ПРОМЫШЛЕННЫЕ ПРИВОДЫ
Техническое описание на преобразователи ACS800-104LC

Technical data

ACS800	-	04LC X04LC	-	XXXX	-	3 5 7	+	XXXX

Mains connection	
Supply voltage	3-phase U_{3IN} = 380 to 415 V, ± 10% 3-phase U_{5IN} = 380 to 500 V, ± 10% 3-phase U_{7IN} = 525 to 690 V, ± 10%
Frequency	48 to 63 Hz
Power factor	$\cos\varphi_1$ = 0.98 (fundamental) $\cos\varphi$ = 0.93 to 0.95 (total)
Efficiency (at nominal power)	> 98
Motor connection	
3-phase supply voltage	Output voltage: 0 to U_{3IN} /U_{5IN}/U_{7IN}
Frequency	0 to ± 300 Hz
Field weakening point	8 to 300 Hz
Motor control	ABB's direct torque control (DTC)
Torque control:	Torque step rise time:
Open loop	<5 ms with nominal torque
Closed loop	<5 ms with nominal torque
	Non-linearity:
Open loop	± 4% with nominal torque
Closed loop	± 3% with nominal torque
Speed Control:	Static accuracy:
Open loop	10% of motor slip
Closed loop	0.01% of nominal speed
	Dynamic accuracy:
Open loop	0.3 to 0.4% sec. with 100% torque step
Closed loop	0.1 to 0.2% sec. with 100% torque step
Enclosure	
Degree of protection	IP00
Paint color module front	Light beige RAL 7035

Environmental limits	
Ambient temperature	
Transportation	-40 to +70 °C
Storage	-40 to +70 °C
Operation in totally enclosed cabinet	0 to 55 °C, no frost allowed 45 to 55 °C at reduced output power (0.5% /1 °C)
Relative humidity	5 to 95%, no condensation allowed
Vibration	0.7 g, 13.2 Hz to 100 Hz, 1 mm displacement 2 to 13.2 Hz
Cooling Method	Liquid-cooled, closed loop
Internal cooling circuit	Drinking water +42 °C max, 42 to 48 °C at reduced output power (1.0% /1 °C)
External cooling circuit with optimal liquid cooling unit	Industrial or sea water +38 °C max, 38 to 45 °C at reduced output power (1.0% /1 °C)
Altitude	
0 to 1000 m	Without derating
1000 to 4000 m	With derating ~ (1%/100 m) (690 V units 1000 to 2000 m with derating)
Storage	IEC 60721-3-1, class 1C2 (chemical gases), Class 1S2 (solid particles)
Transportation	IEC 60721-3-2, Class 2C2 or 3C2* (chemical gases), Class 2S2 (solid particles)
Operation	IEC 60721-3-3, Class 3C2 (chemical gases), Class 3S2 (solid particles without air inlet filters)

C = chemically active substances
S = mechanically active substances
* = coated ci cuit boards

Product compliance

CE, UL, CSA, GOST-R
Low Voltage Directive 2006/95/EC
Machinery Directive 2006/42/EC
EMC Directive 2006/108/EC
Quality assurance system ISO 9001 and
Environmental system ISO 14001

EMC according to EN 61800-3

2nd environment, unrestricted distribution category C3 - as option in ACS800-04 up to frame size R8
1st environment, restricted distribution category C2 as option up to 1000 A input current

Liquid-cooled modules
ACS800-04LC/-X04LC

ACS800	-	04LC X04LC	-	XXXX	-	3 5 7	+	XXXX

Solutions for high power drives
The liquid-cooled ACS800 frequency converter modules offer robust design for high-power applications. The liquid-cooled ACS800 product family provides advanced reliability and availability in all industry sectors.

Customer specific design
The liquid-cooled ACS800 is available for single and system drive purposes. The modular hardware design and advanced software features enable the most sophisticated drive solutions. Our customised solutions provide the optimum customer benefits for any demanding application. Our product know-how is at your service.

