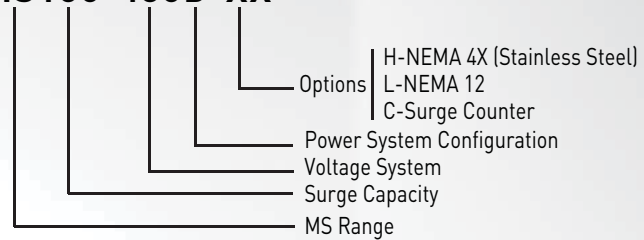


# Data Sheet

## Type 1 Surge Protective Device **MS160 Series**



### MS160-480D-XX



### Application

The MS Series is a high-performance UL 1449 Listed Type 1 SPD designed for critical panels located in the harshest environments. The Surge Protective Device (SPD) achieves the highest UL performance ratings for the Nominal Discharge Current (In) and High Current (SCCR) tests while providing a low Voltage Protection Rating (VPR).

It is ideally suited for all NEC compliant locations including a UL96A Master Label Lightning Protection System and thus can be deployed with complete confidence.

In addition to its rugged performance, the MS Series has a new Smart-Diagnostic system that includes a multi-stage LED to indicate the exact level of protection present per phase, an audible alarm, remote signal contacts and an optional surge counter.

The MS Series is available for all single & three phase configurations up to 600Vac and is housed in a NEMA 4/12 rated metal enclosure or NEMA 4X stainless steel option.

### Features

- I<sub>max</sub> 192kA per phase
- Protects All Modes
- Real-Time LED indicators, Audible Alarm, Remote Contacts
- Smart Diagnostic Indicating Remaining Surge Capacity
- All Enviromental Ratings Available
- Optional Surge Counter
- Optional UL1283 Electromagnetic Interference Filter

### UL

- UL 1449 4th Edition
- Listed UL Type 1 Surge Protective Device
- In 20kA (All models and all modes)
- SCCR 200kA (All models)
- VPR L-N is 700V for 120V, 120/240V, 120/208V (See page 2 for full table)
- File # VZCA.E326289 (www.ul.com)



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# Data Sheet

## Type 1 Surge Protective Device MS160 Series

### Technical Data

Description			MS160-120T	MS160-120Y	MS160-240Y	MS160-240DCT	MS160-240D	MS160-277Y	MS160-347Y	MS160-480D	MS160-480DCT
System voltage			120/240 Vac	120/208 Vac	240/415 Vac	120/120/240 Vac	240 Vac	277/480 Vac	347/600 Vac	480 Vac	320/580 Vac
System			Split 2Ph+N+G	Wye 3Ph+N+G	Wye 3Ph+N+G	Hi-Leg D 3Ph+N+G	Delta 3Ph+G	Wye 3Ph+N+G	Wye 3Ph+N+G	Delta 3Ph+G	Hi-Leg D 3Ph+N+G
Maximum Operating Voltage	MCOV [V]	L- G	150	150	320	150/320	320	320	550	550	550/1100
		L-N	150	150	320	150/320	-	320	550	-	550/1100
		N-G	150	150	320	150	-	320	550	-	550
		L-L	300	300	640	300/470	640	640	1100	640	550/1000
Operating Current	Ic	mA	<10 mA	<10 mA	<10 mA	<30 mA	<30 mA	<10 mA	<10 mA	<30 mA	<30 mA
Follow current	If	A					NONE				
Maximum Leakage Current	Ipe	mA					1 mA				
Maximum Recommended fuse if any	Rating, Type						200 A				
Frequency	f	Hz					50/60 Hz				
Nominal discharge current per mode	In [8/20]	kA					20 kA				
Maximum Discharge Current per phase	I <sub>max</sub> [8/20 kA]	kA					192 kA				
Impulse Discharge Current per phase	I <sub>imp</sub> [10/350]	kA					8 kA				
Total Maximal Discharge Current	I <sub>total</sub> [8/20]	kA					384 kA				
Total Maximal Discharge Current	I <sub>total</sub> [10/350]	kA					24 kA				
Let through Voltage	U <sub>res</sub> [V] at 20kA	L- G					-				
		L- N					-				
		N- G					-				
		L- L					-				
Voltage Protection Rating	VPR [V]	L- G	700	700	1200	700	1200	1200	1800	1800	1200
		L- N	700	700	1000	700	-	1000	1800	-	1000
		N- G	700	700	1000	700	-	1000	1800	-	1000
		L- L	1000	1000	1800	1800	1800	1800	3000	3000	1800
Short Circuit Current Rating	SCCR	kA					200				
Standard's Compliance or recognition	UL1449 ed. 4						UL Type 1 Listed SPD				
RFI Filtering							Optional UL1283 Electromagnetic Interference Filter				
Thermal disconnect							Internal to each component				
Overload disconnect							Internal to each surge protector				
Failure Indicators							LED, audible alarm and remote signaling				
Operating Temperature		°F					-40 +185°F [-40/+85°C]				
Housing- Enclosure material							Steel or Stainless Steel Options				
Mounting type							Wall Mounting by screws (not included)				
Environmental rating		IP					IP66, IP65				
Nema							NEMA4, NEMA4X, NEMA12				
Location Installation							Indoor/Outdoor (Depending on Version)				

