Variable speed drives

Altivar 71 and Altivar 71 Plus

for three-phase motors
from 0.37 kW/0.5 HP to 2000 kW

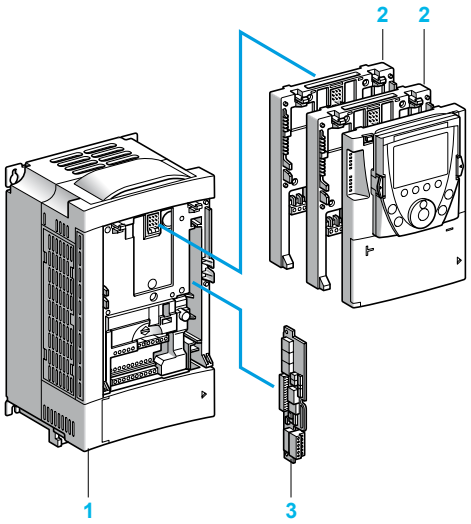
Catalogue

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Schneider Electric



A wide range of options

The numerous options designed for the Altivar 71 drive make it highly flexible and extremely easy to adapt to applications.

Option cards

The Altivar 71 drive **1** can integrate up to three different option cards simultaneously, including:

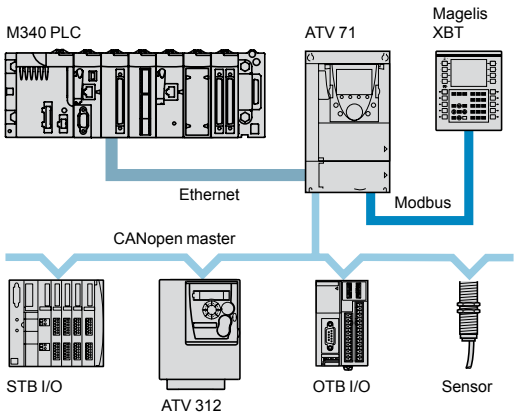
- Two of the following cards:
  - I/O extension cards **2** (see page 1/45)
  - Communication cards **2** (Modbus TCP Daisy Chain, Modbus/Uni-Telway, EtherNet/IP, DeviceNet, PROFIBUS DP, Profinet, POWERLINK etc.) (see page 1/50)
  - Controller Inside programmable card **2** to adapt the variable speed drive to specific applications (see page 1/46)
- One of the following encoder interface cards **3**: with RS 422-compatible differential outputs; with open collector outputs (NPN); with push-pull outputs; resolver; with SinCos, SinCos Hiperface®, EnDat®, or SSI universal outputs; with RS 422-compatible differential outputs plus encoder emulation (RS 422 ESIM) (see page 1/44)

Other options

Numerous other external options can be combined with the Altivar 71:

- Braking units and resistors (standard or hoist-specific) (see pages 1/56 to 1/61)
- Network braking units (see pages 1/62 to 1/63)
- Active Front End (AFE) to use the drive to return energy to the line supply or when the installation requires particularly low harmonic levels; in addition it operates on unstable line supplies (see pages 1/64 to 1/67)
- DC chokes, line chokes and passive filters to reduce harmonic currents (see pages 1/68 to 1/77)
- Additional EMC input filters to reduce conducted emissions on the line (see pages 1/78 and 1/79)
- Motor chokes and sinus filters for long cable runs or to remove the need for shielding (see pages 1/82 to 1/85)

***Note:** Please refer to the compatibility summary tables to determine which options are available for individual drives (see pages 1/32 to 1/43).*



Integration into PLC architectures

The Altivar 71 drive has a built-in combined Modbus or CANopen port for quick, accurate motion control, adjustment, supervision and configuration. A second port is available for connecting a Magelis terminal for machine dialogue.

The Altivar 71 drive can be integrated into many networked industrial applications using the communication option cards.
The following protocols are available:
Modbus TCP Daisy Chain, Modbus/Uni-Telway, EtherNet/IP, DeviceNet, Profinet, PROFIBUS DP V0 and V1, INTERBUS, CC-LINK and Ethernet POWERLINK (see pages 1/50 to 1/55).

The option of powering the control section separately enables communication (monitoring, diagnostics) to be maintained even if there is no power supply to the control section.

The Controller Inside programmable card transforms the drive into an automation island. This is used to adapt the drive to specific applications quickly and progressively, by decentralizing the control system functions (pages 1/46 to 1/49):

- The card has its own I/O; it can also manage those of the drive and an I/O extension card.
- It contains onboard application programs developed in IEC/EN 61131-3 languages, which reduce the control system response time.
- Its CANopen master port enables control of other drives and dialogue with I/O modules and sensors.

