

变频器
INVERTER



Changes for Better Life



ZCS880 Multi-Drive Inverter

Technical Data

Power Supply Connection		Environmental Restrictions	
Voltage and Power Range	Three-phase, UN3 380 to 415 V, +10%/-10%	Temperature	-40 to +70 °C
	Three-phase, UN5 380 to 500 V, +10%/-10%	Transport	-40 to +70 °C
Frequency	Three-phase, UN7 525 to 690 V, +10%/-10%	Storage	0 to +50 °C, no frost allowed
	Inverter Unit (INU) 1.5 to 5600 kW	Operating Range (Air-cooled)	+40 to 50 °C, derate by 1%/1 °C
	Diode Supply Unit (DSU) 50 to 5500 kVA	Cooling Method	
	IGBT Supply Unit (ISU) 300 to 6100 kVA	Air-cooled	Dry, clean air
	Regenerative Rectifier Unit (RRU) 400 to 6100 kVA	Altitude	
Power Factor	IGBT Supply Module (ISU):	0 to 1,000 m	without derating
	cos = 1 (basic)	1,000 to 4,000 m	derate by 1%/100 m ⁵⁾
	cos = 0.99 (total) Diode Supply Module (DSU) and Regenerative Rectifier Unit (RRU):	Relative Humidity	5 to 95%, no condensation allowed
	cos = 0.98 (basic)	Protection Class	
	cos = 0.93 to 0.95 (total)	IP22	standard (IP20 with open cabinet door)
Efficiency (at rated power)	98% with DSU, 97.5% with ISU	IP42, IP54	options
Motor Connection		Paint Color	RAL 9017, RAL 7035
Voltage	Three-phase output voltage 0 to $U_{N3} / U_{N5} / U_{N7}$	Functional Safety	Safe Torque Off (STO) per EN / EN 61800-5-2 IEC
Frequency	0 to ± 598 Hz ^{1) 4)}	Standard	61508 ed2: SIL 3, IEC 61511: SIL 3, EN/IEC 62061: SIL CL 3, EN ISO 13849-1: PL e
Motor Control	Direct Torque Control (DTC) Torque Control	With Internal Safety Function Module	Safety Stop 1 (SS1), Safe Limited Speed (SLS), Safe Emergency Stop (SES), Safe Brake Control (SBC), Maximum Safe Speed (SMS), Prevention of Unexpected Startup (POUS), Safe Direction (SDI), Safe Speed Monitoring (SSM) EN/IEC 61800-5-2, IEC 61508 ed2: SIL 3, IEC 61511: SIL 3 EN/IEC 62061: SIL CL 3, EN ISO 13849-1: PL e TÜV Nord certified ²⁾
Torque Control	Torque step rise time	Fieldbus communication	Safety Function of Multi-drive realized by Safety Function Module Certified realized PROFIsafe function through profinet
Open loop	Less than 5 ms at rated torque	Pollution Degree	No conductive dust allowed
Closed loop	Less than 5 ms at rated torque	Storage	IEC 60721-3-1, 1C2 (chemical gases), Class 1S2 (solid particles) [*]
Open loop	Non-Linearity:	Operation	IEC 60721-3-3, 3C2 (chemical gases), 3S2 (solid particles) ^{*)}
Closed loop	±4% at rated torque	Transport	IEC 60721-3-2, 2C2 (chemical gases), 2S2 (solid particles) ^{*)}
Open loop	±3% at rated torque	Vibration	IEC 60068-2-6, 10 to 57 Hz 0.075 mm displacement amplitude 57 to 150 Hz 1 g ²⁾
Closed loop	Static accuracy:		Equipment with marine structure: Max 1mm (peak value 2 to 13.2 Hz) Max 0.7 g (13.2 to 100 Hz) sine
Speed Control	10% of motor slip		
Open loop	0.01% of rated speed		
Closed loop	Dynamic accuracy:		
Open loop	0.3 to 0.4% seconds at 100% torque step		
Closed loop	0.1 to 0.2% seconds at 100% torque step		
Product Compliance			
CE			
Low Voltage Directive 2014/35/			
Machinery Directive 2006/42/EC			
EMC Directive 2014/30/EU			
ATEX Directive 2014/34/EU			
ISO 9001 Quality Assurance System and ISO 14001 Environmental System			
UL, EAC/GOST R ³⁾ , cUL 508A or cUL 508C, CSA, RCM			
Functional Safety: STO TÜV Nord Certificate			
ATEX Certified Safety Isolation Function, Ex II (2) GD ⁵⁾			
Marine Type Approval			
EMC Compliance per EN 61800-3:2004 + A1:2012			
First environment, restricted sale, Category C2, 1000A and up to 500V option code			
Second environment, unrestricted sale, Category C3, as an option			

^{*)} C = Chemically active substances

^{*)} S = Mechanically active substances

¹⁾ For operational frequencies above 120 Hz, specific derating values may be required

²⁾ Verify the applicability for each drive

³⁾ EAC has replaced GOST R

⁴⁾ For higher output frequencies, please contact us

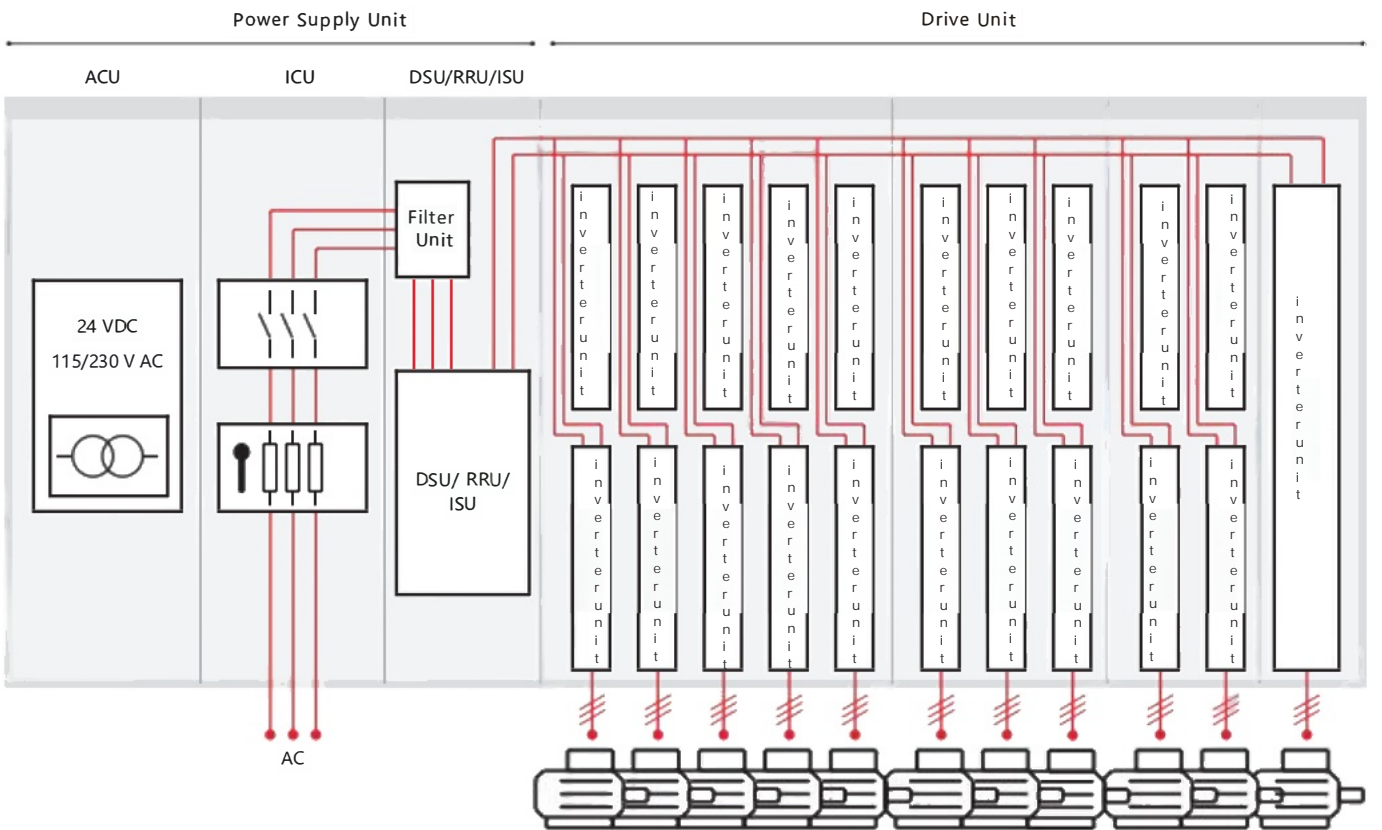
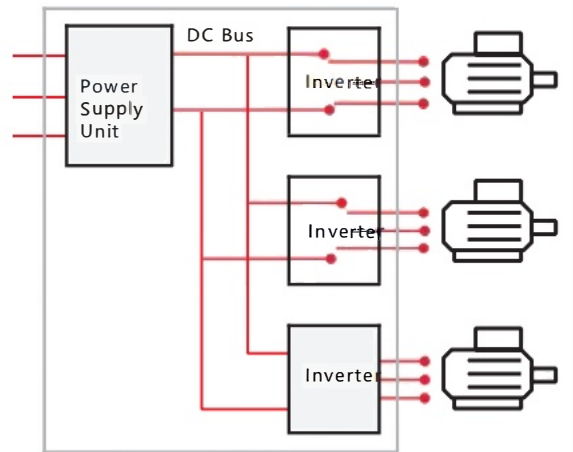
⁵⁾ Below 40 °C ambient temperature, the derating margin will be reduced

