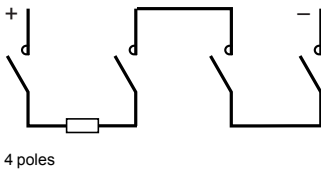
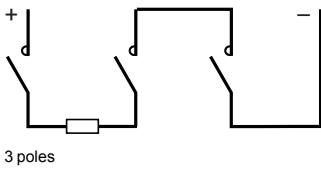
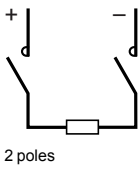
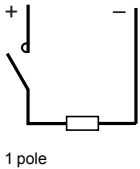


TeSys contactors

For utilisation categories DC-1 to DC-5



5

Rated operational current (Ie) in Amperes, in utilisation category DC-1, resistive loads: time constant $\frac{L}{R} \leq 1$ ms, ambient temperature ≤ 60 °C

| Rated operational voltage Ue | No. of poles connected in series | Contactor rating (1) | | | | | | | | | |
|------------------------------|----------------------------------|----------------------|----------|--------------|--------------|--------------|---------|---------|----------|-----------|--|
| | | LC1 D09 | LC1 DT20 | LC1 D12 DT25 | LC1 D18 DT32 | LC1 D25 DT40 | LC1 D32 | LC1 D38 | LC1 D40A | LC1 DT60A | |
| V | | | | | | | | | | | |
| 24 | 1 | 20 | 20 | 20 | 25 | 32 | 40 | 40 | 50 | 50 | |
| | 2 | 20 | 20 | 20 | 25 | 32 | 40 | 40 | 50 | 50 | |
| | 3 | 20 | 20 | 20 | 25 | 32 | 40 | 40 | 50 | 50 | |
| | 4 | - | 20 | 20 | 25 | 32 | - | - | - | 50 | |
| 48/75 | 1 | 20 | 20 | 20 | 25 | 32 | 40 | 40 | 50 | 50 | |
| | 2 | 20 | 20 | 20 | 25 | 32 | 40 | 40 | 50 | 50 | |
| | 3 | 20 | 20 | 20 | 25 | 32 | 40 | 40 | 50 | 50 | |
| | 4 | - | 20 | 20 | 25 | 32 | - | - | - | 50 | |
| 125 | 1 | 4 | 4 | 4 | 4 | 7 | 7 | 7 | 7 | 7 | |
| | 2 | 20 | 20 | 20 | 25 | 32 | 40 | 40 | 50 | 50 | |
| | 3 | 20 | 20 | 20 | 25 | 32 | 40 | 40 | 50 | 50 | |
| | 4 | - | 20 | 20 | 25 | 32 | - | - | - | 50 | |
| 250 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| | 2 | 4 | 4 | 4 | 4 | 7 | 7 | 7 | 7 | 7 | |
| | 3 | 20 | 20 | 20 | 25 | 32 | 40 | 40 | 50 | 50 | |
| | 4 | - | 20 | 20 | 25 | 32 | - | - | - | 50 | |
| 300 | 3 | 4 | 4 | 4 | 4 | 7 | 7 | 7 | 7 | - | |
| | 4 | - | 20 | 20 | 25 | 32 | - | - | - | 50 | |
| 460 | 1 | - | - | - | - | - | - | - | - | - | |
| | 4 | - | - | - | - | - | - | - | - | - | |
| 900 | 2 | - | - | - | - | - | - | - | - | - | |
| 1200 | 3 | - | - | - | - | - | - | - | - | - | |
| 1500 | 4 | - | - | - | - | - | - | - | - | - | |