Variable speed drives

Altivar 71

Supply voltage: 380...480 V 50/60 Hz

IP 20 drives

107464



ATV71HU22N4

107478



ATV71HU40N4Z

101016



ATV71HC28N4

IP 20 drives

Motor		Line supply				Altivar 71					
Power indicated on rating plate (1)		Line current (2)		Apparent power	Max. prospective line Isc	Maximum continuous current (1)		Max. transient current for		Reference (3)	Weight
		380 V	480 V	380 V		380 V (IEC)	460 V (NEC)	60 s	2 s		
kW	HP	A	A	kVA	kA	A	A	A	A		kg
Three-phase supply voltage: 380…480 V 50/60 Hz											
0.75	1	3.7	3	2.4	5	2.3	2.1	3.5	3.8	**ATV71H075N4**	3.000
1.5	2	5.8	5.3	3.8	5	4.1	3.4	6.2	6.8	**ATV71HU15N4**	3.000
2.2	3	8.2	7.1	5.4	5	5.8	4.8	8.7	9.6	**ATV71HU22N4**	3.000
3	–	10.7	9	7	5	7.8	6.2	11.7	12.9	**ATV71HU30N4**	4.000
4	5	14.1	11.5	9.3	5	10.5	7.6	15.8	17.3	**ATV71HU40N4**	4.000
5.5	7.5	20.3	17	13.4	22	14.3	11	21.5	23.6	**ATV71HU55N4**	5.500
7.5	10	27	22.2	17.8	22	17.6	14	26.4	29	**ATV71HU75N4**	5.500
11	15	36.6	30	24.1	22	27.7	21	41.6	45.7	**ATV71HD11N4**	7.000
15	20	48	39	31.6	22	33	27	49.5	54.5	**ATV71HD15N4**	22.000
18.5	25	45.5	37.5	29.9	22	41	34	61.5	67.7	**ATV71HD18N4**	22.000
22	30	50	42	32.9	22	48	40	72	79.2	**ATV71HD22N4**	30.000
30	40	66	56	43.4	22	66	52	99	109	**ATV71HD30N4**	37.000
37	50	84	69	55.3	22	79	65	118.5	130	**ATV71HD37N4**	37.000
45	60	104	85	68.5	22	94	77	141	155	**ATV71HD45N4**	44.000
55	75	120	101	79	22	116	96	174	191	**ATV71HD55N4**	44.000
75	100	167	137	109.9	22	160	124	240	264	**ATV71HD75N4**	44.000
90	125	166	134	109.3	35	179	179	269	295	**ATV71HD90N4** (4)	100.000
110	150	202	163	133	35	215	215	323	355	**ATV71HC11N4** (4)	122.000
132	200	239	192	157.3	35	259	259	388	427	**ATV71HC13N4** (4)	116.000
160	250	289	233	190.2	50	314	314	471	518	**ATV71HC16N4** (4)	163.000
200	300	357	286	235	50	387	387	580	638	**ATV71HC20N4** (4)	207.000
220	350	396	320	260.6	50	427	427	640	704	**ATV71HC25N4** (4)	207.000
250	400	444	357	292.2	50	481	481	721	793		
280	450	494	396	325.1	50	550	550	825	907	**ATV71HC28N4** (4)	207.000
315	500	555	444	365.3	50	616	616	924	1016	**ATV71HC31N4** (4)	320.000
355	–	637	512	419.3	50	671	671	1006	1107	**ATV71HC40N4** (4)	330.000
400	600	709	568	466.6	50	759	759	1138	1252		
500	700	876	699	576.6	50	941	941	1411	1552	**ATV71HC50N4** (4)	435.000

Dimensions (overall)

Drives	W x H x D mm
ATV71H075N4…HU22N4	130 x 230 x 175
ATV71HU30N4, HU40N4	155 x 260 x 187
ATV71HU55N4, HU75N4	175 x 295 x 187
ATV71HD11N4	210 x 295 x 213
ATV71HD15N4, HD18N4	230 x 400 x 213
ATV71HD22N4	240 x 420 x 236
ATV71HD30N4, HD37N4	240 x 550 x 266
ATV71HD45N4…HD75N4	320 x 630 x 290
ATV71HD90N4	320 x 920 x 377
ATV71HC11N4	360 x 1022 x 377
ATV71HC13N4	340 x 1190 x 377
ATV71HC16N4	440 x 1190 x 377
ATV71HC20N4…HC28N4	595 x 1190 x 377
ATV71HC31N4, HC40N4	890 x 1390 x 377
ATV71HC50N4	1120 x 1390 x 377

(1) These values are given for a nominal switching frequency of 4 kHz up to ATV71HD30N4 or 2.5 kHz for ATV71HD37N4…HC50N4 drives for use in continuous operation.
The switching frequency is adjustable from 1…16 kHz up to ATV71HD75N4 and from 2.5…8 kHz for ATV71HD90N4…ATV71HC50N4 drives.
Above 2.5 or 4 kHz, depending on the rating, the drive will reduce the switching frequency automatically in the event of an excessive temperature rise. For continuous operation above the nominal switching frequency, derate the nominal drive current (see derating curves on our website www.schneider-electric.com).
(2) Typical value for the indicated motor power and for the maximum prospective line Isc.
(3) Variants available (see page 1/20).
(4) Drive supplied without plate for EMC mounting. This is included in the UL Type 1 or IP 31 kit, which must be ordered separately (see pages 1/24 and 1/25).