Advanced liquid-cooling
The ACS800 can utilize direct liquid-cooling which makes the converter extremely compact and silent. Liquid-cooling reduces the need for high-power filtered air cooling in the installation rooms. Along with the high efficiency, direct liquid-cooling offers low noise and easy heat transfer without air filtering problems.

Support for cabinet assembly
A full selection of both mechanical and electrical installation kits is available for liquid-cooled ACS800 frequency converter modules. These make cabinet installation into RITTAL TS8 cabinets efficient and easy. A large variety of support material such as dimensional drawings and circuit diagrams is also available for making cabinet assembly, planning and implementation as straightforward and rapid as possible. It is also possible to use optional installation racks instead of cabinets. Installation racks are a compact and cost efficient way to assemble a full liquid-cooled ACS800 frequency converter drive system inside a closed environment such as, for example, a container without an existing air-conditioning system.

Full selection of drive module products
The liquid-cooled ACS800 frequency converter module product family includes diode and regenerative IGBT supply units, a large variety of inverter units, high power dynamic braking unit modules, and liquid cooling units for all demanding customer needs. Both diode supply units and regenerative IGBT supply units are available with a wide power range and high power density. When high capacity braking is needed and the drive cannot be equipped with a regenerative supply unit, it is possible to use three-phase liquid-cooled dynamic braking unit modules. With a liquid cooling unit it is possible to add supply, inverter and brake unit piping and heat exchangers to the same closed-loop cooling system. The liquid-cooled modules are available in both multidrive and single drive modules.

ACS800-704LC, D4

ACS800-104LC, R8i

Ratings, types and voltages
ACS800-X04LC, drive module, U_N= 400 V

ACS800	-	X04LC	-	XXXX	-	3	+	XXXX

Inverter unit modules (INU)

Nominal ratings		No-overload use	Light-overload use		Heavy-duty use		Losses [1]	Mass flow [2]	Type designation	Frame size
$I_{cont.max}$ A	I_{max} A	$P_{cont.max}$ kW	I_N A	P_N kW	I_{hd} A	P_{hd} kW	P_{loss} kW	l/min		
U_N = 400 V (Range 380 to 415 V). The power ratings are valid at nominal voltage 400 V.										
5.1	6.5	1.5	4.7	1.5	3.4	1.1	0.1	6	ACS800-104LC-0003-3	R2i
6.5	8.2	2.2	5.9	2.2	4.3	1.5	0.1	6	ACS800-104LC-0004-3	R2i
8.5	10.8	3	7.7	3	5.7	2.2	0.1	6	ACS800-104LC-0005-3	R2i
10.9	13.8	4	10.2	4	7.5	3	0.1	6	ACS800-104LC-0006-3	R2i
13.9	17.6	5.5	12.7	5.5	9.3	4	0.2	6	ACS800-104LC-0009-3	R2i
19	24	7.5	18	7.5	14	5.5	0.3	6	ACS800-104LC-0011-3	R3i
25	32	11	24	11	19	7.5	0.3	6	ACS800-104LC-0016-3	R3i
34	46	15	31	15	23	11	0.4	6	ACS800-104LC-0020-3	R3i
44	62	22	41	18.5	32	15	0.5	6	ACS800-104LC-0025-3	R4i
55	72	30	50	22	37	18.5	0.6	6	ACS800-104LC-0030-3	R4i
72	86	37	69	30	49	22	0.8	6	ACS800-104LC-0040-3	R5i
86	112	45	80	37	60	30	1.0	6	ACS800-104LC-0050-3	R5i
103	138	55	94	45	69	37	1.2	6	ACS800-104LC-0060-3	R5i
176	251	90	169	90	132	55	1.6	13	ACS800-104LC-0120-3	R7i
214	251	110	205	110	160	75	2.1	13	ACS800-104LC-0150-3	R7i
250	335	132	240	132	187	90	2.3	13	ACS800-104LC-0170-3	R7i
300	448	160	288	160	224	110	2.6	13	ACS800-104LC-0210-3	R7i
350	524	200	336	200	262	132	3.8	13	ACS800-104LC-0240-3	R8i
444	558	250	426	250	332	160	5.0	13	ACS800-104LC-0310-3	R8i
563	674	315	540	315	421	200	5.9	13	ACS800-104LC-0390-3	R8i
678	837	355	651	355	507	250	7.3	13	ACS800-104LC-0470-3	R8i
889	1037	500	853	400	665	355	9.2	13	ACS800-104LC-0620-3	R8i
1103	1279	630	1059	560	825	450	11.4	26	ACS800-104LC-0760-3	2xR8i
1329	1590	710	1276	710	994	500	14.2	26	ACS800-104LC-0920-3	2xR8i
1742	1994	900	1673	900	1303	710	17.9	26	ACS800-104LC-1210-3	2xR8i
1973	2347	1120	1894	1120	1476	900	20.9	39	ACS800-104LC-1370-3	3xR8i
2587	2941	1400	2484	1400	1935	1120	26.6	39	ACS800-104LC-1790-3	3xR8i
3414	3906	2000	3277	2000	2553	1400	34.8	52	ACS800-104LC-2370-3	4xR8i

