

## Dissipated power, Impedance and Voltage drop

## Acti9 products

The following table indicates the average dissipated power per pole in W for a current equal to the rating of the device and at the operating voltage.

| Rating (A)                                                 | 0.5                         | 1   | 1.6 | 2    | 2.5 | 3   | 4    | 6   | 6.3  | 10  | 12.5 | 13  | 16   | 20   | 25   | 32   | 40   | 45  | 50   | 63  | 80  | 100 | 125 |
|------------------------------------------------------------|-----------------------------|-----|-----|------|-----|-----|------|-----|------|-----|------|-----|------|------|------|------|------|-----|------|-----|-----|-----|-----|
| Circuit breakers                                           |                             |     |     |      |     |     |      |     |      |     |      |     |      |      |      |      |      |     |      |     |     |     |     |
| iC40, iC40F, iC40N, iC40H 1P+N (1)                         |                             | 2.5 |     | 2    |     |     | 2.9  | 1.4 |      | 2.2 |      | 2.9 | 2.9  | 3.3  | 4.3  | 4.4  | 5.7  |     |      |     |     |     |     |
| iC40, iC40N, iC40H 3P+N (4)                                |                             |     |     |      |     |     |      | 4   |      | 6.8 |      | 7.5 | 7.7  | 8.1  | 10.3 | 10   | 12.9 |     |      |     |     |     |     |
| iC40, iC40N, iC40H 3P (4)                                  |                             |     |     |      |     |     |      | 3.9 |      | 6.9 |      | 6.9 | 7.2  | 7.2  | 9    | 8.4  | 10.8 |     |      |     |     |     |     |
| iC60N/H/L                                                  | 2.3                         | 2.3 | 2.6 | 1.9  |     | 2.2 | 2.4  | 1.3 |      | 2.3 |      | 2.3 | 2.4  | 2.4  | 3    | 2.8  | 3.6  |     | 4    | 5.6 |     |     |     |
| iC60P                                                      |                             |     |     |      |     |     |      | 1.3 |      | 2.3 |      |     | 2.4  | 2.4  | 2.8  | 2.8  | 4.2  |     | 4    | 5.6 |     |     |     |
| iC60L-MA                                                   |                             |     | 0.7 |      | 0.2 |     | 0.6  |     | 0.9  | 1.1 | 1.5  |     | 1.6  |      | 0.8  |      | 2    |     |      |     |     |     |     |
| iK60N                                                      |                             | 2.3 |     | 1.9  |     | 2.2 | 2.4  | 2.7 |      | 1.8 |      | 1.8 | 2.5  | 3    | 3.1  | 3.5  | 3.6  |     | 4    | 5.6 |     |     |     |
| C60H-DC                                                    | 2.2                         | 2.3 |     | 2.6  |     | 2.2 | 2.4  | 2.7 |      | 1.8 |      | 2.5 | 2.5  | 3    | 3.1  | 3.5  | 4.3  |     | 4.8  | 6.1 |     |     |     |
| C60PV-DC (4)                                               |                             | 9.2 |     | 10.2 |     | 8.9 |      |     |      | 6.8 |      | 7.4 | 10.4 | 11.8 | 12.2 |      |      |     |      |     |     |     |     |
| C120                                                       |                             |     |     |      |     |     |      |     |      | 1.6 |      |     | 2.3  | 2.8  | 2.5  | 3.4  | 3.5  |     | 3.6  | 4   | 4.5 | 6   | 8   |
| NG125                                                      |                             |     |     |      |     |     |      |     |      | 1.7 |      |     | 2.4  | 2.7  | 2.7  | 3.8  | 3.8  |     | 4.2  | 4   | 5.6 | 5.2 | 8   |
| NG125L-MA                                                  |                             |     |     |      |     |     | 0.15 |     | 0.15 | 0.2 | 0.4  |     | 0.3  |      | 0.6  |      | 1.4  |     |      | 2   | 2.7 |     |     |
| RCBO                                                       |                             |     |     |      |     |     |      |     |      |     |      |     |      |      |      |      |      |     |      |     |     |     |     |
| iCVm40, iCVm40N 1P+N (1)                                   |                             |     |     |      |     |     |      |     |      | 2.8 |      | 3.2 | 3.7  | 3.2  | 3.7  | 5.3  |      |     |      |     |     |     |     |
| iCV40, iCV40N, iCV40H 1P+N (1)                             |                             |     |     | 2.1  |     |     | 3    | 3   |      | 2.9 |      | 3.6 | 4.3  | 5.1  | 7.6  | 7.2  | 10.4 |     |      |     |     |     |     |
