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# ПРОМЫШЛЕННЫЕ ПРИВОДЫ

## Техническое описание на преобразователи

### ACS880-07



# Operation principle and hardware description

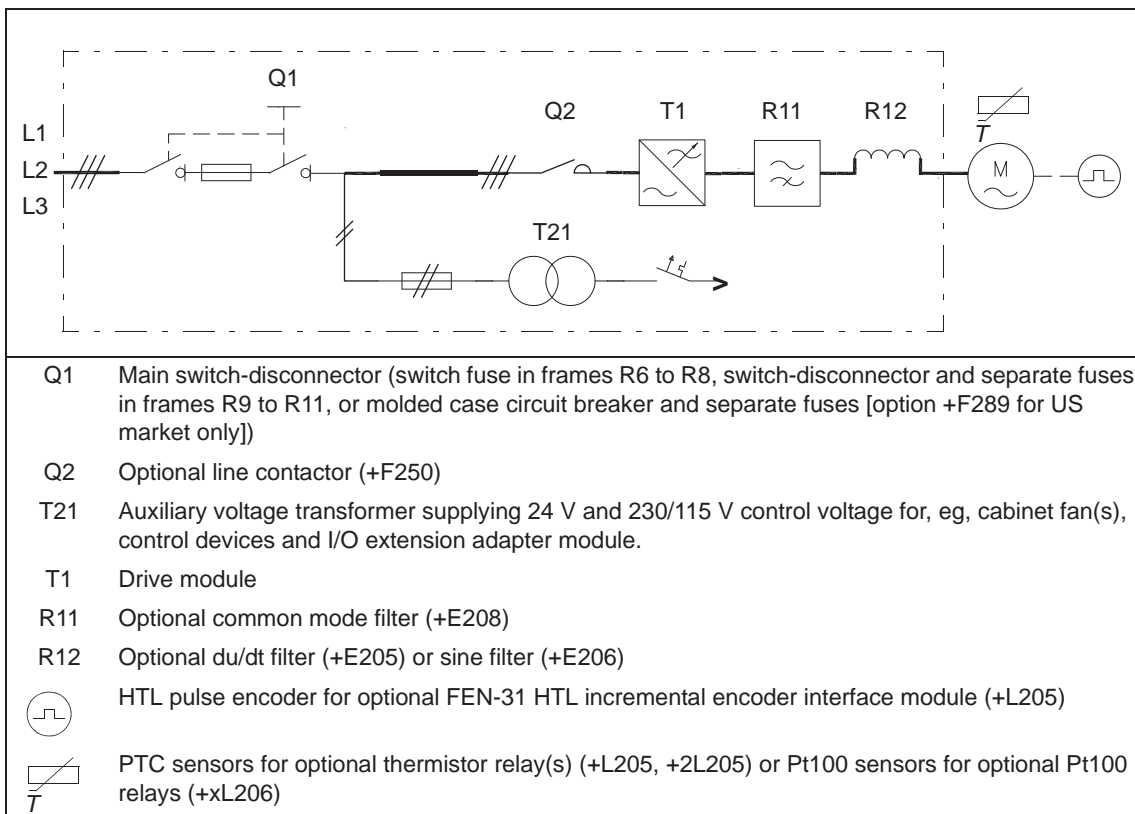
## Contents of this chapter

This chapter briefly describes the operation principle and construction of the drive.

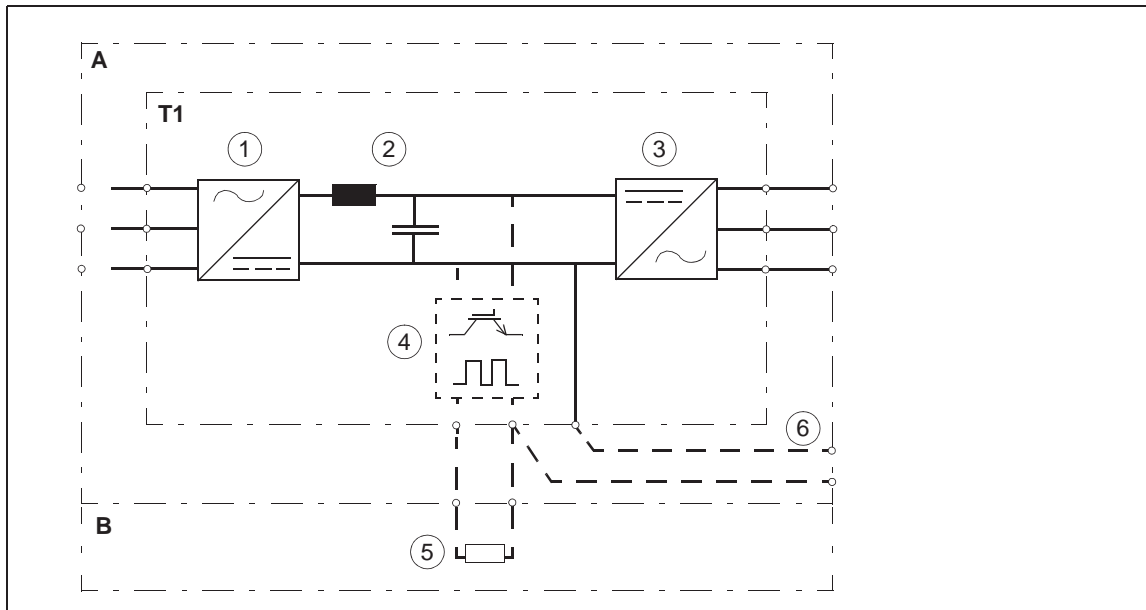
## Product overview

The ACS880-07 is an air-cooled cabinet-installed drive for controlling asynchronous AC induction motors, permanent magnet synchronous motors, AC induction servomotors and ABB synchronous reluctance motors (SynRM motors).

### ■ Single-line circuit diagram of the drive



■ **Block diagram of the brake and DC options (+D150, +D151 and +H356)**



A Drive module cubicle

T1 Drive module

B Brake resistor cubicle

1 Rectifier. Converts alternating current and voltage to direct current and voltage.

2 DC link. DC circuit between rectifier and inverter.

3 Inverter. Converts direct current and voltage to alternating current and voltage.

4 Brake chopper (option +D150). Conducts the surplus energy from the intermediate DC circuit of the drive to the brake resistor when necessary. The chopper operates when the DC link voltage exceeds a certain maximum limit. The voltage rise is typically caused by deceleration (braking) of a high inertia motor. User obtains and installs the brake resistor when needed.