ZCS880 Multi-Drive

01 Configuration with power supply unit, DC bus, and multiple inverters

02 The purpose of constructing a multi-drive is to control multiple motors. The important units are the drive unit (referred to as the inverter unit (INU)) and the power supply unit (DSU/RRU/ISU)

The principle of the multi-drive is based on the arrangement of a common DC bus, which allows for a single power input and a common braking resource for multiple drives. From a simple diode supply unit to a highly sophisticated active IGBT supply unit, there are many power supply options available



ZCS880-107 Inverter
Cabinet Dimensions
A1i to A8i



Multi-drive can be used when multiple motors are part of a single process. The single power supply and DC bus arrangement features a compact modular design and high power density, where multiple inverters can provide several advantages:

Saving wiring, installation, and maintenance costs

Reducing the number of components and the footprint while increasing reliability

- Saving energy and costs because the energy circulates within the common DC bus, and all the energy does not leave the power supply network. It also allows motor-to-motor braking energy to be recycled without the need for braking choppers or regenerative power supply units

Reducing line power and current, making the power supply unit smaller.

Achieving overall safety and control functions through the common power supply of the multi-drive

In multi-motor applications, such as paper machines, individual inverter modules provide fast torque and speed signal communication between inverters to control the tension in the paper web. Similarly, in cases where a single motor's shafts are not tightly coupled, such as in sugar centrifuges, each inverter module can be programmed with speed curves to achieve lower total energy consumption

These two examples only showcase the range of applications that bring substantial benefits to multi-drives compared to other types of drive structures. High-power units D7T, D8T, A6i, A7i, and nxA8i come with speed-controlled cooling fans as standard

Configuration with power supply unit, DC bus, and multiple inverters

Inverter Unit (INU)

Inverter units are DC-powered, with built-in capacitors for smoothing DC voltage. Electrical connection to the common DC bus is protected by fuses. Individual inverter units can be disconnected from the DC bus via fuse switches or DC switches

Braking Unit

The braking unit is used for resistor braking. It controls the energy generated by motor deceleration (e.g., during an emergency stop). Whenever the voltage in the common DC bus exceeds a certain limit, the braking chopper connects the bus to the braking resistor. The products include single-phase braking units and three-phase dynamic braking units (DBU) using A8i modules

Diode Supply Unit (DSU)

In non-regenerative drive systems, diode supply units are used to convert three-phase AC voltage to DC voltage. Two types of diode supply units are available: uncontrolled 6-pulse diode supply units (D6D to D8D) and semi-controlled 6/12-pulse diode supply units with thyristor charging (D7T and D8T). DXT modules can be connected in parallel, and can charge the inverters without external components

IGBT Supply Unit (ISU)

In regenerative drive systems, IGBT supply units are used to convert three-phase AC voltage to DC voltage. The ISU consists of A8i and LCL filter modules. It can operate in both motor and generator modes. The DC voltage remains constant, and the line current is sinusoidal. Control also provides a power factor close to unity. The supply unit can boost DC voltage, for example, when the line voltage is low. Due to DTC control and LCL line filtering, harmonic content remains at very low levels. The ISU has a high tolerance for fluctuations in the grid voltage

Regenerative Rectifier Unit (RRU)

This power supply unit is used in regenerative drive systems to convert three-phase AC voltage to DC voltage. The RRU consists of $n \times$ A8i and L filter modules. In motor mode, the input current flows through the diodes to the DC bus, and the supply unit acts as a diode rectifier bridge. In regeneration mode, the current flows from the DC bus through the IGBT to the power supply network. The IGBT switches once in each grid voltage cycle, reducing switching losses and providing high input and output power for the A8i module. Unlike thyristor bridges, the IGBT can be turned off at any time, increasing reliability. The RRU also operates reliably during grid voltage fluctuations.

DC-DC Converter (DDC)

The DC-DC converter transfers energy from the multi-drive's common DC loop to external storage devices. When needed, it can also feed the energy back into the DC bus. The storage device can be a battery or a supercapacitor. There are applications for energy storage and reuse in many industries, such as marine (heavy load and peak load compensation), process industries (electric braking or DC bus voltage stabilization), and automotive (charging systems). Benefits to customers include cost savings (lower fuel consumption, fewer or smaller generators in ships), improved vessel performance, and enhanced safety in emergencies. The converter unit consists of A8i and DCL filter modules

AC 800M Control Unit (Optional)

The multi-drive concept also includes control units suitable for the AC 800M process controller and S800 I/O system. This control unit is equipped with communication interfaces, power supply, and the necessary front-end equipment for automation devices.



ZCS880 Multi-Drive

Rated Power:

Inverter Unit (INU): 1.5 to 5600 kW

Diode Supply Unit (DSU): 50 to 5500 kVA

IGBT Supply Unit (ISU): 300 to 6100 kVA

Regenerative

Rectifier Unit (RRU):

416 to 6100 kVA

DC-DC Converter

(DDC):

305 to 1146 kW

Voltage Range:

380 to 690 V

Protection Class:

IP22 (standard),

IP42, and IP54

The multi-drive has numerous built-in features and options available

Highlights

Compact design for easy cabinet installation and maintenance

High assembly density, with up to 16 inverter units (size A2i) fitting into a one-meter-wide cabinet

High power density and highly reliable diode rectifier bridge

Quick-connect motor cable connectors at the bottom of the cabinet, simplifying installation work

Protection classes of IP22, IP42, and IP54 for various environments

Optional equipment control panels with switches and indicators

Cabinet lighting and heater options

Efficient heat dissipation function, as the heat lost from each inverter unit is directed to the back of the cabinet. All cabinets belong to their separate compartments.

Long-life capacitors and highly efficient cooling fans with speed or switch control

Rated Values, Types, and Voltage Inverter Unit, $U_N = 400\text{ V}$

$U_N = 400\text{V}$ (range 380 to 415V) Rated power is valid at the nominal voltage of 400 V (1.5 to 2800kW) .

