



Himel Variable Speed Drives

SMART Pump





About Himel

Himel is a multinational manufacturer and provider of electrical products successfully combining global expertise with local knowledge.

Founded by a Spanish entrepreneur in 1958, the company pioneered in exporting quality electrical enclosures, establishing Himel brand globally.

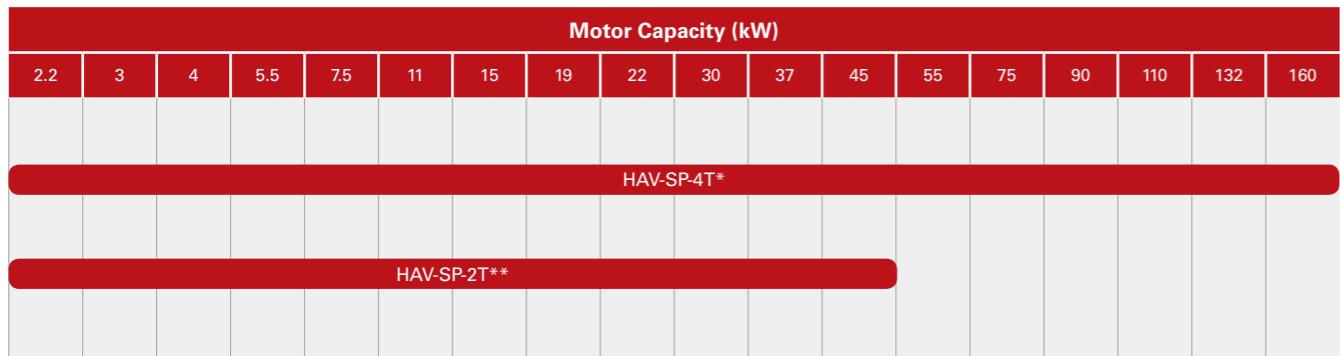
Today, our global footprint and technology enable us to provide the best combination of affordable and reliable offers for Low Voltage Power distribution, Industry Automation and Home Electric to our long-term customers and partners in over 50 countries where we are present.

Himel. Reliable made affordable



SMART Pump (SP)

SMART Pump (SP) drives are full-featured dedicated drives for parabolic load applications like pumps, fans, and chillers. SP drives have a wide range of integrated features like multi-pump control, dry run protection, sensor-less flow and energy calculation, pump cleaning, fire override mode, frost, condensation and hammer effect protections to meet the needs of pump, fans and chillers for modern buildings.



*4T: 380V 3 phase

**2T: 220V 3 phase

Improved Energy Savings

With many integrated control modes like ECO-mode, V²/F, and PID with sleep mode.

High Robustness

- Stable operation in difficult environments
- Built-in category C3 EMC filter ($\geq 11\text{kW}$)

Special program functions

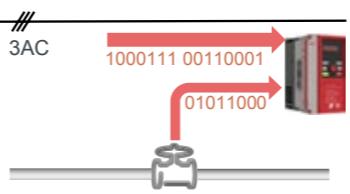
- Multi-pump control
- Energy meter
- Flow calculation
- Pump cleaning
- Fire Override mode
- Dual Ramp



Pump-specific protections

- Dry run detection
- Frost and condensation protection
- Hammer effect protection
- Undervoltage, overvoltage, overcurrent, overload protection
- Phase-loss protection
- Short-circuit protection

Reliable made affordable

Features	Your benefits
Improved energy savings	<ul style="list-style-type: none"> ◆ Integrated Eco-mode for V/f and V²/f automatically adapts the motor magnetic flux to save energy ◆ Improved special PID control with sleep mode helps to save more energy for pump application 
High Robustness	<ul style="list-style-type: none"> ◆ Stable operation under main input voltage fluctuations. Reliable operation with net tensions between 380V and 480V (-15%/+10 %) ◆ Equipped with built-in category C3 standard EMC filter ($\geq 11\text{kW}$) 
Special pump functions	<ul style="list-style-type: none"> ◆ Multi-pump control ◆ Built-in energy and flow meter ◆ Pump cleaning ◆ Fire Override mode ◆ Dual Ramp 
Pump-specific protections	<ul style="list-style-type: none"> ◆ Dry run detection ◆ Frost and condensation protection ◆ Hammer effect protection ◆ Overvoltage, overcurrent, overload protection ◆ Phase-loss protection ◆ Short-circuit protection 

