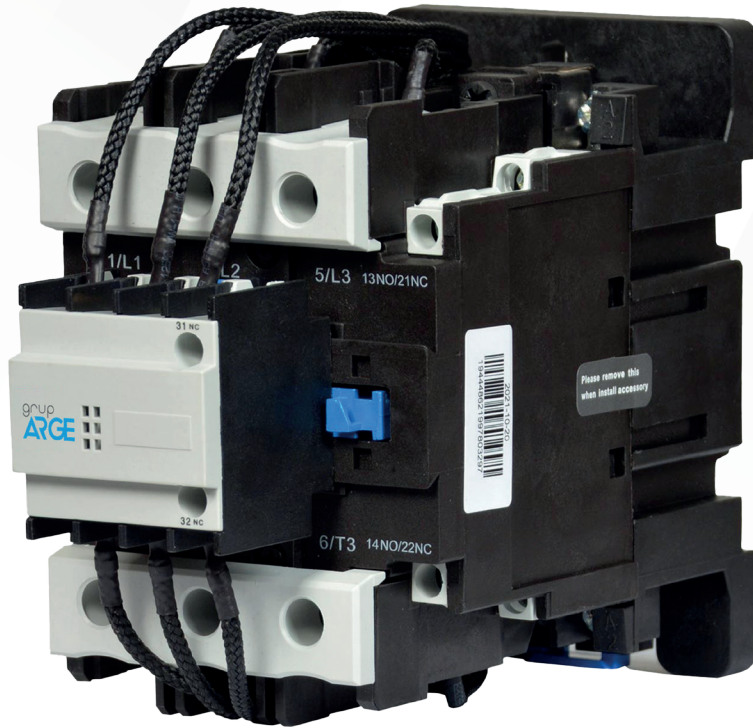


# Compensation Contactors Datasheet



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## 1.1. General Features

Compensation contactors are electromagnetic switching devices that enable the safe and controlled connection or disconnection of capacitor banks in compensation systems. As is well known, capacitors cause very short-term high currents of up to 200 times the rated current between 1 and 15 kHz when first connected to the circuit. Contactors limit these short-term peak currents by up to 70 times, thereby extending the lifespan of both the capacitors and other electrical components in the system, ensuring long-term system safety and energy efficiency.

### Operating Principle

When the contactor is first energized, the auxiliary contacts are activated first and remain in the circuit for approximately 2–3 milliseconds. During this brief pre-switching period, the high peak currents generated when the capacitors are energized are damped by passing through current-limiting resistors within the contactor. These resistors slow down the sudden peak current of the capacitors, reducing voltage fluctuations in the system and the risk of arcing on the contact surfaces.

The auxiliary contacts are disconnected after limiting the peak current, and the main contacts are connected, synchronizing the capacitor bank directly with the system. Thanks to this two-stage switching process, the main contacts are not exposed to high surge currents. This protects both their electrical and mechanical life and prevents faults such as welding, contact melting, or surface deformation.

### Warning

Dangerous voltage values can cause shock and burns. In such cases, be sure to disconnect the power before touching the product. Function testing cannot be performed without discharging the capacitor. Do not test by removing the resistor block. The coils operate within a range of +10% and -15% of the current operating voltage.

### Maintenance Instructions

Clean dust with compressed air. If not cleaned carefully, foreign matter in the magnetic poles may cause noise. Do not use chemicals or sharp objects for cleaning. If noise persists despite careful cleaning, replace the contactor.

