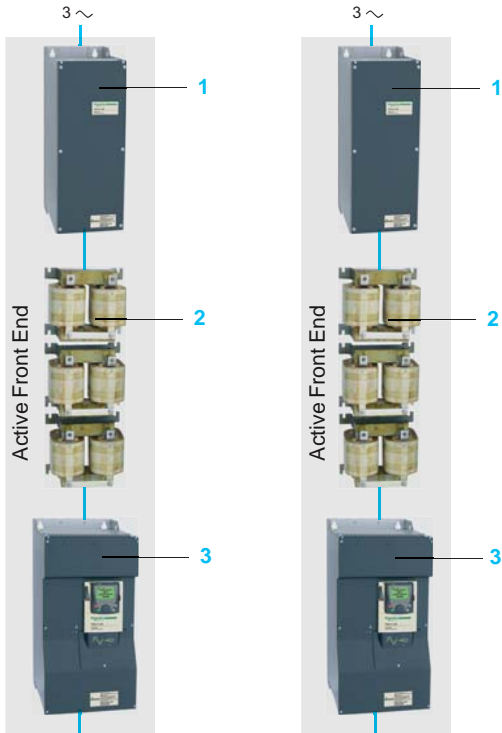


# Variable speed drives

## Altivar 61

### Option: Active Front End



Active Front End  
+  
ATV 61HC11N4D



Active Front End  
+  
ATV 61HD22N4 + ATV 61HU22N4

### Presentation

The Active Front End allows the Altivar 61 drive to be used in applications requiring a particularly low harmonic level (THDI < 4%). It complies with standard IEEE 519-1992.

It is available for a range of drives between 0.75 kW and 800 kW with three types of power supply in 50/60 Hz:

- 380...440 V three-phase
- 480 V three-phase
- 500...690 V three-phase

It has been developed to comply with European directives and to obtain CE marking.

Apart from the possibility of significantly reducing the level of harmonics, this technology offers several benefits:

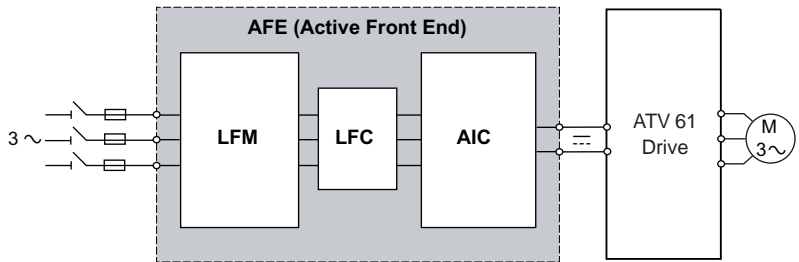
- Increased application dynamics
- Operation on unstable line supplies
- Amplification of the input voltage
- Reduced EMC emissions

The Active Front End consists of a set of three modules installed upstream of the drive, between the line supply and the motor.

It is made up of the following elements:

- A line filter module **LFM 1**, used at input and incorporating:
  - A charging circuit
  - A line contactor
  - An EMC filter
- A line choke **LFC 2**, consisting of 3 single-phase chokes; this is connected between the LFM line filter and the AIC active line supply converter
- An active line supply converter **AIC 3**

The Active Front End allows the Altivar 61 drive to be powered via the common DC bus, while limiting the total current distortion factor (THDI) to less than 4%. It can also supply direct current to several drives of different power ratings, operating in parallel, should the installation require this.



The Active Front End offers degree of protection IP 00. The ambient temperature during operation must be between - 10°C...+ 45°C (without derating, + 60°C with derating).

It is imperative that the protection of the Active Front End on the line supply side is supplemented by fuses for semi-conductors (protection against short-circuits or a system failure).

The DC bus output only requires fuse protection in the event of use in parallel with Active Front End modules.

### Applications

- Applications requiring a very low harmonic level
- Applications with high inertia and strong dynamics
- Applications on unstable line supplies

