

# GE Digital Energy Power Quality

## Introduction

Power-related problems cost U.S. companies more than \$80 billion a year. The impact is far-reaching and affects just about every aspect of business. It drives up maintenance and production costs, causes production delays, lost sales, late deliveries, as well as increased spoilage and scrap. GE's Tranquell™ Series Surge Protective Devices (SPDs) help minimize power-related problems by protecting sensitive electrical equipment from harmful transients.

Most transients originate from within a facility and nearly 80% of today's overvoltage problems are caused by equipment and power disturbances within the plant. These inner-facility transients are caused by light load panels switching on and off, motors starting and stopping, and close conductor proximity, just to name a few. Less than 20% of transient problems originate outside of the facility due to lightning strikes, utility grid switching, switching of capacitor banks, and electrical accidents.

Transients cause three general types of damage to sensitive electrical equipment, for example:

- > **Disruptive** – A voltage transient enters an electronic component which interprets the valid logic command, resulting in system lock-up, malfunctions, faulty output or corrupted files.
- > **Dissipative** – A repetitive, short duration energy surge resulting in long-term electrical degradation.
- > **Destructive** – Associated with high level energy surges, resulting in immediate equipment failure

# Tranquell™ Series

Surge Protective Devices (SPD)

DIN Rail Mounted

UL Recognized

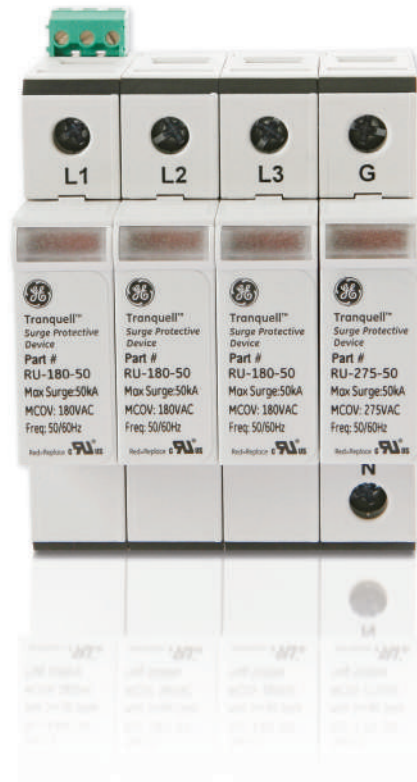


## Features and Benefits

GE's Tranquell™ Series SPD DIN Rail mount device is a Type 2 surge protective device that is modular and easy to install. DIN Rail mount housing allows for quick installation. Each unit has a compact footprint and user-replaceable phase surge pluggable modules with an IP20 finger-safe design. Both visual indicators and remote indicators (dry contact) provide SPD status to critical control circuits.

- > Built-in thermal protection
- > 200kA interrupting rated
- > DIN Rail mount
- > Pluggable modules, fingersafe design – IP20 package
- > Built-in visual status indicator
- > Remote indicator with 3 pin COM/NO/NC contacts
- > Easy installation or retrofit
- > Fail-safe / self-protected design
- > Small footprint
- > No dedicated external fusing or dedicated breakers required

Most SPDs are designed to function in tandem with fuses. If you need a space-saving option or are looking for ways to reduce costs, then consider an integrated system. GE's Tranquell™ Series SPD DIN Rail features thermally protected metal oxide varistor technology, eliminating the need for dedicated overcurrent protection.



## Applications

- > AC Distribution
- > Medium Voltage Power Supplies
- > Industrial Automation Controls
- > Telecom Equipment
- > Motor Controls and Starter Systems
- > Programmable Logic Controller (PLC) Applications
- > Power Transfer Equipment
- > HVAC Controls
- > AC Drives
- > Security Systems
- > IT Networks

## Industries

- > Agriculture
- > Telecommunication
- > Water Treatment
- > Wind Power
- > Transportation
- > Oil & Gas
- > Utilities
- > Pulp & Paper

## Ratings

- > 20kA Nominal Discharge Current ( $I_{n1}$ )
- > 200kA SCCR
- > 25kA and 50kA (8/20 $\mu$ s) surge capacity (per mode)
- > Surge life @ 2kA (8/20 $\mu$ s): 1000 events
- > Operating and storage temperature: -13°F to 140°F (-25°C and +60°C)
- > Wiring Range: #14 AWG to #6 AWG (2.08 mm<sup>2</sup> - 13.3 mm<sup>2</sup>)

