

По вопросам продаж и поддержки обращайтесь:

Самары (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48

Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курган (3522)50-90-47
Курск (4712)77-13-04
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Ноябрьск(3496)41-32-12

Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Пермь (342)205-81-47
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саранск (8342)22-96-24
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35

Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Улан-Удэ (3012)59-97-51
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +7(7172)727-132

Киргизия +996(312)96-26-47

<https://abbdrives.nt-rt.ru/> || aei@nt-rt.ru

ПРИВОДЫ ПЕРЕМЕННОГО ТОКА НИЗКОВОЛЬТНЫЕ Техническое описание на преобразователи ACS380



Technical data

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, UL and other approval marks.

Electrical ratings

■ IEC ratings

Type ACS380- 04xx-...	Input current		Output ratings							Frame size
	No choke	With choke	Max. cur- rent	Nominal use		Light-duty use		Heavy-duty use		
	I_{1N}	I_{1N}	I_{max}	I_N	P_N	I_{Ld}	P_{Ld}	I_{Hd}	P_{Hd}	
	A	A	A	A	kW	A	kW	A	kW	
1-phase $U_N = 230\text{ V}$										
02A4-1	5.0	4.2	3.2	2.4	0.37	2.3	0.37	1.8	0.25	R0
03A7-1	7.1	6.4	4.3	3.7	0.55	3.5	0.55	2.4	0.37	R0
04A8-1	8.8	8.3	6.7	4.8	0.75	4.6	0.75	3.7	0.55	R1
06A9-1	12.0	11.9	8.6	6.9	1.10	6.6	1.10	4.8	0.75	R1
07A8-1	14.2	13.5	12.4	7.8	1.5	7.4	1.5	6.9	1.1	R1
09A8-1	18.7	17.0	14.0	9.8	2.2	9.3	2.2	7.8	1.5	R2
12A2-1	24.6	21.1	17.6	12.2	3.0	11.6	3.0	9.8	2.2	R2
3-phase $U_N = 230\text{ V}$										
02A4-2	3.6	2.4	3.2	2.4	0.37	2.3	0.37	1.8	0.25	R1

Type ACS380- 04xx-...	Input current		Output ratings							Frame size
	No choke	With choke	Max. cur- rent	Nominal use		Light-duty use		Heavy-duty use		
	I_{1N}	I_{1N}	I_{max}	I_N	P_N	I_{Ld}	P_{Ld}	I_{Hd}	P_{Hd}	
	A	A	A	A	kW	A	kW	A	kW	
03A7-2	5.1	3.7	4.3	3.7	0.55	3.5	0.55	2.4	0.37	R1
04A8-2	6.3	4.8	6.7	4.8	0.75	4.6	0.75	3.7	0.55	R1
06A9-2	8.4	6.9	8.6	6.9	1.1	6.6	1.1	4.8	0.75	R1
07A8-2	10.1	7.8	12.4	7.8	1.5	7.5	1.5	6.9	1.1	R1
09A8-2	13.8	9.8	14.0	9.8	2.2	9.3	2.2	7.8	1.5	R1
12A2-2	17.3	12.2	17.6	12.2	3.0	11.6	3.0	9.8	2.2	R2
17A5-2	22.2	17.5	22.0	17.5	4.0	16.7	4.0	12.2	3.0	R3
25A0-2	29.1	25.0	31.5	25.0	5.5	24.2	5.5	17.5	4.0	R3
032A-2	37.0	32.0	45.0	32.0	7.5	30.8	7.5	25.0	5.5	R4
048A-2	50.0	48.0	57.6	48.0	11.0	46.2	11.0	32.0	7.5	R4
055A-2	60.0	55.0	86.4	55.0	15.0	52.8	15.0	48.0	11.0	R4
3-phase $U_N = 400$ V										
01A8-4	2.9	1.8	2.2	1.8	0.55	1.7	0.55	1.2	0.37	R0
02A6-4	3.8	2.6	3.2	2.6	0.75	2.5	0.75	1.8	0.55	R1
03A3-4	5.1	3.3	4.7	3.3	1.1	3.1	1.1	2.6	0.75	R1
04A0-4	6.4	4.0	5.9	4.0	1.5	3.8	1.5	3.3	1.1	R1
05A6-4	8.9	5.6	7.2	5.6	2.2	5.3	2.2	4.0	1.5	R1
07A2-4	10.9	7.2	10.1	7.2	3.0	6.8	3.0	5.6	2.2	R1
09A4-4	13.9	9.4	13.0	9.4	4.0	8.9	4.0	7.2	3.0	R1
12A6-4	17.6	12.6	16.9	12.6	5.5	12.0	5.5	9.4	4.0	R2
17A0-4	25.2	17.0	22.7	17.0	7.5	16.2	7.5	12.6	5.5	R3
25A0-4	34.1	25.0	30.6	25.0	11.0	23.8	11.0	17.0	7.5	R3
032A-4	43.4	32.0	45.0	32.0	15.0	30.5	15.0	25.0	11.0	R4
038A-4	52.3	38.0	57.6	38.0	18.5	36.0	18.5	32.0	15.0	R4
045A-4	56.0	45.0	68.4	45.0	22.0	42.8	22.0	38.0	18.5	R4
050A-4	58.9	50.0	81.0	50.0	22.0	48.0	22.0	45.0	22.0	R4

■ UL (NEC) ratings

Type ACS380- 04xx-...	Input current		Output ratings					Frame size
	No choke	With choke	Max. current	Light-duty use		Heavy-duty use		
	I_{1Ld}	I_{1Ld}	I_{max}	I_{Ld}	P_{Ld}	I_{Hd}	P_{Hd}	
	A	A	A	A	hp	A	hp	
1-phase $U_N = 230$ V								
02A4-1	4.8	4.0	3.2	2.3	0.5	1.8	0.33	R0
03A7-1	6.8	6.1	4.3	3.5	0.8	2.3	0.5	R0
04A8-1	8.2	8.0	6.7	4.6	1.0	3.5	0.75	R1
06A9-1	12.0	11.4	8.6	6.6	1.5	4.6	1.0	R1
07A8-1	13.0	12.8	12.4	7.4	2.0	6.6	1.5	R1
09A8-1	18.0	16.1	14.0	9.3	3.0	7.4	2.0	R2
12A2-1	20.6	20.1	17.6	11.6	3.0	9.3	3.0	R2
3-phase $U_N = 230$ V								
02A4-2	3.5	2.4	3.2	2.3	0.5	1.8	0.33	R1
03A7-2	4.8	3.2	4.3	3.5	0.75	2.4	0.5	R1
04A8-2	5.8	4.6	6.7	4.6	1.0	3.2	0.75	R1
06A9-2	8.3	6.6	8.6	6.6	1.5	4.6	1.0	R1
07A8-2	9.2	7.5	12.4	7.5	2.0	6.6	1.5	R1
09A8-2	13.2	9.3	14.0	9.3	2.0	7.5	2.0	R1
12A2-2	12.8	11.6	17.6	11.6	3.0	9.3	3.0	R2
17A5-2	20.5	16.7	22.0	16.7	5.0	11.6	3.0	R3
25A0-2	29.7	24.2	31.5	24.2	7.5	16.7	5.0	R3
032A-2	36.0	30.8	45.0	30.8	10.0	24.2	7.5	R4
048A-2	50.5	46.2	57.6	46.2	15.0	30.8	10.0	R4
055A-2	57.6	52.8	86.4	52.8	20.0	46.2	15.0	R4
3-phase $U_N = 480$ V								
01A8-4	2.4	1.6	2.2	1.6	0.75	1.1	0.50	R0
02A6-4	3.0	2.1	3.2	2.1	1.0	1.6	0.75	R1
03A3-4	4.3	3.0	4.7	3.0	1.5	2.1	1.0	R1
04A0-4	4.9	3.5	5.9	3.5	2.0	3.0	1.5	R1
05A6-4	6.7	4.8	7.2	4.8	3.0	3.5	2.0	R1
07A2-4	6.7	6.0	10.1	6.0	3.0	4.8	3.0	R1
09A4-4	10.6	7.6	13.0	7.6	5.0	6.0	3.0	R1
12A6-4	14.9	11.0	16.9	11.0	7.5	7.6	5.0	R2
17A0-4	20.2	14.0	22.7	14.0	10.0	11.0	7.5	R3
25A0-4	28.5	21.0	30.6	21.0	15.0	14.0	10.0	R3
032A-4	35.8	27.0	45.0	27.0	20.0	21.0	15.0	R4
038A-4	43.8	34.0	57.6	34.0	25.0	27.0	20.0	R4

