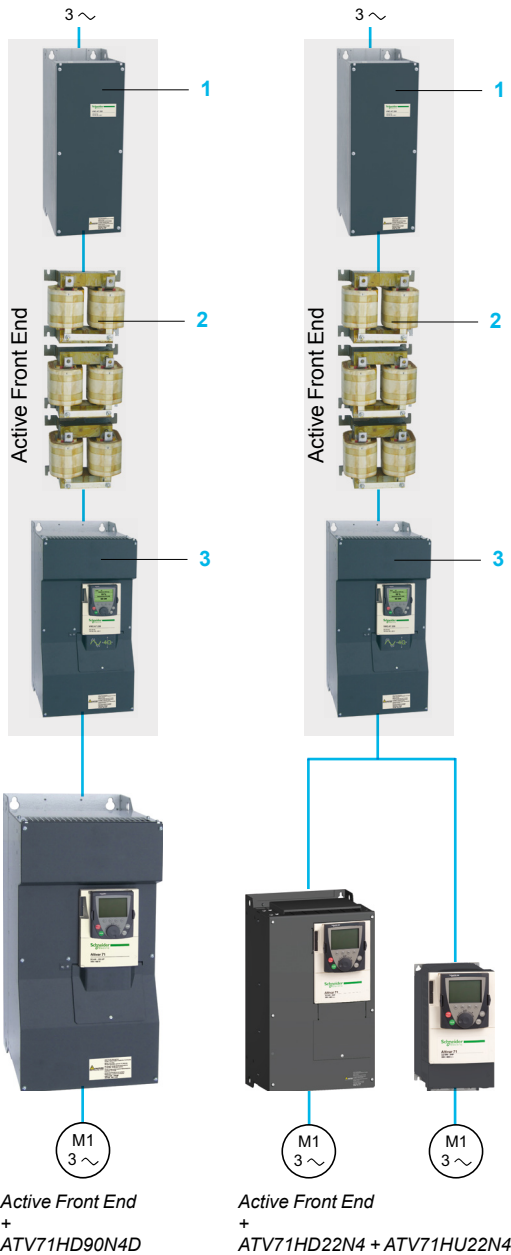


Variable speed drives

Altivar 71

Option: Active Front End

1



Presentation

The Active Front End allows Altivar 71 drives to return energy to the line supply. With 4-quadrant operation, the Active Front End is ideal for applications that allow a generator mode.

It is available for a range of drives between 0.75 kW and 630 kW with three types of 50/60 Hz power supply:

- 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
- Power factor ($\cos \phi$) of 1

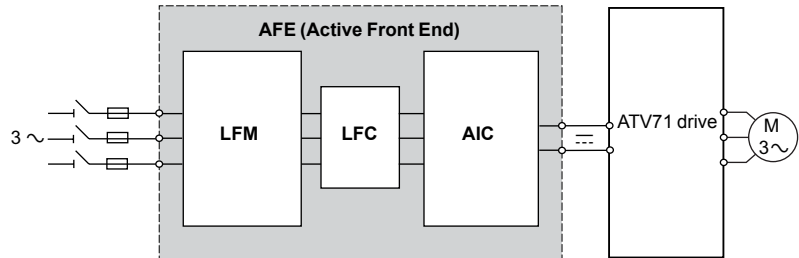
The Active Front End consists of a set of three modules installed upstream of the drive between the line supply and the motor.

It is made up of the following elements:

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

The Active Front End powers the Altivar 71 drive via the common DC bus, while enabling it to return energy to the line supply. It is also used to:

- Limit the total current distortion factor (THDI) to less than 4%
- Supply direct current to several drives of different power ratings, operating in parallel, if required by the installation



The Active Front End offers IP 00 protection. The ambient air temperature during operation must be between - 10°C and + 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 (to protect against short-circuits or a system failure).

The DC bus output only requires fuse protection if Active Front End modules are used in parallel.

Applications

Applications with energy return on driving load:

- Cranes, hoists, platform trucks (long travel), etc.
- Downhill conveyors, winches, escalators, etc.

