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ПРОМЫШЛЕННЫЕ ПРИВОДЫ

Техническое описание на преобразователи

ACS880-01



Wall-mounted single drives

ACS880-01

—
01
ACS880-01 frame size R1,
UL (NEMA) Type 1 / IP21

—
02
ACS880-01 frame size R5,
UL (NEMA) Type 12 / IP55



—
01



—
02

Compact package for simple installation

The ACS880-01 comes in one compact package for easy installation and commissioning.

The drive supports wall mounting as standard and cabinet mounting as an option. The drive offering includes enclosure classes up to UL (NEMA) Type 12 / IP55, making it suitable for most environments and installations.

ACS880-01 drives have all the essential features built-in. These features include a choke for harmonic filtering as well as options including a brake chopper, EMC filter, and communication protocol adapter, functional safety, and I/O extension modules. The extensive range of options also includes external output filters and brake resistors.

The ACS880-01 is also available with marine approval from various key classification bodies.

The drives have an extensive selection of built-in features and options. See page 100.

Highlights

- Wide power range supporting wall mounting, 0.75 to 350 Hp
- Enclosure classes up to UL (NEMA) Type 12 / IP55
- Compact, single package with all the essential features built-in
- Easy installation for different environments
- Robust and reliable design
- Optional marine-type approved version
- Circuit Breaker branch circuit protection certified by UL (see hardware manual)

Wall-mounted ACS880-01 drives

- Power ratings: 0.5 to 350 Hp
- Enclosure classes: UL (NEMA) Type Open / IP20 for cabinet mounting, UL (NEMA) Type 1 / IP21 (as standard) for wall-mounting, and UL (NEMA) Type 12 / IP55 for dusty and wet environments

Main options:

- C2 and C3 EMC filters, see page 73
- For brake chopper (as standard in frames R1 to R4) see page 82
- Brake resistor, see page 82
- Marine-type approval from various key classification bodies
- I/O extension modules, see page 63
- Communication protocol adapters, see page 63
- Speed feedback interfaces, see page 65
- Functional safety modules, see page 70
- Remote monitoring tool, see page 66
- Application specific software, see page 20
- Flange (push-through) mounting

Ratings, types and voltages

Wall-mounted drives, ACS880-01

m

	Frame Size	Light Duty use			Heavy Duty use			Noise Level dB(A)	Heat Loss W*	Air Flow cfm
		I _{LD}	P _{LD}	P _{LD}	I _{2HD}	P _{HD}	P _{HD}			
		A	Hp	kW	A	Hp	kW			
U_N = 240 V (range 208 to 240 V). Ratings are valid at nominal voltage 230 V, 60 Hz										
ACS880-01-04A6-2	R1	4.4	1	0.75	3.7	0.75	0.55	50	61	26
ACS880-01-06A6-2	R1	6.3	1.5	1.1	4.6	1	0.75	50	85	26
ACS880-01-07A5-2	R1	7.1	2	1.5	6.6	1.5	1.1	50	96	26
ACS880-01-10A6-2	R1	10.1	3	2.2	7.5	2	1.5	50	149	26
ACS880-01-16A8-2	R2	16	5	4	10.6	3	3	59	219	52
ACS880-01-24A3-2	R2	23.1	7.5	5.5	16.8	5	4	59	368	52
ACS880-01-031A-2	R3	29.3	10	7.5	24.3	7.5	5.5	60	354	79
ACS880-01-046A-2	R4	44	15	11	38	10	7.5	64	541	79
ACS880-01-061A-2	R4	58	20	15	45	15	11	64	804	165
ACS880-01-075A-2	R5	71	25	18.5	61	20	15	64	925	165
ACS880-01-087A-2	R5	83	30	22	72	25	18.5	64	1142	165
ACS880-01-115A-2	R6	109	40	30	87	30	22	68	1362	256
ACS880-01-145A-2	R6	138	50	37	105	40	30	68	1935	256
ACS880-01-170A-2	R7	162	60	45	145	50	37	67	1968	265
ACS880-01-206A-2	R7	196	75	55	169	60	45	67	2651	265
ACS880-01-274A-2 ³	R8	260	100	75	213	75	55	68	3448	324

* Heat Loss value is a reference for cabinet thermal design. Value is calculated to Ecodesign regulations based on 90% speed and 100% current.

