

SINUS PENTA

Premium Drives for all applications

Full range of premium drives for AC three-phase induction and synchronous motors

5 different control functions: V/F, Sensorless VTC, FOC, SYN, regenerative.

Available in IP00, IP20, IP54 enclosures.

Complete range of inductors, filters, braking unit and resistors.

Complete range of optional boards: speed sensors, communications, I/O expansion, field bus, dataloggers.



Marine applications
special-purpose
product line available
(page n. 48)



TOP EFFICIENCY DRIVE
CDM IE2 according to
IEC 61800-9-2

SINUS PENTA

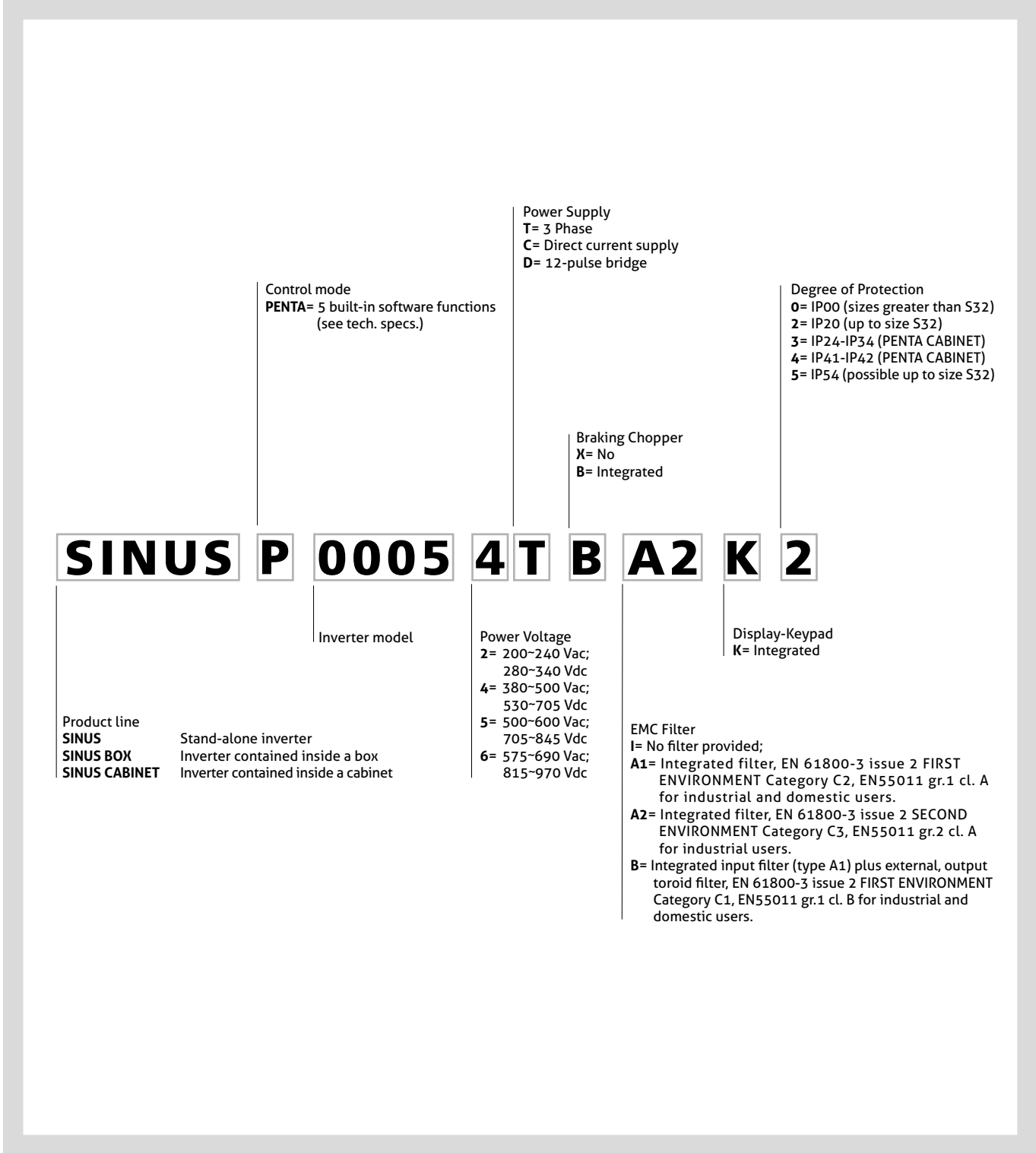


SINUS PENTA



The SINUS PENTA drives have one common part number coding. Refer to this coding to select the specific model and options required for your application. The part number starts with "SINUS P" that identifies the SINUS PENTA family, the following 4 digit number identifies the inverter model. The part number details are given below

PRODUCT SELECTION CHART



NOTE: Not all combinations are possible

OVERLOAD CHOICE

Applications	Overload			
	Light	Standard	Heavy	Strong
Agitator		•		
Atomizer	•			
Axis control			•	•
Ball mill			•	
Bandsaw	•			
Bore pumps			•	
Bottle washer	•			
Calenders		•	•	
Centrifugal damped fan	•			
Centrifugal pumps		•		
Centrifuge		•		
Chipper		•		
Circular saw		•		
Conveyor belt		•	•	
Conveyor roller		•		
Conveyor screw			•	
Crusher cone		•		
Crusher jaw			•	
Crusher rotary		•		
Crusher vertical impact		•		
Damped axial fan	•			
Debarker		•		
Drawplates		•	•	
Drills			•	•
Dryer		•	•	
Dust collector	•			
Hedger		•		
Elevators			•	•
Extruders	•			
Forming machines		•	•	
Grinder	•			
Hammer mill		•		
High pressure fan	•			

Applications	Overload			
	Light	Standard	Heavy	Strong
Hoists and cranes' translation			•	
Hydraulic power pack		•		
Hydraulic power pack injection moulding machines		•		
Industrial washers			•	
Loaded piston compressor			•	
Looms		•	•	
Mechanical presses		•	•	
Mill		•		
Mixer	•			
Palletiser		•	•	
Planers		•		
Positive displacement pumps			•	
Pulper		•		
Roller mill		•		
Rolling plants			•	
Rotary table		•		
Sander		•	•	
Screw compressor, loaded		•		
Screw compressor, unloaded	•			
Screw injection moulding machines		•	•	
Separator	•			
Shears		•	•	
Shredder	•			
Slicer	•			
Slurry pumps		•		
Thumbler	•			
Twister/spinner			•	•
Undamped axial fan	•			
Undamped centrifugal fan	•			
Unloaded piston compressor		•		
Vibrating screen	•			
Winding/Unwinding		•	•	

SINUS PENTA 2T/4T



Drives 1.3 kW to 2100 kW for:

- ***Three-phase asynchronous motor control***
- ***Three-phase synchronous motor control***
- ***Regeneration into the grid***

- Wide power supply voltage range, 200÷500 Vac
- DC power supply range 280÷705 Vdc
- Input frequency 50 - 60 Hz
- Available in cabinet up to 2100 kW
- Enclosure IP00, IP20, IP54
- Full compatibility with the "REMOTE DRIVE" software for remote control

SUPPLY VOLTAGE
2T = 200-240 VAC
4T = 380-500 VAC

3 YEARS
WARRANTY

TECHNICAL HIGHLIGHTS

One product, 5 integrated functions

- **IFD** (Inverter Frequency Drive): vector modulation function for general-purpose applications (V/F pattern).
- **VTC** (Vector Torque Control): fsensorless vector function for high-torque demanding applications.
- **FOC** (Field Oriented Control): vector function with encoder for high torque precision and wide speed range.
- **SYN** (Synchronous): vector function for brushless synchronous motors with permanent magnets, high torque precision joined to high energy efficiency level.
- **RGN** (Regenerative): sinusoidal power factor $\cos \varphi = 1$, AC/DC feeder function for direct supply of a series of drives.
- Extremely compact dimensions: one of the best current density [A/m³] in the market.
- Widest range of STANDARD I/O.
- Most encoder input directly to control board, no option board required for FOC control.
- Open loop speed precision: $\pm 0.5\%$ of max. speed. Closed loop (with an encoder) speed precision: $< 0.01\%$ of max. speed.
- Intelligent cooling system. Through-Hole mounting, segregation of forced air flow channels.
- Integrated braking chopper up to S30 at 100% nominal current.
- Programmable logic blocks.
- Regulation of output frequency from 0 to 1000 Hz (depending on models).
- Lower motor noise with random modulation and carrier frequency up to 16 kHz (depending on models).
- Integrated EMC filters on the full range in compliance with EN61800-3 2nd ed.
- INTEGRATED INPUT FILTERS, EMC EN61800-3, 2nd edition, SECOND ENVIRONMENT Category C3, EN55011 gr.2 cl. A, for residential and industrial environments
- STO (Safe Torque Off) Function in compliance with EN 61800-5-2 SIL 3, EN ISO 13849 PL d.
- Designed according to IEC guidelines 60721-3-3, category 3C2

TECHNICAL FEATURES

SINUS PENTA inverters fit any application thanks to their advanced features, among which: vector modulation; power control with the latest IGBTs; high immunity to radio interference; high overload capability.

- Easy commissioning with preset parameters for the most common applications.
- Operating parameters saved to removable keypad or PC and possibility of parameter transfer to multiple inverters.
- Control panel with 12 keys and large back-lit LCD.
- Automatic calibration for motor parameters tuning.
- Programmable multiple acceleration and deceleration ramps. Programmable S ramps.
- Automatic DC braking.
- Motor PTC thermal probe control. Integrated motor thermal protection.
- In case of power failure, total control of the motor, down to 0 RPM.
- Master-slave function for the operation of several motors connected to the same drive shaft (VTC and FOC).
- 200% max torque.
- PID Function / Second PID Function / 2-zone PID.
- Skip frequency.
- Integrated digital potentiometer. Integrated multifunctional tester.
- Fire Mode function available.
- Trip Log.
- STANDARD I/Os:
 - Encoder feedback
 - 8 programmable inputs and MPL logic
 - 3 programmable analog inputs 0-10 Vdc, 0(4)-20 mA, PTC
 - 4 programmable digital output (2 relays with exchange contact, 1 open-collector, 1 Push-Pull)
 - Auxiliary input frequency 5,000-65,000 Hz, Auxiliary output frequency 5,000-65,000 Hz
 - 3 programmable analog outputs 0-10 Vdc, 0(4)-20 mA.
- Auxiliary output voltage 24 Vdc, 10 Vdc.
- Serial communications RS485 with MODBUS RTU protocol up to 38.400 Baud.

SPECIAL CONFIGURATIONS

- 12 pulse bridge: starting from the S41 size, it is possible to supply the drive on 12-pulse bridge configuration.
- Optional boards for Fieldbus communication, Encoder or Resolver interface, Data loggers, RTC, I/O expansion.
- Custom execution in box or cabinets with input and/or DC and/or output inductors, circuit breakers, AFE sensors and switch.

SINUS PENTA 2T/4T



TECHNICAL DATA

Connected motor power range / voltage range

1.5~260 kW	200÷240 Vac	3phase
2.2~1750 kW	380÷415 Vac	3phase
3.0~2000 kW	440÷460 Vac	3phase
3.7~2100 kW	480÷500 Vac	3phase

Mains Vac supply voltage and frequency

2T	200÷240 Vac, 3phase, -15% +10%	50÷60 Hz
4T	380÷500 Vac, 3phase, -15% +10%	50÷60 Hz

DC supply voltage

2T	280÷340 Vdc
4T	530÷705 Vdc

Overvoltage category

III (refer to EN 61800-5-1)

Degree of protection/size

IP20 from size S05 to size S30,
IP00 from size S41 to size S65,
IP54 from size S05 to size S30

Ambient temperature

- 10°C to 55°C with no derating (or 2%/°C over 40°C, based on the inverter model and the application category)

Storage temperature

-25 ÷ +70°C

Humidity

5 ÷ 95% (non condensing)

Altitude

Standard max. altitude 2000 m a.s.l.
(2000 m ÷ 4000 m, on request)
Above 1000 m, derate 1%/100 m.

Vibrations

Lower than 9.8 m/sec² (= 1.0G)

Operating atmospheric pressure

86 ÷ 106 kPa

Cooling system

Forced air-cooling

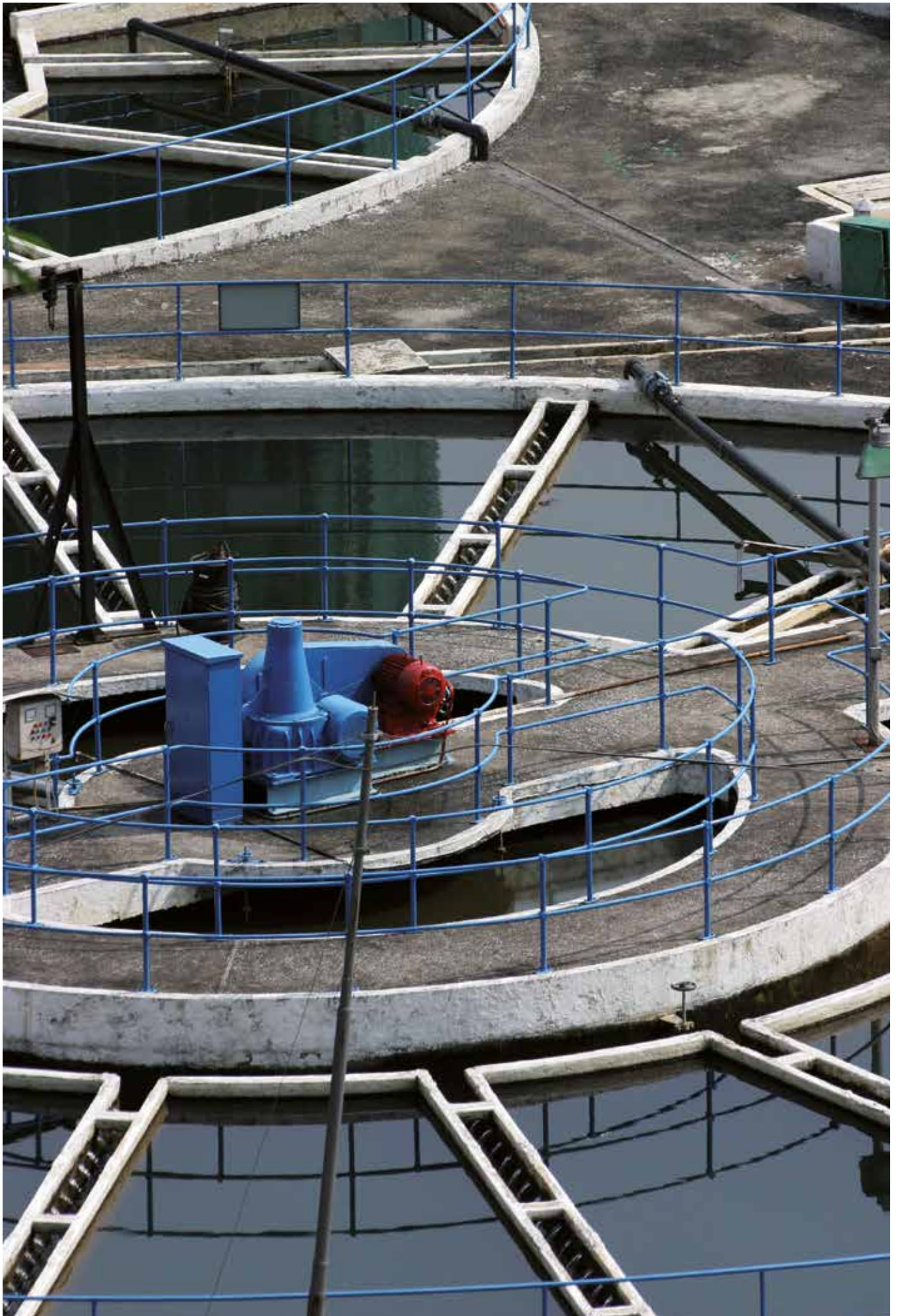
Environmental conditions

Designed according to the guidelines
IEC 60721-3-3, category 3C2



DIMENSIONS AND WEIGHT IP20 - IP00 MODELS

Size	W (mm)	H (mm)	D (mm)	Weight (kg)
S05	170	340	175	7
S12	215	401	225	12,5
S15	225	466	331	22,5
S20	279	610	332	36
S30	302	748	421	51
S41	500	882	409	121
S51	578	882	409	141
S60	890	1310	530	260
S65	980	1400	560	440



