









## **DRA Series Benefits**

- DIN Rail mountable surge protection devices
- ► Replaceable SPD modules eliminate costly, time-consuming replacement wiring
- ► Simple snap "in/out"design for module replacement
- ► Compact & lightweight yet rugged
- Visual monitor advises protection status
- Model choices allow for single mode or all-mode protection strategies
- Each protector module's fixed base is "keyed" to ensure proper application
- All protectors (except N-G model) are equipped with signaling contacts for remote monitoring of protection status

# **Replaceable Surge Protection Modules**

The M-Ti DRA Series of Surge Protection Devices (SPDs) are single pole, parallel-connected (MOV based technology) Type 1 CA (component assembly) protectors. Designed for use in both Type 1 and 2 locations these units are ANSI/UL 1449 Recognized . Each protector module provides 50 kA of Surge protection in a maintenance free, standard DIN profile, DIN Rail mountable, IP20 enclosure.

## **Installation**

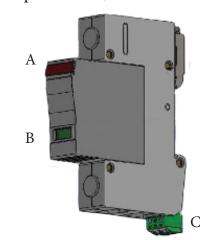
DRA Series Protectors are installed/connected in parallel with the line and the equipment to be protected. The DRA Series has a very high short circuit current rating of 200kA and eliminates the need for any additional overcurrent protection devices.

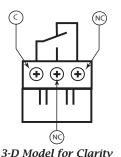
## **Remote Monitoring**

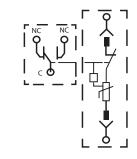
DRA Series protectors (except the N - G protector) come standard with one remote monitoring mechanical switch contact with "dry Form C contacts" per module. The contact can be used to drive several different types of indicators such as a remote light indicator or an audible alarm. The contact ratings are 250V RMS max, 0.5A max. The connection to the remote signal is through detachable screw terminal connector.

## **Visual Indication of Protection Status**

DRA Series protectors are maintenance free devices. If the unit is subjected to a prolonged over-voltage condition or excessive surge energy, internal elements will activate, disconnecting the DRA Series from the line. When the unit is no longer providing protection, the window on the front of the DRA Series turns from Green (normal) to Red (fault) indicating that the module requires replacement(not to be confused with the RED strip label).

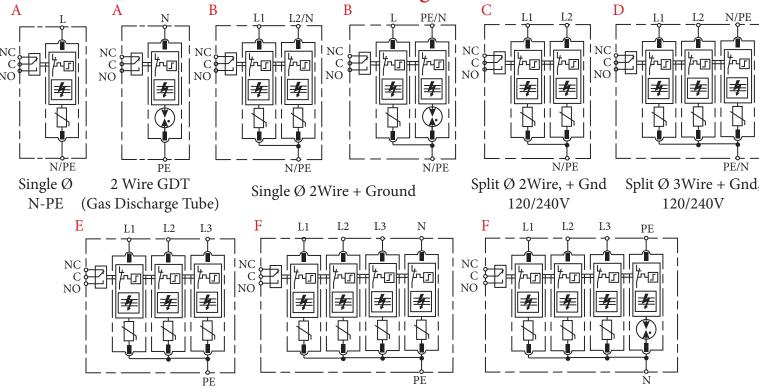






B: Green Flaa = Normal Operation Red Flag = Fault, Replace Module C: AUX Contact Connector

## **DRA Series Configurations**



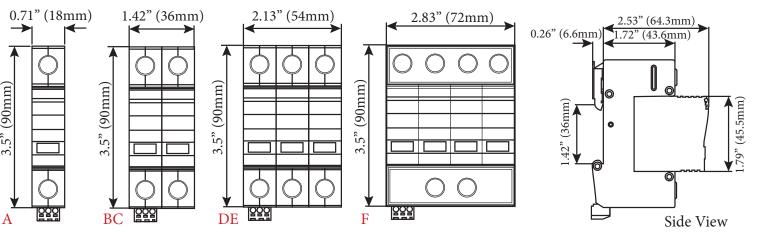
3Ø 2 Wye (star) 4Wire + Gnd, 120/208V, 220/380V, 240/415V, 277/480V, 347/600V

#### **Dimensions**

3Ø Delta/Wye 3Wire

+ Gnd

240V, 277V, 480V,





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# Din Rail Mounted Surge Protection System with Replaceable Modules

















#### DRA SERIES MODELS

The DRA Series is extremely flexible and can be configured to meet your exact protection requirements. A combination of base options allows for increases in per phase or per mode surge capabilites by simply ganging units.











