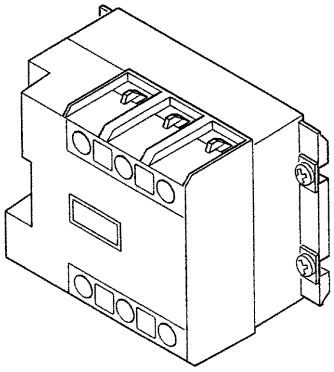
INVERSEURS DE SENS DE ROTATION
MOTOR REVERSER

SV969300

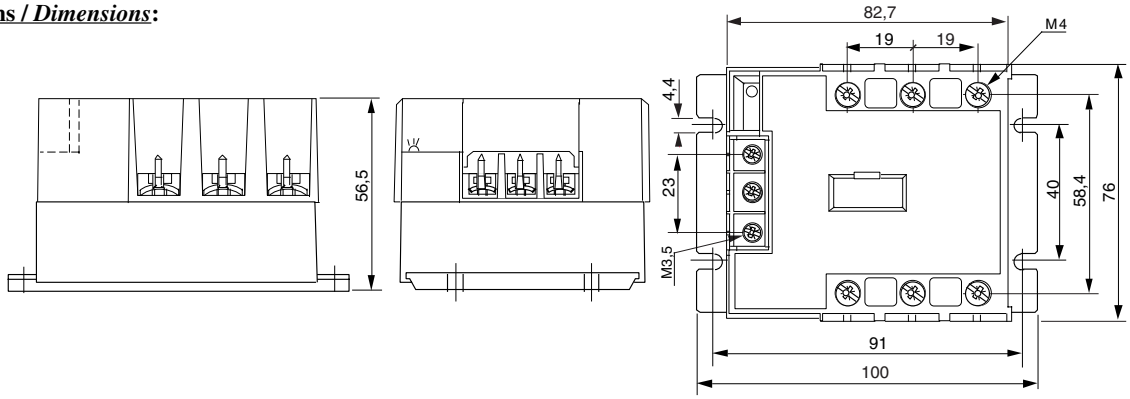
3x400VAC 4KW
two legs model
Boitier IP20
IP20 housing

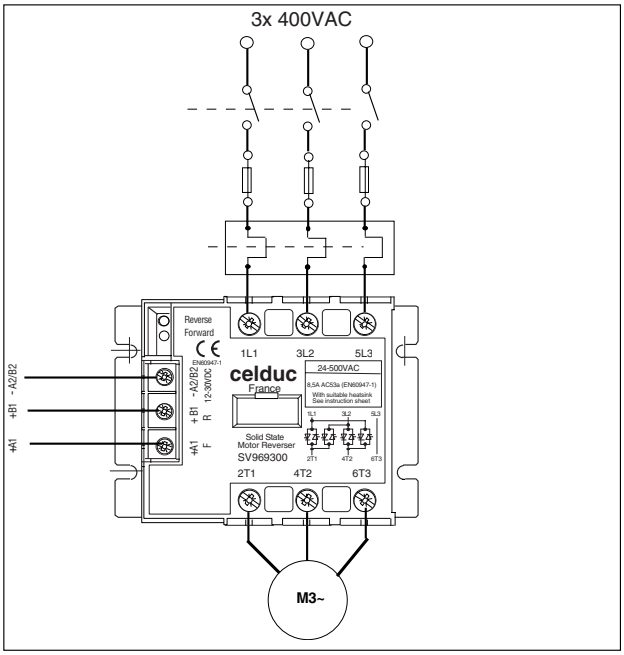


Le relais SV969300 est étudié pour démarrer et inverser le sens de rotation de moteurs triphasés asynchrones , avec la commutation de 2 phases uniquement (4 commutateurs : 2 legs) . Le calibre des thyristors est de 50AR MS (75A sur demande) , ce qui permet de contrôler un moteur avec un courant nominal de 8 à 10ARMS soit 4kWatts sous 400VAC (7,5kW sur demande avec les calibres 75A) , en tenant compte des courants de démarrage et d'inversion. Ces produits sont réalisés avec des composants haute immunité , sans relais REED (tout électronique) , avec toutes les protections : RC , VDR,... mais aussi intervérouillage , temporisation entre chaque inversion,... Ces relais sont équipés de thyristors 1600V.

