



# Daintree® Networked Wireless Area Controller

(WAC70-DT)



## BEFORE YOU BEGIN

Read these instructions completely and carefully.  
Save these instructions for future use.

### ⚠ WARNING

**Risk of electrical shock.** Disconnect power before servicing or installing product.  
**Install in accordance with National Electric Code and local codes.**

### ⚠ CAUTION

**Risk of injury.** Wear safety glasses and gloves during installation and servicing.

The **Daintree WAC70-DT Wireless Area Controller (WAC)** is at the heart of the Daintree Networked wireless controls solution for smart buildings. It provides intelligent control across a large area. Using open and interoperable standards-based technology, the WAC70-DT communicates with wireless standards-compliant sensors, switches, lighting and HVAC control devices that are part of the Daintree Networked platform.

The WAC70-DT provides commissioning, control management and communication functions. It creates the mesh network, manages it, and applies the controls defined on the cloud-hosted Daintree Controls Software (DCS) web application. After commissioning the system, all the schedules and control strategies are pushed to each WAC. WACs continue to execute the control strategies assigned to zones, and they run schedules even if they lose communication with DCS. DCS initiates device commissioning and houses the application used for ongoing management of the system.

The WAC70-DT is a low voltage DC powered device. It can be powered using the provided AC power adapter or using PoE+ (Power over Ethernet) supplied by a PoE+ adapter that is regulated to 12VDC (not provided). The WAC70-DT communicates with the DCS cloud-hosted software over Ethernet. An Ethernet hub or switch is required (not provided).

### Battery Safety:

- Remove and immediately recycle or dispose of used batteries according to local regulations and keep away from children. Do NOT dispose of batteries in household trash or incinerate.
- Even used batteries may cause severe injury or death.
- Call a local poison control center for treatment information.
- The compatible battery type for this product is CR2450.
- The nominal battery voltage is 3V.
- Non-rechargeable batteries are not to be recharged.
- Do not force discharge, recharge, disassemble, heat above 60 degrees Celsius or incinerate. Doing so may result in injury due to venting, leakage or explosion resulting in chemical burns.
- Ensure the batteries are installed correctly according to polarity (+ and -).
- Do not mix old and new batteries, different brands or types of batteries, such as alkaline, carbon-zinc, or rechargeable batteries.
- Remove and immediately recycle or dispose of batteries from equipment not used for an extended period of time according to local regulations.
- Always completely secure the battery compartment. If the battery compartment does not close securely, stop using the product, remove the batteries, and keep them away from children.

### ⚠ WARNING

- **INGESTION HAZARD:** This product contains a button cell or coin battery.
- **DEATH** or serious injury can occur if ingested.
- A swallowed button cell or coin battery can cause **Internal Chemical Burns** in as little as **2 hours**.
- **KEEP** new and used batteries **OUT OF REACH** of **CHILDREN**
- **Seek immediate medical attention** if a battery is suspected to be swallowed or inserted inside any part of the body.



## ① Installation Process

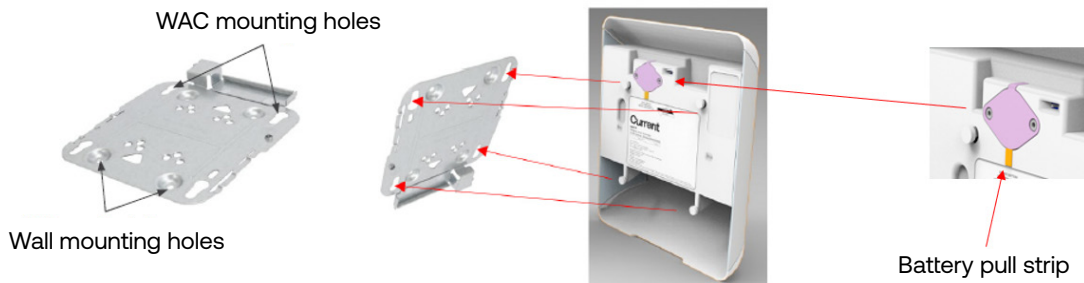
The WAC70-DT must be installed in accordance with all local, state and national electrical codes and requirements.

