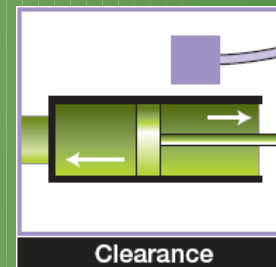
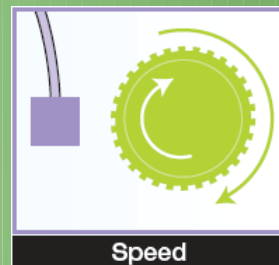
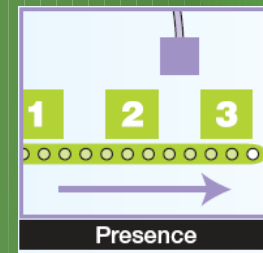
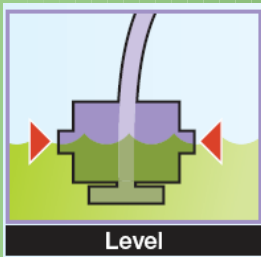




celduc relais

and our magnetic sensors...





I- celduc® relais offers 2 technologies

- The reed switches magnetic sensors
- The electronic sensors

REED switches magnetic sensors



There are two main different types of Reed switches:

- A Form : Normally open contact
- C Form or change over contact (reversing contact (NO + NC) Made in France (in our plant at Sorbiers)

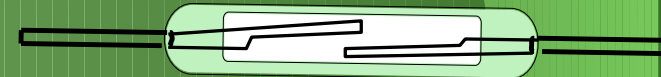
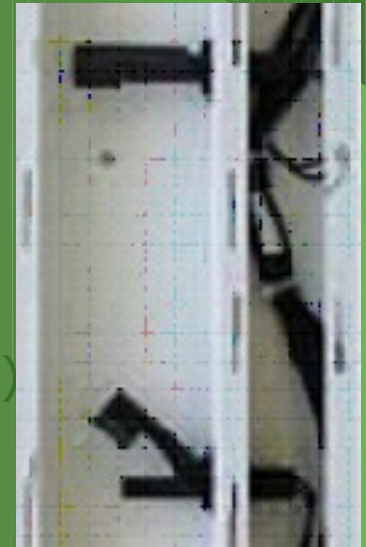
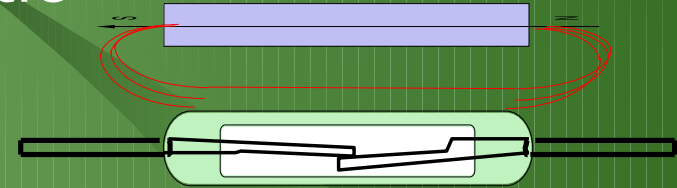


Sales arguments

(REED switches magnetic sensors)

Advantages of reed switches magnetic sensors :

- Very price effective
- Small size sensors
- No need of external power supply
- A real galvanic insulation
- Possibility to use it in harsh environment (hot, cold, humidity, dust, ...)
- Distances for detection can be very large (up to 50mm)
- Good tolerance to shocks
- IP67





SECOND TECHNOLOGY USED FOR MAGNETIC SENSORS: Electronic sensors

➤ HALL EFFECT SENSORS

➤ MAGNETO-RESISTANCE SENSORS



Sales arguments

(Electronic sensors)

Advantages of magneto-resistance or Hall effect sensors :

- High speed operation up to 20Khz
- Insensitive to shocks and vibrations





II-What are the technical specification of the product ?