| iCV40N, iCV40H 3P+N, 30 mA (4)                             |                             |     |     |      |     |     |      | 8.1 |      | 9.5 |      | 11  | 10   | 12   | 12.9 | 13.4 | 16.2 |     |      |     |     |     |     |
| iCV40N, iCV40H 3P+N, 300 mA (4)                            |                             |     |     |      |     |     |      | 8   |      | 9.4 |      | 10  | 10   | 12   | 12.8 | 13.2 | 15   |     |      |     |     |     |     |
| iSPN Vigi                                                  |                             |     |     |      |     |     |      | 1.5 |      | 1.8 |      |     | 3.2  | 3.9  | 4.1  | 5.6  |      |     |      |     |     |     |     |
| iC60N/H RCBO (2)                                           |                             |     |     |      |     |     |      | 2   |      | 3.2 |      |     | 4.9  | 6.8  | 7.6  | 9.3  | 14   |     | 19.8 |     |     |     |     |
| iC60H2 RCBO                                                |                             |     |     |      |     |     |      |     |      | 2.2 |      |     | 2.4  | 2.5  | 3.2  | 3.9  |      |     |      |     |     |     |     |
| iC60H RCBO PoN                                             |                             |     |     |      |     |     |      | 1.6 |      | 2.2 |      |     | 2.6  | 2.9  | 4    | 4.1  | 5.1  | 5.2 |      |     |     |     |     |
| Arc Fault Detection Devices                                |                             |     |     |      |     |     |      |     |      |     |      |     |      |      |      |      |      |     |      |     |     |     |     |
| iARC (1)                                                   |                             |     |     |      |     |     |      |     |      |     |      |     |      |      | 4.4  |      |      |     |      |     |     |     |     |
| iDPN N VigiARC, iDPN H VigiARC, iDPN ARC (1)               |                             |     |     |      |     |     |      | 2.9 |      | 2.2 |      |     | 3.4  | 4.6  | 6.5  |      |      |     |      |     |     |     |     |
| iC40 ARC, iC40N ARC, iC40H ARC, iCV40N ARC, iCV40H ARC (1) |                             |     |     |      |     |     |      | 3   |      | 2.9 |      | 3.3 | 3.4  | 4.1  | 5.5  | 6.3  | 8.7  |     |      |     |     |     |     |
| ARC iC40, VigiARC iC40 (1)                                 |                             |     |     |      |     |     |      |     |      |     |      |     |      |      | 1.2  | 3    |      |     |      |     |     |     |     |
| Integrated control circuit breakers                        |                             |     |     |      |     |     |      |     |      |     |      |     |      |      |      |      |      |     |      |     |     |     |     |
| Reflex Power circuit                                       |                             |     |     |      |     |     |      |     |      | 2   |      |     | 2.1  |      | 2.7  |      | 3.6  |     |      | 5.6 |     |     |     |
| iC60N/H Control circuit                                    | See catalog module CA904012 |     |     |      |     |     |      |     |      |     |      |     |      |      |      |      |      |     |      |     |     |     |     |
| RCCB                                                       |                             |     |     |      |     |     |      |     |      |     |      |     |      |      |      |      |      |     |      |     |     |     |     |
| iID AC, A, A-SI                                            |                             |     |     |      |     |     |      |     |      |     |      |     | 1.3  |      | 3.2  |      | 3.8  |     |      | 3.5 | 5.6 | 7   |     |
| iID B-SI, iID B EV                                         |                             |     |     |      |     |     |      |     |      |     |      |     |      |      | 0.7  |      | 1.8  |     |      | 4.4 | 7.3 |     |     |
| iID K                                                      |                             |     |     |      |     |     |      |     |      |     |      |     |      |      | 2.7  |      | 3.6  |     |      | 5.6 |     |     |     |