Nominal ratings				No-overload use	Light-overload use		Heavy-duty use		Losses [1]				Mass flow [2]	Type designation	Frame size
$I_{cont.max}$ A (AC)	$I_{cont.max}$ A (DC)	I_{max} A (DC)	S_N kVA	$P_{cont.max}$ kW (DC)	I_N A (DC)	P_N kW	I_{hd} A (DC)	P_{hd} kW	P_{loss} kW	$P_{lossISU}$ kW	$P_{lossLCL}$ kW	$P_{loss\ tot}$ kW	l/min		
U_N = 400 V (Range 380 to 415 V). The power ratings are valid at nominal 400 V.															
IGBT supply unit modules (ISU)															
341	413	471	245	243	397	233	309	181	-	4.4	3.0	7.4	22	ACS800-204LC-0240-3	R8i
454	550	627	326	323	528	310	411	241	-	5.6	3.1	8.7	22	ACS800-204LC-0330-3	R8i
567	687	784	408	403	660	387	514	302	-	6.7	3.4	10.1	22	ACS800-204LC-0410-3	R8i
756	917	1046	543	538	880	516	686	402	-	8.9	4.0	12.9	22	ACS800-204LC-0540-3	R8i
1134	1375	1568	815	807	1320	775	1028	604	-	13.5	5.6	19.1	40	ACS800-204LC-0820-3	2xR8i
1482	1797	2049	1065	1054	1725	1012	1344	789	-	17.3	7.9	25.3	40	ACS800-204LC-1070-3	2xR8i
2200	2667	3042	1581	1565	2560	1503	1995	1171	-	25.7	12.0	37.8	66	ACS800-204LC-1580-3	3xR8i
2903	3520	4015	2087	2066	3379	1983	2633	1545	-	33.8	15.8	49.7	80	ACS800-204LC-2090-3	4xR8i
6-pulse, diode supply unit modules (DSU)															
572	700	980	396	378	672	363	560	303	3.6	-	-	-	19	ACS800-304LC-0680-7	1xD3
898	1100	1540	622	594	1056	570	880	475	5.9	-	-	-	19	ACS800-304LC-1070-7	1xD3
1143	1400	1960	792	756	1344	726	1120	605	7.2	-	-	-	19	ACS800-704LC-1370-7	1xD4
1796	2200	3080	1245	1188	2112	1141	1760	951	11.8	-	-	-	19	ACS800-704LC-2150-7	1xD4
2126	2604	3646	1473	1407	2500	1350	2083	1125	13.0	-	-	-	38	ACS800-704LC-2540-7	2xD4
3200	3919	5487	2217	2117	3762	2032	3135	1694	19.7	-	-	-	38	ACS800-704LC-3820-7	2xD4
12-pulse, diode supply unit modules (DSU)															
1143	1400	1960	792	756	1344	726	1120	605	7.2	-	-	-	19	ACS800-704LC-1370-7	1xD4
1796	2200	3080	1245	1188	2112	1141	1760	951	11.8	-	-	-	19	ACS800-704LC-2150-7	1xD4
2126	2604	3646	1473	1407	2500	1350	2083	1125	13.0	-	-	-	38	ACS800-704LC-2540-7	2xD4
3200	3919	5487	2217	2117	3762	2032	3135	1694	19.7	-	-	-	38	ACS800-704LC-3820-7	2xD4