	Frame Size	Light Duty use			Heavy Duty use			Noise Level dB(A)	Heat Loss W*	Air Flow cfm
		I _{LD}	P _{LD}	P _{LD}	I _{2HD}	P _{HD}	P _{HD}			
		A	Hp	kW	A	Hp	kW			
U_N = 500 V (range 380 to 500 V). Ratings are valid at nominal voltage 480 V, 60 Hz										
ACS880-01-02A1-5	R1	2.1	1	0.75	1.7	0.75	0.55	50	42	26
ACS880-01-03A0-5	R1	3	1.5	1.1	2.1	1	0.75	50	50	26
ACS880-01-03A4-5	R1	3.4	2	1.5	3	1.5	1.1	50	55	26
ACS880-01-04A8-5	R1	4.8	3	2.2	3.4	2	1.5	50	71	26
ACS880-01-07A6-5	R1	7.6	5	4	5.2	3	3	50	110	26
ACS880-01-11A0-5	R1	11	7.5	5.5	7.6	5	4	50	180	26
ACS880-01-014A-5	R2	14	10	7.5	11	7.5	5.5	59	191	52
ACS880-01-021A-5	R2	21	15	11	14	10	7.5	59	330	52
ACS880-01-027A-5	R3	27	20	15	21	15	11	60	326	79
ACS880-01-034A-5	R3	34	25	18.5	27	20	15	60	454	79
ACS880-01-040A-5	R4	40	30	22	34	25	18.5	64	424	79
ACS880-01-052A-5	R4	52	40	30	40	30	22	64	600	165
ACS880-01-065A-5	R5	65	50	37	52	40	30	64	715	165
ACS880-01-077A-5	R5	77	60	45	65	50	37	64	916	165
ACS880-01-096A-5	R6	96	75	55	77	60	45	68	1157	256
ACS880-01-124A-5	R6	124	100	75	96	75	55	68	1673	256
ACS880-01-156A-5	R7	156	125	90	124	100	75	67	1840	265
ACS880-01-180A-5	R7	180	150	110	156	125	90	67	2281	265
ACS880-01-240A-5	R8	240	200	132	180	150	110	68	2912	324
ACS880-01-260A-5	R8	260	200	132	240 ¹	150	110	68	3325	324
ACS880-01-302A-5	R9	302	250	187.5	260	200	132	70	3663	677
ACS880-01-361A-5	R9	361	300	200	302	250	187.5	70	4781	677
ACS880-01-414A-5	R9	414 ⁵	350	250	361 ²	300	200	70	5672	677

* Heat Loss value is a reference for cabinet thermal design. Value is calculated to Ecodesign regulations based on 90% speed and 100% current.

	Frame Size	Light Duty use			Heavy Duty use			Noise Level dB(A)	Heat Loss W*	Air Flow cfm
		I_{LD}	P_{LD}	P_{LD}	I_{2HD}	P_{HD}	P_{HD}			
		A	Hp	kW	A	Hp	kW			
$U_N = 600 V$ (range 525 to 690 V). Ratings are valid at nominal voltage 575 V, 60 Hz										
ACS880-01-07A4-7	R3	7	5	4	5.6	3	3	60	101	79
ACS880-01-09A9-7	R3	9.4	7.5	5.5	7.4	5	4	60	128	79
ACS880-01-14A3-7	R3	13.6	10	7.5	9.9	7.5	5.5	60	189	79
ACS880-01-019A-7	R3	18	15	11	14.3	10	7.5	60	271	79
ACS880-01-023A-7	R3	22	20	15	19	15	11	60	338	79
ACS880-01-027A-7	R3	27	25	18.5	23	20	15	60	426	79
ACS880-01-035A-7	R5	41	40	30	32	30	22	64	416	165
ACS880-01-042A-7	R5	52	50	37	41	40	30	64	524	165
ACS880-01-049A-7	R5	52	50	37	41	40	30	64	650	165
ACS880-01-061A-7	R6	62	60	45	52	50	37	68	852	256
ACS880-01-084A-7	R6	77	75	55	62	60	45	68	1303	256
ACS880-01-098A-7	R7	99	100	75	77	75	55	67	1416	265
ACS880-01-119A-7	R7	125	125	90	99	100	75	67	1881	265
ACS880-01-142A-7	R8	144	150	110	125	125	90	68	1970	324
ACS880-01-174A-7 ⁴	R8	180	200	132	144	150	110	68	2670	324
ACS880-01-210A-7	R9	242	250	160	192	200	132	70	2903	677
ACS880-01-271A-7	R9	271	250	200	242	250	160	70	4182	677

* Heat Loss value is a reference for cabinet thermal design. Value is calculated to Ecodesign regulations based on 90% speed and 100% current.

Notes:

Ratings apply at an ambient temperature of 40°C. At higher temperatures (up to 55°C) the derating is 1%/1°C.

1 30% overload for 1 minute every 5 minutes.

2 25% overload for 1 minute every 5 minutes

3 For drives with enclosure class UL Type 12 (IP55), the ratings apply at an ambient temperature of 40°C. For higher ambient temperatures, the derating is 1%/10C from 40 to 45°C and 2.5%/1°C from 45 to 55°C.

4 This unit capable of delivering 192 amps continuous at 40°C with no overload.

5 I_{LD} is 414A at 30°C ambient temperature and 393A at 40°C ambient temperature. Drive can deliver 414A continuously with no overload at 40°C. 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.

Light-overload use

I_{LD} Continuous current allowing 110% I_{LD} for 1 minute every 5 minutes at 40 °C.

P_{LD} Typical motor power in light-overload use.

Heavy-duty use

I_{HD} Continuous current allowing 150% I_{HD} for 1 minute every 5 minutes at 40 °C.

P_{HD} Typical motor power in heavy-duty use.

