



**MANUFACTURERS' REPRESENTATIVE
STOCKING DISTRIBUTOR
MANUFACTURER**

**Daytona Beach, Florida
Columbus, Ohio**

TOPICS COVERED

National Electrical Code 2017 Provision 700.3(F)

Temporary Source of Power for Maintenance or Repair of the Alternative Source of Power

Overview

Conditions

Exceptions

Affected End Users (Emergency System & Legally Required Standby System)

Applicable States

Applicable UL Standards for Temporary Generator or Mobile Load Bank Connections

700.3(F) Requirements

700.3(F) Davidson Sales Company Recommendations

Impact on Generator Service

Impact on Generator Sales

Typical Specification for a Dual-Purpose Generator & Load Bank Docking Station

Power Temp Systems

Applicable Products

Panelsource™

Remote Annunciators

700.3(F) OVERVIEW

Simply put, Provision 700.3(F) means a permanent point of connection for a mobile generator needs to be installed and a mobile generator needs to be deployed for automatic operation, when the generator (defined as an **emergency system** or **legally required standby system**) is offline for maintenance and repairs. Additionally, a remote annunciator or alarm panel is required to give an audible and visual annunciation that the permanent emergency source is disconnected from the emergency system.

*There are some **Conditions** and **Exceptions** that apply to 700.3(F).*

700.3(F) CONDITIONS

- Connection to the portable or temporary alternate source of power shall not require modification of the permanent system wiring.
- Transfer of power between the normal power source and the emergency power source shall be in accordance with 700.12 (*10 seconds or less to supply emergency power*).
- The connection point for the portable or temporary alternate source shall be marked with the phase rotation and system bonding requirements.
- Mechanical or electrical interlocking shall prevent inadvertent interconnection of power sources.
- The switching means shall include a contact point that shall annunciate at a location remote from the generator or at another facility monitoring system to indicate that the permanent emergency source is disconnected from the emergency system.

700.3(F) EXCEPTIONS

- All processes that require an Emergency System or Legally Required Standby System are capable of being disabled during maintenance or repair of same.
- The building is unoccupied, and the fire suppression system doesn't require an emergency system or LRSS.
- Other temporary means can be substituted for the emergency system or LRSS.
- A second Emergency System or LRSS capable of supporting the emergency systems exists onsite.

Examples of an **Emergency System** (NEC Article 700)

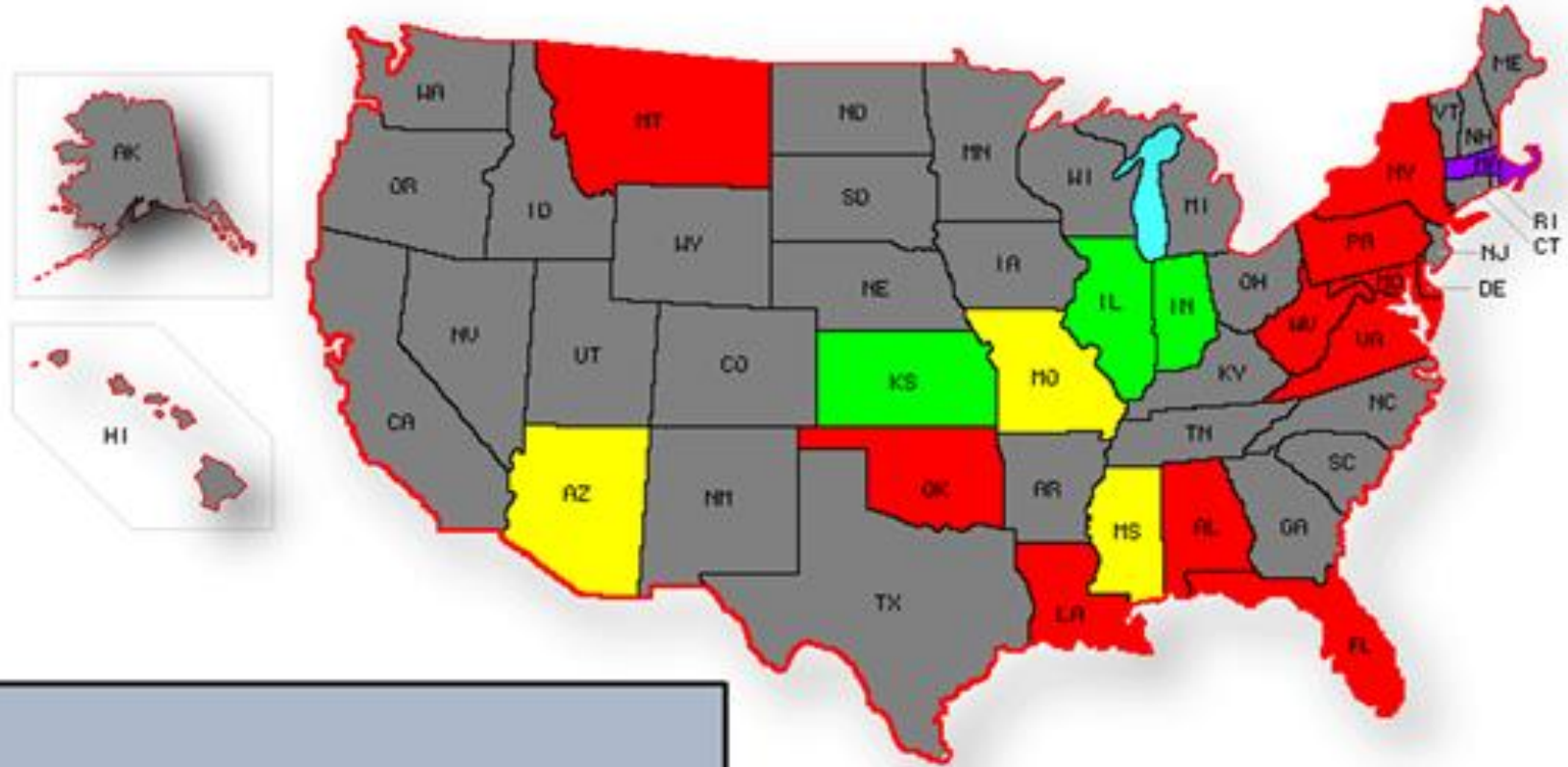
- Hospitals and associated support facilities
- Police & Fire Stations
- Air traffic control centers
- Chemical, petrochemical & hazardous material (including biohazard) handling facilities
- Communications centers, telephone exchanges & cellular tower sites
- 911 call centers
- Central station service facilities (fire and security system monitoring)
- Financial, banking & business data processing facilities
- Police, fire & civil defense radio repeater operations
- Emergency evacuation centers
- Transportation infrastructure – airports, rail stations & seaports
- Municipal infrastructure – water & sewer treatment facilities
- Fuel supply pumping stations (i.e. natural gas distribution & delivery infrastructure)
- Offices & facilities deemed critical to continuity of government
- Prisons & jails
- Radio & television stations (transmitters)