Note: *Consult the summary tables of possible drive, option and accessory combinations (see page 1/34).*

Variants: page 1/20 | Accessories: page 1/21 | Dialogue: page 1/28 | Drive/option combinations: page 1/32

1

Table showing possible combinations of ATV71H●●●N4 drive options

Motor kW	Motor *HP*	Drive	Options: DC choke	Line choke	50 Hz passive filters: THDI 16%	50 Hz passive filters: THDI 10%	50 Hz passive filters: THDI 5%	60 Hz passive filters: THDI 16%	60 Hz passive filters: THDI 10%	60 Hz passive filters: THDI 5%	Additional EMC input filter
Three-phase supply voltage: 380…480 V 50/60 Hz											
0.75	*1*	**ATV71H075N4**	VW3A4501	VW3A4551	VW3A46101	VW3A46120	–	VW3A46139	VW3A46158	–	VW3A4401
1.5	*2*	**ATV71HU15N4**	VW3A4502	VW3A4551	VW3A46101	VW3A46120	–	VW3A46139	VW3A46158	–	VW3A4401
2.2	*3*	**ATV71HU22N4**	VW3A4503	VW3A4552	VW3A46101	VW3A46120	–	VW3A46139	VW3A46158	–	VW3A4401
3	–	**ATV71HU30N4**	VW3A4503	VW3A4552	VW3A46101	VW3A46120	–	VW3A46139	VW3A46158	–	VW3A4402
4	*5*	**ATV71HU40N4**	VW3A4504	VW3A4552	VW3A46102	VW3A46121	–	VW3A46140	VW3A46159	–	VW3A4402
5.5	*7.5*	**ATV71HU55N4**	VW3A4505	VW3A4553	VW3A46102	VW3A46121	–	VW3A46140	VW3A46159	–	VW3A4403
7.5	*10*	**ATV71HU75N4**	VW3A4506	VW3A4553	VW3A46103	VW3A46122	–	VW3A46141	VW3A46160	–	VW3A4403
11	*15*	**ATV71HD11N4**	VW3A4507	VW3A4554	VW3A46104	VW3A46123	–	VW3A46142	VW3A46161	–	VW3A4404
15	*20*	**ATV71HD15N4**	VW3A4508	VW3A4554	VW3A46105	VW3A46124	–	VW3A46143	VW3A46162	–	VW3A4405
18.5	*25*	**ATV71HD18N4**	VW3A4508	VW3A4555	VW3A46106	VW3A46125	–	VW3A46144	VW3A46163	–	VW3A4405
22	*30*	**ATV71HD22N4**	VW3A4510	VW3A4555	VW3A46107	VW3A46126	–	VW3A46145	VW3A46164	–	VW3A4406
30	*40*	**ATV71HD30N4**	VW3A4510	VW3A4556	VW3A46108	VW3A46127	–	VW3A46146	VW3A46165	–	VW3A4407
37	*50*	**ATV71HD37N4**	VW3A4510	VW3A4556	VW3A46109	VW3A46128	–	VW3A46147	VW3A46166	–	VW3A4407
45	*60*	**ATV71HD45N4**	VW3A4511	VW3A4556	VW3A46110	VW3A46129	–	VW3A46148	VW3A46167	–	VW3A4408
55	*75*	**ATV71HD55N4**	VW3A4511	VW3A4556	VW3A46111	VW3A46130	–	VW3A46149	VW3A46168	–	VW3A4408
75	*100*	**ATV71HD75N4**	VW3A4511	VW3A4558	VW3A46112	VW3A46131	–	VW3A46150	VW3A46169	–	VW3A4408
90	*125*	**ATV71HD90N4**	–	VW3A4558 *(1)*	–	VW3A46112	VW3A46131	–	VW3A46151	VW3A46170	VW3A4410
110	*150*	**ATV71HC11N4**	–	VW3A4559 *(1)*	–	VW3A46113	VW3A46132	–	VW3A46152	VW3A46171	VW3A4410
132	*200*	**ATV71HC13N4**	–	VW3A4560 *(1)*	–	VW3A46114	VW3A46133	–	VW3A46153	VW3A46172	VW3A4410
160	*250*	**ATV71HC16N4**	–	VW3A4561 *(1)*	–	VW3A46116	VW3A46135	–	VW3A46153	VW3A46172	VW3A4411
200	*300*	**ATV71HC20N4**	–	VW3A4569 *(1)*	–	VW3A46118	VW3A46137	–	VW3A46155	VW3A46174	VW3A4411
220	*350*	**ATV71HC25N4**	–	VW3A4562 *(1)*	–	VW3A46118	VW3A46137	–	VW3A46155	VW3A46174	VW3A4411
250	*400*	**ATV71HC25N4**	–	VW3A4564 *(1)*	–	VW3A46119	VW3A46138	–	VW3A46157	VW3A46176	VW3A4411
280	*450*	**ATV71HC28N4**	–	VW3A4564 *(1)*	–	VW3A46115	VW3A46134	–	VW3A46157	VW3A46176	VW3A4411
315	*500*	**ATV71HC31N4**	–	VW3A4565 *(1)*	–	VW3A46116	VW3A46135	–	VW3A46153	VW3A46172	VW3A4412
355	–	**ATV71HC40N4**	–	VW3A4569 *(1)*	–	VW3A46116	VW3A46135	–	VW3A46154	VW3A46173	VW3A4412
400	*600*	**ATV71HC40N4**	–	VW3A4569 *(1)*	–	VW3A46117	VW3A46136	–	VW3A46154	VW3A46173	VW3A4412
500	*700*	**ATV71HC50N4**	–	VW3A4564 *(1)*	–	VW3A46119	VW3A46138	–	VW3A46156	VW3A46175	VW3A4413
Page		1/15	1/69	1/71	1/74	1/74	1/75	1/76	1/76	1/77	1/79