SINUS PENTA 2T/4T



LIGHT OVERLOAD UP TO 120% (120s) OR UP TO 144% (3s)

Power supply up to 500 Vac

Sinus Penta Model	2T			4T									Inom.	Imax	Ipeak (3s)
	200-240 Vac			380-415 Vac			440-460 Vac			480-500 Vac					
	kW	CV	A	kW	CV	A	kW	CV	A	kW	CV	A			
Size S05															
SINUS PENTA 0005	-	-	-	4.5	6	9	5.5	7.5	9.7	6.5	9	10.2	10.5	11.5	14
SINUS PENTA 0007	3	4	11.2	5.5	7.5	11.2	7.5	10	12.5	7.5	10	11.8	12.5	13.5	16
SINUS PENTA 0008	3.7	5	13.2	-	-	-	-	-	-	-	-	-	15	16	19
SINUS PENTA 0009	-	-	-	7.5	10	14.5	9.2	12.5	16	9.2	12.5	14.3	16.5	17.5	19
SINUS PENTA 0010	4	5.5	14.6	-	-	-	-	-	-	-	-	-	17	19	23
SINUS PENTA 0011	-	-	-	7.5	10	14.8	9.2	12.5	16	11	15	16.5	16.5	21	25
SINUS PENTA 0013	4.5	6	15.7	-	-	-	-	-	-	-	-	-	19	21	25
SINUS PENTA 0014	-	-	-	7.5	10	14.8	9.2	12.5	16	11	15	16.5	16.5	25	30
SINUS PENTA 0015	5.5	7.5	19.5	-	-	-	-	-	-	-	-	-	23	25	30
SINUS PENTA 0016	7.5	10	25.7	-	-	-	-	-	-	-	-	-	27	30	36
SINUS PENTA 0020 ¹⁾	9.2	12.5	30	-	-	-	-	-	-	-	-	-	30	36	43
Size S12															
SINUS PENTA 0016	-	-	-	11	15	21	15	20	25	15	20	23.2	27	30	36
SINUS PENTA 0017	-	-	-	15	20	29	18.5	25	30	18.5	25	28	30	32	37
SINUS PENTA 0020	-	-	-	15	20	29	18.5	25	30	18.5	25	28	30	36	43
SINUS PENTA 0023	11	15	36	-	-	-	-	-	-	-	-	-	38	42	51
SINUS PENTA 0025	-	-	-	22	30	41	22	30	36	22	30	33	41	48	58
SINUS PENTA 0030	-	-	-	22	30	41	22	30	36	25	35	37	41	56	67
SINUS PENTA 0033	15	20	50	-	-	-	-	-	-	-	-	-	51	56	68
SINUS PENTA 0034	-	-	-	30	40	55	30	40	48	37	50	53	57	63	76
SINUS PENTA 0036	-	-	-	30	40	55	37	50	58	37	50	53	60	72	86
SINUS PENTA 0037	18.5	25	61	-	-	-	-	-	-	-	-	-	65	72	83
Size S15															
SINUS PENTA 0040	22	30	71	37	50	67	45	60	70	50	70	70	72	80	88
SINUS PENTA 0049	25	35	80	45	60	80	50	65	75	55	75	78	80	96	115
Size S20															
SINUS PENTA 0060	28	38	88	50	70	87	55	75	85	65	90	88	88	112	134
SINUS PENTA 0067	30	40	96	55	75	98	65	90	100	75	100	103	103	118	142
SINUS PENTA 0074	37	50	117	65	90	114	75	100	116	85	115	120	120	144	173
SINUS PENTA 0086	45	60	135	75	100	133	90	125	135	90	125	127	135	155	186
Size S30															
SINUS PENTA 0113	55	75	170	100	135	180	110	150	166	132	180	180	180	200	240
SINUS PENTA 0129	65	90	195	110	150	191	125	170	192	140	190	195	195	215	258
SINUS PENTA 0150	70	95	213	120	165	212	132	180	198	150	200	211	215	270	324
SINUS PENTA 0162	75	100	231	132	180	228	150	200	230	175	238	240	240	290	324
Inverter power supply	200-240 Vac; 280-340 Vdc			380-500 Vac; 530-705 Vdc											

1) Unavailable model as IP54 - 2) Cabinet version only available on demand - 3) input reactor and output reactor required.

Key Inom= inverter nominal current • Imax= inverter maximum current for 120sec every 20min. up to S30 and 60sec. every 10min. >=S41 • Ipeak= inverter maximum current for 3sec
Note: The indicated motor currents refer to standard 4 pole motors, with IE2 efficiency

LIGHT OVERLOAD UP TO 120% (60s) OR UP TO 144% (3s)
Power supply up to 500 Vac

Sinus Penta Model	2T			4T									Inom.	Imax	Ipeak (3s)
	200-240 Vac			380-415 Vac			440-460 Vac			480-500 Vac					
	kW	CV	A	kW	CV	A	kW	CV	A	kW	CV	A			
Size S41															
SINUS PENTA 0180	90	125	277	160	220	273	200	270	297	220	300	300	300	340	408
SINUS PENTA 0202	110	150	332	200	270	341	220	300	326	250	340	337	345	420	504
SINUS PENTA 0217	120	165	375	220	300	375	250	340	366	260	350	359	375	460	552
SINUS PENTA 0260	132	180	390	250	340	421	280	380	410	300	410	418	425	560	672
Size S51															
SINUS PENTA 0313	160	220	475	280	380	480	315	430	459	355	485	471	480	600	720
SINUS PENTA 0367	185	250	550	315	430	528	375	510	540	400	550	544	550	680	792
SINUS PENTA 0402	200	270	593	400	550	680	450	610	665	500	680	673	680	850	1020
Size S60															
SINUS PENTA 0457	250	340	732	400	550	680	450	610	665	500	680	673	720	880	1056
SINUS PENTA 0524	260	350	780	450	610	765	500	680	731	560	760	751	800	960	1152
Size S60P															
SINUS PENTA 0598P	-	-	-	500	680	841	560	760	817	630	860	864	900	1100	1152
Size S65³⁾															
SINUS PENTA 0598	-	-	-	500	680	841	560	760	817	630	860	864	900	1100	1320
SINUS PENTA 0748	-	-	-	560	760	939	630	860	939	710	970	960	1000	1300	1560
SINUS PENTA 0831	-	-	-	710	970	1200	800	1090	1160	900	1230	1184	1200	1440	1728
Size S75²⁾															
SINUS PENTA 0964	-	-	-	900	1230	1480	1000	1360	1431	1100	1500	1480	1480	1780	2136
SINUS PENTA 1130	-	-	-	1000	1360	1646	1170	1600	1700	1270	1730	1700	1700	2040	2448
SINUS PENTA 1296	-	-	-	1200	1650	2050	1400	1830	2000	1460	1990	2050	2100	2520	3024
Size S90²⁾															
SINUS PENTA 1800	-	-	-	1500	2000	2500	1750	2400	2500	1850	2500	2500	2600	3100	3720
SINUS PENTA 2076	-	-	-	1750	2400	2900	2000	2720	2900	2100	2900	2900	3000	3600	4000
Inverter power supply	200-240 Vac; 280-340 Vdc			380-500 Vac; 530-705 Vdc											

SINUS PENTA IN PARALLEL

Sinus Penta Model	2T			4T									Inom.	Imax	Ipeak (3s)
	200-240 Vac			380-415 Vac			440-460 Vac			480-500 Vac					
	kW	CV	A	kW	CV	A	kW	CV	A	kW	CV	A			
Size S43 (2xS41)³⁾															
SINUS PENTA 0523	260	350	780	450	610	765	500	680	731	560	760	751	800	960	-
Size S53 (2xS51)³⁾															
SINUS PENTA 0599	-	-	-	500	680	841	560	760	817	630	860	864	900	1100	-
SINUS PENTA 0749	-	-	-	560	760	939	630	860	939	710	970	960	1000	1300	-
SINUS PENTA 0832	-	-	-	710	970	1200	800	1090	1160	900	1230	1184	1200	1440	-
Size S55 (3xS51)³⁾															
SINUS PENTA 0850	-	-	-	800	1090	1334	900	1230	1287	1000	1360	1317	1340	1600	-
SINUS PENTA 0965	-	-	-	900	1230	1480	1000	1360	1431	1100	1500	1480	1480	1780	-
SINUS PENTA 1129	-	-	-	1000	1360	1646	1170	1600	1700	1270	1730	1700	1700	2040	-
Inverter power supply	200-240 Vac; 280-340 Vdc			380-500 Vac; 530-705 Vdc											

1) Unavailable model as IP54 - 2) Cabinet version only available on demand - 3) input reactor and output reactor required.

Key Inom= inverter nominal current • Imax= inverter maximum current for 120sec every 20min. up to S30 and 60sec. every 10min. >=S41 • Ipeak= inverter maximum current for 3sec
 Note: The indicated motor currents refer to standard 4 pole motors, with IE2 efficiency

SINUS PENTA 2T/4T



STANDARD OVERLOAD UP TO 140% (120s) OR UP TO 168% (3s)

Power supply up to 500 Vac

Sinus Penta Model	2T			4T									Inom.	Imax	Ipeak (3s)
	200-240 Vac			380-415 Vac			440-460 Vac			480-500 Vac					
	kW	CV	A	kW	CV	A	kW	CV	A	kW	CV	A			
Size S05															
SINUS PENTA 0005	-	-	-	4	5.5	8.4	4.5	6	7.8	5.5	7.5	9	10.5	11.5	14
SINUS PENTA 0007	2.2	3	8.5	4.5	6	9	5.5	7.5	9.7	6.5	9	10.2	12.5	13.5	16
SINUS PENTA 0008	3	4	11.2	-	-	-	-	-	-	-	-	-	15	16	19
SINUS PENTA 0009	-	-	-	5.5	7.5	11.2	7.5	10	12.5	7.5	10	11.8	16.5	17.5	19
SINUS PENTA 0010	3.7	5	13.2	-	-	-	-	-	-	-	-	-	17	19	23
SINUS PENTA 0011	-	-	-	7.5	10	14.8	9.2	12.5	15.6	9.2	12.5	14.3	16.5	21	25
SINUS PENTA 0013	4	5.5	14.6	-	-	-	-	-	-	-	-	-	19	21	25
SINUS PENTA 0014	-	-	-	7.5	10	14.8	9.2	12.5	15.6	11	15	16.5	16.5	25	30
SINUS PENTA 0015	4.5	6	15.7	-	-	-	-	-	-	-	-	-	23	25	30
SINUS PENTA 0016	5.5	7.5	19.5	-	-	-	-	-	-	-	-	-	27	30	36
SINUS PENTA 0020 ¹⁾	7.5	10	25.7	-	-	-	-	-	-	-	-	-	30	36	43
Size S12															
SINUS PENTA 0016	-	-	-	9.2	12.5	17.9	11	15	18.3	15	20	23.2	27	30	36
SINUS PENTA 0017	-	-	-	11	15	21	11	15	18.3	15	20	23.2	30	32	37
SINUS PENTA 0020	-	-	-	15	20	29	15	20	25	18.5	25	28	30	36	43
SINUS PENTA 0023	9.2	12.5	30	-	-	-	-	-	-	-	-	-	38	42	51
SINUS PENTA 0025	-	-	-	18.5	25	35	18.5	25	30	22	30	33	41	48	58
SINUS PENTA 0030	-	-	-	22	30	41	22	30	36	25	35	37	41	56	67
SINUS PENTA 0033	11	15	36	-	-	-	-	-	-	-	-	-	51	56	68
SINUS PENTA 0034	-	-	-	25	35	46	30	40	48	30	40	44	57	63	76
SINUS PENTA 0036	-	-	-	30	40	55	30	40	48	37	50	53	60	72	86
SINUS PENTA 0037	15	20	50	-	-	-	-	-	-	-	-	-	65	72	83
Size S15															
SINUS PENTA 0040	18.5	25	61	30	40	55	37	50	58	40	55	58	72	80	88
SINUS PENTA 0049	22	30	71	37	50	67	45	60	70	45	60	64	80	96	115
Size S20															
SINUS PENTA 0060	25	35	80	45	60	80	55	75	85	55	75	78	88	112	134
SINUS PENTA 0067	30	40	96	55	75	98	60	80	91	65	90	88	103	118	142
SINUS PENTA 0074	37	50	117	65	90	114	70	95	107	75	100	103	120	144	173
SINUS PENTA 0086	40	55	127	75	100	133	75	100	116	85	115	120	135	155	186
Size S30															
SINUS PENTA 0113	45	60	135	90	125	159	90	125	135	90	125	127	180	200	240
SINUS PENTA 0129	55	75	170	100	135	180	110	150	166	110	150	153	195	215	258
SINUS PENTA 0150	65	90	195	110	150	191	132	180	198	150	200	211	215	270	324
SINUS PENTA 0162	75	100	231	132	180	228	150	200	230	160	220	218	240	290	324
Inverter power supply	200-240 Vac; 280-340 Vdc			380-500 Vac; 530-705 Vdc											

1) Unavailable model as IP54 - 2) Cabinet version only available on demand - 3) Input reactor and output reactor required.