Three Module with Triple Base



Four Module with **Quad Base** 

0 0 0 0 0 0

Example: Service Configuration 3Ø,

modules and bases

4-Wire WYE, w/ground using single

NOTE: When using multiple module base units, only one set of Form C Dry Contacts is provided per assembly. Modules are replaced individually.

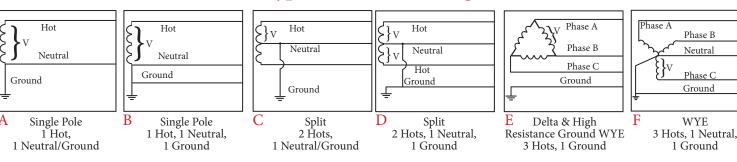
## **Applications**

- Power Supplies
- Communication/Broadcasting
- Industrial Automation
- Transportation Systems & Controls
- UPS Systems
- Electric Vehicle Charging Stations
- Water & Waste Treatment Systems
- Motor Control and Starter Systems
- AC/DC Distribution Systems
- Programmable Logic Controllers (PLC)
- Power Transfer Equipment
- HVAC Applications
- IT/Data Centers
- AC/DC Drives
- Medical Equipment/Systems
- Security Systems

## Features/Benefits

- ANSI/UL 1449 Reconized Type 1 Component Assembly
- Applicable for Type 1 & 2 Service Locations
- SCCR 200kA
- Patented arc-extinguishing
- Large surge energy capability (50kA)
- Low voltage protection levels (VPR)
- Degradation (window) failure indication
- Fail-safe, self-protected design
- No additional over-current fuse devices required
- DIN-rail (35mm) mountable for easy installation
- Plug-in/out replacement Modules
- Fixed bases are keyed per service voltage
- Wire (hookup) range: 6-12AWG stranded CU
- Form C Contacts for Remote Monitoring #16 AWG Max
- 15 Year Warranty
- Meets ANSI/UL1449 4th Edition & IEC61643-11

## **Typical Service Wiring**



## **Specifications**

**Short-Circuit Current Rating (SCCR):** Nominal discharge current (8/20) In: Max Discharge current (8/20) Imax:

Frequency: **Follow Current:** 

GDT model: 200A Self Cutoff Internal\Thermal disconnect:

MOV model: None

**Green = Normal / Red = Failure** 

Wire Range: 6-12AWG Solid (2AWG max) / Stranded (4AWG max) CU

**Mounting: 35mm DIN-Rail** 20 kA 50 kA **Degree of Protection IP 20** 50-60 Hz Flammability UL94 V0

> Operating & Storage Temperature: – 40° C to + 85° C Remote Alarm Contacts: NO/NC/C, Isolated Form C Remote alarm contact capability (Nominal Volts/Nominal Amps)

AC: 250V/0.5A DC: 250V/0.1A

Remote Alarm Wire Size: Max # 16AWG

## DRA Series (DIN Rail Assemblies)

A Single-Phase 2 Wire Systems (Single Base with Single Protection Module):

Model Number	# of	Electrical Service	MCOV			VPR			Replacement Module	Replacement Module
1120 401 1 (41110 01	Poles		L-N	L-G	N-G	L-N	L-G	N-G	(L-N) (L-G)	(N-G)
DRA50-1P120-S	1	Single Ø 120V, 2 Wire	150V	150V		700V	700V		DRM50-1P-120	
DRA50-1P127-S	1	Single Ø 127V, 2 Wire	180V	180V		1000V	1000V		DRM50-1P-127	
DRA50-1P220-S	1	Single Ø 220V, 2 Wire	275V	275V		1000V	1000V		DRM50-1P-220	
DRA50-1P230-S	1	Single Ø 230V, 2 Wire	275V	275V		1000V	1000V		DRM50-1P-230	
DRA50-1P240-S	1	Single Ø 240V, 2 Wire	320V	320V		1200V	1200V		DRM50-1P-240	
DRA50-1P277-S	1	Single Ø 277V, 2 Wire	320V	320V		1200V	1200V		DRM50-1P-277	
DRA50-1P347-S	1	Single Ø 347V, 2 Wire	420V	420V		1500V	1500V		DRM50-1P-347	
DRA50-1P480-S	1	Single Ø 480V, 2 Wire	550V	550V		1800V	1800V		DRM50-1P-480	
DRA50-1P600-S	1	Single Ø 600V, 2 Wire	690V	690V		2500V	2500V		DRM50-1P-600	
DRA50-1P120NG-S	1	Single Ø 120V, 2 Wire (N-G)			150V			900V		DRM50-1P120NG
DRA50-1P220NG-S	1	Single Ø 220V, 2 Wire (N-G)			255V			900V		DRM50-1P220NG
DRA50-1P230NG-S	1	Single Ø 240V, 2 Wire (N-G)			255V			900V		DRM50-1P230NG
DRA50-1P240NG-S	1	Single Ø 240V, 2 Wire (N-G)			255V			900V		DRM50-1P240NG