Table showing possible combinations of ATV71Q●●●N4 drive options

Motor kW	Motor *HP*	Drive	Options: DC choke	Line choke	50 Hz passive filters: THDI 16%	50 Hz passive filters: THDI 10%	50 Hz passive filters: THDI 5%	60 Hz passive filters: THDI 16%	60 Hz passive filters: THDI 10%	60 Hz passive filters: THDI 5%	Additional EMC input filter
Supply voltage: 380…480 V 50/60 Hz											
90	*125*	**ATV71QD90N4**	–	VW3A4559 *(1)*	–	VW3A46112	VW3A46131	–	VW3A46151	VW3A46170	VW3A4410
110	*150*	**ATV71QC11N4**	–	VW3A4560 *(1)*	–	VW3A46113	VW3A46132	–	VW3A46152	VW3A46171	VW3A4410
132	*200*	**ATV71QC13N4**	–	VW3A4568 *(1)*	–	VW3A46114	VW3A46133	–	VW3A46153	VW3A46172	VW3A4410
160	*250*	**ATV71QC16N4**	–	VW3A4561 *(1)*	–	VW3A46116	VW3A46135	–	VW3A46153	VW3A46172	VW3A4411
200	*300*	**ATV71QC20N4**	–	VW3A4569 *(1)*	–	VW3A46118	VW3A46137	–	VW3A46155	VW3A46174	VW3A4411
220	*350*	**ATV71QC25N4**	–	VW3A4564 *(1)*	–	VW3A46118	VW3A46137	–	VW3A46155	VW3A46174	VW3A4411
250	*400*	**ATV71QC25N4**	–	VW3A4564 *(1)*	–	VW3A46119	VW3A46138	–	VW3A46157	VW3A46176	VW3A4411
315	*500*	**ATV71QC31N4**	–	VW3A4561 *(1)*	–	VW3A46116	VW3A46135	–	VW3A46153	VW3A46172	VW3A4412
355	–	**ATV71QC40N4**	–	VW3A4563 *(1)*	–	VW3A46116	VW3A46135	–	VW3A46154	VW3A46173	VW3A4412
400	*600*	**ATV71QC40N4**	–	VW3A4563 *(1)*	–	VW3A46117	VW3A46136	–	VW3A46154	VW3A46173	VW3A4412
500	*700*	**ATV71QC50N4**	–	VW3A4573 *(1)*	–	VW3A46119	VW3A46138	–	VW3A46156	VW3A46175	VW3A4413
Page		1/16	–	1/71	–	1/74	1/75	–	1/76	1/77	1/79

(1) For drives with a power rating of 90 kW or more without an integrated DC choke, a line choke must be used. This is the case for ATV71HD90N4D to ATV71HC50N4D drives (see page 1/20) and for ATV71QD90N4 to ATV61QC●●N4 drives.
ATV71HD90N4D to ATV71HC50N4D drives are variants without an integrated DC choke of ATV71HD90N4 to ATV71HC50N4 drives.

Note: *The quantity of certain required options varies according to the drive used. For more information, refer to pages 1/59 to 1/77.*

Variable speed drives
Altivar 71
Option: braking resistors


VW3A7701

References (continued)

For drives	Degree of protection of the resistor	Ohmic value at 20°C	Average power available at 50°C *(1)*	Reference	Weight
		Ω	kW		kg
Supply voltage: 380…480 V 50/60 Hz					
ATV71H075N4…HU40N4 ATV71W075N4, WU40N4 ATV71P075N4Z…PU55N4Z	IP 20	100	0.05	**VW3A7701**	1.900
ATV71HU55N4, HU75N4 ATV71WU55N4, WU75N4 ATV71PU55N4Z, PU75N4Z	IP 20	60	0.1	**VW3A7702**	2.400
ATV71HD11N4, HD15N4 ATV71WD11N4, WD15N4 ATV71PD11N4Z	IP 20	28	0.2	**VW3A7703**	3.500
ATV71HD18N4…HD30N4 ATV71WD18N4…WD30N4	IP 20	15	1	**VW3A7704**	11.000
ATV71HD37N4 ATV71WD37N4	IP 20	10	1	**VW3A7705**	11.000
ATV71HD45N4...HD75N4 ATV71WD45N4...WD75N4	IP 20	5	1.3	**VW3A7707**	11.00
ATV71HD90N4 ATV71QD90N4	IP 23	2.75	25	**VW3A7710**	80.000
ATV71HC11N4, HC13N4 ATV71QC11N4, QC13N4	IP 23	2.1	37	**VW3A7711**	86.000
ATV71HC16N4 ATV71QC16N4	IP 23	2.1	44	**VW3A7712**	104.000
ATV71HC20N4 ATV71QC20N4	IP 23	1.05	56	**VW3A7715**	136.000
ATV71HC25N4, HC28N4 ATV71QC25N4	IP 23	1.05	75	**VW3A7716**	172.000
ATV71HC31N4, HC40N4 ATV71QC31N4, QC40N4	IP 23	0.7	112	**VW3A7717**	266.000
ATV71HC50N4 ATV71QC50N4	IP 23	0.7	150	**VW3A7718**	350.000

