### Construction
Energy saving variable speed circulating pump driven by a permanent magnet synchronous motor (pm) controlled by on board inverter.

### Applications
Heating, conditioning, circulating systems.
For civil and industrial applications.

### Operating conditions
- Liquid temperature from -10 °C to +110 °C
- Ambient temperature from 0 °C to +40 °C
- Maximum permissible working pressure: 6/10 bar
- Storage: -20°C/+70°C max. relative humidity 95% at 40 °C
- Certifications: in conformity with CE requirements
- Sound pressure ≤ 54 dB (A).
- Minimum suction pressure: - 0,5 bar at 50 °C.
  - 0,8 bar at 80 °C.
  - 1,4 bar at 110 °C.
- Maximum glycol quantity: 20%.
- EMC according to: EN 55014-1, EN 55014-2, EN 61000-3-2, EN 61000-3-2.
- Connections: Flanges according to PN 6/10, EN 1092-2, DN 50, 65, 80, 100.
- The benchmark for most efficient circulators is EEI ≤ 0,20.

### Motor
Synchronous motor with permanent magnet.
- Motor: variable speed
- Standard voltage: single-phase 230 V (-10%;+6%)
- Frequency: 50-60 Hz
- Protection: IP 44
- Insulation class: H
- Overload protection (integrated).
- Cable: phases and neutral.
- Constructed in accordance with: EN 60335-1, EN 60335-2-51.

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### Features

#### Smart pump
**NCE G.F** adapt its functions to the system: the circulator measures the pressure and the flow and adjusts the speed to the selected pressure.

#### Easy use
There are different operating modes selectable from the control panel.

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<table>
<thead>
<tr>
<th>Designation</th>
<th>NCE G 65 F - 180 / 360</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td></td>
</tr>
<tr>
<td>Version</td>
<td></td>
</tr>
<tr>
<td>DN ports in mm</td>
<td></td>
</tr>
<tr>
<td>With flanges</td>
<td></td>
</tr>
<tr>
<td>Max. head in dm</td>
<td></td>
</tr>
<tr>
<td>connection size mm</td>
<td></td>
</tr>
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</table>
NCE G.F Energy saving circulating pumps with flanges

Operating modes

Automatic mode
(factory setting):
In this mode the pump automatically sets the operating pressure, depending on the hydraulic system. This mode is recommended in most systems.

Proportional pressure mode:
The circulator changes the pressure proportionally to the current flow.
The pressure value can be adjusted with the + and - buttons.

Constant pressure mode:
The circulator maintains the pressure constant when the reference flow changes.
The pressure value can be adjusted with the + and - buttons.

Fixed speed mode:
The circulator works with constant curve and the curve could be changed using + e - buttons.

Operating mode-control panel

NCE G.F could works in:
- automatic mode
- proportional pressure mode
- constant pressure mode
- fixed speed mode

Coverage chart

[Graph showing coverage chart for NCE G.F pumps]
NCE G.F  Energy saving circulating pumps with flanges

Characteristic curves

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**NCE G 80F-130**  
**NCE G 100F-130**  
**EEI ≤ 0.23**

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**NCE G 65F-180**  
**EEI ≤ 0.23**

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**NCE G 80F-180**  
**NCE G 100F-180**  
**EEI ≤ 0.23**

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NCE G.F Energy saving circulating pumps with flanges

Materials

<table>
<thead>
<tr>
<th>Component</th>
<th>Pos.</th>
<th>Material</th>
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<tbody>
<tr>
<td>Pump casing</td>
<td>1</td>
<td>Cast iron</td>
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<tr>
<td>Impeller</td>
<td>2</td>
<td>Stainless steel</td>
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<tr>
<td>Shaft</td>
<td>3</td>
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<tr>
<td>Bearings</td>
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<td>Carbon</td>
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<tr>
<td>Thrust bearing</td>
<td>5</td>
<td>Steel</td>
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<td>Rotor</td>
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<td>Stainless steel jacket</td>
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<td>Winding</td>
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<td>Copper wire</td>
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<td>Gasket</td>
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<td>EPDM</td>
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Examples of installations

Dimensions and weights

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<tr>
<th>TYPE</th>
<th>DN</th>
<th>H</th>
<th>Q</th>
<th>P₁</th>
<th>mm</th>
<th>kg</th>
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<th>DK</th>
<th>DG</th>
<th>holes</th>
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