[1] In totally enclosed cabinet 98% of losses are conducted to coolant, 2% to ambient air.
[2] Pressure loss 100 kPa. Hydrostatic pressure loss 120 kPa due to 2 m height difference.

Nominal ratings	
$I_{cont.max}$	Rated current available continuously without overloadability at 42 °C 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}.
S_n	Nominal apparent power.
No-overload use	
$P_{cont.max}$	Typical motor power in no-overload use.
Light-overload use	
I_N	Continuous base current allowing 110% overload for 1 min /5 min.
P_N	Typical motor power in light-overload use.

Heavy-duty use	
I_{hd}	Continuous base current allowing 150% overload for 1 min /5 min.
P_{hd}	Typical motor power in heavy-duty use.
Losses	
P_{loss}	Power loss conducted to coolant.
$P_{lossISU}$	Power loss of supply module(s).
$P_{lossLCL}$	Power loss of supply LCL filter.
$P_{loss\ tot}$	Sum of $P_{lossISU}$ and $P_{lossLCL}$.

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

Ratings, types and voltages
ACS800-X04LC, drive module, U_N= 690 V

ACS800	-	X04LC	-	XXXX	-	7	+	XXXX

Inverter unit modules (INU)

Nominal ratings		No-overload use	Light-overload use		Heavy-duty use		Losses [1]	Mass flow [2]	Type designation	Frame size
$I_{cont.max}$ A	I_{max} A	$P_{cont.max}$ kW	I_N A	P_N kW	I_{hd} A	P_{hd} kW	P_{loss} kW	l/min		
U_N = 690 V (Range 525 to 690 V). The power ratings are valid at nominal voltage 690 V.										
13	14	11	12	7.5	8.5	5.5	0.3	6	ACS800-104LC-0011-7	R4i
17	19	15	16	11	11	7.5	0.3	6	ACS800-104LC-0016-7	R4i
22	28	18.5	21	15	15	11	0.4	6	ACS800-104LC-0020-7	R4i
25	38	22	24	18.5	19	15	0.5	6	ACS800-104LC-0025-7	R4i
33	44	30	32	22	22	18.5	0.6	6	ACS800-104LC-0030-7	R4i
36	54	30	35	30	27	22	0.7	6	ACS800-104LC-0040-7	R4i
51	68	45	49	37	34	30	0.8	6	ACS800-104LC-0050-7	R5i
57	84	55	55	45	42	37	1.0	6	ACS800-104LC-0060-7	R5i
83	124	75	79	55	62	55	1.2	13	ACS800-104LC-0100-7	R7i
106	158	90	101	90	79	75	1.6	13	ACS800-104LC-0130-7	R7i
126	188	110	121	110	94	90	1.8	13	ACS800-104LC-0150-7	R7i
158	236	132	152	132	118	110	2.4	13	ACS800-104LC-0190-7	R7i
180	270	160	173	160	135	132	2.7	13	ACS800-104LC-0220-7	R7i
204	306	200	196	200	153	160	2.4	13	ACS800-104LC-0240-7	R7i
258	386	250	248	250	193	200	4.8	13	ACS800-104LC-0310-7	R8i
347	518	315	333	315	259	250	5.5	13	ACS800-104LC-0410-7	R8i
403	604	355	387	355	302	315	6.4	13	ACS800-104LC-0480-7	R8i
458	686	450	440	400	343	355	8.2	13	ACS800-104LC-0550-7	R8i
583	872	560	560	500	436	400	8.9	13	ACS800-104LC-0700-7	R8i
790	1182	710	759	710	591	560	12.7	26	ACS800-104LC-0940-7	2xR8i
898	1344	900	863	900	672	630	15.9	26	ACS800-104LC-1070-7	2xR8i
1143	1710	1120	1097	1120	855	710	17.4	26	ACS800-104LC-1370-7	2xR8i
1334	1996	1250	1281	1250	998	900	24.0	39	ACS800-104LC-1590-7	3xR8i
1697	2538	1600	1629	1600	1269	1250	25.8	39	ACS800-104LC-2030-7	3xR8i
2239	3350	2240	2150	2000	1675	1600	34.3	52	ACS800-104LC-2680-7	4xR8i

