

celduc[®] relais



ПРЕЗЕНТАЦИЯ КОМПАНИИ

РЕЗЮМЕ

- Выбор языка
- Презентация компании
- Структура компании
- Аренда
- Уважение
- История
- Результаты
- Глобальное присутствие
- Серии продуктов
- Основные рынки
- Производство во Франции

I. ПРЕЗЕНТАЦИЯ КОМПАНИИ



- Продюсерский центр
- Проектная контора
- Акции
- Офисы продаж
- Проект расширения

II. СТРУКТУРА КОМПАНИИ



Исполнительный директор :
Чарльз Перро
Численность работников :
7 человек

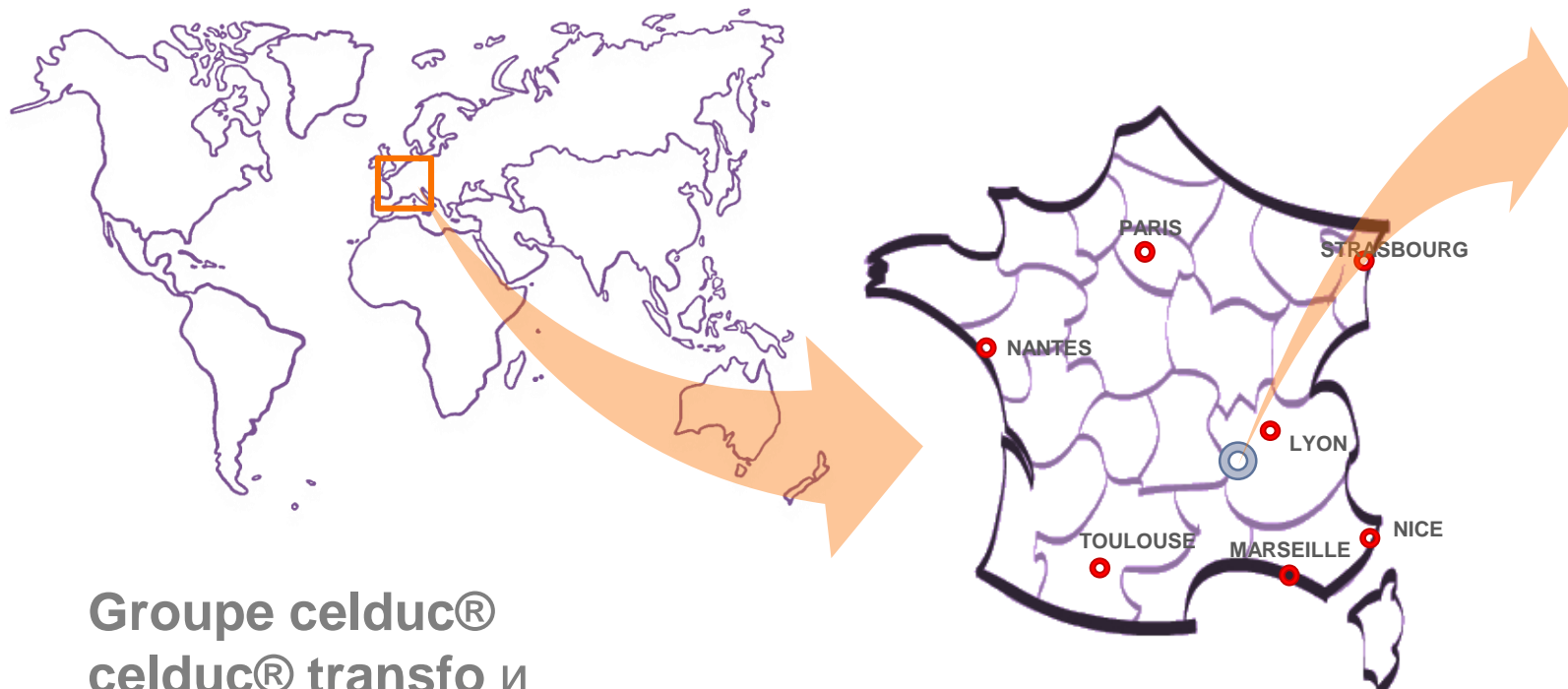


Генеральный директор :
Эдди Боре
Оборот в 2013г :
6.5 миллионов €
Численность работников :
31 человек



Генеральный директор :
Чарльз Перро
Оборот в 2013г :
18.6 миллионов €
Численность работников :
109 человек

III. АРЕНДА



- Рядом с Санкт-Этьен
- 500 км от Парижа
- 60 км от Лиона

Groupe celduc®
celduc® transfo и
celduc® relais
 территориальное расположение
 сайта Sorbiers во Франции