Key Inom= inverter nominal current • Imax= inverter maximum current for 120sec every 20min. up to S30 and 60sec. every 10min. >=S41 • Ipeak= inverter maximum current for 3sec
Note: The indicated motor currents refer to standard 4 pole motors, with IE2 efficiency

STANDARD OVERLOAD UP TO 140% (60s) OR UP TO 168% (3s)
Power supply up to 500 Vac

Sinus Penta Model	2T			4T									Inom. A	Imax A	Ipeak (3s) A	
	200-240 Vac			380-415 Vac			440-460 Vac			480-500 Vac						
	kW	CV	A	kW	CV	A	kW	CV	A	kW	CV	A				
Size S41																
SINUS PENTA 0180	80	110	250	160	220	273	185	250	279	200	270	273	300	340	408	
SINUS PENTA 0202	90	125	277	200	270	341	220	300	326	250	340	337	345	420	504	
SINUS PENTA 0217	110	150	332	220	300	375	250	340	375	260	350	359	375	460	552	
SINUS PENTA 0260	132	180	390	250	340	421	280	380	410	300	410	418	425	560	672	
Size S51																
SINUS PENTA 0313	150	200	458	280	380	480	315	430	459	355	485	471	480	600	720	
SINUS PENTA 0367	160	220	475	315	430	528	375	510	540	400	550	544	550	680	792	
SINUS PENTA 0402	185	250	550	400	550	680	450	610	665	500	680	673	680	850	1020	
Size S60																
SINUS PENTA 0457	220	300	661	400	550	680	450	610	665	500	680	673	720	880	1056	
SINUS PENTA 0524	260	350	780	450	610	765	500	680	731	560	770	751	800	960	1152	
Size S60P																
SINUS PENTA 0598P	-	-	-	500	680	841	560	760	817	630	860	864	900	1100	1152	
Size S65³⁾																
SINUS PENTA 0598	-	-	-	500	680	841	560	760	817	630	860	864	900	1100	1320	
SINUS PENTA 0748	-	-	-	560	760	939	630	860	939	710	970	960	1000	1300	1560	
SINUS PENTA 0831	-	-	-	630	860	1080	800	1090	1160	800	1090	1067	1200	1440	1728	
Size S75²⁾																
SINUS PENTA 0964	-	-	-	800	1090	1334	900	1230	1287	1000	1360	1317	1480	1780	2136	
SINUS PENTA 1130	-	-	-	900	1230	1480	1100	1500	1630	1170	1600	1570	1700	2040	2448	
SINUS PENTA 1296	-	-	-	1200	1650	2050	1400	1830	2000	1460	1990	2050	2100	2520	3024	
Size S90²⁾																
SINUS PENTA 1800	-	-	-	1400	1910	2400	1700	2300	2400	1750	2400	2400	2600	3100	3720	
SINUS PENTA 2076	-	-	-	1750	2400	2900	2000	2720	2900	2100	2900	2900	3000	3600	4000	
Inverter power supply	200-240 Vac; 280-340 Vdc			380-500 Vac; 530-705 Vdc												

SINUS PENTA IN PARALLEL

Sinus Penta Model	2T			4T									Inom. A	Imax A	Ipeak (3s) A	
	200-240 Vac			380-415 Vac			440-460 Vac			480-500 Vac						
	kW	CV	A	kW	CV	A	kW	CV	A	kW	CV	A				
Size S43 (2xS41)³⁾																
SINUS PENTA 0523	260	350	780	450	610	765	500	680	731	560	770	751	800	960	-	
Size S53 (2xS51)³⁾																
SINUS PENTA 0599	-	-	-	500	680	841	560	760	817	630	860	864	900	1100	-	
SINUS PENTA 0749	-	-	-	560	760	939	630	860	939	710	970	960	1000	1300	-	
SINUS PENTA 0832	-	-	-	630	860	1080	800	1090	1160	800	1090	1067	1200	1440	-	
Size S55 (3xS51)³⁾																
SINUS PENTA 0850	-	-	-	710	970	1200	800	1090	1160	900	1230	1184	1340	1600	-	
SINUS PENTA 0965	-	-	-	800	1090	1334	900	1230	1287	1000	1360	1317	1480	1780	-	
SINUS PENTA 1129	-	-	-	900	1230	1480	1100	1500	1630	1170	1600	1570	1700	2040	-	
Inverter power supply	200-240 Vac; 280-340 Vdc			380-500 Vac; 530-705 Vdc												

1) Unavailable model as IP54 - 2) Cabinet version only available on demand - 3) Input reactor and output reactor required.

Key Inom= inverter nominal current • Imax= inverter maximum current for 120sec every 20min. up to S30 and 60sec. every 10min. >=S41 • Ipeak= inverter maximum current for 3sec
 Note: The indicated motor currents refer to standard 4 pole motors, with IE2 efficiency

SINUS PENTA 2T/4T



HEAVY OVERLOAD UP TO 175% (120s) OR UP TO 210% (3s)
Power supply up to 500 Vac

Sinus Penta Model	2T			4T									Inom.	Imax	Ipeak (3s)
	200-240 Vac			380-415 Vac			440-460 Vac			480-500 Vac					
	kW	CV	A	kW	CV	A	kW	CV	A	kW	CV	A			
Size S05															
SINUS PENTA 0005	-	-	-	3	4	6.4	3.7	5	6.6	4.5	6	7.2	10.5	11.5	14
SINUS PENTA 0007	1.8	2.5	7.3	4	5.5	8.4	4.5	6	7.8	5.5	7.5	9	12.5	13.5	16
SINUS PENTA 0008	2.2	3	8.5	-	-	-	-	-	-	-	-	-	15	16	19
SINUS PENTA 0009	-	-	-	4.5	6	9	5.5	7.5	9.7	7.5	10	11.8	16.5	17.5	19
SINUS PENTA 0010	3	4	11.2	-	-	-	-	-	-	-	-	-	17	19	23
SINUS PENTA 0011	-	-	-	5.5	7.5	11.2	7.5	10	12.5	9.2	12.5	14.3	16.5	21	25
SINUS PENTA 0013	3.7	5	13.2	-	-	-	-	-	-	-	-	-	19	21	25
SINUS PENTA 0014	-	-	-	7.5	10	14.8	9.2	12.5	15.6	11	15	16.5	16.5	25	30
SINUS PENTA 0015	4	5.5	14.6	-	-	-	-	-	-	-	-	-	23	25	30
SINUS PENTA 0016	4.5	6	15.7	-	-	-	-	-	-	-	-	-	27	30	36
SINUS PENTA 0020 ¹⁾	5.5	7.5	19.5	-	-	-	-	-	-	-	-	-	30	36	43
Size S12															
SINUS PENTA 0016	-	-	-	9.2	12.5	17.9	11	15	18.3	12.5	17	18.9	27	30	36
SINUS PENTA 0017	-	-	-	9.2	12.5	17.9	11	15	18.3	12.5	17	18.9	30	32	37
SINUS PENTA 0020	-	-	-	11	15	21	15	20	25	15	20	23.2	30	36	43
SINUS PENTA 0023	7.5	10	25.7	-	-	-	-	-	-	-	-	-	38	42	51
SINUS PENTA 0025	-	-	-	15	20	29	18.5	25	30	18.5	25	28	41	48	58
SINUS PENTA 0030	-	-	-	18.5	25	35	22	30	36	22	30	33	41	56	67
SINUS PENTA 0033	11	15	36	-	-	-	-	-	-	-	-	-	51	56	68
SINUS PENTA 0034	-	-	-	22	30	41	25	35	40	28	38	41	57	63	76
SINUS PENTA 0036	-	-	-	25	35	46	30	40	48	30	40	44	60	72	86
SINUS PENTA 0037	15	20	50	-	-	-	-	-	-	-	-	-	65	72	83
Size S15															
SINUS PENTA 0040	15	20	50	25	35	46	30	40	48	37	50	53	72	80	88
SINUS PENTA 0049	18.5	25	61	30	40	55	37	50	58	45	60	64	80	96	115
Size S20															
SINUS PENTA 0060	22	30	71	37	50	67	45	60	70	50	70	70	88	112	134
SINUS PENTA 0067	25	35	80	45	60	80	50	70	75	55	75	78	103	118	142
SINUS PENTA 0074	30	40	96	50	70	87	55	75	85	65	90	88	120	144	173
SINUS PENTA 0086	32	45	103	55	75	98	65	90	100	75	100	103	135	155	186
Size S30															
SINUS PENTA 0113	45	60	135	75	100	133	75	100	116	90	125	127	180	200	240
SINUS PENTA 0129	50	70	150	80	110	144	90	125	135	110	150	153	195	215	258
SINUS PENTA 0150	55	75	170	90	125	159	110	150	166	132	180	180	215	270	324
SINUS PENTA 0162	65	90	195	110	150	191	132	180	198	140	190	191	240	290	324
Inverter power supply	200-240 Vac; 280-340 Vdc			380-500 Vac; 530-705 Vdc											

1) Unavailable model as IP54 - 2) Cabinet version only available on demand - 3) Input reactor and output reactor required.

Key Inom= inverter nominal current • Imax= inverter maximum current for 120sec every 20min. up to S30 and 60sec. every 10min. >=S41 • Ipeak= inverter maximum current for 3sec
 Note: The indicated motor currents refer to standard 4 pole motors, with IE2 efficiency

HEAVY OVERLOAD UP TO 175% (60s) OR UP TO 210% (3s)
Power supply up to 500 Vac

Sinus Penta Model	2T			4T									Inom.	Imax	Ipeak (3s)	
	200-240 Vac			380-415 Vac			440-460 Vac			480-500 Vac						
	kW	CV	A	kW	CV	A	kW	CV	A	kW	CV	A				A
Size S41																
SINUS PENTA 0180	75	100	231	132	180	228	160	220	237	160	220	218	300	340	408	
SINUS PENTA 0202	80	110	250	150	200	264	185	250	279	200	270	273	345	420	504	
SINUS PENTA 0217	110	150	332	185	250	321	220	300	326	220	300	300	375	460	552	
SINUS PENTA 0260	110	150	332	200	270	341	260	350	390	280	380	393	425	560	672	
Size S51																
SINUS PENTA 0313	132	180	390	220	300	375	260	350	390	300	400	413	480	600	720	
SINUS PENTA 0367	150	200	458	250	340	421	315	430	459	355	485	471	550	680	792	
SINUS PENTA 0402	160	220	475	315	430	528	375	510	540	400	550	544	680	850	1020	
Size S60																
SINUS PENTA 0457	200	270	593	315	430	528	400	550	576	450	610	612	720	880	1056	
SINUS PENTA 0524	220	300	661	355	480	589	450	610	665	500	680	673	800	960	1152	
Size S60P																
SINUS PENTA 0598P	-	-	-	400	550	680	500	680	731	560	760	751	900	1100	1152	
Size S65³⁾																
SINUS PENTA 0598	-	-	-	400	550	680	500	680	731	560	760	751	900	1100	1320	
SINUS PENTA 0748	-	-	-	500	680	841	560	760	817	630	860	864	1000	1300	1560	
SINUS PENTA 0831	-	-	-	560	760	939	630	860	939	710	970	960	1200	1440	1728	
Size S75²⁾																
SINUS PENTA 0964	-	-	-	710	970	1200	800	1090	1160	900	1230	1184	1480	1780	2136	
SINUS PENTA 1130	-	-	-	800	1090	1334	900	1230	1287	1000	1360	1317	1700	2040	2448	
SINUS PENTA 1296	-	-	-	1000	1360	1650	1100	1500	1630	1170	1600	1560	2100	2520	3024	
Size S90²⁾																
SINUS PENTA 1800	-	-	-	1200	1650	2050	1450	1970	2050	1500	2000	2050	2600	3100	3720	
SINUS PENTA 2076	-	-	-	1400	1910	2400	1700	2300	2400	1750	2400	2400	3000	3600	4000	
Inverter power supply	200-240 Vac; 280-340 Vdc			380-500 Vac; 530-705 Vdc												

SINUS PENTA IN PARALLEL

Sinus Penta Model	2T			4T									Inom.	Imax	Ipeak (3s)	
	200-240 Vac			380-415 Vac			440-460 Vac			480-500 Vac						
	kW	CV	A	kW	CV	A	kW	CV	A	kW	CV	A				A
Size S43 (2xS41)³⁾																
SINUS PENTA 0523	220	300	661	355	480	589	450	610	665	500	680	673	800	960	-	
Size S53 (2xS51)³⁾																
SINUS PENTA 0599	-	-	-	400	550	680	500	680	731	560	760	751	900	1100	-	
SINUS PENTA 0749	-	-	-	500	680	841	560	760	817	630	860	864	1000	1300	-	
SINUS PENTA 0832	-	-	-	560	760	939	630	860	939	710	970	960	1200	1440	-	
Size S55 (3xS51)³⁾																
SINUS PENTA 0850	-	-	-	630	860	1080	710	970	1043	800	1090	1067	1340	1600	-	
SINUS PENTA 0965	-	-	-	710	970	1200	800	1090	1160	900	1230	1184	1480	1780	-	
SINUS PENTA 1129	-	-	-	800	1090	1334	900	1230	1287	1000	1360	1317	1700	2040	-	
Inverter power supply	200-240 Vac; 280-340 Vdc			380-500 Vac; 530-705 Vdc												

1) Unavailable model as IP54 - 2) Cabinet version only available on demand - 3) Input reactor and output reactor required.

