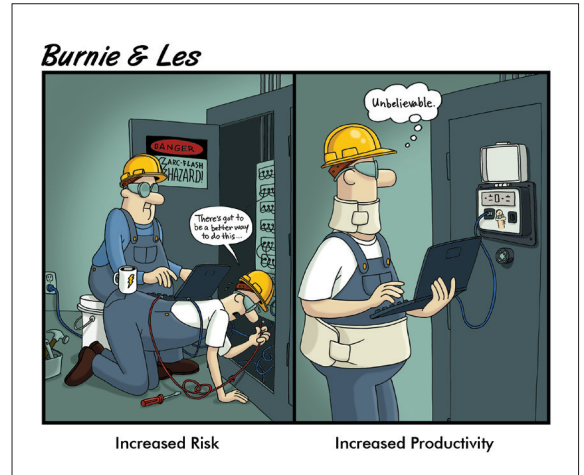




# GRACE PORT®

# QUICK REFERENCE GUIDE



## Customer Problem



Safely providing physical access to information inside an enclosure without opening the door. Connection to PLCs, VFDs, and other data collectors is often required for many tasks. An open enclosure exposes electrical hazards to service personnel and exposes environmental hazards to the components inside the enclosure.

## GracePort® Solution

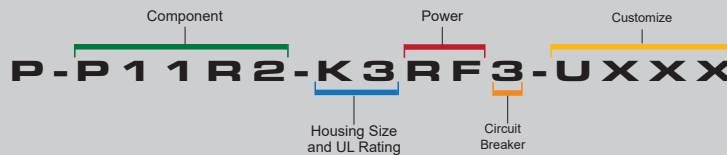
GracePort® panel interface connectors are installed on the outside of enclosures allowing access to required connections like Ethernet, USB, and laptop power. This provides safe and controlled through-door access by eliminating hazardous exposure to personnel and protecting the valuable assets on the inside from the outside environment.

## Features and Benefits



- Same day shipping on select units. Custom configurations are typically built within 3-4 days
- 15,000+ unique part numbers
- 300+ components, 30+ power options (including international options)

- Unlimited configuration options and flexible mounting options
- UL Types 1, 3R, 4, 4X, 12 housings and customizable faceplates available with logos and special text
- Stainless steel housing options available, type #304 & #316



### Components

There are various connectors available and are represented by a two to three digit code found in between the first two dashes of our GracePort® part number layout. Multiple connectors in a GracePort® are listed alpha-numerically and multiples of the same component are followed by # and the quantity.

### Housing Size & UL Rating

Several housing types are available to meet your needs. The size of your housing depends on several variables including the kinds of components you choose, the power option you want and, in some cases, the UL rating you need. UL ratings offered include UL Type 1, 4, 4X, and 12.

### Power Option / Circuit Breaker

Many power options for international and domestic use are available and are represented by a one, two, or three letter code. Because circuit breakers offer the ability to limit what devices can be run through the GracePort®.



## MAKING MAINTENANCE SAFER, SMARTER, AND MORE PRODUCTIVE

## Customers and Applications

### Who Are The Customers?

- OEM Manufacturers of Industrial Control Panels (ICPs) and Motor Control Centers (MCCs)
- Customers wanting to retrofit ICPs and MCCs
- The GracePort line also features GracePort+ Human Machine Interface (HMI) cover kits for customers wanting to protect their HMIs

### Why Do They Buy?

- Specified by OEM Manufacturers
- Retrofitting projects on equipment for convenient access PLC programming
- HMIs users benefit from the UV, water, dust, debris, and other contaminants protection added by the GracePort+ cover kit.

### What Are Their Applications?

- Provide easy, thru-door access for PLC programming on MCCs/ICPs.
- GracePort®+ HMI cover kit can be installed over existing HMIs of all sizes.

## Customer Benefits

Customers using PLCs can improve safety for routine programming, while simultaneously improving productivity by providing an easier method of plugging in via the GracePort components and power source.

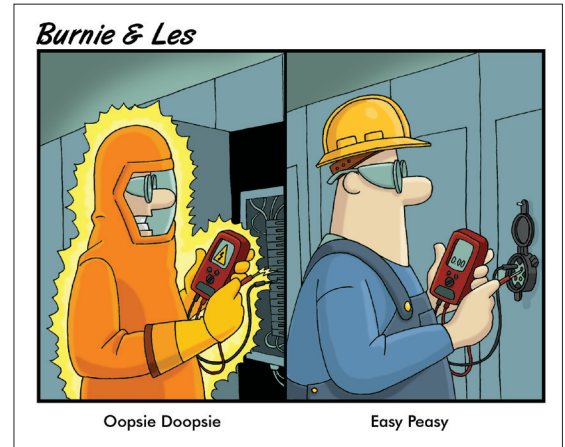
## GracePorts® vs. Other Panel Interface Connectors

The GracePort® is fully customizable to the customer's precise specifications and needs. This includes housings, components, power options, special text, and adding their company logo to the faceplate. GracePorts® are built and shipped within 3-4 business days.