5 Brake resistor (option +D151)

6 Optional DC cable connection busbars (+H356). Not available with option +D150.

■ General information on the cabinet layout

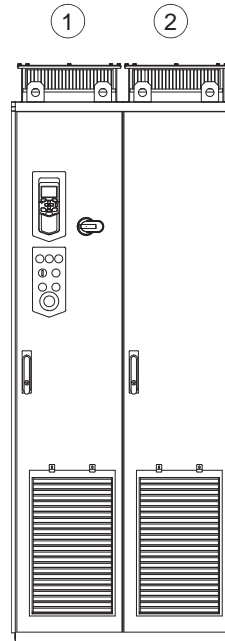


IP22/IP42  
UL Type 1 /  
UL Type 1 Filtered

IP54  
UL Type 12



UL Type 1 with molded case circuit breaker (option +F289 for US market only)

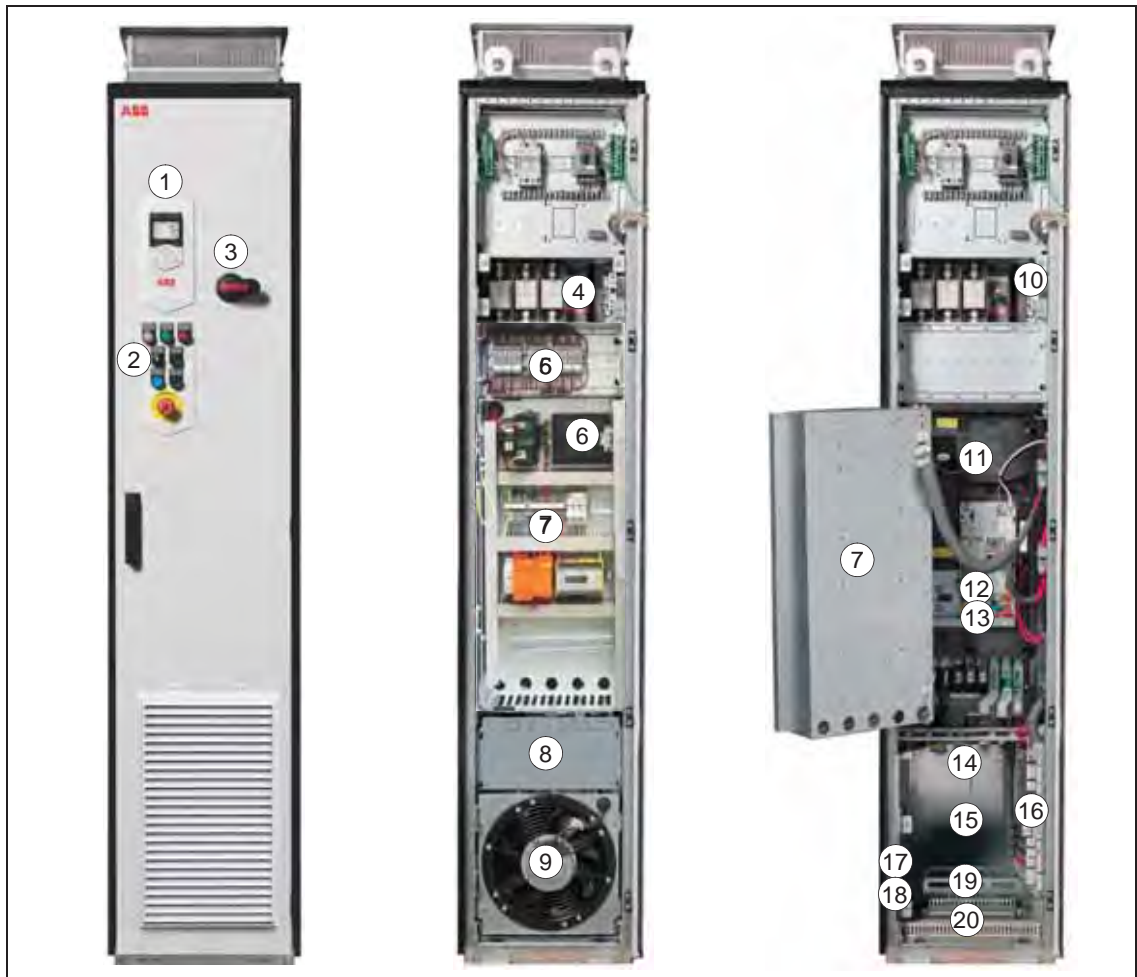


Example cabinet line-up

- |   |   |
|---|---|
| 1 | Frames R6 to R8: drive module cubicle.<br>Frames R9 to R11: two cubicles with one door (main switch and power cabling cubicle and drive module cubicle) |
| 2 | Brake resistor cubicle with option +D151  |

## ■ Cabinet layout of frames R6 to R8

The cabinet layout without shrouds is shown below.



1	Drive control panel	12	Control unit, see page <a href="#">119</a> .
2	Door switches and lights, see page <a href="#">41</a> .	13	Optional terminal block for external control unit connections (X504, option +L504)
3	Main switch handle	14	Power cable connection terminals and du/dt filter (option +E205) and common mode filter (option +E208) behind
4	Main switch-disconnector with fuses	15	Common mode filter (option +E208)
5	Thermistor and Pt100 relays (options +L505 and +L506)	16	Connection terminals for options +F250, +Q951, +Q952, +Q963, +Q964+Q968, +Q954, +M600...+M605,+ L505, +L506. See page <a href="#">40</a> .
6	Buffering module C22	17	Cabinet heater (option +G300)
7	Swing-out frame	18	PE busbar
8	Mounting plate with connection terminals for options +G300, +G307, +G313 at the back side of the plate	19	Power cable lead-throughs
9	"Door" fan	20	Control cable lead-through
10	Auxiliary voltage transformer (T21)	-	-
11	Drive module	-	-

## ■ Cabinet layout of frames R6 to R8 with option +C129

The cabinet layout without shrouds is shown below.