Type ACS380- 04xx-...	Input current		Output ratings				Frame size	
	No choke	With choke	Max. current	Light-duty use		Heavy-duty use		
	I_{1Ld}	I_{1Ld}	I_{max}	I_{Ld}	P_{Ld}	I_{Hd}		P_{Hd}
	A	A	A	A	hp	A		hp
045A-4	49.4	40.0	68.4	40.0	30.0	34.0	25.0	R4
050A-4	49.4	42.0	81.0	42.0	30.0	40.0	30.0	R4

■ Definitions

The ratings are valid at a maximum surrounding air temperature of 50 °C (122 °F), with the default drive switching frequency of 4 kHz (parameter 97.01) , and with an installation altitude below 1000 m (3281 ft).

U_N	Nominal input voltage of the drive. For input voltage range U1, refer to Electrical power network specification
I_{1N}	Nominal input current with typical motor power P_N . Continuous rms input current, for dimensioning cables and fuses.
I_{1Ld}	Light-duty input current (rms) with typical motor power P_{Ld} , for dimensioning cables and fuses.
I_{max}	Maximum output current. Available for 2 seconds every 10 minutes when the output frequency is less than 9 Hz. Otherwise maximum current is $1.5 \times I_{Hd}$. Maximum current setting (parameter 30.17) can also limit the value.
I_N	Nominal output current. Maximum continuous rms output current (no overload).
P_N	Typical motor power in nominal use (no overloading). The kilowatt ratings are applicable to most IEC 4-pole motors.
I_{Ld}	Continuous rms output current. Allows 10% overload for 1 minute every 10 minutes.
P_{Ld}	Typical motor power in light-duty use (10% overload) . The kilowatt ratings are applicable to most IEC 4-pole motors. The horsepower ratings are applicable to most NEMA 4-pole motors.
I_{Hd}	Continuous rms output current. Allows 50% overload for 1 minute every 10 minutes.
P_{Hd}	Typical motor power in heavy-duty use (50% overload). The kilowatt ratings are applicable to most IEC 4-pole motors. The horsepower ratings are applicable to most NEMA 4-pole motors.

Type ACS380- 04xx-...	Input current	Min. short-cir- cuit cur- rent 1)	Fuses				
			Nominal current	I^2t	Voltage rating	ABB type	IEC 60269 size
	A	A	A	A ² s	V		
1-phase $U_N = 230$ V							
02A4-1	5.0	80	10	380	500	OFAF000H10	000
03A7-1	7.1	80	10	380	500	OFAF000H10	000
04A8-1	8.8	128	16	720	500	OFAF000H16	000
06A9-1	12.0	200	20	1500	500	OFAF000H20	000
07A8-1	14.2	200	25	2500	500	OFAF000H25	000
09A8-1	18.7	256	32	2500	500	OFAF000H32	000
12A2-1	24.6	320	35	7000	500	OFAF000H35	000
3-phase $U_N = 230$ V							
02A4-2	3.6	48	6	110	500	OFAF000H6	000
03A7-2	5.1	80	10	360	500	OFAF000H10	000
04A8-2	6.3	80	10	360	500	OFAF000H10	000
06A9-2	8.4	128	16	740	500	OFAF000H16	000
07A8-2	10.1	128	16	740	500	OFAF000H16	000
09A8-2	13.8	128	16	740	500	OFAF000H16	000
12A2-2	17.3	200	25	2500	500	OFAF000H25	000
17A5-2	22.2	256	32	4500	500	OFAF000H32	000
25A0-2	29.1	400	50	15500	500	OFAF000H50	000
032A-2	37.0	504	63	20000	500	OFAF000H63	000
048A-2	50.0	800	100	65000	500	OFAF000H100	000
055A-2	60.0	800	100	65000	500	OFAF000H100	000
3-phase $U_N = 400$ V							
01A8-4	2.9	32	4	55	500	OFAF000H4	000
02A6-4	3.8	48	6	110	500	OFAF000H6	000
03A3-4	5.1	48	6	110	500	OFAF000H6	000
04A0-4	6.4	80	10	360	500	OFAF000H10	000
05A6-4	8.9	80	10	360	500	OFAF000H10	000
07A2-4	10.9	128	16	740	500	OFAF000H16	000
09A4-4	13.9	128	16	740	500	OFAF000H16	000
12A6-4	17.6	200	25	2500	500	OFAF000H25	000
17A0-4	25.2	256	32	4500	500	OFAF000H32	000
25A0-4	34.1	400	50	15500	500	OFAF000H50	000
032A-4	43.4	504	63	20000	500	OFAF000H63	000
038A-4	52.3	640	80	36000	500	OFAF000H80	000
045A-4	56.0	800	100	65000	500	OFAF000H100	000

Type ACS380- 04xx-...	Input current	Min. short-cir- cuit cur- rent 1)	Fuses				
			Nominal current	I^2t	Voltage rating	ABB type	IEC 60269 size
	A	A	A	A^2s	V		
050A-4	58.9	800	100	65000	500	OFAF000H100	000

1) Minimum permitted short-circuit current of the electrical power network

gR fuses

Type ACS380- 04xx-...	Input current	Min. short-cir- cuit cur- rent 1)	Fuses				
			Nominal current	I^2t	Voltage rating	Bussmann type	IEC 60269 size
	A	A	A	A^2s	V		
1-phase $U_N = 230$ V							
02A4-1	5.0	80	32	275	690	170M2695	00
03A7-1	7.1	80	32	275	690	170M2695	00
04A8-1	8.8	128	40	490	690	170M2696	00
06A9-1	12.0	200	50	1000	690	170M2697	00
07A8-1	14.2	200	63	1800	690	170M2698	00
09A8-1	18.7	256	63	1800	690	170M2698	00
12A2-1	24.6	320	63	1800	690	170M2698	00
3-phase $U_N = 230$ V							
02A4-2	3.6	48	25	125	690	170M2694	00
03A7-2	5.1	80	32	275	690	170M2695	00
04A8-2	6.3	80	32	275	690	170M2695	00
06A9-2	8.4	128	40	490	690	170M2696	00
07A8-2	10.1	128	40	490	690	170M2696	00
09A8-2	13.8	128	40	490	690	170M2696	00
12A2-2	17.3	200	50	1000	690	170M2697	00
17A5-2	22.2	256	63	1800	690	170M2698	00
25A0-2	29.1	400	80	3600	690	170M2699	00
032A-2	37.0	504	100	6650	690	170M2700	00
048A-2	50.0	800	160	22500	690	170M2702	00
055A-2	60.0	800	160	22500	690	170M2702	00
3-phase $U_N = 400$ V							
01A8-4	2.9	32	25	125	690	170M2694	00
02A6-4	3.8	48	25	125	690	170M2694	00
03A3-4	5.1	48	25	125	690	170M2694	00
04A0-4	6.4	80	32	275	690	170M2695	00
05A6-4	8.9	80	32	275	690	170M2695	00