Nominal ratings				No-overload use	Light-overload use		Heavy-duty use		Losses [1]				Mass flow [2]	Type designation	Frame size
$I_{cont.max}$ A (AC)	$I_{cont.max}$ A (DC)	I_{max} A (DC)	S_N kVA	$P_{cont.max}$ kW (DC)	I_N A (DC)	P_N kW	I_{hd} A (DC)	P_{hd} kW	P_{loss} kW	$P_{lossISU}$ kW	$P_{lossLCL}$ kW	$P_{loss\ tot}$ kW	l/min		
U_N = 690 V (Range 525 to 690 V). The power ratings are valid at nominal 690 V.															
IGBT supply unit modules (ISU)															
216	262	386	258	256	251	245	196	191	-	5.0	2.6	7.6	22	ACS800-204LC-0260-7	R8i
300	364	604	359	355	349	341	272	266	-	5.6	3.1	8.7	22	ACS800-204LC-0360-7	R8i
360	436	686	430	426	419	409	327	319	-	7.6	3.4	11.0	22	ACS800-204LC-0430-7	R8i
480	582	872	574	568	559	545	435	425	-	8.3	4.3	12.6	22	ACS800-204LC-0570-7	R8i
720	873	1344	860	852	838	818	653	637	-	15.2	4.4	19.6	40	ACS800-204LC-0860-7	2xR8i
941	1141	1710	1124	1113	1095	1069	853	833	-	16.2	6.7	22.9	40	ACS800-204LC-1120-7	2xR8i
1397	1694	2538	1669	1653	1626	1587	1267	1236	-	24.1	7.4	31.5	58	ACS800-204LC-1670-7	3xR8i
1843	2235	3350	2203	2181	2145	2094	1672	1631		31.8	13.4	45.2	80	ACS800-204LC-2200-7	4xR8i
6-pulse, diode supply unit modules (DSU)															
572	700	980	683	652	672	626	560	522	3.6	-	-	-	19	ACS800-304LC-0680-7	1xD3
898	1100	1540	1073	1025	1056	984	880	820	5.9	-	-	-	19	ACS800-304LC-1070-7	1xD3
1143	1400	1960	1366	1305	1344	1252	1120	1044	7.2	-	-	-	19	ACS800-704LC-1370-7	1xD4
1796	2200	3080	2147	2050	2112	1968	1760	1640	11.8	-	-	-	19	ACS800-704LC-2150-7	1xD4
2126	2604	3646	2541	2426	2500	2329	2083	1941	13.0	-	-	-	38	ACS800-704LC-2540-7	2xD4
3200	3919	5487	3824	3652	3762	3506	3135	2921	19.7	-	-	-	38	ACS800-704LC-3820-7	2xD4
12-pulse, diode supply unit modules (DSU)															
1143	1400	1960	1366	1305	1344	1252	1120	1044	7.2	-	-	-	19	ACS800-704LC-1370-7	1xD4
1796	2200	3080	2147	2050	2112	1968	1760	1640	11.8	-	-	-	19	ACS800-704LC-2150-7	1xD4
2126	2604	3646	2541	2426	2500	2329	2083	1941	13.0	-	-	-	38	ACS800-704LC-2540-7	2xD4
3200	3919	5487	3824	3652	3762	3506	3135	2921	19.7	-	-	-	38	ACS800-704LC-3820-7	2xD4