Drive Type	Dimension	Rated Value			Light Overload Applications		Heavy Duty Application		Noise Level (dB(A))	Heat Dissipation (kW)	Air Flow (m ³ /h)
		I_N AC (A)	I_{MAX} AC (A)	P_N (kW)	I_{Ld} (A)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (kW)			
Inverter Unit (INU) , ZCS880-											
107ZCS880-107-004A8-3	A1i	4.8	7	1.5	4.5	1.5	4	1.5	47	0.07	24
ZCS880-107-006A0-3	A1i	6	8.8	2.2	5.5	2.2	5	1.5	47	0.08	24
ZCS880-107-008A0-3	A1i	8	10.5	3	7.6	3	6	2.2	47	0.09	24
ZCS880-107-0011A-3	A2i	10.5	13.5	4	9.7	4	9	3	39	0.11	48
ZCS880-107-0014A-3	A2i	14	16.5	5.5	13	5.5	11	4	39	0.14	48
ZCS880-107-0018A-3	A2i	18	21	7.5	16.8	7.5	14	5.5	39	0.17	48
ZCS880-107-0025A-3	A3i	25	33	11	23	11	19	7.5	63	0.2	142
ZCS880-107-0035A-3	A3i	35	44	15	32	15	29	11	63	0.3	142
ZCS880-107-0044A-3	A3i	44	53	18.5	41	18.5	35	15	71	0.35	200
ZCS880-107-0050A-3	A3i	50	66	22	46	22	44	22	71	0.41	200
ZCS880-107-0061A-3	A4i	61	78	30	57	30	52	22	70	0.5	290
ZCS880-107-0078A-3	A4i	78	100	37	74	37	69	30	70	0.6	290
ZCS880-107-0094A-3	A4i	94	124	45	90	45	75	37	70	0.74	290
ZCS880-107-0100A-3	A4i	104	125	55	100	55	78	37	70	0.75	290
ZCS880-107-0140A-3	A6i	141	183	75	135	75	105	55	71	1.1	650
ZCS880-107-0170A-3	A6i	169	220	90	162	90	126	55	71	1.4	650
ZCS880-107-0210A-3	A6i	206	268	110	198	110	154	75	71	1.8	650
ZCS880-107-0250A-3	A6i	246	320	132	236	132	184	90	71	2	650
ZCS880-107-0300A-3	A7i	300	390	160	288	160	224	110	72	2.5	940
ZCS880-107-0350A-3	A7i	350	455	200	336	160	262	132	72	3.1	940
ZCS880-107-0470A-3	A8i	470	620	250	451	250	352	160	72	4.8	1300
ZCS880-107-0640A-3	A8i	640	840	355	614	315	479	250	72	6.7	1300
ZCS880-107-0760A-3	A8i	760	990	400	730	400	568	315	72	8	1300
ZCS880-107-0900A-3	A8i	900	1080	500	864	450	673	355	72	10	1300
ZCS880-107-1250A-3	2×A8i	1250	1630	710	1200	630	935	500	74	13	2600
ZCS880-107-1480A-3	2×A8i	1480	1930	800	1421	800	1107	630	74	16	2600
ZCS880-107-1760A-3	2×A8i	1760	2120	1000	1690	900	1316	710	74	20	2600
ZCS880-107-2210A-3	3×A8i	2210	2880	1200	2122	1200	1653	900	76	23	3900
ZCS880-107-2610A-3	3×A8i	2610	3140	1400	2506	1400	1952	1000	76	30	3900
ZCS880-107-3450A-3	4×A8i	3450	4140	1800	3312	1800	2581	1400	76	40	5200
ZCS880-107-4290A-3	5×A8i	4290	5150	2400	4118	2000	3209	1800	77	50	6500
ZCS880-107-5130A-3	6×A8i	5130	6160	2800	4925	2400	3837	2000	78	60	7800

Ratings

I_N The rated current continuously available at 40°C without overload

S_N The rated apparent power

P_N Typical motor power without overload application

Maximum output current

I_{max} Can last for 10 seconds during startup, then as long as the drive temperature allows.

Light Overload Usage

I_{Ld} Permissible continuous current at 40°C with 110% / ILd for 1 minute every 5 minutes

P_{Ld} Typical motor power for light overload applications

Heavy Duty Applications

I_{Hd} Continuous current, permissible 150% / IHd overload for 1 minute every 5 minutes at 40°C

P_{Hd} Typical motor power for heavy-duty applications

The ratings apply to an ambient temperature of 40°C. At higher temperatures (up to 50°C), derate by 1%/1°C. Within one voltage range, these rated current values are the same regardless of supply voltage. Product selection must be verified using DriveSize

Ratings, Types and Voltage Power Supply Unit, $U_N = 400\text{ V}$

$U_N = 400\text{ V}$ (range 380 to 415V)

Drive Type	Dimensions	Ratings					No Overload Application	Light Overload Application		Heavy Duty Application		Noise Level (dB(A))	Heat Dissipation (kW)	Air flow (m ³ /h)
		I_N	I_N	I_{MAX}	S_N	P_N	I_{Ld}	P_{Ld}	I_{Hd}	P_{Hd}				
		AC (A)	DC (A)	DC (A)	(kVA)	DC (kW)	DC (A)	DC (kW)	DC (A)	DC (kW)				
IGBT Supply Unit (ISU) ZCS880 - 207														
ZCS880-207-0420A-3	A8i+BLCL-13-5	423	513	667	293	290	492	279	384	217	72	9.2	2200	
ZCS880-207-0580A-3	A8i+BLCL-13-5	576	698	908	399	395	670	379	522	296	72	12	2200	
ZCS880-207-0810A-3	A8i+BLCL-15-5	810	982	1277	561	556	943	553	735	416	72	17.4	2200	
ZCS880-207-1130A-3	2×A8i+BLCL-24-5	1125	1364	1773	779	772	1309	741	1020	577	74	21.5	4100	
ZCS880-207-1330A-3	2×A8i+BLCL-24-5	1332	1615	2100	923	914	1550	877	1208	683	74	23.9	4100	
ZCS880-207-1580A-3	2×A8i+BLCL-25-5	1584	1921	2497	1097	1086	1844	1043	1437	813	74	31.7	4100	
ZCS880-207-2350A-3	3×A8i+2xBLCL-24-5	2349	2848	3703	1627	1611	2734	1547	2130	1205	76	47.1	6900	
ZCS880-207-3110A-3	4×A8i+2xBLCL-25-5	3105	3765	4894	2151	2130	3614	2045	2816	1593	76	63.1	8200	
ZCS880-207-4620A-3	6×A8i+2xBLCL-25-5	4617	5598	7278	3199	3167	5374	3040	4187	2369	78	94.5	12300	
Regenerative Rectifier Unit (RRU) ZCS880 - 907														
ZCS880-907-0600A-3	1xA8i + BL-15-5	600	727	955	416	393	698	377	544	294	72	8.4	2200	
ZCS880-907-0900A-3	1xA8i + BL-15-5	900	1091	1433	624	589	1048	566	816	441	72	12.9	2200	
ZCS880-907-1180A-3	2xA8i + BL-25-5	1180	1431	1879	818	773	1374	742	1070	578	74	15.7	4100	
ZCS880-907-1770A-3	2xA8i + BL-25-5	1770	2146	2818	1226	1159	2060	1113	1605	867	74	25.2	4100	
ZCS880-907-2310A-3	4xA8i + 2xBL-25-5	2310	2801	3678	1600	1512	2689	1452	2095	1131	76	31.5	8200	
ZCS880-907-3460A-3	4xA8i + 2xBL-25-5	3460	4195	5509	2397	2265	4027	2175	3138	1695	76	50.4	8200	
ZCS880-907-5130A-3	6xA8i + 3xBL-25-5	5130	6220	8168	3554	3359	5971	3225	4653	2512	78	75.6	12300	
Diode Supply Unit(DSU) ZCS880 - 307 6 Pulse														
Diode														
ZCS880-307-0080A-3+A003	D6D ¹⁾	80	98	137	55	53	94	51	78	42	62	1.4	720	
ZCS880-307-0170A-3+A003	D6D ¹⁾	173	212	297	120	114	203	110	170	92	62	2	720	
ZCS880-307-0330A-3+A003	D7D ¹⁾	327	400	561	227	216	384	208	320	173	62	3	1070	
ZCS880-307-0490A-3+A003	D7D ¹⁾	490	600	840	339	324	576	311	480	259	62	4.1	1070	
ZCS880-307-0650A-3+A003	D8D ¹⁾	653	800	1120	452	432	768	415	640	345	65	5.8	1430	
ZCS880-307-0980A-3+A003	D8D ¹⁾	980	1200	1680	679	648	1152	622	960	519	65	7.6	1430	
ZCS880-307-0650A-3+A018	D8T ²⁾	653	800	1120	452	432	768	415	598	323	72	4.6	1300	
ZCS880-307-0980A-3+A018	D8T ²⁾	980	1200	1680	679	648	1152	622	898	485	72	6.6	1300	
ZCS880-307-1210A-3+A018	2×D8T ²⁾	1215	1488	2083	842	804	1428	771	1113	601	74	9.2	2600	
ZCS880-307-1820A-3+A018	2×D8T ²⁾	1823	2232	3125	1263	1205	2143	1157	1670	902	74	13.3	2600	
ZCS880-307-2730A-3+A018	3×D8T ²⁾	2734	3348	4687	1894	1808	3214	1736	2504	1352	76	19.9	3900	
ZCS880-307-3640A-3+A018	4×D8T ²⁾	3645	4464	6250	2525	2411	4285	2314	3339	1803	76	26.6	5200	
ZCS880-307-4560A-3+A018	5×D8T ²⁾	4557	5580	7812	3157	3013	5357	2893	4174	2254	77	33.3	6500	
ZCS880-307-5470A-3+A018	6×D8T ²⁾	5468	6696	9374	3788	3616	6428	3471	5009	2705	78	40	7800	
12-Pulse Diode														
ZCS880-307-0910A-3+A004+A018	2×D7T ³⁾	912	1116	1562	632	625	1071	600	835	467	74	8.4	1800	
1210A-3+A004+A018	2×D8T ³⁾	1215	1488	2083	842	833	1428	800	1113	623	74	9.2	2600	
A004+A018	2×D8T ³⁾	1823	2232	3125	1263	1250	2143	1200	1670	935	74	13.3	2600	
ZCS880-307-3640A-3+A004+A018	4×D8T ³⁾	2430	2976	4166	1684	1667	2857	1600	2226	1247	76	18.4	5200	
5470A-3+A004+A018	4×D8T ³⁾	3645	4464	6250	2525	2500	4285	2400	3339	1870	76	26.6	5200	
	6×D8T ³⁾	5468	6696	9374	3788	3750	6428	3600	5009	2805	78	40	7800	

