Industrial
Coolant and
High Pressure

Electric
Immersion
Pumps

Ruthman Pump & Engineering, Inc.
# SELF PRIMING COOLANT PUMP

![Special safety device & protection](image1)

![Special water sealing](image2)

The complete fittings (i.e., harness, wire...etc.) are available for your choice.

## COOLANT PUMP

## SPECIFICATION

<table>
<thead>
<tr>
<th>MODEL</th>
<th>HP</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>FLOW RATE LITER</th>
<th>HEAD METER</th>
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<tbody>
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<td>COOLING OIL</td>
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<tr>
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<td>150</td>
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## SELF PRIMING COOLANT PUMP

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<td>1&quot;</td>
<td>30</td>
<td>240</td>
<td>190</td>
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</tbody>
</table>
Electric Immersion Pumps
PRA/PRT/HCT
DIN 5440 – Plastic

Features:
- no seals
- common motor/pump shaft
- 1 - 6 stage
- 2- or 4-pole motor
- max. immersion depth 320 mm

Materials:
PRA/PRT: PP
- temperature max. +60°C
HCT: LCP
- temperature max. +150°C

Performance:
- flow rate: Q max. 120 l/min
- delivery head: H max. 32 m

Electric Immersion Pumps
PMK – Plastic

Features:
- common motor/pump shaft single stage
- no seals
- 2-pole motor
- can be run dry
- max. immersion depth 450 mm

Materials:
- all parts in contact with the liquid are made of PVC or PP

Performance:
- flow rate: Q max. 220 l/min
- delivery head: H max. 13 m

Electric Immersion Pumps
PK

Features:
- flange dimensions to DIN 5440
- mechanical seal
- shaft coupled to motor
- 2- or 4-pole motor
- max. immersion depth up to 1060 mm

Materials:
- SAN (LURAN)
  - shaft: 1.4028
  - pump casing: 1.4306

Performance:
- flow rate: Q max. 300 l/min
- delivery head: H max. 210 m

Electric Immersion Pumps
PS/PSL

Features:
- common motor/pump shaft
- 1 - 8 stage
- 2- or 4-pole motor
- max. immersion depth 740 mm
- all frame sizes have the same mounting and connection dimensions

Materials:
- cast iron

Performance:
- flow rate: Q max. 1250 l/min
- delivery head: H max. 125 m
### Electric Immersion Pumps
**PSH**

**Features:**
- no seals
- common motor/pump shaft
- 1 or 2 stage
- 2- or 4-pole motor
- max. immersion
- depth 550 mm

**Materials:**
- cast iron
- stainless steel

**Performance:**
- flow rate: Q max. 800 l/min
- delivery head: H max. 55 m

### High Pressure Pumps
**PVS**

**Features:**
- positive displacement pump principle
- flange dimensions to DIN 5440
- pressure port with SAE flange
- immersion depth 550 mm

**Material:**
- cast iron

**Performance:**
- flow rate: Q max. 850 l/min
- delivery head: H max. 600 m (800 m)

### Gear Pumps
**PZ**

**Features:**
- shaft coupled to motor
- oil-proof
- sleeve bearings lubricated by pumped liquid
- 2- or 4-pole motor

**Material:**
- cast iron

**Performance:**
- flow rate: Q max. 16 l/min
- delivery head: H max. 500 m

### Block Pumps
**PVB / PVBS**

**Features:**
- peripheral impellers
- shaft seals or mechanical seals

**Materials:**
- non-metallic materials (High-Tech plastics)
- metallic materials
- shafts: 1.4028 / 1.4122 or other

**Performance:**
- flow rate: Q max. 70 l/min
- delivery head: H max. 45 m

**Temperature ranges:**
- -60 °C to +150 °C
- (other temperature ranges on request)
Electric Immersion Pumps
EX

Features:
- no seals
- common motor/pump shaft
- 1 or 2 stage
- 2- or 4-pole motor
- two versions available:
  - EEse – increased safety
  - EEsd – flameproof enclosure
  - available with pneumatic motor
  - max. immersion depth 700 mm