References								
For drives	Motor	Line supply	DC bus		Active Front End (1) (2)	Quantity per drive	Reference	Weight
	Power indicated on rating plate	Nominal line current 400 V	Maximum current	Continuous power 400 V				
	kW	A	A	kW				
<b>Three-phase supply voltage: 380...440 V 50/60 Hz</b>								
ATV 61H075N4... HD90N4	0.75...90	160	185	120	AIC	1	VW3 A7 250	60.000
					LFC	1	VW3 A7 265	54.000
					LFM	1	VW3 A7 260	60.000
ATV 61HC11N4D	110	160	185	120	AIC	1	VW3 A7 250	60.000
					LFC	1	VW3 A7 265	54.000
					LFM	1	VW3 A7 260	60.000
ATV 61HC13N4D	132	200	220	143	AIC	1	VW3 A7 251	74.000
					LFC	1	VW3 A7 266	69.000
					LFM	1	VW3 A7 261	80.000
ATV 61HC16N4D... HC22N4D	220	348	366	238	AIC	1	VW3 A7 253	110.000
					LFC	1	VW3 A7 267	132.000
					LFM	1	VW3 A7 262	125.000
ATV 61HC25N4D	250	395	412	268	AIC	1	VW3 A7 254	140.000
					LFC	1	VW3 A7 267	132.000
					LFM	1	VW3 A7 262	125.000
ATV 61HC31N4D	315	495	517	336	AIC	1	VW3 A7 255	140.000
					LFC	1	VW3 A7 267	132.000
					LFM	1	VW3 A7 262	125.000
ATV 61HC40N4D	400	628	654	425	AIC	1	VW3 A7 256	215.000
					LFC	2	VW3 A7 267	132.000
					LFM	2	VW3 A7 262	125.000
ATV 61HC50N4D	500	780	815	530	AIC	1	VW3 A7 257	225.000
					LFC	2	VW3 A7 267	132.000
					LFM	2	VW3 A7 262	125.000
ATV 61HC63N4D	630	980	1023	665	AIC	1	VW3 A7 258	300.000
					LFC	2	VW3 A7 267	132.000
					LFM	2	VW3 A7 262	125.000

**Dimensions (overall)**

Active line supply converter (AIC)	W x H x D mm
VW3 A7 250	310 x 680 x 377
VW3 A7 251	350 x 782 x 377
VW3 A7 253	430 x 950 x 377
VW3 A7 254	585 x 950 x 377
VW3 A7 255	585 x 950 x 377
VW3 A7 256	880 x 1150 x 377
VW3 A7 257	880 x 1150 x 377
VW3 A7 258	1110 x 1150 x 377
Line choke (LFC)	W x H x D mm
VW3 A7 265	835 x 210 x 185
VW3 A7 266	835 x 295 x 195
VW3 A7 267	970 x 360 x 255
Line filter (LFM)	W x H x D mm
VW3 A7 260	240 x 680 x 379
VW3 A7 261	290 x 730 x 379
VW3 A7 262	290 x 1100 x 379

(1) For all further information about the Active Front End, please refer to the programming manual or our website "www.schneider-electric.com".

(2) AIC = active line supply; LFC = line choke; LFM = line filter.

References								
For drives	Motor	Line supply	DC bus		Active Front End (1) (2)	Quantity per drive	Reference	Weight
	Power indicated on rating plate	Nominal line current 480 V	Maximum current	Continuous power 480 V				
	HP	A	A	kW				
<b>Three-phase supply voltage: 480 V 50/60 Hz</b>								
ATV 61H075N4... HD90N4	1...125	177	185	120	AIC	1	VW3 A7 250	60.000
					LFC	1	VW3 A7 265	54.000
					LFM	1	VW3 A7 260	60.000
ATV 61HC11N4D	150	177	185	120	AIC	1	VW3 A7 250	60.000
					LFC	1	VW3 A7 265	54.000
					LFM	1	VW3 A7 260	60.000
ATV 61HC13N4D	200	212	220	143	AIC	1	VW3 A7 251	74.000
					LFC	1	VW3 A7 266	69.000
					LFM	1	VW3 A7 261	80.000
ATV 61HC16N4D	250	265	265	172	AIC	1	VW3 A7 252	80.000
					LFC	1	VW3 A7 266	69.000
					LFM	1	VW3 A7 261	80.000
ATV 61HC22N4D	350	348	366	238	AIC	1	VW3 A7 283	110.000
					LFC	1	VW3 A7 267	132.000
					LFM	1	VW3 A7 262	125.000
ATV 61HC25N4D	400	395	412	268	AIC	1	VW3 A7 254	140.000
					LFC	1	VW3 A7 267	132.000
					LFM	1	VW3 A7 262	125.000
ATV 61HC31N4D	500	495	517	336	AIC	1	VW3 A7 255	140.000
					LFC	1	VW3 A7 267	132.000
					LFM	1	VW3 A7 262	125.000
ATV 61HC40N4D	600	628	654	425	AIC	1	VW3 A7 286	215.000
					LFC	2	VW3 A7 267	132.000
					LFM	2	VW3 A7 262	125.000
ATV 61HC50N4D	700	780	815	530	AIC	1	VW3 A7 287	225.000
					LFC	2	VW3 A7 267	132.000
					LFM	2	VW3 A7 262	125.000
ATV 61HC63N4D	900	980	1023	665	AIC	1	VW3 A7 258	300.000
					LFC	2	VW3 A7 267	132.000
					LFM	2	VW3 A7 262	125.000

