Your Advantages

• Simple and time saving as well as user friendly operation because of
  - “Adaptive acceleration control” (self learning acceleration control)
  - Graphical LCD display for parameterization and visualisation
• Adjustable bus bars for units from 360 A ... 1600 A for easy connection
• Comprehensive and customer specific motor protection functions because thermal motor modell - external motor protection is not necessary
• Emergency operation, i.e. in the case of failure a 2-phase control allows motor operation
• Slow motion operation forward and reverse
• DC brake (contact free), therfore no brake contactor neccessary

Features

• 3-phase softstarter for asynchronous motors up to 800 kW (400 V)
• W3 connection up to 1300 kW (400V)
• Nominal current 23 ... 1600 A
• Integrated bridging contactor up to 220 A
• Programmable in- and outputs for fault indication and operation
• Motor-PTC connection possible
• Communication interfaces as option for Profibus, Devicenet or Modbus
• Start and stop via seperate push buttons or control switch

Adjustable functions:

• Emergency operation
• Slow motion operation forward and reverse
• Control input (3 x fixed, 1 x programmable)
• Relay output (3 x programmable)
• 24 V DC output
• Analogue output
• Different softstart / stop modes
• 690 V units on request

Approval and Marking

Application

• Pumps
• Fans and ventilation systems
• Conveyor systems and elevators
• Compressors
• Mills, crushers, presses
• ... and for all applications with ambitious start-up and deceleration

Indication

Graphical LCD display for parameterization and visualisation
## Technical Data

### Nominal voltage:
- 3 AC 200 ... 525 V (± 10 %)
- 3 AC 380 ... 690 V (± 10 %)

**Nominal frequency: (at start):** 45 ... 66 Hz

<table>
<thead>
<tr>
<th>Rated current (I_n) (A):</th>
<th>23</th>
<th>43</th>
<th>53</th>
<th>76</th>
<th>105</th>
<th>145</th>
<th>170</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor power at 400 V (kW):</td>
<td>-11</td>
<td>-18.5</td>
<td>-30</td>
<td>-45</td>
<td>-55</td>
<td>-75</td>
<td>-90</td>
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<tr>
<td>I(_T)-Power semiconductor fuse (kA(^2)s):</td>
<td>1.15</td>
<td>8</td>
<td>15</td>
<td>15</td>
<td>125</td>
<td>125</td>
<td>320</td>
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<tr>
<td>Weight (kg):</td>
<td>3.2</td>
<td>3.2</td>
<td>3.2</td>
<td>3.5</td>
<td>4.8</td>
<td>16</td>
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</table>

<table>
<thead>
<tr>
<th>Rated current (I_n) (A):</th>
<th>220</th>
<th>255</th>
<th>380</th>
<th>430</th>
<th>650</th>
<th>790</th>
<th>930</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor power at 400 V (kW):</td>
<td>-110</td>
<td>-132</td>
<td>-200</td>
<td>-250</td>
<td>-310</td>
<td>-400</td>
<td>-500</td>
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<tr>
<td>I(_T)-Power semiconductor fuse (kA(^2)s):</td>
<td>320</td>
<td>320</td>
<td>320</td>
<td>320</td>
<td>1200</td>
<td>2530</td>
<td>4500</td>
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<tr>
<td>Weight (kg):</td>
<td>16</td>
<td>25</td>
<td>50.5</td>
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</tbody>
</table>

### Softstart mode:
- Constant current, voltage ramp, "Adaptive acceleration control",
- kick start
- Softstopp, braking, free wheeling

### Deceleration mode:
- Operating frequency 3 \(x\) \(I_n\) and 10 s:
- Switching capacity relay output:
  - ambient-temperature:
    - AC 110 and 220 V (+ 10% / - 15%; 600 mA) AC/DC 24 V (± 20%)

### Auxiliary voltage (A4, A5, A6):
- either: AC 110 and 220 V (+ 10% / - 15%; 600 mA)
- or: AC/DC 24 V (± 20%)

### Inputs:
- Nominal value for "active input": DC 24 V, 8 mA
- Start (54,55): normally open
- Stop (56,57): normally closed
- Reset (58,57): normally closed
- programmable input (53,55): NO contact
- Motor thermistor (64, 65): response > 3.6 kΩ; reset < 1.6 kΩ

