PIC Controls,
Starters with Kilowatt Meters.

Number: C9406
Date: 8/2/94
Supersedes:
Date:

File: Controls, Wiring.

Prepared By: Dan Perry

Approved By: Alan Johnson

This document and the material contained herein are the property of Carrier Corporation and may not be copied, reproduced, or released without written permission of Carrier Corporation.

Situation:

The following is a procedure on how to input the correct value for the "Meter Rated Line KW", found on the SERVICE 1 screen of chillers with PIC controls. This procedure also can be used to calibrate the meter if the output is tied to an energy management system (EMS). Since the KW meter is a starter option, it will not be present on all starters. The correct "Meter Rated Line KW" value is only calculated and input if the meter is present on the starter. The "Compressor/Motor KW" value, located on the STATUS01 screen, will show a value of zero if no meter is present.

If the chiller has a KW meter, the full scale watts value must first be calculated and used as follows:

1. If chiller has PIC controls, this value is input for "Meter Rated Line KW" in configuration table "SERVICE 1".
2. If the KW meter outputs to an EMS system, the EMS people will want to know this value.

If no KW METER IS PRESENT, no calculations are required.

Calculation Procedure:

a = Determine initial transducer calibration (this will be stamped on the KW meter {i.e., 4000 watts, 4 KW})

b = Determine CT ratio of current input to KW meter (i.e., 100:5 = 20)

c = Determine potential (voltage) transformer ratio to KW meter (i.e., 600:120 = 5)

- Most 3 phase 480 volt applications do not use a transformer, the 480 volt is wired directly to the KW meter (ratio = 1)

FULL SCALE WATTS = a x b x c

Example:

Example:

Find full scale watts of a KW meter with an initial transducer calibration of 4000 watts. The ct ratio to the KW meter is 1000:5. The voltage, 480V, is wired directly to the KW meter.

a = Initial transducer calibration = 4000

b = CT ratio = 1000:5 = 200

c = Voltage ratio = 1 (no voltage transformer is used)

$$\begin{aligned}\text{Full Scale Watts} &= a \times b \times c \\ &= 4000 \times 200 \times 1 = 800,000 \text{ Watts}\end{aligned}$$

Full Scale Watts = 800 KW

This value would be configured to:

1. "Meter Rated Line KW" if PIC controls are present.
2. Or this will be the 20mA value (full scale value) that the EMS people will need.