

Magnetic Proximity Sensors

MAGNETIC PROXIMITY SENSORS

We are the experts ! !!!

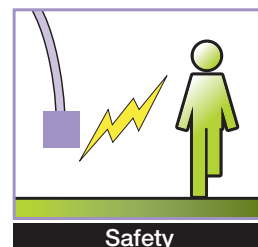
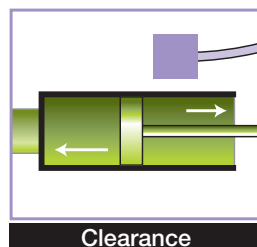
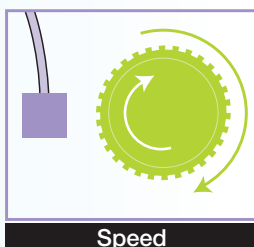
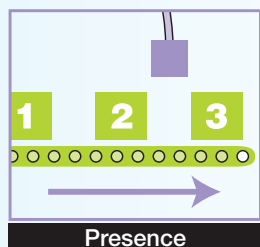
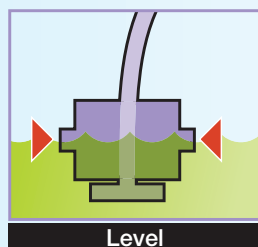
If you are looking for position, presence, level or speed detection, then we will be able to offer a solution from our range of magnetic sensors.

We can even design a specific product for your applications !

At celduc® relais, we are eager to offer the best products for your application, thanks to our 30-year experience in the key technologies that we use in our products :

- Reed switch, a dry contact in a sealed glass bulb providing insulation at the same time : a simple, reliable and low cost solution.
- Electronic cell, based on either magneto-resistance or Hall effect, necessary for higher performance, particularly in high frequency operation.

SCOPE



Industry

Counting
Cylinder positions
Machine safety
Advertising panel
Actuator position
Liquide level
Speed control.

Home

Burglar alarm
Camera shutter control window position (blinds)
Lifts
Alarms
Big and small household goods
Swimming-pools.

Aircraft, space and army

Fuel/oil level
Camera shutter control
Sensors and actuators for Airbus.

Specific applications

ATEX (explosive atmospheres)

CONTACT TYPE

- NO / A Form → Normally Open
- NC / B Form → Normally Closed
- BISTABLE NO / L Form
- CHANGE-OVER / C Form

Other lengths of cable or wire possible for signifiant quantities.

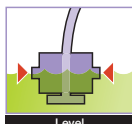
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REMINDER : Reed switches and magnetic sensors using reed switches can switch AC or DC current. In our technical data-sheets the values given for current and voltage are the maximum values. It means that in DC applications it corresponds to the max. switching current and voltage. In AC applications these values are the peak values, to obtain the nominal value you should divide by 1,414.



Level sensors



celduc® relais offers a large range of standard or specific level and flow sensors using Reed switches. Our sensors are available in plastic, brass or stainless steel housing, making it possible to use them with various chemical substances and/or operating temperatures.

With some sensors, it is possible to invert function by reversing the float or using the sensor upside down.

Please see the data sheets for more details.

For specific applications (e.g. potentiometric scale, special level sensors) do not hesitate to contact us : products can be developed on request.

| | | | | | | | |
|--------------------------------|---------|---|---|---|---|---|----------------------------------|
| | |  |  |  |  |  | |
| Product reference | | PTF01060 | PTFA1015 | PTFA1103 ⁽¹⁾ | PTFA1104 ⁽¹⁾ | PTFA1210 | PTFA2115 ⁽¹⁾⁽²⁾ |
| Mounting | | Vertically | Vertically High and low level | Vertically High level | Vertically Low level | Vertically High and low level | Vertically High and low level |
| Contact status (float down) | | 1NO | 1NO | 1NC | 1NO | 1NO+NC | 1NO |
| Connection type | | 2 wires 600mm | 2 wires 1,5m | 2 wires 300mm | 2 wires 300mm | Cable (3 wires) 300mm | 2 wires 1,5m |
| Material | Housing | Polyamide 6/6 resin with glass fiber content | Polyamide 6/6 resin with glass fiber content | Polypropylene | Polypropylene | Polyamide | Stainless steel |
| | Float | Polypropylene | Polypropylene | | | Polyurethane | |
| Liquid compatibility | | Water | Water | 1 | 1 | 2 | 3 |
| Float travel | | 10mm | 17mm | 9mm | 9mm | 48,5mm | 8mm |
| Max. switching power | | 10VA | 10VA | 10VA | 10VA | Top : 10VA Bottom : 3VA | 50VA |
| Max. switching voltage | | 100Vdc | 100Vdc | 100Vdc | 100Vdc | Top : 200Vdc Bottom : 100Vdc | 300Vac/dc |
| Max. switching current | | 0,5A | 0,5A | 0,5A | 0,5A | Top : 0,5A Bottom : 0,25A | 0,5A |
| Density mini | | 0,8 | 0,75 | 0,7 | 0,7 | 0,6 | 0,75 |
| Working temperature | | 0 / 70°C | 0 / 70°C | -10 / 80°C | -10 / 80°C | -10 / 85°C | 0 / 100°C |
| Thread | | M8 x 1,25 | 3/8" threading UNC 1,588mm (16 per inch) | 1/8" GAS (28 per inch) | 1/8" GAS (28 per inch) | 3/8" threading UNC 1,588mm (16 per inch) | M10 x 1 |

(1) Possible to invert the functions by reversing the float

(2) Available in ATEX version (see page 31).