Materials:
- cast iron
- stainless steel
- plastic

Performance:
- flow rate: Q max. 830 l/min
- delivery head: H max. 20 m

Electric Immersion Pumps
EX

Features:
- shaft coupled to motor
- detachable pump unit (snap-on)
- 1 or 2 stage
- 2- or 4-pole motor
- two versions available:
  - EEse – increased safety
  - EEsd – flameproof enclosure
  - available with pneumatic motor
  - resistant to machine washing
  - max. immersion depth 440 mm

Materials:
- cast iron
- stainless steel
- plastic

Performance:
- flow rate: Q max. 290 l/min
- delivery head: H max. 20 m
Applications:
Cooling emulsions
Water emulsions
Oils
Hot/cold water, with/without chemical additives
Salt water
Distilled water
Deionized water
Alkaline solutions and acids at appropriate concentrations and temperatures for the model
Photography and developing solutions
Miscellaneous fluids

General Technical Information
- The sealless, single- and multi-stage electric immersion pumps have port dimensions conforming to DIN 5440.
- The pump components are made of plastic, chemically coupled PP (polypropylene) reinforced with fiber glass and are unusually rugged due to their non-polar structure based on paraffin hydrocarbons with a high molecular weight.
- We supply a version for machine tools, model PRT, and a systems version, model PRA.
- The respective impeller clearances in the pump chamber are 2 mm.
- The pumps can be operated on 50 Hz current or, if the impeller is changed, on 60 Hz current, models PRT.. H and PRA.. H.
- Models PRT.. K and PRA.. K can be operated on 50 and 60 Hz current without changing the impeller.

- It is possible to pump not only clean fluids but also contaminated and viscous ones. The pumps can be operated with the valves against dead head.
- Fluid temperatures up to +60°C; higher temperatures on request.

Electrical Design
The drive motors bear the CE sign and conform to the relevant VDE regulations, German and European standards as well as their associated requirements.
Versions conforming to U.S. standards or complying with special requirements are available on request.
All the motors have fail-safe windings in compliance with insulation class "F", the units being operated in accordance with insulation class "B". They can be operated at ambient temperatures up to +40°C and relative humidities up to 92% (normal tropical climate – constant climate 23/83 and 40/92 as per DIN 50015).
Additional protection is recommended when, for example, very high relative humidities are encountered or when the ambient air contains aggressive dust and crystal particles.
The windings are designed for connection to a large number of mains voltages.
The standard models have windings intended for connection to 230v/460v, 60 Hz, 50 Hz voltage in compliance with DIN IEC 385/87 for rated operation (S1). The motors can, of course, be manufactured to run on all customary main power.
On request, we can supply the pumps with integrated, thermistor-type motor protection for 1-phase AC current.

Mechanical Design
Model PRT, design features
- Pump components of HOSTALEN, chemically coupled PP reinforced with fiber glass.
- Motor and pump shaft supported only by motor bearings.
- Material: high-strength special steel, Stressproof®/ETG.
- Permanently lubricated 2 Z ball bearings.

Model PRA, design features
- Pump components of HOSTALEN, chemically coupled PP reinforced with fiber glass.
- Motor and pump shaft supported only by motor bearings.
- Material: stainless steel, W-No. 1.4122; other materials on request.
- Permanently lubricated 2 RS ball bearings.
- Lower ball bearing fitted with radial Viton seal.
- Viton splash ring beneath flange.
- Viton splash ring on top in front of pump chamber.
- V-ring between fan and motor housing for fan-cooled motors.
Chart specifies a motor circuit-breaker with the following tripping characteristics.

**Installation and Assembly**

The pump is installed vertically so that the highest level of fluid is at least 20 mm beneath the pump flange when the pump is off and all the fluid has returned to the reservoir. The delivery line should have the same diameter as the threaded port of the pump to keep tube resistance low at full delivery.