Dimensions

ACS880

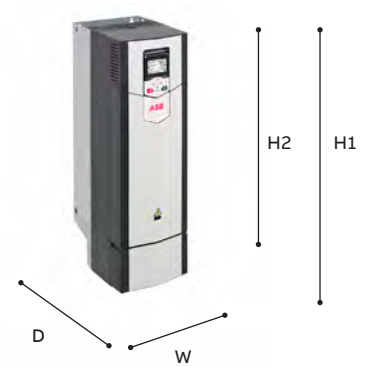
ACS880-01, UL (NEMA) Type 1 / IP21

Frame size	Height (H1)		Height (H2)		Width (W)		Depth (D)		Weight	
	in	mm	in	mm	in	mm	in	mm	lb	kg
R1	16.0	405	14.6	370	6.1	155	8.9	226	13	6
R2	16.0	405	14.6	370	6.1	155	9.8	249	18	8
R3	18.5	471	16.5	420	6.7	172	10.3	261	22	10
R4	22.9	580	18.2	462	8.0	203	10.8	274	41	18.5
R5	28.8	732	23.5	596	8.0	203	10.8	274	51	23
R6	28.6	726.5	21.6	548	9.9	252	14.1	357	99	70
R7	34.6	880	23.6	600	11.2	284	14.4	365	121	55
R8	38.0	965	26.8	680	11.8	300	15.2	386	154	70
R9	37.6	955	26.7	680	15.0	380	16.2	412	216	98

H1 = Height with cable entry box

H2 = Height without cable entry box

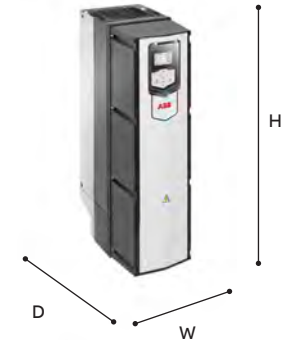
Width and depth with cable entry box



ACS880-01, UL (NEMA) Type 12 / IP55

Frame size	Height (H)		Width (W)		Depth (D)		Weight	
	in	mm	in	mm	in	mm	lb	kg
R1	17.6	450	6.3	162	11.5	295	13	6
R2	17.6	450	6.3	162	12.3	315	18	8
R3	20.5	525	7.0	180	12.8	327	22	10
R4	28.9	735	9.3	236	13.5	344	41	18.5
R5	34.9	886	9.3	236	13.5	344	51	23
R6	34.8	884	11.5	291	16.4	417	99	45
R7	40.9	1038	12.8	324	16.5	418	121	55
R8	44.2	1123	13.8	350	17.8	452	159	72
R9	46.8	1188	17.0	431	18.8	477	220	100

Width and depth with cable entry box



Connectivity to automation systems

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01
ACS880 is compatible with many communication protocols
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02
Input/output extension modules

Communication protocol adapters

ACS880 industrial drives are compatible with a wide range of communication protocols. The drive comes with a Modbus RTU fieldbus interface as standard.

The ACS880 supports two different communication connections simultaneously and offers redundant communication. PROFIsafe (functional safety over PROFINET) is also supported.

Communication protocol adapters

Option code	Ordering code for loose item	Communication protocol	F-Series Adapter
+K451	68469341	DeviceNet™	FDNA-01
+K454	68469325	PROFIBUS DP, DPV0/DPV1	FPBA-01
+K457	68469376	CANopen®	FCAN-01
+K458	3AUA0000031336	Modbus RTU	FSCA-01
+K462	3AUA0000094512	ControlNet	FCNA-01
+K469	3AUA0000072069	EtherCAT®	FECA-01
+K470	3AXD5000019239	POWERLINK	FEPL-02
+K491	3AXD5000049964	Modbus/TCP	FMBT-21
+K492	3AXD50000192779	PROFINET IO	FPNO-21 ¹⁾
+K490	3AXD50000192786	EtherNet/IP	FEIP-21
+Q986	3AXD50000112821	PROFIsafe safety functions module	FSPS-21

¹⁾ For the PROFIsafe to work the PROFINET adapter module (FPNO-21) and the safety functions module FSO-12 (+Q973) or FSO-21 (+Q972) are required. The FPNO-21 adapter module enables PROFINET system redundancy S2 allowing the drive to establish connection with two control PLCs in a redundant manner.



01



02

Input/output extension modules

Standard input and output can be extended by using optional analog and digital input/output extension modules. The modules are easily installed in the option slots on the drive.

If there are not enough I/O option slots in the drive, the FEA-03 module can increase the number of slots. The FEA-03 has two option slots for digital I/O extensions and speed feedback interface modules. The connection to the control unit is via an optical fiber link, and the adapter can be mounted on a DIN rail (35 × 7.5 mm).

