



Product data sheet

HAVSP4T0022P

Characteristics

Variable speed drive, SMART Pump, 2.2 kW, 380-480V, 3 phase, normal duty



Main

|                                    |                                                                                                  |
|------------------------------------|--------------------------------------------------------------------------------------------------|
| Range of product                   | SMART-Pump                                                                                       |
| Product or component type          | Variable speed drive                                                                             |
| Product specific application       | Pump<br>Fan<br>Chiller                                                                           |
| Network number of phases           | 3 phases                                                                                         |
| [Us] rated supply voltage          | 380...480 V - 15...10 %                                                                          |
| Supply frequency                   | 50...60 Hz                                                                                       |
| Motor power kW                     | 2.2 kW for normal duty                                                                           |
| Motor power hp                     | 3 hp for normal duty                                                                             |
| Maximum transient current          | 6 A during 1 min (normal duty)<br>7.5 A during 1 s (normal duty)<br>9 A during 0 s (normal duty) |
| Asynchronous motor control profile | Sensorless vector control (SVC)<br>Voltage/frequency ratio (V/f)                                 |
| Speed drive output frequency       | 0...599 Hz                                                                                       |
| Continuous output current          | 5 A                                                                                              |
| EMC filter                         | Without EMC filter                                                                               |

Complementary

|                                     |                                                                                                                                                                                                                                                                    |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product destination                 | Asynchronous motors                                                                                                                                                                                                                                                |
| Function available                  | Multi-pump control<br>Dry run protection<br>Energy/flow calculator<br>Frost and condensation protection<br>Pump cleaning<br>Fire override mode<br>Energy saving mode                                                                                               |
| Type of cooling                     | Fan                                                                                                                                                                                                                                                                |
| Communication port protocol         | Modbus                                                                                                                                                                                                                                                             |
| Regulation loop                     | Adjustible PID regulator with sleep mode                                                                                                                                                                                                                           |
| Acceleration and deceleration ramps | Linear adjustable separately from 0.01 to 3600 s                                                                                                                                                                                                                   |
| Frequency resolution                | Digital input: 0.005/50 Hz<br>Analog input: 0.05/50 Hz                                                                                                                                                                                                             |
| Analogue input number               | 2                                                                                                                                                                                                                                                                  |
| Analogue input type                 | AI1 voltage: 0...10 V, impedance: 100 kOhm, resolution 0.01 V<br>AI1 current: 0...20 mA, impedance: 500 Ohm, resolution 0.02 mA<br>AI2 voltage: 0...10 V, impedance: 100 kOhm, resolution 0.01 V<br>AI2 current: 0...20 mA, impedance: 500 Ohm, resolution 0.02 mA |
| Discrete input number               | 5                                                                                                                                                                                                                                                                  |
| Discrete input type                 | Programmable (DI1...DI5)<br>Programmable as pulse input (DI5)                                                                                                                                                                                                      |
| Analogue output number              | 2                                                                                                                                                                                                                                                                  |

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|                        |                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Analogue output type   | AO1 voltage/current: 0...20 mA or 0...10 V<br>AO2 voltage/current: 0...20 mA or 0...10 V                                                                                                                                                                                                                                                                                |
| Discrete output number | 3                                                                                                                                                                                                                                                                                                                                                                       |
| Discrete output type   | configurable relay logic 250 V (5 A) for NO relay output circuit<br>configurable relay logic 250 V (3 A) for NC relay output circuit<br>configurable relay logic 24 V DC (3 A) for NO relay output circuit<br>configurable relay logic 24 V DC (3 A) for NC relay output circuit<br>open collector 9...30 V (50 mA)<br>open collector 9...30 V (50 mA) for pulse output |
| Output frequency       | 50 kHz for pulse output at DO2                                                                                                                                                                                                                                                                                                                                          |
| Display type           | 5 digits 7 segments for 38 parameters                                                                                                                                                                                                                                                                                                                                   |
| Device application     | Speed control                                                                                                                                                                                                                                                                                                                                                           |
| Device composition     | Built-in breaking unit                                                                                                                                                                                                                                                                                                                                                  |
| Type of installation   | Indoor/outdoor                                                                                                                                                                                                                                                                                                                                                          |
| Control type           | Manual using keypad<br>Using control terminal<br>Using serial port                                                                                                                                                                                                                                                                                                      |
| Device mounting        | Wall mounted<br>Enclosure<br>Flange                                                                                                                                                                                                                                                                                                                                     |
| Speed accuracy         | +/- 0.1 % of nominal speed                                                                                                                                                                                                                                                                                                                                              |
| Protection type        | Hammer effect<br>Overcurrent<br>Overvoltage<br>Undervoltage<br>Overheating<br>Overload<br>Short-circuit                                                                                                                                                                                                                                                                 |
| Width                  | 120 mm                                                                                                                                                                                                                                                                                                                                                                  |
| Height                 | 215 mm                                                                                                                                                                                                                                                                                                                                                                  |
| Depth                  | 163 mm                                                                                                                                                                                                                                                                                                                                                                  |

Environment

|                                       |                                                                  |
|---------------------------------------|------------------------------------------------------------------|
| Relative humidity                     | 0...95 % without condensation                                    |
| Ambient air temperature for storage   | -20...60 °C                                                      |
| Quality labels                        | CE                                                               |
| Operating altitude                    | = 1000 m                                                         |
| IP degree of protection               | IP20                                                             |
| Ambient air temperature for operation | -10...40 °C                                                      |
| Environmental characteristic          | Dust resistant<br>Corrosive gas free<br>Oil and vapour resistant |
| Vibration resistance                  | 5.9 m/s²                                                         |

Packing Units

|                              |        |
|------------------------------|--------|
| Unit Type of Package 1       | PCE    |
| Number of Units in Package 1 | 1      |
| Package 1 Height             | 215 mm |
| Package 1 Width              | 120 mm |
| Package 1 Length             | 163 mm |
| Package 1 Weight             | 2.3 kg |