Examples of a **Legally Required Standby System** (NEC Article 701)

- Public schools, universities & colleges
- Shopping centers & large stores
- Movie theaters & performing arts buildings
- Indoor or covered sporting centers
- Public meeting halls & places of assembly
- Large buildings and those over 75 feet
- High performance buildings
- Data centers
- Call centers
- Buildings with electrically operated doors or rated ceiling openings
- Buildings with electrically driven fire safety, smoke control, fire suppression systems or air compressor for dry pipe sprinkler systems
- Buildings with legally required power room-cooling systems & controls
- Large factories & occupied warehouses

NEC® in Effect

3/1/2020



2020 NEC® - 1
2017 NEC® - 32
2014 NEC® - 11
2008 NEC® - 3
County/Municipality NEC® regulation only - 3

Puerto Rico is currently NEC 2017

APPLICABLE UL STANDARDS

UL 1008 Transfer Switch Equipment

INPUT PANEL - Any temporary connection equipment under this code will have male cam style connectors and be considered a transfer switch accessory. This would be a mobile generator connection. *This code requires an automatic or manual transfer switch as part of the installation.*

UL 891 Switchboards

OUTPUT PANEL - Any temporary connection equipment under this code will have female cam style connectors. This would be a temporary load bank connection.

IMPACT ON GENERATOR SERVICE

Emergency Systems & Legally Required Standby Systems

- Educating customers on NEC 2017 700.3(F) and the requirements thereof
- Update existing sites to current code (generator docking stations & remote annunciator)
- Quoting mobile generator deployment in conjunction with maintenance and repairs
- *Deploying mobile generators for maintenance and repairs*
- *Safety for personnel and equipment will improve with cam-type load bank connections*

IMPACT ON GENERATOR SALES

Emergency Systems & Legally Required Standby Systems

- Educating customers on NEC 2017 700.3(F) and the requirements thereof
- Quoting a generator docking station and a remote annunciator for new generator applications
- Opportunity to sell dual-purpose generator docking stations
- Opportunity to sell load banks

700.3(F) REQUIREMENTS

1. Permanent point of connection for a mobile generator for automatic operation with:
 - a mechanical or electrical interlock to prevent interconnection of sources
 - terminal points for the mobile generator connection to the remote start contacts
 - a contact for a remote annunciator (audible & visual annunciation)
 - Voltage & phase rotation and system bonding requirements markings on connection point
2. Remote Annunciator to signal the permanent emergency source is disconnected

MINIMUM REQUIRED EQUIPMENT

1. Generator Docking Station with the following:
 - Trapped key interlock (TKI) between the breaker, disconnect or manual transfer switch and the temporary and permanent emergency sources
 - Voltage & phase specific color-coded bulkhead mount cam-style connectors for mobile generator
 - System bonding markings on docking station
 - Remote Start Contact Terminals
 - Remote annunciator output contact for permanent emergency source being disconnected
2. Remote Annunciator with the following:
 - Single light with an audible horn and an alarm silence switch
 - Text: **THE PERMANENT EMERGENCY SOURCE IS DISCONNECTED FROM THE EMERGENCY SYSTEM**

700.3(F) EQUIPMENT RECOMMENDATIONS

1. Dual purpose (mobile & load bank) generator docking station with the following:
 - Trapped key interlock (TKI) isolation breaker or a rotary manual transfer switch
 - Voltage & phase specific color-coded bulkhead mount cam-lok style temporary connectors for the mobile generator and load bank connections
 - phase monitor with the system bonding markings
 - Remote start contact terminals
 - Load dump circuit or a load dump shunt trip breaker
 - Auxiliary power AC outlet for mobile generator battery charger & engine block heater
2. Remote Annunciator with the following:
 - Single light with an audible horn and an alarm silence switch
 - Text: **THE PERMANENT EMERGENCY SOURCE IS DISCONNECTED FROM THE EMERGENCY SYSTEM**

OPTIONS

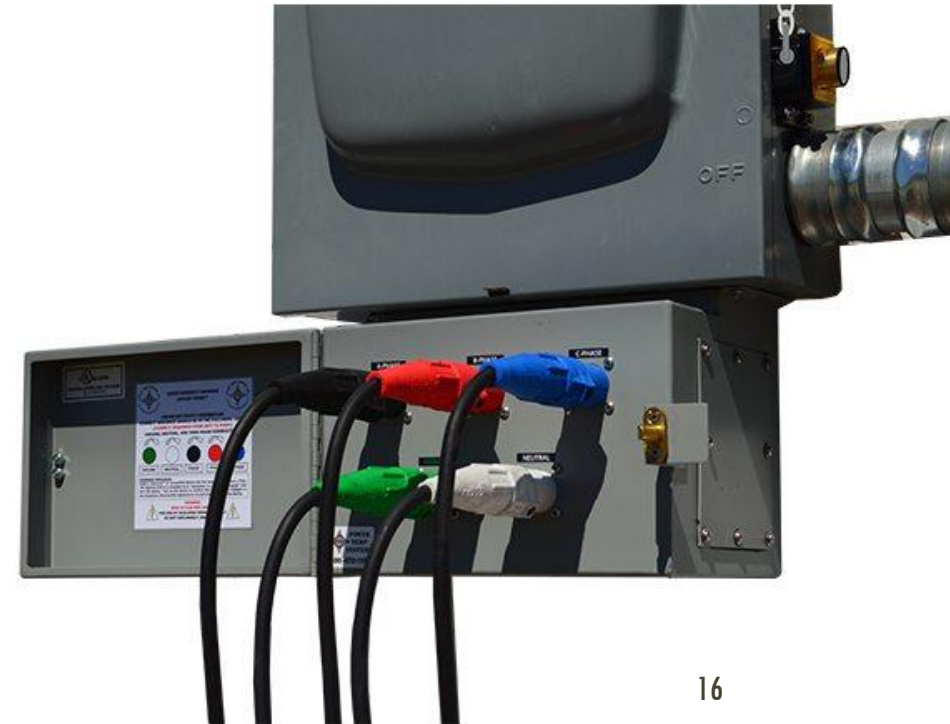
- Additional terminal strip for DC power & remote annunciation connection
- Surge protection device connected to the temporary power source
- Stainless steel enclosure