NG = Gas Discharge Tube for Neutral to Ground Protection Only Note: For Canadian Applications add a "/C" at the end of the Model Number

#### **B** Single-Phase 2 Wire Plus Ground Systems (Dual Base with 2 Protection Modules):

Model Number	# of	Electrical Service	MCOV			VPR			Replacement Module	Replacement Module
	Poles		L-N	L-G	N-G	L-N	L-G	N-G	(L-N) (L-G)	(N-G)
DRA50-2P120-LGN-S	2	1Ø 120V, 2 Wire + Gnd		150V	150V		700V	700V	DRM50-1P-120	DRM50-1P120
DRA50-2P120-LNG-S	2	1Ø 120V, 2 Wire + Gnd	150V		150V	700V		900V	DRM50-1P-120	DRM50-1P-120NG
DRA50-2P127-LGN-S	2	1Ø 127V, 2 Wire + Gnd		180V	180V		1000V	1000V	DRM50-1P-127	DRM50-1P127
DRA50-2P127-LNG-S	2	1Ø 127V, 2 Wire + Gnd	180V		150V	1000V		900V	DRM50-1P-127	DRM50-1P-120NG
DRA50-2P220-LGN-S	2	1Ø 220V, 2 Wire + Gnd		275V	275V		1000V	1000V	DRM50-1P-220	DRM50-1P220
DRA50-2P220-LNG-S	2	1Ø 220V, 2 Wire + Gnd	275V		255V	1000V		900V	DRM50-1P-220	DRM50-1P-220NG
DRA50-2P230-LGN-S	2	1Ø 230V, 2 Wire + Gnd		275V	255V		1000V	1000V	DRM50-1P-230	DRM50-1P230
DRA50-2P230-LNG-S	2	1Ø 230V, 2 Wire + Gnd	275V		255V	1000V		900V	DRM50-1P-230	DRM50-1P-230NG
DRA50-2P240-LGN-S	2	1Ø 240V, 2 Wire + Gnd		320V	320V		1200V	1200V	DRM50-1P-240	DRM50-1P240
DRA50-2P240-LNG-S	2	1Ø 240V, 2 Wire + Gnd	320V		275V	1200V		900V	DRM50-1P-240	DRM50-1P-240NG
DRA50-2P277-LGN-S	2	1Ø 277V, 2 Wire + Gnd		320V	320V		1200V	1200V	DRM50-1P-277	DRM50-1P-277
DRA50-2P347-LGN-S	2	1Ø 347V, 2 Wire + Gnd		420V	420V		1500V	1500V	DRM50-1P-347	DRM50-1P-347

Gas Discharge Tube is Used in LNG Units

Note: For Canadian Applications add a "/C" at the end of the Model Number

#### DRA Series (DIN Rail Assemblies) continued

C Split-Phase 3 Wire Systems (Dual Base with 2 Protection Modules):

Model Number	# of Poles	Electrical Service	MCOV			VPR			Replacement Module	Replacement Module
niodel i (dinoci			L-N	L-G	N-G	L-N	L-G	N-G	(L-N) (L-G)	(N-G)
DRA50-2PS127-S	2	2Ø 120/240V, 2 Wire + Gnd	180V	180V		1000V	1000V		DRM50-1P127	DRM50-1P127
DRA50-2PS240-S	2	2Ø 240/480V, 2 Wire + Gnd	320V	320V		1200V	1200V		DRM50-1P240	DRM50-1P240

These Models Are Configured For Split Phase Applications With L to N And L to G Protection Modes.

Note: For Canadian Applications add a "/C" at the end of the Model Number.