Liquids compatibility

- 1** → Compatible with acid : acetic, citric, formic, lactic, nitric diluted, phosphoric, sulphuric diluted ; soda ; alcohols : ethanol, methanol, propanol ; glycol ; mineral oil ; water.
→ Not compatible with the following solvents : chloroforme, methylene chloride, trichloroethylene, toluene ; hard acids.
- 2** → Compatible with fuels, engine oil, kerosene, lubricating oil, mineral oil, vegetable oil
→ Not compatible with almost all acids, methylene chloride
→ Acceptable resistance to water
- 3** → Compatible with almost all the liquids except hard acids.



Working principle

A float fitted with one or more magnets moves with the liquid and actuates, due to its magnetic field, a hermetically sealed reed contact located in the body of the float.

Advantages

- One moving part
 - The Reed contact is actuated by a magnetic field only : no contact so no wear
 - The Reed contact is completely isolated from the liquid so perfectly waterproof
- The above advantages allow a safety use, repetitiveness, precision and minimum maintenance.



| Product reference | PTFA0100 | PTFA0115 | PTFA3115 | PTFA3315 ⁽²⁾ | PTFA3415 | PTFA3002 |
|------------------------|------------------------------------|-----------------------------------|------------------------------|-----------------------------|-----------------------------------|-----------------------------------|
| Mounting | Horizontally External mounting | Horizontally External mounting | Horizontally | Horizontally | Horizontally External mounting | Horizontally External mounting |
| Contact status | 1NO | 1NO | 1NO | 1NO | 1NO | 1NO |
| Connection type | 2 wires 175mm + Molex connector | 2 wires 1,5m | 2 wires 1,5m | 2 wires 1,5m | Cable 1,5m | Cable 20m R in serie |
| Material | Polyamide 30% glass fiber | Polyamide 30% glass fiber | Polyamide 30% glass fiber | Polypropylene | Polypropylene | Polypropylene |
| Liquid compatibility | 2 | 2 | 2 | 1 | 1 | 1 |
| Float travel | 50° | 50° | 50° | 50° | 50° | 50° |
| Max. switching power | 10VA | 10VA | 50VA | 50VA | 50VA | 50VA |
| Max. switching voltage | 200Vdc | 200Vdc | 300Vac/dc | 300Vac/dc | 300Vac/dc | 300Vac/dc |
| Max. switching current | 0,5A | 0,5A | 0,5A | 0,5A | 0,5A | 0,1A |
| Density mini | 0,6 | 0,6 | 0,6 | 0,6 | 0,6 | 0,6 |
| Working temperature | 0 / 85°C | 0 / 85°C | 0 / 85°C | -10 / 100°C (wires/85°C) | -10 / 100°C (wires/85°C) | -10 / 100°C (wires/85°C) |
| Thread | Specific | Specific | Specific | M16 x 2 | M16 x 2 | M16 x 2 |

(2) Available in ATEX version (see page 31).

For Stainless steel version please consult us

Applications

Heating (air-conditioning, heaters, humidifiers)

→ To detect the water level in the tank.

Domestic equipment (electronic flush, solar systems)

→ To detect the water level.

Food industry (coffee machines, vending machines)

→ Check the level of water left in the tank.

Medical equipment (sterilising equipment for medical instruments)

→ Check level of water for steam or liquid detergent level.

Water treatment (water purifying, desalinating)

→ The sensors enable the reserve water level to be established.

Swimming pools (water treatment, water heating)

→ Water level and flow.

Automobile (radiator liquids level, windscreen washer, engine oil level, brake oil level)

→ Detection of liquids levels.

Various industries (photo lab equipment, scrubber machines, fuel dispensing systems...)

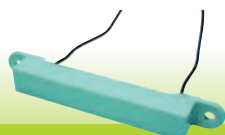
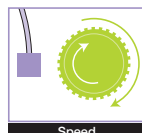
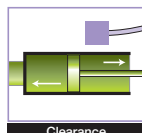
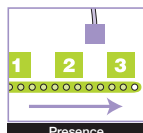


General use screw sensors for industry and household use :

- 



| Product reference | PLA13701 | PLA13715 | PLA13725 | PLA13750 | PLA13780 | PLB10060 | PLB16701 | PLC10040 | PLC13701 | PLC13780 |
|------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|----------------------------|-----------------------|--------------------|--------------------|--------------------|
| Contact status | NO | NO | NO | NO | NO | NC | | Change-over | | |
| Connection type | cable | cable | cable | cable | cable | cable | cable | cable | 3 wires | cable |
| Cable length | 100mm | 1,5m | 2,5m | 5m | 8m | 3m | 100mm | 1,5m | 100mm | 8m |
| Max. switching power | 12VA | | | | | | | NC : 3VA NO : 8VA | | |
| Max. switching voltage | 250VDC | | | | | | | 100VDC | | |
| Max. switching current | 0,4A | | | | | | | 0,25A | | |
| Activation distance | 10mm with P6250000 | 10mm with P6250000 | 10mm with P6250000 | 10mm with P6250000 | 10mm with P6250000 | 4<d<12mm (magnet provided) | 4mm (magnet provided) | 14mm with P6250000 | 10mm with P6250000 | 10mm with P6250000 |
| Working temperature | -40 to +100°C | | | | | | | | | |
| Dimensions (mm) | 32x15x6,8 | | | | | | | | | |
| Fixing screws distance | 17,5mm | | | | | | | | | |