Rated operational current (Ie) in Amperes, in utilisation category DC-2 to DC-5, inductive loads: time constant $\frac{L}{R} \leq 15$ ms, ambient temperature ≤ 60 °C

| Rated operational voltage Ue | No. of poles connected in series | Contactor rating (1) | | | | | | | | | |
|------------------------------|----------------------------------|----------------------|----------|--------------|--------------|--------------|---------|---------|----------|-----------|--|
| | | LC1 D09 | LC1 DT20 | LC1 D12 DT25 | LC1 D18 DT32 | LC1 D25 DT40 | LC1 D32 | LC1 D38 | LC1 D40A | LC1 DT60A | |
| V | | | | | | | | | | | |
| 24 | 1 | 20 | 20 | 20 | 25 | 32 | 40 | 40 | 50 | 50 | |
| | 2 | 20 | 20 | 20 | 25 | 32 | 40 | 40 | 50 | 50 | |
| | 3 | 20 | 20 | 20 | 25 | 32 | 40 | 40 | 50 | 50 | |
| | 4 | - | 20 | 20 | 25 | 32 | - | - | - | 50 | |
| 48/75 | 1 | 20 | 20 | 20 | 25 | 32 | 40 | 40 | 50 | 50 | |
| | 2 | 20 | 20 | 20 | 25 | 32 | 40 | 40 | 50 | 50 | |
| | 3 | 20 | 20 | 20 | 25 | 32 | 40 | 40 | 50 | 50 | |
| | 4 | - | 20 | 20 | 25 | 32 | - | - | - | 50 | |
| 125 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | |
| | 2 | 20 | 20 | 20 | 25 | 32 | 40 | 40 | 50 | 50 | |
| | 3 | 20 | 20 | 20 | 25 | 32 | 40 | 40 | 50 | 50 | |
| | 4 | - | 20 | 20 | 25 | 32 | - | - | - | 50 | |
| 250 | 1 | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 1 | 1 | |
| | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 4 | |
| | 3 | 8 | 8 | 8 | 8 | 32 | 40 | 40 | 50 | 50 | |
| | 4 | - | 20 | 20 | 25 | 32 | - | - | - | 50 | |
| 300 | 3 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | |
| | 4 | - | 8 | 8 | 8 | 32 | - | - | - | 50 | |
| 460 | 1 | - | - | - | - | - | - | - | - | - | |
| | 4 | - | - | - | - | - | - | - | - | - | |
| 900 | 2 | - | - | - | - | - | - | - | - | - | |
| 1200 | 3 | - | - | - | - | - | - | - | - | - | |
| 1500 | 4 | - | - | - | - | - | - | - | - | - | |

(1) For rated operational currents of contactors LC1 and LP1 K: please consult your Regional Sales Office.