Test benches and drives with high dynamics

Applications requiring a very low harmonic level

Applications with high inertia and strong dynamics

References								
For drives	Motor	Line supply	DC bus		Active Front End (1) (2)	Quantity per drive	Reference	Weight kg
	Power indicated on rating plate	Nominal line current 400 V	Maximum current	Continuous power 400 V				
	kW	A	A	kW				
Three-phase supply voltage: 380...440 V 50/60 Hz								
ATV71H075N4... HD90N4D	0.75...90	177	185	120	AIC	1	VW3A7250	60.000
					LFC	1	VW3A7265	54.000
					LFM	1	VW3A7260	60.000
ATV71HC11N4D	110	212	220	143	AIC	1	VW3A7251	74.000
					LFC	1	VW3A7266	69.000
					LFM	1	VW3A7261	80.000
ATV71HC13N4D	132	255	265	172	AIC	1	VW3A7252	80.000
					LFC	1	VW3A7266	69.000
					LFM	1	VW3A7261	80.000
ATV71HC16N4D	160	348	366	238	AIC	1	VW3A7253	110.000
					LFC	1	VW3A7267	132.000
					LFM	1	VW3A7262	125.000
ATV71HC20N4D	200	395	412	268	AIC	1	VW3A7254	140.000
					LFC	1	VW3A7267	132.000
					LFM	1	VW3A7262	125.000
ATV71HC25N4D	250	495	517	336	AIC	1	VW3A7255	140.000
					LFC	1	VW3A7267	132.000
					LFM	1	VW3A7262	125.000
ATV71HC28N4D	280	558	581	378	AIC	1	VW3A7256	215.000
					LFC	2	VW3A7267	132.000
					LFM	2	VW3A7262	125.000
ATV71HC31N4D	315	628	654	425	AIC	1	VW3A7256	215.000
					LFC	2	VW3A7267	132.000
					LFM	2	VW3A7262	125.000
ATV71HC40N4D	400	780	815	530	AIC	1	VW3A7257	225.000
					LFC	2	VW3A7267	132.000
					LFM	2	VW3A7262	125.000
ATV71HC50N4D	500	980	1023	665	AIC	1	VW3A7258	300.000
					LFC	2	VW3A7267	132.000
					LFM	2	VW3A7262	125.000

Dimensions (overall)

Active infeed converter (AIC)	W x H x D mm
VW3A7250	310 x 680 x 377
VW3A7251	350 x 782 x 377
VW3A7252	330 x 950 x 377
VW3A7253	430 x 950 x 377
VW3A7254	585 x 950 x 377
VW3A7255	585 x 950 x 377
VW3A7256	880 x 1150 x 377
VW3A7257	880 x 1150 x 377
VW3A7258	1110 x 1150 x 377

Line filter choke (LFC)

Line filter choke (LFC)	W x H x D mm
VW3A7265	835 x 210 x 185
VW3A7266	835 x 295 x 195
VW3A7267	970 x 360 x 255

Line filter module (LFM)

Line filter module (LFM)	W x H x D mm
VW3A7260	240 x 680 x 379
VW3A7261	290 x 730 x 379
VW3A7262	290 x 1100 x 379

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

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

References (continued)

For drives	Motor	Line supply	DC bus		Active Front End (1) (2)	Quantity per drive	Reference	Weight kg
	Power indicated on rating plate	Nominal line current 480 V	Maximum current	Continuous power 480 V				
	HP	A	A	kW				
Three-phase supply voltage: 480 V 50/60 Hz								
ATV71H075N4... HD90N4D	1...125	160	163	120	AIC	1	VW3A7250	60.000
					LFC	1	VW3A7265	54.000
					LFM	1	VW3A7260	60.000
ATV71HC11N4D	150	200	203	143	AIC	1	VW3A7251	74.000
					LFC	1	VW3A7266	69.000
					LFM	1	VW3A7261	80.000
ATV71HC13N4D	200	200	203	172	AIC	1	VW3A7252	80.000
					LFC	1	VW3A7266	69.000
					LFM	1	VW3A7261	80.000
ATV71HC16N4D	250	348	366	238	AIC	1	VW3A7283	110.000
					LFC	1	VW3A7267	132.000
					LFM	1	VW3A7262	125.000
ATV71HC20N4D	300	395	412	268	AIC	1	VW3A7254	140.000
					LFC	1	VW3A7267	132.000
					LFM	1	VW3A7262	125.000
ATV71HC25N4D	400	495	517	336	AIC	1	VW3A7255	140.000
					LFC	1	VW3A7267	132.000
					LFM	1	VW3A7262	125.000
ATV71HC28N4D	450	558	581	378	AIC	1	VW3A7286	215.000
					LFC	2	VW3A7267	132.000
					LFM	2	VW3A7262	125.000
ATV71HC31N4D	500	628	654	425	AIC	1	VW3A7286	215.000
					LFC	2	VW3A7267	132.000
					LFM	2	VW3A7262	125.000
ATV71HC40N4D	600	780	815	530	AIC	1	VW3A7287	225.000
					LFC	2	VW3A7267	132.000
					LFM	2	VW3A7262	125.000
ATV71HC50N4D	700	980	1023	665	AIC	1	VW3A7258	300.000
					LFC	2	VW3A7267	132.000
					LFM	2	VW3A7262	125.000