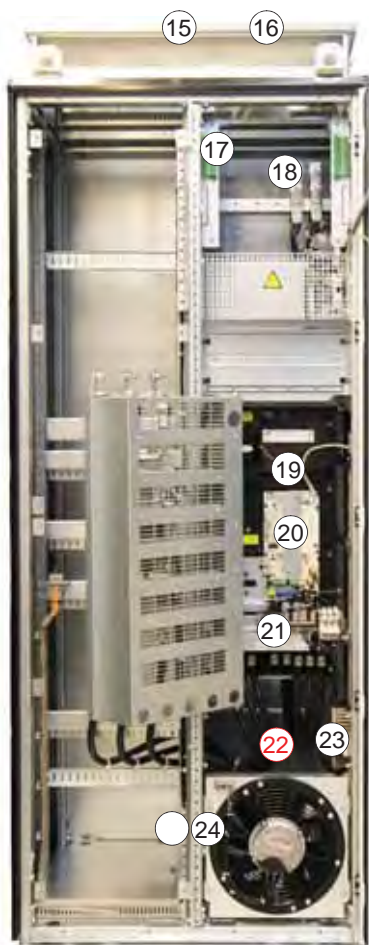
1	Drive control panel	11	Buffering module C22
2	Door switches and lights, see page 41.	12	Swing-out frame
3	Main switch handle	13	Mounting plate with connection terminals for options +G300, +G307, +G313 at the back side of the plate
4	Power and control cable lead-throughs	14	"Door" fan
5	Ground bar	15	Drive module
6	Input cable connection terminals	16	Control unit, see page 119.
7	Motor cable connection terminals	17	Optional terminal block for external control unit connections (X504, option +L504)
8	Auxiliary voltage transformer (T21)	18	Connection terminals for options +F250, +Q951, +Q952, +Q963, +Q964+Q968, +Q954, +M600...+M605, +L505, +L506. See page 40.
9	Main switch-disconnector with fuses	19	Cabinet heater (option +G300)
10	Thermistor and Pt100 relays (options +L505 and +L506)	-	-

■ **Cabinet layout of frames R6 to R8 with options +C129 and +F289**

Option +C129 +F289 is available for US market only. The cabinet layout without shrouds is shown below.



1	Drive control panel	9	Auxiliary voltage transformer (T21)
2	Door switches and lights, see page 41.	10	Thermistor and Pt100 relays (options +L505 and +L506)
3	Main switch handle	11	Buffering module C22
4	Input power cable lead-throughs	12	Swing-out frame
5	Ground bar	13	Mounting plate with connection terminals for options +G300, +G307, +G313 at the back side of the plate
6	Input power cable terminals	14	"Door" fan
7	Molded case circuit breaker (option +F289)		
8	Main fuses for control devices, IP54 fan transformer (with option +B055), V-meter (option +G334), starter for auxiliary motor fan (option +M600)		

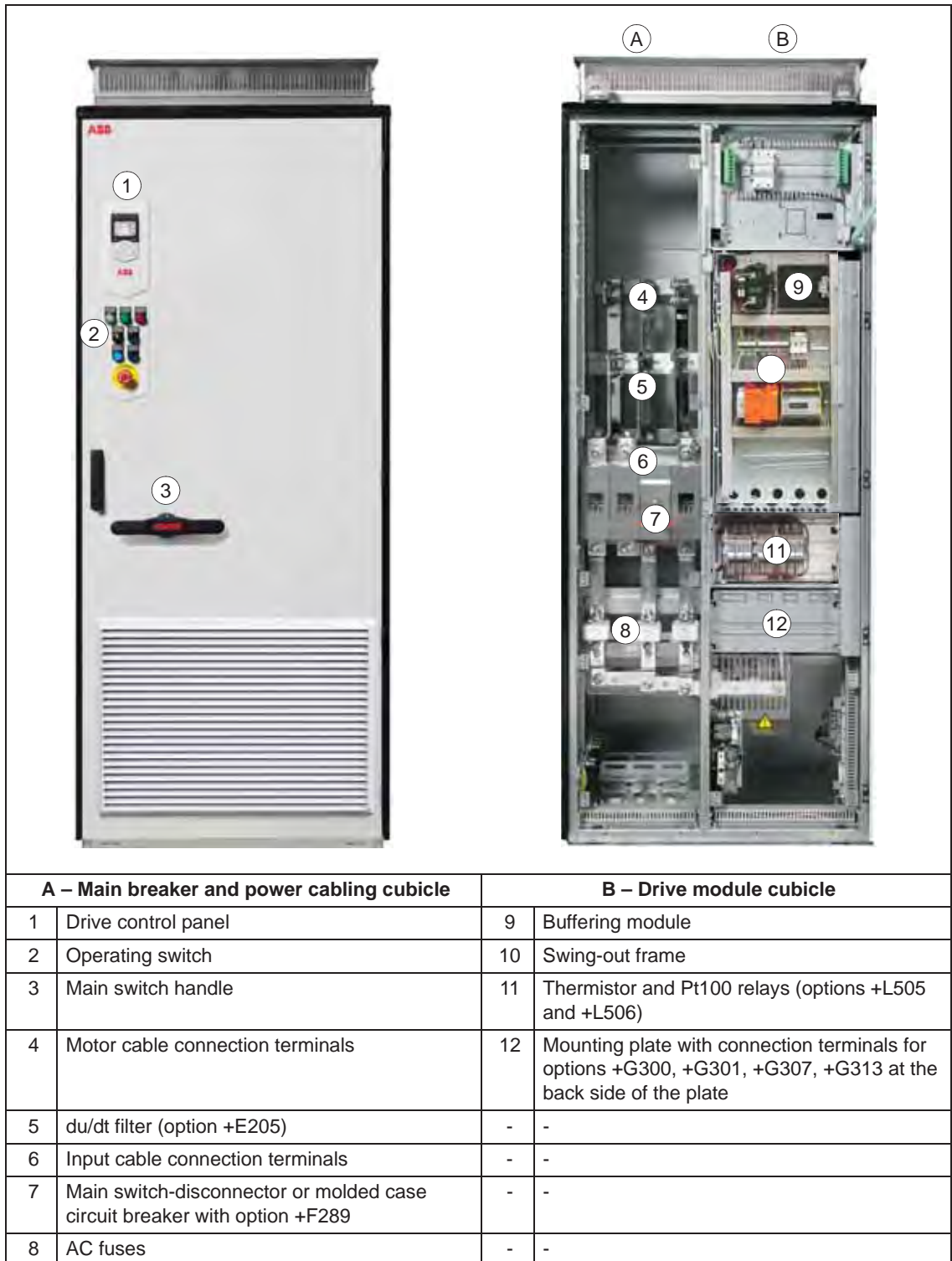


15	Control cable lead-throughs	20	Control unit, see page <a href="#">119</a> .
16	Motor cable lead-throughs	21	Optional terminal block for external control unit connections (X504, option +L504)
17	Ground bar	22	Common mode filter (option +E208)
18	Motor cable connection terminals	23	Connection terminals for options +F250, +Q951, +Q952, +Q963, +Q964+Q968, +Q954, +M600...+M605,+ L505, +L506. See page <a href="#">40</a> .
19	Drive module		



## ■ Cabinet layout of frame R9

The cabinet layout is shown below. See also the next page.