## Approvals / Standards

- > UL 1449 3<sup>rd</sup> Edition
- > Type 4 UL Recognized Component (tested to SPD Type 2)
- > ANSI/IEEE C62.41
- > RoHS Compliant



## Product Views



Assembly System: 4-Pole



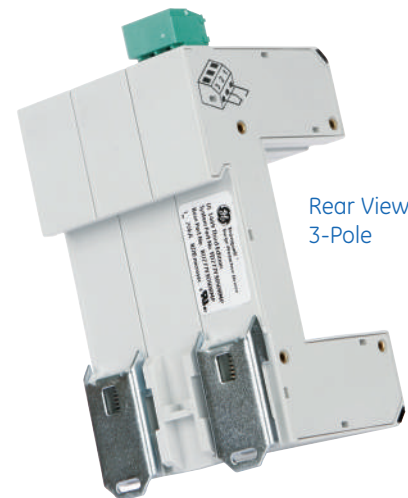
Assembly System on DIN Rail: 2-Pole



Base Module: 4-Pole



Side View – User-Replaceable Pluggable Module



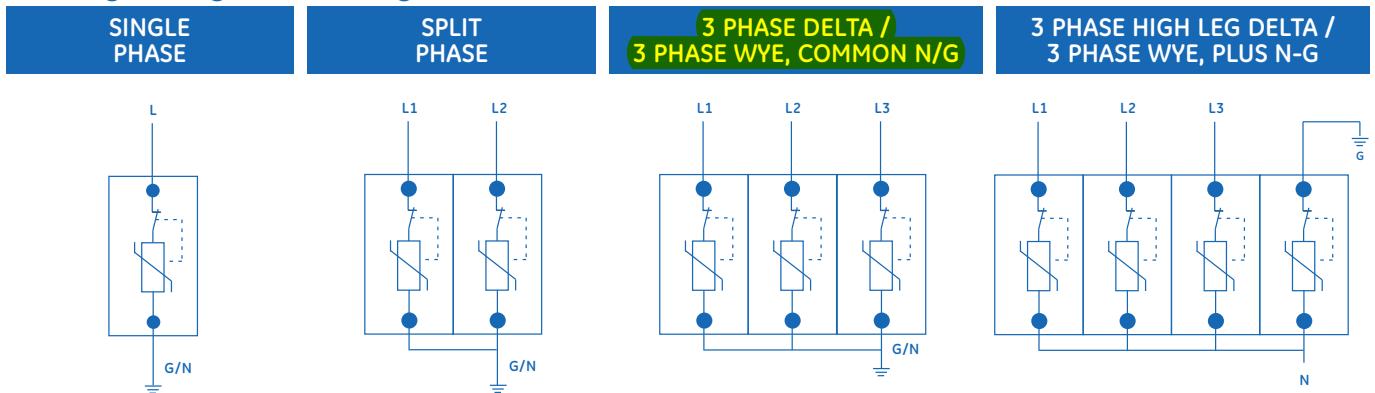
Rear View: 3-Pole

# Part Numbers & Specifications

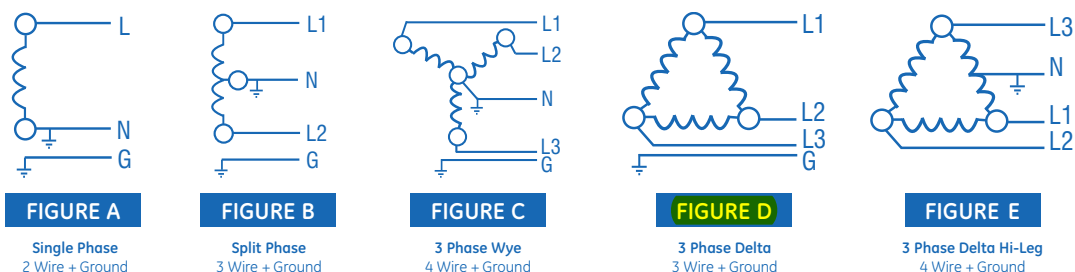
System Part Number	Nominal Voltage (50/60 Hz)	Product Configuration				UL Specifications					Voltage Protection Rating (VPR) (Up @ I <sub>n</sub> )						
		No. of Wires	Max Discharge Current (I <sub>max</sub> , 8/20 μs, kA)	Wiring Configuration*	Electrical Voltage Configuration**	Nominal Discharge Current (I <sub>n</sub> , kA)	MCOV (Vc) L-L	MCOV (Vc) L-G	MCOV (Vc) L-N	L-N	L-G	N-G	L-L	H-L1	H-N	H-G	
TD120Y4025RMN	120 / 208V	5-Wire / 4 Pole	25kA	3 Phase Wye, plus N-G	Figure C	20	360	360	180	600	1200	600	1200	-			
TD120Y4050RMN	277 / 480V		50kA			20	360	360	180	600	1200	600	1200	-			
TD277Y4025RMN			25kA			20	640	500	320	1000	1500	600	1800	-			
TD277Y4050RMN			50kA			20	640	500	320	1000	1500	600	1800	-			
TD347Y4025RMN			347 / 600V			25kA	10	840	695	420	1500	2000	900	2500	-		
TD347Y4050RMN	50kA					10	840	695	420	1500	2000	900	2500	-			
TD240H4025RMN	120 / 240V		4-Wire / 3 Pole	25kA	3 Phase High Leg Delta	Figure E	20	***	***	600	1200	600	1200	1500	900	1500	
TD240H4050RMN	240 / 480V			50kA			20			600	1200	600	1200	1500	900	1500	
TD480H4025RMN				25kA			10			900	1500	600	1800	2500	1800	2000	