The relay SV969300 is designed for controlling and inverting the direction of a three-phase motors without direct third leg (two legs). The maximum current of semiconductors is 50 Amps. rms (75A on request), which allows a motor with a current rating of 8 up to 10 Amps.rms (or approximately 4 kW under 400 V (7,5kW on request)), taking the starting and reversing current into account.
These products are designed with very high immunity components , without REED switches (only composed of solid state components) , with all protections : RC , VDR ,..... temporisation ,....., and 1600Volt peak voltage components.

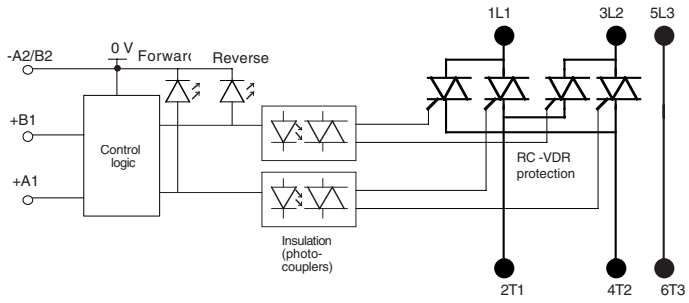
Dimensions / *Dimensions*:





Circuit équivalent/*Equivalent circuit* :

Internal block diagram :



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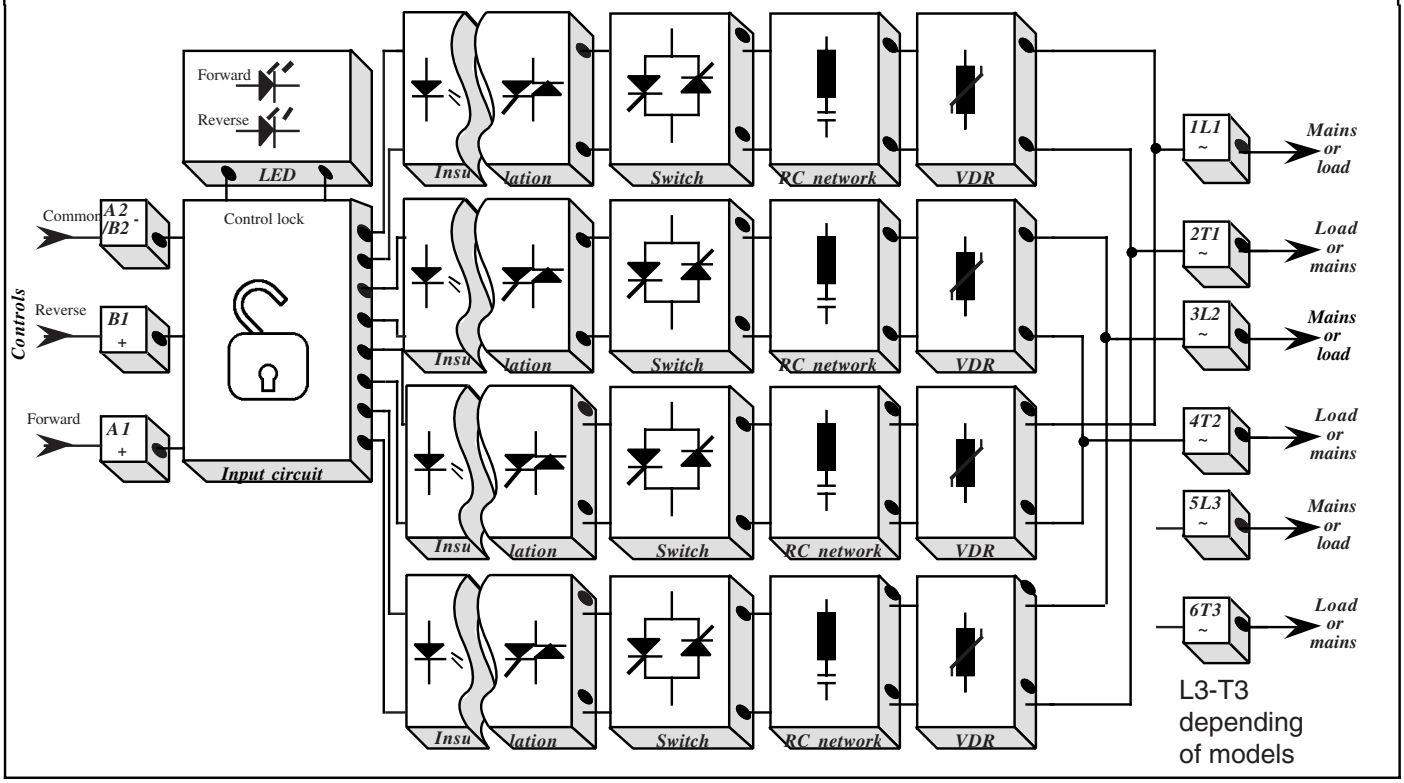
Synoptique interne / Internal diagram for two leg models :