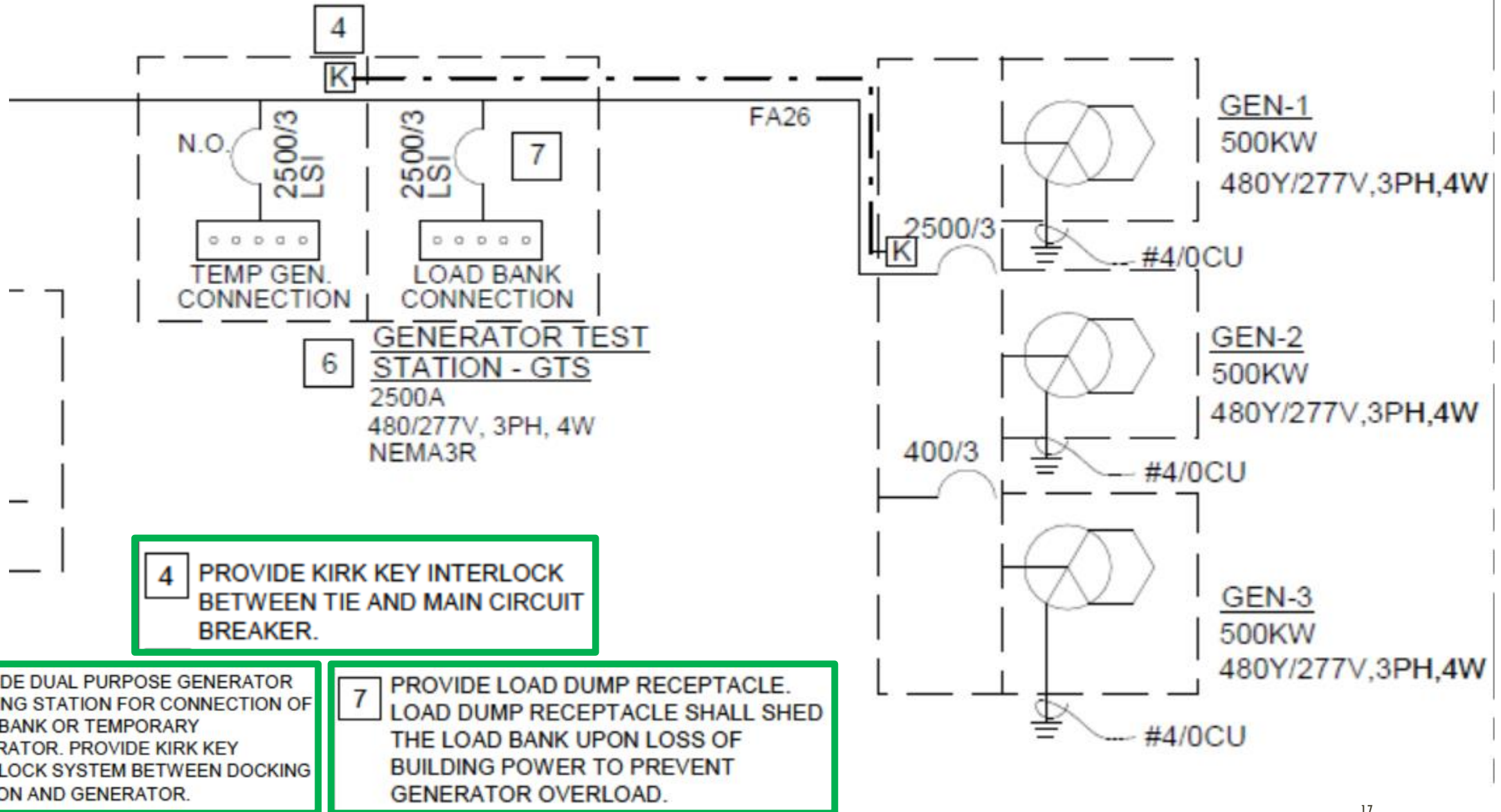
Established in 1991 & located in Houston, Texas



GENERATOR DOCKING STATIONS, MOBILE POWER DISTRIBUTION EQUIPMENT & CUSTOM SOLUTIONS



TYPICAL SPECIFICATION



TYPICAL SPECIFICATION

2,500 Amp Pad Mount Trap Key Interlock Dual Purpose Docking Station with both an isolation breaker for the mobile generator and a load dump shunt trip breaker on the load bank connection

N. Temporary Generator Connection:

1. Description: Permanent temporary generator connection cabinet.
2. Bussing: Provide copper or aluminum bussing as indicated on the one-line diagram.
3. Voltage: 480/277V, 3 phase, 4 wire, 4 pole.
4. Enclosure: NEMA 3R steel construction with hinged access covers.
5. Cam Lock Connectors: Provide E1016 type camlock connectors sized to carry at a minimum the bus ampacity.
6. Interlock: Provide electrical interlock between temporary generator connection and building generator output shunt trip breaker so that only one can operate at a time.
 - a. Provide two position switch on connection cabinet – “Permanent Building Generator” and “Temporary Generator”.
 - b. Provide auxiliary contacts and control wiring to the Fire Command Center to an annunciator indicating that the permanent building generator is offline.
7. Load Bank Connection: Provide connection for temporary load bank with E1016 type camlock connectors. Provide load dump control method to remove load bank on loss of utility power.
8. Labeling: Provide permanent labeling on enclosure. Label shall include at a minimum the following:
 - a. Voltage.
 - b. Ampacity.
 - c. Phase rotation.
 - d. Bonding requirements.
 - e. AIC rating.

WALL MOUNT 200 TO 250 Amp 700.3(F) Dual Purpose TKI Quick Connection Panel

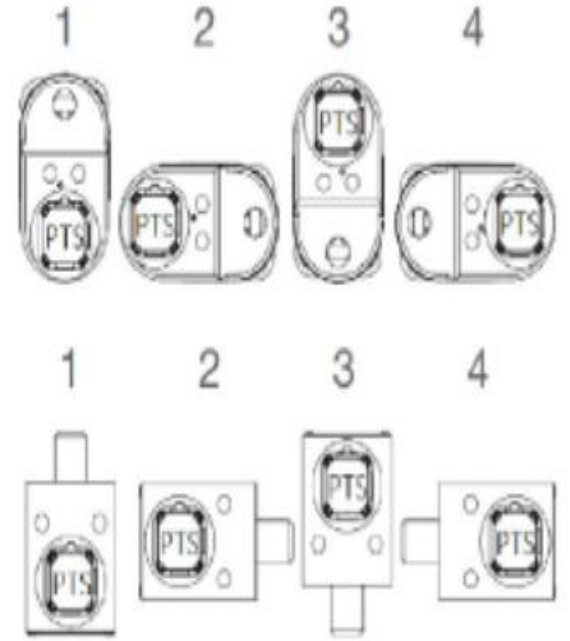


Patented Power Temp Systems Smart Lug (mechanical compression lug)

