

PassiveLogic Hive Platform



Product Data Sheet

The PassiveLogic Hive™ is the heart of our autonomous ecosystem, replacing traditional control panels. The Hive runs a physics-based digital twin of your building, systems, weather, and occupancy to enable generative design and real-time autonomy. Instead of waiting for the cloud, the Hive makes AI decisions at the edge with the compute power of its 8-core NVIDIA Jetson Orin, optimizing controls for comfort and energy efficiency.

The Hive is a customizable, pre-manufactured control panel with a touch screen. It serves as a place to land all of your wired sensors and controllables with the 48 universal, software-defined terminals or 24 relays, and it does automated I/O testing. It's also an IoT gateway for a multitude of wireless devices, has a 4-port Ethernet switch, and creates a self-managing wired and wireless private network. PassiveLogic's Cell® I/O modules snap in to connect wired devices, using tool-less lever-lock terminals. The Hive's sliding screen locks in place to protect all of the low and high voltage wiring. Built-in power monitoring and status LEDs support our continuous commissioning features.

Designed to solve millions of control challenges, this compact, full-stack, modular automation device is a general solution that can replace innumerable single-purpose control boxes. Its secure private network isolates IoT devices from the local network. Adding Hive controllers for more I/O combines their power into a distributed computation engine.

Use Creator™ on the Hive screen to draw your digital twin, or scan your building with the Lens™ iPhone app. The software then generates the control design, guides the wiring process, creates accurate sensor fusion using the underlying physics, and displays building data in Live™. Our Quantum API for buildings lets you set up custom queries, such as system state, energy monitoring, and building alerts.



Hive Specifications

Display

Size (diagonal)	10.1 in (256.54 mm) capacitive touch screen
Resolution	1920 x 1200 pixels
Slide-up touch screen	Screen opens to reveal 8 PassiveLogic Cell module bays, and locks to protect wiring

Network

Wireless	Bluetooth range: Up to 100 ft (30 m)
Ethernet	Stand-alone private network & isolated IoT network, 4-port industrial switch (10/100MB)

Connectivity Options

Protocols	BACnet/IP, Modbus TCP
Protocols w/Multi Cell	1-Wire protocol

Cell Module Bays

The Hive includes 8 Cell[®] module bays, allowing you to mix and match different types of Cell modules for your different applications, or run with none at all, depending on the needs of your system.

Multi [™] Cell module	6 multi-function terminals, universal software-defined I/O
Relay [™] Cell module	3 single-pole, single-throw, normally open relays

Powering the PassiveLogic Hive

Power draw	Up to 4A @ 24VAC nominal. Max load 98 VA. Use a Class II or Class III rated transformer, dedicated to a single PassiveLogic Hive controller and grounded to a reliable earth ground.
Input voltage	24VAC, 16-20 AWG
Stripping length	5 mm

Environmental Operating Conditions

Operating temperature	-4 to 122°F (-20 to 50°C)
Storage temperature	-22 to 122°F (-30 to 50°C)

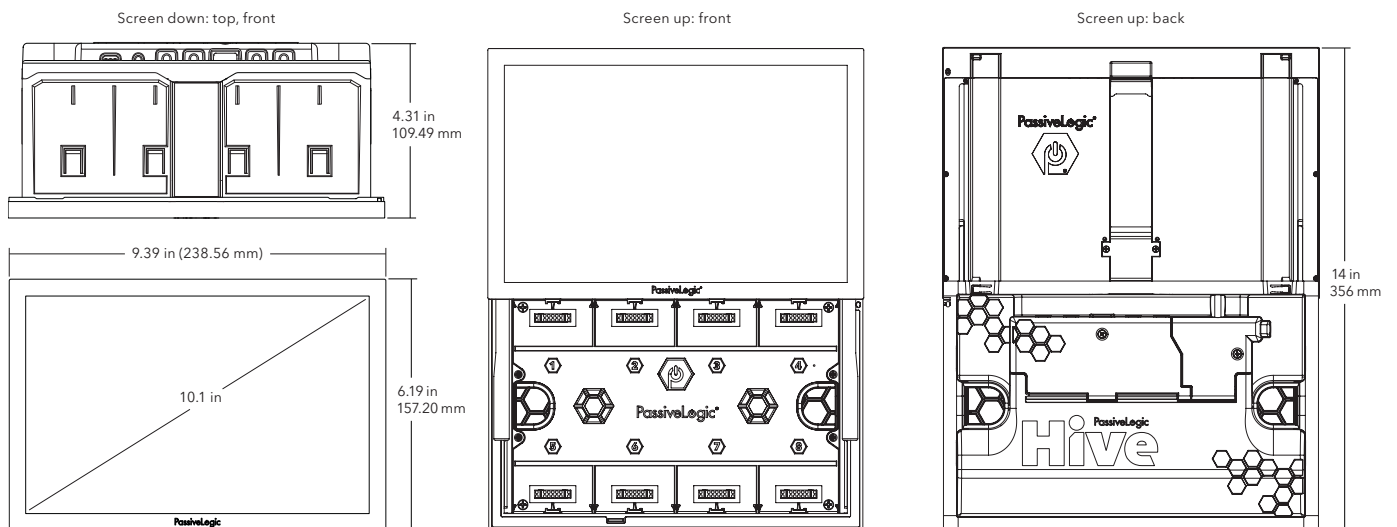
Mechanical

Height Width Depth (screen down)	6.19 in (157.20 mm) 9.39 in (238.56 mm) 4.31 in (109.49 mm)
Weight	3.4 lb (1550 g)

Mounting Options

Surface mount	Mount with Hive Enclosure or other approved accessory. Use fasteners appropriate for the surface.
DIN rail mount	Mount with approved accessory. Make sure panel or enclosure has adequate ventilation. Use fasteners appropriate for the surface behind the DIN rail.

Dimensions



Wiring Example

The PassiveLogic Hive is designed to handle millions of building control applications. This section highlights a few examples.

Mechanical RTU control, valves, and temperature sensor

Multi Cell terminals are software defined, so wiring placement is flexible.