[1] In totally enclosed cabinet 98% of losses are conducted to coolant, 2% to ambient air.
[2] Pressure loss 100 kPa. Hydrostatic pressure loss 120 kPa due to 2 m height difference.

Nominal ratings	
$I_{cont.max}$	Rated current available continuously without overloadability at 42 °C 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}.
S_n	Nominal apparent power.
No-overload use	
$P_{cont.max}$	Typical motor power in no-overload use.
Light-overload use	
I_N	Continuous base current allowing 110% overload for 1 min /5 min.
P_N	Typical motor power in light-overload use.

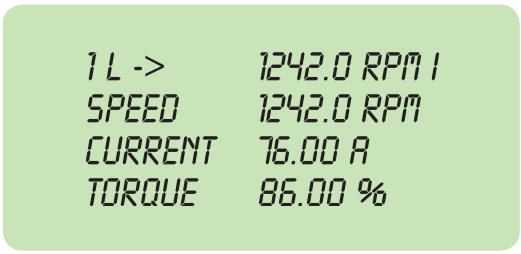
Heavy-duty use	
I_{hd}	Continuous base current allowing 150% overload for 1 min /5 min.
P_{hd}	Typical motor power in heavy-duty use.
Losses	
P_{loss}	Power loss conducted to coolant.
$P_{lossISU}$	Power loss of supply module(s).
$P_{lossLCL}$	Power loss of supply LCL filter.
$P_{loss\ tot}$	Sum of $P_{lossISU}$ and $P_{lossLCL}$.

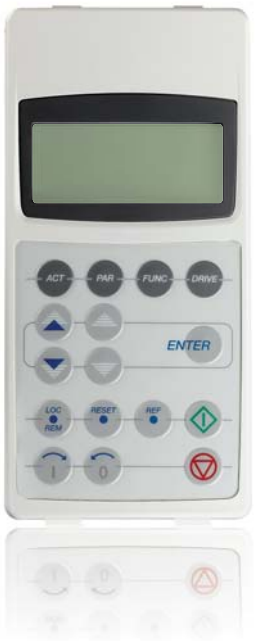
The current ratings are the same regardless of the supply voltage within one voltage range.

Options
Control panel
Control panel mounting platforms

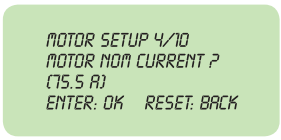
The industrial drive control panel has a multil-ingual alphanumeric display (4 lines x 20 characters) with plain text messages in 14 languages.

The control panel is removable and can be mounted on the drive enclosure or remotely.





Startup assistant



Easy commissioning with the startup assistant in standard control program. The startup assistant actively guides you through the commissioning procedure step by step. It also has a unique on-line help function.

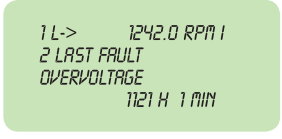
Actual value display

The control panel can display three separate actual values simultaneously.

Examples of these are:

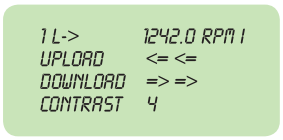
- Motor speed
- Frequency
- Current
- Torque
- Power
- References
- DC bus voltage
- Output voltage
- Heatsink temperature
- Operating hours
- Kilowatt hours

Fault memory



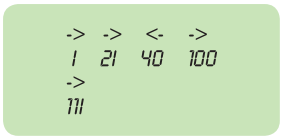
A built-in fault memory stores information relating to the latest 64 faults, each with a time stamp.