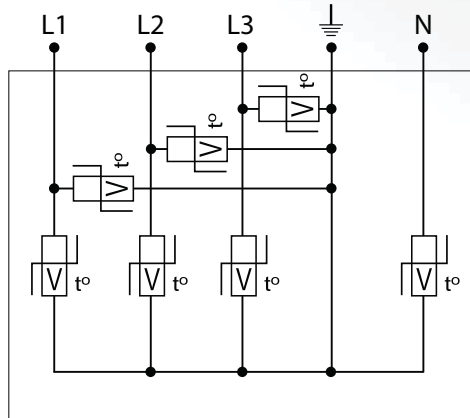


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# Data Sheet

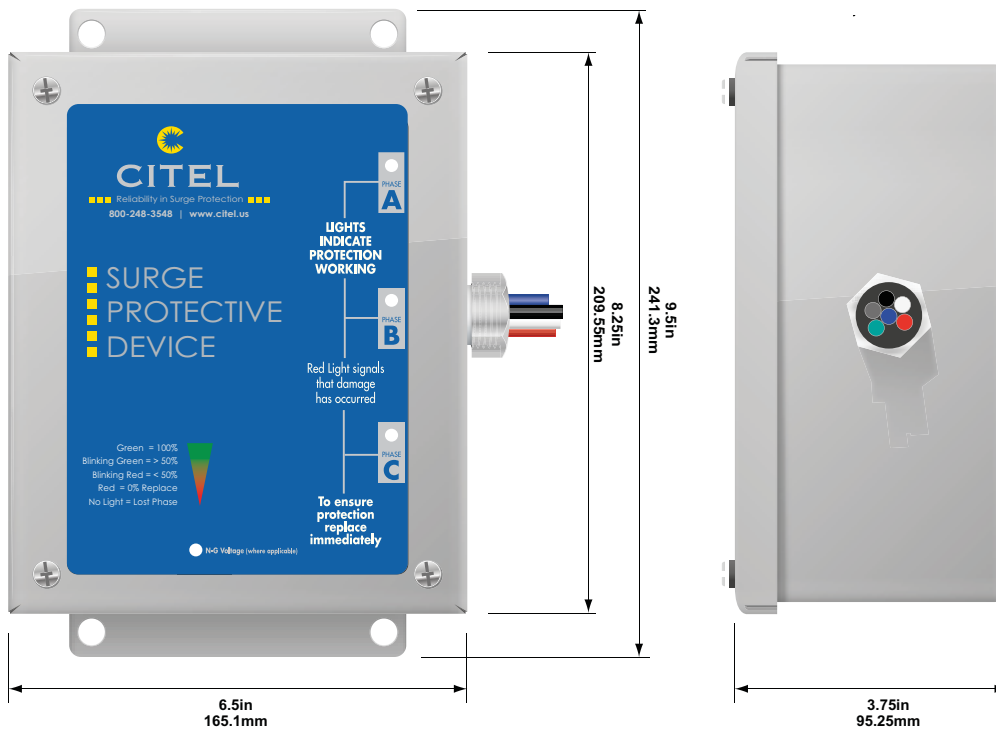
## Type 1 Surge Protective Device MS160 Series

### Electrical Diagram



V : High energy varistor  
t<sup>o</sup> : Thermally Protected

### Dimensions (in mm)



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