

# Relais Statique Triphasé

## Three Phase Solid State Relays

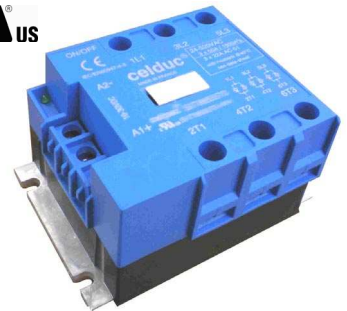
### Entraxe 47,5mm / 47,5mm mounting

- Sortie AC Synchrone. / Adapté aux charges résistives.
- Commande 4-32VDC avec LED et courant régulé.
- IP20.
- Technologie thyristors TMS<sup>2</sup>
- Zero cross AC output . / Designed for resistive loads.
- 4 - 32VDC control voltage with LED and current regulator
- IP20 -
- TMS<sup>2</sup> Back to back Thyristors technology

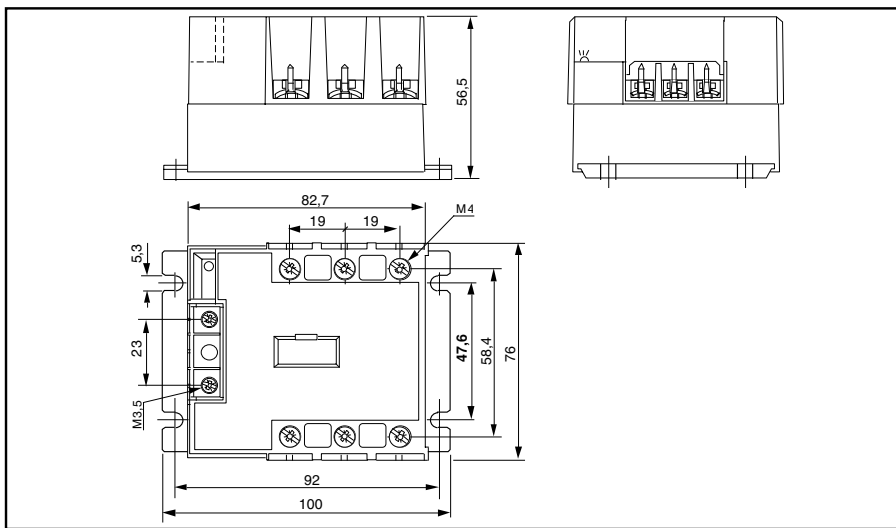
# SVT965460E

24 to 600 VAC - 50ARMS

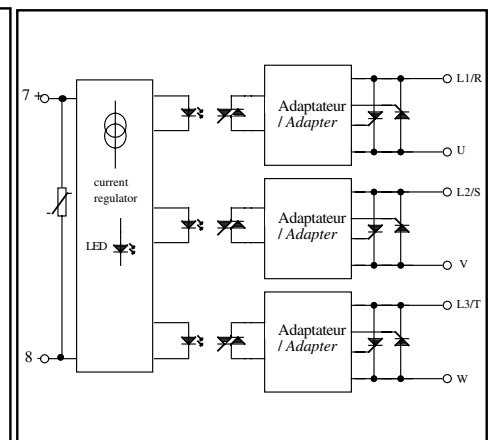
c **RU** <sup>®</sup> **US**



#### Dimensions / Dimensions:



#### Circuit équivalent/Equivalent circuit :



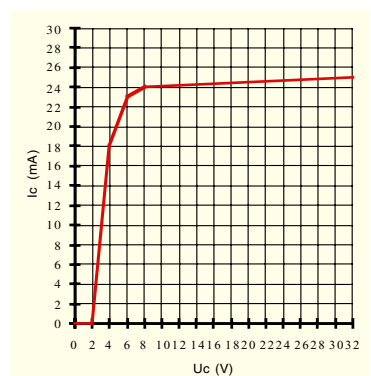
#### Caractéristiques de commande (à 20°C) / Control characteristics (at 20°C)

| Paramètre / Parameter                              | Symbol | Min | Nom               | Max | Unit |
|----------------------------------------------------|--------|-----|-------------------|-----|------|
| Tension de commande / Control voltage              | Uc     | 4   |                   | 32  | V    |
| Courant de commande / Control current (@ Uc )      | Ic     |     | <25               |     | mA   |
| Tension de relâchement/Release voltage             | Uc off | 2   |                   |     | V    |
| Résistance interne / Input internal resistor fig.1 | Rc     |     | Current regulator |     | Ω    |
| Tension inverse / Reverse voltage                  | Urv    |     | 30                |     | V    |

#### Caractéristiques d'entrée-sortie (à 20°C) / Input-output characteristics (at 20°C)

|                                                      |      |  |      |  |      |
|------------------------------------------------------|------|--|------|--|------|
| Isolement entrée-sortie/Input-output isolation @500m | Ui   |  | 4000 |  | VRMS |
| Isolement sortie-semelle/Output-case isolation @500m | Ui   |  | 3300 |  | VRMS |
| Tension assignée isolement/ Rated impulse voltage    | Uimp |  | 4000 |  | V    |

fig. 1 :Caractéristique d'entrée / Control characteristic



#### Caractéristiques générales / General characteristics

| Paramètre / Parameter                                              | Conditions | Symbol | Typ.       | Unit |
|--------------------------------------------------------------------|------------|--------|------------|------|
| Poids/Weight                                                       |            |        | 410        | 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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Caractéristiques sujettes à modifications sans préavis.

