MARLEY®

user manual

# MarleyGard LINK™ BACnet/IP communication panel

INSTALLATION - OPERATION

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READ AND UNDERSTAND THIS MANUAL PRIOR TO OPERATING OR SERVICING THIS PRODUCT.

# contents

**Note**

***This manual contains vital information for the proper installation and operation of the MarleyGard LINK. Carefully read the manual before installation or operation and follow all instructions. Save this manual for future reference.***

# introduction

These instructions are intended to assure that field connections are completed properly and the control system operates for the maximum time possible. Since product warranty may depend on your actions, please read these instructions thoroughly prior to operation.

If you have questions about the operation and/or maintenance of this control system and you do not find the answers in this manual, please contact your Marley sales representative.

**⚠ Warning**

***Hazard of electrical shock or burn. Be sure to turn off power to the panel before servicing. If working on equipment out of site of panel disconnect, lockout using standard lockout procedure.***

## Safety First

The MarleyGard LINK uses UL listed components installed in accordance with the National Electric Code. The location of the cooling tower and field installation of the control system can affect the safety of those responsible for installing, operating or maintaining the tower and controls. However, since SPX Cooling Technologies does not control the tower location, or field installation, we cannot be responsible for addressing safety issues that are affected by these items.

**⚠ Warning**

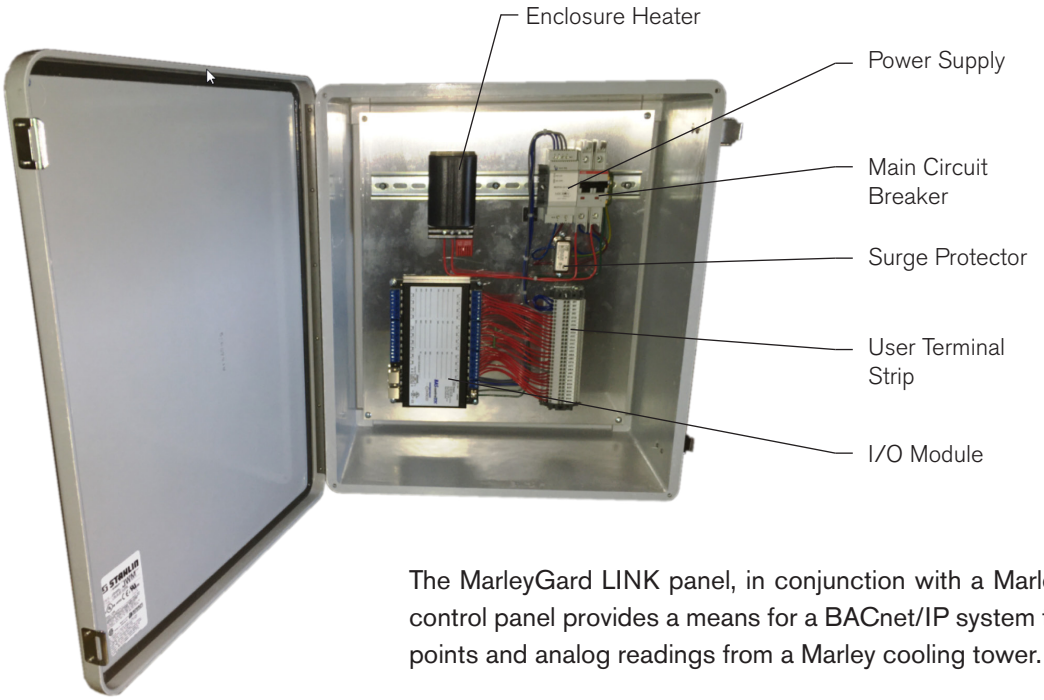
***The following safety issues should be addressed by those responsible for installation, maintenance or repair of the tower and controls:***

- Access to and from the control panel (including the customer supplied main disconnect/branch circuit protection)
- Proper grounding of electrical control circuits
- Sizing and protection of branch circuits feeding the control panel
- Qualification of persons who will install, maintain and service the electrical equipment

These are only some of the safety issues that may arise in the design and installation process. Consult a safety engineer for additional guidance.

Other safety issues are addressed in literature supplied with your tower. You should closely review the literature prior to installing, maintaining or repairing your tower.