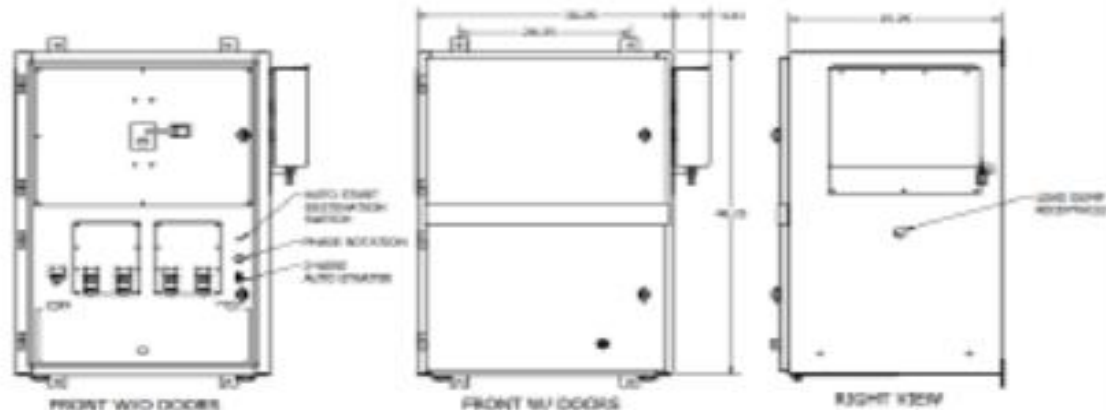
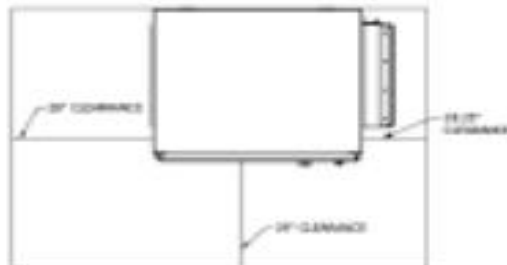


Castell Trapped Key Interlocks

1. Zero Maintenance, as compared to Kirk Key, which requires maintenance twice per year when outdoors.
2. Utilizes matching embossed letters, numbers or symbols instead of Yale type key.
3. Key is indestructible milled stainless steel.
4. Each lock and key is easily distinguished between each other when multiple units are on the same location.



WALL MOUNT 800 Amp 700.3(F) Dual Purpose TKI Quick Connection Panel



GENERAL NOTES

1. THIS INFORMATION IS NOT A SUBSTITUTE FOR THE NATIONAL ELECTRICAL CODE (NEC).
2. ALL FITTINGS MUST BE LISTED FOR USE WITH THE PANEL. THE PANEL IS A TYPICAL UNIT IN THAT THE W/CO IS NOT INCLUDED IN THE CONNECTIONS.
3. TAKE CARE TO PROTECT THE SUBSTANTIALLY OR SUBSTANTIALLY FROM THE LINE VOLTAGE FROM THE PERMANENT CONNECTIONS FOR THE W/CO AND FROM THE W/CO AND FROM THE W/CO.
4. THE W/CO IS NOT TO BE USED FOR THE W/CO AS SPECIFIED IN THE PANEL'S INSTRUCTIONS. THE W/CO IS NOT TO BE USED FOR THE W/CO AS SPECIFIED IN THE PANEL'S INSTRUCTIONS.
5. THE W/CO IS NOT TO BE USED FOR THE W/CO AS SPECIFIED IN THE PANEL'S INSTRUCTIONS.
6. THE W/CO IS NOT TO BE USED FOR THE W/CO AS SPECIFIED IN THE PANEL'S INSTRUCTIONS.
7. THE W/CO IS NOT TO BE USED FOR THE W/CO AS SPECIFIED IN THE PANEL'S INSTRUCTIONS.
8. THE W/CO IS NOT TO BE USED FOR THE W/CO AS SPECIFIED IN THE PANEL'S INSTRUCTIONS.
9. THE W/CO IS NOT TO BE USED FOR THE W/CO AS SPECIFIED IN THE PANEL'S INSTRUCTIONS.
10. THE W/CO IS NOT TO BE USED FOR THE W/CO AS SPECIFIED IN THE PANEL'S INSTRUCTIONS.
11. THE W/CO IS NOT TO BE USED FOR THE W/CO AS SPECIFIED IN THE PANEL'S INSTRUCTIONS.
12. THE W/CO IS NOT TO BE USED FOR THE W/CO AS SPECIFIED IN THE PANEL'S INSTRUCTIONS.
13. THE W/CO IS NOT TO BE USED FOR THE W/CO AS SPECIFIED IN THE PANEL'S INSTRUCTIONS.
14. THE W/CO IS NOT TO BE USED FOR THE W/CO AS SPECIFIED IN THE PANEL'S INSTRUCTIONS.