**Note:** When the enclosure's thermal balance, consider the 4P devices load is only on 3 phases.

RCBO dissipated power per pole is the sum of circuit breaker dissipated power per pole + add-on residual current device dissipated power per pole.

Example: iC60N (25 A) + Vigi iC60 (30 mA) = 3 + 1.4 = 4.4 W.

(1) Dissipated power indicated in the table is the sum of phase+neutral.

(2) iC60N/H RCBO: 1 m neutral cable included during voltage drop measurement.

(4) Dissipated power indicated in the table is the sum of all poles.

**Impedance calculation:**

$$Z = P / I^2$$

Z: impedance in Ohms

P: dissipated power in Watts (table values)

I: rating in Amperes

**Voltage drop calculation:**

$$U = P / I$$

U: voltage drop in Volts

P: dissipated power in Watts (table values)

I: rating in Amperes

# Dissipated power, Impedance and Voltage drop (cont.)

## Acti9 products (cont.)

The following table indicates the average dissipated power per pole in W for a current equal to the rating of the device and at the operating voltage.

| Rating (A)                            | 0.5                                      | 1 | 1.6 | 2 | 2.5 | 3 | 4 | 6 | 6.3 | 10  | 12.5 | 13 | 16  | 20  | 25  | 32  | 40  | 45 | 50   | 63  | 80  | 100 | 125 |
|---------------------------------------|------------------------------------------|---|-----|---|-----|---|---|---|-----|-----|------|----|-----|-----|-----|-----|-----|----|------|-----|-----|-----|-----|
| Add-on residual current devices       |                                          |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     |     |    |      |     |     |     |     |
| Vigi iC40 (1)                         |                                          |   |     |   |     |   |   |   |     |     |      |    |     |     | 3.3 |     | 4.7 |    |      |     |     |     |     |
| Vigi iC60                             | 10 mA                                    |   |     |   |     |   |   |   |     |     |      |    |     |     | 3   |     |     |    |      |     |     |     |     |
|                                       | 30 mA                                    |   |     |   |     |   |   |   |     |     |      |    |     |     | 1.4 |     | 1.5 |    |      | 2.3 |     |     |     |
|                                       | 100 mA                                   |   |     |   |     |   |   |   |     |     |      |    |     |     | 1.1 |     |     |    |      | 2.3 |     |     |     |
|                                       | 300 mA                                   |   |     |   |     |   |   |   |     |     |      |    |     |     | 1.3 |     | 0.9 |    |      | 2.3 |     |     |     |
|                                       | 500 mA                                   |   |     |   |     |   |   |   |     |     |      |    |     |     | 1.1 |     | 0.9 |    |      | 2.3 |     |     |     |
|                                       | 1000 mA                                  |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     |     |    |      | 2.3 |     |     |     |
| Vigi C120                             |                                          |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     |     |    |      |     |     |     | 3.6 |
| Vigi NG125                            |                                          |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     |     |    |      |     |     |     | 4   |
| Residual current device reclosers     |                                          |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     |     |    |      |     |     |     |     |
| REDs, REDtest                         |                                          |   |     |   |     |   |   |   |     |     |      |    |     |     | 1.5 |     | 2.7 |    |      | 3.1 |     |     |     |
| Contactors                            |                                          |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     |     |    |      |     |     |     |     |
| iCT/iCT+ Power circuit                |                                          |   |     |   |     |   |   |   |     |     |      |    | 0.6 | 0.9 | 1.4 |     | 3.5 |    |      | 7   |     | 9   |     |
| Control circuit                       | See catalog module CA904007              |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     |     |    |      |     |     |     |     |
| Impulse relays                        |                                          |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     |     |    |      |     |     |     |     |
| iTL/iTL+ Power circuit                |                                          |   |     |   |     |   |   |   |     |     |      |    | 0.6 |     |     | 1.5 |     |    |      |     |     |     |     |
| Control circuit                       | See catalog module CA904008              |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     |     |    |      |     |     |     |     |
| Push-buttons                          |                                          |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     |     |    |      |     |     |     |     |
| iPB                                   |                                          |   |     |   |     |   |   |   |     |     |      |    |     | 0.6 |     |     |     |    |      |     |     |     |     |
| Selector switches                     |                                          |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     |     |    |      |     |     |     |     |
| iSSW                                  |                                          |   |     |   |     |   |   |   |     |     |      |    |     | 0.8 |     |     |     |    |      |     |     |     |     |
| iCMA/iCMB/iCMC/<br>iCMDV/iCMV         |                                          |   |     |   |     |   |   |   |     | 0.4 |      |    |     |     |     |     |     |    |      |     |     |     |     |
| Load-shedders                         |                                          |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     |     |    |      |     |     |     |     |
| DSE1, CDS, CDSc                       |                                          |   |     |   |     |   |   |   |     |     |      |    |     |     |     | 1.8 |     |    |      |     | 3   |     |     |
| Switch-disconnectors                  |                                          |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     |     |    |      |     |     |     |     |
| iSW                                   |                                          |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     | 0.6 |    |      | 1.8 |     | 4.7 | 6.4 |
| iSW-NA                                |                                          |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     | 0.7 |    |      | 1.8 |     | 3   | 5   |
| C60NA-DC (4)                          |                                          |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     |     |    | 12.6 |     |     |     |     |
| SW60-DC (4)                           |                                          |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     |     |    | 12.6 |     |     |     |     |
| C120NA-DC (4)                         |                                          |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     |     |    |      |     |     | 8   |     |
| NG125NA                               |                                          |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     |     |    |      | 2   | 2.7 | 4   | 7   |
| Remote controls                       |                                          |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     |     |    |      |     |     |     |     |
| RCA, ARA                              | See catalog module CA904010 and CA904011 |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     |     |    |      |     |     |     |     |
| Indication auxiliaries                |                                          |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     |     |    |      |     |     |     |     |
| iOF, iSD, iOF/SD+OF                   | See catalog module CA908028              |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     |     |    |      |     |     |     |     |
| Tripping auxiliaries                  |                                          |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     |     |    |      |     |     |     |     |
| iMN, iMNs, iMNx,<br>iMX+OF, iMX, iMSU | See catalog module CA908029              |   |     |   |     |   |   |   |     |     |      |    |     |     |     |     |     |    |      |     |     |     |     |