Key Inom= inverter nominal current • Imax= inverter maximum current for 120sec every 20min. up to S30 and 60sec. every 10min. >=S41 • Ipeak= inverter maximum current for 3sec
 Note: The indicated motor currents refer to standard 4 pole motors, with IE2 efficiency

SINUS PENTA 2T/4T



STRONG OVERLOAD UP TO 200% (120s) OR UP TO 240% (3s)
Power supply up to 500 Vac

Sinus Penta Model	2T			4T									Inom. A	Imax A	Ipeak (3s) A	
	200-240 Vac			380-415 Vac			440-460 Vac			480-500 Vac						
	kW	CV	A	kW	CV	A	kW	CV	A	kW	CV	A				
Size S05																
SINUS PENTA 0005	-	-	-	2.2	3	4.9	3	4	5.6	3.7	5	6.1	10.5	11.5	14	
SINUS PENTA 0007	1.5	2	6.1	3	4	6.4	3.7	5	6.6	4.5	6	7.2	12.5	13.5	16	
SINUS PENTA 0008	1.8	2.5	7.3	-	-	-	-	-	-	-	-	-	15	16	19	
SINUS PENTA 0009	-	-	-	4	5.5	8.4	4.5	6	7.8	5.5	7.5	9	16.5	17.5	19	
SINUS PENTA 0010	2.2	3	8.5	-	-	-	-	-	-	-	-	-	17	19	23	
SINUS PENTA 0011	-	-	-	4.5	6	9	5.5	7.5	9.7	7.5	10	11.8	16.5	21	25	
SINUS PENTA 0013	3	4	11.2	-	-	-	-	-	-	-	-	-	19	21	25	
SINUS PENTA 0014	-	-	-	5.5	7.5	11.2	7.5	10	12.5	9.2	12.5	14.3	16.5	25	30	
SINUS PENTA 0015	3.7	5	13.2	-	-	-	-	-	-	-	-	-	23	25	30	
SINUS PENTA 0016	4	5.5	14.6	-	-	-	-	-	-	-	-	-	27	30	36	
SINUS PENTA 0020 ¹⁾	4.5	6	15.7	-	-	-	-	-	-	-	-	-	30	36	43	
Size S12																
SINUS PENTA 0016	-	-	-	7.5	10	14.8	9.2	12.5	15.6	11	15	16.5	27	30	36	
SINUS PENTA 0017	-	-	-	7.5	10	14.8	9.2	12.5	15.6	12.5	17	18.9	30	32	37	
SINUS PENTA 0020	-	-	-	9.2	12.5	17.9	11	15	18.3	12.5	17	18.9	30	36	43	
SINUS PENTA 0023	5.5	7.5	19.5	-	-	-	-	-	-	-	-	-	38	42	51	
SINUS PENTA 0025	-	-	-	11	15	21	15	20	25	15	20	23.2	41	48	58	
SINUS PENTA 0030	-	-	-	15	20	29	18.5	25	30	18.5	25	28	41	56	67	
SINUS PENTA 0033	7.5	10	25.7	-	-	-	-	-	-	-	-	-	51	56	68	
SINUS PENTA 0034	-	-	-	18.5	25	35	22	30	36	22	30	33	57	63	76	
SINUS PENTA 0036	-	-	-	22	30	41	25	35	40	28	38	41	60	72	86	
SINUS PENTA 0037	11	15	36	-	-	-	-	-	-	-	-	-	65	72	83	
Size S15																
SINUS PENTA 0040	12.5	17	41	22	30	41	25	35	40	30	40	44	72	80	88	
SINUS PENTA 0049	15	20	50	25	35	46	30	40	48	37	50	53	80	96	115	
Size S20																
SINUS PENTA 0060	18.5	25	61	30	40	55	37	50	58	45	60	64	88	112	134	
SINUS PENTA 0067	20	27	66	32	45	59	40	55	63	50	70	70	103	118	142	
SINUS PENTA 0074	22	30	71	37	50	67	45	60	70	55	75	78	120	144	173	
SINUS PENTA 0086	25	35	80	45	60	80	55	75	85	65	90	88	135	155	186	
Size S30																
SINUS PENTA 0113	30	40	96	55	75	98	65	88	100	75	100	103	180	200	240	
SINUS PENTA 0129	37	50	117	65	90	114	75	100	116	85	115	120	195	215	258	
SINUS PENTA 0150	45	60	135	75	100	133	90	125	135	90	125	127	215	270	324	
SINUS PENTA 0162	55	75	170	90	125	159	110	150	166	110	150	153	240	290	324	
Inverter power supply	200-240 Vac; 280-340 Vdc			380-500 Vac; 530-705 Vdc												

1) Unavailable model as IP54 - 2) Cabinet version only available on demand - 3) Input reactor and output reactor required.

Key Inom= inverter nominal current • Imax= inverter maximum current for 120sec every 20min. up to S30 and 60sec. every 10min. >=S41 • Ipeak= inverter maximum current for 3sec
 Note: The indicated motor currents refer to standard 4 pole motors, with IE2 efficiency

STRONG OVERLOAD UP TO 200% (60s) OR UP TO 240% (3s)
Power supply up to 500 Vac

Sinus Penta Model	2T			4T									Inom. A	Imax A	Ipeak (3s) A
	200-240 Vac			380-415 Vac			440-460 Vac			480-500 Vac					
	kW	CV	A	kW	CV	A	kW	CV	A	kW	CV	A			
Size S41															
SINUS PENTA 0180	60	85	185	110	150	191	120	165	184	132	180	180	300	340	408
SINUS PENTA 0202	65	90	195	132	180	228	150	200	230	160	220	218	345	420	504
SINUS PENTA 0217	75	100	231	150	200	260	160	220	245	185	250	257	375	460	552
SINUS PENTA 0260	90	125	277	160	220	273	200	270	307	200	270	273	425	560	672
Size S51															
SINUS PENTA 0313	110	150	332	185	250	321	220	300	326	250	340	337	480	600	720
SINUS PENTA 0367	120	165	375	200	270	341	250	340	366	260	350	359	550	680	792
SINUS PENTA 0402	132	180	390	280	380	480	315	430	462	355	480	471	680	850	1020
Size S60															
SINUS PENTA 0457	160	220	475	280	380	480	330	450	493	375	510	497	720	880	1056
SINUS PENTA 0524	185	250	550	315	430	528	375	510	540	400	550	544	800	960	1152
Size S60P															
SINUS PENTA 0598P	-	-	-	355	480	589	400	550	591	450	610	612	900	1100	1152
Size S65³⁾															
SINUS PENTA 0598	-	-	-	355	480	589	400	550	591	450	610	612	900	1100	1320
SINUS PENTA 0748	-	-	-	400	550	680	500	680	731	560	760	751	1000	1300	1560
SINUS PENTA 0831	-	-	-	450	610	765	560	760	817	630	860	864	1200	1440	1728
Size S75²⁾															
SINUS PENTA 0964	-	-	-	560	770	939	710	970	1043	800	1090	1067	1480	1780	2136
SINUS PENTA 1130	-	-	-	710	970	1200	800	1090	1160	900	1230	1184	1700	2040	2448
SINUS PENTA 1296	-	-	-	800	1090	1334	900	1230	1287	1000	1360	1317	2100	2520	3024
Size S90²⁾															
SINUS PENTA 1800	-	-	-	1000	1360	1650	1170	1600	1650	1200	1650	1650	2600	3100	3720
SINUS PENTA 2076	-	-	-	1200	1650	2050	1450	1970	2050	1500	2000	2050	3000	3600	4000
Inverter power supply	200-240 Vac; 280-340 Vdc						380-500 Vac; 530-705 Vdc								

SINUS PENTA IN PARALLEL

Sinus Penta Model	2T			4T									Inom. A	Imax A	Ipeak (3s) A
	200-240 Vac			380-415 Vac			440-460 Vac			480-500 Vac					
	kW	CV	A	kW	CV	A	kW	CV	A	kW	CV	A			
Size S43 (2xS41)³⁾															
SINUS PENTA 0523	185	250	550	315	430	528	375	510	540	400	550	544	800	960	-
Size S53 (2xS51)³⁾															
SINUS PENTA 0599	-	-	-	355	480	589	400	550	591	450	610	612	900	1100	-
SINUS PENTA 0749	-	-	-	400	550	680	500	680	731	560	760	751	1000	1300	-
SINUS PENTA 0832	-	-	-	450	610	765	560	760	817	630	860	864	1200	1440	-
Size S55 (3xS51)³⁾															
SINUS PENTA 0850	-	-	-	500	680	841	630	860	939	710	970	960	1340	1600	-
SINUS PENTA 0965	-	-	-	560	770	939	710	970	1043	800	1090	1067	1480	1780	-
SINUS PENTA 1129	-	-	-	710	970	1200	800	1090	1160	900	1230	1184	1700	2040	-
Inverter power supply	200-240 Vac; 280-340 Vdc						380-500 Vac; 530-705 Vdc								

1) Unavailable model as IP54 - 2) Cabinet version only available on demand - 3) Input reactor and output reactor required.

Key Inom= inverter nominal current • Imax= inverter maximum current for 120sec every 20min. up to S30 and 60sec. every 10min. >=S41 • Ipeak= inverter maximum current for 3sec
 Note: The indicated motor currents refer to standard 4 pole motors, with IE2 efficiency

SINUS PENTA 2T/4T



SINUS PENTA IP54 models

- The Sinus series also features an IP54-range suitable for environmental conditions with a strong presence of dust and water (up to SINUS PENTA S30).

- The robust metal enclosure is suitable for outdoor installations; therefore no electric cabinet is required.

DIMENSIONS AND WEIGHT IP54 MODELS

Size	W (mm)	H (mm)	D (mm)	Weight (kg)
S05 ¹⁾	214	577	227	15.7
S12	250	622	268	23.3
S15	288	715	366	40
S20	339	842	366	57
S30	359	1008	460	76

1) model Sinus Penta 0020 2T unavailable as IP54

IP54 Front door operation (optional)

A complete set is available for front-door operation, including a potentiometer, an emergency push-button and a key-operated selector switch.

LOCAL (LOC) Enables motor speed adjustment via the inverter keypad.

REMOTE (REM) Controls the inverter based on how it is programmed via terminal board, serial ports or fieldbus.





SINUS PENTA 5T/6T



Drives 1.3 kW to 3000 kW for:

- ***Three-phase asynchronous motor control***
- ***Three-phase synchronous motor control***
- ***Regeneration into the grid***

- Wide power supply AC voltage range, 500÷690 Vac
- DC power supply range 705÷970 Vdc
- Input frequency 50-60 Hz
- Available in cabinet up to 3000 kW
- Enclosure IP00, IP20, IP54
- Full compatibility with the "REMOTE DRIVE" software for remote control

SUPPLY VOLTAGE
5T = 500-600 VAC
6T = 575-690 VAC

**3 YEARS
WARRANTY**

TECHNICAL HIGHLIGHTS

One product, 5 integrated functions:

- **IFD** (Inverter Frequency Drive): vector modulation function for general-purpose applications (V/F pattern).
- **VTC** (Vector Torque Control): sensorless vector function for high-torque demanding applications.
- **FOC** (Field Oriented Control): vector function with encoder for high torque precision and wide speed range.
- **SYN** (Synchronous): vector function for brushless synchronous motors with permanent magnets, high torque precision joined to high energy efficiency level.
- **RGN** (Regenerative): sinusoidal power factor $\cos \phi = 1$, AC/DC feeder function for direct supply of a series of drives.
- Extremely compact dimensions: one of the best current density [A/m³] in the market.
- Widest range of STANDARD I/O.
- Most encoder input directly to control board, no option board required for FOC control.
- Open loop speed precision: $\pm 0.5\%$ of max. speed. Closed loop (with an encoder) speed precision: $< 0.01\%$ of max. speed.
- Intelligent cooling system. Through-Hole mounting, segregation of forced air flow channels.
- Integrated braking chopper up to S32 at 100% nominal current.
- Programmable logic blocks.
- Regulation of output frequency from 0 to 1000 Hz (depending on models).
- Lower motor noise with random modulation and carrier frequency up to 16 kHz (depending on models).
- Integrated EMC filters on the full range in compliance with EN61800-3 2nd ed.
- INTEGRATED INPUT FILTERS, EMC EN61800-3, 2nd edition, SECOND ENVIRONMENT Category C3, EN55011 gr.2 cl. A, for industrial environments
- STO (Safe Torque Off) Function in compliance with EN 61800-5-2 SIL 3, EN ISO 13849 PL d.
- Designed according to IEC 60721-3-3, category 3C2.

TECHNICAL FEATURES

SINUS PENTA inverters fit any application thanks to their advanced features, among which: vector modulation; power control with the latest IGBTs; high immunity to radio interference; high overload capability.

- Easy commissioning with pre-set parameters for the most common applications. Special application "multi-pump".
- Operating parameters saved to removable keypad or PC and possibility of parameter transfer to multiple inverters.
- Control panel with 12 keys and large back-lit LCD.
- Automatic calibration for motor parameters tuning.
- Programmable multiple acceleration and deceleration ramps. Programmable S ramps.
- Automatic DC braking.
- Motor PTC thermal probe control. Integrated motor thermal protection.
 - In case of power failure, total control of the motor, down to 0 RPM.
- Master-slave function for the operation of several motors connected to the same drive shaft (VTC and FOC).
- 200% max torque.
- PID Function / Second PID Function / 2-zone PID.
- Skip frequency.
- Integrated digital potentiometer. Integrated multifunctional tester.
- Fire Mode function available.
- Trip Log.
- STANDARD I/Os:
 - Encoder feedback
 - 8 programmable inputs and MPL logic
 - 3 programmable analog inputs 0-10 Vdc, 0(4)-20 mA, PTC
 - 4 programmable digital output (2 relays with exchange contact, 1 open-collector, 1 Push-Pull)
 - Auxiliary input frequency 5,000-65,000 Hz, Auxiliary output frequency 5,000-65,000 Hz
 - 3 programmable analog outputs 0-10 Vdc, 0(4)-20 mA.
- Auxiliary output voltage 24 Vdc, 10 Vdc.
- Serial communications RS485 with MODBUS RTU protocol up to 38.400 Baud.

SPECIAL CONFIGURATIONS:

- 12-pulse bridge: starting from the S42 size, it is possible to supply the drive on 12-pulse bridge configuration.
- Optional boards for Fieldbus communication, Encoder or Resolver interface, Data loggers, RTC, I/O expansion.
- Custom execution in box or cabinets with input and/or DC and/or output inductors, circuit breakers, AFE sensors and switch.

