

 BROCHURE

Solar pump drive

0.5 to 25 hp (0.37 to 18.5 kW)



Solar pump drive

Exploring the power of the sun



Low-carbon economy

With utilization of solar power, ABB drives helps in reducing your carbon footprint. The installed base of ABB's variable speed drives saved about 310 TWh in 2011 and reduced CO₂ emissions by 260 million tons.



Built-in MPPT

Maximum power point tracking ensures that you get the most power output possible from your solar panel and maximizes the performance of your pump throughout the day.



Pump-specific protection

Built-in flow measurement and flow detection function. Drive turns off in case of dry run.



Remote monitoring

With the addition of optional modules you can monitor solar pump parameters from anywhere.

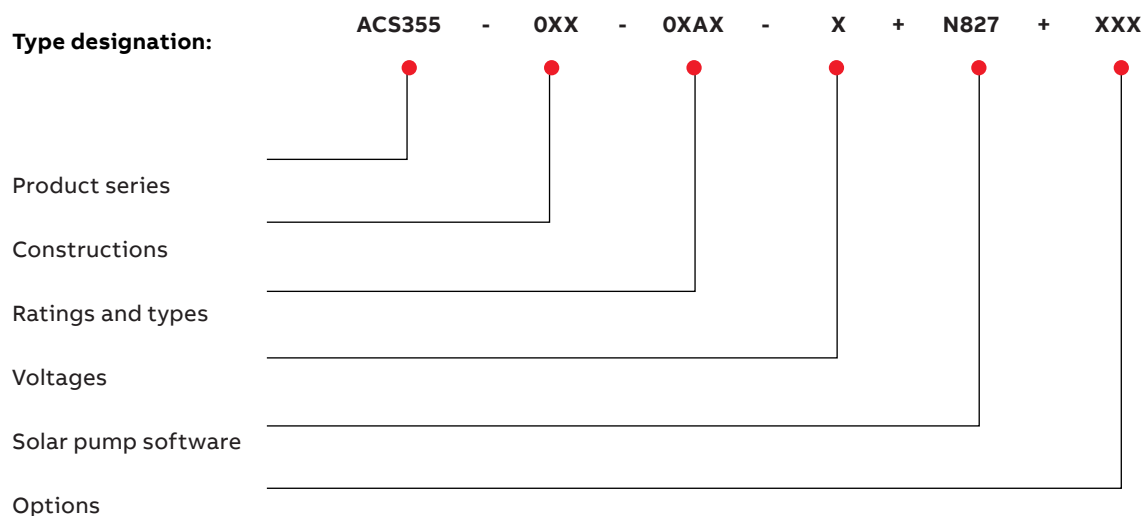


Best off grid solution

Where electricity is very erratic and unpredictable, farmers need not depend on grid electricity for their agricultural requirements. 300 days of sunshine can now put a smile on their face.



Select and order your drive



Features

- Maximize your pump delivery without wasting a watt
- Automatic start and stop with solar radiation
- Self-diagnostics and self-protection
- Dry run protection
- Dual supply mode - solar and grid compatible
- Compatible with all pumps

Ratings, types, voltages

Type code

This is the unique reference number (shown above and below) to identify your drive by power rating and frame size and can be used to determine the drive dimensions.

Voltages

The ACS355 is available in two voltage ranges:

2 = 125 to 400 V DC or 200 to 240 V AC

4 = 250 to 800 V DC or 380 to 480 V AC

Insert either “2” or “4”, depending upon your chosen voltage, into the type code shown.