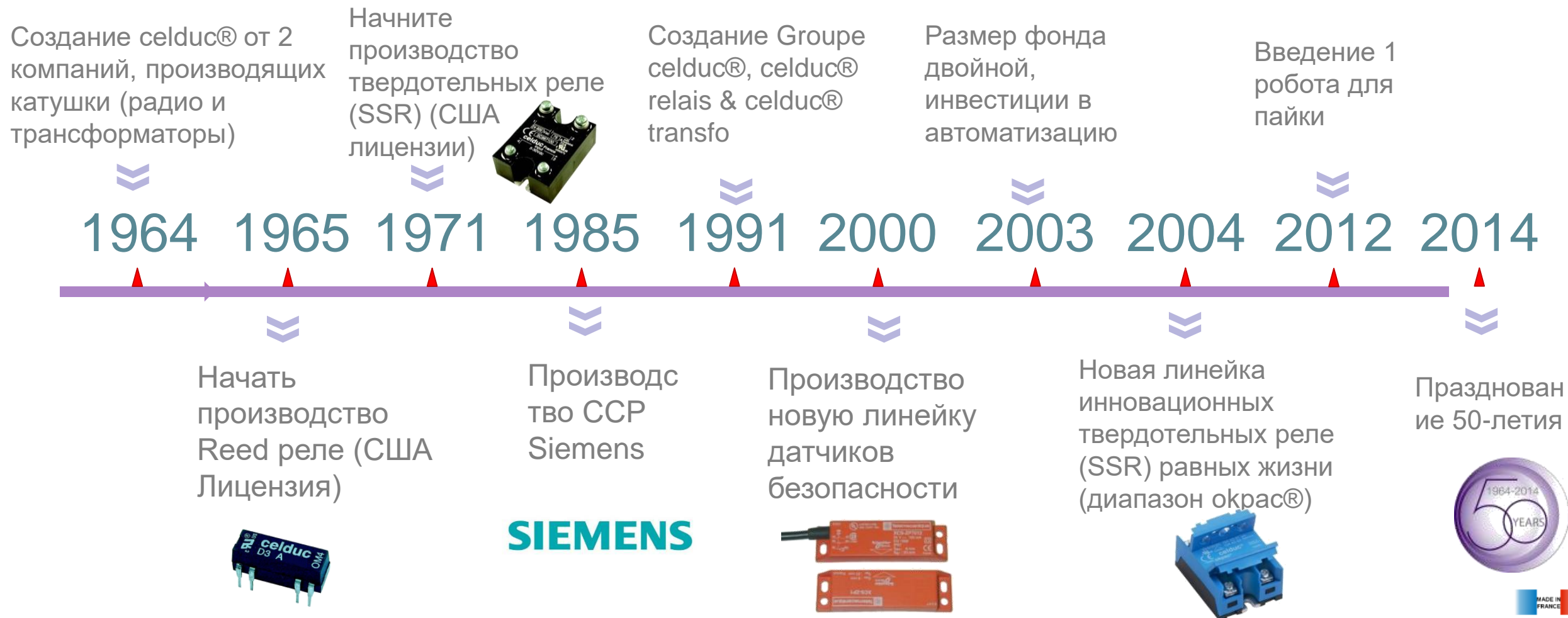


IV. УВАЖЕНИЕ

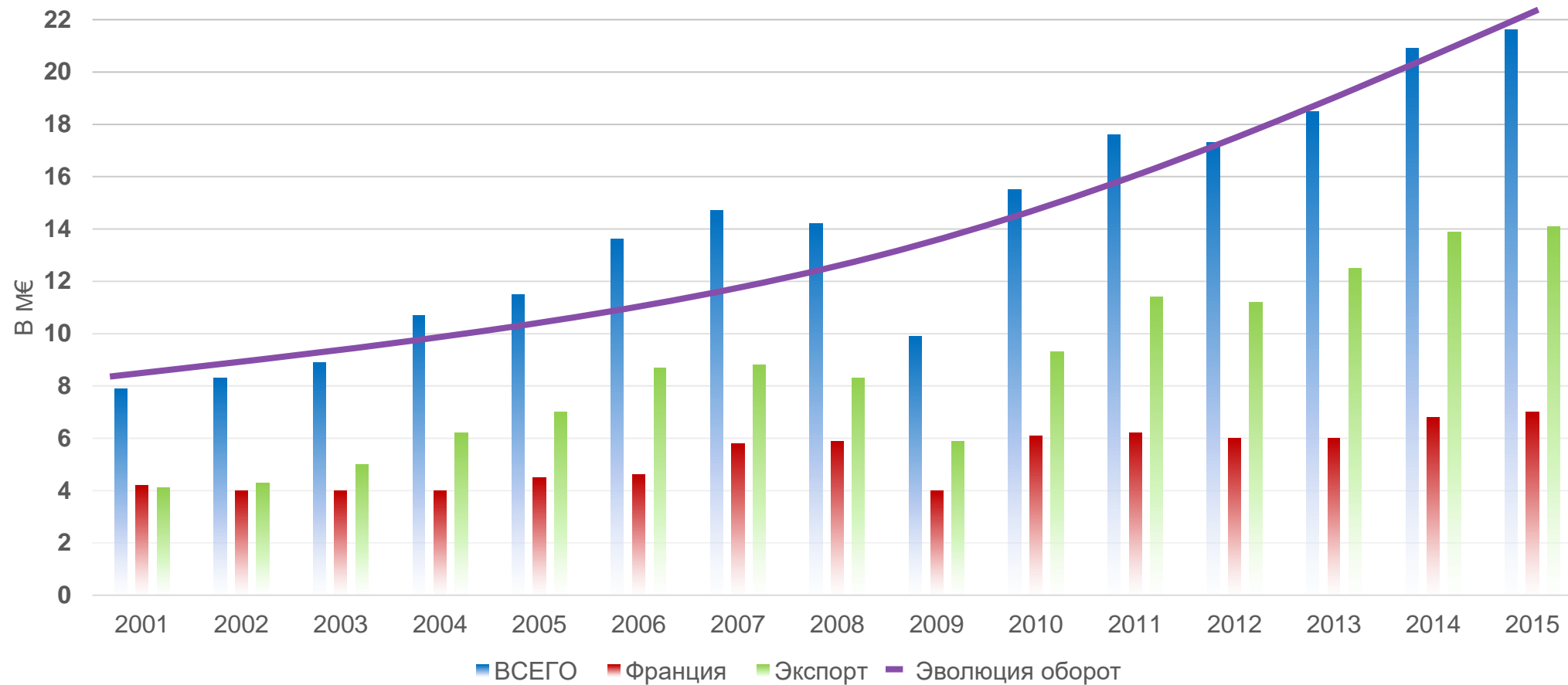
- Наша ключевая ценность с момента основания в 1964г : **УВАЖЕНИЕ**
 - **к людям** : постоянный вклад в прогресс в области сотрудничества с клиентами, сотрудниками компании, дистрибьюторами и поставщиками
 - **к окружающей среде** : создание и производство лучшего качества, практически безвредных для природы товаров с продолжительным сроком службы