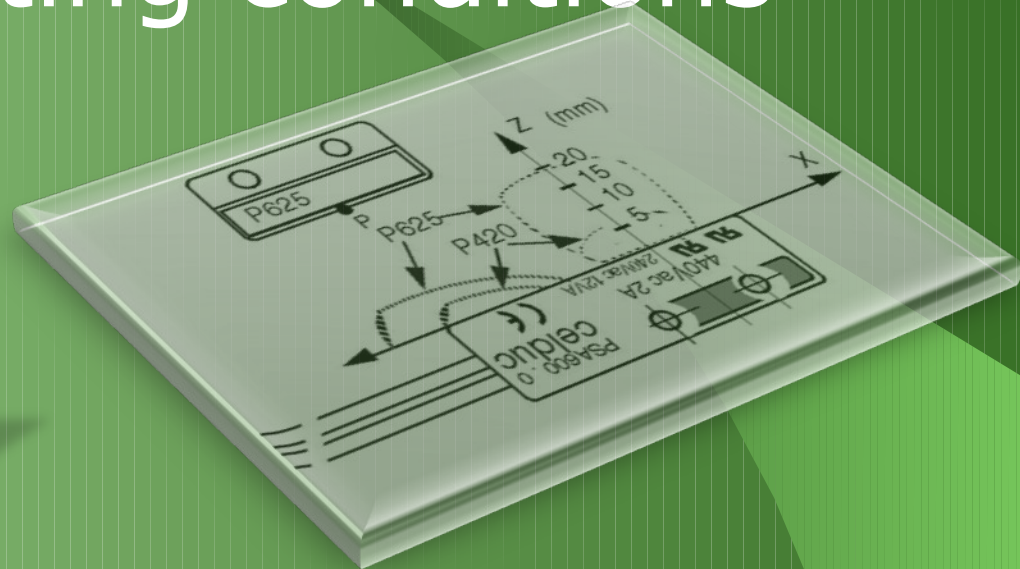




1 – Application field

2- Operating conditions

The operating distance between the magnet and the sensors



What is the environment? material used close to the sensor (plastic, copper, aluminium, steel, iron, presence of motors....

Working conditions : vibrations, shocks, gas vapour, dust, humidity...



3- Electrical data

Type of load
(resistive or
inductive)

Power ?
Voltage ?

Type of contact
(NO, NC, change
over contact)

4- Physical aspects

Which design
needs the
customer ?

Which
connection
types ?

Which type of
magnets ?
(cylindrical, ring,
square...)



III- Examples of applications

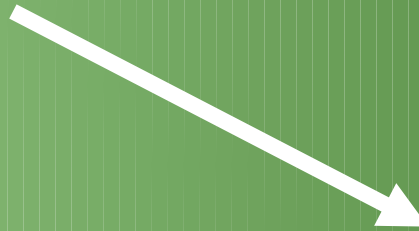
1- Level sensors



CUSTOMER : KIS
Photo lab equipment manufacturer

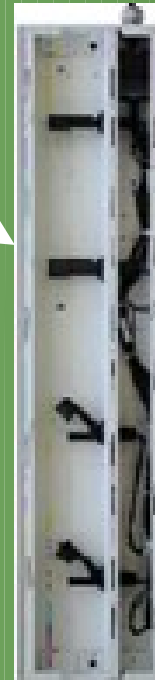
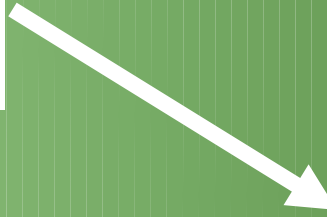


Function : to check the level of the liquid to
develop pictures



**SSR user too !
SKA / SO9 / SC7**

CUSTOMER : CCEI
Manufacturer of accessories
for swimming pool

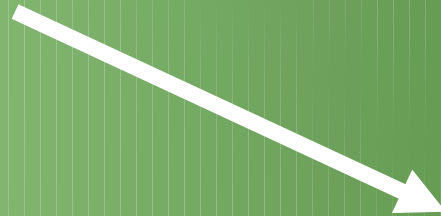


Function : to check the level of the water





CUSTOMER : Kampmann GmbH
Manufacturer of
heating, cooling, ventilating and
air conditioning systems



Function : in some systems there are tanks for
the condensate. The sensor is detecting the
water level and switch on a pump.



Examples of applications

2- Tubular sensors



Rocla

Project - CUSTOMER : ROCLA OY Fork lift manufacturer



Function : oil, fuel level

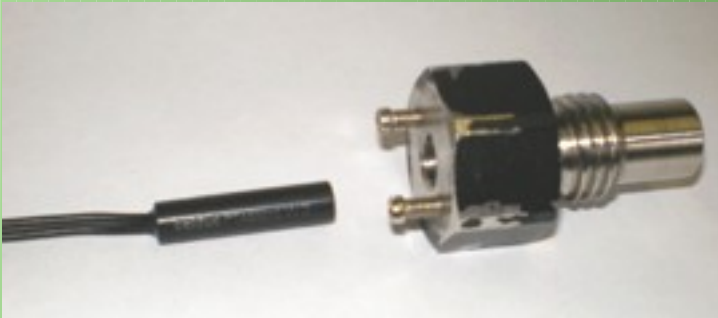
New PTI M8

Attractive price !





CUSTOMER : SERTA Hydraulic cylinder manufacturer



Function : to check the position of the cylinder.