The immersion depth can be extended by attaching tubes to the bottom of the pump. When the pump is switched on, the level of fluid must always be higher than the pump chamber; afterward the pump delivers up to the end of the tubing.

The pumps can also be outfitted with agitator blades to maintain homogeneity in fluids that form sediments quickly. (Please note: this requires more power.)

**Order example**

- **Model**: PRT 7 H - 220
- **Size**: PRA 7 K - 220
- **H = 50 Hz** (with impeller change)
- **K = 50/60 Hz** (without impeller change)
- **Immersion depth**

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**Type of enclosure**

The drive motors are designed to conform to IP 54 as per DIN EN 60 034-5 / 4.88.

**Terminal box**

- **Standard version**: plastic
- **Special version**: light metal

The terminal box of the standard model is located opposite the discharge port, position 1, DIN 5440. The position of the entry can be adjusted to the existing connection layout by turning the terminal box.

The terminal boxes have threads conforming to DIN 40 430/2.71 on the cable entries to accommodate screwed glands for cables and leads as per DIN 46 320-1/9.85.

The cable entries are closed with a dummy plug at the factory prior to delivery.

For reasons of safety, use only plastic compression glands on plastic terminal boxes.

**Noise emissions**

The noise emitted by our pumps is determined with measurements of the total sound pressure level using weighting curve A of a sound level meter as per DIN EN 60 034-9/5.96 and is expressed in dB(A).

**Paint**

The drive motors are painted dull black (RAL 9005). Special coats of paint for severe climatic conditions or for installation in ambient air containing aggressive chemicals are available at extra charge.

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Please note:
Variable-speed pumps with freely selectable microelectronic control of the drive motors are available for special applications.
Models PRT/PRA..H, single-stage, **with** impeller change

Parameters  
50 Hz or 60 Hz depending on mains frequency

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Data are for liquids with a viscosity of 1 mm²/s at a density of 1 kg/dm³.

○ Q max. in single-phase operation

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<table>
<thead>
<tr>
<th>Type</th>
<th>Rated power</th>
<th>Rated voltage</th>
<th>Rated frequency</th>
<th>Rated current Δ/Y</th>
<th>Rated speed</th>
<th>Noise level</th>
<th>Type</th>
<th>Rated power</th>
<th>Rated voltage</th>
<th>Rated frequency</th>
<th>Rated current</th>
<th>Rated speed</th>
<th>Single-phase operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRT 5H 1-stage</td>
<td>0.12</td>
<td>230/400</td>
<td>50</td>
<td>0.71 / 0.41</td>
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<td>42</td>
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<td>'1'</td>
<td>'1'</td>
<td>'1'</td>
<td>'1'</td>
<td>'1'</td>
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<tr>
<td></td>
<td>0.12</td>
<td>255/440</td>
<td>60</td>
<td>0.65 / 0.38</td>
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<td>'1'</td>
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<td>230/400</td>
<td>50</td>
<td>0.86 / 0.50</td>
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<td>255/440</td>
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<td>230/400</td>
<td>50</td>
<td>0.86 / 0.50</td>
<td>2812</td>
<td>44</td>
<td>PRTE 7H 1-stage</td>
<td>0.18</td>
<td>230</td>
<td>50</td>
<td>1.36</td>
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<td>0.25</td>
<td>255/440</td>
<td>60</td>
<td>0.99 / 0.57</td>
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<td>0.99 / 0.57</td>
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') on request
Models PRT/PRA..H, 2–6-stage, with impeller change

Parameters

50 Hz or 60 Hz depending on mains frequency

Data are for liquids with a viscosity of 1 mm²/s at a density of 1 kg/dm³.

