

#### Presentation

Line chokes provide improved protection against overvoltages on the line supply and reduce harmonic distortion of the current produced by the drive.

The recommended chokes limit the line current.

They have been developed in line with standard IEC 61800-5-1 (VDE 0160 level 1 high-energy overvoltages on the line supply).

The inductance values are defined for a voltage drop between 3% and 5% of the nominal line voltage. Values higher than this will cause loss of torque.

The use of line chokes is recommended in particular for ATV 312H●●●M2, ATV 312H●●●M3 and ATV 312H●●●N4 drives under the following circumstances:

- Line supply with significant disturbance from other equipment (interference, overvoltages)
- Line supply with voltage imbalance between phases > 1.8% of nominal voltage
- Drive supplied by a line with very low impedance (in the vicinity of a power transformer 10 times more powerful than the drive rating)
- Installation of a large number of frequency inverters on the same line
- Reduction of overloads on the cos  $\phi$  correction capacitors, if the installation includes a power factor correction unit

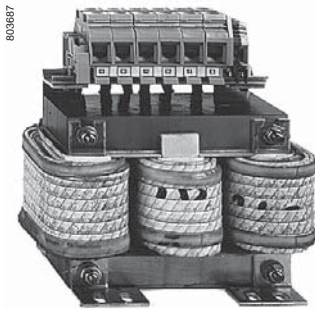
The use of line chokes is mandatory for ATV 312H●●●S6 drives.

The prospective short-circuit current at the drive connection point must not exceed the maximum value indicated in the reference tables. The use of chokes allows connection to the following line supplies:

- Max. Isc 22 kA for 200/240 V
- Max. Isc 65 kA for 380/500 V and 525/600V

#### Characteristics

Type of line choke		VZ1 L004 M010	VZ1 L007 UM50	VZ1 L018 UM20	VW3 A4 551	VW3 A4 552	VW3 A4 553	VW3 A4 554	VW3 A4 555
Conformity to standards		IEC 61800-5-1 (VDE 0160 level 1 high-energy overvoltages on the line supply)							
Voltage drop		Between 3% and 5% of the nominal line voltage. Values higher than this will cause loss of torque.							
Degree of protection	Choke	IP 00							
	Terminals	IP 20						IP 10	
Inductance value	mH	10	5	2	10	4	2	1	0.5
Nominal current	A	4	7	18	4	10	16	30	60
Losses	W	17	20	30	45	65	75	90	80



VW3A4 55●

## Line chokes

Altivar 312					Choke	
	Line current without choke		Line current with choke		Reference	Weight
	U min. (1)	U max. (1)	U min. (1)	U max. (1)		
	A	A	A	A	kg	
<b>Single-phase supply voltage: 200...240 V 50/60 Hz</b>						
ATV 312H018M2	3.0	2.5	2.1	1.8	VZ1 L004M010	0.630
ATV 312H037M2	5.3	4.4	3.9	3.3		
ATV 312H055M2	6.8	5.8	5.2	4.3	VZ1 L007UM50	0.880
ATV 312H075M2	8.9	7.5	7.0	5.9		
ATV 312HU11M2	12.1	10.2	10.2	8.6	VZ1 L018UM20	1.990
ATV 312HU15M2	15.8	13.3	13.4	11.4		
ATV 312HU22M2	21.9	18.4	19.2	16.1		
<b>Three-phase supply voltage: 200...240 V 50/60 Hz</b>						
ATV 312H018M3	2.1	1.9	1	0.9	VW3 A4 551	1.500
ATV 312H037M3	3.8	3.3	1.9	1.6		
ATV 312H055M3	4.9	4.2	2.5	2.2		
ATV 312H075M3	6.4	5.6	3.3	2.9		
ATV 312HU11M3	8.5	7.4	4.8	4.2	VW3 A4 552	3.000
ATV 312HU15M3	11.1	9.6	6.4	5.6		
ATV 312HU22M3	14.9	13	9.2	8	VW3 A4 553	3.500
ATV 312HU30M3	19.1	16.6	12.3	10.7		
ATV 312HU40M3	24.2	21.1	16.1	14	VW3 A4 554	6.000
ATV 312HU55M3	36.8	32	21.7	19		
ATV 312HU75M3	46.8	40.9	29	25.2		
ATV 312HD11M3	63.5	55.6	41.6	36.5	VW3 A4 555	11.000
ATV 312HD15M3	82.1	71.9	55.7	48.6		
<b>Three-phase supply voltage: 380...500 V 50/60 Hz</b>						
ATV 312H037N4	2.2	1.7	1.1	0.9	VW3 A4 551	1.500
ATV 312H055N4	2.8	2.2	1.4	1.2		
ATV 312H075N4	3.6	2.7	1.8	1.5		
ATV 312HU11N4	4.9	3.7	2.6	2		
ATV 312HU15N4	6.4	4.8	3.4	2.6		
ATV 312HU22N4	8.9	6.7	5	4.1	VW3 A4 552	3.000
ATV 312HU30N4	10.9	8.3	6.5	5.2		
ATV 312HU40N4	13.9	10.6	8.5	6.6		
ATV 312HU55N4	21.9	16.5	11.7	9.3	VW3 A4 553	3.500
ATV 312HU75N4	27.7	21	15.4	12.1		
ATV 312HD11N4	37.2	28.4	22.5	18.1	VW3 A4 554	6.000
ATV 312HD15N4	48.2	36.8	29.6	23.3		
<b>Three-phase supply voltage: 525...600 V 50/60 Hz</b>						
ATV 312H075S6 (2)	–	–	1.4	1.4	VW3 A4 551	1.500
ATV 312HU15S6 (2)	–	–	2.4	2.3		
ATV 312HU22S6 (2)	–	–	3.8	3.6		
ATV 312HU40S6 (2)	–	–	6	5.8	VW3 A4 552	3.000
ATV 312HU55S6 (2)	–	–	7.8	7.5		
ATV 312HU75S6 (2)	–	–	11	10.7	VW3 A4 553	3.500
ATV 312HD11S6 (2)	–	–	15	14.4		
ATV 312HD15S6 (2)	–	–	21.1	20.6	VW3 A4 554	6.000

(1) Nominal supply voltage:

For drives	Nominal voltage	
	U min.	U max.
ATV 312H●●●M2 ATV 312H●●●M3	200	240
ATV 312H●●●N4 ATV 312H●●●S6	380	500
	525	600

(2) Line choke mandatory for ATV 312H●●●S6 drives.