INSTALLATION NOTES

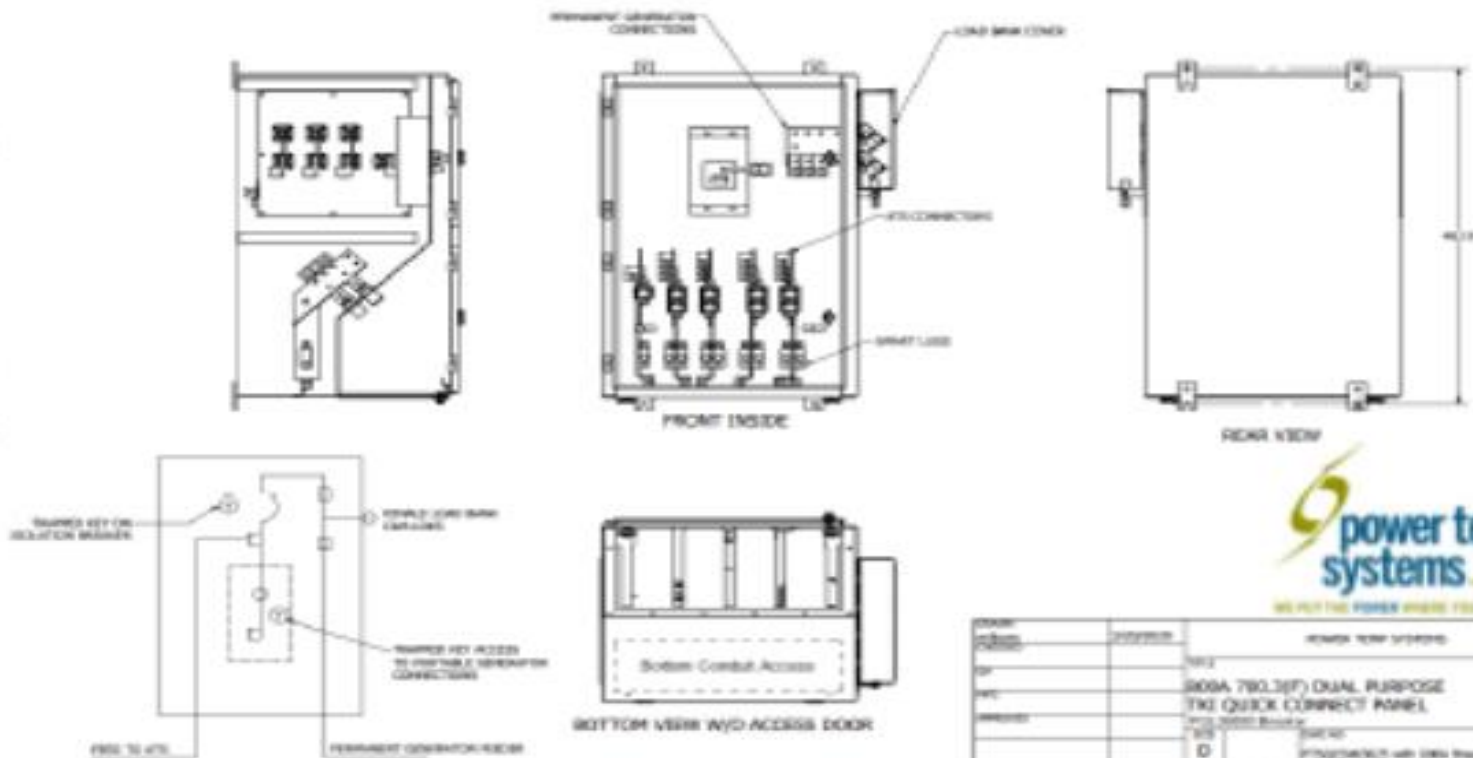
1. ALL W/CO'S MUST BE INSTALLED WITH THE W/CO'S AS SPECIFIED IN THE PANEL'S INSTRUCTIONS. THE W/CO'S MUST BE INSTALLED WITH THE W/CO'S AS SPECIFIED IN THE PANEL'S INSTRUCTIONS.
2. THE W/CO'S MUST BE INSTALLED WITH THE W/CO'S AS SPECIFIED IN THE PANEL'S INSTRUCTIONS.
3. THE W/CO'S MUST BE INSTALLED WITH THE W/CO'S AS SPECIFIED IN THE PANEL'S INSTRUCTIONS.
4. THE W/CO'S MUST BE INSTALLED WITH THE W/CO'S AS SPECIFIED IN THE PANEL'S INSTRUCTIONS.

W/CO	W/CO	W/CO	W/CO	W/CO	W/CO
1	2	3	4	5	6

W/CO	W/CO	W/CO	W/CO	W/CO	W/CO
1	2	3	4	5	6

OPTIONAL AVAILABLE ON SOME MODELS

1. ALUM AND COPPER CONNECTIONS (SEE PANEL'S INSTRUCTIONS FOR MORE INFORMATION).
2. THE W/CO'S MUST BE INSTALLED WITH THE W/CO'S AS SPECIFIED IN THE PANEL'S INSTRUCTIONS.



W/CO	W/CO	W/CO	W/CO	W/CO	W/CO
1	2	3	4	5	6

700.3(F) COMPLIANT CAPABLE 400 – 4000 AMP MODULAR PAD MOUNT GENERATOR DOCKING CONNECT PANEL TAP BOX

STANDARD FEATURES

Three stackable sections: Portable Generator, Load Bank, Breaker/MTS

Rotary transfer switch, bypass breaker and/or main breaker

NEMA 3R aluminum powder coated enclosure

Ventilated top and lower section

Narrow 31" wide models up to 2000A

Wide 48" wide models up to 4000A

Color coded Cam-Loks

Phase rotation monitor

All required mechanical lugs

OPTIONS

2 wire auto start (optional)

Castell Trapped Key Interlock on access and/or breaker (optional)

