The Daikin DDC Controller offers:

- Constant volume unit control for the DC & DT Series, 3-20 Ton units.
- Stand-alone operation or networked operation with multiple units
- Multiple interface options
- Trend logging and alarm monitoring
- BACnet® MS/TP or LON® compatibility

Features and Benefits:

- Controls up to 2 compressors or a 2-stage, single compressor
- Controls up to 2 stages of heat – gas, electric, or heat pump with optional auxiliary heat
- User adjustable defrost interval in heat pump mode
- Supply Fan options:
  - One or two speed fan control
  - Continuous or fan cycling operation
- Economizer Control:
  - Acts as 1st stage of cooling in conjunction with the compressors
  - Configurable Minimum Damper Position
  - Enabled based on either an outdoor drybulb, wetbulb, dewpoint, or enthalpy setpoint
  - Economizer Minimum Position can be reset higher based on indoor CO₂ conditions
  - Title 24 Economizer certified
  - An exhaust fan can be energized during Economizer operation
- Space Sensor options:
  - Separate analog space temperature and humidity sensors
  - E-BUS (communicating) temperature sensor with display
  - E-BUS (communicating) combination and humidity sensor with display
  - E-BUS (communicating) combination temperature and humidity sensor without display
  - Analog temperature sensor and E-BUS with display have setpoint adjust and timed override capabilities
Features and Benefits (continued):

- Provides a Fan Proving interlock and alarm
- Has a Clogged Filter alarm based on either a clogged filter switch input and/or accumulated run time of the unit
- Provides an Emergency Shutdown Alarm input from a Smoke Detector, Phase Monitor, Firestat, or other shutdown condition
- Scheduling
  - Has an internal clock which allows user-adjustable schedules for efficient unit control
  - Scheduling capability includes 7 day, 2 events per day scheduling with up to 14 holiday periods
  - Provides Daylight Savings Time adjustment
  - Automatic Optimal Start function to get space temperature to setpoint by the occupied start time
- Allows Unoccupied Night Setback configuration
- Has a Remote Start/Stop input allowing scheduling control from an external device
- On-board LCD display provides status and alarm monitoring as well as the configurations and setpoints required for unit troubleshooting and service work at the unit
- Other interface options:
  - Wall-mount System Manager Touch Screen II–G
  - Free Windows®-based PrismD Software for on-site PC
  - Remote Access available using PrismD Software
- Trend Logging capability with a user-adjustable trend interval
- Allows user-adjustable stage up/down delays as well as minimum run times and minimum off times
- Has on-board BACnet® MS/TP communications capability
- LON® compatibility available using an external PT-Link II LON®-3 device
- Provides a load shedding option based on a binary input or a BACnet® command that spreads the heating and cooling setpoints by a user-adjustable amount
- Other alarms include:
  - High and Low Space Temperature
  - Mechanical Heating/Cooling failures
  - Low Pressure Switch trips
  - High/Low Supply Air Temperature
  - Title 24 Economizer failures
  - Sensors Failures
  - Missing BACnet® values

PrismD Software
PrismD is a Windows®-based graphical interface package that has simple pre-designed configuration, setpoint, status, alarm, and schedule screens that allow for easy set-up and monitoring of your unit. PrismD also allows access to unit trend logs to aid in diagnostics. PrismD software is free and can be easily downloaded from the daikin.wattmaster.com website.

A PC or tablet running PrismD can connect directly to the DDC Controller for roof-top access to the unit. And, a CommLink 5 connected to the unit controller(s) can give permanent PC access inside the building. Adding an IP Module Kit to the CommLink 5 allows access to the system from a remote PC(s) running the PrismD software.

Protocol Options
The DDC Controller has on-board BACnet® MS/TP protocol capability. This gives a BACnet® MS/TP front end the ability to read and write to the setpoints of the controller as well as to read the status points and alarm conditions of the controller. Sensor values can also be written to the controller, and an Occupied/Unoccupied command can be given.

A LON® protocol option is also available by utilizing an external LON® PT-Link (Protocol Translator) device that gives the same read/write options.

Specifications:

Wiring
All field wiring must be plenum-rated, minimum 18-gauge, 2-conductor, twisted pair with shield. Minimum wire size for all sensors should be 24-gauge. Some sensors require 2-conductor wire and some require 3-or 4-conductor wire. Minimum wire size for 24 VAC thermostat wiring should be 22 gauge.

Inputs
- Supply Air Temperature Sensor
- Outdoor Air Temperature Sensor
- Title 24 Economizer Actuator Feedback
- Analog Outdoor Air Humidity Sensor or E-BUS Outdoor Air Temperature & Humidity Sensor
- Analog Space or Return Air CO$_2$ Sensor or E-BUS CO$_2$ Sensor
- Analog Space Temperature Sensor or E-BUS Space Temperature Sensor
- Space Temperature Slide Adjust
- Analog Space Humidity Sensor or E-BUS Space Temperature & Humidity Sensor
- Remote Start/Stop Switch
- Fan Proving Switch
- Clogged Filter Switch
- Defrost Switch
- Phase Loss/Emergency Shutdown Switch
- Load Shedding Switch
- Pressure Switch for Compressor 1
- Pressure Switch for Compressor 2

Stand-Alone or Networked Applications
The DDC Controller can be used in a stand-alone configuration or daisy-chained together with multiple units in a networked system.