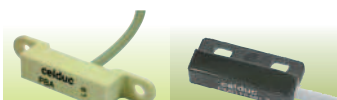
| Product reference | PB158S00 | PB195T00 | PB285T00 | PB367G00 | PB390G00 | PBA13725 | PBA13740 | PBA13780 |
|------------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|
| Contact status | NO | | NC | | NO | NO | | |
| Connection type | 2 wires | 2 wires | 2 wires | 2 wires | 2 wires | cable | cable | cable |
| Cable length | 80mm | 80mm | 80mm | 80mm | 80mm | 2,5m | 4m | 8m |
| Max. switching power | 100VA | 50VA | 50VA | 16VA | 16VA | 12VA | 12VA | 12VA |
| Max. switching voltage | 250VAC | 250VAC | 250VAC | 250VAC | 250VAC | 250VAC | 250VAC | 250VAC |
| Max. switching current | 3A | 1A | 1A | 0,5A | 0,5A | 0,4A | 0,4A | 0,4A |
| Activation distance | 4mm with P4160000 | 7mm with P4160000 | 6mm with P4160000 | 6mm with P4159000 | 13mm with P4160000 | 13mm with P4160000 | 13mm with P4160000 | 13mm with P4160000 |
| Working temperature | -40 to +100°C | -40 to +100°C | | | -40 to +100°C | -40 to +100°C | -40 to +100°C | -40 to +100°C |
| Dimensions (mm) | 86x8,5x12,5 | 86x8,5x12,5 | 86x8,5x12,5 | 51x8,5x11,5 | 51x8,5x11,5 | 51x8,5x11,5 | 51x8,5x11,5 | 51x8,5x11,5 |
| Fixing screws distance | 75mm | | | 40mm | | | | |

Sensor with metal housing



| Product reference | PLMA0220 |
|------------------------|------------------------|
| Contact status | NO |
| Connection type | 1 shielded cable |
| Cable length | 2m |
| Max. switching power | 100VA |
| Max. switching voltage | 300VAC |
| Max. switching current | 1A |
| Activation distance | 25mm (provided magnet) |
| Working temperature | -40 to +85°C |
| Dimensions (mm) | 88x38x12 |
| Fixing screws distance | 69mm |

Screw sensors with safety loop (Alarms)



| Product reference | PBA10010 | PMG12482 |
|------------------------|--------------------|--------------------|
| Contact status | NO | NO |
| Connection type | cable + loop | cable + loop |
| Cable length | 8m | 8m |
| Max. switching power | 12VA | 12VA |
| Max. switching voltage | 250VDC | 250VDC |
| Max. switching current | 0,4A | 0,5A |
| Activation distance | 16mm with P4160000 | 14mm with P6250000 |
| Working temperature | -40 to +100°C | -25 to +85°C |
| Dimensions (mm) | 51x8,5x11,5 | 33x15x6,8 |
| Fixing screws distance | 40mm | 17,5mm |

High power switching sensors

These sensors allow controlling loads up to 3A.



| Product reference | PSA60010 | PSA60015 |
|------------------------|--------------------|--------------------|
| Contact status | NO | NO |
| Max. switching power | 500VA | 500VA |
| Max. switching voltage | 24-440VAC | 24-440VAC |
| Max. switching current | 3A | 3A |
| Cable length | 2 wires 350mm | Cable 1,5m |
| Activation distance | 12mm with P6250000 | 13mm with P6250000 |
| Working temperature | -40 to +85°C | -40 to +85°C |
| Dimensions (mm) | 51x16x7 | |
| Fixing screws distance | 16mm | |

Safety sensors manufactured in compliance with the European Directive 2006/42/CE :

PLC according to ISO13849-1

SIL1 according to IEC62061

Category 1

High MTTFd

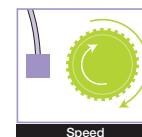
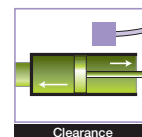
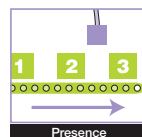
For other safety applications see page 33.