Before mounting the WAC70-DT in its final location:

1. Install and test lighting, control devices and wireless adapters per the instructions provided with the units.
2. Review the Where to Install the WAC70-DT section on the next page. Determine the location for the WAC. If power will be supplied by the AC power adapter, be sure there is a receptacle nearby. The Ethernet cable run from the Ethernet hub or PoE+ switch to the WAC location must be less than 300 feet.
3. Once the location of the WAC70-DT has been determined, note its location and its IEEE address on the facility floor plan or relay schedule.
4. Make sure the WAC70-DT has been configured with appropriate network options as described in the facility's commissioning plan associated worksheets.

## ② Mounting and Connections

1. Install the mounting plate to the surface:
  - a. If installing to a T-grid (such as for a drop ceiling), attach the included T-grid clip to the T-grid first, then screw the mounting plate to the clip using the included machine screws.
  - b. If installing to a flat surface, screw the mounting plate directly to the surface using the included wood screws. If mounting vertically, the narrow side of the keyhole slots should face downward.
  - c. For optimal performance, it is recommended to install the WAC70-DT at least 6" away from walls, ceilings, or other devices.
2. Make all necessary connections to the WAC70-DT:
  - a. Plug the ethernet cable into the WAN port on the WAC70-DT. The BLDG port cannot be used for connecting the WAC70-DT to the internet.
  - b. Plug the power cable from either the AC power adapter or the PoE+ adapter regulated to 12VDC into the barrel connector on the WAC70-DT. When power is applied, the power supply indicator LED will illuminate.
  - c. Remove the battery pull strip from the battery compartment.
3. Attach the WAC70-DT onto the mounting plate by sliding the mounting feet of the WAC70-DT into the corresponding keyhole slots of the mounting plate.
4. Use the Daintree web-based application to configure zones and devices.



### ③ Where to Install the WAC70-DT

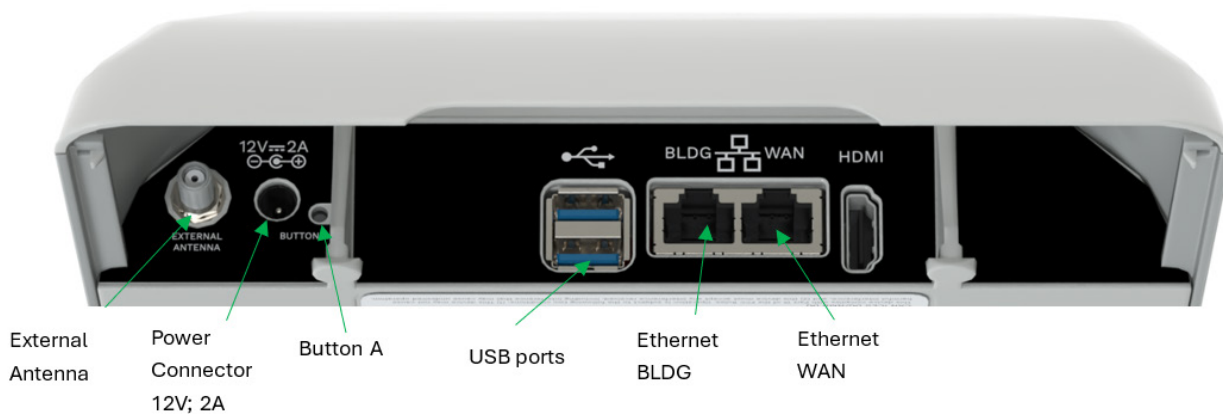
Typically, the WAC70-DT is mounted high on a wall near the ceiling.

Ideally, the WAC70-DT is located in an area with good line of sight to the nearby wireless devices in the Daintree wireless network.