**Note:** When the enclosure's thermal balance, consider the 4P devices load is only on 3 phases.

(1) Dissipated power indicated in the table is the sum of phase+neutral.

(4) Dissipated power indicated in the table is the sum of all poles.

### Impedance calculation:

$$Z = P / I^2$$

Z: impedance in Ohms

P: dissipated power in Watts (table values)

I: rating in Amperes

### Voltage drop calculation:

$$U = P / I$$

U: voltage drop in Volts

P: dissipated power in Watts (table values)

I: rating in Amperes

## Dissipated power, Impedance and Voltage drop (cont.)

## Multi 9 products

The following table indicates the average dissipated power per pole in W for a current equal to the rating of the device and at the operating voltage.

| Rating (A)                      | 0.5                                  | 1   | 1.6 | 2   | 2.5 | 3   | 4   | 5   | 6   | 6.3 | 8   | 10  | 12.5 | 13  | 15  | 16  | 20  | 25  | 30 | 32  | 40  | 45  | 50  | 63  | 80 | 100 | 125 |
|---------------------------------|--------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|----|-----|-----|-----|-----|-----|----|-----|-----|
| Circuit breakers                |                                      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |     |     |     |     |     |    |     |     |
| C60BP, C60BPR, C60SP            | 2.6                                  | 1.3 |     | 1.7 |     | 1.9 | 2   | 2.2 | 1.2 |     | 1.7 | 1.9 |      | 2.4 | 2.3 | 2.6 | 2.2 | 3.4 |    | 2.8 | 3.6 | 3.9 | 4.8 | 4.8 |    |     |     |
| C60N, C60H, C60L, C60CTRL       |                                      | 1.3 |     | 1.7 |     | 1.9 | 2   |     | 1.2 |     |     | 1.9 |      | 2.4 |     | 2.6 | 2.2 | 2.7 |    | 3.2 |     |     | 4.8 | 4.3 |    |     |     |
| N40N (1)                        |                                      | 2.5 |     | 1.9 |     | 2.1 | 2.6 |     | 2.7 |     |     | 2.7 |      |     |     | 3.2 | 4.7 | 4.7 |    | 4.6 | 5.8 |     |     |     |    |     |     |
| RCBO                            |                                      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |     |     |     |     |     |    |     |     |
| N40 Vigi (1)                    |                                      |     |     |     |     |     |     |     | 4.1 |     |     | 3.2 |      |     |     | 3.9 | 4.4 | 4.5 |    |     | 6.4 |     |     |     |    |     |     |
| RCCB                            |                                      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |     |     |     |     |     |    |     |     |
| GFP                             |                                      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     | 1.4 |    |     | 3.6 |     |     | 4.4 |    | 18  |     |
| RCCB ID                         |                                      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     | 1.4 |    |     | 3.6 |     |     | 4.4 |    |     |     |
| RCCB-ID 125 A                   |                                      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |     |     |     |     |     |    |     | 7   |
| Add-on residual current devices |                                      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |     |     |     |     |     |    |     |     |
| Vigi N40                        |                                      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |     | 2.1 |     |     |     |    |     |     |
| Vigi C60                        |                                      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     | 2.8 |    |     | 1.6 |     |     | 3   |    |     |     |
| Indication auxiliaries          |                                      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |     |     |     |     |     |    |     |     |
| OF, SD, OF+SD/OF                | C60, ID: see catalog module CM908010 |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |     |     |     |     |     |    |     |     |
| Tripping auxiliaries            |                                      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |     |     |     |     |     |    |     |     |
| MN, MNs, MNx, MX+OF, MX, MSU    | C60, ID: see catalog module CM908010 |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |    |     |     |     |     |     |    |     |     |