Construction

“01U” within the type code (shown above) varies depending upon on the drive phase and EMC filtering. Choose one from below options

01 = 1-phase

03 = 3-phase

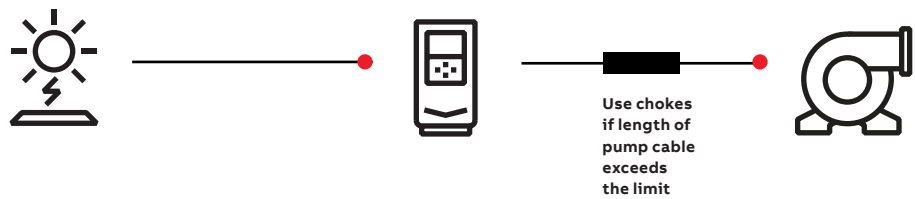
U = EMC filter disconnected, 60 Hz

Product compliance

- UL, cUL, CE, C-Tick and GOST R approvals
- Low Voltage Directive 73/23/EEC with supplements
- EMC Directive 89/336/EEC with supplements
- Quality assurance system ISO 9001
- Environmental system ISO 14001
- RoHS compliant
- DIN40050-9 (IP69K)

Type code	P _N HP	P _N kW	I _{2N}	Frame size
1-phase AC supply, 125 to 400 V DC or 200 to 240 V				
ACS355-01U-04A7-2	0.5	0.37	4.7	R1
ACS355-01U-06A7-2	1	0.75	6.7	R1
ACS355-01U-07A5-2	1.5	1.1	7.5	R2
ACS355-01U-09A8-2	2	1.5	9.8	R2
3-phase AC supply, 125 to 400 V DC or 200 to 240 V				
ACS355-03U-03A5-2	0.5	0.37	3.5	R0
ACS355-03U-04A7-2	0.75	0.55	4.7	R1
ACS355-03U-06A7-2	1	0.75	6.7	R1
ACS355-03U-07A5-2	1.5	1	7.5	R1
ACS355-03U-09A8-2	2	1.5	9.8	R2
ACS355-03U-17A6-2	3	2.2	17.6	R2
ACS355-03U-24A4-2	5	4	24.4	R3
ACS355-03U-31A0-2	7.5	5.5	31	R4
ACS355-03U-46A2-2	10	7.5	46.2	R4
3-phase AC supply, 250 to 800 V DC or 380 to 480 V				
ACS355-03U-01A9-4	0.5	0.37	1.9	R0
ACS355-03U-02A4-4	0.75	0.55	2.4	R1
ACS355-03U-03A3-4	1	0.75	3.3	R1
ACS355-03U-04A1-4	1.5	1.1	4.1	R1
ACS355-03U-05A6-4	2	1.5	5.6	R1
ACS355-03U-08A8-4	3	2.2	8.8	R1
ACS355-03U-12A5-4	5	4	12.5	R3
ACS355-03U-15A6-4	7.5	5.5	15.6	R3
ACS355-03U-23A1-4	10	7.5	23.1	R3
ACS355-03U-31A0-4	15	11	31	R4
ACS355-03U-38A0-4	20	15	38	R4
ACS355-03U-44A0-4	25	18.5	44	R4

Connection representation



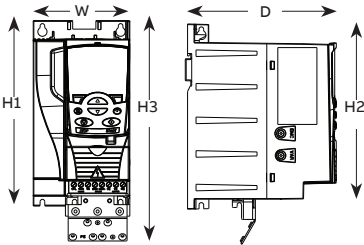
Drive - pump cable length

Frame size	Maximum motor cable length	
	ft	m
Standard drive without external options		
R0	100	30
R1 to R4	165	50
Standard drive with external output chokes		
R0	195	60
R1 to R4	330	100

Cabinet-mounted drives (IP20 UL open)

Frame size	H1		H2		H3		W		D		Weight	
	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
R0	6.7	169	8.0	202	9.4	239	2.8	70	6.3	161	2.6	1.2
R1	6.7	169	8.0	202	9.4	239	2.8	70	6.3	161	2.6	1.2
R2	6.7	169	8.0	202	9.4	239	4.1	105	6.5	165	3.3	1.5
R3	6.7	169	8.0	202	9.3	236	6.7	169	6.7	169	5.5	2.5
R4	7.1	181	8.0	202	9.6	244	10.2	260	6.7	169	9.7	4.4

H1 = Height without fastenings and clamping plate
H2 = Height with fastenings but without clamping plate
H3 = Height with fastenings and clamping plate
W = Width
D1 = Standard depth



Cooling and fuses

Cooling

The ACS355 is fitted with cooling fans as standard. The cooling air must be free from corrosive substances.