- Do not locate the WAC70-DT inside a metal enclosure or where a large metal object completely obstructs the line of sight to all of the wireless network devices.
- Locate the WAC70-DT so that less than 300' of Ethernet cable is required to connect it to the Ethernet switch.
- Try to maintain at least 8'-10' distance from Wi-Fi access points.
- The WAC70-DT must be able to communicate with at least one other AC-powered wireless device in the network.
- If the AC power adapter will be used to power the WAC70-DT, make sure a power outlet is within reach of the plug-in adapter cord.
- If no power outlet is available, consider powering the WAC70-DT using a PoE+ adapter set for 12VDC (not provided).
- In order to maintain sufficient space for airflow & prevent overheating, WAC70-DT must be installed with at least 3" clearance around it.

### ④ Wire Connections

Top view of the WAC70-DT wiring connection area



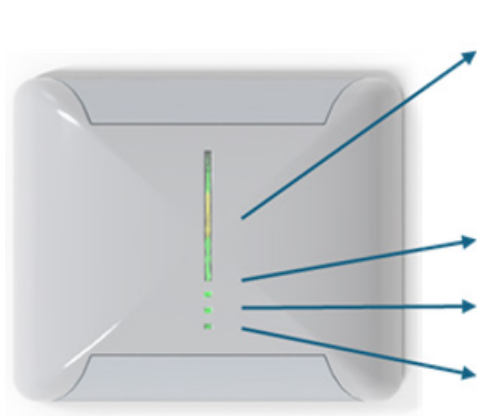
## ⑤ Joining the Lighting Control Network

The WAC70-DT is pre-configured at the factory to connect to Daintree DCS when connected to the Internet. If the WAC70-DT requires a static IP address or proxy server to reach the Internet, use the following instructions to configure the WAC70-DT. Consult the DCS Quick Start Guide for instructions on configuring the WAC in your site.

1. Plug one end of an Ethernet cable into the WAN Ethernet Port on the WAC70-DT.
2. Plug the other end of the cable into an Ethernet port on your laptop
  - Turn OFF Wi-Fi on your laptop.
  - Confirm the laptop's Ethernet interface is configured for DHCP.
3. Initiate the WAC setup procedure as follows:
  - Plug the 12VDC adapter supplied with the WAC70-DT into a 100-240VAC 50/60 Hz outlet.
  - Wait for the LED status bar to light up, which indicates that the WAC has completed boot up.
  - Press and hold "Button A" on the WAC70-DT (shown in Fig. 1) for at least 5 seconds
  - The LED status bar on the WAC70-DT will perform a green signaling pattern to indicate that setup mode was successfully started.
4. Wait two minutes for the laptop to fallback to a link-local IP address
5. To access the WAC70-DT's web page, open a web browser and navigate to <https://169.254.199.101>
6. Log in using the following credentials:
  - Username: webadmin
  - Password: webadmin
  - Technical Note: Computers running Windows and OS X fallback to using a link-local address when their network interface is configured to use DHCP, and a DHCP server doesn't allocate an IP address. This will always happen as the WAC70-DT and laptop are directly connected, i.e., there will be no DHCP server
7. Click on the System menu on the WAC70-DT's web page. Record the IEEE address; it should match the value on the WAC70-DT label. It is used for identification and validation when the WAC70-DT is added to DCS.
8. If a proxy server is being used:
  1. Click on the Network menu
  2. Enter the HTTP, HTTPS and/or SOCKS proxy server information.
  3. Press Save
9. If static IP addressing is to be used
  1. Click on the Network menu
  2. Locate WAN network interface (Port 0) and select Static IP
  3. Enter the desired network parameters from the deployment options worksheet
  4. Press Save and Confirm. Changes will be applied when the WAC is rebooted.
10. Disconnect the Ethernet cable between the WAC and laptop.
11. Connect the WAC70-DT to the operational network. Apply power to the WAC.
12. Check the WAC70-DT status LEDs. When it can communicate with DCS, the status LEDs turn solid green. This should occur within 5 minutes. If the status LEDs are orange, the WAC70-DT cannot communicate with DCS.