Type ACS380- 04xx-...	Input current	Min. short-cir- cuit cur- rent 1)	Fuses				
			Nominal current	I^2t	Voltage rating	Bussmann type	IEC 60269 size
			A	A^2s	V		
07A2-4	10.9	128	40	490	690	170M2696	00
09A4-4	13.9	128	40	490	690	170M2696	00
12A6-4	17.6	200	50	1000	690	170M2697	00
17A0-4	25.2	256	63	1800	690	170M2698	00
25A0-4	34.1	400	80	3600	690	170M2699	00
032A-4	43.4	504	100	6650	690	170M2700	00
038A-4	52.3	640	125	12000	690	170M2701	00
045A-4	56.0	800	160	22500	690	170M2702	00
050A-4	58.9	800	160	22500	690	170M2702	00

1) Minimum permitted short-circuit current of the electrical power network

■ UL (NEC) fuses

The UL listed fuses in the table are the required branch circuit protection. Fuses must be provided as part of the installation.

Type ACS380- 04xx-...	Input cur- rent	Fuses				
		Nominal current	Voltage rat- ing	Bussmann/ Edison type	Type	Max. fuse rating for group in- stallation 1)
		A	V			A
1-phase $U_N = 230\text{ V}$						
02A4-1	5.0	10	300	JJN/TJN10	UL class T	10
03A7-1	7.1	10	300	JJN/TJN10	UL class T	10
04A8-1	8.8	20	300	JJN/TJN20	UL class T	25
06A9-1	12.0	20	300	JJN/TJN20	UL class T	25
07A8-1	14.2	25	300	JJN/TJN25	UL class T	25
09A8-1	18.7	25	300	JJN/TJN25	UL class T	35
12A2-1	24.6	35	300	JJN/TJN35	UL class T	35
3-phase $U_N = 230\text{ V}$						
02A4-2	3.6	6	600	JJS/TJS6	UL class T	25
03A7-2	5.1	10	600	JJS/TJS10	UL class T	25
04A8-2	6.3	10	600	JJS/TJS10	UL class T	25
06A9-2	8.4	20	600	JJS/TJS20	UL class T	25
07A8-2	10.1	20	600	JJS/TJS20	UL class T	25
09A8-2	13.8	20	600	JJS/TJS20	UL class T	25

Type ACS380- 04xx-...	Input current	Fuses				
		Nominal current	Voltage rating	Bussmann/ Edison type	Type	Max. fuse rating for group installation ¹⁾
		A	V			A
12A2-2	17.3	25	600	JJS/TJS25	UL class T	30
17A5-2	22.2	35	600	JJS/TJS35	UL class T	40
25A0-2	29.1	50	600	JJS/TJS50	UL class T	40
032A-2	37.0	60	600	JJS/TJS60	UL class T	100
048A-2	50.0	100	600	JJS/TJS100	UL class T	100
055A-2	60.0	100	600	JJS/TJS100	UL class T	100
3-phase $U_N = 480$ V						
01A8-4	2.9	6	600	JJS/TJS6	UL class T	6
02A6-4	3.8	6	600	JJS/TJS6	UL class T	25
03A3-4	5.1	6	600	JJS/TJS6	UL class T	25
04A0-4	6.4	10	600	JJS/TJS10	UL class T	25
05A6-4	8.9	10	600	JJS/TJS10	UL class T	25
07A2-4	10.9	20	600	JJS/TJS20	UL class T	25
09A4-4	13.9	20	600	JJS/TJS20	UL class T	25
12A6-4	17.6	25	600	JJS/TJS25	UL class T	30
17A0-4	25.2	35	600	JJS/TJS35	UL class T	40
25A0-4	34.1	40	600	JJS/TJS40	UL class T	40
032A-4	43.4	60	600	JJS/TJS60	UL class T	100
038A-4	52.3	80	600	JJS/TJS80	UL class T	100
045A-4	56.0	100	600	JJS/TJS100	UL class T	100
050A-4	58.9	100	600	JJS/TJS100	UL class T	100

¹⁾ Branch circuit short-circuit protection for group installation by fuses: Suitable for motor group installation on a circuit that is capable of delivering no more than 65000 rms symmetrical amperes, 480 V maximum, when protected by class T fuses. The same fuse size is specified for several consecutive drive types. This is possible since the physical structure of the drive types is identical.

1. Fuses are required as part of the installation, are not included in the base drive configuration and must be provided by others.
2. Fuses with a higher current rating than specified must not be used.
3. The UL listed fuses recommended by ABB are the required branch circuit protection per NEC.
4. The recommended size or smaller UL listed 248 fast acting, time delay, or high speed fuses must be used to maintain the UL listing of the drive. Additional protection can be used. Refer to local codes and regulations.

5. A fuse of a different class can be used at the high fault rating where the I_{peak} and I^2t of the new fuse is not greater than that of the specified fuse.
6. UL listed 248 fast acting, time delay, or high speed fuses from other manufacturers can be used if they meet the same class and rating requirements specified in the rules above.
7. When installing a drive, always follow ABB installation instructions, NEC requirements and local codes.
8. Alternative fuses can be used if they meet certain characteristics. For acceptable fuses, see the manual supplement (3AXD50000645015).

Alternative short-circuit protection

■ Miniature circuit breakers (IEC)

If you use a miniature circuit breaker for the short-circuit protection of the drive, install the drive into a metal enclosure.

Note: Miniature circuit breakers with or without fuses have not been evaluated for use as short-circuit protection in North American (UL) environments.

The protective characteristics of the circuit breakers depend on the type, construction and settings of the breakers. There are also limitations pertaining to the short-circuit capacity of the supply network. Your local ABB representative can help you in selecting the breaker type when the supply network characteristics are known.



WARNING!

Due to the inherent operating principle and construction of circuit breakers, independent of the manufacturer, hot ionized gases can escape from the breaker enclosure in case of a short-circuit. To ensure safe use, pay special attention to the installation and placement of the breakers. Obey the manufacturer's instructions.

You can use the circuit breakers specified by ABB. You can also use other circuit breakers with the drive if they provide the same electrical characteristics. ABB does not assume any liability whatsoever for the correct function and protection of the circuit breakers not specified by ABB. Furthermore, if the specifications given by ABB are not obeyed, the drive can experience problems the warranty does not cover.