# description

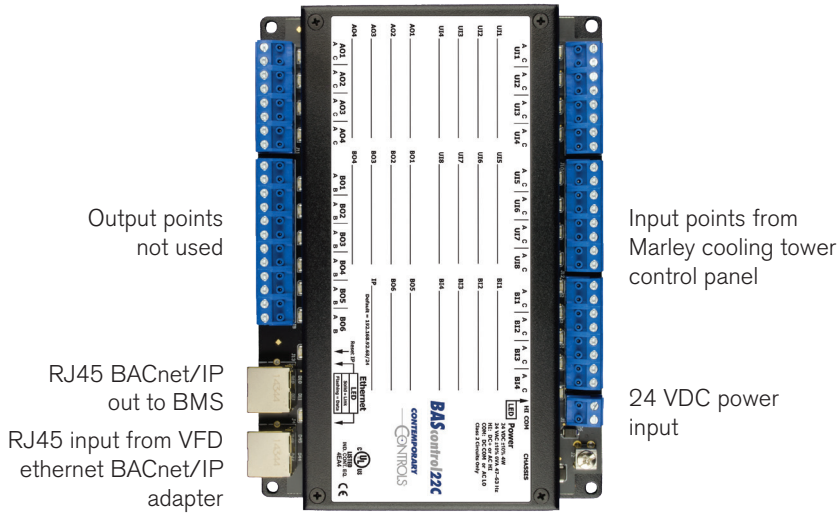



The MarleyGard LINK panel, in conjunction with a Marley cooling tower control panel provides a means for a BACnet/IP system to capture status points and analog readings from a Marley cooling tower.

| | |
|---|---|
| Incoming power: | 120 VAC, 2A, 50/60 Hz |
| Main circuit breaker: | 6A |
| Ambient temperature: | -10°F (-23°C) to 110°F (43°C) |
| Enclosure: | NEMA 4X (IP56) outdoor fiberglass<br>18"W x 20"H x 9"D |
| Surge protection: | Yes |
| Enclosure heater: | Yes |
| I/O module terminals: | Removable |
| User terminal strip: | Yes |
| Standards: | UL/CUL 508A Assembly |
| Module: | BACnet/IP |