Analog and digital input/output extension modules

Option code	Ordering code for loose item	Description	I/O module
+L501	68805368	4×DI/O, 2×RO	FIO-01
+L500	68805384	3×AI (mA/V), 1×AO (mA), 2×DI/O	FIO-11
+L515	3AUA0000108669	2×F-type option extension slots	FEA-03
+L525	3AUA0000141436	2×AI (mA/V), 2×AO (mA)	FAIO-01
+L526	3AUA0000141438	3×DI (up to 250 V DC or 230 V AC), 2×RO	FDIO-01

Feedback interface and DDCS communication options

—
01
FEN-01 TTL encoder
interface module
—
02
FDCO-01 DDCS
communication module

Speed feedback interfaces for precise process control

ACS880 drives can be connected to HTL pulse encoders, TTL pulse encoders, absolute encoders and resolvers. The optional feedback module is installed in the option slot on the drive. It is possible to use two feedback modules at the same time, either of the same type or different types*.

* Excluding FSE-31.

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Feedback interface modules

Option code	Ordering code for loose item	Description	Feedback module
+L517	68805422	2 inputs (TTL pulse encoder), 1 output	FEN-01
+L518	68805830	2 inputs (SinCos absolute, TTL pulse encoder), 1 output	FEN-11
+L516	68805848	2 inputs (Resolver, TTL pulse encoder), 1 output	FEN-21
+L502	68978955	1 input (HTL pulse encoder), 1 output	FEN-31
+L521	3AXD5000023272	Pulse encoder interface for functional safety (for more details see section "Safety options")	FSE-31

DDCS communication option modules

The FDCO-0X optical DDCS communication options are add-on modules on the ACS880 industrial drives control unit. The modules include connectors for two fiber optic DDCS channels. The FDCO-0X modules make it possible to perform master-follower and AC800 M communication. Alternatively the standard RS485 communication port can be used.

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02



Optical communication modules

Option code	Ordering code for loose item	Description	Module
+L503	3AUA0000107392	Optical DDCS (10 Mbd/10 Mbd)	FDCO-01
+L508	3AUA0000107393	Optical DDCS (5 Mbd/10 Mbd)	FDCO-02

NETA-21


NETA-21 connects the drive to the cloud via the Internet or local Ethernet network.

The remote data helps you base your decisions on solid facts and run your operations better and safer.

Remote monitoring helps you to recognize early signs of potential failures allowing you to act before a problem occurs. You can also remotely access the data from ABB drives to analyze and find the root cause of a problem.

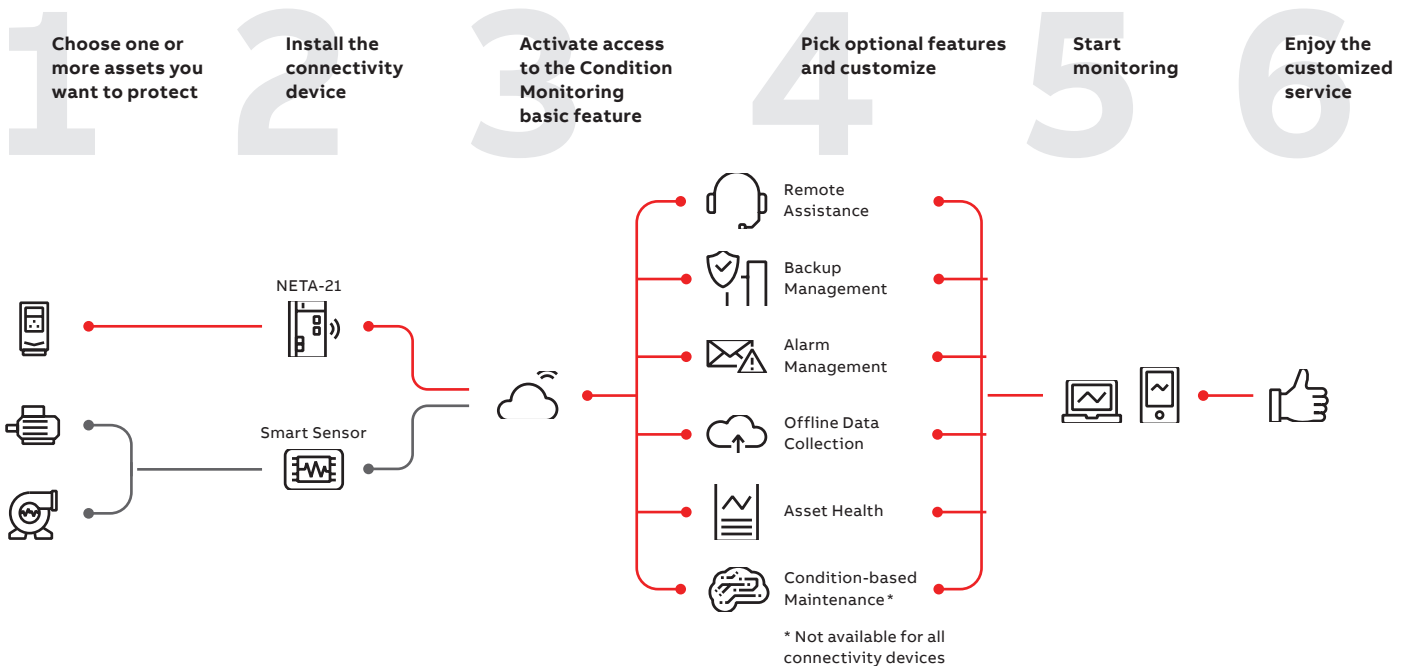
With remote access you can analyze and optimize drive information anywhere, even in sites that are difficult to access, or when a site visit is not possible.