(1) Load factor for resistors: the value of the average power that can be dissipated at 50°C from the resistor into the casing is determined for a load factor during braking that corresponds to the majority of normal applications:
For VW3A7701…705 and VW3A7707:
- 2 s braking with a 0.6 Tn braking torque for a 40 s cycle
- 0.8 s braking with a 1.5 Tn braking torque for a 40 s cycle
For VW3A7710…712 and 715…718:
- 10 s braking with a 2 Tn braking torque for a 30 s cycle

Drive/option combinations:
pages 1/32 to 1/43

Variable speed drives

Altivar 71: reduction of current harmonics

Option: line chokes

PF107532



VW3A4572

References

For drives	Line supply Isc	Line choke				Quantity required per drive	Reference	Weight
		Inductance value	Nominal current	Saturation current	Losses			
	kA	mH	A	A	W			kg
Single-phase supply voltage: 200…240 V 50/60 Hz								
ATV71HU40M3 *(1)*	5	2	25	–	45	1	**VW3A58501**	3.500
ATV71HU55M3 *(1)*	5	1	45	–	50	1	**VW3A58502**	3.500
ATV71HU75M3 *(1)*	22	1	45	–	50	1	**VW3A58502**	3.500
Three-phase supply voltage: 200…240 V 50/60 Hz								
ATV71H037M3, H075M3	5	10	4	–	45	1	**VW3A4551**	1.500
ATV71HU15M3, HU22M3	5	4	10	–	65	1	**VW3A4552**	3.000
ATV71HU30M3	5	2	17	–	75	1	**VW3A4553**	3.500
ATV71HU40M3	5	1	31	–	90	1	**VW3A4554**	6.000
ATV71HU55M3	22	1	31	–	90	1	**VW3A4554**	6.000
ATV71HU75M3, HD11M3X	22	0.5	60	–	94	1	**VW3A4555**	11.000
ATV71HD15M3X	22	0.3	107	–	260	1	**VW3A4556**	16.000
ATV71HD18M3X…HD45M3X	22	0.15	230	–	400	1	**VW3A4557**	45.000
ATV71HD55M3X	35	0.049	429	855	278	1	**VW3A4562**	50.000
ATV71HD75M3X	35	0.038	509	1025	280	1	**VW3A4563**	59.000
Three-phase supply voltage: 380…480 V 50/60 Hz								
ATV71H075N4, HU15N4 ATV71W075N4, WU15N4 ATV71P075N4Z, PU15N4Z	5	10	4	–	45	1	**VW3A4551**	1.500
ATV71HU22N4…HU40N4 ATV71WU22N4…WU40N4 ATV71PU22N4Z…PU40N4Z	5	4	10	–	65	1	**VW3A4552**	3.000
ATV71HU55N4, HU75N4 ATV71WU55N4, WU75N4 ATV71PU55N4Z, PU75N4Z	22	2	17	–	75	1	**VW3A4553**	3.500
ATV71HD11N4, HD15N4 ATV71WD11N4, WD15N4 ATV71PD11N4Z	22	1	31	–	90	1	**VW3A4554**	6.000
ATV71HD18N4, HD22N4 ATV71WD18N4, WD22N4	22	0.5	60	–	94	1	**VW3A4555**	11.000
ATV71HD30N4…HD55N4 ATV71WD30N4…WD55N4	22	0.3	107	–	260	1	**VW3A4556**	16.000
ATV71HD75N4 ATV71WD75N4	22	0.155	184	370	220	1	**VW3A4558**	31.000
ATV71HD90N4D, HC11N4D *(2)*	35	0.12	222	346	278	1	**VW3A4559**	35.000
ATV71HC13N4D *(2)*	35	0.098	264	530	245	1	**VW3A4560**	43.000
ATV71HC16N4D *(2)*	50	0.066	344	685	258	1	**VW3A4561**	47.000
ATV71HC20N4D *(2)*	50	0.060	450	850	335	1	**VW3A4569**	70.000
ATV71HC25N4D, HC28N4D *(2)*	50	0.038	613	1150	307	1	**VW3A4564**	73.000
ATV71HC31N4D *(2)*	50	0.032	720	1352	428	1	**VW3A4565**	82.000
ATV71HC40N4D *(2)*	50	0.060	450	850	335	2	**VW3A4569**	70.000
ATV71HC50N4D *(2)*	50	0.038	613	1150	307	2	**VW3A4564**	73.000

(1) Use of a line choke is recommended.
(2) Use of a line choke is mandatory (see table of combinations on page 1/34).