REED MAGNETIC SENSORS


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General use tubular sensors for industry and household use :

- Rabbit sensors
- Doors opening
- Protection cover presence
- Household appliances



Tubular position sensors



| Product reference | PTA10440 | PTA10540 | PTA11235 | PTA12401 | PTA13715 | PTA13730 | PTA50010 | PTB13702 | PTC12301 | PTC13730 |
|-----------------------------------|---------------|---------------------------|------------|---------------|--------------|------------|---------------|---------------|----------------------|----------------------|
| Contact status | NO | | | | | | | NC | Change-over | |
| Max. switching power | 12VA | 12VA | 12VA | 12VA | 12VA | 12VA | 12VA | 3VA | NC : 3VA NO : 8VA | NC : 3VA NO : 8VA |
| Max. switching voltage | 100VDC | 100VDC | 100VDC | 100VDC | 100VDC | 100VDC | 100VDC | 100VDC | 250VDC | 100VDC |
| Max. switching current | 0,4A | 0,4A | 0,4A | 0,4A | 0,4A | 0,4A | 0,4A | 0,25A | 0,25A | 0,25A |
| Connection type | 2 wires 500mm | 3 wires + connector 395mm | Cable 3,5m | 2 wires 100mm | 2 wires 1,5m | 2 wires 3m | 2 wires 100mm | 2 wires 200mm | 3 wires 100mm | Cable 3m |
| Activation distance with P6250000 | 7mm | 13mm | 15mm | 14mm | 10mm | 10mm | 18mm | 14mm | 8mm | 7mm |
| Working temperature | -40 to +85°C | | | | | | | | | |
| Dimensions (mm) | Ø6x30 | | | | | | Ø6x25,2 | Ø6x30 | | |



| Product reference | PTA10490 | PMG90010 | PMG92291 | PTPA0030 | PTPA0100 | PTPA0230 | PTPB0010 |
|------------------------|--------------------|--------------------|-------------------|------------------------|------------------------|------------------------|------------------------|
| Contact status | NO | 1NO | 1NO | 1NO | 1NO | 1NO | 1NC |
| Max. switching power | 10VA | 10VA | 12VA | 12VA | 12VA | 12VA | 12VA |
| Max. switching voltage | 100VDC | | | | | | |
| Max. switching current | 0,4A | 0,4A | 0,4A | 0,5A | 0,5A | 0,5A | 0,5A |
| Connection type | 2 wires 800mm | Cable 10m | 2 wires 200mm | 2 wires 3m | Connectors | 2 wires 3m | 2 wires 80mm + FASTON |
| Activation distance | 16mm with P6250000 | 12mm with PMG92280 | 8mm with P6250000 | 12mm (magnet provided) | 12mm (magnet provided) | 30mm (magnet provided) | 10mm (magnet provided) |
| Working temperature | -40 to +120°C | -40 to +85°C | -40 to +100°C | -40 to +85°C | -40 to +85°C | -40 to +85°C | -40 to +85°C |
| Dimensions (mm) | Ø6x41 | Ø12x32 | Ø18,5x32,5 | Ø11x28 | Ø11x28 | Ø23x27 | Ø23x28 |

Typical applications :
-Speed sensors,
-Presence, position, clearance sensors.

PTI range – M8 plastic and stainless-steel housing




| Product reference | PTI40003 | PTI40003 | PTI50003 | PTI50020 | PTI60003 | PTI60020 | PTI70003 |
|------------------------|---------------------------|---------------------------|--------------------------|--------------------------|------------------------------|------------------------------|------------------------------|
| Contact status | 1NO / A form | 1NO / A form | 1NC / B form | 1NC / B form | 1NO / A form | 1NO / A form | 1NC / B form |
| Max. switching power | 12VA | 12VA | 5W | 5W | 12VA | 12VA | 5W |
| Max. switching voltage | 200VDC | 200VDC | 175VDC | 175VDC | 200VDC | 200VDC | 175VDC |
| Max. switching current | 0,5A | 0,5A | 0,25A | 0,25A | 0,5A | 0,5A | 0,25A |
| Connection type | Cable 30cm | Cable 2m | Cable 30cm | Cable 2m | Cable 30cm | Cable 2m | Cable 30cm |
| Activation distance | 12mm with magnet PT505000 | 12mm with magnet PT505000 | 7mm with magnet PT505000 | 7mm with magnet PT505000 | 12mm with magnet PT505100 | 12mm with magnet PT505100 | 7mm with magnet PT505100 |
| Working temperature | -40 to +85°C | -40 to +85°C | -40 to +85°C | -40 to +85°C | -40 to +85°C | -40 to +85°C | -40 to +85°C |
| Dimensions (mm) | M8x1 - Lg 31 Plastic | M8x1 - Lg 31 Plastic | M8x1 - Lg 31 Plastic | M8x1 - Lg 31 Plastic | M8x1 - Lg 40 Stainless Steel | M8x1 - Lg 40 Stainless Steel | M8x1 - Lg 40 Stainless Steel |

PTA range – M10 housing




| Product reference | PTA80020 | PTA90050 | PTA90160 |
|------------------------|---------------------------------|---------------------------|---------------------------|
| Contact status | 1NO / A form | 1NO | 1NO |
| Max. switching power | 12VA | 12VA | 5W |
| Max. switching voltage | 200VDC | 100VDC | 100VDC |
| Max. switching current | 0,5A | 0,4A | 0,4A |
| Connection type | Cable 2m | Cable 5m | Cable 1,5m |
| Activation distance | 25mm with magnet PT810000 | 10mm with magnet P6250000 | 12mm with magnet P6250000 |
| Working temperature | -25 to +70°C | -40 to +125°C | -40 to +125°C |
| Dimensions (mm) | M10x1 - Lg 44,5 Stainless Steel | M10x1 - Lg 40 Raw brass | M10x1 - Lg 40 Raw brass |

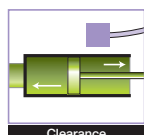
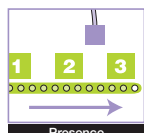
Sensors with M12 housing on request



REED MAGNETIC / HALL EFFECT SENSORS


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Sensors for layout on PCB

Reed switch proximity sensors in plastic housing, for PCB mounting with no risk of damage.