- The module comes with a built-in web server and requires no Flash/Java plugins
- In the absence of a customer local area network, it can be connected via a mobile network router (either Ethernet or USB network adapter)
- One module can be connected to several drives at the same time

NETA-21 *	Ordering code	Description
	3AUA0000094517	2 x panel bus interface max. 9 drives 2 x Ethernet interface SD memory card
	+K496	Connectivity for wired remote monitoring with NETA-21
	+K497	Connectivity for wireless remote monitoring with 4G modem and NETA-21

* Following options available for ACS880-07, -17 and -37

Customers can configure powertrains and customize the digital service plan



Safety options

—
01
ACS880 drive with
FSO-21, FSE-31
and FENA-21

Integrated safety

Integrated safety reduces the need for external safety components, simplifying configuration and reducing installation space. The safety functionality is a built-in feature of the ACS880, with safe torque off (STO) as standard. The STO function corresponds to an uncontrolled stop in accordance with stop category 0 of EN 60204-1. Additional safety functions can be commissioned with the optional and compact safety functions module. ACS880 drives offer functional safety with or without encoder. The drive's functional safety is designed in accordance with EN/IEC 61800-5-2 and complies with the requirements of the European Union Machinery Directive (2006/42/EC).

The safety functions are certified by TÜV Nord and comply with the highest performance requirements (SIL 3/PLe) in machinery safety.¹⁾

The safety functions module can also be ordered separately and installed on the drive.

PROFIsafe safety functions module, FSPS-21, with integrated PROFIsafe, and PROFINET IO connection supports STO and SS1-t safety functions. Since the functions are automatically configured, no additional safety settings are required in the drive.

Safety functions modules, FSO-12 and FSO-21, support a wide range of safety functions. Configure the modules with Drive Composer pro PC tool, which provides an easy-to-use graphical user interface. Larger safety systems can be built using PROFIsafe over PROFINET connection between a safety PLC



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01

(such as AC500-S) and the ACS880 drive. The connection is achieved by adding a PROFINET adapter, FPNO-21/FENA-21, to the drive.

Supported safety functions:

- Encoderless: SS1-t, SS1-r, SLS, SBC, SMS, SSE, POU, STO
- With encoder (requires FSO-21 + FSE-31): SDI, SSM, SS1-t, SS1-r, SLS, SBC, SMS, SSE, POU, STO

Pulse encoder interface module, FSE-31, provides safe encoder data to the safety functions module, and can simultaneously be used as a feedback device for the drive. FSE-31 requires an FSO-21 safety functions module and supports HTL encoders.

Thermistor protection modules, FPTC-01 and FPTC-02

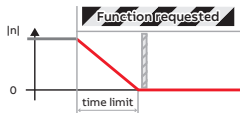
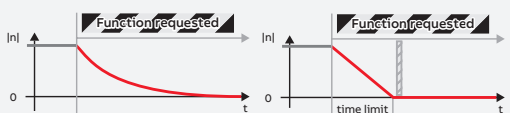
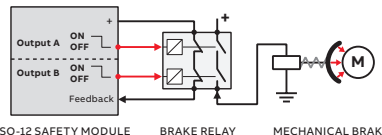
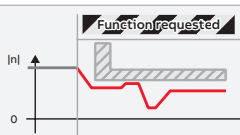

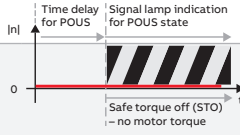
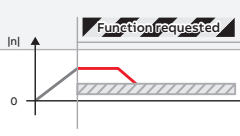
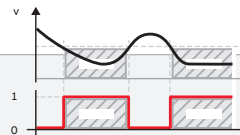

Offer safe temperature monitoring (STM) using FPTC thermistor protection modules.¹⁾

Safety function modules

Option code	Ordering code for loose item	Description	Safety module
+Q973	3AXD50000016771	Safety functions module FSO-12	FSO-12
+Q972+L521	3AXD50000023987 + 3AXD50000023272	Safety functions module FSO-21 and encoder FSE-31	FSO-21+FSE-31
+Q982	—	PROFIsafe safety communication to be used together with FSO-12 or FSO-21: forces to select a functional safety module and PROFINET adapter, FPNO-21	FSO-12 or FSO-21 +FPNO-21
+Q986 ²⁾	3AXD50000112821	PROFIsafe safety functions module FSPS-21	FSPS-21
+L536	3AXD50000024934	Thermistor protection module FPTC-01	FPTC-01

¹⁾ Thermistor modules comply with SIL 2 / PL c.

²⁾ Please contact your local ABB office to check availability.

