


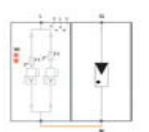
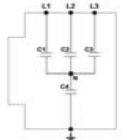


# CITEL COMPARISON CHART

SPD Model Comparison 120Vac Power - Single Phase (L,N,G) - Application	SURGE PROTECTIVE DEVICE		EMI / RFI FILTER		Comments
	CITEL Reliability in Surge Protection	ASCO	CITEL Reliability in Surge Protection	ASCO	
Manufacturer	CITEL	ASCO	CITEL	ASCO	
Model Name	DS72US-1205/G	Model 251 (SHP300-10)	DUC31	Model 250-IsIatrol INX	
UL Listing	UL Listed (Surge Protective Device)	No Listing	UL 1783	No Listing	UL tests safety of the equipment and is a code requirements
UL 1449 - 4th Edition SPD Type	Open-Type 1	Not UL Approved	Recognized	Not UL Approved	Same as above
AC Nominal voltage	120Vac	120Vac	120Vac up to 600Vac	120Vac	
System	Single Phase (2W+G)	Single Phase (2W+G)	Single Phase up to 3 Phase	Single Phase (1W)	ASCO Filter part only filters on 1 mode
Circuit Type / Technology	MOV + GSG	MOV	Capacitor	L-C	
Maximum Line Current	Unlimited	10A	Unlimited	60A	CITEL has no load limitation no matter the panel configuration
Maximum Operating Voltage - MCOV (L-G)	255 Vac	Unknown	690Vac	Unknown	
Maximum Operating Voltage - MCOV (L-L)	N/A (single phase)	N/A (single phase)	690Vac	N/A (single phase)	
Maximum Operating Voltage - MCOV (L-N)	210 Vac	Not mentioned on datasheet	690Vac	Not mentioned on datasheet	
Maximum Operating Voltage - MCOV (N-G)	255 Vac	Not mentioned on datasheet	690Vac	Not mentioned on datasheet	
Modes of Protection	3 modes : L-G ; L-N ; N-G	3 modes : L-G ; L-N ; N-G	Up to 10 modes (when applicable)	1 mode only (L-N)	
Total Maximum Discharge Current - Imaxtot (1 impulse 8/20 μs)	150kA	58.5kA	N/A for filter	N/A for filter	CITEL has close to 3times more surge capability
Maximum Discharge Current per phase - Imax (1 impulse 8/20 μs)	75 kA	39 kA	N/A for filter	N/A for filter	
Nominal Discharge Current - In (15 impulse 8/20 μs)	20 kA	Not mentioned on datasheet	N/A for filter	N/A for filter	CITEL IN is best in Class - Highest value tested at UL - Real value is 30kA
Maximum Impulse Discharge Current - Iimp (1 impulse 10/350 μs)	6 kA	Not tested	N/A for filter	N/A for filter	10/350us waveform represent direct lightning impact strikes
UL Short Circuit Rating - SCCR	200 kA	N/A (not UL Certified & Type 4CA only)	N/A for filter	N/A for filter	CITEL SCCR is best in class - Highest value tested at UL
UL Voltage Protection Rating - VPR - in Real installation conditions (L-G)	1500 V	N/A (not UL Certified & Type 4CA only)	N/A for filter	N/A for filter	
UL Voltage Protection Rating - VPR - in Real installation conditions (L-L)	N/A (single phase)	N/A (single phase)	N/A for filter	N/A for filter	
UL Voltage Protection Rating - VPR - in Real installation conditions (L-N)	800 V	N/A (not UL Certified & Type 4CA only)	N/A for filter	N/A for filter	
UL Voltage Protection Rating - VPR - in Real installation conditions (N-G)	1200 V	N/A (not UL Certified & Type 4CA only)	N/A for filter	N/A for filter	
UL Voltage Protection Rating - MLV - in Real installation conditions (L-G)	N/A (UL Listed)	N/A (not UL Certified)	N/A for filter	N/A for filter	
UL Voltage Protection Rating - MLV - in Real installation conditions (L-L)	N/A (UL Listed)	N/A (not UL Certified)	N/A for filter	N/A for filter	
UL Voltage Protection Rating - MLV - in Real installation conditions (L-N)	N/A (UL Listed)	N/A (not UL Certified)	N/A for filter	N/A for filter	
UL Voltage Protection Rating - MLV - in Real installation conditions (N-G)	N/A (UL Listed)	N/A (not UL Certified)	N/A for filter	N/A for filter	
Internal Thermal Disconnect for safe end of life	Yes	No	N/A for filter	N/A for filter	Huge safety concern - Safe disconnection of SPD is critical to not start fire/explosion
Leakage Current to Ground	None	Yes	None	None	Leakage current causes nuisance tripping of GFCI & prematurely age the SPD
Enhanced TOV Protection	Yes	No	N/A for filter	N/A for filter	TOV = Temporary Over Voltage - This is the most destructive for an SPD
External Overcurrent Protection required	No	Yes	N/A for filter	N/A for filter	Upstream fusing can limite the design flexibility as well as cost savings
Real Time Diagnostic (Visual Indication)	Yes	No	N/A for filter	N/A for filter	End user must know if system is still protected or not
Remote Signal Contacts	Yes	No	N/A for filter	N/A for filter	Since SPD enclosed and not visually accessible, remote monitor is critical.
Audible Alarm	No	No	N/A for filter	N/A for filter	
Replaceable modules for ease of maintenance	Yes	No	No	No	Ease of maintenance and cost savings (no re-wiring necessary on CITEL). An SPD will always fail eventually to protect the equipment.
End of Life of SPD likely forcing complete shutdown of the cabinet	No (parallel Installed)	Yes (Series Installed)	N/A for filter	N/A for filter	ASCO End of life will completely shut down power to cabinet - Safety concern for intersection not controlled anymore.
Surge Filtering Capability	Yes with DUC31	Yes (no UL 1283 Listing)	Yes	Yes (no UL 1283 Listing)	
NEMA Rating	Nema Type 1	Nema Type 1	Nema Type 1	Nema Type 1	
Installation Location	Indoor (IP20)	Indoor (IP20)	Indoor (IP20)	Indoor (IP20)	
Mounting Method	Din-Rail	Surface mount	Din-Rail	Surface mount	
Dimensions	1.42 x 2.64 x 3.54 in.	1.8 x 2.875 x 5.3 in	0.71 x 2.3 x 3.5 in.	3.2 x 4.4 x 2.0 in	CITEL is way more compact
Additional accessories needed	No	Wires with stud termination	No	Wires with stud termination	
Operating Temperature	-35 to +85 °C	-40 to +85 °C (no UL data)	-35 to +85 °C	-40 to +85 °C (no UL data)	
Warranty	10 Year	5 Year	10 Year	5 Year	Limited warranty on ASCO
Approvals	UL 1449 4th Edition	None	UL 1283	None	Again, No 3rd Party approvals....
Representative images of SPD's					
 10108 USA Today Way Miramar, FL 33025 USA Toll Free 800-240-3548 <a href="http://www.citel.us">www.citel.us</a>		Unknown		Unknown	