

This instruction sheet provides important information regarding installation of GraceSense™ Panel-Mount Nodes, CloudGates™ ControlGates™. Please read these instructions in their entirety, and follow all safety instructions before attempting installation.

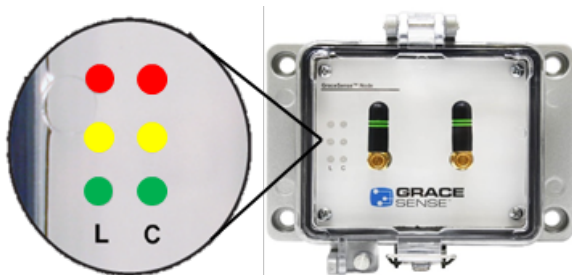
HARDWARE TYPES

There are three GraceSense™ hardware types: CloudGates™/ControlGates™, Panel-Mount™ Nodes, and Field-Mount Nodes. CloudGates/ControlGates are nodes in a Panel-Mount™ form factor, just like our Panel-Mount™ Nodes. The difference is that they have a cloud connection, control integration, or both and therefore makes them a parent in the network. A Panel-Mount™ Node does not have any direct external connections and therefore acts as a child to a CloudGate™ or ControlGate™. Field-Mount Nodes act as children only and are typically mounted on the asset being monitored versus on a panel.

LED CONFIGURATIONS

LEDs on GraceSense™ hardware are used to display status as well as communication. For Panel-Mount™ Hardware, there may be one or two LED columns present based on the hardware type. Columns are labeled with an "L" for local communication or a "C" for cloud communication. Local Communication is any communication between nodes and Cloud Communication is any communication to the cloud. Field-Mount Nodes have a single multicolor LED that is used to indicate communication and status.

See below for an image of a CloudGate™ and a Field-Mount Node. The LEDs on Panel-Mount™ Hardware are represented like a stoplight with RED at the top, Yellow in the middle, and Green at the bottom for both columns. The Field-Mount Node has a single multicolor LED on the base.



CHILD NODE STATUS

Child Nodes can fall into one of two categories and it will affect how they behave. An Orphan Node is a node that does not have a parent that it is connected to. A node is in this status from the factory and it will automatically find its parent. A node that fails to connect to its parent during three consecutive heartbeat periods will also become an orphan. This allows the node to find a new parent to connect to. When a node has a parent, it is considered adopted and is a more typical run state.

FIELD-MOUNT NODE LED INDICATION CHART

Local LEDs	Behavior	Meaning
RED	One Flash	Acknowledgment was not received from parent on all attempted communications during this heartbeat period
	One Flash	Orphan - an adoption request was sent with no Response
GREEN	One Flash	All data for this heartbeat period was acknowledged by parent
	One Flash	Orphan - parent was found successfully, changed from orphan to adopted
BLUE	One Flash	Bootup - node is initialized
GREEN THEN BLUE	One Flash Each	A new configuration is received from parent (Green Flash) then reboot with new configuration (Blue Flash)

(continued on back)

Warning: Verify an electrical conductor has been de-energized using an adequately rated test instrument before working on it. Follow appropriate Energy Control (Lockout/Tagout) procedures as per OSHA Subpart S. © Grace Technologies, Inc. All rights reserved. Specifications are subject to change with/without notice.

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PANEL-MOUNT NODE LED INDICATION CHART

Local LEDs	Behavior	Meaning
RED	One Flash	Acknowledgment was not received from parent on all attempted communications during this heartbeat period
	One Flash	Orphan - an adoption request was sent with no response
YELLOW	One Flash	New configuration received from parent
GREEN	One Flash	All data for this heartbeat period was acknowledged by parent
	One Flash	Orphan - parent was found successfully, changed from orphan to adopted
ALL LEDs	One Flash	Bootup - node is initialized

PANEL-MOUNT NODE LED INDICATION CHART

Local LEDs	Behavior	Meaning
RED	One Flash	Adoption request received from orphan child node but not ready to adopt It
YELLOW	One Flash	Adoption request response sent to an orphan node
	One Flash	New configuration response sent to a child
	One Flash	Bootup - local communication radio initialized
GREEN	One Flash	Received successful data packet from child and acknowledged
Cloud LEDs	Behavior	Meaning
YELLOW	One Flash	Transmitting data to the cloud - the longer the LED stays on, the slower the transmission
GREEN	Solid On	CloudGate™ is idle with connection to the cloud – able to act as a parent
	Blinking	Disassociation event; connection to access point is lost
GREEN and RED	Blinking	Failed network activity – HTTP error received
ALL THREE LEDs	Blinking	Cloud radio is initialized and searching for cloud connection – occurs on bootup or forced bootup due to Lost connection