Type ACS380- 04xx-...	Frame	Miniature circuit breaker	Network SC 1)
		ABB type	kA
1-phase $U_N = 230$ V			
02A4-1	R0	S 201P-B 10 NA	5
03A7-1	R0	S 201P-B 10 NA	5
04A8-1	R1	S 201P-B 16 NA	5

Type ACS380- 04xx-...	Frame	Miniature circuit breaker	Network SC 1) kA
		ABB type	
06A9-1	R1	S 201P-B 20 NA	5
07A8-1	R1	S 201P-B 25 NA	5
09A8-1	R2	S 201P-B 25 NA	5
12A2-1	R2	S 201P-B 32 NA	5
3-phase $U_N = 230$ V			
02A4-2	R1	S 203P-Z 6 NA	5
03A7-2	R1	S 203P-Z 8 NA	5
04A8-2	R1	S 203P-Z 10 NA	5
06A9-2	R1	S 203P-Z 16 NA	5
07A8-2	R1	S 203P-Z 16 NA	5
09A8-2	R1	S 203P-Z 25 NA	5
12A2-2	R2	S 203P-Z 25 NA	5
17A5-2	R3	S 203P-Z 32 NA	5
25A0-2	R3	S 203P-Z 50 NA	5
032A-2	R4	S 203P-Z 63 NA	5
048A-2	R4	Contact ABB	5
055A-2	R4	Contact ABB	5
3-phase $U_N = 400$ V			
01A8-4	R0	S 203P-B 4	5
02A6-4	R1	S 203P-B 6	5
03A3-4	R1	S 203P-B 6	5
04A0-4	R1	S 203P-B 8	5
05A6-4	R1	S 203P-B 10	5
07A2-4	R1	S 203P-B 16	5
09A4-4	R1	S 203P-B 16	5
12A6-4	R2	S 203P-B 25	5
17A0-4	R3	S 203P-B 32	5
25A0-4	R3	S 203P-B 50	5
032A-4	R4	S 203P-B 63	5
038A-4	R4	S 803S-B 80	5
045A-4	R4	S 803S-B 100	5
050A-4	R4	S 803S-B 100	5

1) Maximum permitted rated conditional short-circuit current (IEC 61800-5-1) of the electrical power network.

■ **Manual self-protected combination motor controller – Type E USA (UL (NEC))**

You can use the ABB Type E manual motor protectors (MMP) MS132 & S1-M3-25, MS165-xx and MS5100-100 as an alternative to the recommended fuses as a means of branch circuit protection. This is in accordance with the National Electrical Code (NEC). When the correct ABB Type E manual motor protector is selected from the table and used for branch circuit protection, the drive is suitable for use in a circuit capable of delivering no more than 65 kA rms symmetrical amperes at the maximum rated voltage of the drive. See the table below for the appropriate MMP types and minimum enclosure volume of IP20 / UL open type drive mounted in an enclosure.

If you use a manual motor protector for the branch circuit protection of the drive, install the drive into a metal enclosure.

Note: The UL Listing of drive and MMP combinations applies only to drives that are mounted in appropriately sized metal enclosures that are capable of containing any drive component failure. Wall-mounted drives with UL Type 1 kits (optional) are not covered by the UL combination listing of drives with MMPs.



WARNING!

Use fuses for the short-circuit protection of a wall-mounted drive with the UL Type 1 kit (optional). Serious injury, fire, or damage to equipment can result from the use of MMPs instead of fuses.

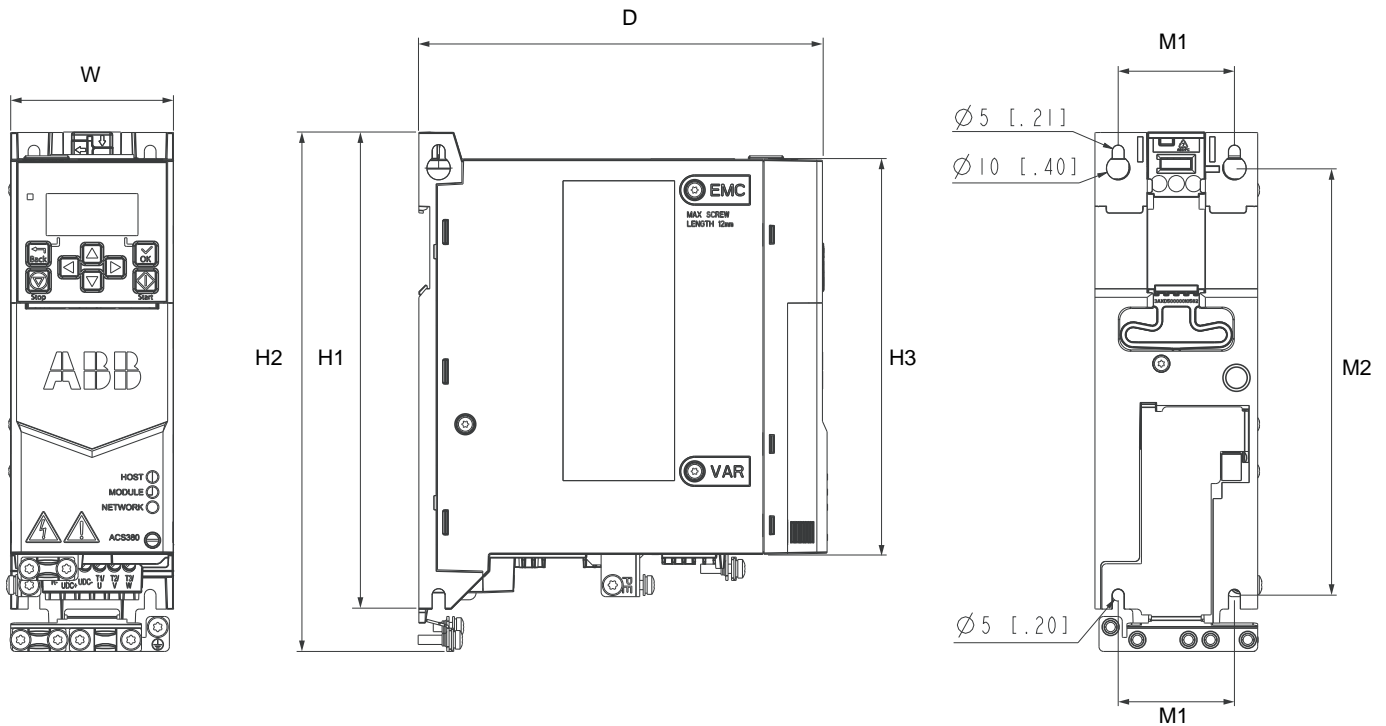
Type ACS380-04xx-...	Frame	MMP type 1) 2) 3)	Minimum enclosure volume 4)	
			dm ³	in ³
1-phase $U_N = 230\text{ V}$				
02A4-1	R0	MS132-6.3 & S1-M3-25 ⁵⁾	30.3	1850
03A7-1	R0	MS132-10 & S1-M3-25 ⁵⁾	30.3	1850
04A8-1	R1	MS165-16	30.3	1850
06A9-1	R1	MS165-16	30.3	1850
07A8-1	R1	MS165-20	30.3	1850
09A8-1	R2	MS165-25	30.3	1850
12A2-1	R2	MS165-32	30.3	1850
3-phase $U_N = 230\text{ V}$				
02A4-2	R1	MS132-6.3 & S1-M3-25 ⁵⁾	30.3	1850
03A7-2	R1	MS132-10 & S1-M3-25 ⁵⁾	30.3	1850
04A8-2	R1	MS132-10 & S1-M3-25 ⁵⁾	30.3	1850
06A9-2	R1	MS165-16	30.3	1850
07A8-2	R1	MS165-16	30.3	1850
09A8-2	R1	MS165-16	30.3	1850

