

LOW VOLTAGE AC DRIVES

# **ABB drives for water and wastewater**

ACQ580, 0.75 to 500 kW



---

**ACQ580 series**

**Always flowing. Never still.**

**Water utilities require reliable solutions securing the flow of water and wastewater.**

**The ACQ580 drive for water is part of ABB's all-compatible drives portfolio. This robust drive is designed to secure optimal operation of water and wastewater pumps, while ensuring low energy consumption.**

# Technical specification

Mains connection		
Voltage range	3-phase, $U_N$	
Power range	ACQ580-01 wall-mounted	0.75 to 250 kW (frame sizes R1 to R9)
	ACQ580-04 module	250 to 500 kW (frame sizes R10 to R11)
	ACQ580-07 cabinet	75 to 500 kW (frame sizes R6 to R11)
	ACQ580-31 ULH wall-mounted	4 to 110 kW (frame sizes R3, R6 and R8)
	ACQ580-34 ULH module	132 to 355 kW (frame size R11)
Frequency	50/60 Hz $\pm 5\%$	
Power factor (-01, -04, -07) (-31, -34)	$\cos\varphi = 0.98$	
	$\cos\varphi = 1$	
Efficiency (at nominal power)	98%	
Motor connection		
Voltage	0 to $U_N$ , 3-phase	
Frequency	0 to 500 Hz	
Motor control	Scalar and vector control	
Speed control	Static accuracy: 20% of motor nominal slip	
	Dynamic accuracy: 1% seconds with 100% torque step	
Product compliance		
CE		
Low Voltage Directive 2014/35/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		
Waste electrical and electronic equipment directive (WEEE) 2000/96/EC		
Quality assurance system ISO 9001 and Environmental system		
RCM, EAC, UL, cUL		
TÜV Nord (safety functions)		
EMC according to EN 61800-3:2004 + A1:2017		
ACQ580-01/-31	Class C2 as standard	
ACQ580-04/-34	Class C3 as standard	
ACQ580-07	Class C2 as standard for powers 75 kW to 250 kW and Class C3 as standard for powers 250 kW to 500 kW	
Harmonic mitigation		
Built-in swinging choke as standard in ACQ580-01 meets the requirements of IEC 61000-3-12: 2011.		
ACQ580-31 and ACQ580-34 in addition meets the requirements of IEEE519 and G5/4.		

Environmental limits		
Ambient temperature		
Transport	-40 to +70 °C	
Storage	-40 to +70 °C	
Operation area	ACQ580-01/-31	-15 °C to 50 °C. No frost allowed. From +40 °C to +50 °C with derating 1% per 1 °C.
	ACQ580-04/-34	-15 °C to 55 °C. No frost allowed. From +40 °C to +55 °C with derating 1% per 1 °C.
	ACQ580-07	0 °C to +50 °C. No frost allowed. From +40 °C to +50 °C with derating 1% per 1 °C.
Cooling method		
Air-cooled	Dry clean air	
Altitude		
0 to 1.000 m	Without derating	
1.000 to 4.000 m	With derating of 1%/100 m	
Relative humidity	5 to 95%. no condensation allowed	
Degree of protection	ACQ580-01/-31	IP21 (UL Type 1) and IP55 (UL Type 12)
	ACQ580-04/-34	IP00 as standard and IP20 as option
	ACQ580-07	IP21 as standard, IP42 and IP54 as option
Functional safety	Safe torque off (STO according EN 61800-5-2) IEC 61508 ed2: SIL 3, IEC 61511: SIL 3, IEC 62061: SIL CL 3, EN ISO 13849-1: PL e	
Contamination levels		
Storage	No conductive dust allowed	
	IEC 60721-3-1. Class 1C2 (chemical gases). Class 1S2 (solid particles)*)	
Operation	IEC 60721-3-3. Class 3C2 as standard and 3C3 as option (chemical gases). Class 3S2 (solid particles)*	
Transportation	IEC 60721-3-2. Class 2C2 (chemical gases). Class 2S2 (solid particles)*)	

\*) C = chemically active substances

S = mechanically active substances

# Dimensions

## ACQ580-01, IP21 and IP55

Frames	Height IP21 <sup>*)</sup> /IP55 <sup>*)</sup> (mm)	Width IP21/IP55 (mm)	Depth IP21 (mm)	Depth IP55 (mm)	Weight IP21 (kg)	Weight IP55 (kg)
R1	373/403	125/128	223	233	4.6	4.8
R2	473/503	125/128	229	239	6.6	6.8
R3	490	203/206	229	237	11.8	13
R4	636	203	257	265	19	20
R5	732	203	295	320	28.3	29
R6	727	252	369	380	42.4	43
R7	880	284	370	381	54	56
R8	965	300	393	452	69	77
R9	955	380	418	477	97	103

<sup>\*)</sup> Front height of the drive with glandbox



## ACQ580-04

Frames	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)
R10	1432	350	529	162
R11	1662	350	529	200



## ACQ580-07

Frames	Height IP21 (mm)	Width IP21 (mm)	Depth IP21 (mm)	Weight IP21 (mm)
R6	2145	430	673	210
R7	2145	430	673	220
R8	2145	530	673	255
R9	2145	530	673	275
R10	2145	830	698	535
R11	2145	830	698	581



## ACQ580-31, IP21 and IP55

Frames	Height (mm)	Width (mm)	Depth IP21 (mm)	Depth IP55 (mm)	Weight IP21 (kg)	Weight IP55 (kg)
R3	495	205	354	360	21.3	21.3
R6	771	252	392	449	61	63
R8	965	300	438	496	112	118



## ACQ580-34, IP00

Frames	Height (mm)	Width (mm)	Depth IP00 (mm)	Weight IP00 (kg)
R11	1722	636.5	504.5	365