

VOLTAGE PROTECTION FOR DC SOLID-STATE RELAYS

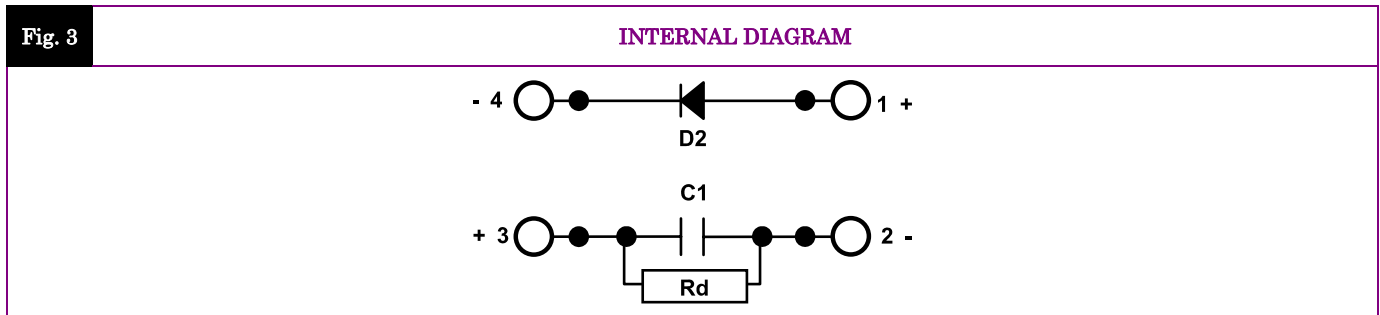
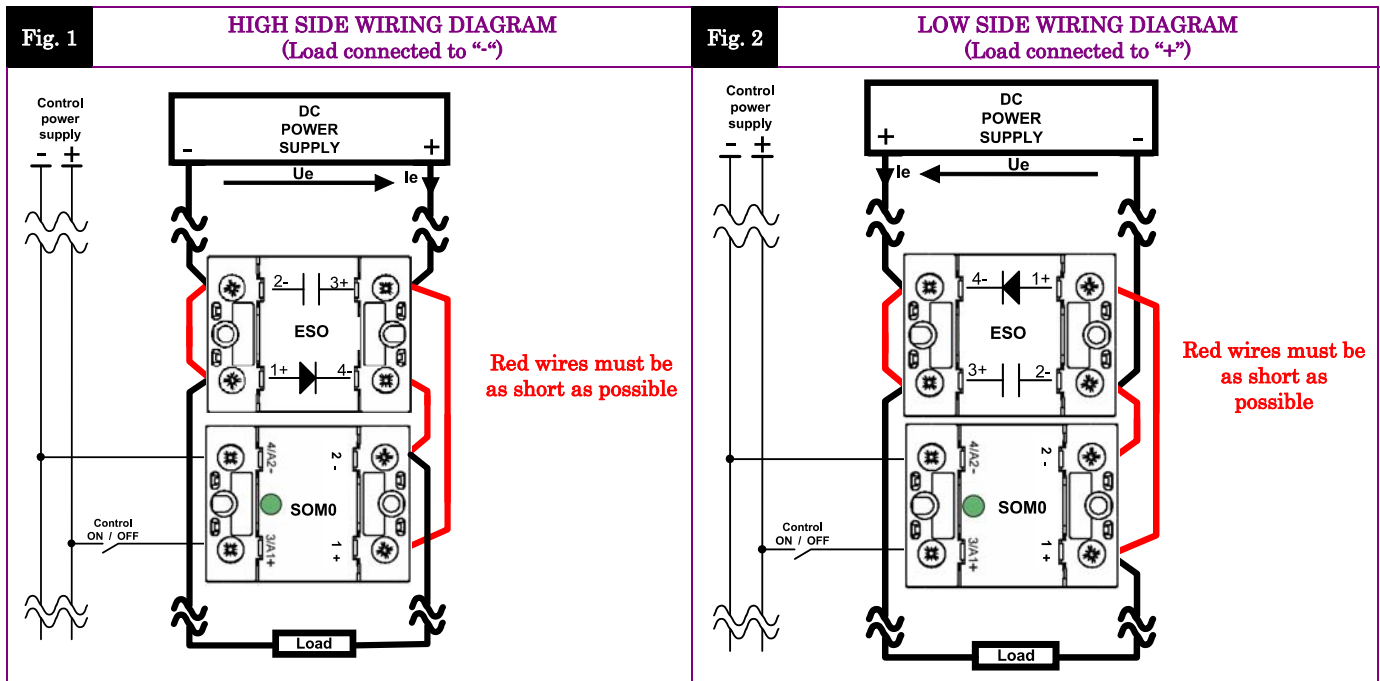
- ▶ Helps protecting solid-state relays against voltage transient due to the inductive effect of lines and loads.
- ▶ Fly wheel diode (D2), with fast response, low on-state voltage drop and connection polarity free, mounted on the metal base plate to be cooled by a heatsink for high switching frequency applications (PWM)
- ▶ Decoupling capacitor (C1), connection polarity free and non polarized (polyester) equipped with a discharging resistor
- ▶ SSR voltage clamping function (D1) not included therefore more adapted to SOM0 DC SSR range (SSR with built-in voltage protection D1)