Type ACS380-04xx-...	Frame	MMP type 1) 2) 3)	Minimum enclosure volume 4)	
			dm ³	in ³
12A2-2	R2	MS165-20	30.3	1850
17A5-2	R3	MS165-32	30.3	1850
25A0-2	R3	MS165-42	30.3	1850
032A-2	R4	MS165-54	75.0	4577
048A-2	R4	MS5100-100 / MS165-80	75.0	4577
055A-2	R4	MS5100-100 / MS165-80	75.0	4577
3-phase $U_N = 480$ V				
01A8-4	R0	MS132-4.0 & S1-M3-25 ⁵⁾	30.3	1850
02A6-4	R1	MS132-6.3 & S1-M3-25 ⁵⁾	30.3	1850
03A3-4	R1	MS132-6.3 & S1-M3-25 ⁵⁾	30.3	1850
04A0-4	R1	MS132-10 & S1-M3-25 ⁵⁾	30.3	1850
05A6-4	R1	MS132-10 & S1-M3-25 ⁵⁾	30.3	1850
07A2-4	R1	MS165-16	30.3	1850
09A4-4	R1	MS165-16	30.3	1850
12A6-4	R2	MS165-20	30.3	1850
17A0-4	R3	MS165-32	30.3	1850
25A0-4	R3	MS165-42	30.3	1850
032A-4	R4	MS165-54	75.0	4577
038A-4	R4	MS165-65	75.0	4577
045A-4	R4	MS5100-100 / MS165-73	75.0	4577
050A-4	R4	MS5100-100 / MS165-80	75.0	4577

- 1) All manual motor protectors listed are Type E self-protected up to 65 kA, except MS165-80 which is Type E self-protected up to 50 kA. See the ABB manual motor starter catalog (1SBC100214C0201) for complete technical data on the ABB Type E manual motor protectors. In order for these manual motor protectors to be used for branch circuit protection, they must be UL listed Type E manual motor protectors, otherwise they can be used only as an At Motor Disconnect. "At Motor Disconnect" is a disconnect just ahead of the motor on the load side of the panel.
- 2) 480Y/277 V delta systems only: Short-circuit protective devices with slash voltage ratings (e.g. 480Y/277 V AC) can be applied only in solidly grounded networks where the voltage from line-to-ground does not exceed the lower of the two ratings (e.g. 277 V AC), and the voltage from line-to-line does not exceed the higher of the two ratings (e.g. 480 V AC). The lower rating represents the device's interrupting capability per pole.
- 3) Manual motor protectors may require adjusting the trip limit from the factory setting at or above the drive input Amps to avoid nuisance tripping. If the manual motor protector is set to the maximum current trip level and nuisance tripping is occurring, select the next size MMP. (MS132-10 is the highest size in the MS132 frame size to meet Type E at 65 kA; the next size up is MS165-16.)
- 4) For all drives, the enclosure must be sized to accommodate the specific thermal considerations of the application as well as provide free space for cooling. Refer to the technical data. For UL only: The minimum enclosure volume is specified in the UL listing when applied with the ABB Type E MMP shown in the table. Fuses must be used for wall-mounted drives installed with a UL Type 1 kit.
- 5) Requires the use of the S1-M3-25 line side feeder terminal with the manual motor protector to meet Type E self-protection class.

Dimensions and weights

■ Dimensions – IP20 / UL open type



1) A side option increases the width of the drive.

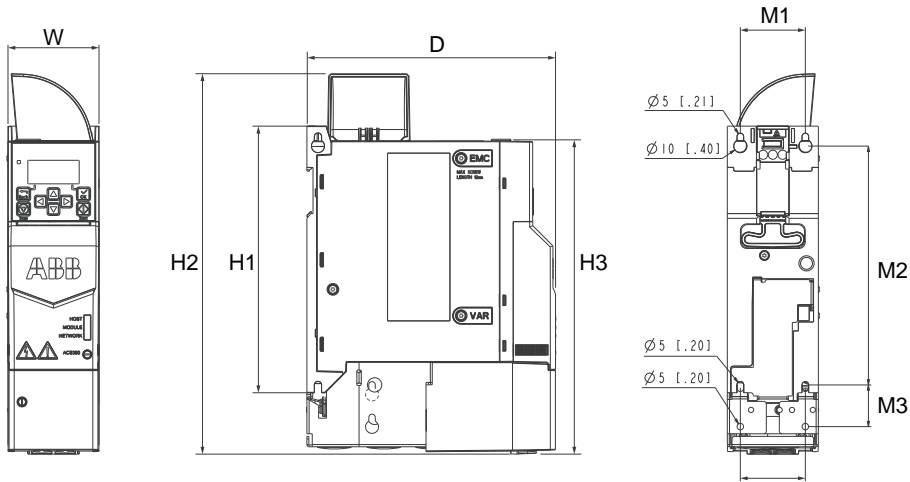
2) The BIO-01 high cover increases the depth of the drive by 15 mm (0.6 in).

Frame size	Dimensions, IP20 / UL open type													
	H1		H2		H3		w 1)		D 2)		M1		M2	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
R0	205	8.1	223	8.8	170	6.7	70	2.8	176	6.9	50	1.97	191	7.52
R1	205	8.1	223	8.8	170	6.7	70	2.8	176	6.9	50	1.97	191	7.52
R2	205	8.1	223	8.8	170	6.7	95	3.7	176	6.9	75	2.95	191	7.52
R3	205	8.1	223	8.8	170	6.7	170	6.7	176	6.9	148	5.83	191	7.52
R4	205	8.1	240	9.5	170	6.7	260	10.2	176	6.9	234	9.21	191	7.52

H1 Height back
H2 Height
H3 Height front
W Width
D Depth
D Mounting hole distance

M1, M2

■ Dimensions – Drive with UL Type 1 kit



M1

Frame size	Dimensions, drive with UL Type 1 kit															
	H1		H2		H3		W ¹⁾		D		M1		M2		M3	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
R0	205	8.1	285	11.2	247	9.7	70	2.8	191	7.5	50	1.97	191	7.52	32	1.26
R1	205	8.1	293	11.5	247	9.7	70	2.8	191	7.5	50	1.97	191	7.52	32	1.26
R2	205	8.1	293	11.5	247	9.7	95	3.7	191	7.5	75	2.95	191	7.52	32	1.26
R3	205	8.1	329	13.0	261	10.3	170	6.7	191	7.5	148	5.83	191	7.52	36	1.42
R4	205	8.1	391	15.3	312	12.3	260	10.2	196	7.7	234	9.21	191	7.52	38	1.50

1) A side option increases the width of the drive.

H1 Height back

H2 Height

H3 Height front

W Width

D Depth

M1, M2, M3 Mounting hole distance

■ **Weights**

Frame size	Weights			
	IP20 / UL open type		UL Type 1 ¹⁾	
	kg	lb	kg	lb
R0	1.4	3.1	0.4	1.0
R1	1.4	3.1	0.4	1.0
R2	2.0	4.4	0.5	1.1
R3	3.3	7.3	0.7	1.5
R4	5.3	11.7	1.2	2.7

1) Additional weight of the UL Type 1 kit.

Free space requirements

1) Drives with the optional UL Type 1 kit: 50 mm (2 in), measured from the top of the hood.

2) A side-mounted option module requires 20 mm (0.8 in) of free space on the right side of the drive.

Frame	Free Space requirement					
	Above ¹⁾		Below		Sides ²⁾	
	mm	in	mm	in	mm	in
All	75	3	75	3	0	0

Losses, cooling data and noise

Drives with frame size R0 have natural convection cooling. Drives with frame size R1...R4 have a cooling fan. The air flow direction is from bottom to top.