¹⁾ +A003 6-pulse, uncontrolled diode rectifier bridge

²⁾ +A018 6-pulse, semi-controlled diode rectifier bridge

³⁾ +A004 12-pulse, DSU

Ratings, Types and Voltage Power Supply Unit, $U_N = 500\text{ V}$

Inverter Unit (INU) , **ZCS880-107**

$U_N = 500\text{ V}$ (Range380 to 500 V) Rated power is valid at the nominal voltage of 500 V (1.5 to 3200 kW)

Drive Type	Dimensions	Rated Values			Light Overload Applications		Heavy Duty Applications		Noise Level (dB(A))	Heat Dissipation (kW)	Airflow (m ³ /h)
		I_N AC (A)	I_{MAX} AC (A)	P_N (kW)	I_{Ld} (A)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (kW)			
ZCS880-107-003A6-5	A1i	3.6	5.3	1.5	3.4	1.5	3	1.5	47	0.06	24
ZCS880-107-004A8-5	A1i	4.8	7	2.2	4.5	2.2	4	1.5	47	0.07	24
ZCS880-107-006A0-5	A1i	6	8.8	3	5.5	3	5	2.2	47	0.08	24
ZCS880-107-008A0-5	A1i	8	10.5	4	7.6	4	6	3	47	0.09	24
ZCS880-107-0011A-5	A2i	10.5	13.5	5.5	9.7	5.5	9	4	39	0.13	48
ZCS880-107-0014A-5	A2i	14	16.5	7.5	13	7.5	11	5.5	39	0.15	48
ZCS880-107-0018A-5	A2i	18	21	11	16.8	11	14	7.5	39	0.18	48
ZCS880-107-0025A-5	A3i	25	33	15	23	15	19	11	63	0.23	142
ZCS880-107-0030A-5	A3i	30	36	18.5	28	18.5	24	15	63	0.28	142
ZCS880-107-0035A-5	A3i	35	44	22	32	22	29	18.5	63	0.32	142
ZCS880-107-0050A-5	A3i	50	66	30	46	30	44	22	71	0.48	200
ZCS880-107-0061A-5	A4i	61	78	37	57	37	52	30	70	0.55	290
ZCS880-107-0078A-5	A4i	78	100	45	74	45	69	45	70	0.65	290
ZCS880-107-0094A-5	A4i	94	124	55	90	55	75	45	70	0.8	290
ZCS880-107-0110A-5	A6i	113	147	75	108	75	85	55	71	1	650
ZCS880-107-0140A-5	A6i	136	177	90	131	90	102	55	71	1.2	650
ZCS880-107-0170A-5	A6i	165	215	110	158	110	123	75	71	1.5	650
ZCS880-107-0200A-5	A6i	197	256	132	189	132	147	90	71	1.8	650
ZCS880-107-0240A-5	A6i	240	312	160	230	160	180	110	71	2	650
ZCS880-107-0300A-5	A7i	302	393	200	290	200	226	132	72	2.7	940
ZCS880-107-0340A-5	A7i	340	442	250	326	200	254	160	72	3.2	940
ZCS880-107-0440A-5	1xA8i	440	580	250	422	250	329	200	72	4.7	1300
ZCS880-107-0590A-5	1xA8i	590	770	400	566	355	441	250	72	6.3	1300
ZCS880-107-0740A-5	1xA8i	740	970	500	710	450	554	355	72	8.1	1300
ZCS880-107-0810A-5	1xA8i	810	1060	560	778	500	606	400	72	9.3	1300
ZCS880-107-1150A-5	2xA8i	1150	1500	800	1104	710	860	560	74	12	2600
ZCS880-107-1450A-5	2xA8i	1450	1890	1000	1392	900	1085	710	74	16	2600
ZCS880-107-1580A-5	2xA8i	1580	2060	1100	1517	1000	1182	800	74	18	2600
ZCS880-107-2150A-5	3xA8i	2150	2800	1500	2064	1400	1608	1100	76	24	3900
ZCS880-107-2350A-5	3xA8i	2350	3060	1600	2256	1500	1758	1200	76	27	3900
ZCS880-107-3110A-5	4xA8i	3110	4050	2000	2986	2000	2326	1600	76	36	5200
ZCS880-107-3860A-5	5xA8i	3860	5020	2400	3706	2400	2887	2000	77	44	6500
ZCS880-107-4610A-5	6xA8i	4610	6000	3200	4426	2800	3448	2400	78	53	7800

Ratings

I_N The rated current continuously available at 40°C without overload

S_N The rated apparent power

P_N Typical motor power without overload application

Maximum output current

I_{max} Can last for 10 seconds during startup, then as long as the drive temperature allows

Light Overload Usage

I_{Ld} Permissible continuous current at 40°C with 110% / ILd for 1 minute every 5 minutes

P_{Ld} Typical motor power for light overload applications

Heavy Duty Applications

I_{Hd} Continuous current, permissible 150% / IHd overload for 1 minute every 5 minutes at 40°C

P_{Hd} Typical motor power for heavy-duty applications

The ratings apply to an ambient temperature of 40°C. At higher temperatures (up to 50°C), derate by 1%/1°C. Within one voltage range, these rated current values are the same regardless of supply voltage.