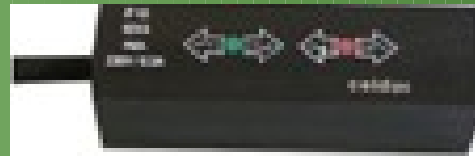
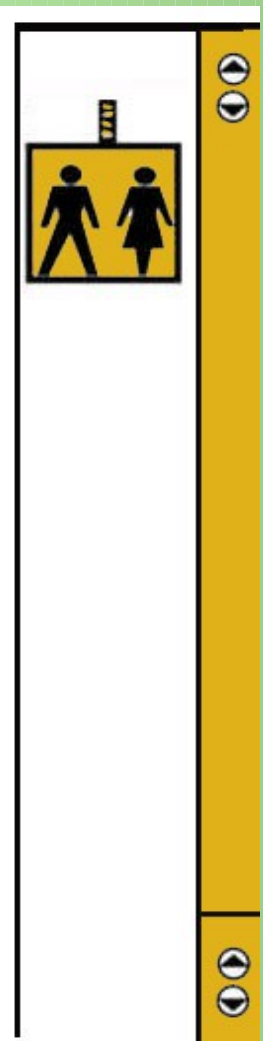


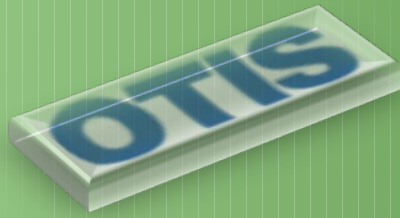
Specificity : this product is used in a steel magnetic environment



Examples of applications

3- Lifts, position sensors

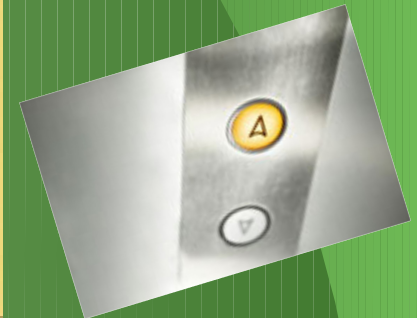




CUSTOMER : OTIS Elevators manufacturer

Function :

- ① Locking and door position
- ② Checking of the position of the cabin.
- ③ Direction of the cabin





Others successes by manufacturer of safety accessories for lifts

DRIM FRANCE

PCA/PCC/PCLA..... (**1000** pieces sold in 2010)



ThyssenKrupp

PHA..... (**16 000** pieces sold in 2010)
PMG... (**2 000** pieces sold in 2010)



Regulations for the lifts market

There will be new markets thanks to **European regulations on Existing Elevator Safety** (This regulation in France has to be applicable between July 2008 and July 2018).

- *locking of the landing doors*
- *installation of a protection against falls*
- *installation of an alarm*



You should check if you have also this kind of new regulations in your country



Examples of applications

4- Doors, windows sensors





Detection of openings and closings of refrigerators



About **13 000** pieces sold
in 2010
PTPA / PTPB

Function : to check the closing
of the door.



Backery material



Medical fridge to store the blood



Laboratory instruments manufacturer



SSR user too !
S08



Detection of openings and closings of windows



Windows frames manufacturer

Function : to check the closing of windows



1000 PTB..... sold in 2008



3000 PLA/PLB/PLC





Examples of applications

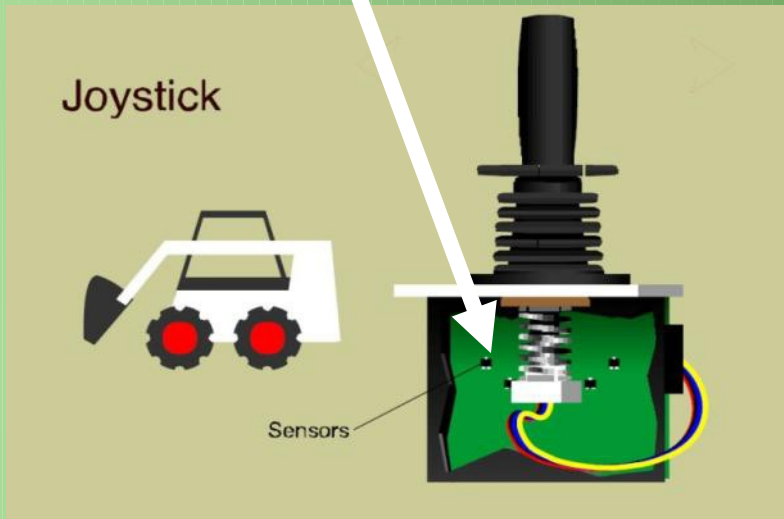
5- Presence, Position
sensors – other
applications



CUSTOMER : Valtra/Maaseudun Kone Safety cabins for tractors



Function : control of joystick on tractor



PTA.....
(**20 000** pieces sold
in 2010)

