




## Choice of sensitivity

The sensitivity of an earth leakage protection device depends mainly on the function it has to perform:

- Protection from electric shock by direct contact.
- Protection from electric shock by indirect contact.
- Protection from fire due to current leakage.

The following table gives a reminder of:

- The circuits that must be protected against these various risks (obligation or recommendation).
- The type of earth leakage protection device to be used in each case, its sensitivity, and its location in the distribution diagram.

Type of protection	Obligations		Recommended by Schneider Electric	Sensitivity (I $\Delta$ n)		
	National standard <i>To be filled in according to the country standard</i>	International standard IEC 60364		30 mA (*)	100 mA to 3000 mA (depending on the earthing system)	300 mA (or 500 mA)
<b>Protection from electric shock by direct contact</b>						
 <small>DB123167</small>	<i>To be filled in according to the country standard</i>	Power supply for <ul style="list-style-type: none"> <li>■ General-purpose power sockets, up to 20 A</li> <li>■ Appliances in the vicinity of a bathtub, shower, pond or swimming pool</li> <li>■ Portable appliances for outdoor use, up to 32 A</li> <li>■ Lighting for exhibition stands and shows</li> <li>■ Outdoor lighting</li> </ul> <i>To be modified according to national obligations (above)</i>	<ul style="list-style-type: none"> <li>■ Lighting in the home</li> </ul>	<b>Setup in final distribution switchboard</b> <ul style="list-style-type: none"> <li>■ Residual current device protecting a circuit</li> <li>■ Residual current circuit breaker protecting a group of circuits</li> </ul>		
<b>Protection from electric shock by indirect contact</b>						
 <small>DB123168</small>	<i>To be filled in according to the country standard</i>	The entire power distribution system, except for devices: <ul style="list-style-type: none"> <li>■ With class II insulation</li> <li>■ Operating at Safety Extra Low Voltage (class III)</li> </ul> <i>To be modified according to national obligations (above)</i>	–	<b>Setup in final distribution switchboard</b> <ul style="list-style-type: none"> <li>■ Residual current circuit breaker or device, on incoming feeder</li> </ul> <b>Setup in subdistribution board or main switchboard</b> <ul style="list-style-type: none"> <li>■ Residual current device protecting a circuit</li> <li>■ Residual current device or circuit breaker protecting a group of circuits</li> <li>■ On incoming feeder: residual current circuit breaker or device</li> </ul>		
<b>Protection from fire due to current leakage</b>						
 <small>DB123169</small>	<i>To be filled in according to the country standard</i>	<ul style="list-style-type: none"> <li>■ High-risk premises:               <ul style="list-style-type: none"> <li>□ explosion (BE3)</li> <li>□ fire (BE2)</li> </ul> </li> <li>■ Agricultural and horticultural buildings</li> <li>■ Equipment for fairs, exhibitions and shows</li> <li>■ Temporary outdoor recreational installations</li> </ul> <i>To be modified according to national obligations (above)</i>	<ul style="list-style-type: none"> <li>■ Dilapidated buildings or electrical installations</li> <li>■ Humid atmospheres: agricultural buildings, public swimming pools</li> <li>■ Presence of chemical agents</li> </ul>		<b>Setup in final distribution switchboard</b> <ul style="list-style-type: none"> <li>■ Residual current circuit breaker or device, on incoming feeder</li> </ul> <b>Setup in subdistribution board or main switchboard</b> <ul style="list-style-type: none"> <li>■ Residual current device protecting each circuit to a high-risk zone</li> <li>■ Residual current device or circuit breaker protecting a group of circuits</li> <li>■ On incoming feeder: residual current circuit breaker or device</li> </ul>	

(\*) The 10 mA sensitivity is useful for certain very specific applications, where there is a risk that someone could sustain a non-dangerous current (10 to 30 mA) without being able to get free. Example: healthcare equipment for hospital beds. Generally, devices with this very high sensitivity are liable to cause frequent tripping, due to the natural leakage currents of the installation.