| LC1 D50A | LC1 D65A | LC1 DT80A | LC1 D80 | LC1 D95 | LC1 D115 | LC1 D150 | LC1 F185 | LC1 F225 | LC1 F265 | LC1 F330 | LC1 F400 | LC1 F500 | LC1 F630 | LC1 F780 | LC1 F800 | LC1 BL | LC1 BM | LC1 BP | LC1 BR |
|----------|----------|-----------|---------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--------|--------|--------|--------|
| 65 | 65 | 65 | 100 | 100 | 200 | 200 | 240 | 260 | 300 | 360 | 430 | 580 | 850 | 1300 | 850 | 700 | 1100 | 1750 | 2400 |
| 65 | 65 | 65 | 100 | 100 | 200 | 200 | 240 | 260 | 300 | 360 | 430 | 580 | 850 | 1300 | 850 | 700 | 1100 | 1750 | 2400 |
| 65 | 65 | 65 | 100 | 100 | 200 | 200 | 240 | 260 | 300 | 360 | 430 | 580 | 850 | 1300 | 850 | 700 | 1100 | 1750 | 2400 |
| - | - | 65 | 100 | - | 200 | - | 240 | 260 | 300 | 360 | 430 | 580 | 850 | 1300 | 850 | 700 | 1100 | 1750 | 2400 |
| 65 | 65 | 65 | 100 | 100 | 200 | 200 | 240 | 260 | 300 | 360 | 430 | 580 | 850 | 1300 | 850 | 700 | 1100 | 1750 | 2400 |
| 65 | 65 | 65 | 100 | 100 | 200 | 200 | 240 | 260 | 300 | 360 | 430 | 580 | 850 | 1300 | 850 | 700 | 1100 | 1750 | 2400 |
| 65 | 65 | 65 | 100 | 100 | 200 | 200 | 240 | 260 | 300 | 360 | 430 | 580 | 850 | 1300 | 850 | 700 | 1100 | 1750 | 2400 |
| - | - | 65 | 100 | - | 200 | - | 240 | 260 | 300 | 360 | 430 | 580 | 850 | 1300 | 850 | 700 | 1100 | 1750 | 2400 |
| 7 | 7 | 7 | 12 | 12 | 12 | 12 | 210 | 230 | 270 | 320 | 380 | 520 | 760 | 1180 | 760 | 700 | 1100 | 1750 | 2400 |
| 65 | 65 | 65 | 100 | 100 | 200 | 200 | 210 | 230 | 270 | 320 | 380 | 520 | 760 | 1180 | 760 | 700 | 1100 | 1750 | 2400 |
| 65 | 65 | 65 | 100 | 100 | 200 | 200 | 240 | 260 | 300 | 360 | 430 | 580 | 850 | 1300 | 850 | 700 | 1100 | 1750 | 2400 |
| - | - | 65 | 100 | - | 200 | - | 240 | 260 | 300 | 360 | 430 | 580 | 850 | 1300 | 850 | 700 | 1100 | 1750 | 2400 |
| 1 | 1,5 | 1,5 | 2 | 2 | 10 | 10 | - | - | - | - | - | - | - | - | - | 700 | 1100 | 1750 | 2400 |
| 7 | 7 | 7 | 12 | 12 | 200 | 200 | 190 | 200 | 250 | 280 | 350 | 450 | 700 | 1000 | 700 | 700 | 1100 | 1750 | 2400 |
| 65 | 65 | 65 | 100 | 100 | 200 | 200 | 240 | 260 | 300 | 360 | 430 | 580 | 850 | 1300 | 850 | 700 | 1100 | 1750 | 2400 |
| - | - | 65 | 100 | - | 200 | - | 240 | 260 | 300 | 360 | 430 | 580 | 850 | 1300 | 850 | 700 | 1100 | 1750 | 2400 |
| 7 | 7 | 7 | 12 | 12 | 200 | 200 | 190 | 200 | 250 | 280 | 350 | 450 | 700 | 1000 | 700 | 700 | 1100 | 1750 | 2400 |
| - | - | 65 | 100 | - | 200 | - | 240 | 260 | 300 | 360 | 430 | 580 | 850 | 1000 | 850 | 700 | 1100 | 1750 | 2400 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 700 | 1100 | 1750 | 2400 |
| - | - | - | - | - | 200 | - | 190 | 200 | 250 | 280 | 350 | 450 | 700 | 1000 | 700 | 700 | 1100 | 1750 | 2400 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 700 | 1100 | 1750 | 2400 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 700 | 1100 | 1750 | 2400 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 700 | 1100 | 1750 | 2400 |

