

## How to connect a 2 wires sensor to a Zelio SRxxxxFU

### About the SRxxxxFU module :

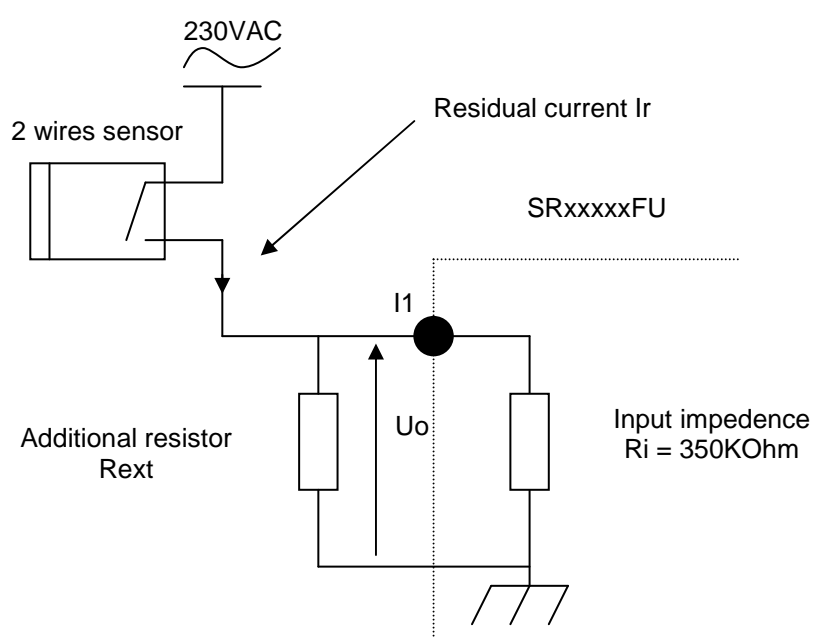
The Input impedance of the SRxxxxFU is about 350kOhms

### About the 2 wires sensor :

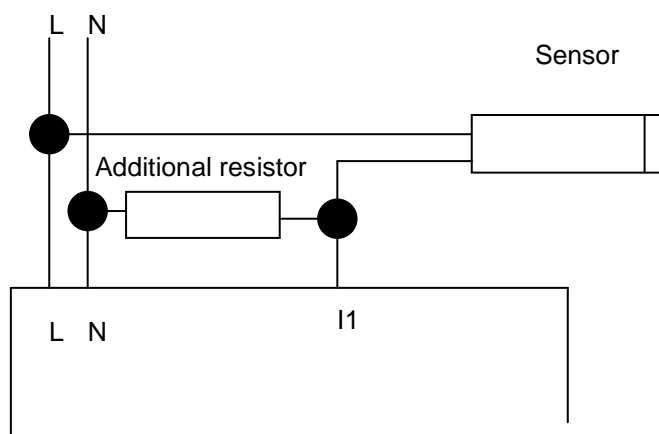
First at all, it is necessary to know residual current at open state of the sensor used.

Due to the residual current of the sensor at open state, the Zelio input will be always to ON. In order to work around, it is necessary to add a resistor in parallel with the internal resistor of the Zelio Module.

### Scheme :



### Wiring diagram :



## How determine the additional resistor

In our exemple, we use a 2 wires sensor with a maximum residual current about 0,6 mA

On the Zelio input characteristic, the maximum voltage to guarantee a state 0 on the input is about 40V. In our exemple, we take  $U_o = 30V (< 40V)$

### 1. Value of the resistor :

$$U_o = (R_{ext}/R_i) \times I_r$$

$$30V = (R_{ext}/R_i) \times 0,6mA$$

$$(R_{ext}/R_i) = 30V/0,6mA = 50Kohms$$

$$R_t = (R_{ext} \times R_i) / (R_{ext} + R_i) = (350 \times R_{ext}) / (350 + R_{ext}) = 50kohm$$

Then  **$R_{ext} = 58Kohms \rightarrow$  We can use a 47Kohm resistor**

### 2. Power of the resistor :

The power is about  $P = U^2/R = 230^2/47K = 1,12W$ .