Drive/option combinations:
pages 1/32 to 1/43

Variable speed drives
Altivar 71: EMC filters
Integrated filters and optional additional filters

Integrated EMC filters

Altivar 71 drives, except for the ATV71H●●●M3X, have built-in radio interference filters to meet the EMC standard for variable speed electrical power drive "products" IEC/EN 60800-3, edition 2, category C2 or C3 in environment 1 or 2 and to comply with the European Electromagnetic Compatibility Directive (EMC).

Drives	Maximum length of shielded cable *(1)* according to			
	EN 55011 class A Gr1		EN 55011 class A Gr2	
	IEC/EN 61800-3 category C2		IEC/EN 61800-3 category C3	
	LF	HF	LF	HF
	m	m	m	m
ATV71H037M3…HU22M3	10	5	–	–
ATV71HU30M3…HU75M3	–	–	10	5
ATV71H075N4…HU40N4 ATV71W075N4…WU40N4 ATV71P075N4Z…PU40N4Z	10	5	–	–
ATV71HU55N4…HD15N4 ATV71WU55N4…WD15N4 ATV71PU55N4Z…PD11N4Z	–	–	10	5
ATV71HD18N4…HC50N4 ATV71WD18N4…WD75N4	–	–	50	25
ATV71HU22Y…HD90Y	–	–	25	25
ATV71HC11Y…HC63Y	–	–	50	25

Switching frequency

Drives	Switching frequency	
	LF (low frequency)	HF (high frequency)
	kHz	kHz
ATV71H●●●M3 ATV71H075N4…HD30N4 ATV71W075N4…WD30N4 ATV71P075N4Z…PD11N4Z	4	4.1…16
ATV71HD37N4…HD75N4 ATV71WD37N4…WD75N4	2…2.5	2.6…12
ATV71HD90N4…HC50N4	2…4	4.1…8
ATV71HU22Y…HD30Y	2.5…4	4.1…6
ATV71HD37Y…HC63Y	2.5	2.6…4.9

Additional EMC input filters

Applications

When used with ATV71H●●●M3, ATV71H●●●M3X, ATV71●●●●N4 and ATV71P●●●N4Z drives, additional EMC input filters can be used to meet more stringent requirements and are designed to reduce conducted emissions on the line supply below the limits of standards EN 55011 group 1, class A or B and IEC/EN 61800-3 category C2 or C3.
For ATV71H●●●M3, ATV71HD11M3X…HD45M3X, ATV71H075N4…HD75N4 and ATV71P075N4Z…PD11N4Z drives, the additional EMC filters can be mounted beside or under the device. They act as a support for the drives and are attached to them via tapped holes.
For ATV71HD55M3X, HD75M3X, ATV71HD90N4…HC50N4 and ATV71QD90N4…QC50N4 drives, the additional EMC filters can only be mounted beside the drive.

Use according to the type of line supply

These additional filters can only be used on TN (neutral connection) and TT (earthed neutral) type systems.
Standard IEC/EN 61800-3, appendix D2.1, states that on IT systems (isolated or impedance earthed neutral), filters can cause permanent insulation monitors to operate in a random manner.
In addition, the effectiveness of additional filters on this type of system depends on the type of impedance between neutral and earth, and therefore cannot be predicted.
If a machine has to be installed on an IT system, one solution is to insert an isolation transformer and connect the machine locally on a TN or TT system.

(1) If motors are connected in parallel, it is the total cable length that should be taken into account.

