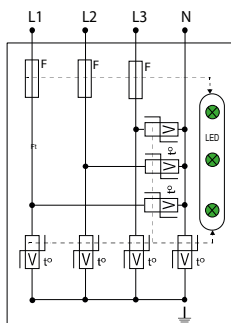
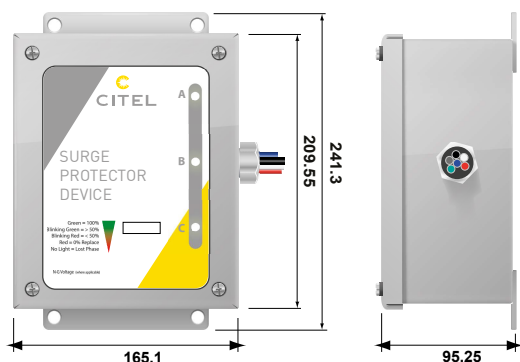




SERIES MS



- I_{max} from 105 to 220 kA (8/20μs)
- All mode of protection
- 200 kA short-circuit fault current rated
- Multi-redundant protection circuit per phase
- Full on-board diagnostics - LED indicators, remote and audible alarms
- EMI/RFI noise filtering (option)
- NEMA 4/4X/12 enclosure
- UL 1449 5th Ed. Type 1 listed
- Lightning counter (option)



V: High energy varistor
 t°: Thermal disconnect
 F: Fuse
 LED: Failure indicator

Characteristics

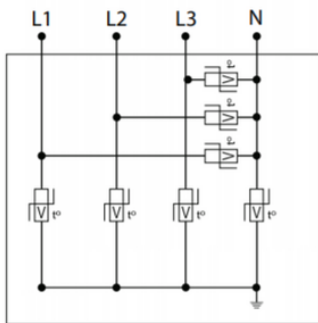
Series		MS80	MS100	MS160	MS200
Max. discharge current by phase	I _{max}	105 kA	132 kA	192 kA	220 kA
Type of Network					
	120/240 Vac Split Phase 3Ph+PE	MS80-120T	MS100-120T	MS160-120T	MS200-120T
	120/208 Vac Wye 3Ph/N+PE	MS80-120Y	MS100-120Y	MS160-120Y	MS200-120Y
	277/480 Vac Wye 3Ph/N+PE	MS80-277Y	MS100-277Y	MS160-277Y	MS200-277Y
	240/415 Vac Wye 3Ph/N+PE	MS80-240Y	MS100-240Y	MS160-240Y	MS200-240Y
	120/120/240 Vac Hi-Leg Delta 3Ph/N PE	MS80-240DCT	MS100-240DCT	MS160-240DCT	MS200-240DCT
	240 Vac Delta 3Ph+PE	MS80-240D	MS100-240D	MS160-240D	MS200-240D
	347/600 Vac Wye 3Ph/N+PE	MS80-347Y	MS100-347Y	MS160-347Y	MS200-347Y
	480 Vac Delta 3Ph+PE	MS80-480D	MS100-480D	MS160-480D	MS200-480D
Protection modes		L/N - L/PE - N/PE - L/L			
Admissible short-circuit current		200 kA			
RFI filtering		- 40 dB			
Standards compliance		UL1449 5th edition - IEC 61643-1			
Safety					
Thermal disconnect		internal to each component			
Electrical disconnect		internal to each surge protector			
Failure indicators		by Led			
Failure indicators		audible alarm and remote signaling			
Mechanical characteristics					
Housing material		Metal-NEMA 4, NEMA 12, Stainless steel-NEMA 4X			
Operating temperature		-40/+85 °C			
Mounting		Wall mounting by screws (not supplied)			
Connection to AC network		#10 AWG 36" Leads			
Dimensions (H x L x D)		203 x 152 x 101 mm (8" x 6" x 4")			
Specific features					
Disconnection switch		no			

Version	Network	Voltage max. (Uc)	Residual voltage (V) following UL1449R500A			
			L-N	L-PE	N-PE	L-L
MSxxx-120T	120/240 Vac Split Phase 3Ph+PE	150Vac	700	700	700	1000
MSxxx-120Y	120/208 Vac Wye 3Ph/N+PE	150Vac	700	700	700	1000
MSxxx-277Y	277/480 Vac Wye 3Ph/N+PE	320Vac	1000	1200	1000	1800
MSxxx-240Y	240/415 Vac Wye 3Ph/N+PE	320Vac	1000	1200	1000	1800
MSxxx-240DCT	120/120/240 Vac Hi-Leg Delta 3Ph/N PE	150/320Vac	1000	1200	1000	1800
MSxxx-240D	240 Vac Delta 3Ph+PE	320Vac	-	1200	-	1800
MSxxx-347Y	347/600 Vac Wye 3Ph/N+PE	550Vac	1800	1800	1800	3000
MSxxx-480D	480 Vac Delta 3Ph+PE	500Vac	-	1800	-	3000

MS100-240Y



- Multi-TMOV Technology
- UL1449 Type 1 LISTED
- 105-220kA Surge Current Rating
- Visual fault indicator, audible alarm and remote contacts
- 10-Year warranty

