Accumulated Power BACnet Object for Power Distribution Indicator (PDI)

Introduction

The Power Distribution Indicator (PDI) tracks outdoor unit energy consumption broken down by indoor unit operation ratio. The PDI requires a field supplied wattmeter per outdoor unit and can track the outdoor units power consumption for up to one outdoor unit and 48 indoor units. Power consumption is displayed by indoor unit on the two line LCD display. If the user desires to view the data on a touch panel or download the data to a USB drive for access on a PC the PDI can be used with AC Smart II. If the user desires to view or download the data remotely over an Ethernet network connection, the PDI can be used with the Advanced Control Platform (ACP).

With a recent software release for the BACnet Gateway, PDI data can now also be monitored through BACnet as an Analog Input Object for each indoor unit.

Requirements

- BACnet Gateway (PQNFB17B0) with software version **2.00.1d** or above
- Building Management System (BMS) or controls which support the Analog Input Object (AI) over BACnet IP

Description

Accumulated Power Distribution (status)

Point Number: 20

Object name: ac_Accumulated power(100 Watt)_XX (XX: A/C unit address)

Object type: Analog Input

Meaning: This object is used to monitor the accumulator power distribution of the A/C's control authority.

Present_Value property: Range is 0-999,999 (Power Distribution: count * 100 Watt)

Refresh rate: 1 minute

Use

The BACnet Object ac_Accumulated power(100 Watt)_XX for each indoor unit updates and stores the associated accumulated power data from the PDI unit and is accessed by the Read Property Request service. The PDI unit Accumulated Power value updates once per minute and resets after 99,999.9 kWh. The BACnet Object value is given in units of 100 Wh so care must be taken when comparing this value to that displayed on the PDI unit which displays in kWh.

Accessing the Accumulated Power Display on the PDI unit is done by pressing the "MENU" key on the unit twice. The first screen shows the accumulated power distribution for the first two indoor units as well as the total power reported by the watt meter as seen in Figure 1 below. Accumulated power display for subsequent units can be seen by pressing the "SHIFT" key.
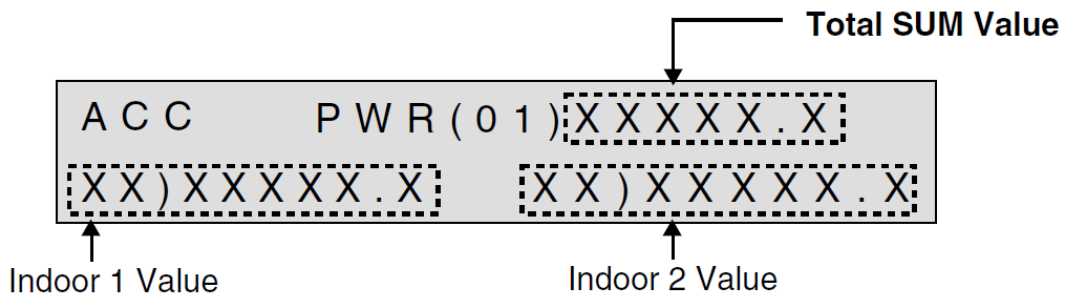

Figure 1: PDI Accumulated Power Display Description

Figure 2 below shows a comparative output between the PDI unit and the BACnet object. For a unit with central control address 00, the PDI unit shows 4.8 kWh while the BACnet object ac_Accumulated power (100 Watt)_0 shows the same output as 48.
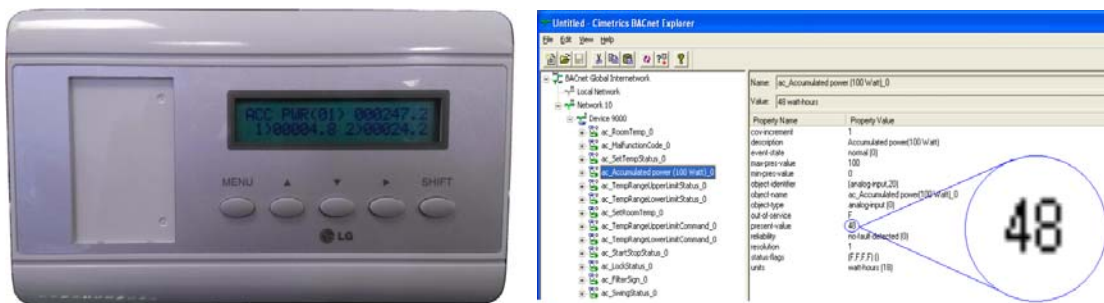

Figure 2: PDI Accumulated Power – PDI Unit Display vs. BACnet Object

Since the BACnet object ac_Accumulated power(100 Watt)_XX is a raw value read from the PDI unit , power usage can be trended by simply subtracting the value logged on the starting time of interest from the value at the finishing time.

Reference

- Submittal and Installation/Operation Manual are located on the website:
    - o Submittal: www.lg-vrf.com → Engineering Resources → Technical Literature →Submittals
    - o Manual: www.lg-vrf.com → Engineering Resources →Technical Literature → Installation Manuals