Safety function	Description	Supported functions		
		FSPS-21	FSO-12 without encoder	FSO-21 + FSE-31 + HTL encoder
Safe stop 1 SS1-t SS1-r	Brings the machine to a stop using a monitored deceleration ramp. It is typically used in applications where the machinery motion needs to be brought to a stop (stop category 1) in a controlled way before switching over to the no-torque (STO) state	x (SS1-t)	x (SS1-t) (SS1-r)	x (SS1-t) (SS1-r)
				
Safe stop emergency SSE	Can be configured to, upon request, either activate STO instantly (category 0 stop), or first initiate motor deceleration and then, once the motor has stopped, activate the STO (category 1 stop).		x	x
				
Safe brake control SBC	Provides a safe output for controlling the motor's external (mechanical) brakes, together with STO.		x	x
				
Safely-limited speed SLS	Ensures that the specified speed limit of the motor is not exceeded. This allows machine interaction to be performed at slow speed without stopping the drive. The safety functions module comes with four individual SLS settings for speed monitoring.		x	x
				
Safe maximum speed SMS	Monitors configured maximum speed limit.		x	x
				
Prevention of unexpected start-up POUS	Ensures that the machine remains stopped when people are in the danger area.		x	x
				
Safe direction SDI	Ensures that rotation is allowed only in the selected direction (available only with FSO-21 and FSE-31).			x
				
Safe speed monitor SSM	Provides a safe output signal to indicate whether the motor speed is between user-defined limits (available only with FSO-21).			x
				
Safe Torque Off STO	Brings the drive safely to a no-torque state, i.e. switches off the drive output to the motor, motor then coasts to a stop.	x	x	x
	ACS880 has safe torque off as standard.			

Summary of features and options

ACS880 air-cooled single drives

	Ordering code	ACS880-01 R1 to R9	ACS880-11/31 R3 to R8	ACS880-07 R6 to R11	ACS880-07 nxR8i	ACS880-17/37 R8 to R11	ACS880-17/37 nxR8i ⁸⁾
Mounting							
Wall-mounting		●	●	–	–	–	–
For cabinet mounting	+P940	□	□	–	–	–	–
	+P944	□	–	–	–	–	–
Cabinet-built		–	–	●	●	●	●
Vibration dampers	+C131	□	□	–	–	–	–
Flange mounting	+C135	□ ¹⁵⁾	□ ¹⁵⁾	–	–	–	–
Cabling							
Bottom entry and exit		●	●	●	●	●	●
Top entry and exit	+H351, +H353	–	–	□	□	□	□
Degree of protection							
IP20 (UL open type)	+P940	□	□	–	–	–	–
	+P944	□	–	–	–	–	–
UL (NEMA) Type 1 / IP21		●	●	–	–	–	–
UL (NEMA) Type 1 / IP22		–	–	●	●	●	●
UL (NEMA) Type 1 / IP42	+B054	–	–	□	□	□	□
UL (NEMA) Type 12 / IP54	+B055	–	–	□	□	□	□
UL (NEMA) Type 12 / IP55	+B056	□	□	–	–	–	–
Nickel plated busbars (tin plating as standard) ³⁰⁾	+C255	□	–	–	–	–	–
Motor control							
DTC motor control		●	●	●	●	●	●
Control panel							
Intuitive control panel		● ⁴⁾	● ⁴⁾	●	●	●	●
Integrated control panel holder in the drive		●	●	●	●	●	●
Control panel mounting platform DPMP-01 (flush) / DPMP-02 (surface)		■	■	●	●	●	●
EMC filters							
EMC 1 st environment, restricted distribution, C2, grounded network (TN)	+E202	□ ²⁾	□	□ ²⁾	□ ¹⁶⁾	□ ¹⁹⁾	□ ²²⁾
EMC 2 nd environment, C3, grounded network (TN)	+E200	□ ³⁾	□	□ ³⁾	●	□ ²⁰⁾	●
EMC 2 nd environment, C3, ungrounded network (IT)	+E201	□ ⁴⁾	□	□ ⁴⁾	●	□ ²³⁾	●
Line filter							
AC or DC choke		●	–	●	●	–	–
Advanced line harmonic filter (LCL)		–	●	–	–	●	●
Output filter							
Common mode filter	+E208	□	□	□	●	□ ²⁸⁾	●
du/dt filters	+E205	–	–	□	●	□	●
Braking (see braking unit table)							
Brake chopper	+D150	● ⁵⁾	–	□	□ ⁶⁾	□	□
Brake resistor	+D151	–	–	□	□ ⁶⁾	□	□