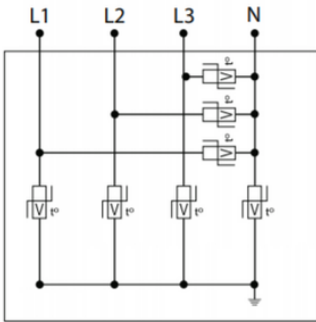


Electrical Characteristics		
POWER SPD TYPE		UL1449 TYPE 1/2 LISTED
VOLTS	(V)	240/415
AC/DC/DC PV/RF		AC
PHASE	(PH)	3Y
AMPS	(A)	-
AMBIENT MIN	(C)	-35
AMBIENT MAX	(C)	+85
MODES		L-L, L-N, L-G, N-G
VPR	(V)	1800/1000/1200/1000
MCOV	(V)	640/320/320/320
IN15 impulses 8/20µs	(kA)	20
IMAX8/20µs	(kA)	132
Mechanical Characteristics		
TECHNOLOGY		Multi-TMOV
NETWORK CONFIGURATION		3PH, 4W+G, Wye
CONNECTION METHOD		36" #10 AWG LEADS
MOUNTING		FLANGE MOUNT
MATERIAL		Steel
NEMA RATING (IP RATING)		3R/4/12
FAIL-SAFE BEHAVIOR		Yes, no upstream over current protection required
REAL-TIME DIAGNOSTICS		% of protection present LED, audible alarm and remote contacts. Optional surge counter.
DIMENSIONS		See diagram
WEIGHT		6 lbs
Standards		
UL STANDARD		UL1449 5th Edition
UL CATEGORY		VZCA, VZCA7
UL FILE NUMBER		E326289
STANDARDS		UL96A, ANSI C62.41/45, NOM-003-SCFI-2014, NOM-001-SCFI-1993, IEC61643-11
ENVIRONMENTAL STANDARDS		ROHS
Part number		
890120		

MS160-240Y



- I_{max} 105-220kA per phase
- UL1449 Type 1 Listed SPD
- I_n 20kA
- SCCR 200kA
- Real-Time LED indicators, Audible Alarm, Remote Contacts
- Smart Diagnostic Indicating % protection present
- NEMA 4 (Other options NEMA 12, NEMA 4X Stainless Steel)
- UL1283 EMI Filter (Option available)
- Surge Counter (Option available)

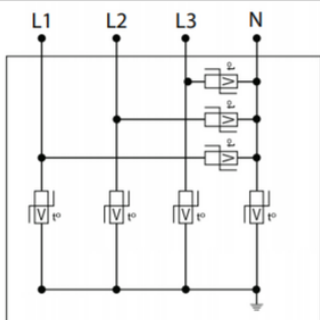


Electrical Characteristics		
POWER SPD TYPE		UL1449 TYPE 1/2 LISTED
VOLTS	(V)	240/415
AC/DC/DC PV/RF		AC
PHASE	(PH)	3Y
AMPS	(A)	-
AMBIENT MIN	(C)	-35
AMBIENT MAX	(C)	+85
MODES		L-L, L-N, L-G, N-G
VPR	(V)	1800/1000/1200/1000
MCOV	(V)	640/320/320/320
IN15 impulses 8/20µs	(kA)	20
IMAX8/20µs	(kA)	192
Mechanical Characteristics		
TECHNOLOGY		Multi-TMOV
NETWORK CONFIGURATION		3PH, 4W+G, Wye
CONNECTION METHOD		36" #10 AWG LEADS
MOUNTING		FLANGE MOUNT
MATERIAL		Steel
NEMA RATING (IP RATING)		3R/4/12
FAIL-SAFE BEHAVIOR		Yes, no upstream over current protection required
REAL-TIME DIAGNOSTICS		% of protection present LED, audible alarm and remote contacts. Optional surge counter.
DIMENSIONS		See diagram
WEIGHT		6 lbs
Standards		
UL STANDARD		UL1449 5th Edition
UL CATEGORY		VZCA, VZCA7
UL FILE NUMBER		E326289
STANDARDS		NOM-003-SCFI-2014, NOM-001-SCFI-1993
ENVIRONMENTAL STANDARDS		ROHS
Part number		
890165		

MS200-240Y



- Multi-TMOV Technology
- UL1449 Type 1 LISTED
- 105-220kA Surge Current Rating
- Visual fault indicator, audible alarm and remote contacts
- 10-Year warranty



Electrical Characteristics		
POWER SPD TYPE		UL1449 TYPE 1/2 LISTED
VOLTS	(V)	240/415
AC/DC/DC PV/RF		AC
PHASE	(PH)	3Y
AMPS	(A)	-
AMBIENT MIN	(C)	-35
AMBIENT MAX	(C)	+85
MODES		L-L, L-N, L-G, N-G
VPR	(V)	1800/1000/1200/1000
MCOV	(V)	640/320/320/320
IN15 impulses 8/20µs	(kA)	20
IMAX8/20µs	(kA)	220
Mechanical Characteristics		
TECHNOLOGY		Multi-TMOV
NETWORK CONFIGURATION		3PH, 4W+G, Wye
CONNECTION METHOD		36" #10 AWG LEADS
MOUNTING		FLANGE MOUNT
MATERIAL		Steel
NEMA RATING (IP RATING)		3R/4/12
FAIL-SAFE BEHAVIOR		Yes, no upstream over current protection required
REAL-TIME DIAGNOSTICS		% of protection present LED, audible alarm and remote contacts. Optional surge counter.
DIMENSIONS		See diagram
WEIGHT		6 lbs
Standards		
Certification		UL 497B
UL STANDARD		UL1449 5th Edition
UL CATEGORY		VZCA, VZCA7
UL FILE NUMBER		E326289
STANDARDS		UL96A, ANSI C62.41/45, NOM-003-SCFI-2014, NOM-001-SCFI-1993, IEC61643-11
ENVIRONMENTAL STANDARDS		ROHS
Part number		
890129		