Type ACS380- 04xx-...	Typical power loss ¹⁾		Air flow		Noise	Frame size
	W	BTU/h	m ³ /h	CFM	dB(A)	
1-phase $U_N = 230\text{ V}$						
02A4-1	33	113	-	-	< 30	R0
03A7-1	49	167	-	-	< 30	R0
04A8-1	67	229	57	33	63	R1
06A9-1	93	317	57	33	63	R1
07A8-1	106	362	57	33	63	R1
09A8-1	92	314	63	37	59	R2
12A2-1	115	392	63	37	59	R2
3-phase $U_N = 230\text{ V}$						
02A4-2	39	133	57	33	63	R1
03A7-2	57	194	57	33	63	R1
04A8-2	72	246	57	33	63	R1

Type ACS380- 04xx-...	Typical power loss ¹⁾		Air flow		Noise	Frame size
	W	BTU/h	m ³ /h	CFM	dB(A)	
06A9-2	111	379	57	33	63	R1
07A8-2	105	358	57	33	63	R1
09A8-2	140	478	57	33	63	R1
12A2-2	149	508	63	37	59	R2
17A5-2	265	904	128	75	66	R3
25A0-2	398	1358	128	75	66	R3
032A-2	350	1194	150	88	69	R4
048A-2	561	1914	150	88	69	R4
055A-2	676	2307	150	88	69	R4
3-phase $U_N = 400/480$ V						
01A8-4	28	96	-	-	<30	R0
02A6-4	44	150	57	33	63	R1
03A3-4	55	188	57	33	63	R1
04A0-4	62	212	57	33	63	R1
05A6-4	91	311	57	33	63	R1
07A2-4	100	341	57	33	63	R1
09A4-4	140	478	57	33	63	R1
12A6-4	165	563	63	37	59	R2
17A0-4	259	884	128	75	66	R3
25A0-4	390	1331	128	75	66	R3
032A-4	396	1351	150	88	69	R4
038A-4	497	1696	150	88	69	R4
045A-4	582	1986	150	88	69	R4
050A-4	672	2293	150	88	69	R4

1) Typical drive losses when it operates at 90% of the motor nominal frequency and 100% of the drive nominal output current.

Typical power cable sizes

The table in this section gives the typical power cable and conductor sizes for use at the nominal drive current.

Note: IEC/EN 61800-5-1 requires two separate PE (ground) conductors for a fixed connection, if the cross-sectional area of the PE conductor is less than 10 mm² Cu.

Type ACS380- 04xx-...	Cable size, Cu (mm ²) ¹⁾	Conductor size, Cu (AWG)	Frame size
1-phase $U_N = 230$ V			
02A4-1	3×1.5 + 1.5	16	R0

Type ACS380- 04xx-...	Cable size, Cu (mm ²) 1)	Conductor size, Cu (AWG)	Frame size
03A7-1	3×1.5 + 1.5	16	R0
04A8-1	3×1.5 + 1.5	16	R1
06A9-1	3×1.5 + 1.5	16	R1
07A8-1	3×1.5 + 1.5	16	R1
09A8-1	3×2.5 + 2.5	14	R2
12A2-1	3×2.5 + 2.5	14	R2
3-phase $U_N = 230$ V			
02A4-2	3×1.5 + 1.5	16	R1
03A7-2	3×1.5 + 1.5	16	R1
04A8-2	3×1.5 + 1.5	16	R1
06A9-2	3×1.5 + 1.5	16	R1
07A8-2	3×1.5 + 1.5	16	R1
09A8-2	3×2.5 + 2.5	14	R1
12A2-2	3×2.5 + 2.5	14	R2
17A5-2	3×6 + 6	10	R3
25A0-2	3×6 + 6	10	R3
032A-2	3×10 + 10	8	R4
048A-2	3×25 + 16	4	R4
055A-2	3×25 + 16	4	R4
3-phase $U_N = 400$ V or 480 V			
01A8-4	3×1.5 + 1.5	16	R0
02A6-4	3×1.5 + 1.5	16	R1
03A3-4	3×1.5 + 1.5	16	R1
04A0-4	3×1.5 + 1.5	16	R1
05A6-4	3×1.5 + 1.5	16	R1
07A2-4	3×1.5 + 1.5	16	R1
09A4-4	3×2.5 + 2.5	14	R1
12A6-4	3×2.5 + 2.5	14	R2
17A0-4	3×6 + 6	10	R3
25A0-4	3×6 + 6	10	R3
032A-4	3×10 + 10	8	R4
038A-4	3×16 + 16	6	R4
045A-4	3×25 + 16	4	R4
050A-4	3×25 + 16	4	R4

1) Symmetrical, shielded, three-phase copper cable.

Terminal data for the power cables

The first table shows the terminal data in SI units. The second table shows the terminal data in imperial units.

Type ACS380- 04xx-...	L1, L2, L3, T1/U, T2/V, T3/W, R-, R+/UDC+			PE		
	Minimum (solid/stranded)	Maximum (solid/stranded)	Tightening torque	Minimum (solid/stranded)	Maximum (solid/stranded)	Tightening torque
	mm ²	mm ²	N·m	mm ²	mm ²	N·m
1-phase $U_N = 230\text{ V}$						
02A4-1	0.5/0.5	4/2.5	0.5...0.6	4/2.5	6/4	1.2
03A7-1	0.5/0.5	4/2.5	0.5...0.6	4/2.5	6/4	1.2
04A8-1	0.5/0.5	4/2.5	0.5...0.6	4/2.5	6/4	1.2
06A9-1	0.5/0.5	4/2.5	0.5...0.6	4/2.5	6/4	1.2
07A8-1	0.5/0.5	4/2.5	0.5...0.6	4/2.5	6/4	1.2
09A8-1	0.5/0.5	4/2.5	0.5...0.6	4/2.5	6/4	1.2
12A2-1	0.5/0.5	4/2.5	0.5...0.6	4/2.5	6/4	1.2
3-phase $U_N = 230\text{ V}$						
02A4-2	0.5/0.5	4/2.5	0.5...0.6	4/2.5	6/4	1.2
03A7-2	0.5/0.5	4/2.5	0.5...0.6	4/2.5	6/4	1.2
04A8-2	0.5/0.5	4/2.5	0.5...0.6	4/2.5	6/4	1.2
06A9-2	0.5/0.5	4/2.5	0.5...0.6	4/2.5	6/4	1.2
07A8-2	0.5/0.5	4/2.5	0.5...0.6	4/2.5	6/4	1.2
09A8-2	0.5/0.5	4/2.5	0.5...0.6	4/2.5	6/4	1.2
12A2-2	0.5/0.5	4/2.5	0.5...0.6	4/2.5	6/4	1.2
17A5-2	0.5/0.5	10/6	1.2...1.5	4/2.5	6/4	1.2
25A0-2	0.5/0.5	10/6	1.2...1.5	4/2.5	6/4	1.2
032A-2	0.5/0.5	25/16	2.5...3.7	10/6	25/16	2.9
048A-2	0.5/0.5	25/16	2.5...3.7	10/6	25/16	2.9
055A-2	0.5/0.5	25/16	2.5...3.7	10/6	25/16	2.9
3-phase $U_N = 400\text{ V}$						
01A8-4	0.5/0.5	4/2.5	0.5...0.6	4/2.5	6/4	1.2
02A6-4	0.5/0.5	4/2.5	0.5...0.6	4/2.5	6/4	1.2
03A3-4	0.5/0.5	4/2.5	0.5...0.6	4/2.5	6/4	1.2
04A0-4	0.5/0.5	4/2.5	0.5...0.6	4/2.5	6/4	1.2
05A6-4	0.5/0.5	4/2.5	0.5...0.6	4/2.5	6/4	1.2
07A2-4	0.5/0.5	4/2.5	0.5...0.6	4/2.5	6/4	1.2
09A4-4	0.5/0.5	4/2.5	0.5...0.6	4/2.5	6/4	1.2
12A6-4	0.5/0.5	4/2.5	0.5...0.6	4/2.5	6/4	1.2
17A0-4	0.5/0.5	10/6	1.2...1.5	4/2.5	6/4	1.2