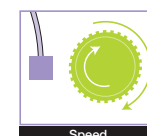
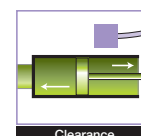
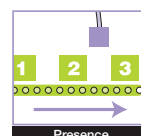


| | | | | |
|-----------------------------------|---|----------|---|----------|
| |  | |  | |
| Product reference | PHA01200 | PHA11200 | PHC10010 | PHC13700 |
| Contact status | NO | | Change-over | |
| Max. switching power | 12VA | | NC : 3VA / NO : 8VA | |
| Max. switching voltage | 100VDC | | | |
| Max. switching current | 0,4A | | 0,4A | |
| Activation distance with U6250000 | 18mm | 17mm | 17mm | 11mm |
| Working temperature | -40 to +100°C | | | |
| Dimensions (mm) | 23x4,2x3,6 | | | |

Hall effect sensors

celduc® relais offers two ranges of electronical sensors :

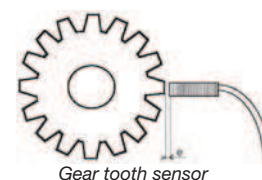
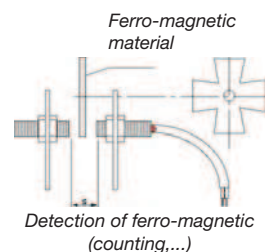
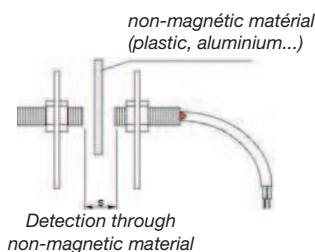
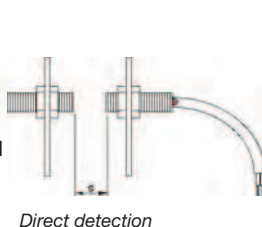
- Hall effect sensors
- Gear tooth sensors.



| Product reference | PLE13220 | PLE14320 | PTE11320 | PTE11321 | PTE21320 | PTE21321 | PTE31320 | PTE31321 | PTE41320 | PTE41321 |
|-------------------------------|---------------------------|-----------------|------------------------|-----------------|----------------|----------------|--------------------------------|-----------------|----------------|----------------|
| Contact status | Hall effect NPN | Hall effect NPN | Hall effect PNP | Hall effect NPN | Gear tooth PNP | Gear tooth NPN | Hall effect PNP | Hall effect NPN | Gear tooth PNP | Gear tooth NPN |
| Longueur de câble | cable 2m | | | | | | | | | |
| Distance max. d'utilisation | top 8mm | side 8mm | 19mm | 19mm | 1,5mm | 1,5mm | 17mm | 17mm | 1,5mm | 1,5mm |
| Tension max. commutable | 5-24VAC | 6-48VAC | | | | | | | | |
| Courant max. commutable | 25mA | 0,4A | | | | | | | | |
| Température de fonctionnement | -25°C to +70°C | | | | | | | | | |
| Dimensions (mm) | Plastic housing 32x15x6,8 | | Plastic housing M12x33 | | | | Stainless stell housing M12x33 | | | |
| Aimant associé | P6250000 | P6250000 | PT810000 | PT810000 | | | PT810000 | PT810000 | | |

Applications

- Industry
- Lift
- Speed sensors
- Household electrical appliances
- Tractors ...



SENSORS FOR SPECIFIC APPLICATIONS

ATEX sensors

celduc® relais is notified as manufacturer of ATEX products : INERIS 04ATEXQ406 and offers a wide range of ATEX sensors.

Groupe II : Open-air industry (other than mines) with possible inflammable dust.

CE0080  II 2GD Ex mb II T6
Ex tD A21 IP67 T85°C

II 1GD Ex ia IIB T6
Ex iaD 20 T85°C

Types of devices :
1 for zone 0 (continuous risk)
2 for zone 1 (intermittent risk)

Gas : G or Dust : D

Protection "m" for zone 1 and "i" for zone 0

Temperature class : T6 (85°C) T4 (135°C) or T3 (200°C).