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**Caractéristiques de sortie(à 20°C) / Output characteristics (at 20°C)**

| Paramètre / Parameter                                                | Conditions           | Symbol            | Typ.            | Unit             |
|----------------------------------------------------------------------|----------------------|-------------------|-----------------|------------------|
| Tension de charge / Load voltage                                     |                      | Ue                | 400             | V rms            |
| Plage tension de fonctionnement / Operating range                    |                      | Uemax             | 600             | V rms            |
| Tension crête / Peak voltage                                         |                      | Up                | 1200            | V                |
| Niveau de synchronisation / Synchronizing level                      |                      | U <sub>sync</sub> | 50              | V                |
| Tension d'amorçage / Latching voltage                                | Ie nom               | Ua                | 10              | V                |
| Courant nominal AC-51/ AC-51 nominal current                         | ( see Fig. 2 )       | Ie AC-51          | 50              | A rms            |
| Courant de surcharge non répétitif / Non repetitive overload current | tp=10ms (Fig. 3)     | I <sub>tsm</sub>  | 720 (min 550)   | A                |
| Chute tension directe crête/ On state voltage drop                   | @ Ie nom             | Vd                | 1,4             | V                |
| Courant de fuite état bloqué/ Off state leakage current              | @Ue, 50Hz            | I <sub>lk</sub>   | 1               | mA               |
| Courant de charge minimum / Minimum load current                     |                      | Ie min            | 5               | mA               |
| Temps de fermeture/ Turn on time                                     | Uc nom DC ,f=50Hz    | ton max           | 10              | ms               |
| Temps d'ouverture/ Turn off time                                     | Uc nom DC ,f=50Hz    | toff max          | 10              | ms               |
| Plage de fréquence / Operating frequency range                       |                      | f                 | 10-440          | Hz               |
| dv/dt état bloqué / Off state dv/dt                                  |                      | dv/dt             | 200             | V/μs             |
| dI/dt maximum non répétitif/ Maximum di/dt non repetitive            |                      | di/dt             | 50              | A/μs             |
| I <sup>2</sup> t (<10ms)                                             |                      | I <sup>2</sup> t  | 2500 (min 1500) | A <sup>2</sup> s |
| EMC Test d'immunité conduite / Conducted immunity level              | IEC 1000-4-4 (burst) |                   | 2kV criterion B |                  |
| EMC Test d'immunité conduite / Conducted immunity level              | IEC 1000-4-5(schocs) |                   | 2kV criterion A |                  |
| Conformité / Conformity                                              | EN60947-4-x          |                   |                 |                  |

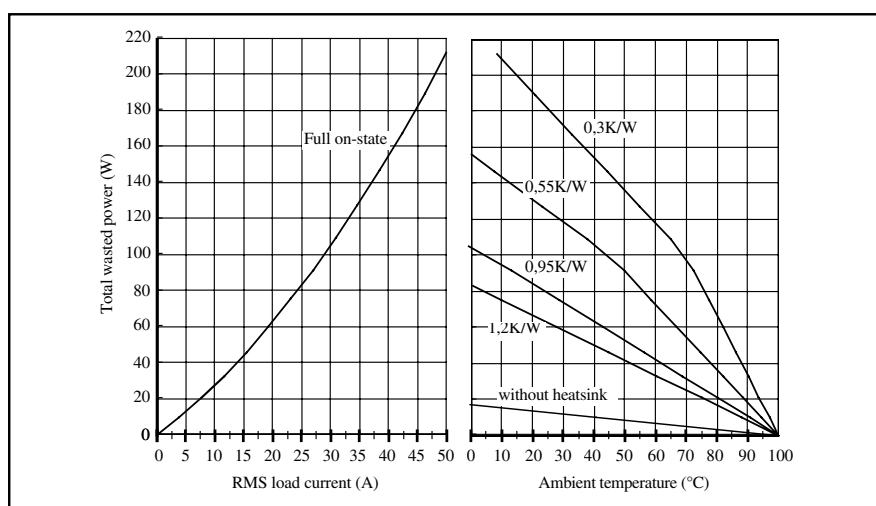
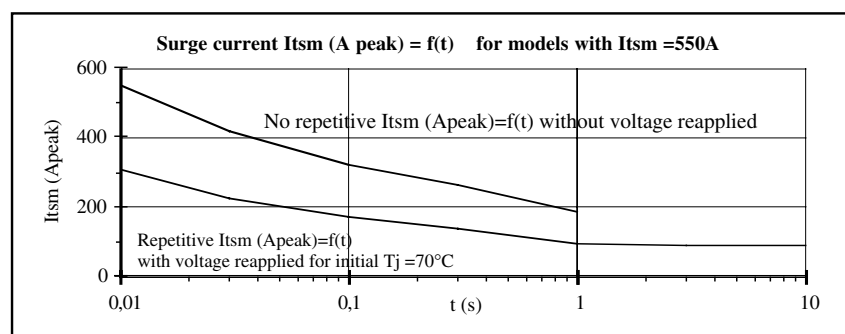
**Caractéristiques thermiques / thermal curves :**