ESO01000



Non-repetitive peak voltage	200VDC
Max operating permanent current	80A
Clamping voltage function for DC relays (D1)	No

Operating voltage range	Current range	DC SSR clamping voltage function	Isolations	Connections	Dimensions (LxHxD)	Weight
0-130VDC	0-80A	Non	4kV	Screw terminals	45 x 58.5 x 30	80g



Proud to serve you

GENERAL CHARACTERISTICS

POWER CIRCUIT	CHARACTERISTIC	LABEL	VALUE	INFO.
	DC mains max voltage	U_{emax}	130VDC	
	Non repetitive peak voltage	U_{ep}	200V	
	Max voltage rise	dU_e/dt	125V/μs	U _e =U _{ep}
	Max nominal current	I_{e max}	80A	
	Power output/case insulation	U_{imp}	4kV	
	Isolation resistance	R_{io}	1GΩ	
	Isolation capacitance	C_{io}	<8pF	
	Storage ambient temperature	T_{stg}	-40°C -> +100°C	
	Operating ambient temperature	T_{amb}	-40°C -> +90°C	
Max. case temperature	T_c	100°C		

LINE CIRCUIT CHARACTERISTICS (C1 & Rd)

LINE CIRCUIT	CHARACTERISTIC	LABEL	VALUE	INFO.
	Decoupling capacitor	C1	4.4μF ±20%	
	Technology		Polyester	
	Discharging resistor	Rd	1MΩ / 0.5 W	
Discharging time constant	τ	2s		

LOAD CIRCUIT CHARACTERISTICS (D2)

LOAD CIRCUIT	CHARACTERISTIC	LABEL	VALUE	INFO.
	Voltage drop during fly wheel	U_{D2} (V _F)	1.2V	@I _e =80A see fig. 4
	Instantaneous power dissipation	P_{D2}	0.96 + 0.003 x I _e	
	Max nominal average current	I_{D2av} (I _{Fav})	80A	
	Max repetitive peak overload current	I_{D2peak} (I _{FRM})	500A	T _{pulse} =25μs
	Max non repetitive peak overload current	I_{D2peak} (I _{FSM})	1000A	T _{pulse} =25μs
	Max leakage current	-I_{D2} (I _R)	0.1mA @ T _j =25°C	17mA @ T _j =T _{jmax} @U _{ep} @T _{jmax}
	Recovering time	t_{rr}	190ns	I _{D2} =1A, di/dt=50A/μs, T _c =25°C
	Junction/case thermal resistance	R_{thjc}	0.35K/W	
	Housing thermal resistance vertically mounted	R_{thra}	10K/W	@ΔT _{ra} =75°C
	Housing thermal time constant	T_{thra}	10 minutes	@ΔT _{ra} =60°C
	Maximum junction temperature	T_{jmax}	125°C	