## 1.2. Technical Features

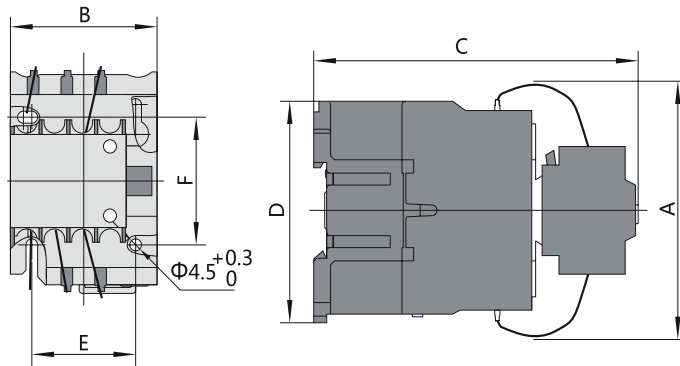
|                                       |   |  |
|---------------------------------------|---|--|
| <b>Standards</b>                      | : | IEC / EN 60947 - 4 - 1   |
| <b>Maximum Operating Voltage (Um)</b> | : | 690 V  |
| <b>Rated Operational Voltage (Ue)</b> | : | 220/230V, 380/400V, 660/690V   |
| <b>Rated Frequency</b>                | : | 50 - 60 Hz   |
| <b>Restrained Surge Capacity</b>      | : | 20 x In  |
| <b>Protection Class</b>               | : | IP20   |
| <b>Ambient Temperature</b>            | : | -5 / +40 °C  |
| <b>Altitude</b>                       | : | ≤ 2000m  |
| <b>Pollution Degree</b>               | : | 3  |
| <b>Installation Category</b>          | : | III  |
| <b>Relative Humidity</b>              | : | Max. %50 at +40 °C<br>Max. %90 at +20 °C   |
| <b>Auxiliary Contact</b>              | : | AC-15: Ie: 0.95A Ue: 380/400V<br>DC-13: Ie: 0.15A Ue: 220/250V<br>Thermal Current Ith: 10A |
| <b>Operating Frequency Cycles/h</b>   | : | 120  |
| <b>Electrical Durability</b>          | : | KNT K2.5 - KNT K50.0 (100.000)<br>KNT K60.0 - KNT K75.0 (20.000)                           |
| <b>Mechanical Durability</b>          | : | KNT K2.5 - KNT K50.0 (1.000.000)<br>KNT K60.0 - KNT K75.0 (3.000.000)                      |

## 1.3. Technical Data

| Product Name | Power (kVAR) |       |       | Ith (A) | Auxiliary Contact |    | Operating Current (Ac-6b) (for 400 V) | Tightening Torque (N.m) |       | Nominal Cable Cross Section (mm²) | Mounting                        |
|--------------|--------------|-------|-------|---------|-------------------|----|---------------------------------------|-------------------------|-------|-----------------------------------|---------------------------------|
|              | 230 V        | 400 V | 690 V |         | NO                | NC |                                       | Main Contact            | A1-A2 |                                   |                                 |
| KNT K2.5     | 1,4          | 2,5   | 4     | 25      | 1                 | 1  | 3,60                                  | 0,8                     | 0,8   | 3(1x4)                            | DIN Rail (35 mm) or M4 Screw    |
| KNT K5.0     | 2,8          | 5     | 7     | 25      | 1                 | 1  | 7,20                                  | 0,8                     | 0,8   | 3(1x4)                            |                                 |
| KNT K7.5     | 4            | 7,5   | 11    | 25      | 1                 | 1  | 11,00                                 | 0,8                     | 0,8   | 3(1x4)                            |                                 |
| KNT K10.0    | 5            | 10    | 15    | 25      | 1                 | 1  | 14,00                                 | 0,8                     | 0,8   | 3(1x4)                            |                                 |
| KNT K12.5    | 6,7          | 12,5  | 18    | 32      | 1                 | 1  | 18,00                                 | 0,8                     | 0,8   | 3(1x4)                            |                                 |
| KNT K15.0    | 8,5          | 15    | 22    | 32      | 1                 | 1  | 22,00                                 | 1,2                     | 0,8   | 3(1x6)                            |                                 |
| KNT K20.0    | 11           | 20    | 26    | 43      | 1                 | 1  | 29,00                                 | 1,2                     | 0,8   | 3(1x10)                           |                                 |
| KNT K25.0    | 14           | 25    | 36    | 63      | 1                 | 2  | 36,00                                 | 1,2                     | 0,8   | 3(1x10)                           | DIN Rail (35/75 mm) or M4 Screw |
| KNT K30.0    | 20           | 30    | 44    | 63      | 1                 | 2  | 44,00                                 | 1,2                     | 0,8   | 3(1x16)                           |                                 |
| KNT K40.0    | 25           | 40    | 58    | 95      | 1                 | 2  | 58,00                                 | 1,2                     | 0,8   | 3(1x25)                           |                                 |
| KNT K50.0    | 29           | 50    | 92    | 95      | 1                 | 2  | 72,00                                 | 6                       | 0,8   | 3(1x35)                           |                                 |
| KNT K60.0    | 32           | 60    | 100   | 200     | 1                 | 0  | 87,00                                 | 10                      | 0,8   | 3(1x35)                           | DIN Rail (35 mm) or M5 Screw    |
| KNT K70.0    | 35           | 70    | 105   | 275     | 1                 | 0  | 101,00                                | 10                      | 0,8   | 3(1x50)                           |                                 |
| KNT K75.0    | 38           | 75    | 110   | 275     | 1                 | 0  | 108,00                                | 10                      | 0,8   | 3(1x70)                           |                                 |