○ Q max. in single-phase operation

### Electrical data

<table>
<thead>
<tr>
<th>Type</th>
<th>Rated power</th>
<th>Rated voltage</th>
<th>Rated frequency</th>
<th>Rated current</th>
<th>Rated speed</th>
<th>Noise level</th>
<th>Type</th>
<th>Rated power</th>
<th>Rated voltage</th>
<th>Rated frequency</th>
<th>Rated current I</th>
<th>Rated speed</th>
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<td>1.80</td>
<td>2700</td>
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<td>255/440</td>
<td>60</td>
<td>1.49 / 0.86</td>
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<td>1.73 / 1.00</td>
<td>2667</td>
<td>48</td>
<td>PRTE 17H 3-stage</td>
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<td>230</td>
<td>50</td>
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</tbody>
</table>

*) on request
Models PRT/PRA..K, 2–6-stage, **without** impeller change for 50 Hz and 60 Hz

Data are for liquids with a viscosity of 1 mm²/s at a density of 1 kg/dm³.

Q max. in single-phase operation

<table>
<thead>
<tr>
<th>Type</th>
<th>Rated power kW</th>
<th>Rated voltage V</th>
<th>Rated frequency Hz</th>
<th>Rated current Δ/V A</th>
<th>Rated speed rpm</th>
<th>Noise level dB (A)</th>
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<tbody>
<tr>
<td>PRT 12K PRA 2-stage</td>
<td>0.37</td>
<td>230/400</td>
<td>50</td>
<td>1.73 / 1.00</td>
<td>2667</td>
<td>48</td>
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<tr>
<td>PRT 17K PRA 3-stage</td>
<td>0.37</td>
<td>230/400</td>
<td>50</td>
<td>1.73 / 1.00</td>
<td>2667</td>
<td>48</td>
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<td>PRT 22K PRA 4-stage</td>
<td>0.75</td>
<td>230/400</td>
<td>50</td>
<td>2.72 / 1.57</td>
<td>2753</td>
<td>54</td>
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<tr>
<td>PRT 27K PRA 5-stage</td>
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<td>60</td>
<td>3.72 / 2.15</td>
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<table>
<thead>
<tr>
<th>Type</th>
<th>Rated power kW</th>
<th>Rated voltage V</th>
<th>Rated frequency Hz</th>
<th>Rated current Δ/V A</th>
<th>Rated speed rpm</th>
<th>Noise level dB (A)</th>
</tr>
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<tbody>
<tr>
<td>PRTE 12K PRAE 2-stage</td>
<td>0.35</td>
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<td>50</td>
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<td>50</td>
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<td>60</td>
<td>3.72 / 2.15</td>
<td>3323</td>
<td>54</td>
</tr>
</tbody>
</table>

*) on request
Our product range is based on over 85 years of experience in the manufacture of pumps. All our products are of the highest quality, are cost effective, and extremely reliable.

In addition to our standard range, we offer special pumps for specific applications. Let us know your requirements, and we will quote you for the type of pump and material best suited to your needs.

Some applications for Gusher Pumps:

- CNC-, NC-machine tools
- Coolant supply, coolant treatment
- Oil treatment
- Degreasing systems
- Washing plants
- Filtration systems
- Refrigeration systems
- Temperature control units
- Eroding systems
- Paraffin systems
- Filling systems
- Galvanic equipment
- Chemical equipment
- Photographic equipment
- Surface coating
- Sewage treatment
- Industrial furnace construction
- Engine test stands
- Laboratory equipment
- Graphic machines
- Printing machines
- Dental equipment
- Air conditioning systems
- Liquefied gas systems
- Booster pump systems
- Recycling systems
- Overhead spraying systems
- Laser installations
- Boiler feed water systems

Performance data given is based on a density of 1 kg/dm³ and a viscosity of 1 mm²/s (except in the case of the PVS High Pressure Pump, which is based on a viscosity of 20 mm²/s).
Gusher Pumps
Self Priming Coolant Pump