**Note:** When the enclosure's thermal balance, consider the 4P devices load is only on 3 phases.

RCBO dissipated power per pole is the sum of circuit breaker dissipated power per pole + add-on residual current device dissipated power per pole.

Example: C60N (25 A) + Vigi C60 (25 A) = 2.7 + 2.8 = 5.5 W.

(1) Dissipated power indicated in the table is the sum of phase+neutral.

**Impedance calculation:**

$$Z = P / I^2$$

Z: impedance in Ohms

P: dissipated power in Watts (table values)

I: rating in Amperes

**Voltage drop calculation:**

$$U = P / I$$

U: voltage drop in Volts

P: dissipated power in Watts (table values)

I: rating in Amperes

# Dissipated power, Impedance and Voltage drop (cont.)



|               |             |                                                                                              |             |
|---------------|-------------|----------------------------------------------------------------------------------------------|-------------|
|               |             |                                                                                              |             |
|               |             |                                                                                              |             |
|               |             |                                                                                              |             |
| 2.9           | 25/06/2026  | Add iC60P products and remove DPN and Vigi DPN products                                      | I. Flaubert |
| 2.8           | 23/01/2026  | Add Acti9 iCVM40 products                                                                    | I. Flaubert |
| 2.7           | 21/02/2022  | Remove ARC iC40/50A value, remove Acti9 relays products and add C60BP/45A value              | I. Flaubert |
| 2.6           | 25/08/2021  | Add 2A rating page 1 and change C120 values                                                  | I. Flaubert |
| 2.5           | 24/02/2021  | Add -DC products page 4, AFDD products page 2 and reorganize tables                          | I. Flaubert |
| 2.4           | 27/03/2019  | Change iCT/iCT+ values                                                                       | I. Flaubert |
| 2.3           | 13/06/2018  | Change Acti9 iCV40/iCV40N/H and Vigi iC40 values                                             | Sonovision  |
| 2.2           | 1/06/2018   | Add Acti9 iC40/iC40N, iCV40/iCV40N/H and Vigi iC40 values                                    | Sonovision  |
| 2.1           | 10/04/2018  | Add Acti9 RCBO values page 2                                                                 | Sonovision  |
| 2.0           | 03/04/2017  | New charte                                                                                   | Sonovision  |
| 1.5           | 14/11/2016  | Added value for iC60N/H/L, 1.6 A and iK60 13 A page 2 - Added C60H-DC values for 5 - 15-30 A | Sonovision  |
| 1.4           | 16/09/2016  | Changed "See module 92605" page 3, replace by CM908010 or CM908011                           | Sonovision  |
| 1.3           | 21/05/2015  | Added RED, REDs, REDtest page 3                                                              | Sonovision  |
| 1.2           | 5/06/2014   | Changed all tables                                                                           | Sedoc       |
| 1.1           | 22/10/2013  | Changed NG125 values page 3                                                                  | Sedoc       |
| 1.0           | 4/09/2012   | Creation                                                                                     | Sedoc       |
| <b>Indice</b> | <b>Date</b> | <b>Modification</b>                                                                          | <b>Name</b> |