Product selection must be verified using DriveSize

Ratings, Types and Voltage Power Supply Unit, $U_N = 500\text{ V}$

Power Supply Unit

$U_N = 500\text{ V}$ (range 380 to 500 V)

Drive Type	Dimensions	Ratings				No Overload		Light Overload		Heavy Duty		Noise Level (dB(A))	Heat Dissipation (kW)	Airflow (m ³ /h)
		I_N AC (A)	I_N DC (A)	I_{MAX} DC (A)	S_N (kVA)	P_N DC (kW)	I_{Ld} DC (A)	P_{Ld} DC (kW)	I_{Hd} DC (A)	P_{Hd} DC (kW)				
IGBT Supply Unit (ISU), ZCS880-207														
ZCS880-207-0400A-5	A8i+BLCL-13-5	396	480	624	343	340	461	326	359	254	72	9.2	2200	
ZCS880-207-0530A-5	A8i+BLCL-13-5	531	644	837	460	455	618	437	482	341	72	11.5	2200	
ZCS880-207-0730A-5	A8i+BLCL-15-5	729	884	1149	631	625	849	600	661	468	72	16.7	2200	
ZCS880-207-1040A-5	2×A8i+BLCL-24-5	1035	1255	1631	896	887	1205	852	939	664	74	20.7	4100	
ZCS880-207-1420A-5	2×A8i+BLCL-25-5	1422	1724	2241	1231	1219	1655	1170	1290	912	74	29.3	4100	
ZCS880-207-2120A-5	3×A8i+2xBLCL-24-5	2115	2564	3334	1832	1813	2462	1741	1918	1356	76	43.8	6900	
ZCS880-207-2800A-5	4×A8i+2xBLCL-25-5	2799	3394	4412	2424	2400	3258	2304	2539	1795	76	58.4	8200	
ZCS880-207-4150A-5	6×A8i+2xBLCL-25-5	4149	5031	6540	3593	3557	4829	3415	3763	2661	78	87.4	12300	

$U_N = 500\text{ V}$ (range 230 to 525 V)

Regenerative Rectifier Unit(RRU)ZCS880-907

ZCS880-907-0600A-5	1xA8i + BL-15-5	600	727	955	520	491	698	471	544	367	72	8.5	2200
ZCS880-907-0900A-5	1xA8i + BL-15-5	900	1091	1433	779	737	1047	707	816	551	72	13	2200
ZCS880-907-1180A-5	2xA8i + BL-25-5	1180	1431	1879	1022	966	1374	927	1070	722	74	16.1	4100
ZCS880-907-1770A-5	2xA8i + BL-25-5	1770	2146	2818	1533	1449	2060	1391	1605	1084	74	25.6	4100
ZCS880-907-2310A-5	4xA8i + 2xBL-25-5	2310	2801	3678	2001	1891	2689	1815	2095	1414	76	32.2	8200
ZCS880-907-3460A-5	4xA8i + 2xBL-25-5	3460	4195	5509	2996	2832	4027	2719	3138	2118	76	51.1	8200
ZCS880-907-5130A-5	6xA8i + 3xBL-25-5	5130	6220	8168	4443	4199	5971	4031	4653	3141	78	76.7	12300

Diode Supply Unit(DSU), ZCS880-3076 Pulse

Diode

ZCS880-307-0080A-5+A003	D6D ¹⁾	80	98	137	69	66	94	63	78	53	62	1.4	720
ZCS880-307-0170A-5+A003	D6D ¹⁾	173	212	297	150	143	203	137	170	114	62	2	720
ZCS880-307-0330A-5+A003	D7D ¹⁾	327	400	561	283	270	384	260	320	216	62	3	1070
ZCS880-307-0490A-5+A003	D7D ¹⁾	490	600	840	424	405	576	389	480	324	62	4.1	1070
ZCS880-307-0650A-5+A003	D8D ¹⁾	653	800	1120	566	540	768	518	640	432	65	5.8	1430
ZCS880-307-0980A-5+A003	D8D ¹⁾	980	1200	1680	849	810	1152	778	960	648	65	7.6	1430
ZCS880-307-0650A-5+A018	D8T ²⁾	653	800	1120	566	540	768	518	598	404	72	4.6	1300
ZCS880-307-0980A-5+A018	D8T ²⁾	980	1200	1680	849	810	1152	778	898	606	72	6.6	1300
ZCS880-307-1210A-5+A018	2×D8T ²⁾	1215	1488	2083	1052	1004	1428	964	1113	751	74	9.2	2600
ZCS880-307-1820A-5+A018	2×D8T ²⁾	1823	2232	3125	1579	1507	2143	1446	1670	1127	74	13.3	2600
ZCS880-307-2730A-5+A018	3×D8T ²⁾	2734	3348	4687	2368	2260	3214	2170	2504	1690	76	19.9	3900
ZCS880-307-3640A-5+A018	4×D8T ²⁾	3645	4464	6250	3157	3013	4285	2893	3339	2254	76	26.6	5200
ZCS880-307-4560A-5+A018	5×D8T ²⁾	4557	5580	7812	3946	3767	5357	3616	4174	2817	77	33.3	6500
ZCS880-307-5470A-5+A018	6×D8T ²⁾	5468	6696	9374	4735	4520	6428	4339	5009	3381	78	40	7800

12-Pulse Diode

ZCS880-307-0910A-5+A004+A018	2×D7T ³⁾	912	1116	1562	790	781	1071	750	835	584	74	8.4	1800
ZCS880-307-1210A-5+A004+A018	2×D8T ³⁾	1215	1488	2083	1052	1042	1428	1000	1113	779	74	9.2	2600
ZCS880-307-2430A-5+A004+A018	2×D8T ³⁾	1823	2232	3125	1579	1562	2143	1500	1670	1169	74	13.3	2600
ZCS880-307-3640A-5+A004+A018	4×D8T ³⁾	2430	2976	4166	2104	2083	2857	2000	2226	1558	76	18.4	5200
ZCS880-307-5470A-5+A004+A018	4×D8T ³⁾	3645	4464	6250	3157	3125	4285	3000	3339	2337	76	26.6	5200
ZCS880-307-5470A-5+A004+A018	6×D8T ³⁾	5468	6696	9374	4735	4687	6428	4500	5009	3506	78	40	7800

¹⁾ +A003 6-pulse, Non-controlled diode rectifier bridge

²⁾ +A018 6-pulse, semi-controlled diode rectifier bridge

³⁾ +A004 12-pulse, DSU

Ratings, Types and Voltage Power Supply

Unit, $U_N = 690\text{ V}$

Inverter Unit (INU) , ZCS880-107

$U_N = 690\text{ V}$ (range 525 to 690 V) Rated power is valid at the nominal voltage of 690V (4 to 5600 kW)