| Product reference | PLA1125Ex | PLB1179Ex | PLC1125Ex | PTA1125Ex | PTB1125Ex | PTC1125Ex |
|------------------------|--------------|-------------|-------------|-------------|-----------|-------------|
| Contact status | 1NO | 1NC | Change-over | 1NO | 1NC | Change-over |
| Temperature group | T6 | T6 | T6 | T6 | T6 | T6 |
| Max. switching power | 10W 12VA | 10W 12VA | 3VA | 10W 12VA | 3VA | 3VA |
| Max. switching voltage | 60VDC | | | | | |
| Max. switching current | 0,4A | 0,4A | 0,25A | 0,4A | 0,25A | 0,25A |
| Cable length | cable 5m | cable 10m | cable 5m | cable 5m | cable 5m | cable 5m |
| Working temperature | -40 to +80°C | | | | | |
| Housing material | Plastic | | | | | |
| Dimensions (mm) | 32x15x6,8 | | | Ø6x30 | | |

| Product reference | PFA2125Ex | PFA3125Ex | PSS5905Ex | PSS7905Ex | PTA6125Ex | PTA9125Ex |
|------------------------|-----------------|---------------|--------------|-----------|--------------------|--------------------|
| Contact status | 1NO | 1NO | 1NO + 1NC | 2NO | 1NO | 1NO |
| Temperature group | T6 | T6 | T4 | T4 | T4/T6 or T3/T6* | T4/T6 or T3/T6* |
| Max. switching power | 10W 12VA | 10W 12VA | 3VA | 3VA | 10W 12VA | 10W 12VA |
| Max. switching voltage | 60VDC | | | | | |
| Max. switching current | 0,4A | 0,4A | 0,1A | 0,1A | 0,4A | 0,4A |
| Cable length | cable 5m | cable 5m | cable 5m | cable 5m | cable 5m | cable 5m |
| Working temperature | -40 to +80°C | | -25 to +85°C | | -40 to +200°C | -20 to +200°C |
| Housing material | Stainless steel | Polypropylene | Plastic | | Brass | |
| Dimensions (mm) | Ø28x60 | Ø28x90 | 51x16 | | Ø6x41 | M10 |

*See data-sheets.

SENSORS FOR SPECIFIC APPLICATIONS



Sensors for lifts (and other industrial applications)

Sensors for :
- Detection of the lift position
- Doors opening control

celduc® relais offers a wide range of magnetic sensors for elevators with reed switches or "Electronic" magnetic sensors using an Hall effect cell or magneto resistance.

The magnetic field created by the permanent magnet, activates the sensitive part (the reed switch or the Hall effect cell or the magneto resistance). It is important to combine the magnet and sensor with consideration to the correct operating conditions (switching distance, presence of ferro-magnetic parts or non ferro-magnetic parts...).

celduc® relais is at your disposal to help you define the right products.

Advantages :
- insensitive to the ambient working conditions (heat or cold air, humidity, dust...)
- high reliability
- large detection distance
- good reliability to shocks and vibrations
- IP67



| Product reference | PMG12802 | PMG12921 | PMG12930 | PMG13051 | PMG13110 |
|------------------------|------------------------|-------------------------|------------------------|-------------------------|---------------------|
| Contact status | NO bistable | NO | NO bistable | NC | NO |
| Max. switching power | 60VA | 100VA | 60VA | 30VA | 30VA |
| Max. switching voltage | 230VDC | 230VDC | 230VDC | 230VDC | 230VDC |
| Max. switching current | 0,3A | 3A | 1A | 0,5A | 1A |
| Cable length | 2m | 7m | 7,3m | 6,5m | 7m |
| Activation distance | 7<D<25mm with UF252060 | 17<D<27mm with UP302010 | 7<D<40mm with UP302010 | 17<D<27mm with UP302010 | 9,5mm with UF221105 |
| Working temperature | -25 to +85°C | | | | |
| Dimensions (mm) | 65x15x16 | M14x75 | 80x30x30 | M14x75 | 80x20x15 |

PC range – M12 housing



Typical applications :

- Lifts : sensors with 2 or 3 normally open contacts are used to detect the position of the cabin as well as automatic level reset according to the weight.
- Position / clearance sensors.

| Product reference | PCA22330 | PCA36720 | PCC12320 | PCLA3020 | PCLA3030 | PC2A2330 | PC3A2330 |
|------------------------|----------------------------|--------------------|----------------------|--------------------|--------------------|--------------------|--------------------|
| Contact status | 1xNO / A form | 1xNO / A form | Change-over / C form | Bistable / L form | Bistable / L form | 2xNO / A form | 3xNO / A form |
| Max. switching power | 70VA | 100VA | 3VA | 100VA | 100VA | 70VA | 70VA |
| Max. switching voltage | 300VAC | 250VAC | 100VAC | 250VAC | 250VAC | 300VAC | 300VAC |
| Max. switching current | 0,5A | 3A | 0,25A | 3A | 3A | 0,5A | 0,5A |
| Cable length | Cable 3m | Cable 2m | Cable 2m | Cable 2m | Cable 3m | Cable 3m | Cable 3m |
| Activation distance | 20mm with UR144061 | 20mm with UR144061 | 25mm with UR144061 | 30mm with UP082006 | 30mm with UP082006 | 20mm with UR144061 | 20mm with UR144061 |
| Working temperature | -25 to +75°C | -25 to +75°C | -25 to +75°C | -25 to +75°C | -25 to +75°C | -40 to +75°C | -40 to +75°C |
| Dimensions (mm) | M12x1 L 80 Plastic housing | | | | | | |

Sensors with M12x1 L50 housing on request

SENSORS FOR SPECIFIC APPLICATIONS



Safety sensors

The PXS or PSS type products are designed to control the opening of protective devices, machine casings and access doors.