● Standard

□ Selectable option, with plus code

■ Selectable option, external, no plus code

ACS880 air-cooled single drives

	Ordering code	ACS880-01 R1 to R9	ACS880-11/31 R3 to R8	ACS880-07 R6 to R11	ACS880-07 nxR8i	ACS880-17/37 R8 to R11	ACS880-17/37 nxR8i ⁸⁾
Software							
Primary control program		●	●	●	●	●	●
Drive application programming based on IEC 61131-3 using Drive Application Builder (available for primary control program)	+N8010	□	□	□	□	□	□
Application control program for winder	+N5000	□	□	□	□	□	□
Application control program for crane	+N5050	□	□	□	□	□	□
Application control program for winch	+N5100	□	□	□	□	□	□
Application control program for centrifuge/decanter	+N5150	□	□	□	□	□	□
Application control program for PCP pump	+N5200	□	□	□	□	□	□
Application control program for Rod pump	+N5250	□	□	-	-	-	-
Application control program for test bench	+N5300	□	□	□	□	□	□
Application control program for cooling tower direct drive	+N5350	□	□	□	□	□	□
Application control program for override control	+N5450	□	□	□	□	-	□
Application control program for spinning and traverse	+N5500	□	¹⁷⁾	-	-	□	-
Application control program for chemical industry process control	+N5550	□	¹⁷⁾	-	-	-	-
Application control program for ESP pumps	+N5600	□	□	□	□	□	□
Application control program for tower cranes	+N5650	□	□	-	-	-	-
Application control program for position control	+N5700	□	□	□	□	□	□
Application control program for anticavitation	+N5900	□	□	-	-	-	-
Support for asynchronous motor		●	●	●	●	●	●
Support for permanent magnet motor		●	●	●	●	●	●
Support for synchronous reluctance motor (SynRM)	+N7502	□	□	□	□	□	□
High speed operation up to 598 Hz output frequency. Operation above 598 Hz requires also +N8200.	+N7500	□ ^{8, 29)}	-	-	-	-	-
High speed license. Allows high speed operation above 598 Hz output frequency.	+N8200	□ ²⁴⁾	-	□ ²⁴⁾	□ ²⁴⁾	□ ²⁴⁾	□ ²⁴⁾
Rectifier bridge							
12-pulse	+A004	-	-	-	□	-	-
Line side apparatus							
aR line fuses		-	-	●	●	●	●
Main switch		-	-	●	●	●	●
Line contactor	+F250	-	-	□	□ ¹⁰⁾	●	● ¹¹⁾
Air circuit breaker	+F255	-	-	-	□ ⁷⁾	-	● ¹²⁾
Earthing switch	+F259	-	-	-	□	-	□
Cabinet options							
Cabinet heater (ext. supply)	+G300	-	-	□	□	□	□
Output for motor heater (ext. supply)	+G313	-	-	□	□	□	□
Customized options	+P902	-	-	□	□	□	□

- Standard
- Selectable option, with plus code
- Selectable option, external, no plus code

ACS880 air-cooled single drives

	Ordering code	ACS880-01 R1 to R9	ACS880-11/31 R3 to R8	ACS880-07 R6 to R11	ACS880-07 nxR8i	ACS880-17/37 R8 to R11	ACS880-17/37 nxR8i ⁸⁾
Safety functions¹⁸⁾							
Safe torque off (STO)		●	●	●	●	●	●
Safety functions module, FSO-12, without encoder, configurable functions: - Safe stop 1 (SS1-t, SS1-r), - Safely-limited speed (SLS) - Safe brake control (SBC) - Safe maximum speed (SMS) - Safe stop emergency (SSE) - Prevention of unexpected start-up (POUS) - Safe torque off (STO)	+Q973	□	□	□	□	□	□
Safety functions module, FSO-21, with encoder support, configurable functions: - Safe stop 1 (SS1-t, SS1-r) - Safely-limited speed (SLS) - Safe brake control (SBC) - Safe maximum speed (SMS) - Safe stop emergency (SSE) - Prevention of unexpected start-up (POUS) - Safe direction (SDI), requires encoder feedback, FSE-31 - Safe speed monitoring (SSM) - Safe torque off (STO)	+Q972	□	□	□	□	□	□
Pulse encoder interface module, FSE-31	+L521	□	□	□	□	□	□
PROFIsafe over PROFINET	+Q982	□	□	□	□	□	□
PROFIsafe safety functions module, FSPS-21	+Q986	□	□	□	□	□ ⁸⁾	□ ⁸⁾
Prevention of unexpected start-up with safety relay (preconfigured)	+Q957	-	-	□	□	□	□
Prevention of unexpected start-up with FSO-12 and -21 (preconfigured)	+Q950	-	-	□	□	□	□
Emergency stop, category 0 with opening the main contactor/breaker, with safety relay (preconfigured)	+Q951	-	-	□	□	□	□
Emergency stop, category 1 with opening the main contactor/breaker, with safety relay (preconfigured)	+Q952	-	-	□	□	□	□
Emergency stop, category 0 with STO, with safety relay (preconfigured)	+Q963	-	-	□	□	□	□
Emergency stop, category 1 with STO, with safety relay (preconfigured)	+Q964	-	-	□	□	□	□
Emergency stop, configurable category 0 or 1 with opening the main contactor/breaker, with FSO-12 and -21 (preconfigured)	+Q978	-	-	□	□	□	□
Emergency stop, configurable category 0 or 1 with STO and FSO-12 and -21 (preconfigured)	+Q979	-	-	□	□	□	□
Safely-limited speed with encoder, with FSO-21 and FSE-31 (preconfigured)	+Q965	-	-	□	□	□	□
Earth fault protection							
Earth fault monitoring, earthed mains		●	●	●	●	●	●
Earth fault monitoring, unearthed mains	+Q954	-	-	□	□	□	□