| LC1 D50A | LC1 D65A | LC1 DT80A | LC1 D80 | LC1 D95 | LC1 D115 | LC1 D150 | LC1 F185 | LC1 F225 | LC1 F265 | LC1 F330 | LC1 F400 | LC1 F500 | LC1 F630 | LC1 F780 | LC1 F800 | LC1 BL | LC1 BM | LC1 BP | LC1 BR |
|----------|----------|-----------|---------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--------|--------|--------|--------|
| 65 | 65 | 65 | 100 | 100 | 200 | 200 | 240 | 260 | 300 | 360 | 430 | 580 | 850 | 1300 | 850 | 700 | 1100 | 1750 | 2400 |
| 65 | 65 | 65 | 100 | 100 | 200 | 200 | 240 | 260 | 300 | 360 | 430 | 580 | 850 | 1300 | 850 | 700 | 1100 | 1750 | 2400 |
| 65 | 65 | 65 | 100 | 100 | 200 | 200 | 240 | 260 | 300 | 360 | 430 | 580 | 850 | 1300 | 850 | 700 | 1100 | 1750 | 2400 |
| - | - | 65 | 100 | - | 200 | - | 240 | 260 | 300 | 360 | 430 | 580 | 850 | 1300 | 850 | 700 | 1100 | 1750 | 2400 |
| 65 | 65 | 65 | 100 | 100 | 200 | 200 | 240 | 260 | 300 | 360 | 430 | 580 | 850 | 1300 | 850 | 700 | 1100 | 1750 | 2400 |
| 65 | 65 | 65 | 100 | 100 | 200 | 200 | 240 | 260 | 300 | 360 | 430 | 580 | 850 | 1300 | 850 | - | - | - | - |
| 65 | 65 | 65 | 100 | 100 | 200 | 200 | 240 | 260 | 300 | 360 | 430 | 580 | 850 | 1300 | 850 | 700 | 1100 | 1750 | 2400 |
| - | - | 65 | 100 | - | 200 | - | 240 | 260 | 300 | 360 | 430 | 580 | 850 | 1300 | 850 | 700 | 1100 | 1750 | 2400 |
| 4 | 4 | 4 | 5 | 5 | 10 | 10 | - | - | - | - | - | - | - | - | - | 700 | 1100 | 1750 | 2400 |
| 65 | 65 | 65 | 100 | 100 | 200 | 200 | 160 | 180 | 250 | 300 | 350 | 500 | 700 | 1000 | 700 | 700 | 1100 | 1750 | 2400 |
| 65 | 65 | 65 | 100 | 100 | 200 | 200 | 240 | 240 | 280 | 310 | 350 | 550 | 850 | 1000 | 850 | 700 | 1100 | 1750 | 2400 |
| - | - | 65 | 100 | - | 200 | - | 240 | 240 | 280 | 310 | 350 | 550 | 850 | 1000 | 850 | 700 | 1100 | 1750 | 2400 |
| 1 | 1,5 | 1,5 | 1 | 1 | 3 | 3 | - | - | - | - | - | - | - | - | - | 700 | 1100 | 1750 | 2400 |
| 4 | 4 | 4 | 5 | 5 | 200 | 200 | 140 | 160 | 220 | 280 | 310 | 480 | 680 | 900 | 680 | 700 | 1100 | 1750 | 2400 |
| 65 | 65 | 65 | 100 | 100 | 200 | 200 | 160 | 180 | 250 | 300 | 350 | 500 | 700 | 1000 | 700 | 700 | 1100 | 1750 | 2400 |
| - | - | 65 | 100 | - | 200 | - | 240 | 260 | 300 | 360 | 430 | 580 | 850 | 1300 | 850 | 700 | 1100 | 1750 | 2400 |
| 3 | 3 | 3 | 5 | 5 | 200 | 200 | 140 | 160 | 220 | 280 | 310 | 480 | 680 | 900 | 680 | 700 | 1100 | 1750 | 2400 |
| - | - | 65 | 100 | - | 200 | - | 240 | 260 | 300 | 360 | 430 | 580 | 850 | 1300 | 850 | 700 | 1100 | 1750 | 2400 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 700 | 1100 | 1750 | 2400 |
| - | - | - | - | - | 200 | - | 140 | 160 | 220 | 280 | 310 | 480 | 680 | 800 | 680 | 700 | 1100 | 1750 | 2400 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 700 | 1100 | 1750 | 2400 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 700 | 1100 | 1750 | 2400 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 700 | 1100 | 1750 | 2400 |

Selection according to required electrical durability, use in categories DC-1 to DC-5