Drive/option combinations:
pages 1/32 to 1/43

Variable speed drives
Altivar 71
Motor starters: 440…480 V supply voltage

PF095516



DF526158



PF107476SE



NSX160●MA150
+
LC1D115●●
+
ATV71HD55N4

Motor starters for IP 20 drives

Motor Power *(1)*		Drive Reference	Circuit-breaker Reference *(2)*	Rating	Irm	Line contactor Reference *(3) (4)*
kW	*HP*			A	A	
Three-phase supply voltage 440…480 V 50/60 Hz - Type 2 coordination						
0.75	*1*	**ATV71H075N4**	**GV2L08**	4	–	**LC1D25●●**
1.5	*2*	**ATV71HU15N4**	**GV2L10**	6.3	–	**LC1D25●●**
2.2	*3*	**ATV71HU22N4**	**GV2L14**	10	–	**LC1D25●●**
3	–	**ATV71HU30N4**	**GV2L14**	10	–	**LC1D25●●**
4	*5*	**ATV71HU40N4**	**GV2L16**	14	–	**LC1D25●●**
5.5	*7.5*	**ATV71HU55N4**	**GV2L20**	25	–	**LC1D25●●**
7.5	*10*	**ATV71HU75N4**	**GV3L25**	32	–	**LC1D32●●**
11	*15*	**ATV71HD11N4**	**GV3L32**	40	–	**LC1D40A●●**
15	*20*	**ATV71HD15N4**	**GV3L50**	50	–	**LC1D50A●●**
18.5	*25*	**ATV71HD18N4**	**GV3L50**	50	–	**LC1D50A●●**
22	*30*	**ATV71HD22N4**	**GV3L50**	50	–	**LC1D65A●●**
30	*40*	**ATV71HD30N4**	**GV3L65**	65	–	**LC1D65A●●**
37	*50*	**ATV71HD37N4**	**NS80HMA80**	100	600	**LC1D80●●**
45	*60*	**ATV71HD45N4**	**NSX100●MA100**	100	600	**LC1D115●●**
55	*75*	**ATV71HD55N4**	**NSX160●MA150**	150	1350	**LC1D115●●**
75	*100*	**ATV71HD75N4**	**NSX250●MA220**	220	1980	**LC1D185●●**
90	*125*	**ATV71HD90N4**	**NSX250●MA220**	220	1980	**LC1D185●●**
110	*150*	**ATV71HC11N4**	**NSX250●MA220**	220	1980	**LC1F185●●**
132	*200*	**ATV71HC13N4**	**NSX250●MA220**	220	1980	**LC1F265●●**
160	*250*	**ATV71HC16N4**	**NSX400● Micrologic 1.3M**	320	1920	**LC1F265●●**
200	*300*	**ATV71HC20N4**	**NSX630● Micrologic 1.3M**	320	1920	**LC1F400●●**
220	*350*	**ATV71HC25N4**	**NSX630● Micrologic 1.3M**	320	1920	**LC1F400●●**
250	*400*	**ATV71HC25N4**	**NSX630● Micrologic 1.3M**	500	3000	**LC1F500●●**
280	*450*	**ATV71HC28N4**	**NSX630● Micrologic 1.3M**	500	3000	**LC1F500●●**
315	*500*	**ATV71HC31N4**	**NS800L Micrologic 2 or 5**	500	3000	**LC1F630●●**
355	–	**ATV71HC40N4**	**NS800L Micrologic 2 or 5**	500	3000	**LC1F630●●**
400	*600*	**ATV71HC40N4**	**NS800L Micrologic 2 or 5**	800	1600	**LC1F780●●**
500	*700*	**ATV71HC50N4**	**NS1000L Micrologic 2 or 5**	1000	2000	**LC1F780●●**

(1) Standard power ratings for 400 V 50/60 Hz 4-pole motors.
The values expressed in HP conform to the NEC (National Electrical Code).
(2) NS80HMA, NSX●●●, NS800L, NS1000L: Products sold under the Merlin Gerin brand.
For references to be completed, replace the dot with the letter corresponding to the circuit-breaker breaking performance (B, F, N, H, S, L).
Breaking capacity of circuit-breakers according to standard IEC 60947-2:

Circuit-breaker	Icu (kA) for 440 V						
		B	F	N	H	S	L
GV2L08, GV2L10	130	–	–	–	–	–	–
GV2L14…L20	20	–	–	–	–	–	–
GV3L25…L65	50	–	–	–	–	–	–
NS80HMA	65	–	–	–	–	–	–
NSX100●MA…250●MA	–	20	35	50	65	90	130
NSX400●, NSX630●	–	–	30	42	65	90	130
NS800L, NS1000L	–	–	–	–	–	–	130

(3) Composition of contactors:
LC1D●●: 3 poles + 1 N/O auxiliary contact and 1 N/C auxiliary contact.
LC1F●●●: 3 poles. To add auxiliary contacts or other accessories, please refer to the "Motor-starter solutions - Control and protection components" catalogue.
(4) Replace ●● with the control circuit voltage reference given in the table below:

	Volts ∿	24	48	110	220	230	240
LC1D	50 Hz	**B5**	**E5**	**F5**	**M5**	**P5**	**U5**
	60 Hz	**B6**	**E6**	**F6**	**M6**	**–**	**U6**
	50/60 Hz	**B7**	**E7**	**F7**	**M7**	**P7**	**U7**
LC1F185	50 Hz (LX1 coil)	**B5**	**E5**	**F5**	**M5**	**P5**	**U5**
	60 Hz (LX1 coil)	**–**	**E6**	**F6**	**M6**	**–**	**U6**
	40…400 Hz (LX9 coil)	**–**	**E7**	**F7**	**M7**	**P7**	**U7**
LC1F265	40…400 Hz (LX1 coil)	**B7**	**E7**	**F7**	**M7**	**P7**	**U7**
LC1F400…F630	40…400 Hz (LX1 coil)	**–**	**E7**	**F7**	**M7**	**P7**	**U7**
LC1F780	40…400 Hz (LX1 coil)	**–**	**–**	**FE7**	**P7**	**P7**	**P7**

For other voltages available between 24 V and 660 V, or a DC control circuit, please contact our Customer Care Centre.