In either case, a wall-mounted System Manager TS (Touch Screen) can be used to interface to the unit(s). Or, a CommLink 5 communications device can be used to connect the controller(s), to a Windows PC or tablet running our free PrismD software.
Outputs
- Economizer Outdoor Air Damper
- Exhaust Fan Signal (SSR)*
- Alarm Control Signal (SSR)*
- Compressor 1 & 2 Enable Relays
- Low Speed & High Speed Blower Relays
- Heat Stage 1 & 2 Enable Relays
- Condenser Fan Enable Relay
- Reversing Valve(s) Enable Relay
* SSR = Solid State Relay

Power Supply
Two-wire 24 VAC +/- 15% 50/60 Hz

Power Consumption
Each DDC Controller requires 15 VA of power delivered to it at 18 to 32 VAC. Separate transformers for each device is preferred. If several devices are to be powered from a single transformer, correct polarity must be followed.

Communications
E-BUS and BACnet® MS/TP at a rate of 57.6K baud. Bus length cannot exceed 4000 ft. in total length.

LED Indicators
Power, Comm, Alarm, and BACnet®, APP Heart Beat, OS Heart Beat, Watchdog, STAT1, STAT2, Loop, E-BUS, 8 Binary inputs, 8 Relay outputs, TX, and RX.

Dimensions
8.5” x 6.05” x 1.5”

Minimum Service Dimensions
9.5” x 7” x 3”

Environmental Ratings
Operating Temperature: -40 Deg F to 158 Deg F at 95% RH
Non-Condensing
Note: LCD does not update at temperatures below -4 Deg F

Setpoint Temperature Range
Controller space temperature range is 12 Deg F to 150 Deg F
Allowable control setpoint range is 40 Deg F to 90 Deg F

Corrosion
Conformal Coated to reduce corrosion possibility.

Approvals
UL Listed under UL 916, UL 61010-1 (Canada Standard C22.2) and UL94-V0 (plastic)
BTL listed
ROHS Compliant

Other Notes
Low voltage class 2 device and should be located in low voltage section of a control panel, not for high voltage use.
Rated for 24VAC pilot duty relays only for relay outputs.
Control point connections are made with depluggable terminal blocks
Onboard USB and binary input isolation.

Field-Installed Sensors

Supply Air Temperature Sensor
The OE230-G or OE231-G Supply Air Temperature Sensor is required for all applications to monitor the supply air temperature. The Supply Air Temperature Sensor should be mounted in the unit discharge plenum or in the supply air duct.

Analog Space Temperature Sensor or E-BUS Digital Room Temperature Sensor
The OE213-G Thermistor 10K Type III Space Temperature Sensor and OE217-02-G E-BUS Digital Room Temperature Sensor both provide override and slide adjust capability and are used for constant volume HVAC unit applications controlling one zone. Either sensor must be mounted approximately 5 feet above the floor in the space that is to be controlled.

Analog Indoor Room Humidity Sensor or E-BUS Digital Room Temperature & Humidity Sensor
The OE265-11-G Indoor Wall-Mounted Room Humidity Sensor is an analog wall-mounted room Humidity Sensor. The OE217-03-G (LCD display) and OE217-04-G (no LCD display) are E-BUS Digital Room Temperature & Humidity Sensors. The humidity value is currently used for status only. The sensor should be mounted at approximately 5 feet above the floor on the wall in an area that does not have drafts or is exposed to direct sunlight.

Outdoor Air Temperature Sensor
The OE250-G Thermistor 10K Type III Outdoor Air Temperature Sensor is used to monitor the Outdoor Air Temperature and must be mounted in an upright position outdoors in an area protected from the elements and sunlight.

Analog Outdoor Air Humidity Sensor or E-BUS Outdoor Air Temperature & Humidity Sensor
The OE265-13-G Analog Outdoor Air Humidity Sensor or the OE265-15-G (Horizontal) or OE265-16-G (Vertical) E-BUS Outdoor Air Temperature & Humidity Sensor is used to sense the outdoor air humidity. The sensor should be mounted in the upright position in an area that is protected from the elements and direct sunlight.

Analog CO₂ Space or Return Air Sensor or E-BUS Wall-Mounted or Duct-Mounted CO₂ Sensor:
The OE255-G (Return Air) or OE256-G (Space) Analog CO₂ Sensor or the OE256-05 (Wall-Mounted) or OE256-07 (Duct-Mounted) E-BUS CO₂ Sensor is used to monitor CO₂ levels for indoor air quality. The Return Air CO₂ Sensor is used for sensing the current CO₂ level in the HVAC unit’s return air stream. This is useful when you want an average CO₂ reading in the area served by the HVAC unit or when you don’t want a wall mounted CO₂ Sensor due to sensor tampering concerns in the space. The wall-mounted or space CO₂ Sensor should be mounted at least 5 feet above the floor on the wall in an area that does not have drafts or is exposed to direct sunlight in the space that is to be controlled.