These products, in their basic design and construction, are conform to the applicable European Directive for machinery safety 2006/42/CEE.

Correctly installed with their associated coded magnets and connected to adapted safety modules, they can reach the following safety level : *PLd and PLe according to EN 13849-1*

SIL3 according to EN 62061



| Product reference | PXS79150 | PXS59150 | PXS10350 | PXS70150 | PSS79050 | PSS79150 | PSS59050 | PSS59150 | PSA60010 | PSA60020 |
|---------------------------|--------------|----------|----------|----------|----------|----------|----------|----------|----------------|----------------|
| Contact status | 2O | O+C | 2O + 1C | 2O + 1C | 2O | 2O | O+C | O+C | 10 solid state | 10 solid state |
| Current limiting resistor | 10Ω | 10Ω | - | 10Ω | 10Ω | 10Ω | 10Ω | 10Ω | - | - |
| Max. switching power | 3VA | 3VA | 3VA | 3VA | 3VA | 3VA | 3VA | 3VA | 500VA | 500VA |
| Max. switching voltage | 100VDC | 100VDC | 100VDC | 100VDC | 100VDC | 100VDC | 100VDC | 100VDC | 24-440VAC | 6-440VAC |
| Max. switching current | 100mA | 100mA | 100mA | 100mA | 100mA | 100mA | 100mA | 100mA | 3A | 3A |
| Cable length | Cable 5m | Cable 5m | Cable 5m | Cable 5m | Cable 5m | Cable 5m | Cable 5m | Cable 5m | 2 wires 350mm | 2 wires 3m |
| Activation distance | 8mm | | | | 5mm | | | | 12mm | |
| Associated coded magnet | P2000100 | | | | P3000100 | | | | P6250000 | |
| LED option | yes | yes | no | yes | no | yes | no | yes | no | no |
| Working temperature | -25 to +85°C | | | | | | | | -40 to +85°C | |

Associated coded magnets



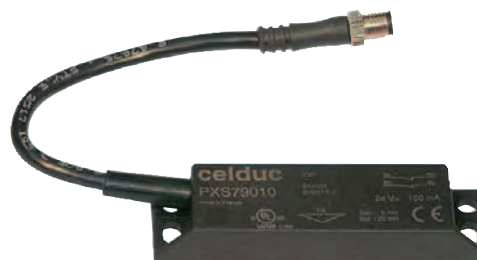
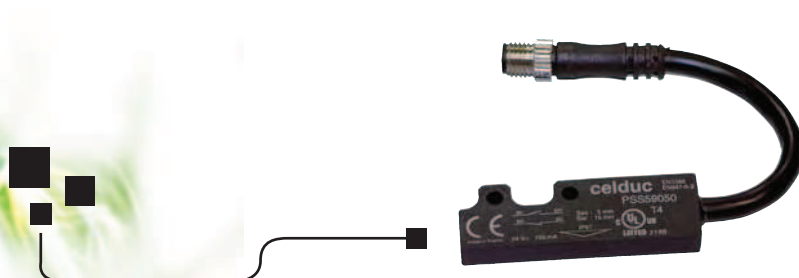
P2000100



P3000100



P6250000



Terminals version on request
M8 or M12 depends on the model : see data sheet

Control magnets

Range of standard permanent magnets used as actuators for our magnetic sensors.

Our range of magnetic sensors with reed switches or "Electronic" magnetic sensors using a Hall effect cell should be actuated with the correct magnet.

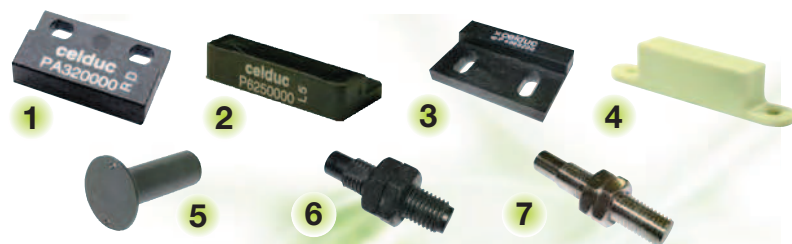
celduc® relais offers 3 families of magnets to be chosen according to the application (working temperature, geometry, resistance to corrosion).

| Material | | Max. operating temperature | Derating according to temperature (recoverable) | Resistance to corrosion | |
|------------|------------------------------|----------------------------|---|--|--|
| Alnico | | 500°C | very low (-0,025% per °C) | Good resistance | generally supplied in bars which should have a length of minimum x4 the diameter |
| Ferrite | | 250°C | high (-0,20% per °C) | Very good resistance | generally supplied in parallelepiped block, disc or ring |
| Rare earth | Samarium Cobalt (SmCo) | 250°C | low (-0,04% per °C) | Very good resistance | generally supplied in blocks or granulates |
| | Neodymium Iron Bore (NdFeBo) | 160°C | low (-0.10% per °C) | Bad resistance (must have tin or nickel coating) | generally supplied in blocks or granulates |

celduc® relais is at your disposal to help you define the correct magnet/sensor arrangement according to your needs / operating conditions.