## Questions?

*Part numbers and pricing varies based on configurations. Scan the QR Code to the left to order product literature.*

Contact a Grace Sales Representative or go to [www.graceport.com](http://www.graceport.com) to learn more!  
Email: [Sales@GraceTechnologies.com](mailto:Sales@GraceTechnologies.com) or Call: 563.386.9596 / 800.280.9517



## Customer Problem

Performing LOTO safely requires the answer to one question; is there voltage? Lockout/Tagout (LOTO) is a time-consuming procedure with a potentially high margin of human error that can result in arc flash and shock hazards resulting in injuries, fatalities, downtime, and OSHA citations/fines.

## Grace PESDs Solution

Permanent Electrical Safety Devices (PESDs) provide a safer and more productive answer to this question by minimizing hazardous exposure, human error, and reducing procedure time by 35-40 minutes. Our devices allow voltage measurement and/or indication outside the enclosure while the door remains closed. PESDs include voltage presence LED indication and absence of voltage voltmeter test points.

## Features & Benefits

### Voltage Indicators

PESDs that visually represent presence of voltage with flashing or non-flashing redundant LED lights.

- Voltage Range: 40-1000 AC & 30-1000 DC
- Medium voltage option with voltage range of 2KV to 43KV
- No batteries needed: line voltage powered
- High surge immunity; Cat III/IV rated
- Various mounting options; Flex-Mount available in 4 or 5 wire configuration
- CE, UL Listed, Type 4X, 12, 13

### Safe-Test Point™

Allows electrically qualified personnel to perform absence of voltage test through closed doors for electrical LOTO and minimizes the risk of arc flash and shock hazard.

- Voltage range: 0-1000 AC/DC
- IP2X & UL 600 V touch safe
- CE and cUL Listed

## Features & Benefits

### ChekVolt®

Voltage presence indication and absence of voltage testing.

- Meet the Standard with NO Exceptions: The ChekVolt® mitigates arc flash/shock exposure hazards and enhances compliance to NFPA 70E (certified to UL 61010).
- Installed through a single 30mm knockout, this touch-safe PESD features voltmeter compatible test points for absence of voltage testing and redundant LED voltage presence indication rated up to 1000 VAC/VDC.
- PESD users report LOTO procedure time reductions of 35-40 minutes. ChekVolt® pays for itself after 6-8 LOTO procedures from time savings alone.

### Voltage Test Station

Combines our Safe-Test Point™ with a voltage indicator within an environmentally protected housing.

- Lockable, clear housing
- Electrical and Mechanical LOTO applications
- Allow for higher UL environments
- UL Types 1, 3R, 4, 4X, 12 housings and customizable faceplates available with logos and special text
- Stainless steel housing options available, type #304 & #316



## Customers and Applications

### Who Are The Customers?

- Any customer with an active Electrical Safety Program within their facility.

### Why Do They Buy?

- Enhanced compliance with local, national, and international safety standards such as OSHA & NFPA 70E
- Improved productivity while performing routine LOTO procedures (up to 75% decrease in procedure time!)
- Increased safety while performing LOTO by providing visual representation of energy presence and providing a safer means of testing for absence of voltage through high impedance protected test points with panel doors closed

### What Are Their Applications?

- Directly installed onto equipment where mechanical and electrical LOTO procedures are performed.
- Countless applications exist where users may be concerned about whether voltage is unknowingly present, or absence of voltage testing poses a risk. PESDs are installed on all sorts of equipment.
- Examples include: MCCs, disconnect switches, switchgear, control cabinets, circuit breaker panels, etc.





## How Customers Benefit from PESDs

Customers who have incorporated PESDs into their Electrical Safety Programs have seen up to a 75% decrease in procedure times. In addition, PESDs improve their safety, compliance, and productivity.



## What makes PESDs different than other Electrical Safety Devices

PESDs, like the Safe-Test Point™, comply with NFPA 70E 120.5(7) as an alternative method to test for absence of voltage using a properly rated portable test instrument (voltmeter). Other devices on the market, such as Absence of Voltage Testers (AVTs), provide a different method of testing and fall under Exception No. 1 of the Energy Control Procedure.