Drive Type	Dimensions	Ratings			Light Overload		Heavy Duty		Noise Level (dB(A))	Heat Dissipation (kW)	Airflow (m ³ /h)
		I_N AC (A)	I_{max} AC (A)	P_N (kW)	I_{Ld} (A)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (kW)			
ZCS880-107-007A3-7	A5i	7.3	9.5	5.5	6.9	5.5	5.6	4	62	0.22	280
ZCS880-107-009A8-7	A5i	9.8	12.7	7.5	9.3	7.5	7.3	5.5	62	0.28	280
ZCS880-107-014A2-7	A5i	14.2	18.5	11	13.5	11	9.8	7.5	62	0.4	280
ZCS880-107-0018A-7	A5i	18	23.4	15	17.1	15	14.2	11	62	0.49	280
ZCS880-107-0022A-7	A5i	22	29	18.5	20.9	18.5	18	15	62	0.58	280
ZCS880-107-0027A-7	A5i	27	35	22	25.7	22	22	18.5	62	0.66	280
ZCS880-107-0035A-7	A5i	35	46	30	33.3	30	27	22	62	0.86	280
ZCS880-107-0042A-7	A5i	42	55	37	39.9	37	35	30	62	1	280
ZCS880-107-0052A-7	A5i	52	68	45	49.4	45	42	37	62	1.12	280
ZCS880-107-0062A-7	A6i	62	81	55	60	55	46	45	71	0.8	650
ZCS880-107-0082A-7	A6i	82	107	75	79	75	61	55	71	1.1	650
ZCS880-107-0100A-7	A6i	99	129	90	95	90	74	75	71	1.3	650
ZCS880-107-0130A-7	A6i	125	163	110	120	110	94	75	71	1.5	650
ZCS880-107-0140A-7	A6i	144	187	132	138	132	108	90	71	1.8	650
ZCS880-107-0190A-7	A6i	192	250	160	184	160	144	132	71	2.5	650
ZCS880-107-0220A-7	A7i	217	282	200	208	200	162	160	72	2.8	940
ZCS880-107-0270A-7	A7i	270	351	250	259	250	202	200	72	3.3	940
ZCS880-107-0340A-7	A8i	340	510	315	326	250	254	200	72	5.2	1300
ZCS880-107-0410A-7	A8i	410	620	400	394	355	307	250	72	6.1	1300
ZCS880-107-0530A-7	A8i	530	800	500	509	450	396	355	72	7.9	1300
ZCS880-107-0600A-7	A8i	600	900	560	576	560	449	400	72	9	1300
ZCS880-107-0800A-7	2×A8i	800	1200	800	768	710	598	560	74	12	2600
ZCS880-107-1030A-7	2×A8i	1030	1550	1000	989	900	770	710	74	15	2600
ZCS880-107-1170A-7	2×A8i	1170	1760	1100	1123	1000	875	800	74	18	2600
ZCS880-107-1540A-7	3×A8i	1540	2310	1400	1478	1400	1152	1100	76	23	3900
ZCS880-107-1740A-7	3×A8i	1740	2610	1600	1670	1600	1302	1200	76	26	3900
ZCS880-107-2300A-7	4×A8i	2300	3450	2000	2208	2000	1720	1600	76	35	5200
ZCS880-107-2860A-7	5×A8i	2860	4290	2800	2746	2400	2139	2000	77	43	6500
ZCS880-107-3420A-7	6×A8i	3420	5130	3200	3283	3200	2558	2400	78	52	7800
ZCS880-107-3990A-7	7×A8i	3990	5990	3600	3830	3600	2985	2800	78	60	9100
ZCS880-107-4560A-7	8×A8i	4560	6840	4400	4378	4000	3411	3200	79	69	10400
ZCS880-107-5130A-7	9×A8i	5130	7700	4800	4925	4800	3837	3600	79	78	11700
ZCS880-107-5700A-7	10×A8i	5700	8550	5600	5472	5200	4264	4000	79	86	13000

Ratings

I_N The rated current continuously available at 40°C without overload

S_N The rated apparent power

P_N Typical motor power without overload application

Maximum output current

I_{max} Maximum output current. Can last for 10 seconds during startup, then as long as the drive temperature allows

Light Overload Usage

I_{Ld} Permissible continuous current at 40°C with 110% / ILd for 1 minute every 5 minutes

P_{Ld} Typical motor power for light overload applications

Heavy Duty Application

I_{Hd} Continuous current, permissible 150% / IHd overload for 1 minute every 5 minutes at 40°C

P_{Hd} Typical motor power for heavy-duty applications

The ratings apply to an ambient temperature of 40°C. At higher temperatures (up to 50°C), derate by 1%/1°C. Within one voltage range, these rated current values are the same regardless of supply voltage.

Product selection must be verified using DriveSize

Ratings, Types and Voltage Power Supply Unit, $U_N = 690\text{ V}$

Power Supply Unit

$U_N = 690\text{ V}$ (range 525 to 690 V)

Drive Type	Dimensions	Ratings				No Overload Application		Light Overload Application		Heavy Duty Application		Noise Level (dB(A))	Heat Dissipation	
		I_N	I_N	I_{max}	S_N	P_N	I_{Ld}	P_{Ld}	I_{Hd}	P_{Hd}	(kW)		(m ³ /h)	
		AC (A)	DC (A)	DC (A)	(kVA)	DC (kW)	DC (A)	DC (kW)	DC (A)	DC (kW)				
IGBT Supply Unit (ISU) ZCS880 - 207														
ZCS880-207-0310A-7	A8i+BLCL-13-7	306	371	557	366	362	356	348	278	271	72	11.7	2200	
ZCS880-207-0370A-7	A8i+BLCL-13-7	369	447	671	441	437	430	419	335	327	72	13.4	2200	
ZCS880-207-0540A-7	A8i+BLCL-15-7	540	655	982	645	639	629	613	490	478	72	17.6	2200	
ZCS880-207-0720A-7	2×A8i+BLCL-24-7	720	873	1309	860	852	838	818	653	637	74	23	4100	
ZCS880-207-1050A-7	2×A8i+BLCL-25-7	1053	1277	1915	1258	1246	1226	1196	955	932	74	31.5	4100	
ZCS880-207-1570A-7	3×A8i+2×BLCL-24-7	1566	1899	2848	1872	1853	1823	1779	1420	1386	76	49.4	6900	
ZCS880-207-2070A-7	4×A8i+2×BLCL-25-7	2070	2510	3765	2474	2449	2409	2351	1877	1832	76	62.7	8200	
ZCS880-207-3080A-7	6×A8i+3×BLCL-25-7	3078	3732	5598	3679	3642	3583	3496	2792	2724	78	94	12300	
ZCS880-207-4100A-7	8×A8i+4×BLCL-25-7	4104	4976	7464	4905	4856	4777	4661	3722	3632	79	125.3	16400	
ZCS880-207-5130A-7	10×A8i+5×BLCL-25-7	5130	6220	9330	6131	6070	5971	5827	4653	4540	79	155.5	20500	
Regenerative Rectifier Unit (RRU) ZCS880-907														
ZCS880-907-0600A-7	1×A8i + BL-15-7	600	727	1102	717	678	698	651	544	507	72	9.8	2200	
ZCS880-907-0900A-7	1×A8i + BL-15-7	900	1 091	1653	1076	1016	1 048	976	816	760	72	14.3	2200	
ZCS880-907-1180A-7	2×A8i + BL-25-7	1180	1 431	2168	1410	1333	1 374	1 279	1 070	997	74	18.5	4100	
ZCS880-907-1770A-7	2×A8i + BL-25-7	1770	2 146	3252	2115	1999	2 060	1 919	1 605	1495	74	28.1	4100	
ZCS880-907-2310A-7	4×A8i + 2xBL-25-7	2310	2 801	4244	2761	2609	2 689	2 505	2 095	1952	76	37.1	8200	
ZCS880-907-3460A-7	4×A8i + 2xBL-25-7	3460	4 195	6356	4135	3908	4 027	3 752	3 138	2923	76	56.2	8200	
ZCS880-907-5130A-7	6×A8i + 3xBL-25-7	5130	6 220	9424	6131	5794	5 971	5562	4 653	4334	78	84.3	12300	
Diode Supply Unit (DSU), ZCS880														
-3076-Pulse Diode														
ZCS880-307-0570A-7+A018	D8T ¹⁾	572	700	980	684	652	672	626	524	488	72	4.5	1300	
ZCS880-307-0820A-7+A018	D8T ¹⁾	817	1000	1400	976	932	960	894	748	697	72	5.8	1300	
ZCS880-307-1060A-7+A018	2×D8T ¹⁾	1064	1302	1823	1272	1213	1250	1164	974	907	74	9	2600	
ZCS880-307-1520A-7+A018	2×D8T ¹⁾	1519	1860	2604	1815	1733	1786	1663	1391	1296	74	12.7	2600	
ZCS880-307-2280A-7+A018	3×D8T ¹⁾	2279	2790	3906	2724	2599	2678	2495	2087	1944	76	19.1	3900	
ZCS880-307-3040A-7+A018	4×D8T ¹⁾	3038	3720	5208	3631	3465	3571	3327	2783	2592	76	25.5	5200	
ZCS880-307-3800A-7+A018	5×D8T ¹⁾	3797	4650	6510	4538	4331	4464	4158	3478	3240	77	32	6500	
ZCS880-307-4560A-7+A018	6×D8T ¹⁾	4557	5580	7812	5446	5198	5357	4990	4174	3888	78	38.4	7800	
12-Pulse Diode														
ZCS880-307-0760A-7+A004+A018	2×D7T ²⁾	760	930	1302	908	898	893	862	696	672	74	7.7	1800	
ZCS880-307-1060A-7+A004+A018	2×D8T ²⁾	1064	1302	1823	1272	1258	1250	1207	974	941	74	9	2600	
ZCS880-307-1520A-7+A004+A018	2×D8T ²⁾	1519	1860	2604	1815	1797	1786	1725	1391	1344	74	12.7	2600	
ZCS880-307-2130A-7+A004+A018	4×D8T ²⁾	2127	2604	3646	2542	2515	2500	2415	1948	1882	76	18.1	5200	
ZCS880-307-3040A-7+A004+A018	4×D8T ²⁾	3038	3720	5208	3631	3594	3571	3450	2783	2688	76	25.5	5200	
ZCS880-307-4560A-7+A004+A018	6×D8T ²⁾	4557	5580	7812	5446	5390	5357	5175	4174	4032	78	38.4	7800	