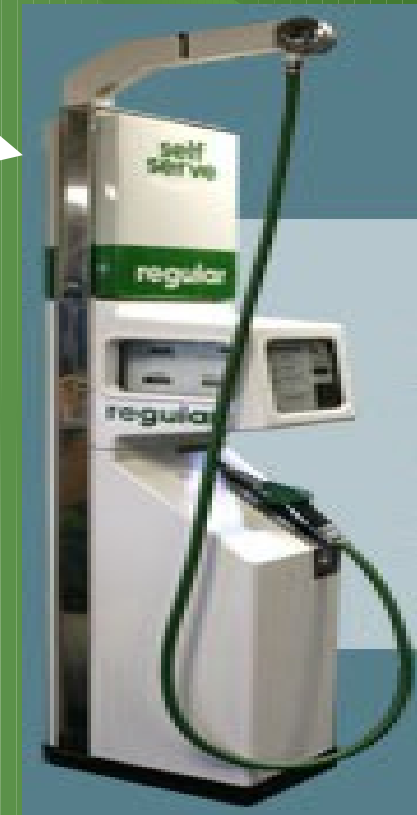


CUSTOMER : PEC FUEL PUMP
Fuel pumps and dispensers
manufacturer

Function : detection of hang up



PLA....+ P625000
(**8 000** pieces sold in 2010)





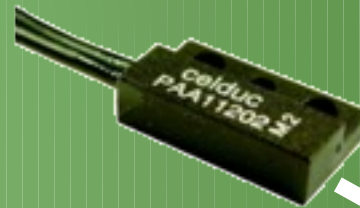
CUSTOMER : ECOTECH as Electrical burning toilet

Function :

Two sensors are used

1- on the seat to control the opening/closing of the pan as it is necessary to close the pan to start "electric burning";

2- the other to check the presence of the ash tank before starting the combustion.



PAA.....
(**9 000** pieces sold in 2010)





CUSTOMER : SOLYSTIC

Manufacturer of mail processing machine



Function : to check the loading of letter compartments

PTB.....

(**10 000** pieces sold in 2010)



SSR user too !
SKA20420



V- Specific sensors

There are numerous special customer applications in all sectors of activity.
celduc relais designs specific products according to the customers needs



CUSTOMER : ELECRO Engineering Swimming pool heaters

PTA..... 10 000pcs / year

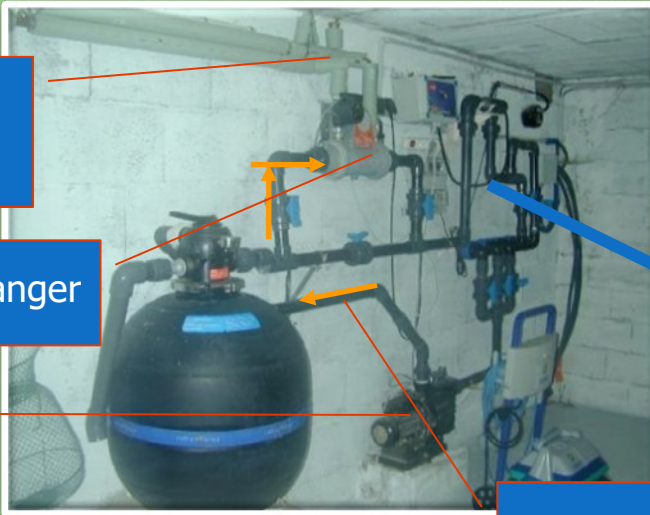


PTA.....