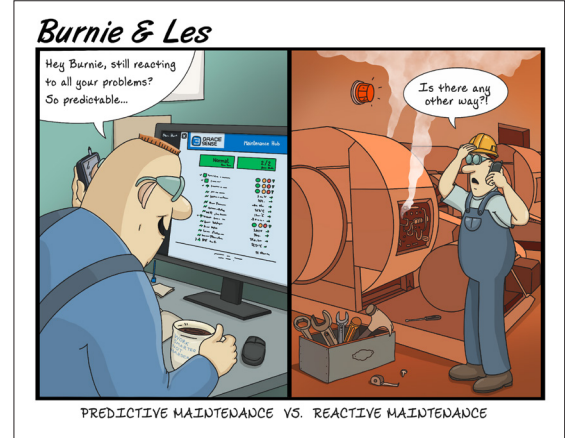


## Questions? *Scan the QR Code to the left to visit our website.*

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Contact a Grace Sales Representative or go to [www.pesd.com](http://www.pesd.com) to learn more!

Email: [Sales@GraceTechnologies.com](mailto:Sales@GraceTechnologies.com) or Call: 563.386.9596 / 800.280.9517



## Customer Problem

Reactive maintenance and over-maintenance are both very costly. Reactive maintenance scenarios often lack required parts and are at a higher risk of personnel becoming injured (70% of injuries occur during reactive maintenance). Downtime is significantly increased when maintenance is unplanned, and personnel cannot make repairs safely or efficiently.

## GraceSense™ Solution

Data provides information for better maintenance plans. IIoT and Hot Spot Monitor devices monitor critical assets to provide alert capabilities when equipment degradation is detected. IIoT devices include vibration and temperature monitoring for motors, pumps, fans, and rotating equipment while the Hot Spot Monitor can be installed to monitor switchgear and MCC temperatures on bolted connection points.

## Features & Benefits

### Field Mount Vibration and Temperature Nodes

- Replaceable long-life battery (5+ years)
- Zigbee compatible wireless connectivity
- IP67, UL Type 4 and 4X
- Stud, plate, fin, and magnetic mounts available
- Wireless range: 30m radius line-of-sight

### Panel Mount Node

- Easy-to-install K size GracePort® housing
- Replaceable long-life battery (5+ year life), 24VDC
- Zigbee, LTE & WiFi wireless connectivity
- Completely customizable transducer options
- IP65, UL Type 4, 4X, 12, & 13

## Features & Benefits



### Hot Spot Monitor

A non-conductive temperature monitoring and alarming device that identifies potential hot spots and enables users to predict potential failures in equipment.

- Hot Spot Monitor Features & Benefits
- Continuous monitoring
- Monitor up to 18 pts per unit
- No calibration required
- Temperature range: -20°C to 120°C
- Communication: Modbus RTU, Modbus TCP/IP, Ethernet IP
- UL Recognized

### Maintenance Hub User Interface

Web application providing real-time asset status using dashboards, plot trends, and analytics.

- Hosted either in the cloud or on a local server
- Displays system information, generates reports, and issues alerts
- SMS and email alerts contain actionable step-by-step remediation instructions
- Open API lets you share data and alerts with existing systems (i.e. CMMS, SCADA, DCS).

## Customers and Applications



### Who Are The Customers?

- Customers looking to improve their maintenance plans with an affordable solution that provides convenient access and alerts capabilities to asset health.

### Why Do They Buy?

- To replace or enhance their current maintenance program with augmentations that provide a substantial ROI by preventing unplanned downtime.

### What Are Their Applications?

- Vibration & Temperature Nodes can be affixed to motors, pumps, fans, conveyor systems, etc.
- The Hot Spot Monitor can be installed wherever critical failure points in the form of bolted connections exist; most commonly within a switchgear.

## Customer Benefits



The Predictive Maintenance System will elevate a customer's current maintenance program to one with better insights, maintenance strategies, and improved safety. Ask your customers about their current program. Are they operating on a preventative or reactive maintenance plan? Are they concerned about lack of preparedness and unplanned downtime? Do they know that most injuries occur during reactive maintenance scenarios?

## GraceSense vs. other Predictive Maintenance Solution



The Predictive Maintenance System benefits from being an all-in-one integration. We work directly with customers to get their Predictive Maintenance System up and running and include all the necessary. GraceSense also benefits from being a completely wireless system, but also includes the feature of Ethernet/IP™ connectivity.

The Hot Spot Monitor replaces routine thermography inspections with the benefit of continuous, remote monitoring of critical hot spots that can often go undetected during thermography inspections. Alerts personnel to temperature anomalies that can occur at any time, while thermography inspections are typically performed on a quarterly basis.

## Questions?



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