Target Applications



■ Irrigation



■ Sewage



■ Fountain



■ Sand pump



■ Circulating pump



■ Rod pump



■ Drying



■ Ventilation



■ Dust removal



■ Centrifugal chillers



■ Reciprocating chillers



■ Scroll chillers



Specifications

Range Name		SMART Pump
Design		
Capacity range	Three phase 200V Class	AC: 200V(-15%)-240V(+10%) 2.2~45kW
	Three phase 400V Class	AC:380V(-15%)-440V(+10%) 2.2~160kW
Frequency		50/60Hz 0-599Hz
Overload capacity		120% for 1min
Control method	V/f	✓
	Sensorless vector control	✓
	Eco mode control	✓
Start torque		0.5Hz, 120%
Built-in PID		✓
Keypad		Pluggable
Display		LED/LCD
Multispeed control		16 stages in one cycle
I/O	DI1-DI4	NPN/PNP, Input: 9-30VDC
	DI5	NPN/PNP, Input: 15-30VDC
	DO1	Pulse input: max. 50kHz 9-30VDC, max. 50mA
	DO2	9-30VDC, max.50mA Pulse output max.50kHz
	AI1	V: 0-10V I:0-20mA
	AI2	Resolution:1/1000
	AO1	V: 0-10V I:0-20mA
	AO2	Resolution:1/1000
	RO(Ta,Tb,Tc)	NO: 24VDC 3A/ 250VAC 5A NC: 24VDC 3A/ 250VAC 3A RS485,Modbus RTU (38.4kbps)
Built-in communication (Max. speed)		DI/DO/RO
Options	Extension I/O	Support, cable length:2m, 5m
	Extension Keypad	Multi-pump control Dry run protection Energy/ flow calculator Frost and condensation protection Pump cleaning Fire override mode Eco-mode/PID with sleep mode/Special pump protections
Functionality		Wall mounted, cabinet, flange installation
Installation Way		✓
Dust Shields		—
EMC Filter	C2	Built-in EMC filter (>=11kW)
	C3	Built-in (<=22kW)
Braking unit		-10-40 °C no capacity reduction, 40 °C -50 °C capacity reduction
Environment	Operation temperature	<95%RH
	Humidity	<1000m, no capacity reduction
	Altitude	IP20
	IP level	CE
Global certificates		

Specifications

Range Name		SMART Pump	
Design			
Velocity ratio		1:100	
Frequency precision		Digital setting: Max frequency X ±0.01% Analog setting: Max frequency X ±0.2%	
Frequency resolution		Digital setting: Max frequency X ±0.01% Analog setting: Max frequency X ±0.1%	
Torque rise		Integrated auto-torque raising function; with manual- setting: 0.1%~30.0%	
V/F control curve definition		Linear, Square, V ^{1/2} /F, V ^{1/3} /F	
Acceleration/Deceleration Time		4 types of ACC/DEC time selection; optional time unit selection(Min/s); setting range: 0~60hours;	
DC braking		Start frequency: 0.00~60.00Hz; braking time: 0.0~30.0S; braking current: 0.0~100%	
Automatic voltage regulation(AVR)		√	
Auto current limitation		√	
Auto PMW adjustment		√	
Special pump protection		Voltage limit, dry run, pump load monitor, frost and condensation protections	
VSD protection function		Over-current, over-voltage, under-voltage, over-heat, over-load, short circuit.	
Cooling		Air- cooling	
Warranty		24 months	