TD480H4050RMN				50kA			10			900	1500	600	1800	2500	1800	2000	
TD480H4050RMN		50kA		10			900			1500	600	1800	2500	1800	2000		
TD120Y3025RMP	120 / 208V	4-Wire / 3 Pole		25kA			3 Phase Wye, common N/G			Figure C	20	360	-	180	600	-	-
TD120Y3050RMP	277 / 480V		50kA	20	360	-		180	600		-	-	1200	-			
TD277Y3025RMP			25kA	20	640	-		320	1000		-	-	1800	-			
TD277Y3050RMP			50kA	20	640	-		320	1000		-	-	1800	-			
TD347Y3025RMP			347 / 600V	25kA	10	840		-	420		1500	-	-	2500	-		
TD347Y3050RMP	50kA			10	840	-		420	1500		-	-	2500	-	-	-	
TD240D3025RMP	240V		3 Phase Delta	25kA	3 Phase Delta	Figure D	20	550	275	-	-	900	-	-	1800	-	
TD240D3050RMP	50kA			20			550	275	-	-	900	-	-	1800	-		
TD480D3025RMP	480V			25kA			10	1100	550	-	-	1800	-	-	3000	-	
TD480D3050RMP				50kA			10	1100	550	-	-	1800	-	-	3000	-	
TD120S2025RMP	120/208V, 120/240V	3 Wire / 2 Pole	25kA	Split Phase	Figure B	20	360	-	180	600	-	-	1200	-	-	-	
TD120S2050RMP	240 / 480V		50kA			20	360	-	180	600	-	-	1200	-	-	-	
TD240S2025RMP			25kA			20	550	-	275	900	-	-	1800	-	-	-	
TD240S2050RMP			50kA			20	550	-	275	900	-	-	1800	-	-	-	
TD120S1025RMP	120V	2 Wire / 1 Pole	25kA	Single Phase	Figure A	20	-	-	180	600	-	-	-	-	-		
TD120S1050RMP	240 V		50kA			20	-	-	180	600	-	-	-	-	-	-	
TD240S1025RMP			25kA			20	-	-	275	900	-	-	-	-	-	-	
TD240S1050RMP			50kA			20	-	-	275	900	-	-	-	-	-	-	
TD277S1025RMP	277 V		25kA			20	-	-	320	1000	-	-	-	-	-	-	
TD277S1050RMP			50kA			20	-	-	320	1000	-	-	-	-	-	-	
TD347S1025RMP	347 V		25kA			10	-	-	420	1500	-	-	-	-	-	-	
TD347S1050RMP			50kA			10	-	-	420	1500	-	-	-	-	-	-	