Dimensions (overall)

Active infeed converter (AIC)

	W x H x D mm
VW3A7250	310 x 680 x 377
VW3A7251	350 x 782 x 377
VW3A7252	330 x 950 x 377
VW3A7283	585 x 950 x 377
VW3A7254	585 x 950 x 377
VW3A7255	585 x 950 x 377
VW3A7286	1110 x 1150 x 377
VW3A7287	1110 x 1150 x 377
VW3A7258	1110 x 1150 x 377

Line filter choke (LFC)

	W x H x D mm
VW3A7265	835 x 210 x 185
VW3A7266	835 x 295 x 195
VW3A7267	970 x 360 x 255

Line filter module (LFM)

	W x H x D mm
VW3A7260	240 x 680 x 379
VW3A7261	290 x 730 x 379
VW3A7262	290 x 1100 x 379

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

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

References (continued)										
For drives	Motor	Line supply	DC bus			Active Front End (1) (2)	Quantity per drive	Reference	Weight	
	Power indicated on rating plate	Maximum nominal line current 500 V...690 V	Maximum current	Continuous power						
				500 V	600 V					690 V
kW	A	A	kW	kW	kW				kg	
Three-phase supply voltage: 500...690 V 50/60 Hz										
ATV71HC11Y (3)	110	120	130	102	123	142	AIC	1	VW3A7270	110.000
							LFC	1	VW3A7268	99.000
							LFM	1	VW3A7263	80.000
ATV71HC13Y (3)	132	150	156	127	153	172	AIC	1	VW3A7271	110.000
							LFC	1	VW3A7268	99.000
							LFM	1	VW3A7263	80.000
ATV71HC16Y (3)	160	185	195	157	188	215	AIC	1	VW3A7272	110.000
							LFC	1	VW3A7268	99.000
							LFM	1	VW3A7263	80.000
ATV71HC20Y (3)	200	228	244	193	230	268	AIC	1	VW3A7273	190.000
							LFC	1	VW3A7269	210.000
							LFM	1	VW3A7264	125.000
ATV71HC25Y (3)	250	285	305	242	290	335	AIC	1	VW3A7274	190.000
							LFC	1	VW3A7269	210.000
							LFM	1	VW3A7264	125.000
ATV71HC31Y (3)	315	360	386	305	365	424	AIC	1	VW3A7275	190.000
							LFC	1	VW3A7269	210.000
							LFM	1	VW3A7264	125.000
ATV71HC40Y (4)	400	450	481	382	460	528	AIC	1	VW3A7276	400.000
							LFC	2	VW3A7269	210.000
							LFM	2	VW3A7264	125.000
ATV71HC50Y (4)	500	563	604	478	575	663	AIC	1	VW3A7277	400.000
							LFC	2	VW3A7269	210.000
							LFM	2	VW3A7264	125.000
ATV71HC63Y (4)	630	715	765	607	730	842	AIC	1	VW3A7278	400.000
							LFC	2	VW3A7269	210.000
							LFM	2	VW3A7264	125.000

Dimensions (overall)

Active infeed converter (AIC)	W x H x D mm
VW3A7270	330 x 1190 x 377
VW3A7271	330 x 1190 x 377
VW3A7272	330 x 1190 x 377
VW3A7273	585 x 1190 x 377
VW3A7274	585 x 1190 x 377
VW3A7275	585 x 1190 x 377
VW3A7276	1110 x 1390 x 377
VW3A7277	1110 x 1390 x 377
VW3A7278	1110 x 1390 x 377
Line filter choke (LFC)	W x H x D mm
VW3A7268	835 x 295 x 210
VW3A7269	985 x 540 x 250
Line filter module (LFM)	W x H x D mm
VW3A7263	290 x 730 x 370
VW3A7264	290 x 1100 x 390

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

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

(3) Requires a 6 V fan wiring option, reference VW3A7280. For more information, please visit our website www.schneider-electric.com.

(4) Requires two 6 V fan wiring options, reference VW3A7280. For more information, please visit our website www.schneider-electric.com.