

# VLT<sup>®</sup> drives for 690 V now available down to smallest power sizes

Danfoss makes 690 V installations most cost efficient. The high performance frequency converters now cover the complete 690 V power range from 1.4 MW down to 1.1 kW.

Danfoss presents the smallest 690 V enclosure on the market below 7.5 kW and extends the power range of its IP 20 drives up to 75 kW with 4 new enclosure sizes.

Now you can even control 690 V motors down to 0.37 kW without expensive over-dimensioned drives or step down transformers.

Built on the powerful and reliable VLT<sup>®</sup> platform, the drives offer system designers, machine builders, and end users the efficiency enhancing benefits offered by Danfoss' single drive concept for industrial applications.

Suitable for use on normal TN and IT (isolated) grids, the IP 20 protected drives are especially useful in installations within chemical, mining, water/wastewater and marine applications.



Danfoss extends the power range of its IP 20 drives up to 75 kW with 4 new enclosure sizes

**65%**  
less cabinet space required. Especially for power sizes below 7.5 kW, Danfoss offers a remarkable space reduction in comparison to other solutions.

Feature	Benefit
Dedicated enclosure sizes down to 1.1 kW	No need for large over-dimensioned drive
Operate motors down to 0.37 kW	No need for step-down transformer
Smallest size and required space	Cost for cabinet and installation room reduced
Side-by-side mounting without derating	Saves valuable panel space
Integrated harmonic filters (<40% THDi)	Maintain mains quality without external filters
Integrated EMC filter (A1/EN 55011) with up to 150 m screened motor cable	Provide reliable operation of the installation without additional external filters
Class 3C3 conformal coating (IEC 60721-3-3) as standard	Increase lifetime and reliability in harsh environments
Full performance at 50° C ambient temperature (D-frames 45° C)	Secure operation without derating/over-dimensioning
Danfoss output filters	Matching sinusoidal or du/dt filters
Complete range of 690 V drives up to 1.4 MW	One drive series covers all your systems needs

VLT® AutomationDrive frequency converters can be individually configured with additional safety functions through special options and accessories.

**ATEX-certified thermistor input**

The PTB ATEX-certified PTC Thermistor option MCB 112 can be used to monitor both Ex d and Ex e motors. It is certified according to IEC 61508 for use in low demand applications to protect motors placed in Zones 1, 2, 21 and 22. The option can be used as the sole protective device of an explosion-proof motor operated by a frequency converter.

**Universal residual current monitoring**

The RCMB20/35 external fault current monitoring module reliably detects insulation faults in drives systems operating on IT or TN mains. In addition to usual protection against sudden insulation faults, this module supports

**Ordering numbers: Sine Wave Filters**

VLT® ratings		Filter current rating			Switching frequency kHz	Part-No.	
690 V		@50 Hz	@60 Hz	@100 Hz		IP 00	IP 20/23
kW	Current (A)	A	A	A			
1.1	1.6	4.5	4	3	4	130B7335	130B7356
1.5	2.2						
2.2	3.2						
3.0	4.5						
4.0	5.5	10	9	7	4	130B7289	130B7324
5.5	7.5						
7.5	10						
11	13	13	12	9	3	130B3195	130B3196
15	18	28	26	21	3	130B4112	130B4113
18.5	22						
22	27						
30	34						
37	41	45	42	33	3	130B4114	130B4115
45	52	76	72	57	3	130B4116	130B4117
55	62						
75	83						
90	100	115	109	86	3	130B4118	130B4119

preventive maintenance by detecting gradual insulation deterioration in the equipment in advance, avoiding

unexpected and expensive machine standstills.

**Technical data**

Enclosure		Typical shaft output [kW]	Output current 150% for 1 min (HO) 110% for 1 min (NO) 160% for 1 min (HO for A3)		Output power Continuous kVA 690 V AC [kVA]	Max input current		Estimated loss at rated maximum load [W]	Efficiency	Height	Width	Depth	Max weight [kg]
			Continuous (3x551-690 V) [A]	Intermittent (3x551-690 V) [A]		Continuous (3x551-690 V) [A]	Intermittent (3x551-690 V) [A]						
IP 20	A3	P1K1	1.1	1.6	2.6	1.9	1.4	2.3	0.96	268	130	205	6.6
		P1K5	1.5	2.2	3.5	2.6	2.0	3.2					
		P2K2	2.2	3.2	5.1	3.8	2.9	4.6					
		P3K0	3	4.5	7.2	5.4	4.0	6.5					
		P4K0	4	5.5	8.8	6.6	4.9	7.9					
		P5K5	5.5	7.5	12	9	6.7	10.8					
		P7K5	7.5	10	16	12	9.0	14.4					
IP 20	B4	P11K	HO 11	13	20.8	15.5	12.5	20.1	0.98	520	230	242	23.5
		NO 15	18	19.8	21.5	17.4	19.1						
		P15K	HO 15	18	28.8	21.5	17.4	27.8					
		NO 18.5	22	24.2	26.3	21.2	23.3						
		P18K	HO 18.5	22	35.2	26.3	21.2	33.9					
		NO 22	27	29.7	32.3	26.0	28.6						
		P22K	HO 22	27	43.2	32.3	26.0	41.6					
		NO 30	34	37.4	40.6	32.8	36.0						
		P30K	HO 30	34	51	40.6	32.8	49.2					
		NO 37	41	45.1	49.0	39.5	43.5						
IP 20	C3	P37K	HO 37	41	61.5	49	39.5	59.3	0.98	550	308	333	35
		NO 45	52	57.2	62.2	50.1	55.1						
		P45K	HO 45	52	78	62.2	50.1	75.2					
		NO 55	62	68.2	74.1	59.8	65.8						
IP 20	D3h	N55K	HO 55	73	110	87	77.0	96.3	0.98	909	250	375	62
		NO 75	86	95	103	87.0	95.7						
		N75K	HO 75	86	129	103	87.0	130.5					
		NO 90	108	119	129	109.0	119.9						
		N90K	HO 90	108	162	129	109.0	163.5					
		NO 110	131	144	157	128.0	140.8						

VLT® power rating: Power ratings correspond to both HO and NO ratings.

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