Load Dump Receptacle



One-Line

Pad Mount Dual Purpose Quick Connect Docking Panel

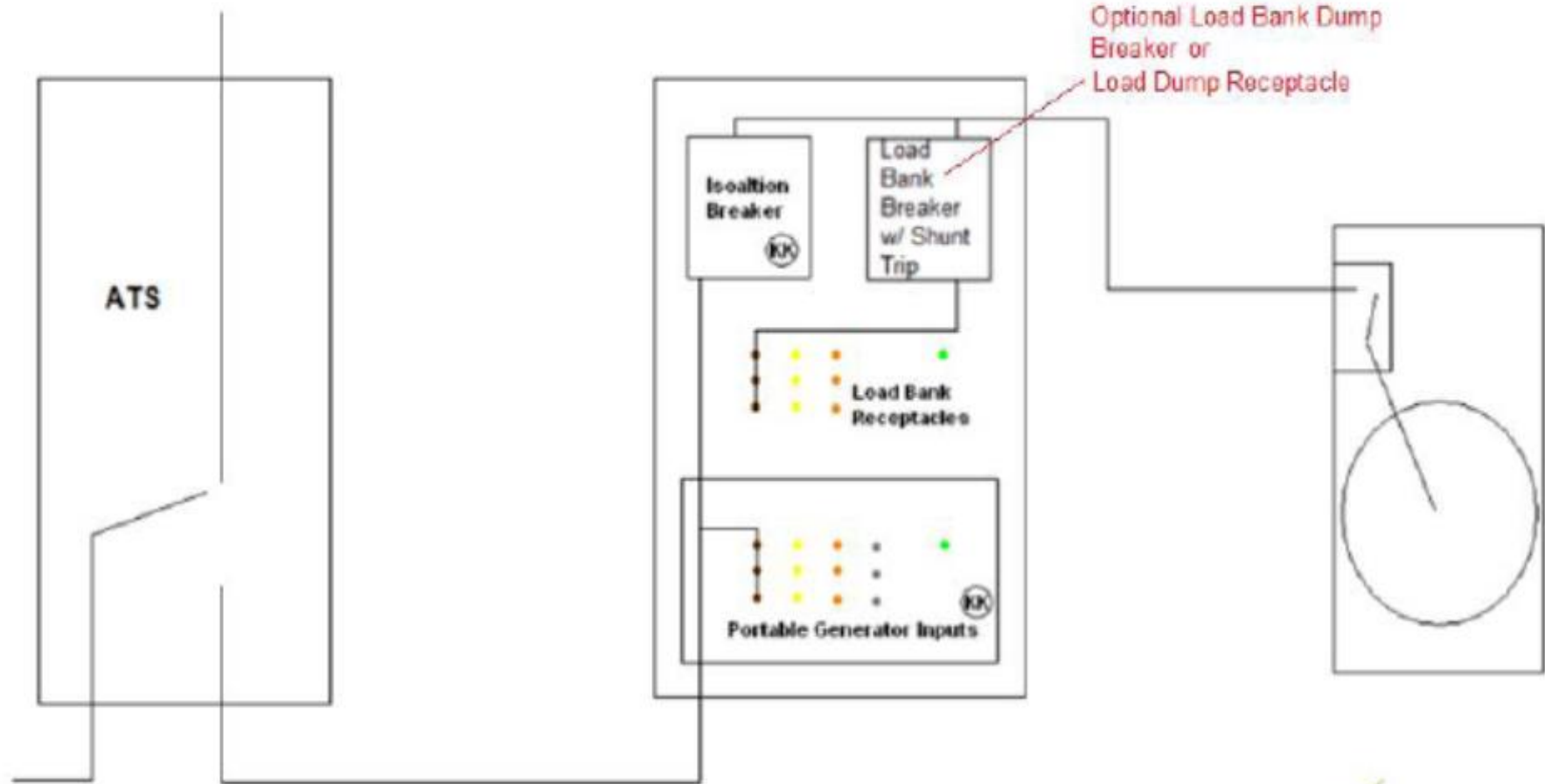


TRAP KEY INTERLOCK



One-Lines

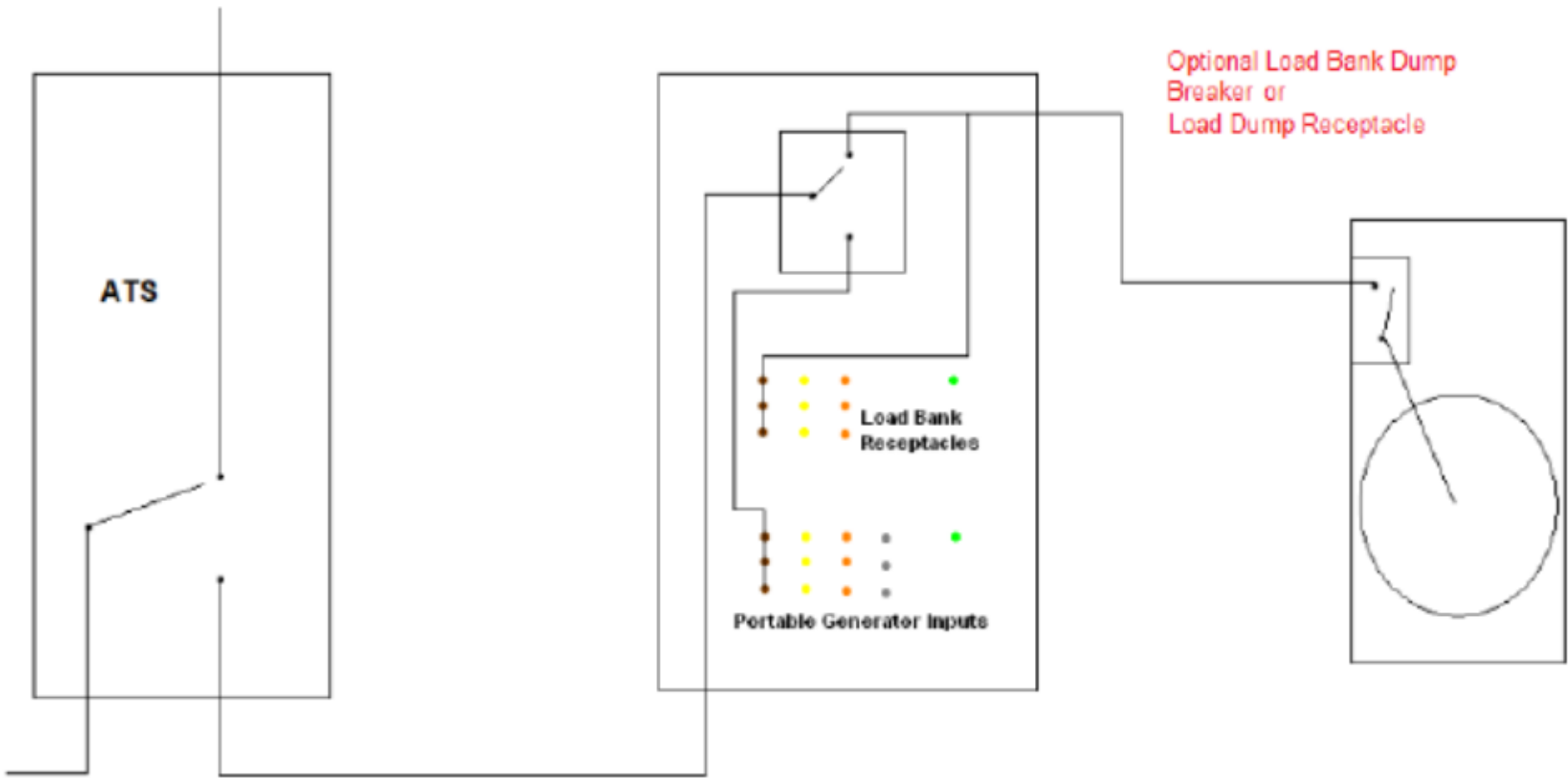
Simultaneous Dual Purpose Pad Mount Quick Connect Docking Panel



ISOLATION BREAKER

One-Line

Simultaneous Dual Purpose Rotary Transfer Switch Pad Mount Quick Connect Docking Panel

