

LOW VOLTAGE AC DRIVES

ACS580, ACH580, ACQ580 Packaged Drives

0.75 to 250 kW



Package drives (PDR) are designed to simplify drive selection, set up, operation and maintenance, all PDR drives brings you ease of use, scalability, quality and IP21/IP55 protection to address variety of environments.

ACx580 Packaged Drives (ACx580-PDR)

Packaged drive includes a ACS580/ACH580/ACQ580 drive with input disconnect switch and fast acting fuses which are IEC60947-3 / IEC60269 complied. It is available from 0.75 to 250kW, 3 Phase AC 380-480V, 50/60 Hz range. PDR provides a door-mounted input disconnect switch (pad lockable in the OFF position), electronic motor overload protection, a door-mounted control panel with graphical display for local control, provisions for external control connections, and serial communications capability.

One product for many applications

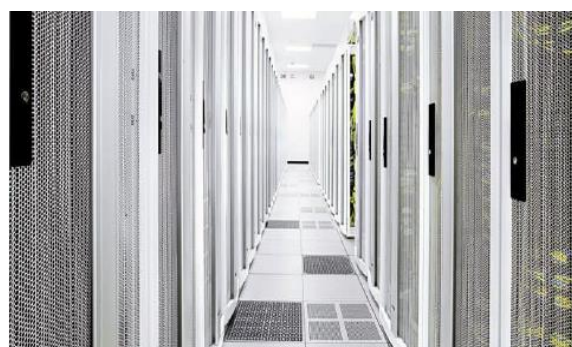
PDR drive includes all the essential components for HVACR applications, Water, & Waste Water applications & many other Industrial applications, such as pumps, fans, compressors, conveyors, mixer, chipper, extruders, crushers, as well as many other variable and constant torque applications.

Smaller footprint

Since all the essential components for the Drive System is built-in as Packaged Drive, the foot print for ACx580-PDR is significantly smaller when compared to a similar power rating drive into a cabinet assembly.

Reliability and constant high quality

ACx580 drives are designed for customers who value high quality and robustness in their applications. Coated control boards, high enclosure classes, and motor temperature monitoring along with supervision and other protection functions ensure your processes will run smoothly even in harsh conditions. In addition, all the drives are tested during production at maximum temperature and with nominal loads. We make sure the drives perform as they should so you do not need to worry about it.



Technical Specification

Voltage & Power range	3- phase AC 380...480 V ACS580/ACH580/ACQ580-PDR : from 0.75 ... 250 kW
Frequency	50 / 60 Hz $\pm 5\%$
Mains Choke	Built-in Choke as standard
Degree of Protection	ACS580/ACH580/ACQ580-PDR :IP21 / IP55
Compliance ¹	CE Low Voltage Directive 2014/34/EU, EN 61800-5-1: 2007 Machinery Directive 2006/42/EC, EN 61800-5-2: 2007 EMC Directive 2014/30/EU, EN 61800-3: 2004 + A1: 2012 RoHS directive 2011/65/EU Quality assurance system ISO 9001 and Environmental system ISO 14001 Waste electrical and electronic equipment directive (WEEE) 2002/96/EC UL, EAC, RCM, UL, cUL TÜV Nord (safety functions)
Safety Functions	Safe torque off (STO) according to EN/IEC 61800-5-2, SIL 3 PL e (TÜV Nord certified)
EMC	According to EMC Directive 2014/30/EU, EN 61800-3:2004 + A1 2012. ACS580/ACH580/ACQ580-PDR: Class C2
Harmonic Mitigation	According to EN 61000-3-12: 2011
Control Connections	2 AI, 2AO,6DI, 3 RO, safe torque off (STO), USB via control panel

Control & Communication Option

Fieldbus adapters	Modbus RTU, PROFIBUS DP, CANopen®, DeviceNet™, EtherNet/IP™, ModbusTCP, PROFINET IO, EtherCAT®, POWERLINK, ControlNet
Optional I/O Extensions modules	CMOD-01: External +24 V AC/DC • 2 RO, 1 DI CMOD-02: External +24 V AC/DC and isolated PTC input CHDI-01: 115/230 V AC digital input • 6DI, 2 RO CPTC-02: ATEX-certified PTC interface and external +24 V CBAI-01: Bipolar I/O extension • Two bipolar AI and two unipolar AO CAIO-01: Analog I/O Extension • 3 bipolar AI and two unipolar AO
PC Tools	Drive composer tool entry, available for free via ABB website, Drive composer tool pro
Control Panel Options	ACS-AP-I, assistant control panel ACS-AP-W, Bluetooth interface control panel ACS-BP-S, basic control panel

Easier than ever before

ACx580 drives have all the essential features built-in, reducing commissioning and setup time. The assistant control panel with a broad set of languages is standard for ACx580 drives. It can be also upgrade to an optional Bluetooth® control panel for wireless commissioning and monitoring. Primary settings and control macros ensure quick setup and the help button on the control panel offers instant advice in unclear situations

ACS580-PDR Essential features inside

- Integrated safe torque off (STO)
- Removable Modbus RTU terminal
- Two option slots, one for a fieldbus adapter and one for I/O extension
- External +24 V AC/DC
- USB interface for PC tool connection
- Optimized DC choke
- Integrated EMC filter

