

Mains connection	
Voltage and power range	1-phase, 200 to 240 V, +10%/-15% 0.25 to 3 kW 3-phase, 200 to 240 V, +10%/-15% 0.25 to 11 kW 3-phase, 380 to 480 V, +10%/-15% 0.37 to 22 kW
Supply network type	TN, TT, IT ACS180-04N-xxxx-4 does not support corner-grounded delta network
Frequency	from 47 to 63 Hz
Power factor	$\cos \varphi = 0.98$
Efficiency (at nominal power)	98%
Efficiency class (IEC 61800-9-2)	IE2
Motor connection	
Voltage	0 to U_N , 3-phase
Frequency	0 to 599 Hz
Motor control	Scalar control Sensorless vector control
Switching frequency	1.5 to 12 kHz, default 4 kHz
Motor control performance	
Speed control performance, open loop	
Static accuracy	20% of motor rated slip
Dynamic accuracy	1% seconds with 100% torque step
Torque control performance	
Torque step rise time	< 10 ms, rated torque step
Non-linearity	±5% with rated torque
Braking power connection	
Brake chopper	Only on frames R2 to R4
Brake resistor	Only on frames R2 to R4
DC connection	Only on frames R2 to R4
Control and connectivity	
Analog input	2 mA or V configure by parameter AI1 can be used as DI5
Analog output	1 mA or V configure by parameter
Digital input	4 PNP or NPN
Digital output	1 Transistor output, 60mA
Relay output	1 NO+NC, 230 V, 2 A
Communication	1 x RJ45 for external control panel/PC tool Terminals for EIA-485 Modbus RTU External panel and Modbus RTU share same port internally – cannot be used together

Functional safety	
Built-in safety features (for ACS180-04S-xxxx-x)	Safe torque off (STO) acc. to EN/IEC61800-5-2: IEC61508 ed2: SIL 3, IEC 61511: SIL 3, IEC 62061: SIL CL 3, EN ISO 13849-1: PL e
Environmental limits	
Ambient temperature	
Operation	-10 to +50 °C at heavy duty -10 to +40 °C at light and nominal duty with derating up to 60 °C (except R0, which has max. temperature of 50 °C)
Transportation and storage	
Cooling method	Air-cooled, dry clean air
Altitude	0 to 2,000 m (see allowed power systems in HW manual) derating above 1,000 m
Relative humidity	5 to 95%, no condensation allowed
Degree of protection	IP20 as standard
Contamination levels	No conductive dust allowed
Storage	IEC 60721-3-1, Class 1C2 (chemical gases) Class 1S2 (solid particles)
Transportation	IEC 60721-3-2, Class 2C2 (chemical gases) Class 2S2 (solid particles)
Operation	IEC 60721-3-3, Class 3C2 (chemical gases) Class 3S2 (solid particles)
Product compliance	
CE	
Low Voltage Directive 2014/35/EU, EN 61800-5-1: 2007	
Machinery Directive 2006/42/EC, EN 61800-5-2: 2007	
EMC Directive 2014/30/EU, EN 61800-3: 2004 + A1: 2012	
RoHS directive 2011/65/EU and delegated directive (EU) 2015/863	
Ecodesign (EU) 2019/1781	
China RoHS II GB/T 26572	
UL, cUL	
RCLM	
KC	
TÜV Nord (safety functions)	
UKCA	
Quality assurance system ISO 9001 and Environmental system	
ISO 14001	
Waste electrical and electronic equipment directive (WEEE) 2002/96/EC	
EMC according to EN 61800-3:2004 + A1:2012	
ACS180-04S-xxxx-1: Class C2 as standard	
ACS180-04S-xxxx-4: Class C3 as standard	
ACS180-04S-xxxx-2: Class C4 as standard	
ACS180-04N-xxxx-x: Class C4 as standard	



1-phase, $U_N = 230$ V (range 200 to 240 V). The power ratings are valid at nominal voltage 230 V (0.25 to 3 kW).

Drive type	Frame size	Nominal ratings		Light-duty use		Heavy-duty use		Max. output current
		I_N (A)	P_N (kW)	I_{Ld} (A)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (kW)	I_{max} (A)
ACS180-04x-02A4-1	R0	2.4	0.37	2.3	0.37	1.8	0.25	3.2
ACS180-04x-03A7-1	R0	3.7	0.55	3.5	0.55	2.4	0.37	4.3
ACS180-04x-04A8-1	R0	4.8	0.75	4.6	0.75	3.7	0.55	6.7
ACS180-04x-06A9-1	R1	6.9	1.1	6.6	1.1	4.5	0.75	8.1
ACS180-04x-07A8-1	R1	7.8	1.5	7.4	1.5	6.6	1.1	11.9
ACS180-04x-09A8-1	R1	9.8	2.2	9.3	2.2	7.4	1.5	13.3
ACS180-04x-12A2-1	R2	12.2	3	11.6	3	9.8	2.2	17.6

3-phase, $U_N = 230$ V (range 200 to 240 V). The power ratings are valid at nominal voltage 230 V (0.25 to 11 kW).