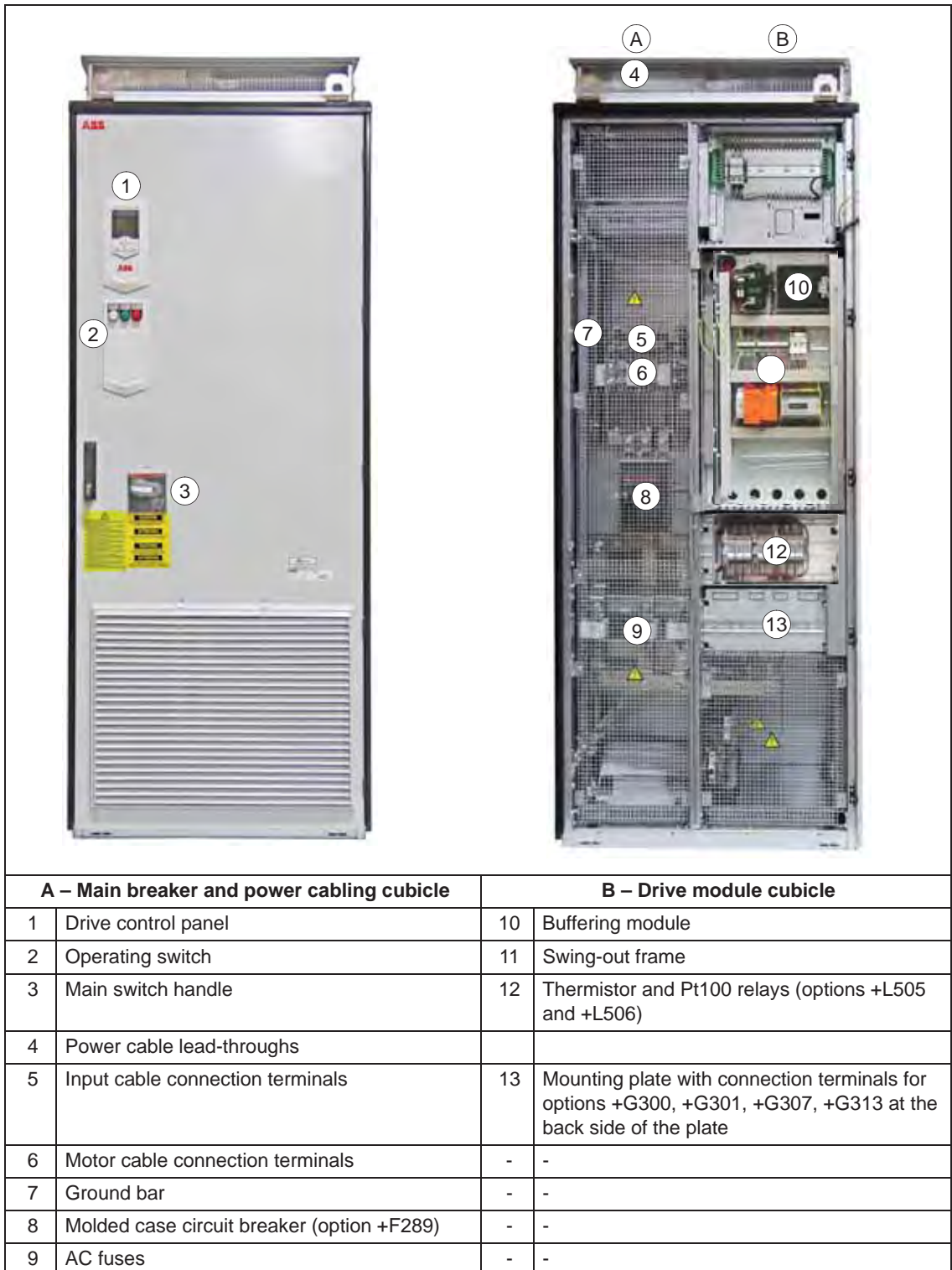
The cabinet layout without shrouds, with the swing-out frame open is shown below.



A – Main breaker and power cabling cubicle		B – Drive module cubicle	
1	Auxiliary voltage transformer (T21)	8	Control unit, see page 119.
2	Swing-out frame	9	Optional terminal block for external control unit connections (X504, option +L504)
3	Main switch-disconnector or molded case circuit breaker with option +F289	10	Connection terminals for external brake resistor and DC cables
4	AC fuses	11	Common mode filter (option +E208) behind the busbars
5	PE-terminal	12	Line contactor (option +F250)
6	Power cable lead-throughs	13	Connection terminals for options +F250, +Q951, +Q952, +Q963, +Q964+Q968, +Q954, +M600...+M605,+ L505, +L506. See page 40.
7	Drive module	14	Cabinet heater (option +G300)
-	-	15	Control cable lead-through

■ **Cabinet layout of frame R9 with options +C129 and +F289**

The cabinet layout is shown below. See also the next page.



A – Main breaker and power cabling cubicle		B – Drive module cubicle	
1	Drive control panel	10	Buffering module
2	Operating switch	11	Swing-out frame
3	Main switch handle	12	Thermistor and Pt100 relays (options +L505 and +L506)
4	Power cable lead-throughs		
5	Input cable connection terminals	13	Mounting plate with connection terminals for options +G300, +G301, +G307, +G313 at the back side of the plate
6	Motor cable connection terminals	-	-
7	Ground bar	-	-
8	Molded case circuit breaker (option +F289)	-	-
9	AC fuses	-	-

The cabinet layout with the swing-out frame open is shown below.



1	Control cable lead-through	7	Connection terminals for external brake resistor and DC cables
2	Swing-out frame	8	Line contactor (option +F250)
3	Drive module	9	Connection terminals for options +F250, +Q951, +Q952, +Q963, +Q964+Q968, +Q954, +M600...+M605,+ L505, +L506. See page 40.
4	Control unit, see page 119.	10	Cabinet heater (option +G300)
5	Optional terminal block for external control unit connections (X504, option +L504)	11	Auxiliary voltage transformer (T21)
6	Common mode filter (option +E208) behind the busbars	-	-

■ **Cabinet layout of frames R10 and R11**

The cabinet layout is shown below. See also the next page.



A – Main breaker and power cabling cubicle		B – Drive module cubicle	
1	Drive control panel	-	See the next page.
2	Operating switch	-	-
3	Main switch handle	-	-
4	Buffering module	-	-
5	Swing-out frame	-	-
6	Thermistor and Pt100 relays (options +L505 and +L506)	-	-
7	Mounting plate with connection terminals for options +G300, +G301, +G307, +G313 at the back side of the plate	-	-
8	“Door” fan		

The cabinet layout without shrouds, with the swing-out frame open is shown below.