SINUS PENTA 5T/6T



TECHNICAL DATA

Connected motor power range / voltage range

3-2500 kW 525÷575 Vac 3phase
3-3000 kW 660÷690 Vac 3phase

Mains Vac supply voltage and frequency

5T 500÷600 Vac, 3phase, -15% +10% 50÷60 Hz
6T 575÷690 Vac, 3phase, -15% +10% 50÷60 Hz

DC supply voltage

5T 705÷845 Vdc
6T 815÷970 Vdc

Overvoltage category

III (refer to EN 61800-5-1)

Degree of protection/size

IP20 from size S12 to size S32,
IP00 from size S42 to size S90,
IP54 from size S12 to size S32

Ambient temperature

-10°C TO 55°C with no derating (or 2%/°C over 40°C, based on the inverter model and the application category)

Storage temperature

-25 ÷ +70°C

Humidity

5 ÷ 95% (non condensing)

Altitude

Standard max. altitude 2000 m a.s.l.
(2000 m ÷ 4000 m, on request)
Above 1000 m, derate 1%/100 m.

Vibrations

Lower than 9.8 m/sec² (= 1.0G)

Installation environment

No direct sunlight, conductive dust, corrosive gases, water sprinkling or dripping, or salty environments

Operating atmospheric pressure

86 ÷ 106 kPa

Cooling system

Forced air-cooling

Environmental conditions

Designed according to the guidelines of IEC 60721-3-3, category 3C2



DIMENSIONS AND WEIGHT IP20 - IP00 MODELS

Size	W (mm)	H (mm)	D (mm)	Weight (kg)
S12	215	401	225	12.5
S14	270	530	250	23
S22	282.5	813.5	353	52
S32	366.5	881	399	84
S42	500	968	409	136
S52	578	968	409	160
S65	980	1400	560	440
S70	1230	1400	960	440



SINUS PENTA 5T/6T



LIGHT OVERLOAD UP TO 120% (60s) OR UP TO 144% (3s)
Power supply up to 690 Vac

Sinus Penta Model	5T			6T			Inom. A	Imax A	Ipeak (3s) A
	525-575vac			660-690 Vac					
	kW	CV	A	kW	CV	A			
Size S12									
SINUS PENTA 0003	4	5.5	5.7	5.5	7.5	6.3	7	8.5	10
SINUS PENTA 0004	5.5	7.5	7.6	7.5	10	8.4	9	11	13
SINUS PENTA 0006	7.5	10	10	9.2	12.5	10.2	11	13.5	16
SINUS PENTA 0012	9.2	12.5	12.5	11	15	12.1	13	16	19
SINUS PENTA 0018	11	15	14	15	20	16.8	17	21	25
Size S14									
SINUS PENTA 0003	4	5.5	5.7	5.5	7.5	6.3	7	8.5	10
SINUS PENTA 0004	5.5	7.5	7.6	7.5	10	8.4	9	11	13
SINUS PENTA 0006	7.5	10	10	9.2	12.5	10.2	11	13.5	16
SINUS PENTA 0012	9.2	12.5	12.5	11	15	12.1	13	16	19
SINUS PENTA 0018	11	15	14	15	20	16.8	17	21	25
SINUS PENTA 0019	15	20	20	18.5	25	21	21	25	30
SINUS PENTA 0021	18.5	25	25	22	30	23	25	30	36
SINUS PENTA 0022	22	30	28	30	40	33	33	40	48
SINUS PENTA 0024	30	40	39	37	50	39	40	48	58
SINUS PENTA 0032 ¹⁾	37	50	47	45	60	46	52	63	76
Size S22									
SINUS PENTA 0042	45	60	55	55	75	56	60	72	86
SINUS PENTA 0051	55	75	70	75	100	78	80	96	115
SINUS PENTA 0062	65	90	83	75	100	78	85	110	132
SINUS PENTA 0069	75	100	95	90	125	94	105	135	162
Size S32									
SINUS PENTA 0076	90	125	115	110	150	113	125	165	198
SINUS PENTA 0088	110	150	138	132	180	133	150	200	240
SINUS PENTA 0131	132	180	168	160	220	158	190	250	300
SINUS PENTA 0164	160	220	198	220	300	220	230	300	360
Size S42									
SINUS PENTA 0181	220	300	275	250	340	250	305	380	420
SINUS PENTA 0201	250	340	300	315	430	310	330	420	420
SINUS PENTA 0218	300	410	358	355	485	350	360	465	560
SINUS PENTA 0259	330	450	395	400	550	390	400	560	560
Size S52									
SINUS PENTA 0290	355	485	420	450	610	440	450	600	720
SINUS PENTA 0314	400	550	480	500	680	480	500	665	798
SINUS PENTA 0368	450	610	532	560	770	544	560	720	850
SINUS PENTA 0401	560	770	630	630	860	626	640	850	850
Inverter power supply	500-600 Vac; 705-845 Vdc			575-690 Vac; 845-970 Vdc					

1) Unavailable model as IP54 - 2) Cabinet version only available on demand - 3) input reactor and output reactor required.

Key Inom= inverter nominal current • Imax= inverter maximum current for 60sec every 10min. • Ipeak= inverter maximum current for 3sec
 Note: The indicated motor currents refer to standard 4 pole motors, with IE2 efficiency

LIGHT OVERLOAD UP TO 120% (60s) OR UP TO 144% (3s)
Power supply up to 690 Vac

Sinus Penta Model	5T			6T			Inom.	Imax	Ipeak (3s)
	525-575vac			660-690 Vac					
	kW	CV	A	kW	CV	A			
Size S65³⁾									
SINUS PENTA 0457	630	860	720	710	970	696	720	880	1056
SINUS PENTA 0524	710	970	800	800	1090	773	800	960	1152
SINUS PENTA 0598	800	1090	900	900	1230	858	900	1100	1320
SINUS PENTA 0748	900	1230	1000	1000	1360	954	1000	1300	1440
Size S70³⁾									
SINUS PENTA 0831	1000	1360	1145	1240	1690	1200	1200	1440	1440
Size S75²⁾									
SINUS PENTA 0964	1270	1730	1480	1530	2090	1480	1480	1780	2136
SINUS PENTA 1130	1460	1990	1700	1750	2380	1700	1700	2040	2448
Size S80²⁾									
SINUS PENTA 1296	1750	2380	2100	2100	2860	2100	2100	2520	3024
Size S90²⁾									
SINUS PENTA 1800	2000	2720	2400	2400	3300	2400	2600	3100	3720
SINUS PENTA 2076	2500	3400	3000	3000	4000	3000	3000	3600	4000
Inverter power supply	500-600 Vac; 705-845 Vdc			575-690 Vac; 845-970 Vdc					

SINUS PENTA IN PARALLEL

Sinus Penta Model	5T			6T			Inom.	Imax	Ipeak (3s)
	575vac			660-690 Vac					
	kW	CV	A	kW	CV	A			
Size S44 (2xS42)³⁾									
SINUS PENTA 0459	630	860	720	710	970	696	720	880	-
Size S54 (2xS52)³⁾									
SINUS PENTA 0526	710	970	800	800	1090	710	800	960	-
SINUS PENTA 0600	800	1090	900	900	1230	800	900	1100	-
SINUS PENTA 0750	900	1230	1000	1000	1360	900	1000	1300	-
SINUS PENTA 0828	1000	1360	1145	1240	1690	1000	1200	1440	-
Size S56 (3xS52)³⁾									
SINUS PENTA 0960	1270	1730	1480	1530	2090	1480	1480	1780	-
SINUS PENTA 1128	1460	1990	1700	1750	2380	1700	1700	2040	-
Inverter power supply	500-600 Vac; 705-845 Vdc			575-690 Vac; 815-970 Vdc					

1)) Unavailable model as IP54 - 2) Cabinet version only available on demand - 3) input reactor and output reactor required.
 Key Inom= inverter nominal current • Imax= inverter maximum current for 60sec every 10min. • Ipeak= inverter maximum current for 3sec
 Note: The indicated motor currents refer to standard 4 pole motors, with IE2 efficiency

SINUS PENTA 5T/6T



STANDARD OVERLOAD UP TO 140% (60s) OR UP TO 168% (3s)
Power supply up to 690 Vac

Sinus Penta Model	5T			6T			Inom.	Imax	Ipeak (3s)
	525-575 Vac			660-690 Vac					
	kW	CV	A	kW	CV	A			
Size S12									
SINUS PENTA 0003	4	5.5	5.7	4	5.5	4.8	7	8.5	10
SINUS PENTA 0004	5.5	7.5	7.6	5.5	7.5	6.3	9	11	13
SINUS PENTA 0006	7.5	10	10	7.5	10	8.4	11	13.5	16
SINUS PENTA 0012	7.5	10	10	9.2	12.5	10.2	13	16	19
SINUS PENTA 0018	11	15	14	11	15	12.1	17	21	25
Size S14									
SINUS PENTA 0003	4	5.5	5.7	4	5.5	4.8	7	8.5	10
SINUS PENTA 0004	5.5	7.5	7.6	5.5	7.5	6.3	9	11	13
SINUS PENTA 0006	7.5	10	10	7.5	10	8.4	11	13.5	16
SINUS PENTA 0012	7.5	10	10	9.2	12.5	10.2	13	16	19
SINUS PENTA 0018	11	15	14	11	15	12.1	17	21	25
SINUS PENTA 0019	11	15	14	15	20	16.8	21	25	30
SINUS PENTA 0021	15	20	20	18.5	25	21	25	30	36
SINUS PENTA 0022	22	30	28	22	30	23	33	40	48
SINUS PENTA 0024	25	35	32	30	40	33	40	48	58
SINUS PENTA 0032 ¹⁾	37	50	47	37	50	39	52	63	76
Size S22									
SINUS PENTA 0042	45	60	55	45	60	46	60	72	86
SINUS PENTA 0051	55	75	70	55	75	56	80	96	115
SINUS PENTA 0062	65	90	83	75	100	77	85	110	132
SINUS PENTA 0069	75	100	95	90	125	95	105	135	162
Size S32									
SINUS PENTA 0076	90	125	115	110	150	113	125	165	198
SINUS PENTA 0088	110	150	135	132	180	133	150	200	240
SINUS PENTA 0131	132	180	168	160	220	158	190	250	300
SINUS PENTA 0164	160	220	198	200	270	198	230	300	360
Size S42									
SINUS PENTA 0181	220	300	275	250	340	250	305	380	420
SINUS PENTA 0201	250	340	300	315	430	310	330	420	420
SINUS PENTA 0218	300	410	358	315	430	310	360	465	560
SINUS PENTA 0259	330	450	395	400	550	390	400	560	560
Size S52									
SINUS PENTA 0290	355	485	420	450	610	440	450	600	720
SINUS PENTA 0314	400	550	480	450	610	440	500	665	798
SINUS PENTA 0368	450	610	532	500	680	480	560	720	850
SINUS PENTA 0401	450	610	532	630	860	626	640	850	850
Inverter power supply	500-600 Vac; 705-845 Vdc			575-690 Vac; 845-970 Vdc					

1) Uavailable model as IP54 - 2) Cabinet version only available on demand - 3) input reactor and output reactor required.
Key Inom= inverter nominal current • Imax= inverter maximum current for 60sec every 10min. • Ipeak= inverter maximum current for 3sec
 Note: The indicated motor currents refer to standard 4 pole motors, with IE2 efficiency

STANDARD OVERLOAD UP TO 140% (60s) OR UP TO 168% (3s)
Power supply up to 690 Vac

Sinus Penta Model	5T			6T			Inom.	Imax	Ipeak (3s)
	525-575 Vac			660-690 Vac					
	kW	CV	A	kW	CV	A			
Size S65³⁾									
SINUS PENTA 0457	560	770	630	630	860	626	720	880	1056
SINUS PENTA 0524	630	860	720	710	970	696	800	960	1152
SINUS PENTA 0598	710	970	800	900	1230	858	900	1100	1320
SINUS PENTA 0748	900	1230	1000	1000	1360	954	1000	1300	1440
Size S70³⁾									
SINUS PENTA 0831	1000	1360	1145	1100	1500	1086	1200	1440	1440
Size S75²⁾									
SINUS PENTA 0964	1180	1610	1369	1410	1920	1369	1480	1780	2136
SINUS PENTA 1130	1350	1840	1569	1620	2210	1569	1700	2040	2448
Size S80²⁾									
SINUS PENTA 1296	1750	2380	2100	1850	2520	1800	2100	2520	3024
Size S90²⁾									
SINUS PENTA 1800	2000	2720	2400	2400	3300	2400	2600	3100	3720
SINUS PENTA 2076	2500	3400	3000	3000	4000	3000	3000	3600	4000
Inverter power supply	500-600 Vac; 705-845 Vdc			575-690 Vac; 845-970 Vdc					

SINUS PENTA IN PARALLEL

Sinus Penta Model	5T			6T			Inom.	Imax	Ipeak (3s)
	575 Vac			660-690 Vac					
	kW	CV	A	kW	CV	A			
Size S44 (2xS42)³⁾									
SINUS PENTA 0459	560	770	630	630	860	626	720	880	-
Size S54 (2xS52)³⁾									
SINUS PENTA 0526	630	860	720	710	970	696	800	960	-
SINUS PENTA 0600	710	970	800	900	1230	858	900	1100	-
SINUS PENTA 0750	900	1230	1000	1000	1360	954	1000	1300	-
SINUS PENTA 0828	1000	1360	1145	1100	1500	1086	1200	1440	-
Size S56 (3xS52)³⁾									
SINUS PENTA 0960	1180	1610	1369	1410	1920	1369	1480	1780	-
SINUS PENTA 1128	1350	1840	1569	1620	2210	1569	1700	2040	-
Inverter power supply	500-600 Vac; 705-845 Vdc			575-690 Vac; 815-970 Vdc					

1) Unavailable model as IP54 - 2) Cabinet version only available on demand - 3) input reactor and output reactor required.
Key Inom= inverter nominal current • Imax= inverter maximum current for 60sec every 10min. • Ipeak= inverter maximum current for 3sec
 Note: The indicated motor currents refer to standard 4 pole motors, with IE2 efficiency

SINUS PENTA 5T/6T



HEAVY OVERLOAD UP TO 175% (60s) OR UP TO 210% (3s)

