

ABB industrial drives

ACS800-17LC, single drives, 55 to 5200 kW

The ACS800 liquid-cooled regenerative drive features robust design for demanding applications. The drive incorporates two technologically advanced solutions in one compact, totally enclosed cabinet: liquid cooling provides high reliability while regeneration delivers significant energy savings.

The ACS800-17LC single drive is available in the range 55 to 5200 kW with 380 to 690 V supply.



Efficient liquid cooling

Direct liquid cooling helps to make the drive extremely compact and silent. Liquid cooling eliminates the need for high power filtered air cooling in electrical rooms and delivers effective heat transfer for high overall efficiency.

Complete regenerative drive

Regenerative operation feeds braking energy back into the network and eliminates the need for a braking chopper and external braking components, thus reducing the size, complexity and cost of the solution.

The ACS800-17LC is a complete regenerative drive in a single, compact package. Everything needed for regenerative operation, as well as the line filter, is built-in. The active supply unit provides full power flow in both motoring and generating modes, with ultra-fast transition between the two modes. This makes the drive ideal for a wide range of applications.

Intelligence and high availability

The ACS800-17LC features ABB's Direct Torque Control technology which allows excellent motor control and a LCL line filter and active supply unit to cut harmonic distortion to exceptionally low levels. This allows the drive to exceed the requirements of the relevant international standards on harmonics.

The drive also has built-in redundancy through parallel connected modules: each module is a complete three-phase inverter, meaning that the drive can run with a partial load even when one of the modules is not operating. This enables higher drive availability and greater uptime. In addition, the power and inverter modules are based on compatible hardware, reducing service training needs and spare parts requirements.

"Compact and easy" are the watchwords to describe the entire ACS800 liquid-cooled drive range. They demonstrate how technology enables ABB to add more and more features into a shrinking space – and still give the benefits of easy installation, access and use.

Highlights

- Extremely versatile
- Modular, optimized design
- Programmability
- Wide range of I/O and communication options
- Extremely low harmonic content due to active supply unit and LCL filtering
- Fully regenerative active single drive in a compact package
- DNV, ABS and LR marine type approvals
- IP42 as standard, IP54 optional

Applications

- Thrusters and propulsion systems
- Test benches
- Winders
- Conveyors
- Cranes
- Winches
- Centrifuges