A – Main breaker and power cabling cubicle		B – Drive module cubicle	
1	Main fuses for control devices, IP54 fan transformer (with option +B055), V-meter (option +G334), starter for auxiliary motor fan (option +M600)	8	Drive module
2	AC fuses	9	Control unit, see page <a href="#">129</a> .
3	Main switch-disconnector	10	Optional terminal block for external control unit connections (X504, option +L504)
4	Input and motor cable connection terminals	11	Auxiliary voltage transformer (T21)
5	PE-terminal	12	Cabinet heater
6	Connection terminals for options +F250, +Q951, +Q952, +Q963, +Q964+Q968, +Q954, +M600...+M605,+ L505, +L506. See page <a href="#">40</a> .	-	-
7	Power and control cable lead-throughs	-	-

# Technical data

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## Contents of this chapter

This chapter contains the technical specifications of the drive, for example, the ratings, sizes and technical requirements, provisions for fulfilling the requirements for CE and other markings.

## Ratings

The nominal ratings for the drives with 50 Hz and 60 Hz supply are given below. The symbols are described below the table.

IEC RATINGS									
Drive type ACS880-07-	Frame size	Input rating	Output ratings						
			No-overload use			Light-overload use		Heavy-duty use	
		$I_{1N}$	$I_{max}$	$I_N$	$P_N$	$I_{Ld}$	$P_{Ld}$	$I_{Hd}$	$P_{Hd}$
A	A	A	kW	A	kW	A	kW		
$U_N = 400\text{ V}$									
0105A-3	R6	105	148	105	55	100	55	87	45
0145A-3	R6	145	178	145	75	138	75	105	55
0169A-3	R7	169	247	169	90	161	90	145	75
0206A-3	R7	206	287	206	110	196	110	169	90
0246A-3	R8	246	350	246	132	234	132	206	110
0293A-3	R8	293	418	293	160	278	160	246*	132
0363A-3	R9	363	498	363	200	345	200	293	160
0430A-3	R9	430	545	430	250	400	200	363**	200
0505A-3	R10	505	560	505	250	485	250	361	200
0585A-3	R10	585	730	585	315	575	315	429	250

IEC RATINGS									
Drive type ACS880-07-	Frame size	Input rating	Output ratings						
			No-overload use			Light-overload use		Heavy-duty use	
			$I_{1N}$	$I_{max}$	$I_N$	$P_N$	$I_{Ld}$	$P_{Ld}$	$I_{Hd}$
		A	A	A	kW	A	kW	A	kW
0650A-3	R10	650	730	650	355	634	355	477	250
0725A-3	R11	725	1020	725	400	715	400	566	315
0820A-3	R11	820	1020	820	450	810	450	625	355
0880A-3	R11	880	1100	880	500	865	500	725 ***	400
$U_N = 500\text{ V}$									
0096A-5	R6	96	148	96	55	91	55	77	45
0124A-5	R6	124	178	124	75	118	75	96	55
0156A-5	R7	156	247	156	90	148	90	124	75
0180A-5	R7	180	287	180	110	171	110	156	90
0240A-5	R8	240	350	240	132	228	132	180	110
0260A-5	R8	260	418	260	160	247	160	240*	132
0361A-5	R9	361	542	361	200	343	200	302	200
0414A-5	R9	414	542	414	250	393	250	361**	200
0460A-5	R10	460	560	460	315	450	315	330	200
0503A-5	R10	503	560	503	355	483	315	361	250
0583A-5	R10	583	730	583	400	573	400	414	250
0635A-5	R10	635	730	635	450	623	450	477	315
0715A-5	R11	715	850	715	500	705	500	566	400
0820A-5	R11	820	1020	820	560	807	560	625	450
$U_N = 690\text{ V}$									
0061A-7	R6	61	104	61	55	58	55	49	45
0084A-7	R6	84	124	84	75	80	75	61	55
0098A-7	R7	98	168	98	90	93	90	84	75
0119A-7	R7	119	198	119	110	113	110	98	90
0142A-7	R8	142	250	142	132	135	132	119	110
0174A-7	R8	174	274	174	160	165	160	142	132
0210A-7	R9	210	384	210	200	200	200	174	160
0271A-7	R9	271	411	271	250	257	250	210	200
0330A-7	R10	330	480	330	315	320	315	255	250
0370A-7	R10	370	520	370	355	360	355	325	315
0425A-7	R11	425	520	425	400	415	400	360	355
0470A-7	R11	470	655	470	450	455	450	415	400
0522A-7	R11	522	655	522	500	505	500	455	450
0590A-7	R11	590	800	590	560	571	560	505	500
0650A-7	R11	650	820	650	630	630	630	571	560

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NEMA RATINGS											
Drive type ACS880-07-	Frame size	Input rating	Max. current	Output ratings							
				Light-overload use			Heavy-duty use				
				$I_{1N}$	$I_{max}$	$I_{Ld}$	$P_{Ld}$		$I_{Hd}$	$P_{Hd}$	
				A	A	A	kW	hp	A	kW	hp
$U_N = 460\text{ V}$											
0096A-5	R6	96	148	96	55	75	77	45	60		
0124A-5	R6	124	178	124	75	100	96	55	75		
0156A-5	R7	156	247	156	90	125	124	75	100		
0180A-5	R7	180	287	180	110	150	156	90	125		
0240A-5	R8	240	350	240	132	200	180	110	150		
0302A-5	R9	375	498	302	200	250	260	132	200		
0361A-5	R9	361	542	361	200	300	302	200	250		
0414A-5	R9	414	542	414	250	350	361 **	200	300		
0503A-5	R10	503	560	483	315	400	361	250	300		
0583A-5	R10	583	730	573	400	450	414	250	350		
0635A-5	R10	635	730	623	450	500	477	315	400		
0715A-5	R11	715	850	705	500	600	566	400	450		
0820A-5	R11	820	1020	807	560	700	625	450	500		
$U_N = 600\text{ V}$											
0061A-7	R6	61	104	62	45	60	52	37	50		
0084A-7	R6	84	124	77	55	75	62	45	60		
0098A-7	R7	98	168	99	75	100	77	55	75		
0119A-7	R7	119	198	125	90	125	99	75	100		
0142A-7	R8	142	250	144	110	150	125	90	125		
0174A-7	R8	174	274	192 *	132	200	144	110	150		
0210A-7	R9	210	384	242	160	250	192	132	200		
0271A-7	R9	271	411	271	200	250	242	160	250		
0330A-7	R10	R10	330	480	320	300	255	250	250		
0370A-7	R10	R10	370	520	360	350	325	300	300		
0425A-7	R11	R10	425	520	415	450	360	350	350		
0470A-7	R11	R11	470	655	455	450	415	450	450		
0522A-7	R11	R11	522	655	505	500	455	450	450		
0590A-7	R11	R11	590	800	571	600	505	500	500		
0650A-7	R11	R11	650	820	630	700	571	600	600		