Power supply up to 690 Vac

Sinus Penta Model	5T			6T			Inom.	Imax	Ipeak (3s)
	525-575 Vac			660-690 Vac					
	kW	CV	A	kW	CV	A			
Size S12									
SINUS PENTA 0003	3	4	4.4	4	5.5	4.8	7	8.5	10
SINUS PENTA 0004	4	5.5	5.7	4	5.5	4.8	9	11	13
SINUS PENTA 0006	5.5	7.5	7.6	7.5	10	8.4	11	13.5	16
SINUS PENTA 0012	7.5	10	10	7.5	10	8.4	13	16	19
SINUS PENTA 0018	9.2	12.5	12.5	11	15	12.1	17	21	25
Size S14									
SINUS PENTA 0003	3	4	4.4	4	5.5	4.8	7	8.5	10
SINUS PENTA 0004	4	5.5	5.7	4	5.5	4.8	9	11	13
SINUS PENTA 0006	5.5	7.5	7.6	7.5	10	8.4	11	13.5	16
SINUS PENTA 0012	7.5	10	10	7.5	10	8.4	13	16	19
SINUS PENTA 0018	9.2	12.5	12.5	11	15	12.1	17	21	25
SINUS PENTA 0019	11	15	14	11	15	12.1	21	25	30
SINUS PENTA 0021	15	20	20	15	20	16.8	25	30	36
SINUS PENTA 0022	18.5	25	25	22	30	23	33	40	48
SINUS PENTA 0024	22	30	28	22	30	23	40	48	58
SINUS PENTA 0032 ¹⁾	30	40	39	37	50	39	52	63	76
Size S22									
SINUS PENTA 0042	37	50	47	37	50	39	60	72	86
SINUS PENTA 0051	45	60	55	55	75	56	80	96	115
SINUS PENTA 0062	55	75	70	55	75	56	85	110	132
SINUS PENTA 0069	55	75	70	75	100	78	105	135	162
Size S32									
SINUS PENTA 0076	75	100	95	90	125	94	125	165	198
SINUS PENTA 0088	110	150	135	110	150	113	150	200	240
SINUS PENTA 0131	110	150	135	160	220	158	190	250	300
SINUS PENTA 0164	132	180	168	185	250	185	230	300	360
Size S42									
SINUS PENTA 0181	185	250	225	220	300	220	305	380	420
SINUS PENTA 0201	200	270	240	250	340	250	330	420	420
SINUS PENTA 0218	220	300	275	315	430	310	360	465	560
SINUS PENTA 0259	280	380	336	355	485	341	400	560	560
Size S52									
SINUS PENTA 0290	300	400	358	400	550	390	450	600	720
SINUS PENTA 0314	330	450	395	450	610	440	500	665	798
SINUS PENTA 0368	355	485	420	500	680	480	560	720	850
SINUS PENTA 0401	400	550	473	560	770	544	640	850	850
Inverter power supply	500-600 Vac; 705-845 Vdc			575-690 Vac; 845-970 Vdc					

1) Unavailable model as IP54 - 2) Cabinet version only available on demand - 3) input reactor and output reactor required.

Key Inom= inverter nominal current • Imax= inverter maximum current for 60sec every 10min. • Ipeak= inverter maximum current for 3sec

Note: The indicated motor currents refer to standard 4 pole motors, with IE2 efficiency

HEAVY OVERLOAD UP TO 175% (60s) OR UP TO 210% (3s)
Power supply up to 690 Vac

Sinus Penta Model	5T			6T			Inom.	Imax	Ipeak (3s)
	525-575 Vac			660-690 Vac					
	kW	CV	A	kW	CV	A			
Size S65³⁾									
SINUS PENTA 0457	500	680	585	560	770	544	720	880	1056
SINUS PENTA 0524	560	770	630	630	860	626	800	960	1152
SINUS PENTA 0598	630	860	720	710	970	696	900	1100	1320
SINUS PENTA 0748	710	970	800	900	1230	858	1000	1300	1440
Size S70³⁾									
SINUS PENTA 0831	800	1090	900	1000	1360	954	1200	1440	1440
Size S75²⁾									
SINUS PENTA 0964	1000	1360	1145	1220	1660	1187	1480	1780	2136
SINUS PENTA 1130	1170	1600	1360	1400	1910	1360	1700	2040	2448
Size S80²⁾									
SINUS PENTA 1296	1340	1830	1560	1610	2190	1560	2100	2520	3024
Size S90²⁾									
SINUS PENTA 1800	1750	2400	2050	2100	2860	2100	2600	3100	3720
SINUS PENTA 2076	2000	2720	2400	2400	3300	2400	3000	3600	4000
Inverter power supply	500-600 Vac; 705-845 Vdc			575-690 Vac; 845-970 Vdc					

SINUS PENTA IN PARALLEL

Sinus Penta Model	5T			6T			Inom.	Imax	Ipeak (3s)
	575 Vac			660-690 Vac					
	kW	CV	A	kW	CV	A			
Size S44 (2xS42)³⁾									
SINUS PENTA 0459	500	680	585	585	770	544	720	880	-
Size S54 (2xS52)³⁾									
SINUS PENTA 0526	560	770	630	630	860	626	800	960	-
SINUS PENTA 0600	630	860	720	710	970	696	900	1100	-
SINUS PENTA 0750	710	970	800	900	1230	858	1000	1300	-
SINUS PENTA 0828	800	1090	900	1000	1360	954	1200	1440	-
Size S56 (3xS52)³⁾									
SINUS PENTA 0960	1000	1360	1145	1220	1660	1187	1480	1780	-
SINUS PENTA 1128	1170	1600	1360	1400	1910	1360	1700	2040	-
Inverter power supply	500-600 Vac; 705-845 Vdc			575-690 Vac; 815-970 Vdc					

1) Unavailable model as IP54 - 2) Cabinet version only available on demand - 3) input reactor and output reactor required.
Key Inom= inverter nominal current • Imax= inverter maximum current for 60sec every 10min. • Ipeak= inverter maximum current for 3sec
 Note: The indicated motor currents refer to standard 4 pole motors, with IE2 efficiency

SINUS PENTA 5T/6T



STRONG OVERLOAD UP TO 200% (60s) OR UP TO 240% (3s)
Power supply up to 690 Vac

Sinus Penta Model	5T			6T			Inom. A	Imax A	Ipeak (3s) A
	525-575 Vac			660-690 Vac					
	kW	CV	A	kW	CV	A			
Size S12									
SINUS PENTA 0003	3	4	4.4	3	4	3.7	7	8.5	10
SINUS PENTA 0004	4	5.5	5.7	4	5.5	4.8	9	11	13
SINUS PENTA 0006	4	5.5	5.7	5.5	7.5	6.3	11	13.5	16
SINUS PENTA 0012	5.5	7.5	7.6	7.5	10	8.4	13	16	19
SINUS PENTA 0018	7.5	10	10	9.2	12.5	10.2	17	21	25
Size S14									
SINUS PENTA 0003	3	4	4.4	3	4	3.7	7	8.5	10
SINUS PENTA 0004	4	5.5	5.7	4	5.5	4.8	9	11	13
SINUS PENTA 0006	4	5.5	5.7	5.5	7.5	6.3	11	13.5	16
SINUS PENTA 0012	5.5	7.5	7.6	7.5	10	8.4	13	16	19
SINUS PENTA 0018	7.5	10	10	9.2	12.5	10.2	17	21	25
SINUS PENTA 0019	9.2	12.5	12.5	11	15	12	21	25	30
SINUS PENTA 0021	11	15	14	11	15	12	25	30	36
SINUS PENTA 0022	15	20	20	18.5	25	21	33	40	48
SINUS PENTA 0024	18.5	25	25	22	30	23	40	48	58
SINUS PENTA 0032 ¹⁾	25	35	32	30	40	33	52	63	76
Size S22									
SINUS PENTA 0042	30	40	39	30	40	33	60	72	86
SINUS PENTA 0051	37	50	47	45	60	46	80	96	115
SINUS PENTA 0062	45	60	55	55	75	56	85	110	132
SINUS PENTA 0069	45	60	55	55	75	56	105	135	162
Size S32									
SINUS PENTA 0076	55	75	70	75	100	77	125	165	198
SINUS PENTA 0088	75	100	95	90	125	95	150	200	240
SINUS PENTA 0131	90	125	115	110	150	115	190	250	300
SINUS PENTA 0164	110	150	138	132	180	140	230	300	360
Size S42									
SINUS PENTA 0181	160	220	198	200	270	198	305	380	420
SINUS PENTA 0201	160	220	198	220	300	220	330	420	420
SINUS PENTA 0218	200	270	240	250	340	250	360	465	560
SINUS PENTA 0259	220	300	275	315	430	310	400	560	560
Size S52									
SINUS PENTA 0290	250	340	300	355	480	341	450	600	720
SINUS PENTA 0314	280	380	336	375	510	360	500	665	798
SINUS PENTA 0368	315	430	367	400	550	390	560	720	850
SINUS PENTA 0401	355	480	410	500	680	480	640	850	850
Inverter power supply	500-600 Vac; 705-845 Vdc			575-690 Vac; 845-970 Vdc					

1) Unavailable model as IP54 - 2) Cabinet version only available on demand - 3) input reactor and output reactor required.

Key Inom= inverter nominal current • Imax= inverter maximum current for 60sec every 10min. • Ipeak= inverter maximum current for 3sec
 Note: The indicated motor currents refer to standard 4 pole motors, with IE2 efficiency

STRONG OVERLOAD UP TO 200% (60s) OR UP TO 240% (3s)
Power supply up to 690 Vac

Sinus Penta Model	5T			6T			Inom.	Imax	Ipeak (3s)
	525-575 Vac			660-690 Vac					
	kW	CV	A	kW	CV	A			
Size S65³⁾									
SINUS PENTA 0457	400	550	480	500	680	480	720	880	1056
SINUS PENTA 0524	450	610	532	560	770	544	800	960	1152
SINUS PENTA 0598	560	770	630	630	860	626	900	1100	1320
SINUS PENTA 0748	630	860	720	800	1090	773	1000	1300	1440
Size S70³⁾									
SINUS PENTA 0831	710	970	800	900	1230	858	1200	1440	1440
Size S75²⁾									
SINUS PENTA 0964	900	1230	1000	1000	1360	954	1480	1780	2136
SINUS PENTA 1130	1000	1360	1145	1100	1500	1086	1700	2040	2448
Size S80²⁾									
SINUS PENTA 1296	1150	1570	1337	1380	1880	1337	2100	2520	3024
Size S90²⁾									
SINUS PENTA 1800	1460	1990	1700	1750	2380	1700	2600	3100	3720
SINUS PENTA 2076	1750	2400	2050	2100	2860	2100	3000	3600	4000
Inverter power supply	500-600 Vac; 705-845 Vdc			575-690 Vac; 845-970 Vdc					

SINUS PENTA IN PARALLEL

Sinus Penta Model	5T			6T			Inom.	Imax	Ipeak (3s)
	575 Vac			660-690 Vac					
	kW	CV	A	kW	CV	A			
Size S44 (2xS42)³⁾									
SINUS PENTA 0459	400	550	480	500	680	480	720	880	-
Size S54 (2xS52)³⁾									
SINUS PENTA 0526	450	610	532	560	770	544	800	960	-
SINUS PENTA 0600	560	770	630	630	860	626	900	1100	-
SINUS PENTA 0750	630	860	720	800	1090	773	1000	1300	-
SINUS PENTA 0828	710	970	800	900	1230	858	1200	1440	-
Size S56 (3xS52)³⁾									
SINUS PENTA 0960	900	1230	1000	1000	1360	954	1480	1780	-
SINUS PENTA 1128	1000	1360	1145	1100	1500	1086	1700	2040	-
Inverter power supply	500-600 Vac; 705-845 Vdc			575-690 Vac; 815-970 Vdc					

1) Unavailable model as IP54 - 2) Cabinet version only available on demand - 3) input reactor and output reactor required.
 Key Inom= inverter nominal current • Imax= inverter maximum current for 60sec every 10min. • Ipeak= inverter maximum current for 3sec
 Note: The indicated motor currents refer to standard 4 pole motors, with IE2 efficiency

SINUS PENTA 5T/6T



S12



S14



S22



S32

SINUS PENTA IP54 models

- The Sinus series also features an IP54-range suitable for environmental conditions with a strong presence of dust and water (up to SINUS PENTA S32).

- The robust metal enclosure is suitable for outdoor installations, therefore no electric cabinet is required

DIMENSIONS AND WEIGHT IP54 MODELS

Size	W (mm)	H (mm)	D (mm)	Weight (kg)
S12	250	622	268	23
S14 ¹⁾	310	751	295	31
S22	345	1075	465	86
S32	431	1160	471	113

1) model Sinus Penta 0032 5T/6T unavailable as IP54

IP54 Front door operation (optional)

A complete set is available for front-door operation, including a potentiometer, an emergency push-button and a key-operated selector switch.

LOCAL (LOC) Enables motor speed adjustment via the inverter keypad.

REMOTE (REM) Controls the inverter based on how it is programmed via terminal board, serial ports or fieldbus.