Technical data

Nominal ratings		No-overload use	Light-overload use		Heavy-duty use		Dissipation to liquid	Mass flow	Liquid qty	Type code	Frame sizes ISU + INU
$I_{\text{cont.max}}$ A	I_{max} A	$P_{\text{cont.max}}$ kW	I_{N} A	P_{N} kW	I_{hd} A	P_{hd} kW	kW	l/min	l		
$U_{\text{N}} = 400 \text{ V}$ (Range 380 to 415 V). The power ratings are valid at nominal voltage 400 V											
159	251	90	153	90	119	55	6.3	41	9.8	ACS800-17LC-0110-3	R7i + R7i
205	251	110	197	110	153	75	7.6	41	9.8	ACS800-17LC-0140-3	R7i + R7i
240	335	132	230	132	180	90	8.3	41	9.8	ACS800-17LC-0170-3	R7i + R7i
295	437	160	283	160	221	132	9.3	41	9.8	ACS800-17LC-0200-3	R7i + R7i
377	512	200	362	200	282	160	12.2	41	10.3	ACS800-17LC-0260-3	R8i + R8i
500	674	250	480	250	374	200	14.3	41	10.3	ACS800-17LC-0350-3	R8i + R8i
625	837	355	600	355	468	250	17.1	41	10.3	ACS800-17LC-0430-3	R8i + R8i
835	1037	500	802	450	625	355	21.7	41	11.1	ACS800-17LC-0580-3	R8i + R8i
1250	1590	710	1200	710	935	500	32.6	79	16.6	ACS800-17LC-0870-3	2xR8i + 2xR8i
1635	1994	900	1570	900	1223	710	42.3	79	16.6	ACS800-17LC-1130-3	2xR8i + 2xR8i
2430	2941	1400	2333	1400	1818	1000	63.1	116	26.1	ACS800-17LC-1680-3	3xR8i + 3xR8i
3210	3906	1800	3082	1800	2401	1400	82.8	152	29.9	ACS800-17LC-2220-3	4xR8i + 4xR8i
4765	5799	2800	4574	2400	3564	2000	122.8	226	44.6	ACS800-17LC-3300-3	6xR8i + 6xR8i
$U_{\text{N}} = 500 \text{ V}$ (Range 380 to 500 V). The power ratings are valid at nominal voltage 500 V											
139	232	90	133	75	104	55	6.2	41	9.8	ACS800-17LC-0120-5	R7i + R7i
191	252	132	183	110	143	90	7.5	41	9.8	ACS800-17LC-0170-5	R7i + R7i
238	335	160	228	160	178	110	8	41	9.8	ACS800-17LC-0210-5	R7i + R7i
290	430	200	278	160	217	132	9.6	41	9.8	ACS800-17LC-0250-5	R7i + R7i
355	515	200	341	200	266	160	12.4	41	10.3	ACS800-17LC-0310-5	R8i + R8i
475	673	315	456	315	355	200	14.5	41	10.3	ACS800-17LC-0410-5	R8i + R8i
595	838	400	571	400	445	315	16.9	41	10.3	ACS800-17LC-0520-5	R8i + R8i
795	1042	560	763	500	595	400	21.4	41	11.1	ACS800-17LC-0690-5	R8i + R8i
1190	1589	800	1142	800	890	630	32.2	79	16.6	ACS800-17LC-1030-5	2xR8i + 2xR8i
1560	1996	1000	1498	1000	1167	800	42	79	16.6	ACS800-17LC-1350-5	2xR8i + 2xR8i
2310	2943	1600	2218	1600	1728	1200	62.8	116	26.1	ACS800-17LC-2000-5	3xR8i + 3xR8i
3050	3885	2000	2928	2000	2281	1600	82	152	29.9	ACS800-17LC-2640-5	4xR8i + 4xR8i
4540	5801	3200	4358	3200	3396	2800	122.1	226	44.6	ACS800-17LC-3930-5	6xR8i + 6xR8i
$U_{\text{N}} = 690 \text{ V}$ (Range 525 to 690 V). The power ratings are valid at nominal voltage 690 V											
106	137	110	102	90	79	75	6.3	41	9.8	ACS800-17LC-0130-7	R7i + R7i
139	206	132	133	132	104	90	7.4	41	9.8	ACS800-17LC-0170-7	R7i + R7i
179	265	200	172	160	134	132	7.9	41	9.8	ACS800-17LC-0210-7	R7i + R7i
237	386	250	228	200	177	160	12.1	41	10.3	ACS800-17LC-0280-7	R8i + R8i
330	604	315	317	315	247	250	14.8	41	10.3	ACS800-17LC-0390-7	R8i + R8i
395	604	400	379	355	295	250	18.8	41	10.3	ACS800-17LC-0470-7	R8i + R8i
530	872	560	509	500	396	400	21	41	10.3	ACS800-17LC-0630-7	R8i + R8i
795	1344	800	763	710	595	630	34.8	70	16.6	ACS800-17LC-0950-7	2xR8i + 2xR8i
1040	1710	1000	998	1000	778	800	39.5	79	16.6	ACS800-17LC-1240-7	2xR8i + 2xR8i
1540	2538	1600	1478	1400	1152	1200	56.2	116	22.4	ACS800-17LC-1840-7	3xR8i + 3xR8i
2035	3350	2000	1954	2000	1522	1600	77.9	152	29.9	ACS800-17LC-2430-7	4xR8i + 4xR8i
3025	4974	3200	2904	2800	2263	2400	110	226	41.7	ACS800-17LC-3620-7	6xR8i + 6xR8i
3878	5802	4000	3723	3600	2901	2800	146.5	291	56.7	ACS800-17LC-4630-7	8xR8i + 7xR8i
4432	6630	4400	4255	4000	3315	3200	157.1	329	61.3	ACS800-17LC-5300-7	9xR8i + 8xR8i
4986	7460	5200	4787	4800	3730	3600	184	364	69.6	ACS800-17LC-5960-7	10xR8i + 9xR8i

Nominal ratings:

$I_{\text{cont.max}}$: rated current available continuously without overloadability at 42 °C converter circuit liquid temperature.

I_{max} : maximum output current. Available for 10 s at start, otherwise as long as allowed by drive temperature. Note: max. motor shaft power is 150% P_{hd} .

Typical ratings:

No-overload use

$P_{\text{cont.max}}$: typical motor power in no-overload use.

Light-overload use

I_{N} : continuous current allowing 110% I_{N} for 1 min / 5 min at 45 °C.

P_{N} : typical motor power in light-overload use.

Heavy-duty use

I_{hd} : continuous current allowing 150% I_{hd} for 1 min / 5 min at 45 °C.

P_{hd} : typical motor power in heavy-duty use.

The current ratings are the same regardless of the supply voltage within one voltage range.

The ratings apply at 45 °C ambient temperature. At higher temperatures (up to 55 °C) the derating is 0,5% / 1 °C.

For more information please contact:

www.abb.com/drives

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