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## ■ Definitions

$U_N$	Nominal voltage
$I_{1N}$	Nominal rms input current
$I_N$	Nominal output current (available continuously with no over-loading)
$P_N$	Typical motor power in no-overload use
$I_{Ld}$	Continuous rms output current allowing 10% overload for 1 minute every 5 minutes.
$P_{Ld}$	Typical motor power in light-overload use

$I_{\max}$	Maximum output current. Available for 10 seconds at start, then as long as allowed by drive temperature.
$I_{\text{Hd}}$	Continuous rms output current allowing 50% overload for 1 minute every 5 minutes. * Continuous rms output current allowing 30% overload for 1 minute every 5 minutes. ** Continuous rms output current allowing 25% overload for 1 minute every 5 minutes. *** Continuous rms output current allowing 40% overload for 1 minute every 5 minutes.
$P_{\text{Hd}}$	Typical motor power in heavy-duty use

**Note 1:** The ratings apply at an ambient temperature of 40 °C (104 °F).

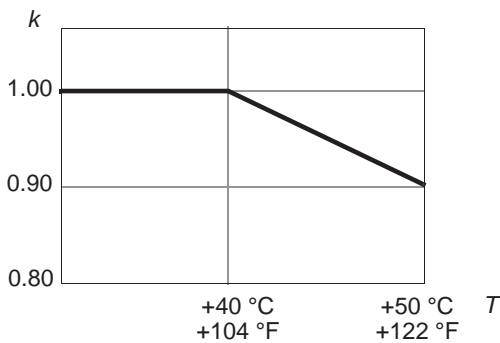
**Note 2:** To achieve the rated motor power given in the table, the rated current of the drive must be higher than or equal to the rated motor current.

The DriveSize dimensioning tool available from ABB is recommended for selecting the drive, motor and gear combination.

## ■ Derating

### Ambient temperature derating

In the temperature range +40...50 °C (+104...122 °F), the rated output current is derated by 1% for every added 1 °C (1.8 °F). The output current can be calculated by multiplying the current given in the rating table by the derating factor (k):



### Altitude derating

At altitudes from 1000 to 4000 m (3281 to 13123 ft) above sea level, the derating is 1% for every 100 m (328 ft). For a more accurate derating, use the DriveSize PC tool.

### Low noise control mode derating

When low noise drive control mode is used, the motor and braking powers are derated. Contact ABB for more information.

## Fuses (IEC)

The drive is equipped with aR fuses listed below.

Drive type ACS880-07-	Input current (A)	Ultrarapid (aR) fuses (one fuse per phase)						
		A	A <sup>2</sup> s	V	Manufacturer	Type	Type with option +F289	Size
<b>U<sub>N</sub> = 400 V</b>								
0105A-3	105	160	8250	690	Bussmann	170M3814D	170M3414	1
0145A-3	145	250	31000	690	Bussmann	170M3816D	170M3416	1
0169A-3	169	250	31000	690	Bussmann	170M3816D	170M3416	1
0206A-3	206	315	52000	690	Bussmann	170M3817D	170M4410	1
0246A-3	246	400	79000	690	Bussmann	170M5808D	170M5408	2
0293A-3	293	500	155000	690	Bussmann	170M5810D	170M5410	2
0363A-3	363	630	210000	690	Bussmann	170M6410	170M6410	3
0430A-3	430	700	300000	690	Bussmann	170M6411	170M6411	3
0505A-3	505	800	465000	690	Bussmann	170M6412	170M6412	3
0585A-3	585	900	670000	690	Bussmann	170M6413	170M6413	3
0650A-3	650	1000	945000	690	Bussmann	170M6414	170M6414	3
0725A-3	725	1250	1950000	690	Bussmann	170M6416	170M6416	3
0820A-3	820	1250	1950000	690	Bussmann	170M6416	170M6416	3
0880A-3	880	1400	2450000	690	Bussmann	170M6417	170M6417	3
<b>U<sub>N</sub> = 500 V</b>								
0096A-5	96	160	8250	690	Bussmann	170M3814D	170M3414	1
0124A-5	124	250	31000	690	Bussmann	170M3816D	170M3416	1
0156A-5	156	250	31000	690	Bussmann	170M3816D	170M3416	1
0180A-5	180	315	52000	690	Bussmann	170M3817D	170M4410	1
0240A-5	240	400	79000	690	Bussmann	170M5808D	170M5408	2
0260A-5	260	500	155000	690	Bussmann	170M5810D	170M5410	2
0361A-5	361	630	210000	690	Bussmann	170M6410	170M6410	3
0414A-5	414	700	300000	690	Bussmann	170M6411	170M6411	3
0460A-5	460	700	300000	690	Bussmann	170M6411	170M6411	3
0503A-5	503	800	465000	690	Bussmann	170M6412	170M6412	3
0583A-5	583	900	670000	690	Bussmann	170M6413	170M6413	3
0635A-5	635	1000	945000	690	Bussmann	170M6414	170M6414	3
0715A-5	715	1250	1950000	690	Bussmann	170M6416	170M6416	3
0820A-5	820	1250	1950000	690	Bussmann	170M6416	170M6416	3
<b>U<sub>N</sub> = 690 V</b>								
0061A-7	61	100	2600	690	Bussmann	170M3812D	170M3412	1*
0084A-7	84	160	8250	690	Bussmann	170M3814D	170M3414	1
0098A-7	98	160	8250	690	Bussmann	170M3814D	170M3414	1
0119A-7	119	250	31000	690	Bussmann	170M3816D	170M3416	1
0142A-7	142	250	31000	690	Bussmann	170M3816D	170M3416	1
0174A-7	174	315	52000	690	Bussmann	170M3817D	170M4410	1
0210A-7	210	315	42000	690	Bussmann	170M4410	170M4410	2
0271A-7	271	500	145000	690	Bussmann	170M5410	170M5410	2
0330A-7	330	630	210000	690	Bussmann	170M6410	170M6410	3
0370A-7	370	630	210000	690	Bussmann	170M6410	170M6410	3

Drive type ACS880-07-	Input current (A)	Ultrarapid (aR) fuses (one fuse per phase)						
		A	A <sup>2</sup> s	V	Manufacturer	Type	Type with option +F289	Size
0425A-7	425	700	300000	690	Bussmann	170M6411	170M6411	3
0470A-7	470	800	465000	690	Bussmann	170M6412	170M6412	3
0522A-7	522	800	465000	690	Bussmann	170M6412	170M6412	3
0590A-7	590	900	670000	690	Bussmann	170M6413	170M6413	3
0650A-7	650	1000	945000	690	Bussmann	170M6414	170M6414	3

**Note 1:** See also [Implementing thermal overload and short-circuit protection](#) on page 78.

**Note 2:** Fuses with higher current rating than the recommended ones must not be used. Fuses with lower current rating can be used.