V. ИСТОРИЯ



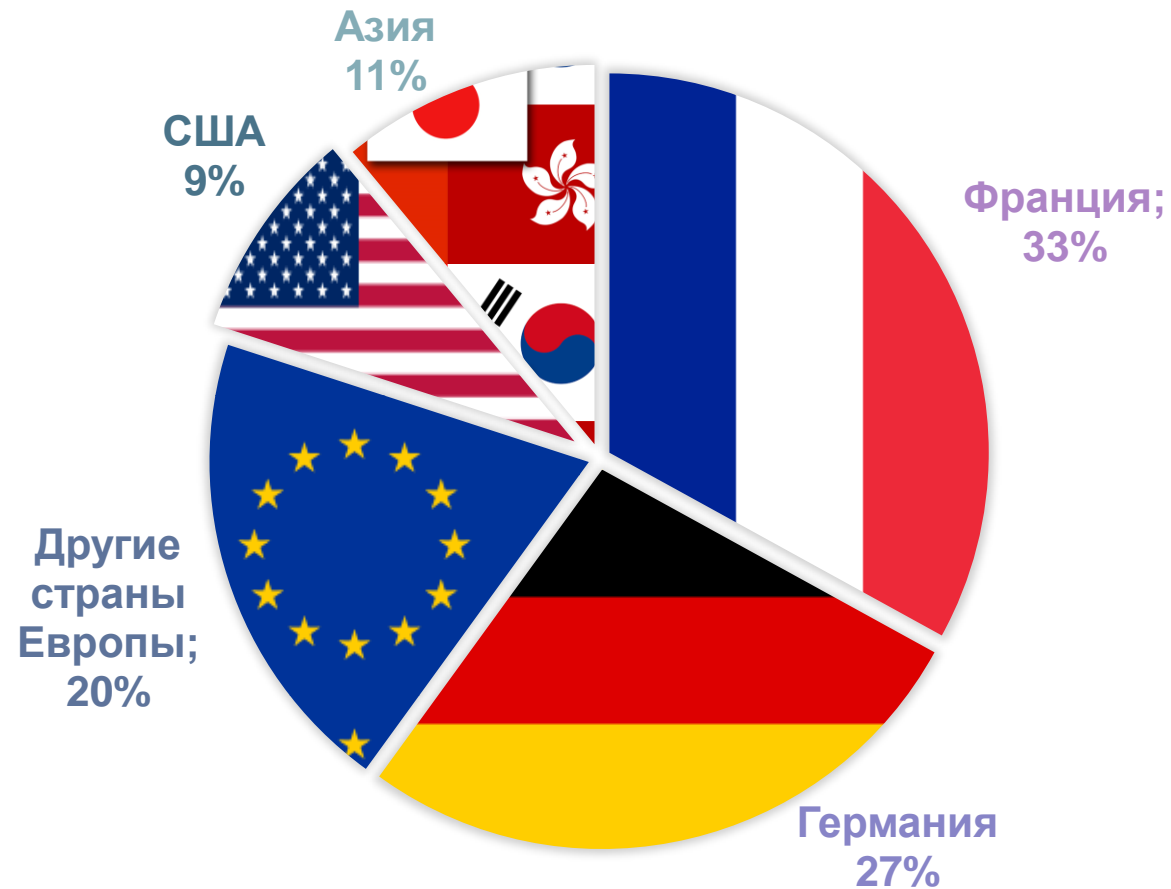
VI. РЕЗУЛЬТАТЫ



VII. ГЛОБАЛЬНОЕ ПРИСУТСТВИЕ

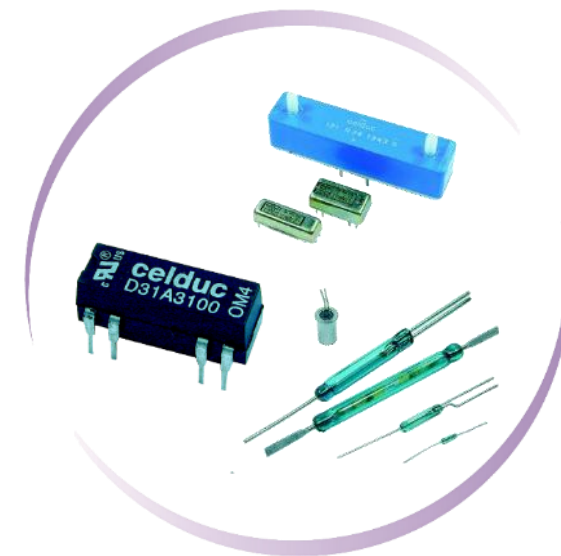
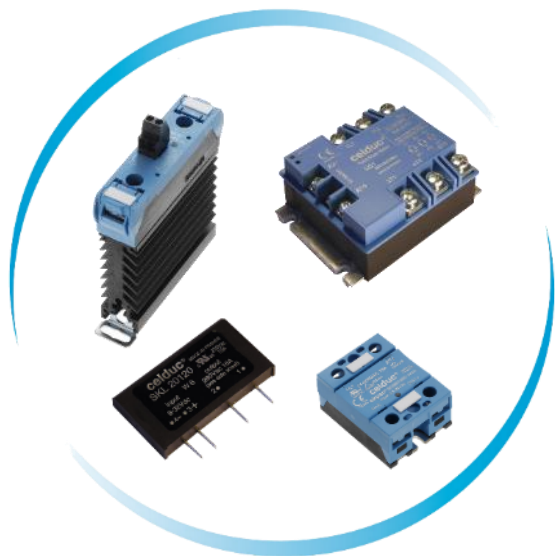
- 67 % экспорта в 2014 году
- Бизнес в 54 странах мира
- Прямые продажи, оригинальные
- производитель оборудования и торговая марка

2014:
20,9 М€



VIII. СЕРИИ ПРОДУКТОВ

- Твердотельные реле (SSR)
- Мощность Электронные реле
- 73% от оборота