#### D Split-Phase 3 Wire Plus Ground Systems (Tri-Base with 3 Protection Modules):

Model Number	# of Poles	Electrical Service	MCOV				VPR		Replacement Module	Replacement Module
Model Manibel			L-N	L-G	N-G	L-N	L-G	N-G	(L-N) (L-G)	(N-G)
DRA50-3PS127-S	3	2Ø 120/240V, 3 Wire + Gnd	180V	180V	180V	180V	1000V	1000V	DRM50-1P127	DRM50-1P127
DRA50-3PS240-S	3	2Ø 240/480V, 2 Wire + Gnd	320V	320V	320V	1200V	1200V	1200V	DRM50-1P240	DRM50-1P240

These Models Are Configured For Split Phase Applications With L1 to G, L2 to G and N to G Protection Modes. (N and G modes may be interchanged) Note: For Canadian Applications add a "/C" at the end of the Model Number.

#### E 3 Phase Delta and Wye (3 Wire Plus Ground) Systems (Tri-Base and 3 Protection Modules):

Model Number	# of	Electrical Service	MCOV			VPR			Replacement Module	Module Module
	Poles		L-N	L-G	N-G	L-N	L-G	N-G	(L-N) (L-G)	(N-G)
DRA50-3P120-S	3	3Ø 120V, 3 Wire + Gnd		150V			700V		DRM50-1P120	DRM50-1P120
DRA50-3P220-S	3	3Ø 220V, 3 Wire + Gnd		275V			1000V		DRM50-1P220	DRM50-1P220
DRA50-3P230-S	3	3Ø 230V, 3 Wire + Gnd		275V			1000V		DRM50-1P230	DRM50-1P230
DRA50-3P240-S	3	3Ø 240V, 3 Wire + Gnd		320V			1200V		DRM50-1P240	DRM50-1P240
DRA50-3P277-S	3	3Ø 277V, 3 Wire + Gnd		420V			1500V		DRM50-1P277	DRM50-1P277
DRA50-3P480-S	3	3Ø 480V, 3 Wire + Gnd		550V			1800V		DRM50-1P480	DRM50-1P480
DRA50-3P600-S	3	3Ø 600V, 3 Wire + Gnd		690V			2500V		DRM50-1P600	DRM50-1P600

Note: For Canadian Applications add a "/C" at the end of the Model Number.

#### Three-Phase 4 Wire Plus Ground Systems (Quad Base with 4 Protection Modules):

Model Number	# of	Electrical Service	MCOV			VPR			Replacement Module	Replacement Module
1120 401 1 (41110 01	Poles		L-N	L-G	N-G	L-N	L-G	N-G	(L-N) (L-G)	(N-G)
DRA50-4P120-S	4	3Ø 120/208V, 4 Wire + Gnd		150V	150V		700V	700V	DRM50-1P-120	DRM50-1P-120
DRA50-4P120-GS	4	3Ø 120/208V, 4 Wire + Gnd	150V		150V	700V		900V	DRM50-1P-120	DRM50-1P-120NG
DRA50-4P220-S	4	3Ø 220/380V,4 Wire + Gnd		275V	275V		1000V	1000V	DRM50-1P-220	DRM50-1P-220
DRA50-4P220-GS	4	3Ø 220/380V, 4 Wire + Gnd	275V		255V	1000V		900V	DRM50-1P-220	DRM50-1P220NG
DRA50-4P230-S	4	3Ø 230/400V, 4 Wire + Gnd		275V	275V		1000V	1000V	DRM50-1P-230	DRM50-1P-230
DRA50-4P230-GS	4	3Ø 230/400V, 4 Wire + Gnd	275V		255V	1000V		900V	DRM50-1P-230	DRM50-1P230NG
DRA50-4P240-S	4	3Ø 240/415V, 4 Wire + Gnd		320V	320V		1200V	1200V	DRM50-1P-240	DRM50-1P-240
DRA50-4P240-GS	4	3Ø 240/415V, 4 Wire + Gnd	320V		255V	1200V		900V	DRM50-1P-240	DRM50-1P240NG
DRA50-4P277-S	4	3Ø 277/480V, 4 Wire + Gnd		320V	320V		1200V	1200V	DRM50-1P-277	DRM50-1P-277
DRA50-4P347-S	4	3Ø 347/600, 4 Wire + Gnd		420V	420V		1500V	1500V	DRM50-1P-347	DRM50-1P-347

Gas Discharge Tube is Used in GS Units.

Note: For Canadian Applications add a "/C" at the end of the Model Number

Reference: DRA = Assembly DRM = Modules DRB = Base

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