**Note 3:** Fuses from other manufacturers can be used if they meet the ratings and the melting curve of the fuse does not exceed the melting curve of the fuse mentioned in the table.

## Fuses (UL)

The drive is equipped for branch circuit protection per NEC with standard fuses listed below. The fuses restrict drive damage and prevent damage to adjoining equipment in case of a short-circuit inside the drive. **Check that the operating time of the fuse is below 0.5 seconds for frame size R6 and is below 0.1 seconds for frames R7 through R11.** The operating time depends on the fuse type, supply network impedance and the cross-sectional area, material and length of the supply cable. The fuses must be of the “non-time delay” type. Obey local regulations.

Drive type ACS880-07-	Input current A	Fuse (one fuse per phase)					
		A	V	Manufacture r	Type	Type with option +F289	UL class / Size
$U_N = 460 \text{ V}$							
0096A-5	96	250	600	Bussmann	DFJ-250	170M3414	J/1
0124A-5	124	250	600	Bussmann	DFJ-250	170M3416	J/1
0156A-5	156	300	600	Bussmann	DFJ-300	170M3416	J/1
0180A-5	180	300	600	Bussmann	DFJ-300	170M4410	J/1
0240A-5	240	400	600	Bussmann	DFJ-400	170M5408	J/2
0260A-5	260	400	600	Bussmann	DFJ-400	170M5410	J/2
0302A-5	375	630	690	Bussmann	170M6410	170M6410	3
0361A-5	361	630	600	Bussmann	170M6410	170M6410	3
0414A-5	414	700	600	Bussmann	170M6411	170M6411	3
0460A-5	460		690	Bussmann		170M6411	3
0503A-5	503	700	690	Bussmann	170M6411	170M6412	3
0583A-5	583	700	690	Bussmann	170M6411	170M6413	3
0635A-5	635	800	690	Bussmann	170M6412	170M6414	3
0715A-5	715	900	690	Bussmann	170M6413	170M6416	3
0820A-5	820	1000	690	Bussmann	170M6414	170M6416	3
$U_N = 600 \text{ V}$							
0061A-7	61	250	600	Bussmann	DFJ-250	170M3412	J/1
0084A-7	84	250	600	Bussmann	DFJ-250	170M3414	J/1
0098A-7	98	250	600	Bussmann	DFJ-250	170M3414	J/1
0119A-7	119	250	600	Bussmann	DFJ-250	170M3416	J/1

Drive type ACS880-07-	Input current A	Fuse (one fuse per phase)					
		A	V	Manufacture r	Type	Type with option +F289	UL class / Size
0142A-7	142	250	600	Bussmann	DFJ-250	170M3416	J/1
0174A-7	174	300	600	Bussmann	DFJ-300	170M4410	J/1
0210A-7	210	315	690	Bussmann	170M4410	170M4410	1
0271A-7	271	500	690	Bussmann	170M5410	170M5410	2
0330A-7	330	630	690	Bussmann	170M6410	170M6410	3
0370A-7	370	630	690	Bussmann	170M6410	170M6410	3
0425A-7	425	700	690	Bussmann	170M6411	170M6411	3
0470A-7	470	800	690	Bussmann	170M6412	170M6412	3
0522A-7	522	800	690	Bussmann	170M6412	170M6412	3
0590A-7	590	900	690	Bussmann	170M6413	170M6413	3
0650A-7	650	1000	690	Bussmann	170M6414	170M6414	3

**Note 1:** See also [Implementing thermal overload and short-circuit protection](#) on page 73.

**Note 2:** Fuses with higher current rating than the recommended ones must not be used. Fuses with lower current rating can be used.

**Note 3:** Fuses from other manufacturers can be used if they meet the ratings and the melting curve of the fuse does not exceed the melting curve of the fuse mentioned in the table.

**Note 4:** Circuit breakers must not be used without fuses.

## Dimensions and weights

Frame size	Height <sup>1)</sup>				Width <sup>2)</sup>		Depth <sup>3)</sup>		Weight	
	IP22/42		IP54		mm	in.	mm	in.	kg	lb
	mm	in.	mm	in.						
R6	2145	84.45	2315	91.14	430	16.93	673	26.50	240	530
R7	2145	84.45	2315	91.14	430	16.93	673	26.50	250	560
R8	2145	84.45	2315	91.14	430	16.93	673	26.50	265	590
R9	2145	84.45	2315	91.14	830	32.68	698	27.48	375	830
R10	2145	84.45	2315	91.14	830	32.68	698	27.48	530	1170
R11	2145	84.45	2315	91.14	830	32.68	698	27.48	580	1280

1) For marine construction (option +C121) extra height is 10 mm (0.39 in.) due to the fastening bars at the bottom of the cabinet.

2) Extra width with brake resistors (option +D151): SAFURxxxFxxx 400 mm (15.75 in.), 2xSAFURxxxFxxx 800 mm (19.68 in.). Extra width for frames R6 to R8 with EMC filter (option +E202): 200 mm (7.87 in.). Total width of R6 to R9 frame sizes with molded case circuit breaker (option +F289) is 830 mm (32.68 in.)

3) For drives with marine fastening bars (option +C121): Depth is 757 mm.