- 40% настроены
- Магнитные датчики для измерения уровня, безопасности, скорости, близости
- 23% от оборота
- 80% настроены
- Герконы и реле
- 4% от оборота



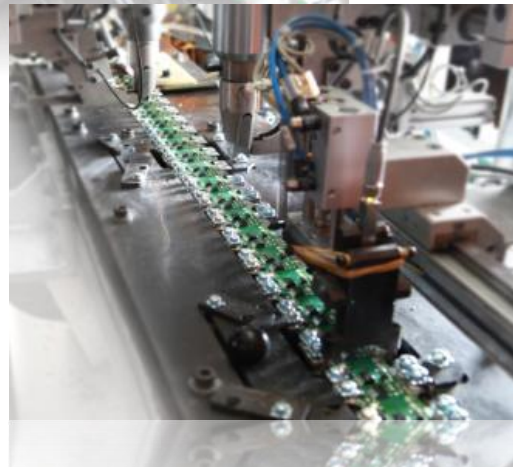
IX. ОСНОВНЫЕ РЫНКИ

- Печи, кофе (Пищевая промышленность)
- Пластиковая промышленность
- Полупроводниковая промышленность
- Медицина
- Электрические приводы (нефть и газ)
- Авиа и ж/д отрасли
- Освещение (уличное, сцена)
- и т.д.