Note: The WAC70-DT may be upgraded when it connects to the DCS. If so, the status LEDs will show the upgrading pattern as described on the next page before showing solid green or orange.

⑥ LED Status Indicator








**System State indicator**  
See table below.

**Internet indicator**  
Green = OK. Flashing Green = Setup Mode. Dark = No Internet access.

**Zigbee indicator**  
Green = OK. Flashing Green = Discovering devices. Dark = Zigbee system failure.

**Power supply indicator**  
Green = OK. Dark = No power.

⑦ Troubleshooting

Indicator	Action Required	Description
Power LED OFF	Apply Power	The WAC70-DT is not powered. Make sure the power adapter is plugged into the appropriate power source and inserted firmly into the 12VDC input on the WAC. Check to be sure plug adapters are connected properly and that circuit power is on.
Zigbee LED – flashing green	None	Discovering Wireless Devices
Zigbee LED OFF	Contact technical support.	
Internet LED OFF	Check Ethernet Connection	Check Ethernet port is active and has access to internet.
System LED Bar – Solid green 	None	WAC70-DT is functioning normal
System LED Bar - Sweeping green continuously back and forth 	None	The WAC70-DT is in setup mode, meaning that reset button has been pressed as the WAC70-DT is powering on. This is typically done during the WAC70-DT configuration process, to provide local access to the WAC70-DT webpage using a link-local static IP address..
System LED Bar - Rapidly pulsing green 	None	The WAC70-DT is updating its software.
System LED Bar - Green pulsing on the ends with an amber center 	Check Daintree application's web page	The WAC70-DT is not communicating with the Daintree software. This could be because of the following reasons: <ul style="list-style-type: none"> <li>• The WAC70-DT doesn't have Ethernet link</li> <li>• The LAN network is not allowing the WAC70-DT outbound access to the Daintree software.</li> </ul>
System LED Bar - Solid red 	Reboot	The WAC70-DT is in an error state. Please reboot the WAC70-DT and contact Daintree support if the problem persists.

## ⑧ Regulatory Information

**Caution:** Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s).

Operation is subject to the following two conditions:

- This device may not cause interference. e.
- This device must accept any interference, including interference that may cause undesired operation of the device

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- L'appareil ne doit pas produire de brouillage;
- L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**FCC Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance 20 cm between the radiator and your body.

**ISED Radiation Exposure Statement – ISDE Déclaration d'exposition aux radiations:**

This equipment complies with RSS-102 radio frequency radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

Cet équipement est conforme aux limites d'exposition CNR-102 aux radiofréquences établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

## Specifications

<b>Electrical Ratings</b>	12VDC, 2A Connect to UL Class 2 Wiring Only
<b>Power Connector</b>	2.1mm barrel connector
<b>Connections</b>	(2) RJ45, 10/100 Mbps Ethernet (2) USB 2.0 (1 Modbus / RS485 via USB) (1) HDMI
<b>Network Capacity</b>	WAC70-LG-DT: Up to 175 wireless devices WAC70-SM-DT: Up to 60 wireless devices
<b>Radio Properties</b>	USA/Canada: 2.4 GHz, 100mW (+20dBm)
<b>Operating Environment</b>	32°F to 104°F (0°C to 40°C) Indoor, dry locations only
<b>Mounting</b>	Wall or ceiling surface
<b>Dimensions</b>	9.5 in x 7.9 in x 2.1 in
<b>Distances, Maximum:</b>	100' between wireless devices maximum (wireless range is clear line of sight) 300' of Ethernet cable between WAC and Ethernet switch or System Controller



## Product Certifications

Contains FCC ID: QOQ-GM240P

Contains IC: 5123A-GM240P

CAN ICES (A) / NMB (A)

Questions:

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