ACH580-PDR Essential features inside

- 5 PIDs to control HVAC processes
- Control panel with graphical display
- Advanced motor control for asynchronous, permanent magnet and synchronous reluctance motors
- BACnet MS/TP, Modbus RTU and N2 as standard
- Multi fan/-pump/-compressor control for up to 8 units
- Safe torque off (STO) SIL 3/PL e
- Fireman's override
- Intelligent Pump Control

ACQ580-PDR Essential features inside

- Intelligent multi-pump control
- Sensorless flow calculation
- Level control
- Soft pipe fill
- Quick ramps
- Pump cleaning
- Dry pump protection

Dimensions

ACx580-PDR dimensions for IP21 & IP55				
Frame	Height1 (mm)	Height2 (mm)	Width (mm)	Depth (mm)
P1	624	624	160	315
P2	723	723	161	320
P3	885	885	213	335
P4	1031	1031	213	362
P5	1325	1325	250	353
P6	949	949	300	421
P7	1250	1250	350	421
P8	1665	1665	360	496
P9	1805	2205	540	535

Height1 : height for IP21 ACx580-PDR

Height2 : height for IP55 ACx580-PDR

¹¹ Applicable only for the Drive module

Ratings, types & voltages

Typecode #	Frame	3-Phase U _N = 400 V							3-Phase U _N = 480 V				
		P _N (kW)	I _N (A)	P _{LD} (kW)	I _{LD} (A)	P _{HD} (kW)	I _{HD} (A)	I _{max} (A)	P _{LD} (kW)	I _{LD} (A)	P _{HD} (kW)	I _{HD} (A)	I _{max} (A)
ACx580-PDR-02A7-4	P1	0.75	2.6	0.75	2.5	0.55	1.8	3.2	0.75	2.1	0.55	1.6	2.9
ACx580-PDR-03A4-4	P1	1.1	3.3	1.1	3.1	0.75	2.6	4.7	1.1	3	0.75	2.1	3.8
ACx580-PDR-04A1-4	P1	1.5	4	1.5	3.8	1.1	3.3	5.9	1.5	3.5	1.1	3	5.4
ACx580-PDR-05A7-4	P1	2.2	5.6	2.2	5.3	1.5	4	7.2	2.2	4.8	1.5	3.4	6.1
ACx580-PDR-07A3-4	P1	3	7.2	3	6.8	2.2	5.6	10.1	3	6	2.2	4	7.2
ACx580-PDR-09A5-4	P1	4	9.4	4	8.9	3	7.2	13	4	7.6	3	4.8	8.6
ACx580-PDR-12A7-4	P1	5.5	12.6	5.5	12	4	9.4	15.3	5.5	12	4	7.6	13.7
ACx580-PDR-018A-4	P2	7.5	17	7.5	16.2	5.5	12.6	22.7	7.5	14	5.5	11	19.8
ACx580-PDR-026A-4	P2	11	25	11	23.8	7.5	17	30.6	11	23	7.5	14	25.2
ACx580-PDR-033A-4	P3	15	32	15	30.4	11	24.6	44.3	15	27	11	21	37.8
ACx580-PDR-039A-4	P3	18.5	38	18.5	36.1	15	31.6	56.9	18.5	34	15	27	48.6
ACx580-PDR-046A-4	P3	22	45	22	42.8	18.5	37.7	67.9	22	44	18.5	34	61.2
ACx580-PDR-062A-4	P4	30	62	30	58	22	45	81	30	52	22	40	72
ACx580-PDR-073A-4	P4	37	73	37	68	30	61	110	37	65	30	52	94
ACx580-PDR-089A-4	P4	45	89	45	83	37	72	130	45	77	37	65	117
ACx580-PDR-106A-4	P5	55	106	55	100	45	87	157	55	96	45	77	148
ACx580-PDR-145A-4	P6	75	145	75	138	55	105	178	75	124	55	96	178
ACx580-PDR-169A-4	P7	90	169	90	161	75	145	247	90	156	75	124	247
ACx580-PDR-206A-4	P7	110	206	110	196	90	169	287	110	180	90	156	287
ACx580-PDR-246A-4	P8	132	246	132	234	110	206	350	132	240	110	180	350
ACx580-PDR-293A-4	P8	160	293	160	278	132	246 ¹⁾	418	160	260	132	240 ¹⁾	418
ACx580-PDR-363A-4	P9	200	363	200	345	160	293	498	200	361	160	302	542
ACx580-PDR-430A-4	P9	250	430	250	400	200	363 ²⁾	545	250	414	200	361 ²⁾	542
ACx580-PDR-490A-4	P9	250	490	250	480	200	385	600	250	454	200	385	600

Nominal Ratings, ACx580-PDR

I_N Rated current available continuously without overloadability at 40 °C.

P_N Typical motor power in no-overload use.

Maximum output current

I_{max} Maximum output current. Available for 2 seconds at start.

Light-overload use

I_{LD} Continuous current allowing 110% I_{LD} for 1 minute every 10 minutes at 40 °C.

P_{LD} Typical motor power in light-duty use

Heavy duty use

I_{HD} Continuous current allowing 150% I_{HD} for 1 minute every 10 minutes at 40 °C.

1) Continuous current allowing 130% I_{HD} for 1 minute every 10 minutes at 40 °C

2) Continuous current allowing 125% I_{HD} for 1 minute every 10 minutes at 40 °C

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

The ratings apply for the frames R1 to R9 up to +40 °C in enclosure class 21.

x: S for Standard drive / H for HVAC / Q for Water segment specific drive variants. Add +B056 at end for IP55 Variant

For more information please contact
your local ABB Representative or visit

abb.com/drives