Développé conformément aux normes / Designed in compliance with standards:
->EN60947-4-2 (V.D.E. 0660 part 109, I.E.C. 158-2) ->EN60947-1 & A11
->EN60950 (V.D.E. 0805-> office equipment) (Pending approval)
->U.L. 508 (Pending approval) ->c.U.L (Pending approval)

Control	Plage de tension de commande / *Control voltage range*	Uc	12-30VDC
	Plage de courant de commande / *Control current range*	Ic	15-25mADC
	Tension de non fonctionnement/ *Release voltage*	Ur	6VDC
	LED de visualisation / *Display LED*		Yes
	protection en cas de cdes simultanées / *protection against simultaneous controls*		Yes
	tension inverse maxi / *Maximum reverse voltage*	Urv	30V
	Signal de sortie / *Output signal*		no output
	temporisation inversion / *Reversing time*		fixed 70ms

Caractéristiques d'entrée-sortie (à 20°C) / *Input-output characteristics (at 20°C)*					**Unit**
Isolement entrée-sortie/*Input-output isolation @500m*	Ui		3300		VRMS
Isolement sortie-semelle/*Output-case isolation @500m*	Ui		3000		VRMS
Tension assignée isolement/rated impulse voltage	Uimp		4000		V

Caractéristiques générales / *General characteristics*				**Unit**
Poids/*Weight*			130g	g
Plage de température de stockage / *Storage temperature range*			-40 / +100	°C
Plage de température de fonctionnement/*Operating temperature range*			-40 / +100	°C