X. ПРОИЗВОДСТВО ВО ФРАНЦИИ

Автоматизация является ключом !



X. ПРОИЗВОДСТВО ВО ФРАНЦИИ

Лучшее качество и инновации являются результаты !



X. ПРОИЗВОДСТВО ВО ФРАНЦИИ

Одобрения лучшего качества !



ISO9001
(2008)



UL, cULUS
USA



CSA
Canada



VDE
GERMANY



TUV
Germany



S-Mark
Safety Mark
South Korea



EX
Explosive
Ambiances
Europe



CE Mark
Europe

OUR CUSTOMERS' EXPECTATIONS DRIVE OUR TECHNOLOGY

The packages of celduc relais' SSR are different from what exist on the market.

This package is the result of a combination of:

-> **listening to customer's challenges** in using those products (global cabinet cost, installation by Electrical Technicians, wiring, lifetime, safety,...) : This is outside features

-> **Expertise in power electronic control** adapted to industrial applications (Heating, Motor,...) : This is internal technology

Competition has remained in the 70's when the first SSR commonly called "Hockey Puck" was released by International Rectifier. It was originally created for Electronic Engineers who only can handle the tricks of using these components in harsh industrial environment.



OUR CUSTOMERS' EXPECTATIONS DRIVE OUR TECHNOLOGY

1) You benefit of the manufacturing in France



Quality, flexibility,
service, highly skilled
peoples

Franco-German technology inside
French design outside



Blue color?

-> Why internal of electrical cabinets should be sad? We bring color!

-> Blue is our signature as our contribution to bring your machine reliability and performance.

For the end user, our products inside your cabinets means Quality, Confidence and good price to sell its used machines.

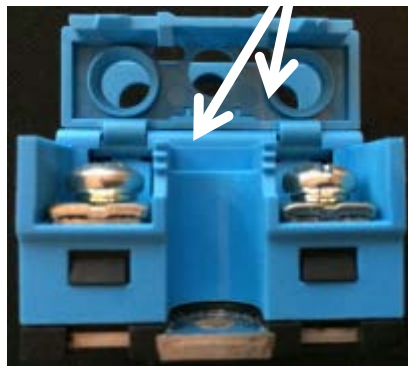
OUR CUSTOMERS' EXPECTATIONS DRIVE OUR TECHNOLOGY

2) You benefit of our unique IP20 touch protection

IP20
finger
test



- > **Fire safety** : UL 94V0 flaps (no risk as could be with standard transparent covers)
- > **Safe even with large connections** : Several positions for big connections (standard covers may loose with big or double lugs)
- > **Manufacturing risk limitation** : No risk to loose or forget installing IP protection as with standard plastic covers
- > **Worker protection** : IP20 on top and even in front to protect workers during machine tests (non connected loads according to European Low Voltage Directive)



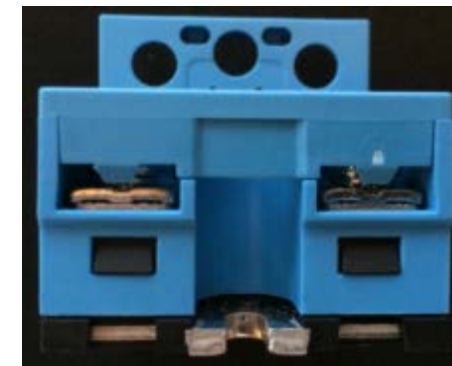
Open
(can see the teeth)



Position 1



Position 2



Fully closed

OUR CUSTOMERS' EXPECTATIONS DRIVE OUR TECHNOLOGY

3) You experience the best power connections with screws ever

- > **Safe connections** : blocking washers for vibration and groove for better current transfer + pulling resistance of wires with vibrations
- > **Easy to screw** : Same screw driver for all connections
- > **Easy to connect** : Large connection to connect ferrules or round lugs
- > **High current control** : Adapters for larger connection requirements