Type ACS380- 04xx-...	L1, L2, L3, T1/U, T2/V, T3/W, R-, R+/UDC+			PE		
	Minimum (solid/stranded)	Maximum (solid/stranded)	Tightening torque	Minimum (solid/stranded)	Maximum (solid/stranded)	Tightening torque
	mm ²	mm ²	N·m	mm ²	mm ²	N·m
25A0-4	0.5/0.5	10/6	1.2...1.5	4/2.5	6/4	1.2
032A-4	0.5/0.5	25/16	2.5...3.7	10/6	25/16	2.9
038A-4	0.5/0.5	25/16	2.5...3.7	10/6	25/16	2.9
045A-4	0.5/0.5	25/16	2.5...3.7	10/6	25/16	2.9
050A-4	0.5/0.5	25/16	2.5...3.7	10/6	25/16	2.9

Type ACS380- 04xx-...	L1, L2, L3, T1/U, T2/V, T3/W, R-, R+/UDC+			PE		
	Minimum	Maximum	Tightening torque	Minimum	Maximum	Tightening torque
	AWG	AWG	lbf·in	AWG	AWG	lbf·in
1-phase $U_N = 230\text{ V}$						
02A4-1	18	10	5	12	10	10.6
03A7-1	18	10	5	12	10	10.6
04A8-1	18	10	5	12	10	10.6
06A9-1	18	10	5	12	10	10.6
07A8-1	18	10	5	12	10	10.6
09A8-1	18	10	5	12	10	10.6
12A2-1	18	10	5	12	10	10.6
3-phase $U_N = 230\text{ V}$						
02A4-2	18	10	5	12	10	10.6
03A7-2	18	10	5	12	10	10.6
04A8-2	18	10	5	12	10	10.6
06A9-2	18	10	5	12	10	10.6
07A8-2	18	10	5	12	10	10.6
09A8-2	18	10	5	12	10	10.6
12A2-2	18	10	5	12	10	10.6
17A5-2	18	6	11...13	12	10	10.6
25A0-2	18	6	11...13	12	10	10.6
032A-2	18	2	22...32	8	4	25.7
048A-2	18	2	22...32	8	4	25.7
055A-2	18	2	22...32	8	4	25.7
3-phase $U_N = 480\text{ V}$						
01A8-4	18	10	5	12	10	10.6
02A6-4	18	10	5	12	10	10.6

Type ACS380- 04xx-...	L1, L2, L3, T1/U, T2/V, T3/W, R-, R+/UDC+			PE		
	Minimum	Maximum	Tightening torque	Minimum	Maximum	Tightening torque
	AWG	AWG	lbf-in	AWG	AWG	lbf-in
03A3-4	18	10	5	12	10	10.6
04A0-4	18	10	5	12	10	10.6
05A6-4	18	10	5	12	10	10.6
07A2-4	18	10	5	12	10	10.6
09A4-4	18	10	5	12	10	10.6
12A6-4	18	10	5	12	10	10.6
17A0-4	18	6	11...13	12	10	10.6
25A0-4	18	6	11...13	12	10	10.6
032A-4	18	2	22...32	8	4	25.7
038A-4	18	2	22...32	8	4	25.7
045A-4	18	2	22...32	8	4	25.7
050A-4	18	2	22...32	8	4	25.7

Note:

- The minimum specified wire size does not necessarily have sufficient current carrying capacity at maximum load.
- The terminals do not accept a conductor that is one size larger than the maximum specified wire size.
- The maximum number of conductors per terminal is 1.

Terminal data for the control cables

This table shows the control cable terminal data of the standard drive variant, that is, the base unit with BMIO-01 I/O & Modbus module.

Wire size		Torque	
mm ²	AWG	N·m	lbf-in
0.14...1.5	26...16	0.5...0.6	4.4...5.3

External EMC filters

The table shows the external EMC filters.

Type ACS380- 04xx-...	EMC filter type	
	ABB order code	Schaffner order code
1-phase $U_N = 230\text{ V}$		
02A4-1	RFI-11	FS 21754-6.1-07
03A7-1	RFI-12	FS 21754-16.1-07
04A8-1	RFI-12	FS 21754-16.1-07
06A9-1	RFI-12	FS 21754-16.1-07
07A8-1	RFI-12	FS 21754-16.1-07
3-phase $U_N = 230\text{ V}$		
02A4-2	RFI-32	FN 3258-16-44
03A7-2	RFI-32	FN 3258-16-44
04A8-2	RFI-32	FN 3258-16-44
06A9-2	RFI-32	FN 3258-16-44
07A8-2	RFI-32	FN 3258-16-44
09A8-2	RFI-32	FN 3258-16-44
12A2-2	RFI-33	FN 3258-30-33
17A5-2	RFI-33	FN 3258-30-33
25A0-2	RFI-33	FN 3258-30-33
032A-2	RFI-34	FN 3258-100-35
048A-2	RFI-34	FN 3258-100-35
055A-2	RFI-34	FN 3258-100-35
3-phase $U_N = 400\text{ V}$		
01A8-4	RFI-32	FN 3258-16-44
02A6-4	RFI-32	FN 3258-16-44
03A3-4	RFI-32	FN 3258-16-44
04A0-4	RFI-32	FN 3258-16-44
05A6-4	RFI-32	FN 3258-16-44
07A2-4	RFI-32	FN 3258-16-44
09A4-4	RFI-32	FN 3258-16-44
12A6-4	RFI-33	FN 3258-30-33
17A0-4	RFI-33	FN 3258-30-33
25A0-4	RFI-33	FN 3258-30-33
032A-4	RFI-34	FN 3258-100-35
038A-4	RFI-34	FN 3258-100-35
045A-4	RFI-34	FN 3258-100-35

Type ACS380- 04xx-...	EMC filter type	
	ABB order code	Schaffner order code
050A-4	RFI-34	FN 3258-100-35

If you use an external EMC filter, you must disconnect the internal EMC filter. Refer to the electrical installation instructions.

Electrical power network specification

Voltage (U1)	Input voltage range: ACS380-04xx-xxxx-1 drives: 1-phase 200 ... 240 V AC -15% ... +10% ACS380-04xx-xxxx-2 drives: 3-phase 200 ... 240 V AC -15% ... +10% ACS380-04xx-xxxx-4 drives: 3-phase 380 ... 480 V AC -15% ... +10%														
Network type	Public low voltage networks. Symmetrically grounded TN-S system, IT (ungrounded), corner-grounded delta. Consult ABB before connecting to other systems (for example, TT, or midpoint grounded delta).														
Rated conditional short-circuit current (IEC 61800-5-1)	65 kA when protected by fuses given in the fuse tables. <table style="margin-left: auto; margin-right: auto;"> <tr> <td>>1.5 kA</td> <td></td> <td></td> </tr> <tr> <td>>5.0 kA</td> <td>>7.5 kA</td> <td></td> </tr> <tr> <td>>5.0 kA</td> <td>>10 kA</td> <td></td> </tr> </table>			>1.5 kA			>5.0 kA	>7.5 kA		>5.0 kA	>10 kA				
>1.5 kA															
>5.0 kA	>7.5 kA														
>5.0 kA	>10 kA														
Short-circuit current protection (UL 61800-5-1, CSA C22.2 No. 274-13)	US and Canada: The drive is suitable for use on a circuit capable of delivering not more than 100 kA symmetrical amperes (rms) at 480 V maximum when protected by fuses given in the fuse table.														
Input choke	Use an input choke, if the short-circuit capacity of the network at the drive terminals is more than specified in this table: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Input voltage</th> <th>R0, R1, R2</th> <th>R3, R4</th> </tr> </thead> <tbody> <tr> <td>1-phase 200 ... 240 V</td> <td></td> <td style="text-align: center;">-</td> </tr> <tr> <td>3-phase 200 ... 240 V</td> <td></td> <td></td> </tr> <tr> <td>3-phase 380 ... 480 V</td> <td></td> <td></td> </tr> </tbody> </table> You can use one choke for several drives if the short-circuit capacity at the drive terminals is decreased to the value in the table.			Input voltage	R0, R1, R2	R3, R4	1-phase 200 ... 240 V		-	3-phase 200 ... 240 V			3-phase 380 ... 480 V		
Input voltage	R0, R1, R2	R3, R4													
1-phase 200 ... 240 V		-													
3-phase 200 ... 240 V															
3-phase 380 ... 480 V															
Frequency (f1)	47 ... 63 Hz, maximum rate of change 2%/s														
Imbalance	Max. ±3% of nominal phase to phase input voltage														
Fundamental power factor (cos phi)	0.98 (at nominal load)														