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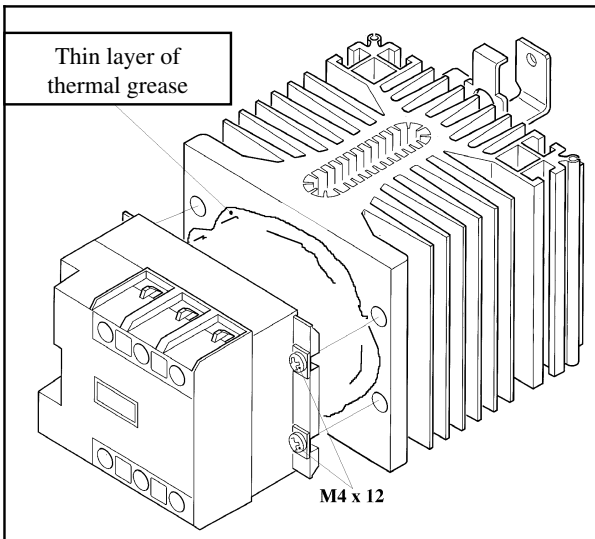
Sortie/ Output	Tension nominale/ *Standard mains voltage*	Ue	400 VAC
	Plage de tension de fonctionnement / *Mains voltage range*	Un	24-520VAC
	tension crête non répétitive/ *Non-repetitive maximum peak voltage*	Up	1600V
	Courant AC-53 maxi/ *Max. nom. current (AC53a=AC3) @40°C*	Ie	8,5A (see motor reverser selection)
	Puissance moteur/ *3 pole power motor (3x400VAC)*	Pn	4kW/5,5hp
	Chute directe / *Max Direct voltage drop (@Ie)*	Ud	1,4VRMS
	Courant crête non répétitif/ *Non repetitive overload current* (@ 1 cycle of 10ms)	ITSM	550A
	I2t value/ *Melting limit (choice of fuse) @10ms*	I^2t	1500 A^2s
	Courant minimal de charge / *Minimum load current*	Imin	100 mA
	facteur de puissance/ *Power factor (@ Ie)*	Pf	0 up to 1
	Temps d'ouverture et de temporisation/ *Turn on time-reversing time(@50Hz)*	ton/trv	20ms / 100ms
	Temps d'ouverture/ *Turn off time (@50Hz)*	toff	10ms
	Courant de fuite /*Maximum leakage current (@Ue/50Hz)*	Ilk	5 mARMS
	dv/dt / *Max off state voltage rise*	dv/dt	500V/µs
	Fréquence de réseau / *Operating frequency range*	f	25 up to 440Hz

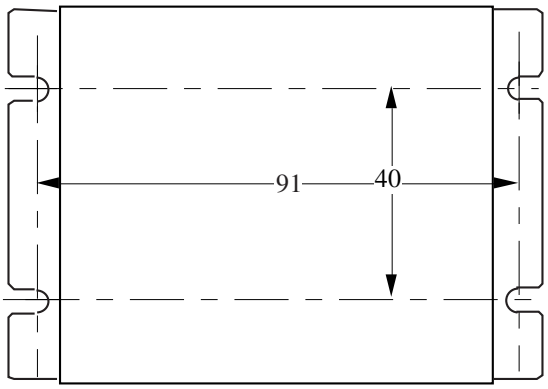
E.M.C.	Max conducted immunity level Test accord. to I.E.C.1000-4-4 (bursts)		4KV direct at output, 4KV with a clamp at input **no turn on or damage**
	Max conducted immunity level Test acc. to I.E.C.1000-4-5 (el. shocks)		2KV in common mode, 1KV in differential mode (Input & output) **no turn on or damage**
	Max radiated immunity level Test accord. to I.E.C.1000-4-3		10V/m **no turn on or damage**
	Max electrostatic disch. immunity level Test accord. to I.E.C.1000-4-2		8KV in the air / 4KV touching **no turn on or damage**
	Max conducted emission level (0,8<Pf<1) Test according to EN55011		The conducted noise made by SSR depends on the wiring configuration and the load type. Test methods recommended by European E.M.C. standards giving results far from reality, we have chosen to advise the right filter suited for the customer's use: Refer to EMC chapter
	Max radiated emission level Test accord. to EN55011 @Ie		<30dBµV from 30 up to 230MHz ; <37dBµV from 230 up to 1000MHz

Misc.	Base/junction thermal resistance	Rthjc	0,5K/W (1 leg)
	Ambient/junction thermal resistance (relay mounted vertically)	Rthja	5K/W
	Weight		130g