Reference Selection

Range Name	Series Name	Input	Adaptation	Drive
HAV	SP	4T	0110	P
HA: Himel Automation	S:SMART	2: 220V 4: 380V – 440V	0022: 2.2kW 0075: 7.5kW 0110: 11kW 0185: 18.5kW 1100: 110kW	P: Normal-duty
V: VSD M: Motion H: HMI P: PLC	P: Pump	T:Three-phase		

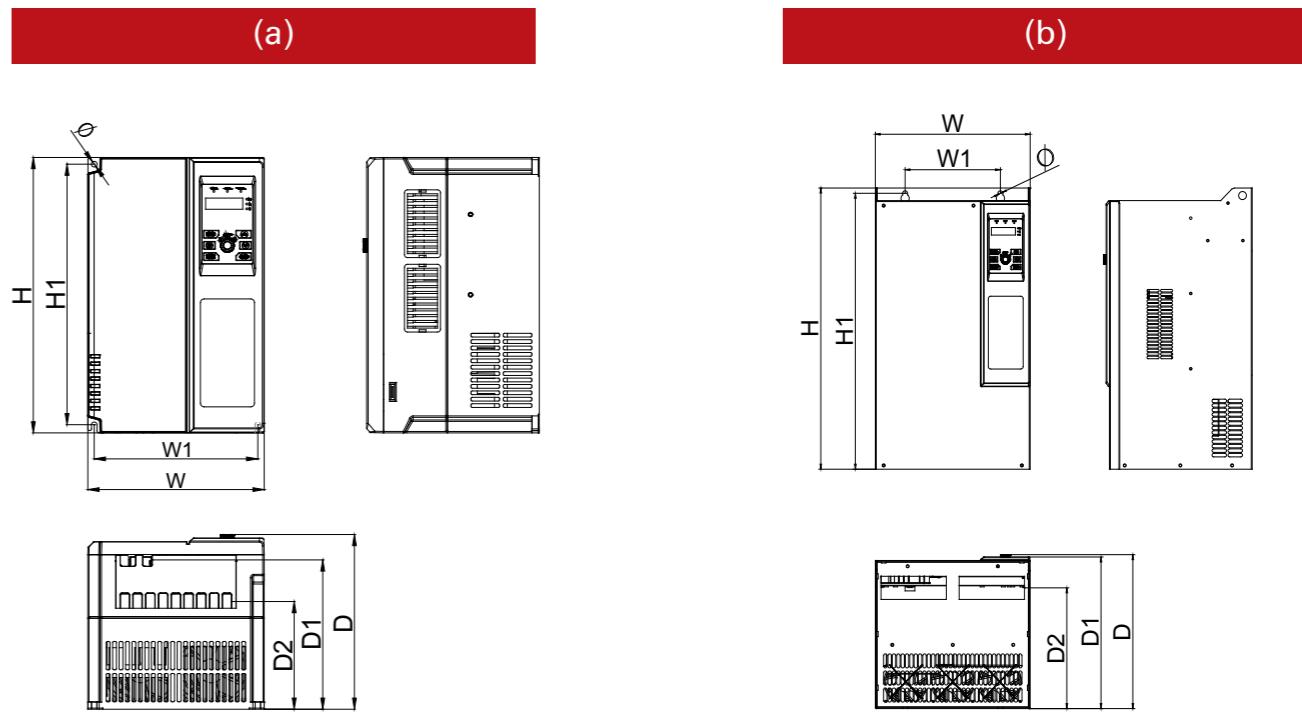
References

Input Voltage	Commercial Reference	Selection			Overload Output Current	
		Motor Power (kW)	Motor Power (HP)	Continuous Output Current (A)	A	%
AC: 200 - 240V Three Phase	HAVSP2T0022P	2.2	3	10.08	12.1	120%
	HAVSP2T0030P	3	4	11.5	13.8	120%
	HAVSP2T0040P	4	5	16.2	19.4	120%
	HAVSP2T0055P	5.5	7.5	20.3	24.4	120%
	HAVSP2T0075P	7.5	10	26.7	32	120%
	HAVSP2T0110P	11	15	39	46.8	120%
	HAVSP2T0150P	15	20	52.5	63	120%
	HAVSP2T0185P	18.5	25	62.4	74.9	120%
	HAVSP2T0220P	22	30	73.6	88.3	120%
	HAVSP2T0300P	30	40	98.7	118.4	120%
	HAVSP2T0370P	37	50	121	145.2	120%
	HAVSP2T0450P	45	60	147	176.4	120%
	HAVSP4T0022P	2.2	3	5	6	120%
	HAVSP4T0030P	3	4	7.5	9	120%
	HAVSP4T0040P	4	5	8.8	10.6	120%
AC: 380 - 440V Three Phase	HAVSP4T0055P	5.5	7.5	13	15.6	120%
	HAVSP4T0075P	7.5	10	17	20.4	120%
	HAVSP4T0110P	11	15	25	30	120%
	HAVSP4T0150P	15	20	32	38.4	120%
	HAVSP4T0185P	18.5	25	37	44.4	120%
	HAVSP4T0220P	22	30	45	54	120%
	HAVSP4T0300P	30	40	60	72	120%
	HAVSP4T0370P	37	50	75	90	120%
	HAVSP4T0450P	45	60	90	108	120%
	HAVSP4T0550P	55	75	110	132	120%
	HAVSP4T0750P	75	100	157	188.4	120%
	HAVSP4T0900P	90	125	180	216	120%
	HAVSP4T1100P	110	150	214	256.8	120%
	HAVSP4T1320P	132	175	256	307.2	120%
	HAVSP4T1600P	160	200	307	368.4	120%