Parameter copying



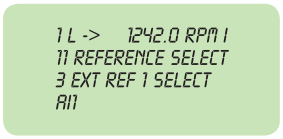
The parameter copy feature allows all drive parameters to be copied from one frequency converter to another to simplify commissioning.

Centralised control



One panel can control up to 31 drives.

Easy programming



Parameters are organised into groups for easy programming.

Control panel mounting platforms (+J410 and +J413)

On the reverse of the control panel are screw holes from where the control panel can be fixed to a cabinet door. Panel-mounting platforms, which allow the panel to be removed, are also available. There are two variants of the panel-mounting platform:

RPMP-11 (+J410) for door mounting
RPMP-21 (+J413) for panel mounting inside the cabinet

Options
Optional I/O

Standard I/O can be extended by using analog and digital extension modules or pulse encoder interface modules which are mounted in the slots on the ASC800 control board. The control board has two slots available for extension modules. More extension modules can be added with the I/O extension adapter which has three slots. The available number and combination of I/O's depends on the control software used. The standard application software supports 1 analog and 3 digital extension modules.

Optional I/O

Analog I/O extension module RAIO-01 (+L500)
- 2 analog inputs: galvanically isolated from 24 V supply and ground
  - ± 0(2) to 10 V, 0(4) to 20 mA or ± 0 to 2 V, resolution 12 bits
- 2 analog outputs: galvanically isolated from 24 V supply and ground
  - 0(4) to 20 mA, resolution 12 bit

Digital I/O extension module RDIO-01 (+L501)
- 3 digital inputs: individually galvanically isolated
  - Signal level 24 to 250 V DC or 115/230 V AC
- 2 relay (digital) outputs:
  - Changeover contact
  - 24 V DC or 115/230 V AC
  - Max. 2 A

Pulse encoder interface module RTAC-01 (+L502)
- 1 incremental encoder input:
  - Channels A, B and Z (zero pulse)
  - Signal level and power supply for the encoder is 24 or 15 V
  - Single ended or differential inputs
  - Maximum input frequency 200 kHz

Pulse encoder interface module RTAC-03 (+L517)

I/O extension adapter AIMA-01
- Three slots for I/O extension modules
- Connection to the ACS800 control board through optic link
- Dimensions: 78 × 325 × 28 mm
- Mounting: onto 35 × 7.5 mm DIN rail
- External power supply connection
- Supply voltage: 24 V DC ± 10%
- Current consumption: depends on connected I/O extension modules

Analog I/O extension module RAIO-01

Pulse encoder interface module RTAC-01

I/O extension adapter AIMA-01 with RDIO-01

Options
Fieldbus communication

ABB industrial drives have connectivity to major automation systems. This is achieved with a dedicated concept between the fieldbus systems and ABB drives.

The fieldbus gateway module can easily be mounted inside the drive. Because of the wide range of fieldbus adapter module offering you can freely select your communication protocol for the integration of automation system and ABB AC drives.

Manufacturing flexibility

Drive control
The drive control word (16 bit) provides a wide variety of functions from start, stop and reset to ramp generator control. Typical setpoint values such as speed, torque and position can be transmitted to the drive with 15 bit accuracy.

Drive monitoring
A set of drive parameters and/or actual signals, such as torque, speed, position, current etc., can be selected for cyclic data transfer providing fast data for operators and the manufacturing process.

Drive diagnostics
Accurate and reliable diagnostic information can be obtained via the alarm, limit and fault words, reducing the drive downtime and therefore also the downtime of the manufacturing process.

Drive parameter handling
Total integration of the drives in the production process is achieved by single parameter read/write up to complete parameter set-up or download.

Reduced installation and engineering effort

Cabling
Substituting the large amount of conventional drive control cabling with a single twisted pair reduces costs and increases system reliability.