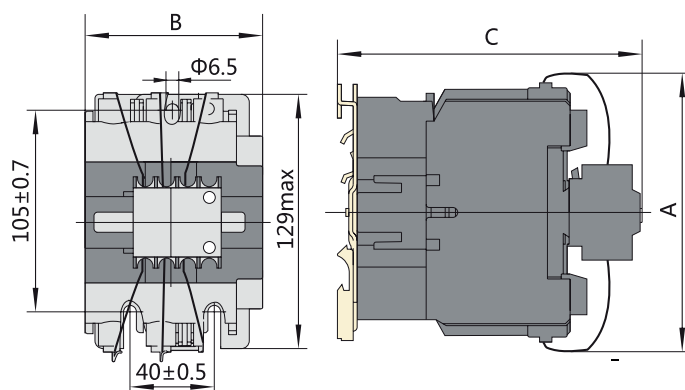
## 1.4. Technical Drawing

### KNT K2.5, KNT K5.0, KNT K7.5, KNT K10.0, KNT K12.5, KNT K15.0, KNT K20.0



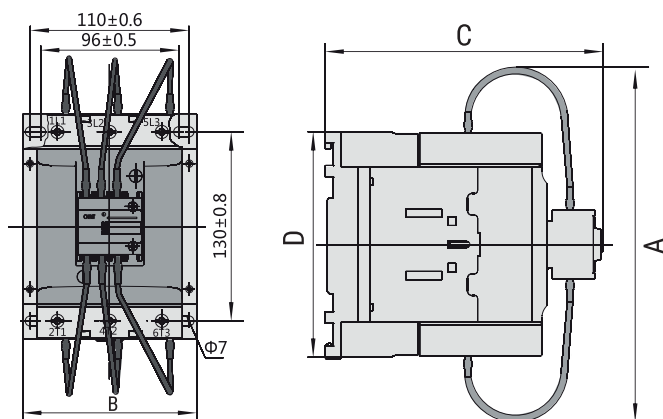
| Contactors Type                            | Amax | Bmax | Cmax | Dmax | Emax  | Fmax  |
|--|------|------|------|------|-------|-------|
| KNT K2.5, KNT K5.0,<br>KNT K7.5, KNT K10.0 | 80   | 47   | 124  | 76   | 34/35 | 50/60 |
| KNT K12.5, KNT K15.0                       | 90   | 58   | 132  | 86   | 40    | 48    |
| KNT K20.0                                  | 90   | 58   | 136  | 86   | 40    | 48    |

### KNT K25.0, KNT K30.0, KNT K40.0, KNT K50.0



| Contactors Type      | Amax | Bmax | Cmax | Dmax | Emax | Fmax |
|----------------------|------|------|------|------|------|------|
| KNT K25.0, KNT K30.0 | 132  | 79   | 150  | -    | -    | -    |
| KNT K40.0, KNT K50.0 | 135  | 87   | 158  | -    | -    | -    |

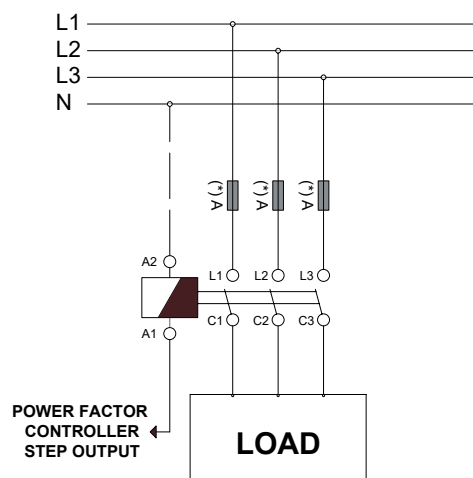
### KNT K60.0, KNT K70.0, KNT K75.0



| Contactors Type                 | Amax | Bmax | Cmax | Dmax | Emax | Fmax |
|---------------------------------|------|------|------|------|------|------|
| KNT K60.0, KNT K70.0, KNT K75.0 | 200  | 120  | 192  | 155  | -    | -    |

## 1.5. Connection Diagram

### Compensation Contactor



(\*)For the recommended fuse current and cable cross-section, please refer to the rated operating current table in the section related to the product of your choice.