Characteristics given at 25°C unless otherwise specified



Mounting of a relay on a heatsink



Template

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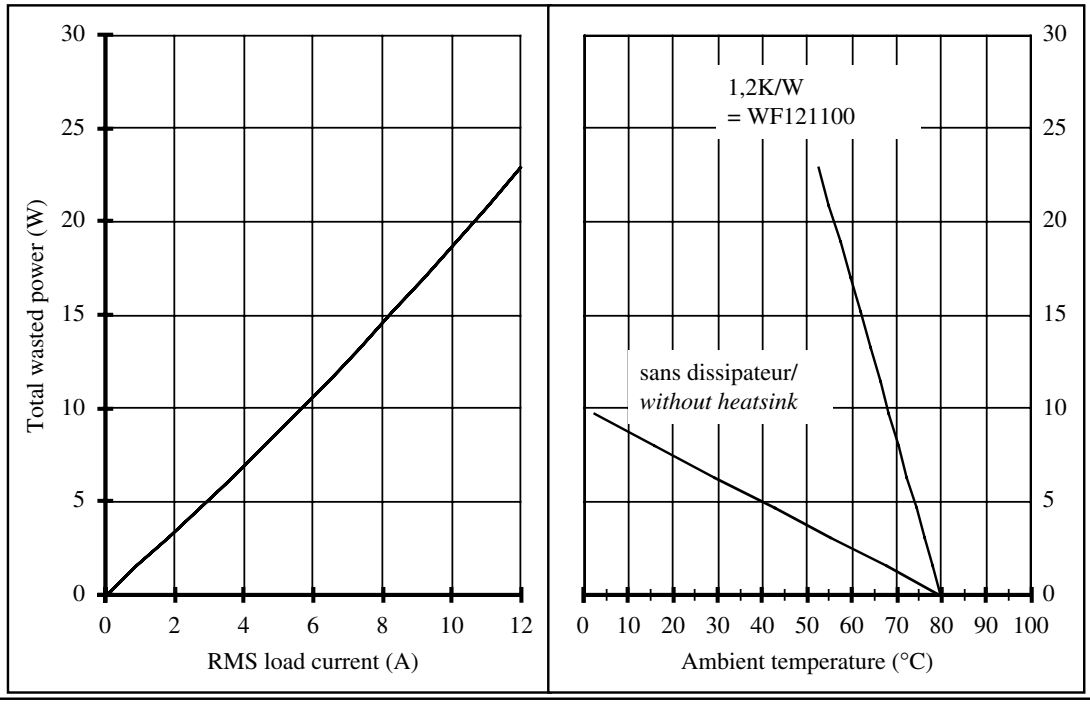
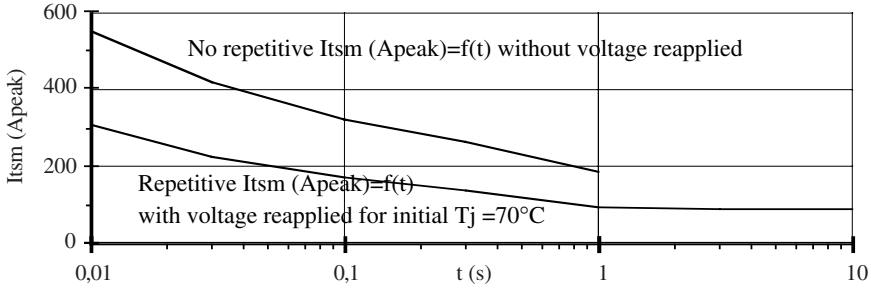
Caractéristiques thermiques / *Thermal curves* :



Surge current Itsm (A peak) = f(t) for models with Itsm =550A



Courant de surcharge non repetitif :ITSM
***/ Non repetitive surge peak on-state current* : ITSM**

REVERSERS + HEATSINK SELECTION IN COMPLIANCE WITH EN60947-4-2

SSR SELECTION motors soft-staters for a permanent current		**Relays without heatsink**	**Heatsink** ambient =40°C heatsink =80°C	**Relays with heatsink**	**Ferraz fuse type** 14x51 size / max. rating	**Overload relay type** Klöckner-Moeller
Motor power	In motor (@ 400V)	**two legs models 50A**	**with integrated DIN RAIL adaptor**	**two legs** ambient =40°C		
0,75 kW	2A	**SG969300 -SV969300**	**none**	**SW960330**	am 8A/500V	Z00-2.4
1,1 kW	2,6A	**SG969300 -SV969300**	**none**	**SW960330**	am 8A/500V	Z00-6
1,5 kW	3,5A	**SG969300 -SV969300**	**none**	**SW960330**	am 12A/500V	Z00-6
2,2 kW	5A	**SG969300 -SV969300**	**WF121000**	**SW961230**	am 12A/500V	Z00-6
3 kW	6,6A	**SG969300 -SV969300**	**WF121000**	**SW961230**	am 12A/500V	Z00-10
4 kW	8,5A	**SG969300 -SV969300**	**WF121000**	**SW961230**	am 12A/500V	Z00-10