OUR CUSTOMERS' EXPECTATIONS DRIVE OUR TECHNOLOGY

4) You benefit of reliable plug-in control connections



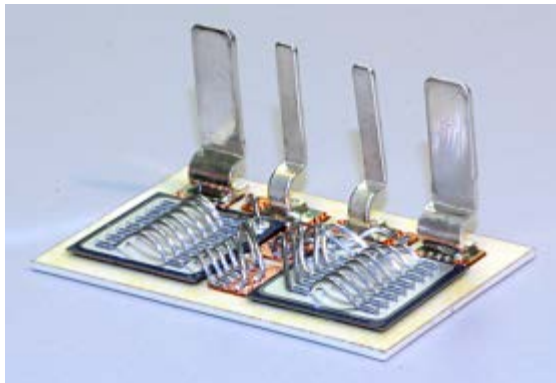
- >**Manufacturing flexibility** : Plug-in connection allows fast installation of the harnesses
- >**Manufacturing flexibility** : wire sizes from 28 to 12AWG
- >**Manufacturing flexibility** : 10 different Weidmüller connecting solutions can be supplied by celduc (screws, spring and spring with lever)
- >**Manufacturing compatibility** : 5,08 pitch adapted to Electrical Technicians
- >**Reliability** : Railway vibration proven terminals IEC61373 (certificate on demand)

OUR CUSTOMERS' EXPECTATIONS DRIVE OUR TECHNOLOGY

5) Power switches designed to increase lifetime over thermal cycling

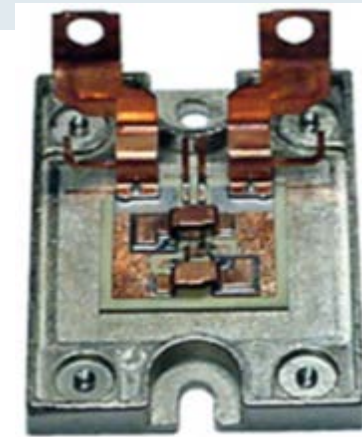
->**celduc relais use wire bonding technology, to ease thyristor thermal expansion/contraction** (Copper bridges lead to cracks in connection because of different thermal expansion coefficients)

->**Flexible and loop shape power terminals** to move with total package thermal expansion and contraction (too rigid connections might lead after some time of thermal cycles to internal disconnections and fire)



celduc relais
TMS² Technology

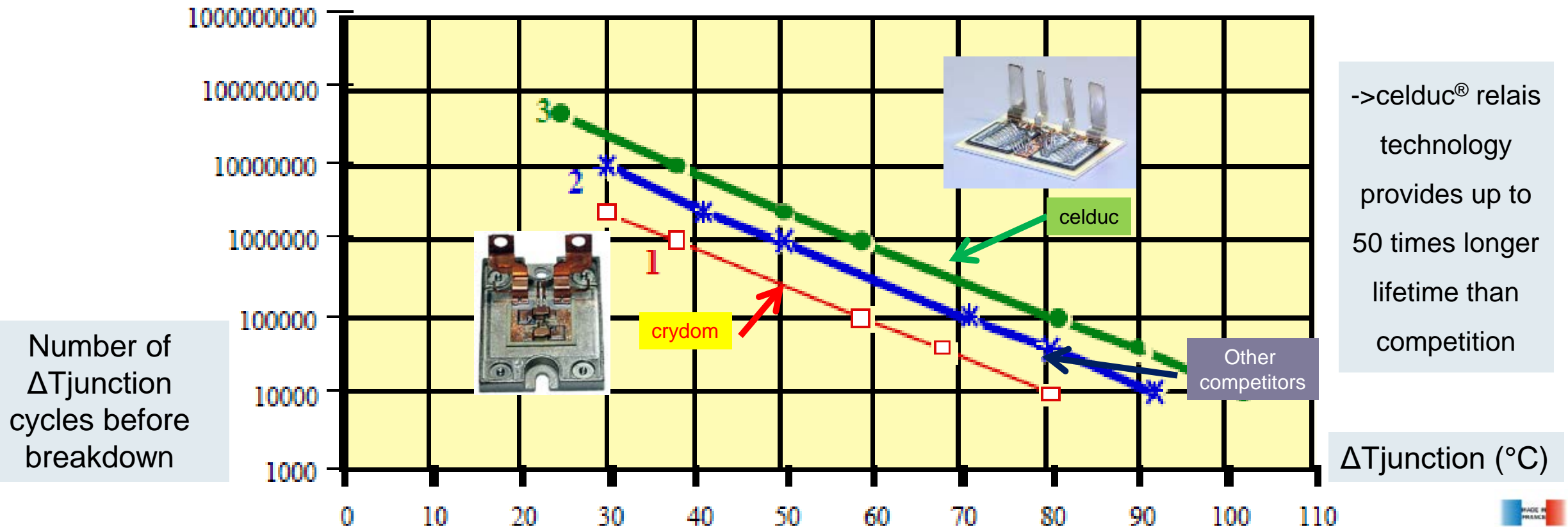
TMS²=Thermo-mechanical
Stress Solution



Competition
technology
(copper bridge
+ straight
power terminals)