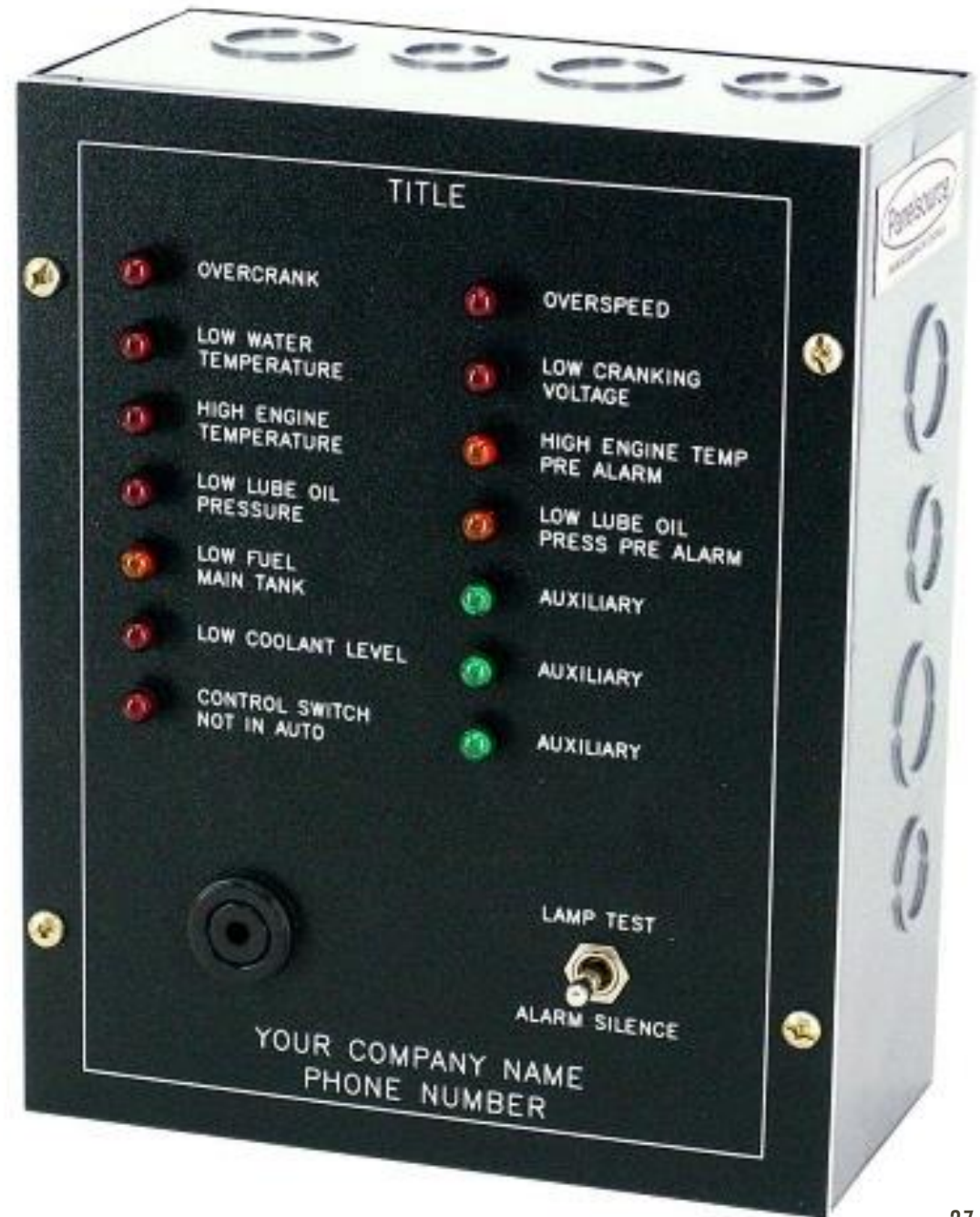


ROTARY TRANSFER SWITCH

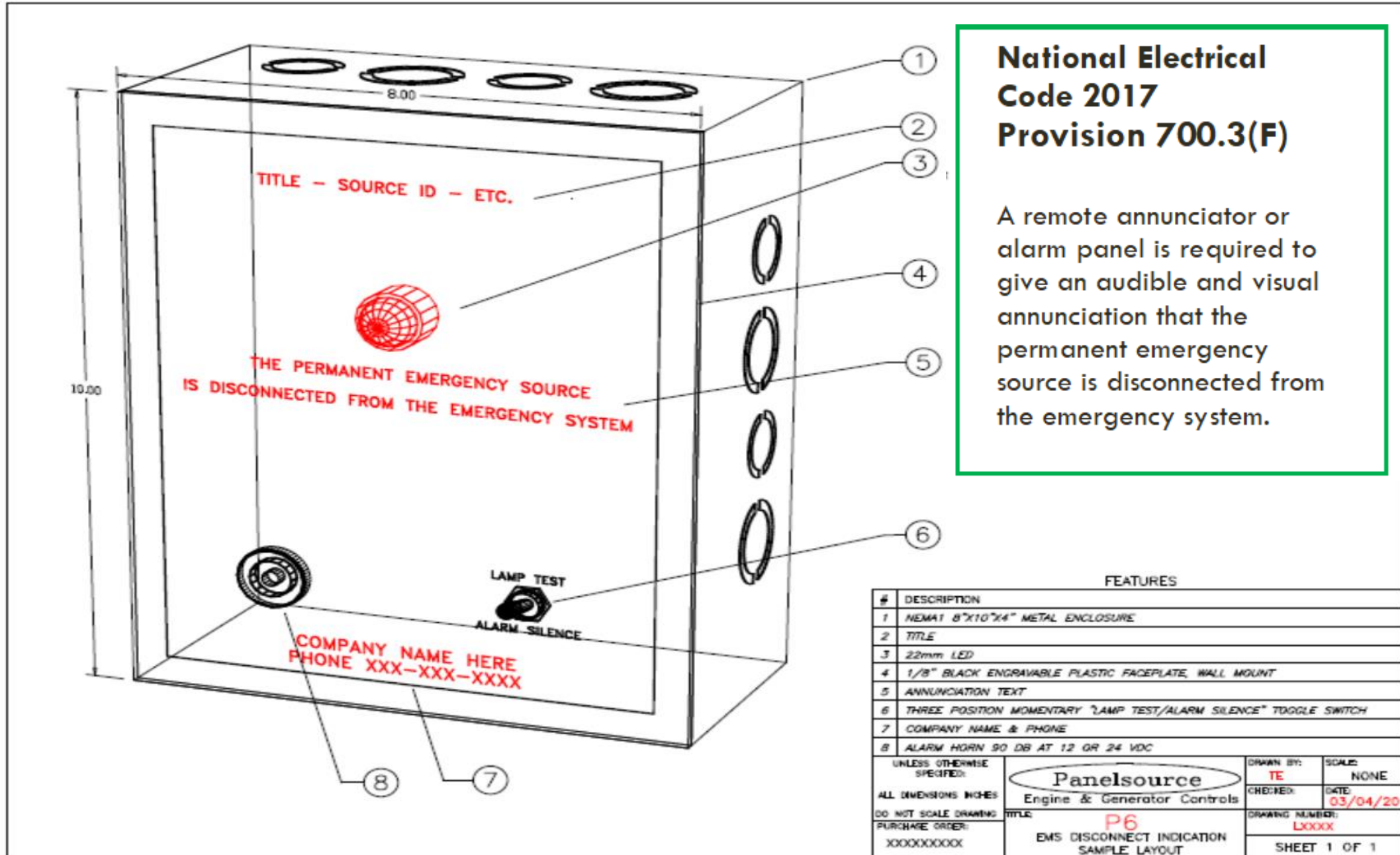




ENGINE & GENERATOR CONTROLS



PANELSOURCE P6-700.3(F) CUSTOM REMOTE ANNUNCIATOR



National Electrical Code 2017 Provision 700.3(F)

A remote annunciator or alarm panel is required to give an audible and visual annunciation that the permanent emergency source is disconnected from the emergency system.