Motor connection data

Motor type	Asynchronous AC induction motors, permanent magnet synchronous motors or ABB synchronous reluctance motors (SynRM motors)
Voltage (U2)	0 ... U1, 3-phase symmetrical

Short-circuit protection (IEC 61800-5-1, UL 61800-5-1)	The motor output is short-circuit proof by IEC 61800-5-1 and UL 61800-5-1.
Frequency (f2)	0 ... 599 Hz
Frequency resolution	0.01 Hz
Current	See the electrical ratings given in this manual.
Motor cable length	
Switching frequency	2, 4, 8, or 12 kHz

Operational functionality and motor cable length

The drive is designed to operate with optimum performance with these maximum motor cable lengths. The values are valid for 4 kHz switching frequency.

Note: Conducted and radiated emissions of these motor cable lengths do not comply with the EMC requirements of IEC/EN 61800-3.

Frame	Maximum motor cable length	
	m	ft
Standard drive, without external options		
R0...R4	100	328

Note: In multimotor systems, the calculated sum of all motor cable lengths must not exceed the maximum motor cable length given in the table.

EMC compatibility and motor cable length

To comply with the EMC requirements of IEC/EN 61800-3, do not exceed these maximum motor cable lengths. The values are valid for 4 kHz switching frequency.

Frame	Maximum motor cable length, 4 kHz					
	C1 1)		C2		C3	
	m	ft	m	ft	m	ft
With internal EMC filter						
1-phase 200 ... 240 V (ACS380-042x)						
R0	-	-	10	33	10	33
R1	-	-	10	33	10	33
R2	-	-	10	33	10	33
3-phase 380 ... 480 V (C2: ACS380-042x, C3: ACS380-040x)						
R0	-	-	10	33	30	98
R1	-	-	10	33	30	98
R2	-	-	10	33	20	66
R3	-	-	10	33	30	98
R4	-	-	10	33	30	98

Frame	Maximum motor cable length, 4 kHz					
	C1 ¹⁾		C2		C3	
	m	ft	m	ft	m	ft
With optional external EMC filter						
1-phase 200 ... 240 V (ACS380-040x)						
R0	10	33	10	33	10	33
R1	10	33	10	33	10	33
R2	-	-	-	-	-	-
3-phase 200 ... 240 V (ACS380-040x)						
R1	-	-	20	66	20	66
R2	-	-	20	66	20	66
R3	-	-	20	66	20	66
R4	-	-	20	66	20	66
3-phase 380 ... 480 V (ACS380-040x)						
R0	30	98	30	98	30	98
R1	40	131	40	131	40	131
R2	40	131	40	131	40	131
R3	40	131	40	131	40	131
R4	30	98	30	98	30	98

1) Category C1 with conducted emissions only. Radiated emissions are not compatible when measured with the standard emission measurement setup and must be measured on cabinet and machine installations for each case.

Note: Radiated emissions are according to C2 with ACS380-042x drives. For ACS380-040x drives, use a metal enclosure to fulfill radiated emissions C2 limits with an external EMC filter.

Control connection data

Analog inputs (AI1, AI2)	Voltage signal, single-ended	0 ... 10 V DC (10% overrange, 11 V DC max.) $R_{in} = 221.6$ kohm
	Current signal, single-ended	0 ... 20 mA (10% overrange, 22 mA max.) $R_{in} = 137$ ohm
	Inaccuracy	$\leq 1.0\%$, of full scale
	Overvoltage protection	up to 30 V DC
	Potentiometer reference value	10 V DC $\pm 1\%$, max. load current 10 mA
Analog output (AO)¹⁾	Current output mode	0 ... 20 mA (10% overrange, 22 mA max.) into 500 ohm load
	Voltage output mode	0 ... 10 V DC (10% overrange, 11 V DC max.) into 200 kohm minimum load (resistive)
	Inaccuracy	$\leq 1.0\%$, of full scale

Auxiliary voltage out-put/ optional input (+24V)	As output	+24 V DC \pm 10%, max. 250 mA
	As input (optional)	+24 V DC \pm 10%, max. 1000 mA (incl internal fan load)
Digital inputs (DI1...DI5)	Voltage	12 ... 24 V DC (int. or ext. supply) Max. 30 V DC.
	Type	PNP and NPN
	Input impedance	$R_{iN} = 2 \text{ kohm}$
Programmable digital I/O (DIO1, DIO2) ¹⁾	As inputs	
	Voltage	12 ... 24 V DC with internal or external supply. Max. 30 V DC.
	Type	PNP and NPN
	Input impedance	$R_{iN} = 2 \text{ kohm}$
	As outputs	
	Type	Transistor output PNP
	Max. switching voltage	30 V DC
	Max. switching current	70 mA / 30 DC, short-circuit protected
	Frequency	10 Hz ... 16 kHz
	Resolution	1 Hz
Relay output (RA, RB, RC)	Type	1 From C (NO + NC)
	Max. switching voltage	250 V AC / 30 V DC
	Max. switching current	2 A
Frequency input (FI)	10 Hz ... 16 kHz DI3 and DI4 can be used as digital or frequency inputs.	
Frequency output (FO)	DIO1 and DIO2 can be used as digital or frequency outputs.	
Safe torque off (STO) interface (SGND, S+, S1, S2)	Refer to <i>The Safe torque off function (page 213)</i>	
EIA-485 embedded fieldbus (A+, B-, BGND)	Connector pitch 5 mm, maximum wire size 2.5 mm ² (14 AWG) Physical layer: RS-485 Cable type: Shielded twisted pair cable with twisted pair for data and a wire or pair for signal ground, nominal impedance 100 ... 165 ohm, for example Belden 9842 Transmission rate: 9.6 ... 115.2 kbit/s Termination by jumper	
Control panel - drive connection	EIA-485, male RJ-45 connector, cable type CAT 5e or better, maximum cable length 100 m (328 ft)	
Control panel - PC connection	USB Type A – Type Mini-B cable, maximum cable length 3 m (9.8 ft)	

1) For information about BMIO-01 output behavior in certain conditions, refer to the default I/O connection diagram in the control cable connection instructions.

По вопросам продаж и поддержки обращайтесь:

Самары (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48

Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курган (3522)50-90-47
Курск (4712)77-13-04
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Ноябрьск (3496)41-32-12

Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Пермь (342)205-81-47
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саранск (8342)22-96-24
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35

Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Улан-Удэ (3012)59-97-51
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +7(7172)727-132

Киргизия +996(312)96-26-47

<https://abbdrives.nt-rt.ru/> || aei@nt-rt.ru