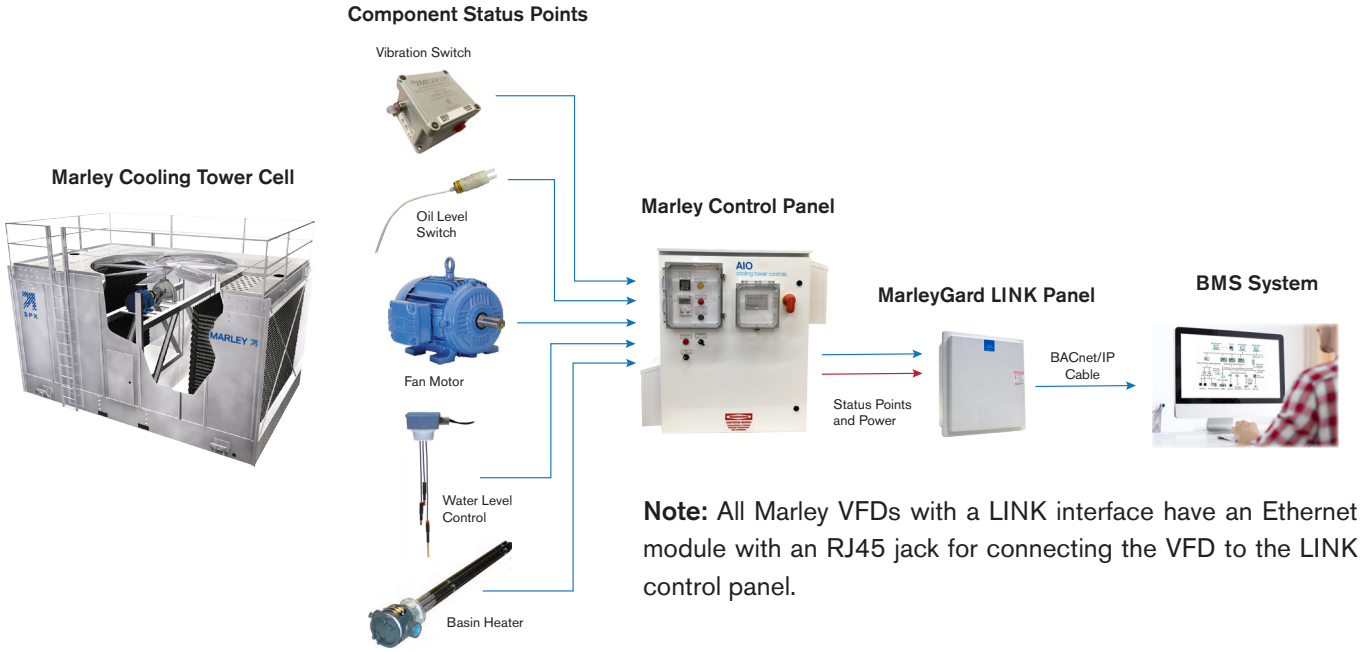
# description

## I/O Module




**Note:** CoolBoost fluid cooler control panels require two I/O modules

## System Diagram




**Note:** All Marley VFDs with a LINK interface have an Ethernet module with an RJ45 jack for connecting the VFD to the LINK control panel.

# installation

The communications module is BACnet compliant and programmed by Marley for job specific configuration. The LINK panel is available as an “add on box” integrated into a Marley cooling tower control panel system.

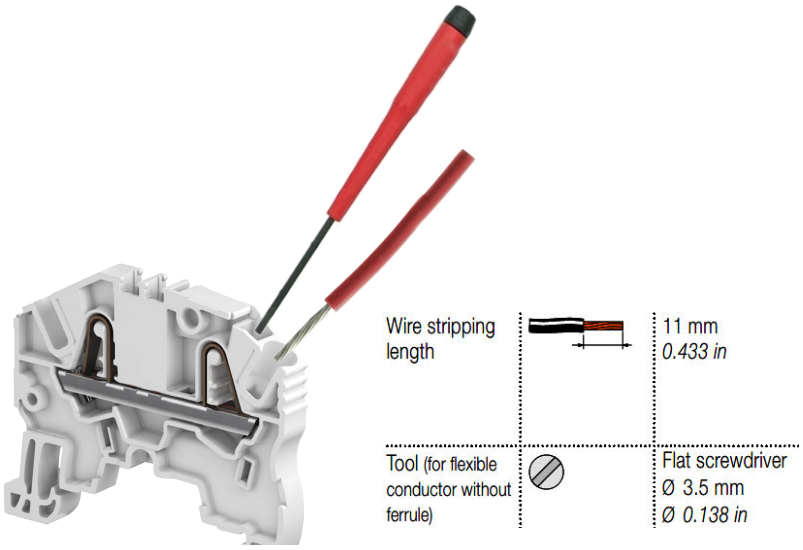
Each LINK panel is serialized with a cooling tower order number located on the inside door of the control panel. Refer to this number when addressing questions or support with SPX Cooling Technologies.

The MarleyGard LINK panel is compatible with Marley control panels:

- AIO control panel
- SPPC control panel
- CoolBoost control panel
- ABH control panel

**Quick Start Guide**

- Mount LINK enclosure adjacent to a Marley control panel.
- Identify job site points to monitor in the Marley control panel.
- Run 120VAC power wiring from the Marley control panel to the LINK panel in separate conduit.
- Run conduit for status wires from the control panel to BACnet panel in separate conduit.
- Seal conduit runs with expanding foam or silicone making a vapor barrier to prevent condensation.
- Spring clamp terminal block instructions: Strip field wire insulation back 7⁄16". Insert small flat blade screw driver into the square hole then push downwards to release the internal wire clamp, while holding downward insert the field wiring then release the driver.