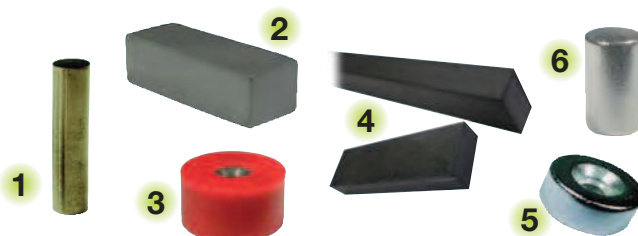
Coated magnets

| Product reference | For sensors ... | Bare magnet dimensions (mm) | Dimensions (mm) | Fig n° |
|-------------------|----------------------|-----------------------------|-----------------|--------|
| PA320000 | PA | Ø 3x20 | 23x15x6 | 1 |
| P3150000 | PA, PH, PL, PT | Ø 3x15 | 32x15x6,8 | 2 |
| P4200000 | PA, PH, PL, PT | Ø 4x20 | 32x15x6,8 | 2 |
| P6250000 | PA, PH, PL, PT | Ø 6x25 | 32x15x6,8 | 2 |
| P4060200 | PLA10290x | Ø 4.7 x 25.4 | 28,57x19x6,34 | 3 |
| P4159000 | PB or PLA | Ø 3x15 | 51,8x8,5x11,5 | 4 |
| P4160000 | PB or PLA | Ø 5x25 | 51,8x8,5x11,5 | 4 |
| PMG92280 | PMG92291 | Ø 6x25 | Ø 18,5x28 | 5 |
| PT505000 | PTI5 plastic | D5x5 | M8x1 Lg 31 | 6 |
| PT508000 | PTI5 plastic | D5x8 | M8x1 Lg 31,2 | 6 |
| PT505100 | PTI6 stainless steel | D5x5 | M8x1 Lg 40 | 7 |



Bare magnets

| Product reference | Material | Dimensions (mm) | Fig n° |
|-------------------|---------------|-----------------|--------|
| U315P003 | Alnico5 | Ø 3x15 | 1 |
| U4200000 | Alnico5 | Ø 4x20 | 1 |
| U6250000 | Alnico5 | Ø 6x25 | 1 |
| U8300000 | Alnico5 | Ø 8x30 | 1 |
| U8350000 | Alnico5 | Ø 8x35 | 1 |
| UB104000 | Alnico5 | Ø 10x40 | 1 |
| UF181538 | Ferrite | 18x15x3,8 | 2 |
| UF127738 | Ferrite | 12x7,7x3,8 | 2 |
| UF777760 | Ferrite | 7,7x7,7x6 | 2 |
| UF207760 | Ferrite | 20,5x7,7x6 | 2 |
| UF221105 | Ferrite | Ø 22x11x5 | 3 |
| UF341605 | Ferrite | Ø 34x16x5 | 3 |
| UP051508 | Plastoferrite | 50x15x8 | 4 |
| UP301508 | Plastoferrite | 300x15x8 | 4 |
| UR102540 | NdFeBo | Ø 10x4x2,5 | 5 |
| UR124540 | NdFeBo | Ø 12x4x4,5 | 5 |
| UR144361 | NdFeBo | Ø 14x6x4,3 | 5 |
| UR304000 | NdFeBo | Ø 3x4 | 6 |
| UR502000 | NdFeBo | Ø 5x2 | 6 |
| UR508000 | NdFeBo | Ø 5x8 | 6 |
| UR604010 | NdFeBo | Ø 6x4 | 6 |
| UR801000 | NdFeBo | Ø 8x10 | 6 |



SPECIAL CUSTOMERS PRODUCTS

celduc® relais : the expert in specific sensors

There are numerous special customer applications in all sectors of activity. Please consult us to have our expertise.

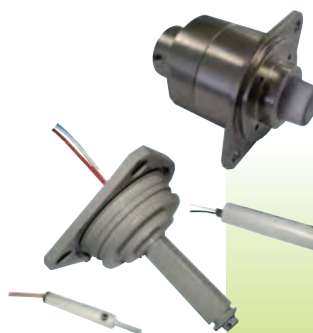
Automobile



In the automotive industry there are numerous applications for our magnetic proximity sensors : detection of liquid levels (radiator liquid, windscreen washer, engine oil level, brake oil level, ...) but also closing/locking detection of the fuel tank knob , detection of water in the oil filter, potentiometric scales to be used in lorry tank for level measurement , ...



Aircraft industry



Serving this industry is a proof of reliability. celduc ® relais has developed special sensors to detect the opening/closing of the doors as for example push-buttons used to detect open/closed doors in Airbus A380 ; sensors to detect tank refueling in Mirage Rafale and Saab Jas 39 fighters ; level sensors for AIRBUS humidifiers, ...



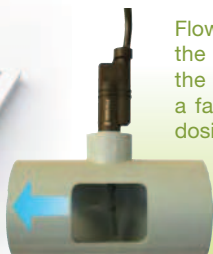
Medical



In the medical field magnetic proximity sensors can be used in automatic analysis systems to control liquids level, presence of a tank, right-working of the arms, open /closed doors of sterilizers ...



Swimming pools / Water treatment



Flow sensors are used to supervise the flow rate and the function of the dosing pump and to indicate a failure or loss of capacity of the dosing pump.