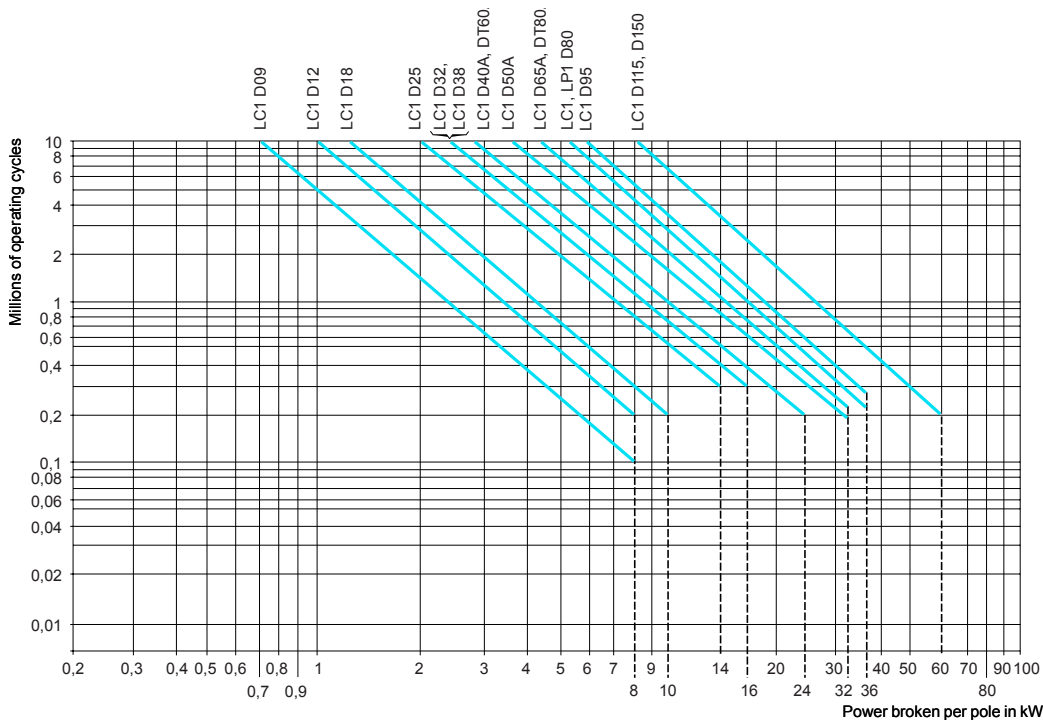
The criteria for contactor selection are:

- the rated operational current I_e ,
- the rated operational voltage U_e ,
- the utilisation category and the time constant L/R,
- the required electrical durability.

Maximum operating rate (operating cycles)

The following limits must not be exceeded: 120 operating cycles/hour at rated operational current I_e .

Electrical durability



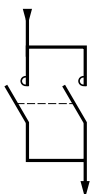
5

Example

Series wound motor - $P = 1.5 \text{ kW}$ - $U_e = 200 \text{ V}$ - $I_e = 7.5 \text{ A}$. Utilisation: reversing, inching.

- Utilisation category = DC-5.
- Select contactor LC1 D09 with 3 poles in series.
- The power broken is: $P_c \text{ total} = 2.5 \times 200 \times 7.5 = 3.75 \text{ kW}$.
- The power broken per pole is: 1.25 kW .
- The electrical durability read from the curve is ≥ 3 millions of operating cycles.

Use of poles in parallel



Electrical durability can be increased by using poles connected in parallel.

With N poles connected in parallel, the electrical durability becomes: electrical durability read from the curves $\times N \times 0.7$.

Note: 1

When the poles are connected in parallel, the maximum operational currents indicated on pages 5/204 et 5/205 must not be exceeded.

Note: 2

Ensure that the connections are made in such a way as to equalise the currents in each pole.