**Setup Programming**

- The BAScontrol22C module used in the LINK control panel is pre programmed according to cooling tower components status points selected for a project. Actual monitoring points may vary by project requirements for BMS monitoring.
- IP address, setup and descriptions may be changed in the field using a PC and RJ45 ethernet patch cable, software is not required. The default IP address is 192.168.92.68.
- For additional support see I/O module manufacturer's website www.ccontrols.com

## Typical Input Assignment Table

| Object Instance | Object Name | Object Type | Object Description | Units | Marley Field devices | UI1 | UI2 | UI3 | UI4 | UI5 | UI6 | UI7 | UI8 | BI1 | BI2 | BI3 | BI4 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | VIB_SW_TRIP | Binary Input | Vibration switch (cooling tower shutdown - high vibration) | no-units | 685A, 685B, 686B, 5550, 440 | | | | | | | | | | | | X | Module 1 AIO SPPC ABH CoolBoost Control Panel |
| 11 | VIB_SW_ALM | Binary Input | Vibration switch alarm (cooing tower notification - increasing vibration) | no-units | 685B, 440 | | | | | | | | | | | X | | |
| 8 | VIB_LVL_XMTR | Analog Input | Vibration level transmitter (cooling tower - loop powered by panel) | mA | 640B | | | | | | | | X | | | | | |
| 8 | VIB_LVL_XMTR | Analog Input | Vibration level transmitter (cooling tower - loop powered by switch) | mA | 685B, 440 | | | | | | | | X | | | | | |
| 10 | OIL_LVL_ALM | Binary Input | Oil level (cooling tower - low oil in gearbox) | no-units | LU10 | | | | | | | | | | X | | | |
| 7 | WATER_LVL_CWB | Analog Input | Water Level transmitter (cooling tower CWB - loop powered by panel) | mA | DL10, DL24 | | | | | | | X | | | | | | |
| 6 | WATER_TEMP_CWB | Analog Input | Water temperature transmitter (cooling tower CWB - loop powered by panel) | mA | ABH with 4-20mA Temp card | | | | | | X | | | | | | | |
| 5 | WATER_HIGH_ALM | Binary Input | Water level high (cooling tower CWB) | no-units | LLC HA | | | | | X | | | | | | | | |
| 4 | WATER_MAKEUP_ON | Binary Input | Water makeup solenoid valve open (cooling tower CWB) | no-units | LLC MU | | | | X | | | | | | | | | |
| 3 | WATER_LOW_ALM | Binary Input | Water level low (cooling tower CWB) | no-units | LLC LA | | | X | | | | | | | | | | |
| 9 | BASIN_HEATER_ON | Binary Input | Basin heater ON (cooling tower - heater drawing current) | no-units | ABH | | | | | | | | | X | | | | |
| 1 | BASIN_HEATER_FAIL | Binary Input | Basin heater failed (heater is not drawing current) | no-units | ABH | X | | | | | | | | | | | | |
| 2 | SPARE | Binary Input | Spare Input (binary) | no-units | N/A | | X | | | | | | | | | | | |
| 9 | SPRAY_PUMP_1_ON | Binary Input | Spray pump 1 ON (fluid cooler - contactor is energized) | no-units | CoolBoost spray pump 1 | | | | | | | | | X | | | | Module 2 CoolBoost Control Panel |
| 10 | SPRAY_PUMP_1_TRIP | Binary Input | Spray pump 1 TRIP (fluid cooler - motor over load) | no-units | CoolBoost spray pump 1 | | | | | | | | | | X | | | |
| 11 | SPRAY_PUMP_2_ON | Binary Input | Spray pump 2 ON (fluid cooler - contactor is energized) | no-units | CoolBoost spray pump 2 | | | | | | | | | | | X | | |
| 12 | SPRAY_PUMP_2_TRIP | Binary Input | Spray pump 2 TRIP (fluid cooler - motor over load) | no-units | CoolBoost spray pump 2 | | | | | | | | | | | | X | |
| 1 | SPRAY_PUMP_SAFETY_TRIP | Binary Input | Spray pump (fluid cooler - low water or freezing water safety trip) | no-units | CoolBoost spray pump safety shutdown | X | | | | | | | | | | | | |
| 2 | DAMPER_1_OPEN | Binary Input | Damper 1 (fluid cooler - contactor is energized) | no-units | CoolBoost damper 1 contactor energized | | X | | | | | | | | | | | |
| 3 | DAMPER_1_OPEN_END_SW | Binary Input | Damper 1 (fluid cooler - open end switch is closed) | no-units | CoolBoost damper 1 open | | | X | | | | | | | | | | |
| 4 | DAMPER_1_CLOSED_END_SW | Binary Input | Damper 1 (fluid cooler - closed end switch is closed) | no-units | CoolBoost damper 1 closed | | | | X | | | | | | | | | |
| 5 | DAMPER_2_OPEN | Binary Input | Damper 2 (fluid cooler - contactor is energized) | no-units | CoolBoost damper 2 contactor energized | | | | | X | | | | | | | | |
| 6 | DAMPER_2_OPEN_END_SW | Binary Input | Damper 2 (fluid cooler - open end switch is closed) | no-units | CoolBoost damper 2 open | | | | | | X | | | | | | | |
| 7 | DAMPER_2_CLOSED_END_SW | Binary Input | Damper 2 (fluid cooler - closed end switch is closed | no-units | CoolBoost damper 2 closed | | | | | | | X | | | | | | |
| 8 | SPARE | Binary Input | Spare Input (binary) | no-units | N/A | | | | | | | | X | | | | | |

