Technical Data Sheet
Power Surge Protection Devices (SPD)

GKSDX-50 /100 /150 SURGE DIVERTER (SPD)

GKSD1 GKSD3

Product Description:

General: The ***Gatekeeper*** range manufactured by LDU Applied Technologies in Australia has been designed to provide high-energy surge protection for single and three phase power circuits. Being full 3 mode or 10 mode devices, the diverters have been designed for mounting at either main power switchboards, major distribution boards or sub-boards and should be installed in front of any surge filters or UPS to maximise the protection offered to the load.

Features:

- Low let-through voltage
- High surge current capabilities per phase
- Internal over current and Thermal Fusing
- Full status, power, individual segmental & thermal indication
- Full multimode protection
- Earth Potential indication
- N-E Reverse wired safety indication
- 10 year manufactures warranty
- Full Metal Housing

Electrical Specification:		**GKSDX-50**	**GKSDX-100**	**GKSDX-150**
Connection Type:		Parallel		
Phases:		Single or Three		
Nominal Input Voltage per Phase:	U_O	230Vac / 50Hz		
Maximum Continuous Voltage per Phase:	U_C	275Vac / 50hZ		
Voltage Protection Level/Rating	U_p	800V		
Nominal Current (p/phase) (8/20 µS)	I_n	20KA	40KA	60KA
Nominal Current (p/phase) (10/350 µS)	I_n	54KA	108KA	162KA
Primary Surge Protection (p/phase) (8/20 µS)	I_{MAX}	50KA	100KA	150KA
Primary Surge Protection (p/phase) (10/350 µS)	I_{MAX}	135KA	270KA	405KA
Primary Surge Protection (Joules p/phase)	J	920	1840	2750
N-E Protection (per mode) (8/20 µS)	I_{MAX}	90KA		
N-E Protection (per mode) (10/350 µS)	I_{MAX}	243KA		
Modes of protection (Single Phase)		3 Mode (L-N, L-E, N-E)		
Modes of protection (Three Phase)		10 Mode (L1-N, L2-N, L3-N, L1-E, L2-E, L3-E, L1-L2, L2-L3, L1-L3, N-E)		
Response time	t_A	<5ns		
Earth leakage current:		<1mA		
Display:		Segmental & Thermal Hi-intensity LED Display		
Internal Current Fusing		YES - Standard		
Internal Thermal Fusing		YES - Standard		
Alarm Contacts		YES - Standard		
Alarm Contact Triggering		30% Reduced Capacity – Not resettable.		
Mechanical Specifications:				
Connection Type:		Screw terminal		
Power Terminal Capacity:		25mm2		
Alarm Terminal Capacity		2.5mm2		
IP index:		IP 20		
Enclosure Shape		DIN		
Mounting:		TS35 DIN rail		
Width – single phase (3 phase):	mm	97 (97)		
Height – single phase (3 phase):	mm	97 (97)		
Depth – single phase (3 phase):	mm	69 (69) plus the depth of the DIN rail		
Weight – single phase (3 phase):	g	285 (500)	315 (560)	345 (620)
Standards:				
Country of Design & Manufacture:		Australia		
Standard Compliance:	IEEE C62.41 cat, A, B, AS1768-2007 cat. A, B & C, AS3260, BS6651 cat A, B CP33 cat A, B, IEC 1000-4-5-1995, CE, UL1449 Third Edition, RMC 5140, IEC 61643-11:2011 Class l, ll, lll			

KEY: Example: **GKSD3-100/P**

Gatekeeper		Number of Phases			Optional Enclosure
GK	SD	3	-	100	/P
	Surge Diverter			KA Rating	

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Indication Panel:

General: The ***Gatekeeper*** indication panel has a number of LED indicators identifying the status of the following for each phase:

- MOV Segments (SG1-6) - LEDS are illuminated when powered up.
- Thermal Status (Thermal) - LEDS are illuminated when powered up.
- Earth Potential (EP) - LEDS are extinguished when powered up.

GKSD1 Diverter GKSD3 Diverter (Old Label shown)

MOV Segmental Status:

NOTE: Currently on the GKSD3 the MOV status is indicated using a percentage rating. In the next production run this will be changed to a Segmental Display to conform to the current GKSD1 and GKSD3-200 models.

The diverter consists of a number of MOV segments on each active line. Each segment is fused and therefore can be monitored. The status LED, e.g.: SG1, indicated if the MOV Segment is healthy or expired. Currently there is no method to measure a MOV status to indicate the remaining capacity of a MOV without reducing that capacity. Therefore the only method of indicating the status is either good or bad. When a MOV expired due to a surge, the MOV state changed to a complete short, therefore each MOV has an inline track fuse to instantly take the MOV off line thereby changing the state of the LED from on to off.

Thermal Status:

Surges come in all sizes from a small spike or transient to a massive surge. Often small transients can enter the diverter in large numbers. Each of the transients cause the diverter to conduct and therefore generates a small amount of heat in the MOV. When a large number of transients pass through the MOV the heat increases and can reach a point where the MOV may be damaged losing capacity but not expiring causing the SG Status indicator to remain on. The Thermal indicator monitors this build up and once it reached 130 degrees 'C', the indicator turns off indicating that a segment on the line has suffered excessive thermal duress and may not be at full capacity.

Earth Potential (EP):

Normally off, this LED monitors the E-N status and will illuminate if a potential appears across it.