For motor > 4kW consult us : we have some solutions

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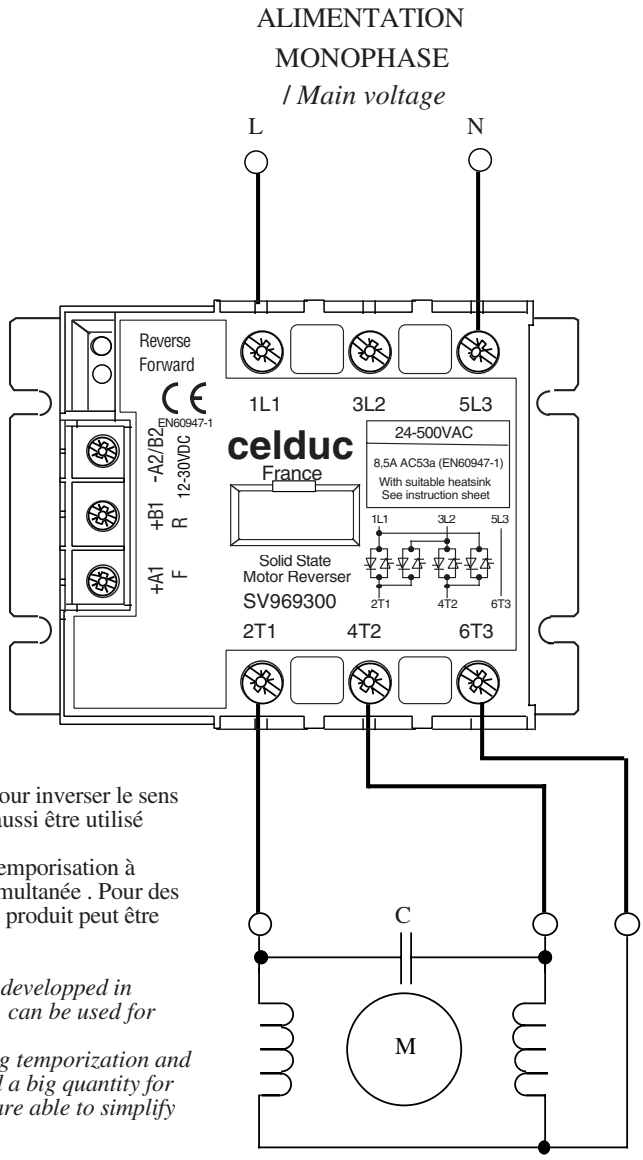
NOTE D'APPLICATION :

UTILISATION DU RELAIS STATIQUE SV969300 POUR L'INVERSION DE SENS DE ROTATION D'UN MOTEUR ASYNCHRONE MONOPHASE A CONDENSATEUR DE DEPHASAGE

APPLICATION NOTE :

USING A SV969300 RELAY FOR REVERSING AN ASYNCHRONOUS SINGLE PHASE MOTOR WORKING WITH A PHASE SHIFTING CAPACITOR



Note : Le relais SV969300 développé initialement pour inverser le sens de rotation des moteurs asynchrones triphasés peut aussi être utilisé pour l'inversion de moteurs monophasés .

Ce relais possède 4 voies de puissance , une temporisation à l'inversion et un verrouillage en cas de commande simultanée . Pour des quantités importantes , en utilisation monophasée , le produit peut être simplifié car seulement 2 voies sur 4 sont utilisées .

Note : *The SV969300 relay which has been initially developped in order to reverse three phase asynchronous motors , can be used for reversing single phase motors .*

This relay has 4 power switches , a reversing temporization and a lock in case of simultaneous controls . If you need a big quantity for a single phase use , please contact us , because we are able to simplify the product as only 2 switches among 4 are used .

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