Drive type	Frame size	Nominal ratings		Light-duty use		Heavy-duty use		Max. output current
		I_N (A)	P_N (kW)	I_{Ld} (A)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (kW)	I_{max} (A)
ACS180-04S-02A4-2	R0	2.4	0.37	2.3	0.37	1.8	0.25	3.2
ACS180-04S-03A7-2	R0	3.7	0.55	3.5	0.55	2.4	0.37	4.3
ACS180-04S-04A8-2	R0	4.8	0.75	4.6	0.75	3.7	0.55	6.7
ACS180-04S-06A9-2	R1	6.9	1.1	6.6	1.1	4.5	0.75	8.1
ACS180-04S-07A8-2	R1	7.8	1.5	7.4	1.5	6.6	1.1	11.9
ACS180-04S-09A8-2	R1	9.8	2.2	9.3	2.2	7.4	1.5	13.3
ACS180-04S-15A6-2	R2	15.6	3	14.6	3	10.7	2.2	19.3
ACS180-04S-17A5-2	R2	17.5	4	16.7	4	12.2	3	22
ACS180-04S-25A0-2	R3	25	5.5	24.2	5.5	17.5	4	31.5
ACS180-04S-033A-2	R3	32	7.5	30.8	7.5	25	5.5	45
ACS180-04S-048A-2	R4	48	11	46.2	11	32	7.5	57.6
ACS180-04S-055A-2	R4	55	11	52.8	11	48	11	86.4

x (in type code) = S or N

S = Standard offering with STO and EMC filter

1-phase 200 to 240 V: Class C2

3-phase 200 to 240 V: Class C4 (no built-in EMC filter)

3-phase 380 to 480 V: Class C3

N = Without STO and EMC filter (class C4)

Nominal ratings

I_N Rated current available continuously without overload ability at 40 °C.

P_N Typical motor power in no-overload use.

Light-duty use

I_{Ld} Continuous current allowing 110% I_{Ld} for 1 minute every 10 minutes at 40 °C.

P_{Ld} Typical motor power in light-duty use.

Heavy-duty use

I_{Hd} Continuous current allowing 150% I_{Hd} for 1 minute every 10 minutes at 50 °C.

P_{Hd} Typical motor power in heavy-duty use.

Maximum output current

I_{max} Maximum output current. Available for 2 seconds at start, then as long as allowed by drive temperature.

3-phase, $U_N = 400$ V (range 380 to 480 V). The power ratings are valid at nominal voltage 400 V (0.37 to 22 kW).

Drive type	Frame size	Nominal ratings		Light-duty use		Heavy-duty use		Max. output current
		I_N (A)	P_N (kW)	I_{Ld} (A)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (kW)	I_{max} (A)
ACS180-04x-01A8-4	R0	1.8	0.55	1.7	0.55	1.2	0.37	2.2
ACS180-04x-02A6-4	R0	2.6	0.75	2.5	0.75	1.8	0.55	3.2
ACS180-04x-03A3-4	R0	3.3	1.1	3.1	1.1	2.4	0.75	4.3
ACS180-04x-04A0-4	R1	4	1.5	3.8	1.5	3.3	1.1	5.9
ACS180-04x-05A6-4	R1	5.6	2.2	5.3	2.2	4	1.5	7.2
ACS180-04x-07A2-4	R1	7.2	3	6.8	3	5.6	2.2	10.1
ACS180-04x-09A4-4	R1	9.4	4	8.9	4	7.2	3	13
ACS180-04x-12A6-4	R2	12.6	5.5	12	5.5	9.4	4	16.9
ACS180-04x-17A0-4	R2	17	7.5	16.2	7.5	12.6	5.5	22.7
ACS180-04x-25A0-4	R3	25	11	23.8	11	17	7.5	30.6
ACS180-04x-033A-4	R3	32	15	30.5	15	25	11	45
ACS180-04x-038A-4	R4	38	18.5	36	18.5	32	15	57.6
ACS180-04x-045A-4	R4	45	22	42	22	38	18.5	68.4
ACS180-04x-050A-4	R4	50	22	48	22	45	22	81

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3-phase 380 to 480 V: Class C3

N = Without STO and EMC filter (class C4)

Nominal ratings

I_N Rated current available continuously without overload ability at 40 °C.

P_N Typical motor power in no-overload use.

Light-duty use

I_{Ld} Continuous current allowing 110% I_{Ld} for 1 minute every 10 minutes at 40 °C.

P_{Ld} Typical motor power in light-duty use.

Heavy-duty use

I_{Hd} Continuous current allowing 150% I_{Hd} for 1 minute every 10 minutes at 50 °C.

P_{Hd} Typical motor power in heavy-duty use.

Maximum output current

I_{max} Maximum output current. Available for 2 seconds at start, then as long as allowed by drive temperature.

ACS180 IP20

Frame size	Height 1 (mm)	Height 2 (mm)	Width (mm)	Depth (mm)	Weight (kg)
R0	174	209	70	143	0.9
R1	190	220	70	143	1.3
R2	202	230	120	143	1.9
R3	205	241	170	174	3.3
R4	205	240	260	178	5.3

Height 1: Total height of the drive without grounding plate.

Height 2: Total height of the drive with grounding plate