PENTA MARINE 2T/4T and 5T/6T



***Inverter for marine and offshore applications
Certified by DNV-GL***

Drives from 1.3 kW to 1750 kW with 5 functions for:

- Three-phase asynchronous motor control
- Three-phase synchronous motor control
- Regeneration into the grid
- Wide power supply AC voltage range, 200÷690 Vac
- DC power supply range 280÷970 Vdc
- Input frequency 50-60 Hz
- Enclosure IP00, IP20, IP54
- Full compatibility with the "REMOTE DRIVE" software for remote control

SUPPLY VOLTAGE
2T = 200-240 VAC
4T = 380-500 VAC
5T = 500-600 VAC
6T = 575-690 VAC

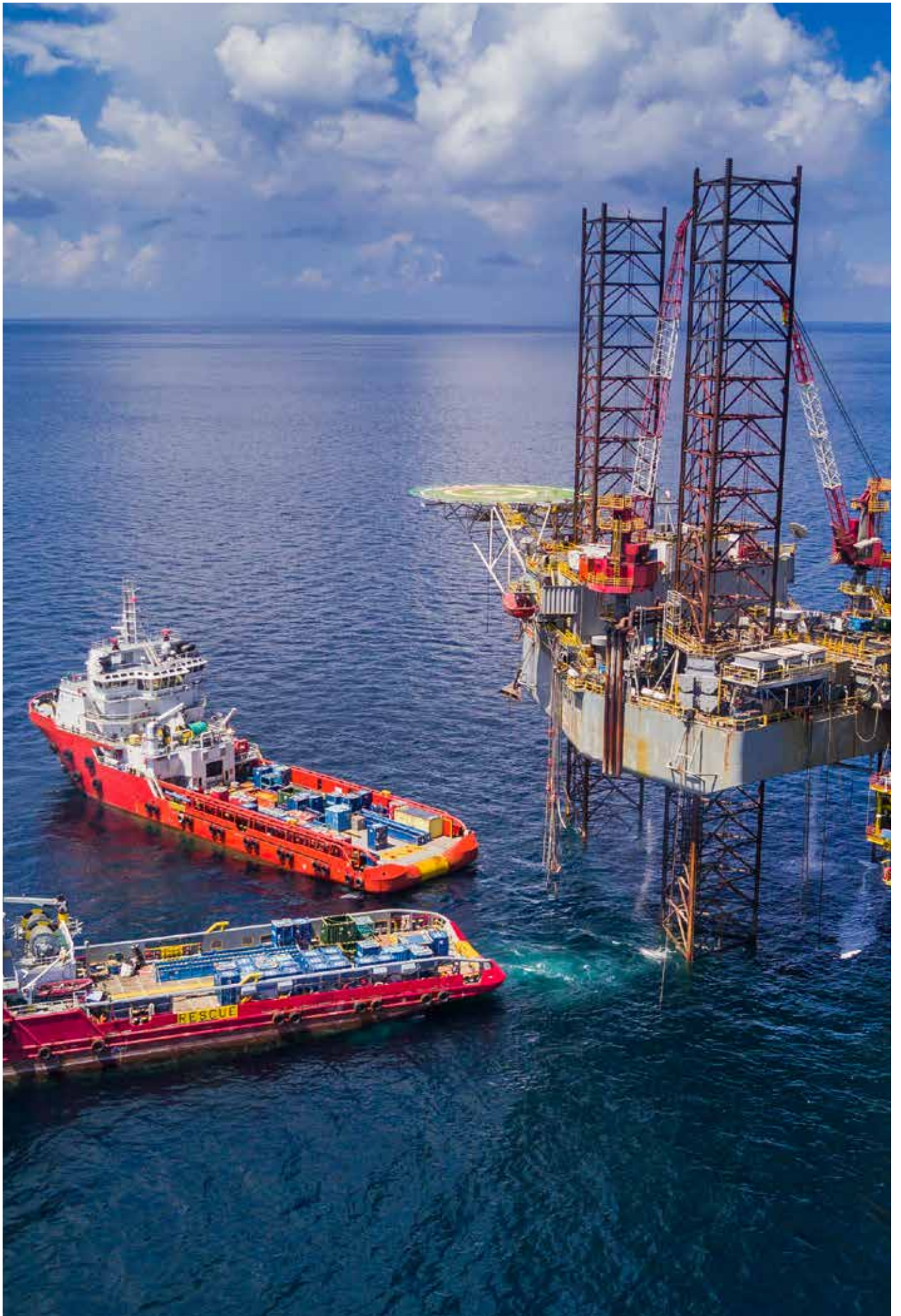
**3 YEARS
WARRANTY**



For the combination of inverter/ motor see the tables of SINUS PENTA except sizes S65, S70, S75, S80, S90



**TOP EFFICIENCY DRIVE
CDM IE2 according to
IEC 61800-9-2**



SINUS PENTA XT



SINUS PENTA XT: **"Turnkey" solution for floor installation**

The same drive controls both three-phase asynchronous and synchronous permanent magnet motors (with and without speed feedback)

Wide Power Range and two Voltage Classes

4T: 3 x 380÷500 Vac, 110÷710 kW

6T: 3 x 575÷690 Vac, 200÷1240 kW

Supply voltage tolerance: +10/-15%

- Input frequency 50 Hz
- Degree of Protection IP21, IP54

3 YEARS WARRANTY



TOP EFFICIENCY DRIVE
CDM IE2 according to
IEC 61800-9-2

MAIN FEATURES

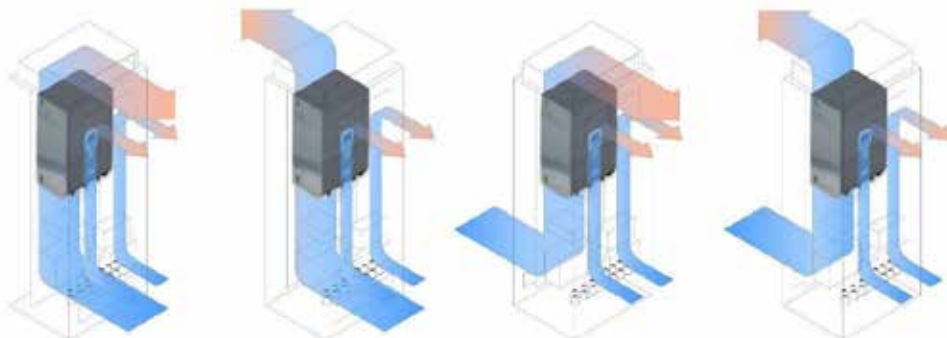
- Compact design adaptable to customer needs
- Intuitive and multi-language control panel
- Easy access connection terminal block and internal cable tray available to the customer
- Cooling by means of separate ventilation channels:
 - Front-channel: dissipation of the control section of the drive
 - Back-channel: dissipation of the power section of the drive
- Zero clearance (side-by-side mounting)
- Three front door control modes:
 - O = BASIC
 - S = START/STOP
 - F = FULL
- SINUS PENTA XT can be configured with three input protective devices:
 - SF = Switch + Fuses 65 kA
 - CB = Circuit Breaker 10 kA
 - BF = Breaker + Fuses 65 kA

One product, 4 modes configurable by the customer



180 ° adjustable
for rear or front
air expulsion

Air intake slot that can be installed on the back or front



SINUS PENTA XT



SINUS PENTA XT - 4T

Model	LIGHT	STANDARD	HEAVY	STRONG	Total dimensions WxHxD
	kW	kW	kW	kW	mm
SINUS PENTA XT 0180 4T	160	160	132	110	2200 x 800 x 600
SINUS PENTA XT 0202 4T	200	200	150	132	
SINUS PENTA XT 0217 4T	220	220	185	150	
SINUS PENTA XT 0260 4T	250	250	200	160	
SINUS PENTA XT 0313 4T	280	280	220	185	2200 x 1000 x 600
SINUS PENTA XT 0367 4T	315	315	250	200	
SINUS PENTA XT 0402 4T	400	400	315	280	
SINUS PENTA XT 0523 4T	450	450	355	315	2200 x 2000 x 600
SINUS PENTA XT 0599 4T	500	500	400	355	2200 x 2600 x 600
SINUS PENTA XT 0749 4T	560	560	500	400	
SINUS PENTA XT 0832 4T	710	630	560	450	

NOTE: 1) The output power values are referred to a 400 Vac voltage feeder; 2) The kW shown in the table refer to standard motors 4 poles, efficiency class IE2.

SINUS PENTA XT - 6T

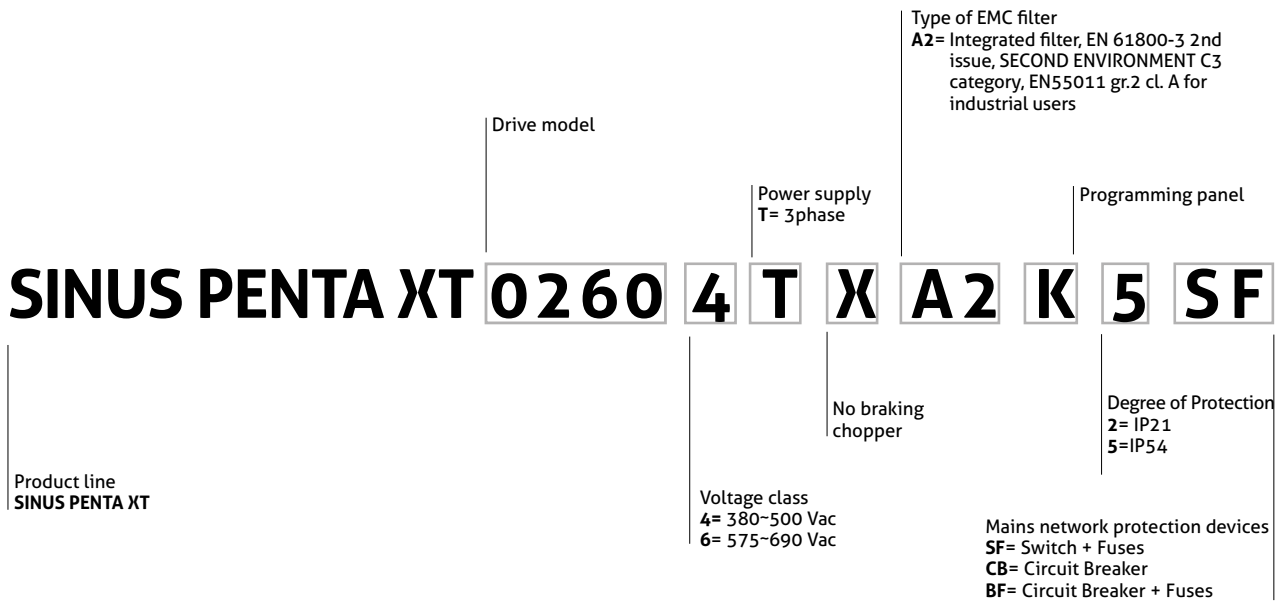
Model	LIGHT	STANDARD	HEAVY	STRONG	Total dimensions WxHxD
	kW	kW	kW	kW	mm
SINUS PENTA XT 0181 6T	250	250	220	200	2200 x 800 x 600
SINUS PENTA XT 0201 6T	315	315	250	220	
SINUS PENTA XT 0218 6T	355	315	315	250	
SINUS PENTA XT 0259 6T	400	400	355	315	
SINUS PENTA XT 0290 6T	450	450	400	355	2200 x 1000 x 600
SINUS PENTA XT 0314 6T	500	450	450	375	
SINUS PENTA XT 0368 6T	560	500	500	400	
SINUS PENTA XT 0401 6T	630	630	560	500	
SINUS PENTA XT 0459 6T	710	630	560	500	2200 x 2000 x 600
SINUS PENTA XT 0526 6T	800	710	630	560	2200 x 2600 x 600
SINUS PENTA XT 0600 6T	900	900	710	630	
SINUS PENTA XT 0750 6T	1000	1000	900	800	
SINUS PENTA XT 0828 6T	1240	1100	1000	900	

NOTE: 1) The output power values are referred to a 690 Vac voltage feeder; 2) The kW shown in the table refer to standard motors 4 poles, efficiency class IE2.

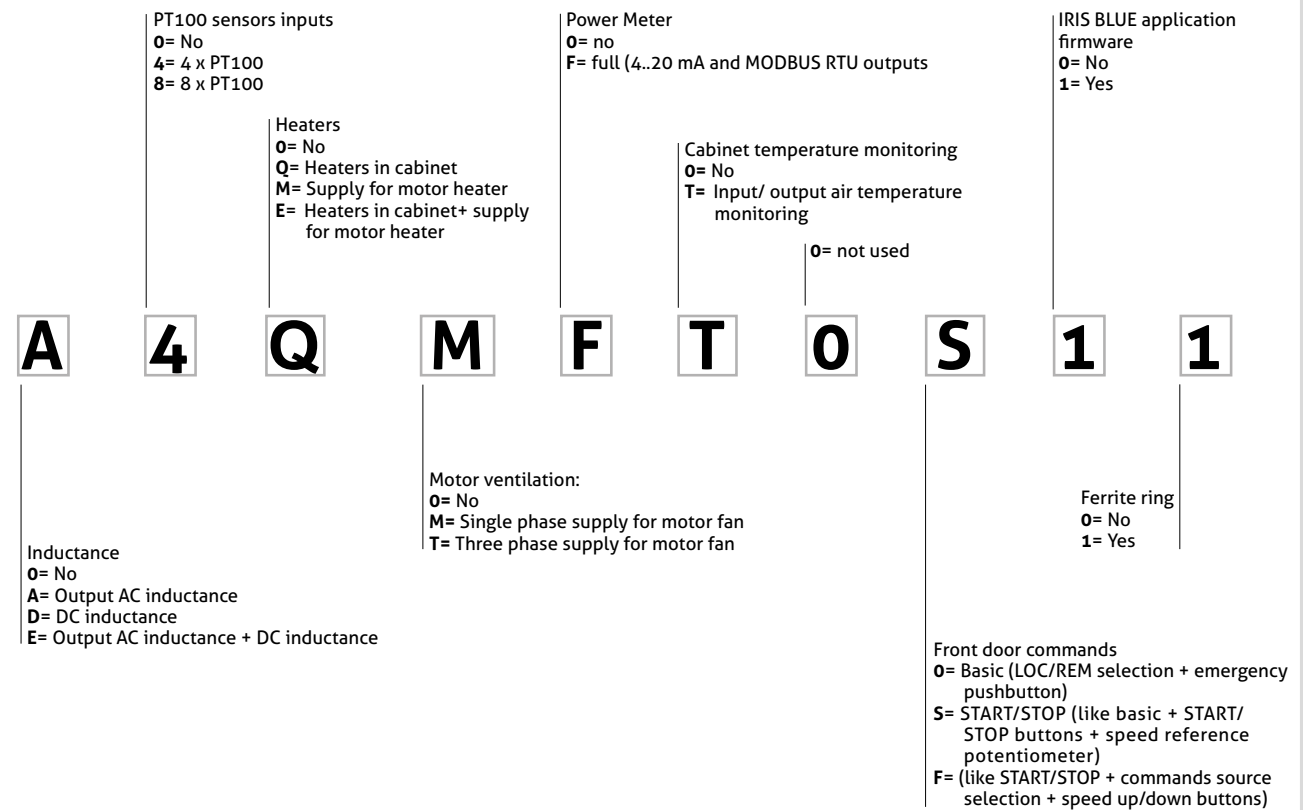
Overload available 60s every 10min:

- Light: up to 120% (up to 144% for 3s)
- Standard: up to 140% (up to 168% for 3s)
- Heavy: up to 175% (up to 210% for 3s)
- Strong: up to 200% (up to 240% for 3s)

PRODUCT SELECTION CHART



OPTIONS CONFIGURABILITY



SINUS PENTA IN CABINET



3 kW to 3000 kW SINUS PENTA CABINET

on demand for:

- **Three-phase asynchronous motor control**
- **Three-phase synchronous motor control**
- **Regeneration into the grid**

- Wide power supply voltage range, 200 ÷ 690 Vac
- DC power supply range 280 ÷ 970 Vdc
- Input frequency 50 - 60 Hz
- Enclosure IP24, IP34, IP54
- Many different options available, please contact Santerno Pre-Sales office
- Full compatibility with the "REMOTE DRIVE" software for remote control

SUPPLY VOLTAGE

2T = 200-240 VAC

4T = 380-500 VAC

5T = 500-600 VAC

6T = 575-690 VAC

**3 YEARS
WARRANTY**

SINUS PENTA IN CABINET (on demand)



TECHNICAL FEATURES & HIGHLIGHTS

Sinus PENTA line inverters can be provided in cabinet. A custom made solution is given by a choice of options.