We offer a comprehensive range of coolant pumps; low cost, high performance, more reliable.
Models PRT/PRA..K, single-stage, without impeller change for Parameters 50 Hz and 60 Hz

Data are for liquids with a viscosity of 1 mm/s at a density of 1 kg/dm

○ Q max. in single-phase operation

<table>
<thead>
<tr>
<th>Type</th>
<th>Rated power</th>
<th>Rated voltage</th>
<th>Rated frequency</th>
<th>Rated current ( \frac{\Delta}{\Delta Y} ) A</th>
<th>Rated speed</th>
<th>Noise level dB (A)</th>
<th>Type</th>
<th>Rated power</th>
<th>Rated voltage</th>
<th>Rated frequency</th>
<th>Rated current</th>
<th>Rated speed</th>
<th>BC</th>
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<td>0.71 / 0.41</td>
<td>2886</td>
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<td>PRTE 5K 1-stage</td>
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<td>230</td>
<td>50</td>
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<td>0.65 / 0.38</td>
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<td>230</td>
<td>50</td>
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<td>2886</td>
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<td>0.78 / 0.45</td>
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<tr>
<td>PRT 7K 1-stage</td>
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<td>50</td>
<td>0.86 / 0.50</td>
<td>2812</td>
<td>44</td>
<td>PRTE 7K 1-stage</td>
<td>0.18</td>
<td>230</td>
<td>50</td>
<td>1.36</td>
<td>2840</td>
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</tr>
<tr>
<td></td>
<td>0.25</td>
<td>255/440</td>
<td>60</td>
<td>0.99 / 0.57</td>
<td>3350</td>
<td>44</td>
<td>PRTE 8K 1-stage</td>
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<td>230</td>
<td>50</td>
<td>1.36</td>
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<td>PRT 8K 1-stage</td>
<td>0.18</td>
<td>230/400</td>
<td>50</td>
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<td>45</td>
<td>PRTE 8K 1-stage</td>
<td>0.18</td>
<td>230</td>
<td>50</td>
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<td>2840</td>
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<td>60</td>
<td>0.99 / 0.57</td>
<td>3350</td>
<td>45</td>
<td>PRTE 8K 1-stage</td>
<td>0.18</td>
<td>230</td>
<td>50</td>
<td>1.36</td>
<td>2840</td>
<td>6</td>
</tr>
</tbody>
</table>

\( \) on request
The fan-cooled motors on standard models have no protective covers. If such a cover is required by law or safety regulations it can be supplied at additional cost. Dimension "C" is then increased by approx. 25 mm.

Please note:
All equipment may only be installed and/or mounted by qualified personnel. Care is to be taken that safety regulations as valid are observed.

*) For models conforming to CSA and US requirements or for models with free ends of thermistor-type protection system in terminal box: +20 mm.
Applications:
For medium temperatures from -100 °C to +150 °C.
Plants, machines and equipment used, for example, to pump, move and transport the following liquids e.g.:
- Cooling brine, Freon 12, 22
- Thermal oils
- Deionized water
- Varying concentrations of acids
- Chemicals, especially solvents
- Cleansers
- Mineral acids and lyes at high temperature
- Fuels
- Liquid foodstuffs

General Technical Information
The new HCT model of single- and multi-stage sealless electric immersion pumps with mounting dimensions to DIN 5440 is an alternative to stainless steel pumps.
The standard model has no seals.
Special models for special duty requirements are available at extra cost.
- The pump components are made of LCP, a thermotropic liquid-crystalline polymer with high thermal stability that is processed while molten.
This non-metallic material is resistant to gamma rays. It is impervious to gases and water vapor and is highly resistant to hydrolysis.
- The respective impeller clearances in the pump chamber are 2 mm.
- The HCT pump with optimized volumetric output is intended for 50 Hz operation. Model HCT..H can be used for 60 Hz operation if the impeller is changed.
Model HCT..K can be used for both 50 and 60 Hz operation without changing the impeller.
- These pumps can be used to deliver not only clean fluids but also contaminated and viscous ones.
The pumps can be operated against dead head.