OUR CUSTOMERS' EXPECTATIONS DRIVE OUR TECHNOLOGY

5) Power switches designed to increase lifetime over thermal cycling

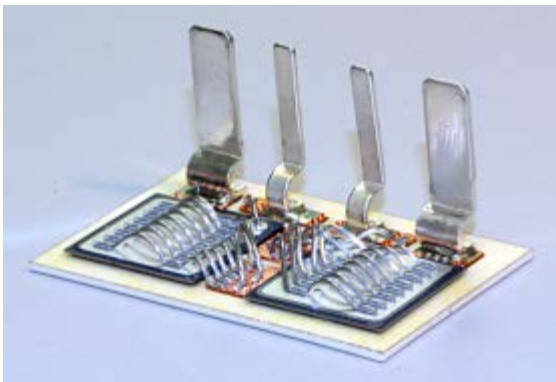


OUR CUSTOMERS' EXPECTATIONS DRIVE OUR TECHNOLOGY

5) Power switches designed to increase lifetime over thermal cycling

End of lifetime : How SSR's die?

Progressive disconnections
and fusing of wire bonding :
very limited risk of fire



celduc® relais
TMS² Technology

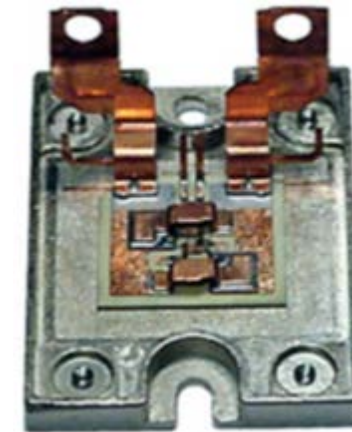
TMS²=Thermo-mechanical
Stress Solution

Aging of the solder between the copper bridge and the
thyristor (solder cristal changing structure)

->Progressive increase in resistance

->Progressive increase of heat (power losses)

->Risk of continuous fire with surrounding materials
(gel, resins)



Competition
technology
(copper bridge
+ straight
power terminals)

OUR CUSTOMERS' EXPECTATIONS DRIVE OUR TECHNOLOGY

6) Short circuit approval : 100kA UL SCCR approved solutions



UL Test certificate available on demand

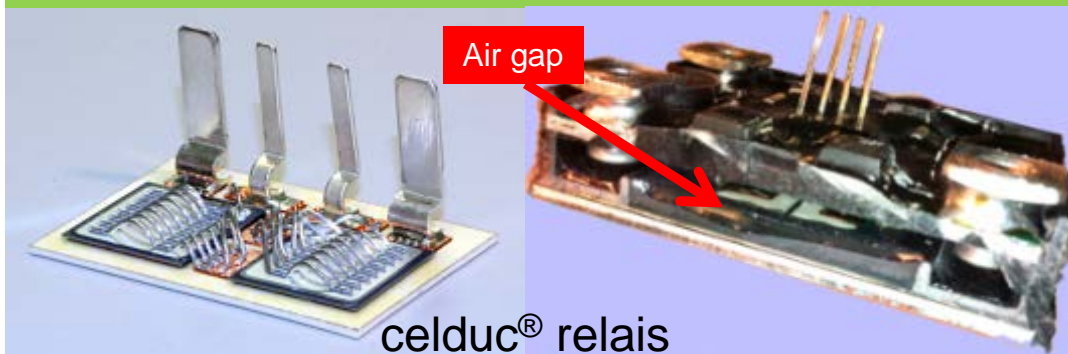
MODEL	TRIAC	FUSE
Model SO, SOL, SOR, SOD, followed by 7, 8 or 9, followed by 4, 6 or 8, followed by 3 followed by 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9, followed by 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9, followed by 0	SKCQ25	CLASS CC 30A
		CLASS J 30A
		CLASS T 30A
Model SO, SOL, SOR, SOD, followed by 4, 7, 8 or 9, followed by 4, 6 or 8, followed by 5 followed by 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9, followed by 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9, followed by 0	SKCQ40	CLASS CC 30A
		CLASS J 30A
		CLASS T 30A
Model SO, SOL, SOR, SOD, followed by 4, 7, 8 or 9, followed by 4, 6 or 8, followed by 7 followed by 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9, followed by 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9, followed by 0	SKCQ60	CLASS J 50A
Model SO, SOL, SOR, SOD, followed by 7, 8 or 9, followed by 4, 6 or 8, followed by 8 followed by 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9, followed by 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9, followed by 0	SKCQ80	CLASS J 50A
Model SO, SOL, SOR, SOD, followed by 7, 8 or 9, followed by 4, 6 or 8, followed by 9 followed by 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9, followed by 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9, followed by 0	SKCQ100	CLASS J 60A
Model SOB followed by 7, 8 or 9; followed by 4 or 6, followed by 3 followed by 0, 1, 3, 4 or 6; followed by 0, 1, 2, 3, 4, 5, 6 or 7, followed by 0 or 4. May be followed by E or C.	SKCQ25	CLASS CC 30A
		CLASS J 30A
		CLASS T 30A
Model SOB followed by 7, 8 or 9; followed by 4 or 6, followed by 5 followed by 0, 1, 3, 4 or 6; followed by 0, 1, 2, 3, 4, 5, 6 or 7, followed by 0 or 4. May be followed by E or C.	SKCQ40	CLASS CC 30A
		CLASS J 30A
		CLASS T 30A
Model SOB followed by 7, 8 or 9; followed by 4 or 6, followed by 7 followed by 0, 1, 3, 4 or 6; followed by 0, 1, 2, 3, 4, 5, 6 or 7, followed by 0 or 4. May be followed by E or C.	SKCQ60	CLASS J 50A