OUTPUT CHARACTERISTIC CURVES

Fig. 4

**VOLTAGE DROP VS CURRENT
(DIODE D2 DURING FLY WHEEL)**

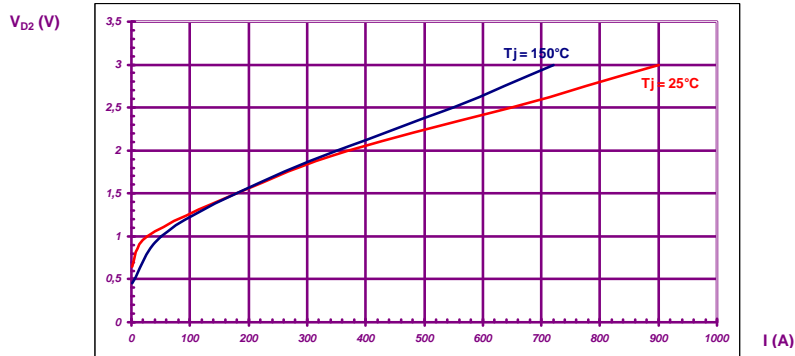


Fig. 5

**THERMAL IMPEDANCE
(DIODE D2)**

Not available

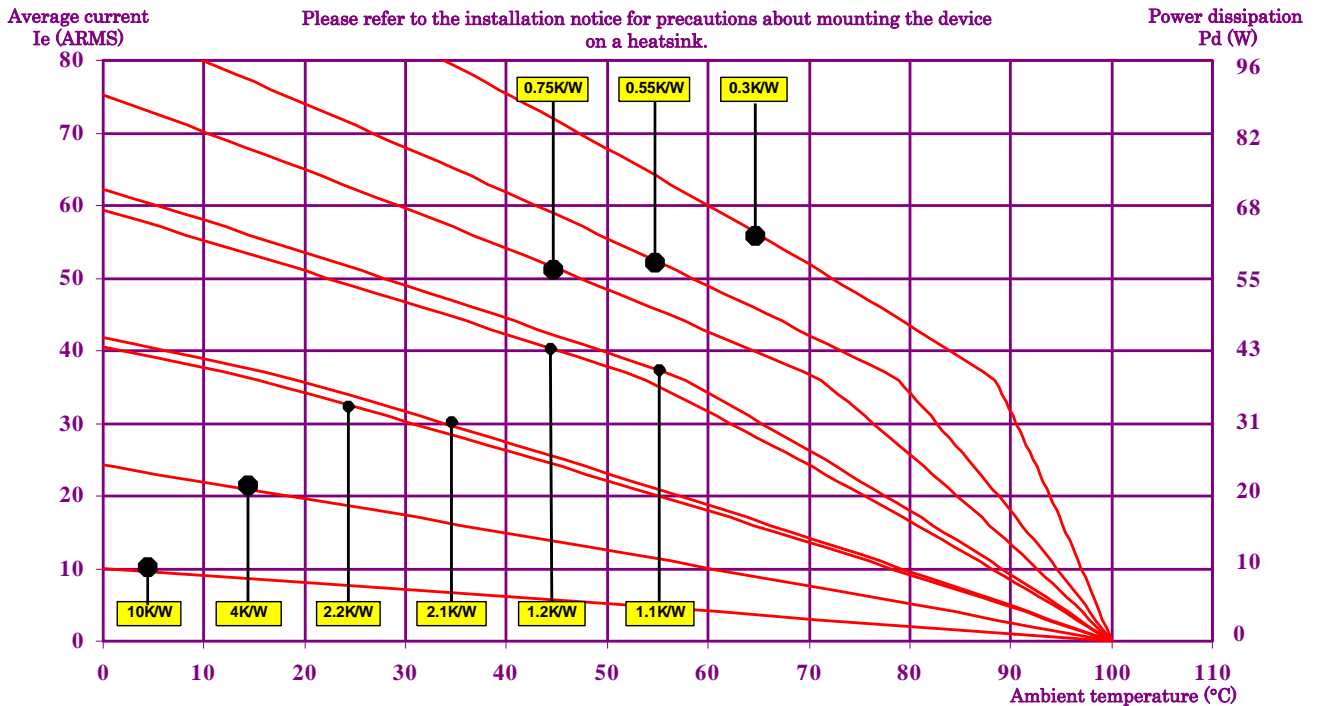
Fig. 6

**OVERLOAD PERMITTED DURING ON-STATE
(DIODE D2 DURING FLY WHEEL)**

Not available

Fig. 7

POWER DISSIPATION AND AVERAGE CURRENT VS AMBIENT TEMPERATURE



10K/W = No Heatsink / 1LD12020
2.1K/W = WF210000
0.75K/W = WF070000

4K/W = 150x150x3mm aluminium sheet
1.2K/W = WF121000
0.55K/W = WF050000

2.2K/W = WF262100 / WF151200
1.1K/W = WF131100
0.3K/W = WF031100

GENERAL INFORMATION

GENERAL INFORMATION	Mounting	2 screws (M4x12mm ; tightening = 1.2N.m)	See mounting sheet
	Screwdriver for connections	POZIDRIV2	
	tightening torque for connections	2 N.m	
	Insulated crimp terminals (round tabs, eyelet type)	M5	
	Display	Green LED (load supplied)	
	Housing	UL94V0	
	Weight	80g	

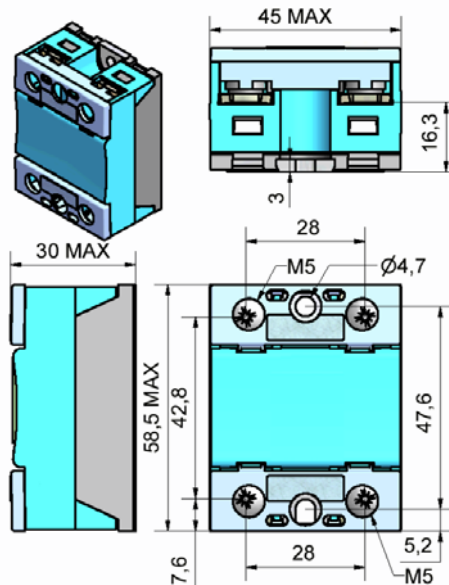
STANDARDS

STANDARDS	Standards	IEC60947-1	
	Protection level	IP20	
	Protection against direct touch	Yes	
	CE marking	Yes	
	UL, cULUS and VDE approvals	Pending	

DIMENSIONS AND ACCESSORIES

Fig. 8

DIMENSIONS (mm)



ACCESSORIES

FLAT TAB CONNECTION ADAPTORS
1L587000



Please consult our website for other accessory references
(Heatsinks, mounting adaptors, thermal grease...)