Mechanical Design
Design features
- Pump components of LCP
- Pump shaft of stainless steel, 1.4571, special materials on request
- Special permanently lubricated ball bearings
- Special seals to meet special duty requirements.

Electrical Design
The drive motors bear the CE sign and conform to the relevant VDE regulations, German and European standards as well as their associated requirements.
Versions conforming to U.S. standards or complying with special requirements are available on request.
All the motors have fail-safe windings in compliance with insulation class "F", the units being operated in accordance with insulation class "B". They can be operated at ambient temperatures up to +40°C and relative humidities up to 92% (normal tropical climate - constant climate 23/83 and 40/92 as per DIN 50015).
Additional protection is recommended when, for example, very high relative humidities are encountered or when the ambient air contains aggressive dust and crystal particles.
The windings are designed for connection to a large number of main voltages.
The standard models have windings intended for connection to 230V/460V, 60 Hz, 50 Hz voltage in compliance with DIN IEC 38/5.87 for rated operation (S1). The motors can, of course, be manufactured to run on all customary main power.

Chart specifies a motor circuit-breaker with the following tripping characteristics.

Type of enclosure
The drive motors are designed to conform to IP 54 as per DIN EN 60034-5 / 4.88.
Terminal box

Standard version: plastic
Special version: light metal

The terminal box of the standard model is located opposite the discharge port, position 1, DIN 5440. The position of the cable entry can be adjusted to the existing connection layout by turning the terminal box.

The terminal boxes have threads conforming to DIN 40.430/2.71 on the cable entries to accommodate screwed glands for cables and leads as per DIN 46 320-1/9.85.

The cable entries are closed with a dummy plug at the factory prior to delivery.

For reasons of safety, use only plastic compression glands on plastic terminal boxes.

Noise emissions

The noise emitted by our pumps is determined with measurements of the total sound pressure level using weighting curve A of a sound level meter as per DIN EN 60 034-9/5.96 and is expressed in dB(A).

Paint

The motors are provided with a coat of two-component paint, RAL 1013. Special paint for severe climatic conditions or for operation in chemically aggressive ambient air is available at extra cost.

The pump components are beige.

Order example

HCT 17 H - 220
HCT 27 K - 270

Model
Size
H = 50 Hz
60 Hz (with impeller change)
K = 50/60 Hz
(without impeller change)
Immersion depth t

The following must be indicated as well:
- installed loads
- desired operating temperature
(The maximum permissible temperature decreases with the number of pump stages.)

Installation and Assembly

The pump is installed vertically so that the highest level of fluid is at least 20 mm beneath the pump flange when the pump is off and all the fluid has returned to the reservoir. The delivery line should have the same diameter as the threaded port of the pump to keep tube resistance low at full delivery.

Please note:
Variable-speed pumps with freely selectable microelectronic control of the drive motors are available for special applications.
Model HCT..H, 1–6-stage, with impeller change
Parameters 50 Hz or 60 Hz depending on mains frequency

![Graph showing flow rate (Q) vs. head (H) for different models of pumps]

Data are for liquids with a viscosity of 1 mm²/s at a density of 1 kg/dm³
○ Q max. in single-phase operation