Selection according to required electrical durability, use in categories DC-1 to DC-5

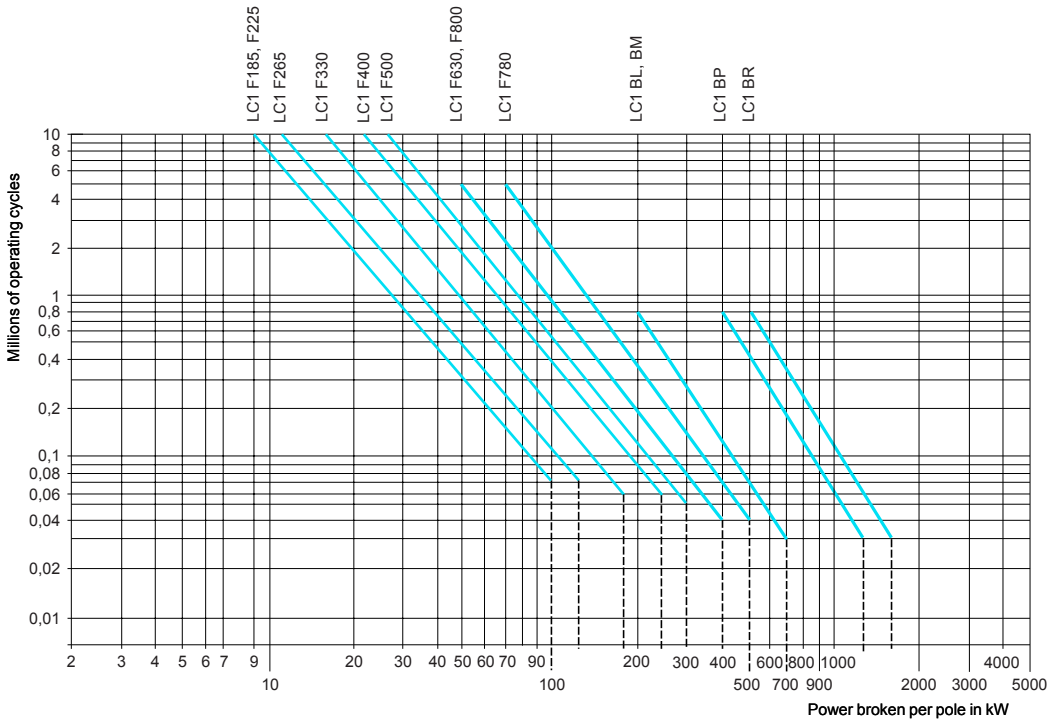
Determining the electrical durability

The electrical durability can be read directly from the curves below, having previously calculated the power broken as follows:

$$P \text{ broken} = U \text{ broken} \times I \text{ broken}$$

The tables below give the values of U_c and I_c for the various utilisation categories.

| Utilisation categories | U broken | I broken | P broken |
|---|-----------|-----------|----------------------|
| DC-1 Non inductive or slightly inductive loads | U_e | I_e | $U_e \times I_e$ |
| DC-2 Shunt wound motors, breaking whilst motor running | $0.1 U_e$ | I_e | $0.1 U_e \times I_e$ |
| DC-3 Shunt wound motors, reversing, inching | U_e | $2.5 I_e$ | $U_e \times 2.5 I_e$ |
| DC-4 Series wound motors, breaking whilst motor running | $0.3 U_e$ | I_e | $0.3 U_e \times I_e$ |
| DC-5 Series wound motors, reversing, inching | U_e | $2.5 I_e$ | $U_e \times 2.5 I_e$ |



Example

Series wound motor: $P = 40 \text{ kW}$ - $U_e = 200 \text{ V}$ - $I_e = 200 \text{ A}$. Utilisation: reversing, inching. Utilisation category = DC-5.

- Select contactor LC1 F265 with 2 poles in series.
- The power broken is: $P_c \text{ total} = 2.5 \times 200 \times 200 = 100 \text{ kW}$.
- The power broken per pole is 50 kW .
- The electrical durability read from the curve is $500\,000$ operating cycles.