### Outputs:
- Relay outputs: 10 A at AC 250 V ohmic, 5 A at AC 250 V AC15 Li 0.3
- Programmable outputs:
  - relay A (13, 14): normally open
  - relay B (21, 22, 24): change-over
  - relay C (33, 34): normally open
  - Analogue output (40, 41): 0 ... 20 mA or 4 ... 20 mA (adjustable)
  - Max. load: 600 W (DC 12 V at 20 mA)
  - Accuracy: ± 5 %
  - DC 24 V-output (P24, COM) max. load: 200 mA
  - Accuracy: ± 10 %

### Technical Data

### Degree of protection:
- at 23 ... 105 A: IP 20 IEC/EN 60 529
- at 145 ... 1600 A: IP 20 with additional finger guard kit (see accessories)

### Temperature range:
- operation: - 10 °C ... + 60 °C
- storage temperature: over 40 °C with low nominal value
- Altitude: 0 ... 1000 m
- over 1000 m with low nominal value
- 5% ... 95% relative humid

### Humid:
- Pollution degree: 3

### EMC:
- Surge voltage between wires for power supply: 1 kV IEC/EN 61 000-4-5
- between wire and ground: 2 kV IEC/EN 61 000-4-5
- Fast transients:
  - Voltage dip and short time interruption: 100 ms (at 40 % nominal voltage)
  - Harmonics and distortion: IEC 61000-2-4 (class 3), IEC/EN61800-3

### Short circuit current:
- 7.5 ... 37 kW: 5 kA
- 55 ... 110 kW: 10 kA

### Heat dissipation:
- during start: 4.5 Watt / Ampere
- during operation:
  - 23 ... 53 A: ≤ 39 Watt (approx.)
  - 76 ... 105 A: ≤ 51 Watt (approx.)
  - 145 ... 220 A: ≤ 120 Watt (approx.)
  - 255 ... 930 A: 4.5 Watts / Ampere (approx.)
  - 1200 ... 1600 A: 4.5 Watts / Ampere (approx.)

### General Data

**Coordination with semiconductor fuses:** Typ 2
**Coordination with HRC fuses:** Typ 1
**Prospective current:**
- 145 ... 255 A: 10 kA
- 360 ... 930 A: 18 kA
- 1200 ... 1600 A: 85 kA

**Weight:**
- 3.2 kg (23 A)
- 3.2 kg (43 A)
- 3.2 kg (53 A)
- 3.5 kg (76 A)
- 4.8 kg (105 A)
- 16 kg (145 A)
- 16 kg (170 A)

**Weight (kg):**
- 220 A: 16 kg
- 255 A: 25 kg
- 380 A: 50.5 kg
- 430 A: 50.5 kg
- 650 A: 53.5 kg
- 790 A: 53.5 kg
- 930 A: 53.5 kg

**Rated current IN (A):**
- 1200 A: 1600 A
- 1410 A: 1600 A
- 1410 A: 1600 A

**Motor power at 400 V (kW):**
- -110 kW
- -132 kW
- -200 kW
- -250 kW
- -310 kW
- -400 kW
- -500 kW

**Auxiliary voltage (A4, A5, A6):**
- AC 110 and 220 V (+ 10% / - 15%; 600 mA)
- AC/DC 24 V (± 5%)

**Inputs (Nominal value for "active input"):**
- DC 24 V, 8 mA
- Start (54,55): normally open
- Stop (56,57): normally closed
- Reset (58,57): normally closed
- Programmable input (53,55): NO contact
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**Outputs (Relay outputs 10 A at AC 250 V ohmic, 5 A at AC 250 V AC15 Li 0.3):**
- Normally open
- Change-over
- Normally open
- 0 ... 20 mA or 4 ... 20 mA (adjustable)
- 600 W (DC 12 V at 20 mA)
- Accuracy: ± 5 %
- DC 24 V-output (P24, COM) max. load: 200 mA
- Accuracy: ± 10 %
### Technical Data

#### Dimensions

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<tr>
<th>Unit</th>
<th>A (mm)</th>
<th>B (mm)</th>
<th>C (mm)</th>
<th>D (mm)</th>
<th>E (mm)</th>
<th>Weight (kg)</th>
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<td>23 A</td>
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<td>1410</td>
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<td>750</td>
<td>727</td>
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<td>1600</td>
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#### Ordering Example

**GI 9015** 3 AC 200 ... 525 V 105 A AC 110 V and 220 V

#### Accessories
- GW 5312: DeviceNet-Module
- GW 5313: Modbus-Module
- GW 5314: Profibus-Module
- GW 5316: Finger guard kit and touch protection

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**Connection Example**