Fig.3 Courbes de surcharge de courant / Overload current curves



1 - I<sub>tsm</sub> non répétitif sans tension réappliquée est donné pour la détermination des protections.

*No repetitive I<sub>tsm</sub> is given without voltage reapplied for the determination of the protection.*

2 - I<sub>tsm</sub> répétitif est donné pour des surcharges de courant (T<sub>j</sub> initiale=70°C). La répétition de ces surcharges de courant diminue la durée de vie du Relais.

*Repetitive I<sub>tsm</sub> is given for inrush current with initial T<sub>j</sub> = 70°C. The repetition of the surge current decrease the lifetime SSR's .*

**Précautions :**

\* Les relais à semiconducteurs ne procurent pas d'isolation galvanique entre le réseau et la charge.

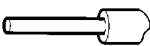
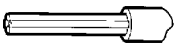
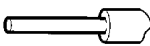
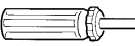
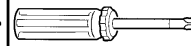
**Cautions :**

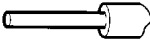
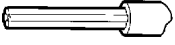
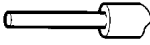
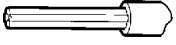
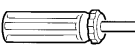
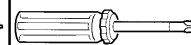
\* Semiconductor relays don't provide any galvanic insulation between the load and the mains.

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| SVT <b>Cablage commande / Wiring of the control circuit:</b>                      |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                             |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------|
| nombre de fils/ NUMBER OF WIRES                                                   |                                                                                   |                                                                                   |                                                                                   | SCREWDRIVER TYPE                                                                   |                                                                                     | MINIMUM TORQUE<br>couple serrage<br><br>N.m |
| 1                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | tournevis                                                                          | tournevis                                                                           |                                             |
| SOLID<br>(No ferrule)<br>rigide sans embout                                       | FINE STRANDED<br>(With ferrule)<br>multibrins avec embouts                        | SOLID<br>(No ferrule)<br>rigide sans embout                                       | FINE STRANDED<br>(With ferrule)<br>multibrins avec embouts                        |                                                                                    |                                                                                     |                                             |
|  |  |  |  |  |  |                                             |
| 0,75 ... 2,5 mm <sup>2</sup>                                                      | 0,75 ... 2,5 mm <sup>2</sup>                                                      | 0,75 ... 2,5 mm <sup>2</sup>                                                      | 0,75 ... 2,5 mm <sup>2</sup>                                                      | 0,8 x 5,5 mm                                                                       | POZIDRIV 2                                                                          | 1,2                                         |

| SVT <b>Cablage puissance / Wiring of the power circuit:</b>                         |                                                                                     |                                                                                     |                                                                                     |                                                                                      |                                                                                       |                                             |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------|
| NUMBER OF WIRES                                                                     |                                                                                     |                                                                                     |                                                                                     | SCREWDRIVER TYPE                                                                     |                                                                                       | MINIMUM TORQUE<br>couple serrage<br><br>N.m |
| 1                                                                                   |                                                                                     | 2                                                                                   |                                                                                     | tournevis                                                                            | tournevis                                                                             |                                             |
| SOLID<br>(No ferrule)<br>rigide sans embout                                         | FINE STRANDED<br>(With ferrule)<br>multibrins avec embouts                          | SOLID<br>(No ferrule)<br>rigide sans embout                                         | FINE STRANDED<br>(With ferrule)<br>multibrins avec embouts                          |                                                                                      |                                                                                       |                                             |
|  |  |  |  |  |  |                                             |
| 1,5 ... 10 mm <sup>2</sup>                                                          | 1,5 ... 6 mm <sup>2</sup>                                                           | 1,5 ... 10 mm <sup>2</sup>                                                          | 1,5 ... 6 mm <sup>2</sup>                                                           | 0,8 x 5,5 mm                                                                         | POZIDRIV 2                                                                            | 1,8                                         |