¹⁾ +A018 6-Pulse, semi-controlled diode rectifier bridge

²⁾ +A004 12-Pulse, DSU

Dimensions

ZCS880 Multi-Drive

Power Supply Unit, Dimensions include ACU, ICU, and ISU/RRU/DSU

Dimensions/Size	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)	
ZCS880-207 IGBT Supply Unit (ISU)					
A8i+BLCL-13-5	Restrictions Range ¹⁾	2145	1000	636	810
	Standard Range ¹⁾	2145	1600	636	1300
A8i+BLCL-15-5	Restrictions Range ¹⁾	2145	1000	636	860
	Standard Range ¹⁾	2145	1600	636	1300
2×A8i+BLCL-24-5	1040A-5	2145	1800	636	1600
	1130A-3, 1330A-3	2145	2000	636	1720
2×A8i+BLCL-25-5	2145	2000	636	1720	
3×A8i+2xBLCL-24-5	2145	2600	636	2410	
4×A8i+2xBLCL-25-5	2145	2800	636	2820	
6×A8i+3xBLCL-25-5	2145	4000	636	3960	
A8i+BLCL-13-7	2145	1600	636	1300	
A8i+BLCL-15-7	2145	1600	636	1300	
2×A8i+BLCL-24-7	2145	1800	636	1600	
2×A8i+BLCL-25-7	2145	1800	636	1600	
3×A8i+2xBLCL-25-7	2145	2600	636	2210	
4×A8i+2xBLCL-25-7	2145	2800	636	2820	
6×A8i+3xBLCL-25-7	2145	3600	636	3720	
8×A8i+4xBLCL-25-7	2145	5100	636	4860	
10×A8i+5xBLCL-25-7	2145	5900	636	5760	
ZCS880-907 Regenerative Rectifier Unit (RRU)					
1×A8i+BL-15-5	2145	1600	636	1275	
2×A8i+BL-25-5	2145	2000	636	1615	
4×A8i+2xBL-25-5	2310A-3/5	2145	2800	636	2610
	3460A-3/5	2145	3200	636	2850
6×A8i+3xBL-25-5	2145	4000	636	3645	
1×A8i+BL-15-7	2145	1600	636	1275	
2×A8i+BL-25-7	2145	2000	636	1615	
4×A8i+2xBL-25-7	2310A-7	2145	2800	636	2610
	3460A-7	2145	3200	636	2850
6×A8i+3xBL-25-7	2145	4000	636	3645	

¹⁾ In addition to the standard ZCS880 multi-drive products, a limited range of products is also offered. They have special configurations for 400V and 500V, A1i to A7i inverters

²⁾ The height of the IP54 cabinet is 2315 millimeters, and the height of the IPxxR cabinet is 2051 millimeters

³⁾ The width and weight depend on the total number of inverter units

For the option with built-in compartments (+ C204), the width is 400 millimeters for up to three inverters

⁴⁾ For A1i to A7i models with top cable entry, the depth increases by 130 millimeters

⁵⁾ The width and weight depend on the total number of inverter units

For the option with built-in compartments (+ C204), the width is 500 millimeters for up to two A5i inverters

⁶⁾ The drive control unit (DCU) requires 300 millimeters. Two drive units can use one DCU

⁷⁾ For n×A8i models with top cable entry and backpack, the depth increases by 190 millimeters

Power Supply Unit, Dimensions include ACU, ICU, and ISU/RRU/DSU

Dimensions/Size	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)	
ZCS880-307 Diode Supply Unit (DSU)					
6-Pulse Diode					
D6D	2145	400	636	300	
D7D	2145	400	636	350	
D8D	2145	700	636	550	
D8T	2145	1400	636	850	
2×D8T	1060A-7	2145	1400	636	1130
	1210A-3/5, 1820A-3/5, 1520A-7	2145	1600	636	1130
	690 V drive	2145	2000	636	1560
3×D8T	2145	2000	636	1560	
4×D8T	400/500 V drive	2145	2400	636	1940
	690 V drive	2145	2800	636	2140
5×D8T	2145	3000	636	2420	
6×D8T	2145	3200	636	2700	
12-pulse type					
2×D7T	2145	1800	636	900	
2×D8T	2145	1800	636	1180	
4×D8T	2430A-3/5, 2130A-7	2145	2400	636	1840
	3640A-3, 3650A-5, 3040A-7	2145	3000	636	2040
	6×D8T	2145	3400	636	2900
ZCS880-107 Inverter Unit (INU)					
A1i	2145 ²⁾	400 至 1000 ³⁾	636 ⁴⁾	240 至 490 ³⁾	
A2i	2145 ²⁾	400 至 1000 ³⁾	636 ⁴⁾	240 至 490 ³⁾	
A3i	2145 ²⁾	400 至 1000 ³⁾	636 ⁴⁾	240 至 490 ³⁾	
A4i	2145 ²⁾	400 至 1000 ³⁾	636 ⁴⁾	240 至 490 ³⁾	
A5i	2145 ²⁾	300 至 500 ⁵⁾	636	200 至 320 ⁵⁾	
A6i	2145 ²⁾	400	636 ⁴⁾	250	
A7i	2145 ²⁾	400	636 ⁴⁾	250	
A8i	2145 ²⁾	400 ⁶⁾	636 ⁷⁾	320	
2×A8i	2145 ²⁾	600 ⁶⁾	636 ⁷⁾	510	
3×A8i	2145 ²⁾	800 ⁶⁾	636 ⁷⁾	660	
4×A8i	2145 ²⁾	1200 ⁶⁾	636 ⁷⁾	1020	
5×A8i	2145 ²⁾	1400 ⁶⁾	636 ⁷⁾	1170	
6×A8i	2145 ²⁾	1600 ⁶⁾	636 ⁷⁾	1320	
7×A8i	2145 ²⁾	2000 ⁶⁾	636 ⁷⁾	1680	
8×A8i	2145 ²⁾	2200 ⁶⁾	636 ⁷⁾	1830	
9×A8i	2145 ²⁾	2400 ⁶⁾	636 ⁷⁾	1980	
10×A8i	2145 ²⁾	2800 ⁶⁾	636 ⁷⁾	2340	

Standard and extended interfaces

Control unit ZCU
 Example of a typical multi-drive input/output connection diagram. Subject to change. For detailed information, refer to the ZCS880 User's Manual

The ZCS880 MultiDrive offers a wide variety of standard interfaces. In addition, the transmission Control Unit (ZCU/BCU) offers three option slots that can be used for expansion, including fieldbus adapter modules, input/output expansion modules, feedback modules, and safety function modules. For I/O extensions, see page 34.