## Losses, cooling data and noise

Drive type	Frame	Air flow		Heat dissipation W	Noise dB(A)
		m <sup>3</sup> /h	ft <sup>3</sup> /min		
<b><math>U_N = 400\text{ V}</math></b>					
ACS880-07-0105A-3	R6	1750	1130	1795	67
ACS880-07-0145A-3	R6	1750	1130	1940	67
ACS880-07-0169A-3	R7	1750	1130	2440	67
ACS880-07-0206A-3	R7	1750	1130	2810	67
ACS880-07-0246A-3	R8	1750	1130	3800	65
ACS880-07-0293A-3	R8	1750	1130	4400	65
ACS880-07-0363A-3	R9	1150	677	5300	68
ACS880-07-0430A-3	R9	1150	677	6500	68
ACS880-07-0505A-3	R10	2950	1837	6102	72
ACS880-07-0585A-3	R10	2950	1837	6909	72
ACS880-07-0650A-3	R10	2950	1837	8622	72
ACS880-07-0725A-3	R11	2950	1837	9264	72
ACS880-07-0820A-3	R11	2950	1837	10362	72
ACS880-07-0880A-3	R11	3170	1978	11078	71
<b><math>U_N = 500\text{ V}</math></b>					
ACS880-07-0096A-5	R6	1750	1130	1795	67
ACS880-07-0124A-5	R6	1750	1130	1940	67
ACS880-07-0156A-5	R7	1750	1130	2440	67
ACS880-07-0180A-5	R7	1750	1130	2810	67
ACS880-07-0240A-5	R8	1750	1130	3800	65
ACS880-07-0260A-5	R8	1750	1130	4400	65
ACS880-07-0302A-5	R9	1150	677	4700	68
ACS880-07-0361A-5	R9	1150	677	5300	68
ACS880-07-0414A-5	R9	1150	677	6500	68
ACS880-07-0460A-5	R10	2950	1837	4903	72
ACS880-07-0503A-5	R10	2950	1837	6102	72
ACS880-07-0583A-5	R10	2950	1837	6909	72
ACS880-07-0635A-5	R10	2950	1837	8622	72
ACS880-07-0715A-5	R11	2950	1837	9264	72
ACS880-07-0820A-5	R11	2950	1837	10362	71
<b><math>U_N = 690\text{ V}</math></b>					
ACS880-07-0061A-7	R6	1750	1130	1795	67
ACS880-07-0084A-7	R6	1750	1130	1940	67
ACS880-07-0098A-7	R7	1750	1130	2440	67
ACS880-07-0119A-7	R7	1750	1130	2810	67
ACS880-07-0142A-7	R8	1750	1130	3800	65
ACS880-07-0174A-7	R8	1750	1130	4400	65
ACS880-07-0210A-7	R9	1150	677	4700	68
ACS880-07-0271A-7	R9	1150	677	5300	68
ACS880-07-0330A-7	R10	2950	1837	4903	72
ACS880-07-0370A-7	R10	2950	1837	6102	72

Drive type	Frame	Air flow		Heat dissipation	Noise
		m <sup>3</sup> /h	ft <sup>3</sup> /min	W	dB(A)
ACS880-07-0425A-7	R11	2950	1837	6909	72
ACS880-07-0470A-7	R11	2950	1837	8622	72
ACS880-07-0522A-7	R11	2950	1837	9264	72
ACS880-07-0590A-7	R11	2950	1837	10362	71
ACS880-07-0650A-7	R11	3170	1978	11078	71

## Terminal and lead-through data for the power cables

### ■ IEC

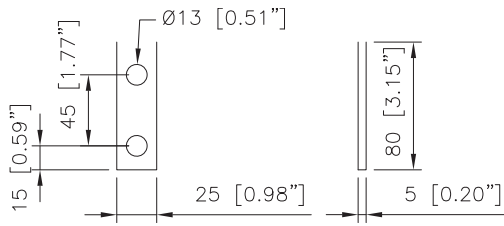
Frame size	Number of holes in the lead-through plate for the power cables. Hole diameter 60 mm.	Terminals L1, L2, L3, U2, V2, W2, UDC+/R+, UDC- and R-			Grounding terminals	
		Max. phase conductor size mm <sup>2</sup>	Bolt size	Tightening torque	Bolt size	Tightening torque N·m
R6	6	185	M10	20...40 N·m	M10	30...44 N·m
R7	6	185				
R8	6	1×240 or 2×185	M12	50...75 N·m		
R9	9	3×240				
R10	12	3×240 or 4×185				
R11	12	3×240 or 4×185				

### ■ US

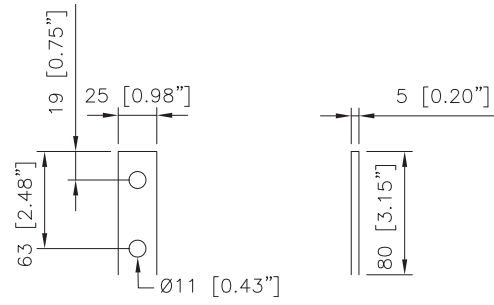
Frame size	Terminals L1, L2, L3, U2, V2, W2, UDC+/R+, UDC- and R-			Grounding terminals	
	Max. phase conductor size	Busbar bolt size – Hole spacing	Tightening torque	Bolt size	Tightening torque
	AWG/kcmil		bf·ft		bf·ft
R6	350 MCM	M10 (3/8") × 2 – .75"	15...30	M10 (3/8")	22...32
R7					
R8	1×500 MCM or 2×350 MCM	M12 (7/16") × 2 – .75"	37...55		
R9					
R10	1×500 MCM or 4×350 MCM	M12 (7/16") × 4 – .75"			
R11					

**Input and motor cable terminal dimensions of frames R6 to R7**

Bottom entry and exit:

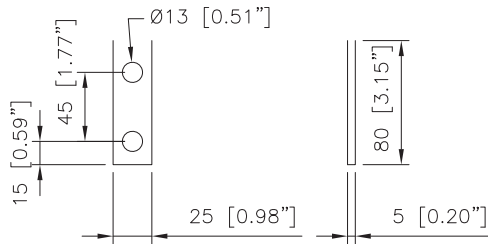


Top entry and exit:

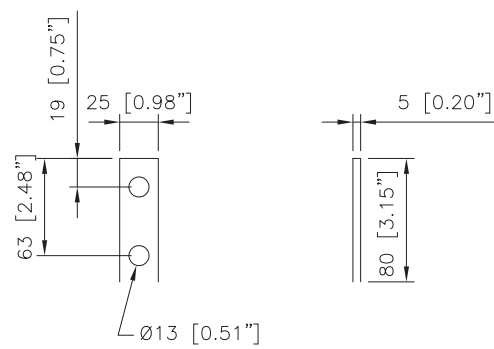


**Input and motor cable terminal dimensions of frame R8**

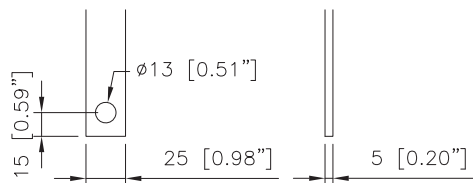
Bottom entry and exit:



Top entry and exit:



**Resistor and DC cable terminal dimensions of frames R6 to R8**





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