Variable speed drives
Altivar 71
Motor starters: 440…480 V supply voltage

PF095516



DF526158



PF107476SE



NSX160●MA150
+
LC1D115●●
+
ATV71HD55N4

Motor starters for IP 20 drives

Motor Power *(1)*		Drive Reference	Circuit-breaker Reference *(2)*	Rating	Irm	Line contactor Reference *(3) (4)*
kW	*HP*			A	A	
Three-phase supply voltage 440…480 V 50/60 Hz - Type 1 coordination						
0.75	*1*	**ATV71H075N4**	**GV2L08**	4	–	**LC1D09●●**
1.5	*2*	**ATV71HU15N4**	**GV2L10**	6.3	–	**LC1D09●●**
2.2	*3*	**ATV71HU22N4**	**GV2L14**	10	–	**LC1D09●●**
3	–	**ATV71HU30N4**	**GV2L14**	10	–	**LC1D09●●**
4	*5*	**ATV71HU40N4**	**GV2L16**	14	–	**LC1D09●●**
5.5	*7.5*	**ATV71HU55N4**	**GV2L20**	25	–	**LC1D09●●**
7.5	*10*	**ATV71HU75N4**	**GV3L25**	32	–	**LC1D25●●**
11	*15*	**ATV71HD11N4**	**GV3L32**	40	–	**LC1D32●●**
15	*20*	**ATV71HD15N4**	**GV3L50**	50	–	**LC1D40A●●**
18.5	*25*	**ATV71HD18N4**	**GV3L50**	50	–	**LC1D40A●●**
22	*30*	**ATV71HD22N4**	**GV3L50**	50	–	**LC1D50A●●**
30	*40*	**ATV71HD30N4**	**GV3L65**	65	–	**LC1D65A●●**
37	*50*	**ATV71HD37N4**	**NS80HMA80**	100	600	**LC1D80●●**
45	*60*	**ATV71HD45N4**	**NSX100●MA100**	100	600	**LC1D95●●**
55	*75*	**ATV71HD55N4**	**NSX160●MA150**	150	1350	**LC1D115●●**
75	*100*	**ATV71HD75N4**	**NSX250●MA220**	220	1980	**LC1D115●●**
90	*125*	**ATV71HD90N4**	**NSX250●MA220**	220	1980	**LC1D150●●**
110	*150*	**ATV71HC11N4**	**NSX250●MA220**	220	1980	**LC1F150●●**
132	*200*	**ATV71HC13N4**	**NSX250●MA220**	220	1980	**LC1F225●●**
160	*250*	**ATV71HC16N4**	**NSX400● Micrologic 1.3M**	320	1920	**LC1F225●●**
200	*300*	**ATV71HC20N4**	**NSX630● Micrologic 1.3M**	320	1920	**LC1F330●●**
220	*350*	**ATV71HC25N4**	**NSX630● Micrologic 1.3M**	320	1920	**LC1F330●●**
250	*400*	**ATV71HC25N4**	**NSX630● Micrologic 1.3M**	500	3000	**LC1F400●●**
280	*450*	**ATV71HC28N4**	**NSX630● Micrologic 1.3M**	500	3000	**LC1F500●●**
315	*500*	**ATV71HC31N4**	**NS800L Micrologic 2 or 5**	500	3000	**LC1F500●●**
355	–	**ATV71HC40N4**	**NS800L Micrologic 2 or 5**	500	3000	**LC1F630●●**
400	*600*	**ATV71HC40N4**	**NS800L Micrologic 2 or 5**	800	1600	**LC1F630●●**
500	*700*	**ATV71HC50N4**	**NS1000L Micrologic 2 or 5**	1000	2000	**LC1F630●●**

(1) Standard power ratings for 400 V 50/60 Hz 4-pole motors.
The values expressed in HP conform to the NEC (National Electrical Code).
(2) NS80HMA, NSX●●●, NS800L, NS1000L: Products sold under the Merlin Gerin brand.
For references to be completed, replace the dot with the letter corresponding to the circuit-breaker breaking performance (B, F, N, H, S, L).
Breaking capacity of circuit-breakers according to standard IEC 60947-2:

Circuit-breaker	Icu (kA) for 440 V						
		B	F	N	H	S	L
GV2L08, GV2L10	130	–	–	–	–	–	–
GV2L14…L20	20	–	–	–	–	–	–
GV3L32…L65	50	–	–	–	–	–	–
NS80HMA	65	–	–	–	–	–	–
NSX100●MA… 250●MA	–	20	35	50	65	90	130
NSX400●, NSX630●	–	–	30	42	65	90	130
NS800L, NS1000L	–	–	–	–	–	–	130

(3) Composition of contactors:
LC1D●●: 3 poles + 1 N/O auxiliary contact and 1 N/C auxiliary contact.
LC1F●●●: 3 poles. To add auxiliary contacts or other accessories, please refer to the "Motor-starter solutions - Control and protection components" catalogue.
(4) Replace ●● with the control circuit voltage reference given in the table below:

	Volts ∿	24	48	110	220	230	240
LC1D	50 Hz	**B5**	**E5**	**F5**	**M5**	**P5**	**U5**
	60 Hz	**B6**	**E6**	**F6**	**M6**	**–**	**U6**
	50/60 Hz	**B7**	**E7**	**F7**	**M7**	**P7**	**U7**
LC1F185	50 Hz (LX1 coil)	**B5**	**E5**	**F5**	**M5**	**P5**	**U5**
	60 Hz (LX1 coil)	**–**	**E6**	**F6**	**M6**	**–**	**U6**
	40…400 Hz (LX9 coil)	**–**	**E7**	**F7**	**M7**	**P7**	**U7**
LC1F265	40…400 Hz (LX1 coil)	**B7**	**E7**	**F7**	**M7**	**P7**	**U7**
LC1F400…F630	40…400 Hz (LX1 coil)	**–**	**E7**	**F7**	**M7**	**P7**	**U7**
LC1F780	40…400 Hz (LX1 coil)	**–**	**–**	**FE7**	**P7**	**P7**	**P7**

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