\*\*\* Please contact the factory for details

## \* Wiring Configuration Diagrams (NOTE: Shown with no power applied)

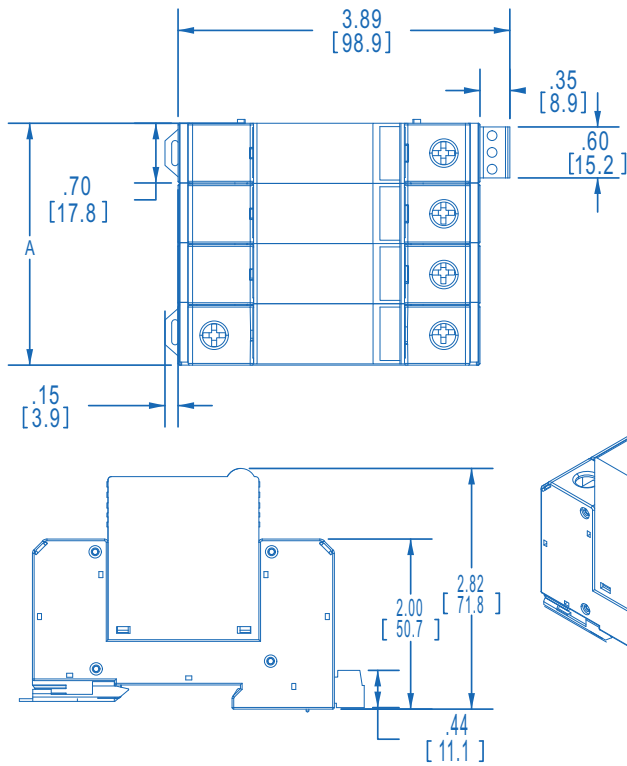


## \*\* Electrical Voltage Configurations

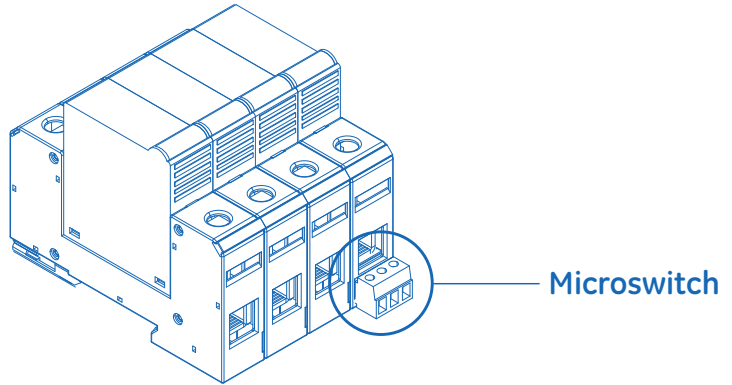


**NOTE:** GE's Tranquell™ Series SPD DIN Rail mount devices are tested for safe operation without any dedicated overcurrent protection, when correctly matched to the power system parameters. A gG 160 Amp NH Fuse may be chosen to meet other requirements in an IEC application. Consult local codes and standards for appropriate fuse sizing.

## Dimensional Diagrams



Poles	A
1-Pole	0.71 in [18 mm]
2-Pole	1.42 in [36 mm]
3-Pole	2.13 in [54 mm]
4-Pole	2.84 in [72 mm]



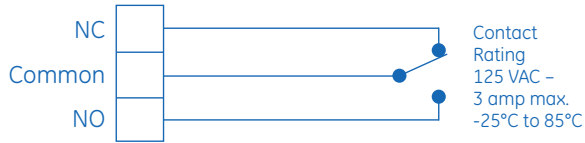
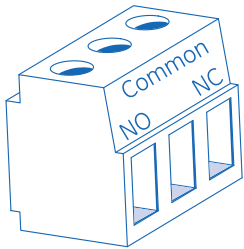
### NOTE:

All dimensions in the diagram above are for reference only and are shown in Inches [millimeters]

## Microswitch Wiring

Contact between Common + NO  
= Product Offline, Not-Protected

Contact between Common + NC  
= Product Online, Protected



Contact Rating  
125 VAC -  
3 amp max.  
-25°C to 85°C

Signal Wire Range: #30 AWG to #16 AWG (.051 mm<sup>2</sup> - 1.31 mm<sup>2</sup>)  
Terminal Torque: 1.8 in.-lb. (0.113 N-m)

### NOTE:

- ✓ Shown with no power applied
- ✓ Field wiring by others



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