Dimensions (overall)	
Active line supply converter (AIC)	W x H x D mm
VW3 A7 250	310 x 680 x 377
VW3 A7 251	350 x 782 x 377
VW3 A7 252	330 x 950 x 377
VW3 A7 283	585 x 950 x 377
VW3 A7 254	585 x 950 x 377
VW3 A7 255	585 x 950 x 377
VW3 A7 286	1110 x 1150 x 377
VW3 A7 287	1110 x 1150 x 377
VW3 A7 258	1110 x 1150 x 377
Line choke (LFC)	W x H x D mm
VW3 A7 265	835 x 210 x 185
VW3 A7 266	835 x 295 x 195
VW3 A7 267	970 x 360 x 255
Line filter (LFM)	W x H x D mm
VW3 A7 260	240 x 680 x 379
VW3 A7 261	290 x 730 x 379
VW3 A7 262	290 x 1100 x 379

(1) For all further information regarding the Active Front End, please refer to the programming manual or to our website "www.schneider-electric.com".

(2) AIC = active line supply converter; LFC = line choke; LFM = line filter.

References										
For drives	Motor	Line supply	DC bus			Active Front End (1) (2)	Quantity per drive	Reference	Weight	
			Maximum current	Continuous power						
	Power indicated on rating plate	Maximum nominal line current 500 V...690 V			500 V	600 V	690 V			
	kW	A	A	kW	kW	kW				kg
<b>Three-phase supply voltage: 500...690 V 50/60 Hz</b>										
ATV 61HC11Y	110	120	130	102	123	142	AIC	1	VW3 A7 270	110.000
							LFC	1	VW3 A7 268	99.000
							LFM	1	VW3 A7 263	80.000
ATV 61HC13Y	132	120	130	102	123	142	AIC	1	VW3 A7 270	110.000
							LFC	1	VW3 A7 268	99.000
							LFM	1	VW3 A7 263	80.000
ATV 61HC16Y	160	150	156	127	153	172	AIC	1	VW3 A7 271	110.000
							LFC	1	VW3 A7 268	99.000
							LFM	1	VW3 A7 263	80.000
ATV 61HC20Y	200	185	195	157	188	215	AIC	1	VW3 A7 272	110.000
							LFC	1	VW3 A7 268	99.000
							LFM	1	VW3 A7 263	80.000
ATV 61HC25Y	250	228	244	193	230	268	AIC	1	VW3 A7 273	190.000
							LFC	1	VW3 A7 269	210.000
							LFM	1	VW3 A7 264	125.000
ATV 61HC31Y	315	285	305	242	290	335	AIC	1	VW3 A7 274	190.000
							LFC	1	VW3 A7 269	210.000
							LFM	1	VW3 A7 264	125.000
ATV 61HC40Y	400	360	386	305	365	424	AIC	1	VW3 A7 275	190.000
							LFC	1	VW3 A7 269	210.000
							LFM	1	VW3 A7 264	125.000
ATV 61HC50Y	500	450	481	382	460	528	AIC	1	VW3 A7 276	400.000
							LFC	2	VW3 A7 269	210.000
							LFM	2	VW3 A7 264	125.000
ATV 61HC63Y	630	563	604	478	575	663	AIC	1	VW3 A7 277	400.000
							LFC	2	VW3 A7 269	210.000
							LFM	2	VW3 A7 264	125.000
ATV 61HC80Y	800	715	765	607	730	842	AIC	1	VW3 A7 278	400.000
							LFC	2	VW3 A7 269	210.000
							LFM	2	VW3 A7 264	125.000
<b>Dimensions (overall)</b>										
<b>Active line supply converter (AIC)</b>									<b>W x H x D mm</b>	
VW3 A7 270									330 x 1190 x 377	
VW3 A7 271									330 x 1190 x 377	
VW3 A7 272									330 x 1190 x 377	
VW3 A7 273									585 x 1190 x 377	
VW3 A7 274									585 x 1190 x 377	
VW3 A7 275									585 x 1190 x 377	
VW3 A7 276									1110 x 1390 x 377	
VW3 A7 277									1110 x 1390 x 377	
VW3 A7 278									1110 x 1390 x 377	
<b>Line choke (LFC)</b>									<b>W x H x D mm</b>	
VW3 A7 268									835 x 295 x 210	
VW3 A7 269									985 x 540 x 250	
<b>Line filter (LFM)</b>									<b>W x H x D mm</b>	
VW3 A7 263									290 x 730 x 370	
VW3 A7 264									290 x 1100 x 390	

(1) For all further information regarding the Active Front End, please refer to the programming manual or to our website "www.schneider-electric.com".

(2) AIC = active line supply converter; LFC = line choke; LFM = line filter.