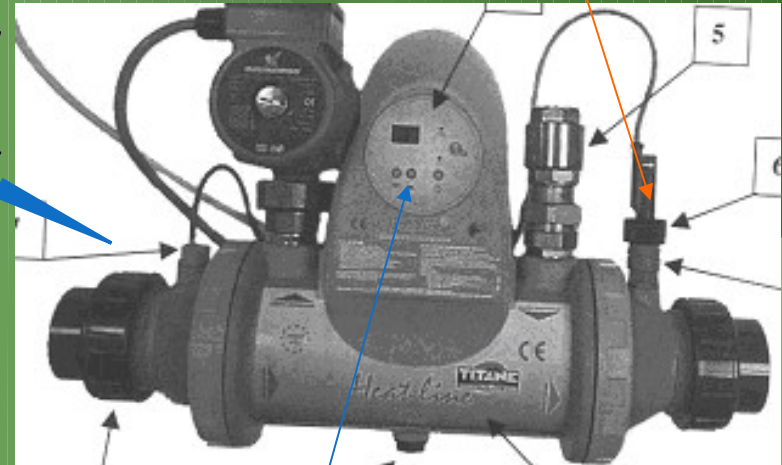
Warm water
coming from
the boiler

Exchanger

Pump



Direction of
circulation



Temperature of
the water

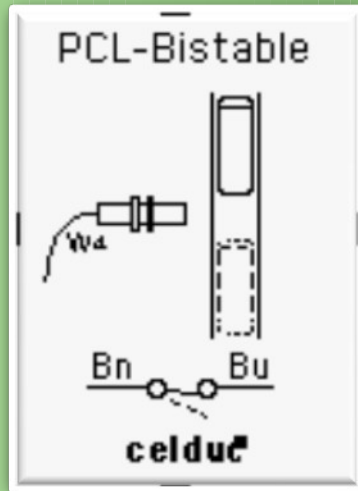
Function : To measure the water flow in the exchanger.

If the water flow is too low, that means if only the boiling water (85°C) is flowing in the exchanger, they will be damaged as they are made in plastic. For that reason, a sensor is installed at the exit of the exchanger to detect the flow. If no flow or low flow, the sensor cut the arrival of the water from the boiler

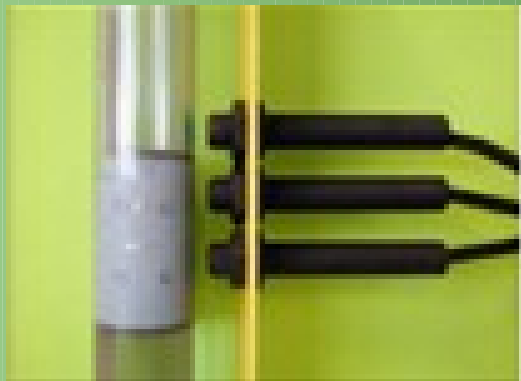


CUSTOMER : TOUSSAINT NYSSSENNE

Air handling units



Function : Air handling units have to maintain the air at a constant humidity degree. For that, they create a water screen, where the air is pushed in. The water fall is saved in a pool, where the water level is continuously being measured at 3 points. According to the measured level, the user has to add water or to reduce it in the water fall.





Latching level sensor with REED switches

Other applications

Standard PVC pipe

Float inside the pipe



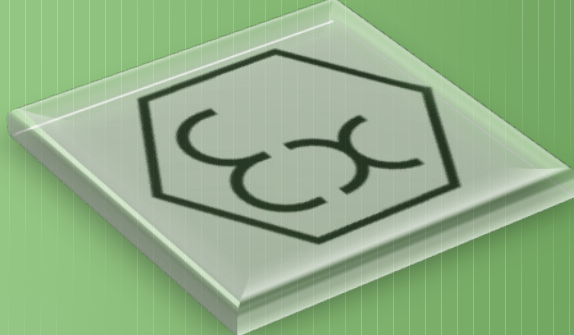
Different kind of floats
depending on the
density



Example of application :

Desalinators for sea water (SLCE Water maker)





ATEX sensors
celduc's know-how

celduc is notified as a manufacturer of ATEX products INERIS 04ATEXQ406

PRODUCTS FOR POTENTIALLY **EXPLOSIVE** **AT**MOSPHERES

ATEX standard corresponds to a new directive for devices or systems providing protection in hazardous / dangerous areas where there are gas vapour and dust.

Magnetic sensors used to detect hang up signals of nozzles in petrol station

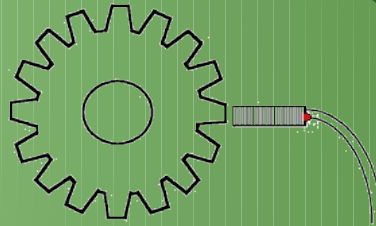


Position sensors used in the petrol industry

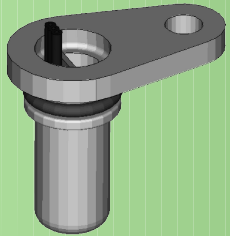




Magneto-resistance or Hall effect sensors celduc's know-how



Gear tooth sensor
Application : speed sensors, tractors, truck, ...





III- Conclusion

❶ By visiting a customer, it's necessary to speak both of our SSRs and of our magnetic sensors as most of the SSR users, are also sensors users.

❷ A lot of products we are able to produce are not mentioned in our catalogue.

The biggest part is customised products.

Contact celduc to get a personalised offer !

❸ Our goal is to increase the turnover of magnetic sensors to get to 30 % of our turnover.