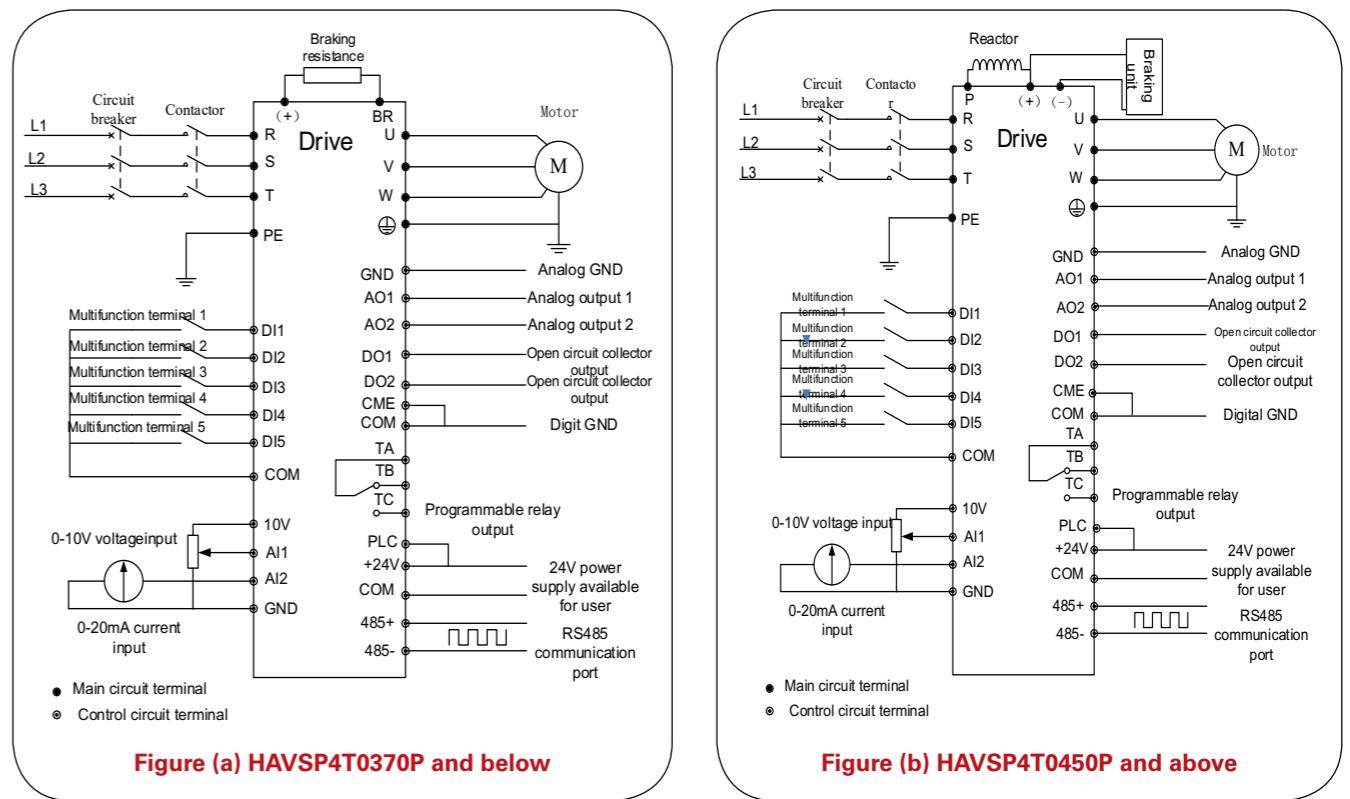
Dimensions

Input Voltage	Commercial Reference	Dimensions(mm)			Mounting Dimensions (mm)				Mounting Hole Diameter (mm)	CAD Diagram
		W	H	D	W1	H1	D1	D2		
AC: 200-240V Three Phase	HAVSP2T0022P	120	215	163	109	204	133	85	5.5	(a)
	HAVSP2T0030P	120	215	163	109	204	133	85	5.5	
	HAVSP2T0040P	120	215	163	109	204	133	85	5.5	
	HAVSP2T0055P	150	259	181	138	248	150	104	5.5	
	HAVSP2T0075P	150	259	181	138	248	150	104	5.5	
	HAVSP2T0110P	205	322	215	188	305	176	130	6.5	
	HAVSP2T0150P	235	370	235	218	350	200	146	7	
	HAVSP2T0185P	235	370	235	218	350	200	146	7	
	HAVSP2T0220P	305	490	275	200	470	270	211	10	
	HAVSP2T0300P	305	490	275	200	470	270	211	10	
	HAVSP2T0370P	320	560	307	197	543	302	240	10	
	HAVSP2T0450P	320	560	307	197	543	302	240	10	
	HAVSP4T0022P	120	215	163	109	204	133	85	5.5	(b)
	HAVSP4T0030P	120	215	163	109	204	133	85	5.5	
	HAVSP4T0040P	120	215	163	109	204	133	85	5.5	
	HAVSP4T0055P	120	215	163	109	204	133	85	5.5	
	HAVSP4T0075P	120	215	163	109	204	133	85	5.5	
	HAVSP4T0110P	150	259	181	138	248	150	104	5.5	
	HAVSP4T0150P	150	259	181	138	248	150	104	5.5	
	HAVSP4T0185P	205	322	215	188	305	176	130	6.5	
	HAVSP4T0220P	205	322	215	188	305	176	130	6.5	
	HAVSP4T0300P	235	370	235	218	350	200	146	7	
	HAVSP4T0370P	235	370	235	218	350	200	146	7	
	HAVSP4T0450P	305	490	275	200	470	270	211	10	
	HAVSP4T0550P	305	490	275	200	470	270	211	10	
	HAVSP4T0750P	320	560	307	197	543	302	240	10	
	HAVSP4T0900P	320	560	307	197	543	302	240	10	
	HAVSP4T1100P	320	560	307	197	543	302	240	10	
	HAVSP4T1320P	355	678	319	240	659	314	261	11	
	HAVSP4T1600P	355	678	319	240	659	314	261	11	