● Standard

□ Selectable option, with plus code

■ Selectable option, external, no plus code

ACS880 air-cooled single drives

	Ordering code	ACS880-01 R1 to R9	ACS880-11/31 R3 to R8	ACS880-07 R6 to R11	ACS880-07 nxR8i	ACS880-17/37 R8 to R11	ACS880-17/37 nxR8i ⁸⁾
Control connections (I/O) and communications							
2 pcs analog inputs, programmable, galvanically isolated		•	•	•	•	•	•
2 pcs analog outputs, programmable		•	•	•	•	•	•
6 pcs digital inputs, programmable, galvanically isolated – can be divided into two groups		•	•	•	•	•	•
2 pcs digital inputs/outputs		•	•	•	•	•	•
1 pcs digital input interlock		•	•	•	•	•	•
3 pcs relay outputs programmable		•	•	•	•	•	•
Drive-to-drive link/Built-in Modbus		•	•	•	•	•	•
Assistant control panel/PC tool connection		•	•	•	•	•	•
Possibility for external power supply for control unit		•	•	•	•	•	•
Built-in I/O extension and speed feedback modules: for more details see sections: “Input/output extension modules”, “Speed feedback interfaces for precise process control” and “DDCS communication option modules” ²⁵⁾		□	□	□	□	□	□
Built-in adapters for several communication protocols: for more details see section “Communication protocol adapters” ²⁶⁾		□	□	□	□	□	□
Approvals							
CE, UKCA		•	•	•	•	•	•
UL, cUL	+C129	•	•	□	□	□	□
CSA	+C134	•	•	□	□	□	□
EAC/GOST R ⁹⁾		•	•	•	•	•	•
RoHS		•	•	•	•	•	•
RCM		•	•	•	•	•	•
Marine type approvals ¹³⁾	+C132	□ ¹³⁾	□ ¹³⁾	□ ¹³⁾	□ ¹³⁾	□ ¹³⁾	□ ¹³⁾
Marine construction	+C121	–	–	□	□	□	□
Marine product certification for essential applications		□ ⁸⁾	–	□ ⁸⁾	□ ⁸⁾	–	–
TÜV nord certificate for safety functions		•	•	•	•	•	•
SEMI F47		•	•	•	•	•	•

- Standard
- Selectable option, with plus code
- Selectable option, external, no plus code
- Not available

1) Without control panel, +0J400
2) For frame sizes R1 to R9, 380 to 500 V (-01). For frame sizes R6 to R11, 380 to 500 V (-07).
3) For frame sizes R1 to R9, 380 to 500 V, and frame sizes R3 to R9, 690 V (-01). For frame sizes R6 to R11, 380 to 690 V (-07).
4) For frame sizes R6 to R9, 380 to 500 V, and frame sizes R7 to R9, 690 V (-01). For frame sizes R6 to R9, 380 to 500 V and frame size R6, 690 V and frame sizes R10 to R11, 380 to 690 V (-07).

2nd environment C4 for frame sizes R1 to R5, 380 to 500 V, and frame sizes R3 to R6, 690 V (-01).

5) Frame sizes R1 to R4 built-in and R5 to R9 as selectable option

6) 2xR8i

7) 2xD8T to 4xD8T

8) Check availability from local ABB

9) EAC has replaced GOST R

10) D8T, 2xD7T and 2xD8T

11) R8i to 2xR8i, 400 to 500 V. R8i to 3xR8i, 690 V

12) 3xR8i, 400 to 500 V. 4xR8i and 6xR8i, 690 V

13) ACS880 marine type approvals and type approved drives are listed

14) For cabinet-built drives (-07)

15) Available only with IP20 (+P940 or +P944)

16) For 1140A-3 and 1070A-5 (-07 nxR8i).

17) Pending

18) Three option slots are available for I/O extension, speed feedback, communication protocol and functional safety options. FSO-xx can also be mounted on a DIN rail by us-ing a separate installation kit. DIN rail mounting does not consume the drive's option slots. With frames R6 to R11 it is possible to mount the FSO-xx inside the drive without using the drive's option slots.

19) For frame sizes R8 and R11, 380 to 500 V (-17, -37).

20) For frame size R8, 380 to 500 V (-17, -37). As standard for R11, 380 to 690 V.

21) Only for frame size R11.

22) Only for frame size 1xR8i, 380 to 500 V (-17, -37).

23) For frame size R8, 380 to 500 V (-17, -37). For R11, 380 to 690 V, please contact your local ABB.

24) For availability and further information, please contact your local ABB office.

25) Three option slots are available for I/O extension, speed feedback, communication protocol and functional safety options.

The slot number for I/O and encoder options can be extended with FEA-03 option. Please note that functional safety and communication protocol adapters cannot be used with FEA-03.

26) Three option slots are available for I/O extension, speed feedback, communication protocol and functional safety options.

27) For ACS880-37LC.

28) Common mode filter (+E208) is standard for 690 V devices.

29) Available for voltages from 380 to 500 V.

30) Frames R5 – R9 available through the Must Win process.

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