Type code	Frame size	Heat Dissipation	Air Flow
		W	m³/h
1-phase AC supply, 125 to 400 V DC or 200 to 240 V			
ACS355-01U-04A7-2	R1	72	24
ACS355-01U-06A7-2	R1	97	24
ACS355-01U-07A5-2	R2	101	21
ACS355-01U-09A8-2	R2	124	21
3-phase AC supply, 125 to 400 V DC or 200 to 240 V			
ACS355-03U-03A5-2	R0	54	– 1)
ACS355-03U-04A7-2	R1	64	24
ACS355-03U-06A7-2	R1	86	24
ACS355-03U-07A5-2	R1	88	21
ACS355-03U-09A8-2	R2	111	21
ACS355-03U-17A6-2	R2	180	52
ACS355-03U-24A4-2	R3	285	71
ACS355-03U-31A0-2	R4	328	96
ACS355-03U-46A2-2	R4	488	96
3-phase AC supply, 250 to 800 V DC or 380 to 480 V			
ACS355-03U-01A9-4	R0	40	– 1)
ACS355-03U-02A4-4	R1	50	13
ACS355-03U-03A3-4	R1	60	13
ACS355-03U-04A1-4	R1	69	13
ACS355-03U-05A6-4	R1	90	19
ACS355-03U-08A8-4	R1	127	24
ACS355-03U-12A5-4	R3	161	52
ACS355-03U-15A6-4	R3	204	52
ACS355-03U-23A1-4	R3	301	71
ACS355-03U-31A0-4	R4	408	96
ACS355-03U-38A0-4	R4	498	96
ACS355-03U-44A0-4	R4	588	96

1) Frame size R0 with free convection cooling

Enclosure type	Space above		Space below		Space on left/right	
	in	mm	in	mm	in	mm
All frame sizes	3.0	75	4.0	75	0	0

Fuses

Use standard fuses with ABB Solar pump drive.

For input fuse connections in DC side UR or gG, see the table below. With UR fuses, determine the rating by the maximum instantaneous DC current because fuses work quickly. In practice, select fuses for a current about two times higher than the DC current calculated from the nominal power. With gG fuses, take a rating one size smaller. An optional AC-side gG fuse is also mentioned if the drive is operating in grid mode.

Type code	Frame size	IEC fuses	DC fuse	
		AC side [A]	PV side [A]	
		Fuse type	Fuse type	
		gG	UR	gG
1-phase AC supply, 125 to 400 V DC or 200 to 240 V				
ACS355-01U-04A7-2	R1	16	10	10
ACS355-01U-06A7-2	R1	16	10	10
ACS355-01U-07A5-2	R2	20	16	10
ACS355-01U-09A8-2	R2	25	16	16
3-phase AC supply, 125 to 400 V DC or 200 to 240 V				
ACS355-03U-03A5-2	R0	10	10	10
ACS355-03U-04A7-2	R1	10	10	10
ACS355-03U-06A7-2	R1	16	10	10
ACS355-03U-07A5-2	R1	16	16	10
ACS355-03U-09A8-2	R2	16	16	16
ACS355-03U-17A6-2	R2	25	35	25
ACS355-03U-24A4-2	R3	63	35	35
ACS355-03U-31A0-2	R4	80	50	50
ACS355-03U-46A2-2	R4	100	80	63
3-phase AC supply, 250 to 800 V DC or 380 to 480 V				
ACS355-03U-01A9-4	R0	10	10	10
ACS355-03U-02A4-4	R1	10	10	10
ACS355-03U-03A3-4	R1	10	10	10
ACS355-03U-04A1-4	R1	16	10	10
ACS355-03U-05A6-4	R1	16	10	10
ACS355-03U-08A8-4	R1	20	25	16
ACS355-03U-12A5-4	R3	25	25	16
ACS355-03U-15A6-4	R3	35	35	25
ACS355-03U-23A1-4	R3	50	50	35
ACS355-03U-31A0-4	R4	80	63	50
ACS355-03U-38A0-4	R4	100	80	50
ACS355-03U-44A0-4	R4	100	80	63



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