- IP24 ÷ IP54 enclosure
- Input three-pole switch with fast fuses
- Input three-pole circuit breaker
- AC1 input three-pole contactor
- Board front operation with key selector
- LOCAL/REMOTE command and EMERGENCY push-button
- Input chokes
- DC inductors
- Resonant Harmonic Filters in compliance with IEEE 519
- Motor side output chokes
- Sinusoidal filters motor-side
- EMC filters
- Supplementary terminal board for input and output cables
- Output ferrite filter
- Power supply circuit for servoventilation
- Braking module for sizes >= S41
- Internal resistor against condensation
- PT100 motor thermal probe instrument
- Front back-lit display keypad
- Special customer requests

DIMENSIONS AND WEIGHT OF THE COMPACT MODELS IN CABINET

Size	Sinus Penta Cabinet model	Voltage class	W (mm)	H (mm)	D (mm)	Weight (kg)
S15C	0040-0049	2T-4T	600	2270	500	130
S20C	0060-0067-0074-0086	2T-4T	600	2270	500	140-143
S22C	0042-0051-0062-0069	5T-6T	600	2270	500	158-161
S30C	0113-0129-0150-0162	2T-4T	600	2270	600	162
S32C	0076-0088-0131-0164	5T-6T	600	2270	600	191-195
S41C	0180-0202-0217-0260	2T-4T	1000	2270	600	280
S42C	0181-0218-0259	5T-6T	1000	2270	600	300
S51C	0313-0367-0402	2T-4T	1200	2270	600	350
S52C	0290-0314-0368-0401	5T-6T	1200	2270	600	370
S60C	0457-0524	2T-4T	1600	2675	800	586
S65C	0598-0748-0831-0457-0524-0598-0748	4T-5T-6T	2000	2675	800	854
S70C	0831	5T-6T	2200	2675	800	1007

*Dimensions and weights may change according to the required optional

SINUS PENTA IN CABINET (on demand)



Configurations, dimensions and weight

Model	Size	Voltage class (Vac)	Circuit breakers	Power supply unit	IGBT module units	Braking units	Dimensions (mm) (WxHxD)	Weight (kg)
6-PULSE Power Supply, no braking unit								
PENTA CABINET 0964 4T XA2K300	S75	380-500	1	2	6	n.d.	3600x2675x800	2580
PENTA CABINET 0964 5T/6T XA2K300		500-600 / 575-690					3600x2675x800	2600
PENTA CABINET 1130 4T XA2K300	S75	380-500	1	2	6	n.d.	3600x2675x800	2600
PENTA CABINET 1130 5T/6T XA2K300		500-600 / 575-690					3600x2675x800	2650
PENTA CABINET 1296 4T XA2K300	S80	380-500	1	3	6	n.d.	4000x2675x800	2880
PENTA CABINET 1296 5T/6T XA2K300		500-600 / 575-690					4000x2675x800	2930
PENTA CABINET 1800 4T XA2K300	S90	380-500	1	3	9	n.d.	5000x2675x800	3880
PENTA CABINET 1800 5T/6T XA2K300		500-600 / 575-690					6000x2675x800	4320
PENTA CABINET 2076 4T XA2K300	S90	380-500	1	3	9	n.d.	5000x2675x800	3900
PENTA CABINET 2076 5T/6T XA2K300		500-600 / 575-690					6000x2675x800	4340
6-PULSE Power Supply with braking unit								
PENTA CABINET 0964 4D XA2K300	S75	380-500	2	2	6	n.d.	3800x2675x800	2590
PENTA CABINET 0964 5D/6D XA2K300		500-600 / 575-690					3800x2675x800	2630
PENTA CABINET 1130 4D XA2K300	S75	380-500	2	2	6	n.d.	3800x2675x800	2590
PENTA CABINET 1130 5D/6D XA2K300		500-600 / 575-690					3800x2675x800	2680
PENTA CABINET 1296 4D XA2K300	S80	380-500	2	4	6	n.d.	4600x2675x800	3220
PENTA CABINET 1296 5D/6D XA2K300		500-600 / 575-690					5200x2675x800	3550
PENTA CABINET 1800 4D XA2K300	S90	380-500	2	4	9	n.d.	6000x2675x800	4230
PENTA CABINET 1800 5D/6D XA2K300		500-600 / 575-690					6600x2675x800	4650
PENTA CABINET 2076 4D XA2K300	S90	380-500	2	4	9	n.d.	6000x2675x800	4250
PENTA CABINET 2076 5D/6D XA2K300		500-600 / 575-690					6600x2675x800	4670
12-PULSE Power Supply, no braking unit								
PENTA CABINET 0964 4T BA2K300	S75	380-500	2	2	6	1	4000x2675x800	2740
PENTA CABINET 0964 5T/6T BA2K300		500-600V / 575-690					4000x2675x800	2930
PENTA CABINET 1130 4T BA2K300	S75	380-500	1	2	6	1	4000x2675x800	2740
PENTA CABINET 1130 5T/6T BA2K300		500-600 / 575-690					4200x2675x800	2980
PENTA CABINET 1296 4T BA2K300	S80	380-500	1	3	9	2	4600x2675x800	3150
PENTA CABINET 1296 5T/6T BA2K300		500-600 / 575-690					4600x2675x800	3260
PENTA CABINET 1800 4T BA2K300	S90	380-500	1	3	9	2	5600x2675x800	4210
PENTA CABINET 1800 5T/6T BA2K300		500-600 / 575-690					5600x2675x800	4210
PENTA CABINET 2076 4T BA2K300	S90	380-500	1	3	9	2	5600x2675x800	4230
PENTA CABINET 2076 5T/6T BA2K300		500-600 / 575-690					5600x2675x800	4230
12-PULSE Power Supply with braking unit								
PENTA CABINET 0964 4D BA2K300	S75	380-500	2	2	6	1	4200x2675x800	2770
PENTA CABINET 0964 5D/6D BA2K300		500-600 / 575-690					4400x2675x800	2650
PENTA CABINET 1130 4D BA2K300	S75	380-500	2	2	6	1	4200x2675x800	2770
PENTA CABINET 1130 5D/6D BA2K300		500-600 / 575-690					4400x2675x800	3000
PENTA CABINET 1296 4D BA2K300	S80	380-500	2	4	6	2	5200x2675x800	3400
PENTA CABINET 1296 5D/6D BA2K300		500-600 / 575-690					5200x2675x800	3550
PENTA CABINET 1800 4D BA2K300	S90	380-500	2	4	9	2	6600x2675x800	4570
PENTA CABINET 1800 5D/6D BA2K300		500-600 / 575-690					6600x2675x800	4650
PENTA CABINET 2076 4D BA2K300	S90	380-500	2	4	9	2	6600x2675x800	4590
PENTA CABINET 2076 5D/6D BA2K300		500-600 / 575-690					6600x2675x800	4670

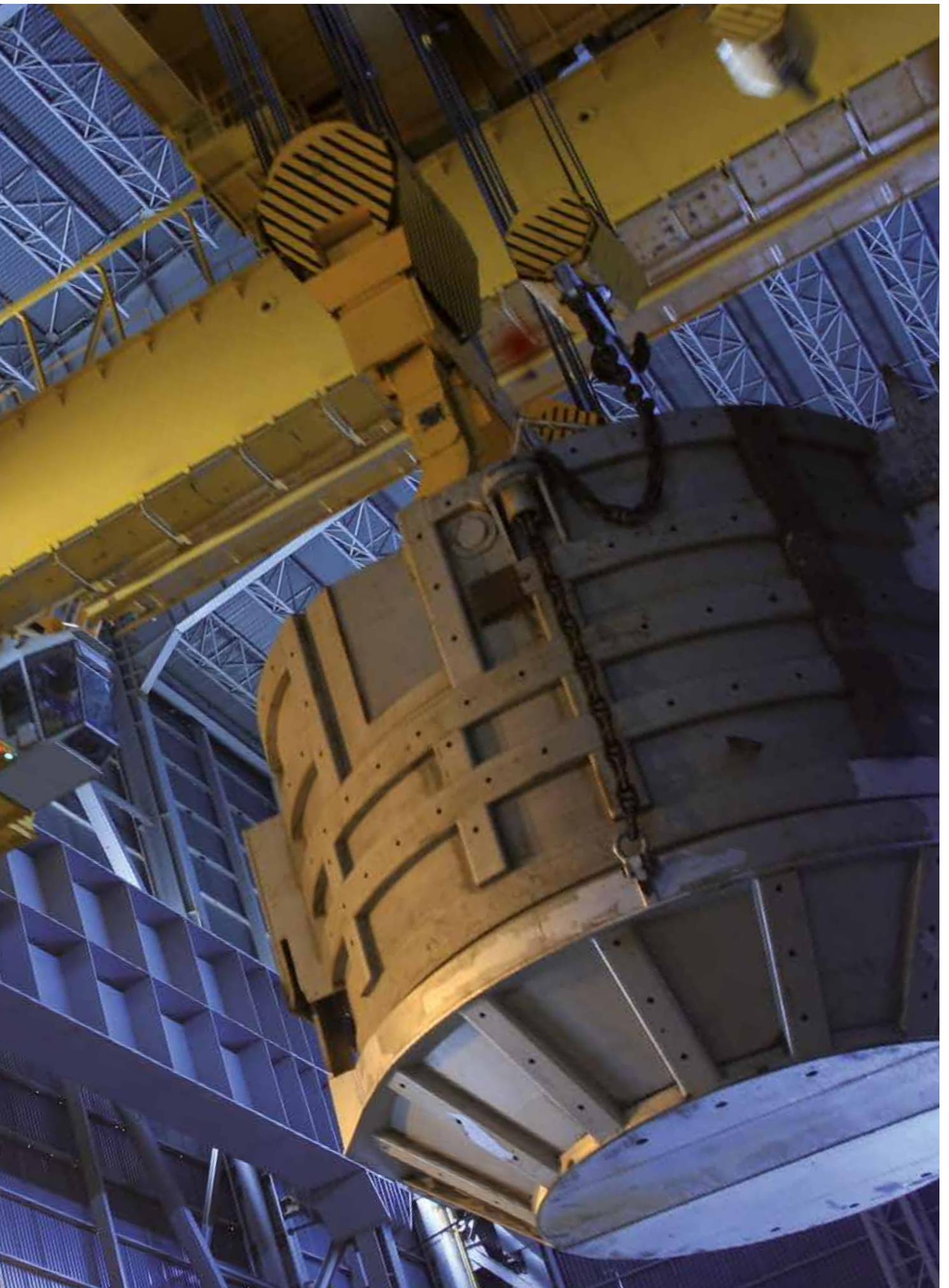
SINUS PENTA IN CABINET (on demand)



Configurations, dimensions and weight

Model	Size	Voltage class (Vac)	Circuit breakers	Power supply unit	IGBT module units	Braking units	Dimensions (mm) (WxHxD))	Weight (kg)
Regenerative Active Front End								
PENTA CABINET RGN 0964 4C XA2K300	S74+S74	380-500	1	N.A.	6+6	n.d.	7400x2675x1000	5140
PENTA CABINET RGN 0964 5C/6C XA2K300		500-600 / 575-690					7400x2675x1000	5770
PENTA CABINET RGN 1130 4C XA2K300	S74+S74	380-500	1	N.A.	6+6	n.d.	7400x2675x1000	5140
PENTA CABINET RGN 1130 5C/6C XA2K300		500-600 / 575-690					7400x2675x1000	5770
PENTA CABINET RGN 1296 4C XA2K300	S74+S74	380-500	1	N.A.	6+6	n.d.	7400x2675x1000	5800
PENTA CABINET RGN 1296 5C/6C XA2K300		500-600 / 575-690					7400x2675x1000	5800
PENTA CABINET RGN 1800 4C XA2K300	S84+S84	380-500	1	N.A.	9+9	n.d.	10800x2675x1000	8360
PENTA CABINET RGN 1800 5C/6C XA2K300		500-600 / 575-690					10800x2675x1000	8720
PENTA CABINET RGN 2076 4C XA2K300	S84+S84	380-500	1	N.A.	9+9	n.d.	10800x2675x1000	8400
PENTA CABINET RGN 2076 5C/6C XA2K300		500-600 / 575-690					10800x2675x1000	8760





SINUS PENTA BOX IP54

WALL MOUNTING



SUPPLY VOLTAGE
2T = 200-240 VAC
4T = 380-500 VAC
5T = 500-600 VAC
6T = 575-690 VAC

3 YEARS
WARRANTY

5-function 1.3 kW to 90 kW drives in IP54 box for:

- **Three-phase asynchronous motor control**
- **Three-phase synchronous motor control**

- Wide power supply voltage range, 200 Vac - 690 Vac.
- Input frequency 50 - 60 Hz
- Power range 1.3 - 90 kW
- Full compatibility with the "REMOTE DRIVE" software for remote control

TECHNICAL FEATURES & HIGHLIGHTS

Sinus PENTA line inverters can be provided in box up to IP54 protection degree.
A custom-made solution is given by a choice of options.

- Input three pole switch circuit breaker
- AC1 input three pole contactor
- Front operation board by key selector LOCAL/REMOTE command and EMERGENCY push-button
- Input chokes
- Motor side output chokes
- Power supply circuit for servoventilation
- Internal resistor against condensation
- Supplementary terminal board for input and output cables
- Front back-lit display with keyboard

DIMENSIONS AND WEIGHTS BOX MODELS

Size	W (mm)	H (mm)	D (mm)	Weight (kg)
S05B	400	600	290	27.9
S12B	500	700	300	50.5
S15B	600	1000	400	78.2
S20B	600	1200	400	112.3

*Dimensions and weights may change according to the required optionals.