OUR CUSTOMERS' EXPECTATIONS DRIVE OUR TECHNOLOGY

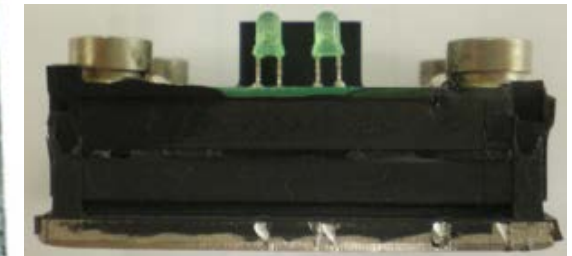
6) You benefit of our expertise for short-circuits

Short circuit : How SSR's die?

Fusion of the wire bonding limiting the energy inside the relay and therefore the risk of explosion even in case of bad coordination.
Also, the air gap between the power ship and the PCB helps air compression and prevents explosion of the package



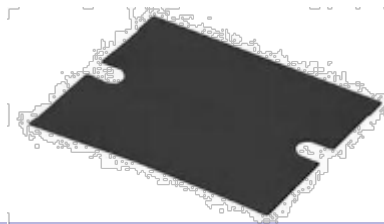
No limitation of the short circuit energy leading to explosion of the thyristors. It is even worst if no air gap as competition dual relays



Competition

OUR CUSTOMERS' EXPECTATIONS DRIVE OUR TECHNOLOGY

7) You benefit of our solutions for thermal transfer



Comparative test: The lower is the R_{th} , the better is the lifetime (better cooling of the power elements)	Thermal resistance R_{th} (K/W) (Lower is better)
Thermal grease (applied with a roll)	0.11
celduc relais thermal pad (phase change)	0.17
Competition thermal pad (carbon)	0.33

OUR CUSTOMERS' EXPECTATIONS DRIVE OUR TECHNOLOGY

8) You can ask customized solutions



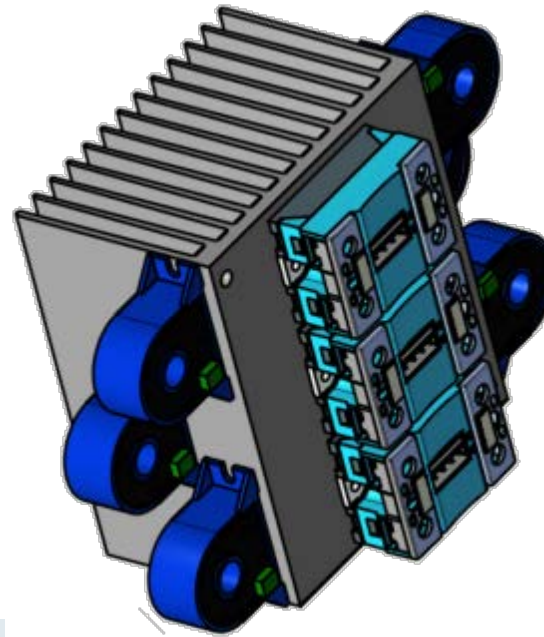
Dual SSR with
push-in connections
($<25A$)



SSR with
diagnostic



Isolated
Bar bus



Complete set
with SSR, CT
and heatsink

Liquid cooling solution for high power and energy
saving (preheating of water)



OUR SOLUTIONS

More generally celduc relais propose a real **win-win partnership** and its expertise to help Customers designing the switching part of the electrical cabinet

- > Cost reduction
- > Thermal management
- > Short circuit protection design
- > Wiring optimization
- > Deal with standard constraints



celduc[®] relais



СПАСИБО ЗА ВНИМАНИЕ