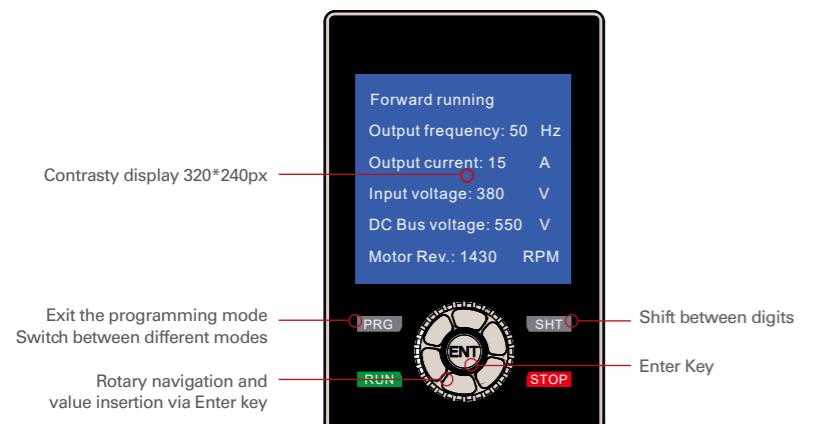
CAD Diagrams



Wiring Diagrams



LCD Keypad



Features	Benefits
Display	<ul style="list-style-type: none"> More visible status information Intuitive operation Short commissioning times User-friendly interface
Rotary navigation	<ul style="list-style-type: none"> Quick navigation and input of values
Quick commissioning	<ul style="list-style-type: none"> Visible parameter names Possible to commission without documentation Easily copy parameters between multiple drives

VSD Accessories

Type	Commercial Reference	Short Description	Applicable Product		
			Applicable Commercial Reference	Specifications	Pictures
IO extension card	HAVXSIO3DIR	IO extension card with 3 Di and 1 relay	HAVSP4T0022P ~ HAVSP4T1600P	4T*: 2.2 - 160kW	A green printed circuit board with various components and connectors.
Keypad bracket	HAVXSJPT	Keypad holder for external keypad	HAVSP4T0022P ~ HAVSP4T1600P	4T*: 2.2 - 160kW	A metal bracket designed to hold an external keypad.
External Keypad	HAVSPLKD**	External keypad	HAVSP4T0022P ~ HAVSP4T1600P	4T*: 2.2 - 160kW	A black keypad with a small display and several buttons.
	HAVSPLCD	LCD keypad	HAVSP4T0022P ~ HAVSP4T1600P	4T*: 2.2 - 160kW	A black keypad with a larger blue LCD screen and buttons.
Keypad cable	HAVXSCAB2	Length 2m	HAVSP4T0022P ~ HAVSP4T1600P	4T*: 2.2 - 160kW	A coiled grey cable.
	HAVXSCAB5	Length 5m	HAVSP4T0022P ~ HAVSP4T1600P	4T*: 2.2 - 160kW	A coiled grey cable.

*4T: 380V 3 Phase

** All VSDs have built-in removable keypad. HAVSPLKD is sold as a spare part.

Global sales, global service



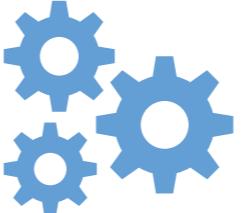
Support and Consulting Services



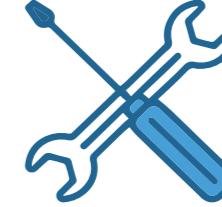
Training Services



Spare Parts Services



Repair Services



Contact Himel team



support@himel.com



Contact local distributor

Company name:

Contact:

Tel:

Email:

Address:



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