



Altivar Process drive with dv/dt filter

Presentation

Altivar Process drives operate with the following maximum motor cable lengths: 150 m/492 ft for shielded cables and 300 m/984 ft for unshielded cables. To limit the impact of dv/dt filters and overvoltages at the motor side, it is recommended, for cables longer than 50 m/164 ft, that you check the motor insulation type and add an output filter if necessary.

Output filters are used to limit dv/dt at the motor terminals.

They are also used to:

- Limit overvoltages at the motor terminals to:
 - 1000 V at 400 V ~ (rms value)
- Filter interference caused by opening a contactor placed between the filter and the motor
- Reduce the motor ground leakage current

The performance of dv/dt filters will be affected if the maximum cable lengths are exceeded. For an application with several motors connected in parallel, the cable length must include all cabling. If a cable longer than that recommended is used, the dv/dt filters may overheat.

dv/dt output filters						
For drives	Maximum length of motor cable		Degree of protection	Nominal current	Unit reference	Weight
	Maximum switching frequency (1)	Shielded cable (2)				
	kHz	m/ft	IP	A		kg/lb
Three-phase supply voltage: 200...240 V						
ATV630D11M3	4	500/1640	20	50	VW3A5304	18.000/ 39.683
ATV630D15M3...D22M3	4	500/1640	20	95	VW3A5305	19.000/ 41.888
ATV630D30M3...D45M3	2.5	500/1640	00	180	VW3A5306	22.000/ 48.502
Three-phase supply voltage: 380...480 V						
ATV630D15N4...D22N4	4	500/1640	20	50	VW3A5304	18.000/ 39.683
ATV650D15N4...D22N4 (3)						
ATV630D30N4...D45N4	4	500/1640	20	95	VW3A5305	19.000/ 41.888
ATV650D30N4...D45N4 (3)						
ATV630D55N4...D90N4	2.5	500/1640	00	180	VW3A5306	22.000/ 48.502
ATV650D55N4...D90N4 (3)						
IP 21 protection kits						
Description	For dv/dt filters		Reference	Weight		
Mechanical kit including cover and cable clamps	VW3A5304		VW3A53904	1.500/ 3.307		
	VW3A5305		VW3A53905	1.500/ 3.307		

(1) The filters are designed to operate in a switching frequency range of between 2 and 8 kHz.

(2) Values given depend on the nominal switching frequency of the drive. This frequency depends on the drive rating. These cable lengths are given as examples only as they can vary depending on the application. They correspond to motors conforming to IEC 6034-25 and NEMA MG1/31.2006.

(3) When used with **ATV650D15N4...D90N4** drives, the filter must be mounted in a separate enclosure to maintain IP 55 protection for the installation.