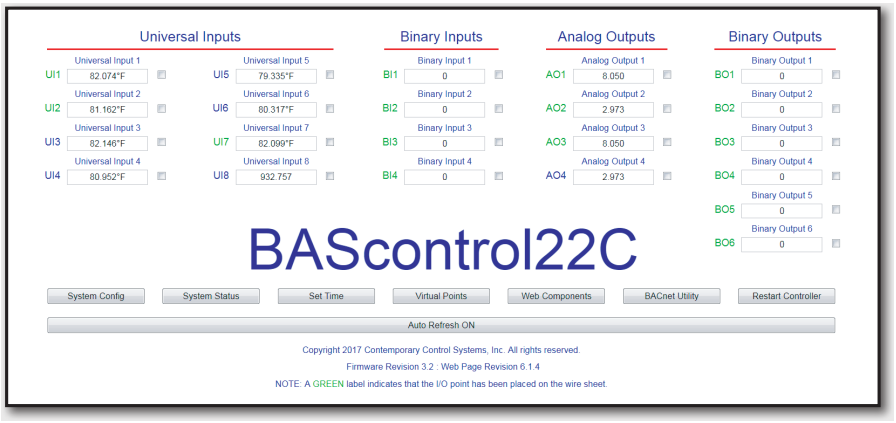
**Note:** Data points shown are pre-programmed into the module but may not all be available depending on type and number of field devices
Field devices for binary inputs use a normally open contact unless otherwise noted

### Web Page Configuration — Main Page and System

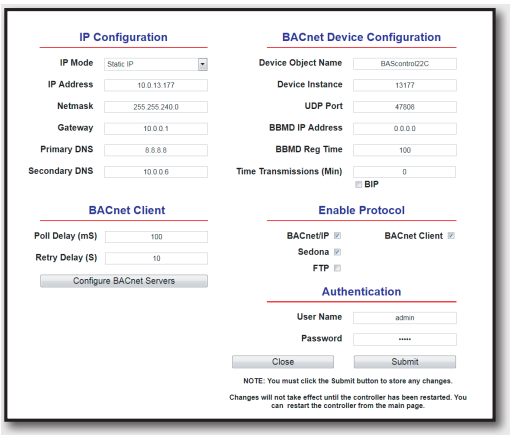
The Model BAScontrol22C I/O user manual is included with the MarleyGard Link control panel and is also available at www.ccontrols.com

Access to the web pages is intended for the installer or skilled technicians. In order to access any of the web pages authentication is required. The default IP address is 192.168.92.68 and the default User Name and Password is admin/admin. Once on the main page, the System Configuration button can be clicked.

The main web page provides an overview of all real points plus access to other web pages. To configure a point, click on the point and a configuration page will appear. To observe the updated data for each point, click Auto Refresh button to ON. Point values can be temporarily forced by checking the box adjacent to the point and entering a value into the point's text box (make sure Auto Refresh button is OFF). The value will remain forced until the box is unchecked or the unit power cycled. Care must be exercised when forcing values into points.




The IP settings can be changed to the desired values. Either DHCP or a static IP address can be selected. If a static address is desired, enter the value along with the network mask and gateway address. If domain address is required, enter in the Primary and Secondary DNS addresses.




BACnet device data must be entered when using BACnet. Make sure the Device Instance and Device Object Name are both unique over the complete BACnet Internetwork.

# MarleyGard LINK

**USER MANUAL**

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