The control units ZCU for inverters (A1i to A7i) and the diode supply units (D6D to D8D) come with three option slots for expanding the option modules

The control unit BCU is used for inverters (NXA8i), IGBT power supply units, feed-back rectifier units and diode power supply units (profile DXT).The BCU is equipped with an integrated branching unit, as well as three optional slots and an additional slot for the DDCS communication option.



Control connection	Description
2 analog inputs (XAI)	Current input: -20 to 20mA, Rin: 100 ohms Voltage input: -10 to 10V. Rin>200kohm Resolution: 11 bits + sign bit
2 analog outputs (XAO)	0 to 20mA, Rload<500ohm Frequency range: 0 to 300Hz Resolution: 11 bits + sign bit
6 digital inputs (XDI)	Input type: NPN/PNP (DI1 to DI5), NPN (DI6) DI6 (XDI: 6) can also be used as input for PTC thermistors.
Digital Input Interlock (DIIL)	Input type: NPN/PNP
2 digital inputs/outputs (XDIO)	As input: 24V logic level "0" < 5V, "1" > 15V Rin: 2.0kohm Filter: 0.25ms 作为输出: 来自24 V DC的总输出电流被限制到200 mA 可设置为脉冲序列输入和输出
3 relay outputs (XRO1, XRO2, XRO3)	250 V AC/30 V DC, 2 A
Safe Torque Cancel (XSTO)	Both circuits must be closed when starting the drive. For inverter units only.
Transmission to transmission connection (XD2D)	Physical layer: EIA-485
Built-in Modbus protocol	EIA-485
Helper-type control panel/PC tool connection	Connector: RJ-45

relay output	XRO1, XRO2, XRO3		
Ready	NO	13	
250 V AC/30 V DC	COM	12	
2 A	NC	11	
Operation	NO	23	
250 V AC/30 V DC	COM	22	
2 A	NC	21	
Malfunctions (-1)	NO	33	
250 V AC/30 V DC	COM	32	
2 A	NC	31	
External power input	XPOW		
24 V DC, 2 A	GND	2	
	+24VI	1	
Reference voltage and analog inputs	J1, J2, XAI		
AI1/AI2 current/voltage selection	AI1: U	AI2: U	
	AI1: I	AI2: I	
Not used by default	AI2-	7	
0(4) to 20mA, Rin=	AI2+	6	
100ohm Speed Reference	AI1-	5	
0(2) to 10V, Rin>	AI1+	4	
200kohm	AGND	3	
Ground	-10 V DC, R _L 1 to 10 kohm	2	
	10 V DC, R _L 1 to 10 kohm	1	
analog output	XAO		
Motor current 0 to	AGND	4	
20mA, RL<500ohm	AO2	3	
Motor speed rpm0 to	AGND	2	
20mA, RL<500ohm	AO1	1	
Transmission to transmission	J3, XD2D		
connections	ON <input type="checkbox"/> OFF		
Transmission to transmission	Shield	4	
connection shorting	BGND	3	
Drive-to-drive connections or built-in	A	2	
Modbus protocols	B	1	
Safe torque cancellation	XSTO		
	IN2	4	
	IN1	3	
The safety torque is canceled. To start the drive, both circuits	SGND	2	
must be closed.	OUT	1	
digital input	XDI		
Not used by default	DI6	6	
Constant speed 1 selection (1=on)	DI5	5	
Acceleration and deceleration selection	DI4	4	
reset (a dislocated joint, an electronic device etc)	DI3	3	
Forward (0)/Reverse (1) Stop (0)/	DI2	2	
Start (1)	DI1	1	
Digital inputs/outputs	XDIO		
Output: Run	DIO2	2	
Output: Ready	DIO1	1	
Ground Selection			
Auxiliary Voltage Output, Digital Input Interlock	XD24		
Digital Input/Output Ground	DIOGND	5	
+24 V DC 200 mA	+24VD	4	
Digital Input/Output Ground	DICOM	3	
+24 V DC 200 mA	+24VD	2	
digital interlock	DIIL	1	
Safety Function Module Interface	X12		
Control Panel/PC Interface	X13		
memory interface	X205		

EMC – Electromagnetic Compatibility

Immunity and EMC

Each ZCS880 model is equipped with a built-in filter to reduce high frequency radiation.

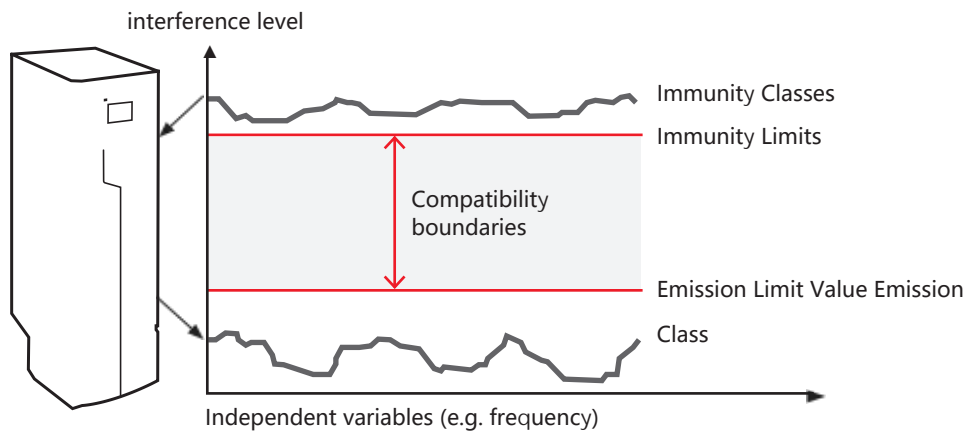
EMC Standards

The EMC product standard (EN61800-3) covers specific EMC requirements for the use of transmissions (tested using motors and motor cables) within the European Union. The EMC standards (e.g. EN55011 or EN61000-6-3/4) are applicable to both industrial and domestic equipment and systems, including components within transmissions. Power supply units meeting the requirements of the EN61800-3 standard always comply with similar categories in the EN55011 and EN61000-6-3/4 standards, but the converse is not necessarily true. EN55011 and EN61000-6-3/4 neither specify cable lengths nor require the connection of motors as loads. The radiation limits are similar to the EMC standards on the following page.

Domestic environments versus public low voltage networks

A category of environment includes residential buildings. It also includes installations that are directly connected (without intermediate transformers) to the low-voltage electricity network supplying residential buildings.

Type II environments include all facilities other than those directly connected to the low-voltage electrical network that supplies power to residential buildings.



EMC standard EMC according to EN61800-3: 2004+A1:2012 product standards	EN61800-3 Product Standard Product standard	EN55011 products for industrial, scientific and medical (ISM) equipment, the EN55011 product Series Standards	EN61000-6-4, General Radiation Standard for Industrial Environments	EN61000-6-3, General Radiation Standard for Residential, Commercial and General Radiation Standard for Light Industrial Applications
Class I environments, unrestricted sales	C1	Group 1. Category B	inapplicable	适用
Class I environment, restricted sales	C2	Group 1. Category A	applicable	inapplicable
Type II environments, unrestricted sales	C3	Group 2. Category A	inapplicable	inapplicable
Type II environments, restricted sales	C4	inapplicable	inapplicable	inapplicable

Selecting an EMC Filter

Transmission type	Voltage (V)	Dimensions	Class I environments, restricted sales, C2. Grounding network (TN) up to 1000A Option Code	Class II environments, C3, grounded networks (TN) and ungrounded network (IT) Option Code
ZCS880-307	38 to 500	D6D to D8D	-	+E210 *)
	380 to 500	1xD8T	+E202	+E210 *)
	380 to 500	DxT Max 980 A	+E202	+E210 *)
ZCS880-207	380 to 500	A8i	+E202	+E210 *)
	380 to 690	nxA8i	-	+E210 *)
ZCS880-907	380 to 690	nxA8i	-	+E210 *)

*) Conducted emission and immunity are realized by standard filtering. Radiated emission and immunity are optional (cabinet construction).