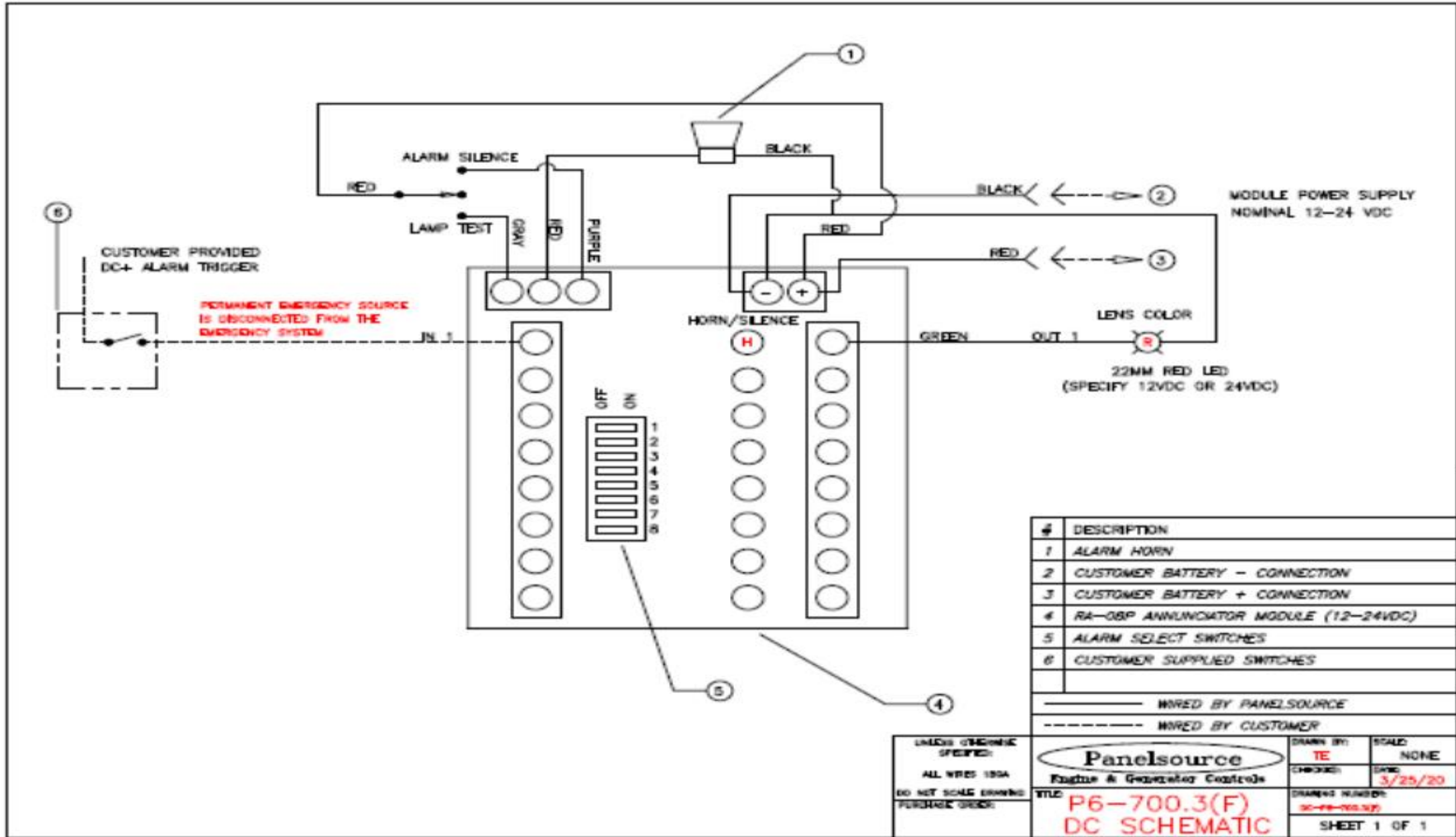
FEATURES

#	DESCRIPTION
1	NEMA1 8"x10"x4" METAL ENCLOSURE
2	TITLE
3	22mm LED
4	1/8" BLACK ENGRAVABLE PLASTIC FACEPLATE, WALL MOUNT
5	ANNUNCIATION TEXT
6	THREE POSITION MOMENTARY "LAMP TEST/ALARM SILENCE" TOGGLE SWITCH
7	COMPANY NAME & PHONE
8	ALARM HORN 90 DB AT 12 OR 24 VDC

UNLESS OTHERWISE SPECIFIED:	 Panelsource Engine & Generator Controls	DRAWN BY:	SCALE:
ALL DIMENSIONS INCHES		TE	NONE
DO NOT SCALE DRAWING	TITLE:	CHECKED:	DATE:
PURCHASE ORDER:	P6		03/04/20
XXXXXXXXXX	EMS DISCONNECT INDICATION SAMPLE LAYOUT	DRAWING NUMBER:	
		LXXXX	
		SHEET 1 OF 1	



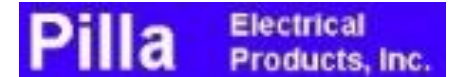
PANELSOURCE P6-700.3(F) DC SCHEMATIC







Powering Business Worldwide



Related and possibly helpful documents on our Davidson
Sales Company webpage

www.davidsonsales.com

[DSC Written Review of NEC 2017 Provisions](#) **PDF**

[NEC 2017 Provision 700.3\(F\) PowerPoint Presentation](#) **PDF**

[700.3\(F\) Compliance Alert Letter Template](#) **WORD**

CONCLUSION

National Electrical Code 2017

Provision 700.3(F)

QUESTIONS, COMMENTS & FEEDBACK