# Disio Cloud Graphical Interface

# Division 23 – Heating, Ventilating, and Air Conditioning

# Section 23 09 00 – Instrumentation and Control for HVAC

The following specification is for a defined application. Price would be pleased to assist in developing a specification for your specific need.

# PART 1 – GENERAL

##  Section Includes

1. Graphical Interface

##  Related Requirements

1. Section 01 40 00 - Quality Requirements
2. Section 01 78 00 - Closeout Submittals
3. Section 01 79 00 - Demonstration and Training

##  Reference Standards

1. All referenced standards and recommended practices in this section pertain to the most recent publication thereof, including all addenda and errata.
2. BACnet International – Building Automation and Control networks: communications protocol for building automation control networks that leverage the ASHRAE, ANSI and ISO standard protocols.
	1. ANSI/ASHRAE Standard 135.1 – Method of Test for Conformance to BACnet.
	2. ISO 16484-5 – Building Automation and Control Systems: Data communication protocol.

##  Documentation

1. The manufacturer shall provide documentation for each device to address typical wiring, sequence of operation, physical dimensions of components and installation procedures and requirements.

##  Quality Assurance

1. The manufacturer qualifications shall be specified in this section, with minimum ten years of documented experience.

##  Warranty

1. The warranty shall begin upon the date of shipment and continue for a period of 18 months.
	1. The warranty shall cover all products from manufacturer defect and shall include any replacement parts only during the coverage period.
	2. The manufacturer shall not include the cost of labor to replace or recalibrate, if necessary, any components found to be defective.
	3. This warranty does not cover any product failure which results from, either directly or indirectly, any damage which occurs to the device by improper installation or from failure to comply with the preventative maintenance required per the manufacturer’s instructions, or by codes set by local or facility authorities.
	4. An extended warranty shall be available at additional cost from the manufacturer.
2. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.

# PART 2 – PRODUCTS

**2.01 Disio Cloud Package**

 A. Basis of Design: Price Industries, Inc.

1. Disio Cloud Graphical Interface Package

2.02 **Disio Cloud Package**

 A. Description:

1. The Disio Cloud shall allow a user to be able to log in to a cloud based app over the internet to view the building’s HVAC network and monitor/override certain values pertaining to all zone controllers and rooftop units. The Disio Cloud shall also allow the ability to monitor any third party BACnet MS/TP devices on the network for information purposes only. The login shall be password protected and network shall be secure with cloud data encrypted. The app shall also allow the user to view any other site the user has access to by selecting locations on a map on the homescreen.
2. In addition to all HVAC zone controllers and RTU controllers, the optional Disio Cloud package shall include:
	1. Disio Cloud Hub.
	2. BACnet MS/TP Router.
	3. IP Switch.
	4. Industrial control panel for power and mounting BACnet IP support.
3. The Disio Cloud package shall allow remote access to building HVAC controls and conditions, and allow the user to make adjustments to any writable points on any networked controller. The Disio Cloud shall come complete with preloaded graphics for every type of zone controller, as well as the rooftop unit.
4. Preloaded graphics for each zone controller shall include, but not be limited to:
	1. Occupancy status.
	2. Supply air temperature.
	3. Airflow [**pressure independent controllers only**].
	4. Airflow target [**pressure independent controllers only**].
	5. Room setpoint.
	6. Room temperature.
	7. Damper position.
	8. Damper target [**pressure dependent controllers only**].
	9. Room setpoint override.
	10. Room load PI
5. Preloaded graphics for the rooftop unit controller shall include, but not be limited to:
	1. Occupancy status
	2. Temperature local to the rooftop controller thermostat
	3. Rooftop return air temperature
	4. Rooftop discharge air temperature
	5. Stages of heat/cool energized
	6. Rooftop status (heat/cool/neutral)
	7. Rooftop control polling strategy
	8. Number of zones
	9. Number of zones up
	10. Polled cooling demand, %
	11. Polled heating demand, %
	12. Polled deadband demand, %
	13. Network status (active, or down)
6. The Disio Cloud shall also be able to support custom graphics, such as building floor plans, for quickly locating zone conditions/points for a given space.
7. The Disio Cloud shall allow multiple users with different access levels to view/manage sites. Users and access levels shall be customizable by administrative level users.
8. Electrical Requirements:
9. The Disio Cloud Hub and associated routers and switches shall operate with 24 VDC current protected power supply provided in the Disio Cloud panel enclosure. Contractor to provide 120 VAC field connection to panel.
10. Start-up & Commissioning:
	1. Start-up shall include verifying proper installation, configuring and verifying of network communication, and ensure that all graphics are created as per site requirements.
	2. Basic adjustments from the Disio Cloud shall be performed to ensure proper operation and communication to the BACnet device is achieved.

# PART 3 – EXECUTION

## 3.01 Examination

1. Verify that conditions are suitable for installation.
2. Verify that field measurements are as shown on the drawings.

## 3.02 Installation

1. The mechanical contractor, controls contractor, or factory authorized commissioning contractor shall install and 120 VAC bring power to the Disio Cloud control panel. The Disio Cloud Hub, and all associated routers, switches, breakers and power supplies to be factory mounted and wired within panel.
2. The Disio Cloud control panel shall be shipped with separate top and bottom mounting rails for easy wall mounting and hanging of the control panel.
3. All BACnet networking of zone controllers to the rooftop unit controller shall be completed using factory shipped plenum rated CAT 5 cables with RJ45 ends to ensure uniform polarity and network coms throughout network, and to ensure error-proof installation.
4. The Disio Cloud shall have the following cable and wire requirements:
	* + 1. Factory supplied 2 foot length of plenum rated (CMP) RJ-45 Cat 5 cable for networking the IP Router to the Disio Cloud Hub and associated BACnet MS/TP routers.

## 3.03 Field Quality Control

1. See Section 01 40 00 - Quality Requirements, for additional quality requirements.

## 3.04 Closeout Activities

1. The manufacturer or manufacturer’s representative shall provide a minimum of four hours of owner training to facilities personnel or other parties as required.
2. See Section 01 79 00 - Demonstration and Training for additional closeout requirements.