Design
The use of fieldbus communication reduces engineering time at installation due to the modular structure of the hardware and software.

Commissioning and assembly
The modular machine configuration allows pre-commissioning of single machine sections and provides easy and fast assembly of the complete installation.

Fieldbus adapter modules

Option	Option code	Fieldbus protocol	Device profile	Baud rate
RCAN-01	+K457	CANopen®	Drives and motion control ABB Drives*)	10 kbit/s - 1 Mbit/s
RCNA-01	+K462	ControlNet	AC/DC drive ABB Drives*)	5 Mbit/s
RDNA-01	+K451	DeviceNet™	AC/DC drive ABB Drives*)	125 kbit/s - 500 kbit/s
RECA-01	+K469	EtherCAT®	Drive and motion control ABB Drives *)	100 Mbit/s
REPL-02	+K470	Ethernet PowerLink	Drive and motion control ABB Drives *)	100 Mbit/s
RETA-01	+K466	Ethernet IP, Modbus TCP	ABB Drives*), AC/DC drive ABB Drives*)	10 Mbit/s/ 100 Mbit/s
RETA-02	+K467	PROFINET IO, Modbus TCP	PROFIdrive ABB Drives*)	10 Mbit/s/ 100 Mbit/s
RLON-01	+K452	LonWorks®, LonTalk®	Variable speed motor drive	78 kbit/s
RMBA-01	+K458	Modbus RTU	ABB Drives*)	600 bit/s - 19.2 kbit/s
RPBA-01	+K454	PROFIBUS DP, DPV1	PROFIdrive ABB Drives*)	9.6 kbit/s - 12 Mbit/s
NIBA-01	+K453	InterBUS-S I/O, PCP	ABB Drives*)	500 kbit/s

*) Vendor specific profile

Standard control program

Standard control program
Based on direct torque control technology, the ACS800 offers highly advanced features as standard. The ACS800 standard control program provides solutions to virtually all AC drives applications such as pumps, fans, extruders and conveyors to name few.

Adaptive programming
In addition to parameters, industrial drives have the possibility for function block programming as standard. Adaptive programming with 15 programmable function blocks makes it possible to replace e.g. relays or even a PLC in some applications. Adaptive programming can be done either by standard control panel or DriveAP, a user-friendly PC tool.

The standard application macros
The ACS800 features built-in, pre-programmed application macros for configuration of such parameters as inputs, outputs and signal processing.

- FACTORY SETTINGS for basic industrial applications
- HAND/AUTO CONTROL for local and remote operation
- PID CONTROL for closed loop processes
- SEQUENTIAL CONTROL for repetitive cycles
- TORQUE CONTROL for processes where torque control is required
- USER MACRO 1 & 2 for user's own parameter settings

Software features
A complete set of standard software features offers premium functionality and flexibility.

- Accurate speed control
- Accurate torque control without speed feedback
- Adaptive programming
- Automatic reset
- Automatic start
- Constant speeds
- Controlled torque at zero speed
- DC hold
- DC magnetizing
- Diagnostics
- Flux braking
- Flux optimization
- IR compensation
- Master/follower control
- Mechanical brake control
- Motor identification
- Parameter lock
- Power loss ride-through
- Process PID control
- Programmable I/O
- Scalar control
- Speed controller tuning
- Startup assistant
- Support for sine filter in the drive output
- Trim function
- User-selectable acceleration and deceleration ramps
- User adjustable load supervision/limitation

Pre-programmed protection functions
A wide range of features provides protection for the drive, motor and the process.

- Ambient temperature
- DC overvoltage
- DC undervoltage
- Drive temperature
- Input phase loss
- Overcurrent
- Power limits
- Short circuit

Programmable protection functions
- Adjustable power limits
- Control signal supervision
- Critical frequencies lock-out
- Current and torque limits
- Earth fault protection
- External fault
- Motor phase loss
- Motor stall protection
- Motor thermal protection
- Motor underload protection
- Panel loss

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