<table>
<thead>
<tr>
<th>Type</th>
<th>Rated power kW</th>
<th>Rated voltage V</th>
<th>Rated frequency Hz</th>
<th>Rated current Δ / Y A</th>
<th>Rated speed rpm</th>
<th>Noise level dB (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCT 8H 1-stage</td>
<td>0.25</td>
<td>230/400</td>
<td>50</td>
<td>1.11 / 0.64</td>
<td>2701</td>
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<tr>
<td>HCT 12H 2-stage</td>
<td>0.37</td>
<td>230/400</td>
<td>50</td>
<td>1.73 / 1.00</td>
<td>2667</td>
<td>48</td>
</tr>
<tr>
<td>HCT 17H 3-stage</td>
<td>0.37</td>
<td>230/400</td>
<td>50</td>
<td>1.73 / 1.00</td>
<td>2667</td>
<td>48</td>
</tr>
<tr>
<td>HCT 22H 4-stage</td>
<td>0.75</td>
<td>230/400</td>
<td>50</td>
<td>2.72 / 1.57</td>
<td>2753</td>
<td>54</td>
</tr>
<tr>
<td>HCT 27H 5-stage</td>
<td>0.75</td>
<td>230/400</td>
<td>50</td>
<td>3.46 / 2.00</td>
<td>2846</td>
<td>54</td>
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<tr>
<td>HCT 32H 6-stage</td>
<td>1.10</td>
<td>255/440</td>
<td>60</td>
<td>3.72 / 2.15</td>
<td>3323</td>
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<table>
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<tr>
<th>Type</th>
<th>Rated power kW</th>
<th>Rated voltage V</th>
<th>Rated frequency Hz</th>
<th>Rated current Δ</th>
<th>Rated speed rpm</th>
<th>BC</th>
<th>μF</th>
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<tbody>
<tr>
<td>HCTE 8H 1-stage</td>
<td>0.18</td>
<td>230</td>
<td>50</td>
<td>1.36</td>
<td>2840</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>HCTE 12H 2-stage</td>
<td>0.35</td>
<td>230</td>
<td>50</td>
<td>1.80</td>
<td>2700</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>HCTE 17H 3-stage</td>
<td>0.35</td>
<td>230</td>
<td>50</td>
<td>2.00</td>
<td>3220</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>HCTE 22H 4-stage</td>
<td>0.55</td>
<td>230</td>
<td>50</td>
<td>3.45</td>
<td>2855</td>
<td>12</td>
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<tr>
<td>HCTE 27H 5-stage</td>
<td>0.75</td>
<td>250</td>
<td>60</td>
<td>3.97</td>
<td>3380</td>
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<td>HCTE 32H 6-stage</td>
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<td>60</td>
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<td>3323</td>
<td>54</td>
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</tbody>
</table>

') on request
Model HCT..K, 1–6-stage, without impeller change for
Parameters

50 Hz and 60 Hz

Data are for liquids with a viscosity of 1 mm²/s at a density of 1 kg/dm³.
O Q max. in single-phase operation

<table>
<thead>
<tr>
<th>Type</th>
<th>Rated power kW</th>
<th>Rated voltage V</th>
<th>Rated frequency Hz</th>
<th>Rated current A</th>
<th>Rated speed rpm</th>
<th>Noise level dB (A)</th>
</tr>
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<tbody>
<tr>
<td>HCT 8K 1-stage</td>
<td>0.18</td>
<td>230/400</td>
<td>50</td>
<td>0.86 / 0.50</td>
<td>2812</td>
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<tr>
<td></td>
<td>0.25</td>
<td>255/440</td>
<td>60</td>
<td>0.99 / 0.57</td>
<td>3350</td>
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<tr>
<td>HCT 12K 2-stage</td>
<td>0.37</td>
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<td>1.73 / 1.00</td>
<td>2667</td>
<td>48</td>
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<td></td>
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<td>60</td>
<td>1.49 / 0.86</td>
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<td>HCT 17K 3-stage</td>
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<th>Type</th>
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<tr>
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<td></td>
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<td>2.37</td>
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<td>54</td>
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</tbody>
</table>

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The fan-cooled motors on standard models have no protective covers. If such a cover is required by law or safety regulations, it can be supplied at additional cost. Dimension "c" is then increased by approx. 25 mm.

Please note:
All equipment may only be installed and/or mounted by qualified personnel. Care is to be taken that safety regulations as valid are observed.

Design, dimensions and weight subject to change.