

Three-phase motors of the V range

totally enclosed fan cooled, enclosure IP54/IP55

thermic class F

Speed 1500 rpm – 4 pole – general data

Frame size	Type	Rated output	Rated speed	Rated current at 400 V	At DOL starting:		Break-down torque ratio	Efficiency η	Power factor $\cos\phi$	Rotor inertia	Motor weight food mounted	
					starting current ratio	starting torque ratio					self-ventilated	force-ventilated
		[kW]	[rpm]	[A]				%		[kgm ²]	[kg]	[kg]
80	VA 80/4B-11	0.55	1410	1.4	5.1	2.8	2.9	77	0.76	0.0012	9	11
80	VA 80/4C-11	0.75	1420	1.9	5.4	2.8	3.0	78	0.78	0.0015	10	12
90S	VA 90S/4B-11	1.1	1420	2.6	5.7	2.7	3.0	77	0.80	0.0022	14	15
90L	VA 90L/4C-11	1.5	1420	3.5	6.2	3.0	3.2	77.5	0.80	0.0028	17	18
100L	VA 100L/4B-12	2.2	1420	4.6	6.5	2.7	3.0	81	0.86	0.0041	22	24
100L	VA 100L/4C-12	3	1420	6.6	6.9	2.8	3.0	82	0.83	0.0049	24	25
112M	VA 112M/4K-11	4	1450	8.6	7.7	2.6	3.3	84.5	0.81	0.0092	30	32
132S	VA 132S/4F-11	5.5	1450	11.5	7.9	2.5	3.2	86	0.85	0.016	59	62
132M	VA 132M/4C-11	7.5	1440	15	7.6	2.6	3.1	86.5	0.84	0.019	70	72
160M	VA 160M/4B-11	11	1470	21	7.6	2.3	3.2	89	0.86	0.058	82	85
160L	VA 160L/4F-11	15	1470	28	8.2	2.5	3.2	90	0.86	0.077	99	102
180M	VR 18.5/4-75P	18.5	1475	35	7.6	2.3	3.0	91	0.86	0.18	170	174
180L	VR 22/4-75P	22	1475	40	7.9	2.4	3.0	92.3	0.87	0.21	200	204
200L	VR 30/4-75P	30	1475	54	8.3	2.6	3.3	92.5	0.88	0.27	219	223
200L	VR 30/4-75PA	37	1475	68	8.3	3.0	3.6	92.3	0.86	0.27	219	223

225M	VR 225M/4-75	45	1470	84	7.1	2.7	2.6	93	0.83	0.40	335	340
250M	VR 250M/4-75	55	1475	98	8.1	2.2	2.7	94	0.88	0.80	425	430
280S	VR 280S/4-75	75	1475	135	8.0	2.2	3.1	94.5	0.85	1.20	575	580
280M	VR 280M/4-75	90	1483	155	8.5	2.2	3.0	94.8	0.87	1.66	650	660
315S	VR 315S/4-75	110	1486	197	7.2	2.2	2.7	95.2	0.84	2.35	795	805
315M	VR 315M/4-75	132	1485	240	7.3	2.2	2.6	95.2	0.83	2.8	890	905

Speed 1500 rpm – 4 pole

Data for force-ventilated motors for the operation within the speed range from 0 to 50 Hz with constant torque and above the corner frequency of 50 Hz, up to indicated maximum motor speed within the field-weakening area.
(Output and torque / speed characteristics are shown on the following two pages)

Frame size	Type	Magnetising current [A]	Rated torque [Nm]	Motor torque at 1.5 fold current [Nm]	Max. speed with constant output [rpm]	Max. speed with reduced output IP 54	Max. speed with reduced output IP 55	Motor torque at maximum speed IP 54
80	VAV 80/4B-11	1.0	3.7	6.3	3500	6000	6000	0.53
80	VAV 80/4C-11	1.25	5.0	8.6	3500	6000	6000	0.73
90S	VAV 90S/4B-11	1.8	7.4	11.5	3500	6000	6000	1.1
90L	VAV 90L/4C-11	2.35	10.0	16	3500	6000	6000	1.5
100L	VAV 100L/4B-12	2.55	14.8	23	3500	6000	6000	2.2
100L	VAV 100L/4C-12	3.85	20.2	31	3500	6000	6000	3.0
112M	VAV 112M/4K-11	5.0	26.5	41	3000	6000	6000	3.5
132S	VAV 132S/4F-11	6.2	36.2	59	3000	6000	5600	4.6
132M	VAV 132M/4C-11	7.2	49.7	78	3000	6000	5600	6.0
160M	VAV 160M/4B-11	10	71.5	110	3200	6000	5000	10
160L	VAV 160L/4F-11	12	97.5	150	3200	6000	5000	13.5
180M	VRV 18.5/4-75P	15	120	182	3200	6000	4000	16
180L	VRV 22/4-75P	18.5	147	225	3200	6000	4000	19
200L	VRV 30/4-75P	23	194	295	3200	6000	4000	26
200L	VRV 30/4-75PA	30	240	365	3000	6000	4000	30
225M	VRV 225M/4-75	37	292	440	2900	5300	5300	44
250M	VRV 250M/4-75	32	356	535	2950	4800	4800	67

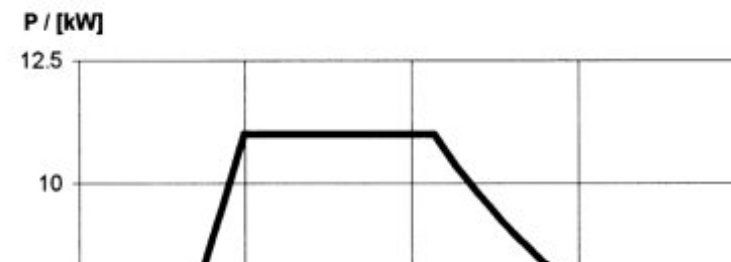
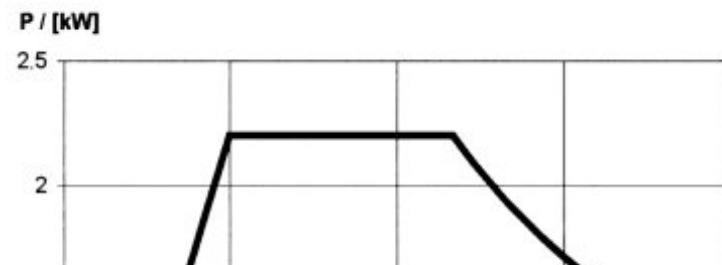
280S	VRV 280S/4-75	41	485	730	2500	4300	4300	93
280M	VRV 280M/4-75	49	580	870	2950	4300	4300	110
315S	VRV 315S/4-75	77	707	1060	2950	3600	3600	239
315M	VRV 315M/4-75	89	850	1275	2950	3600	3600	286

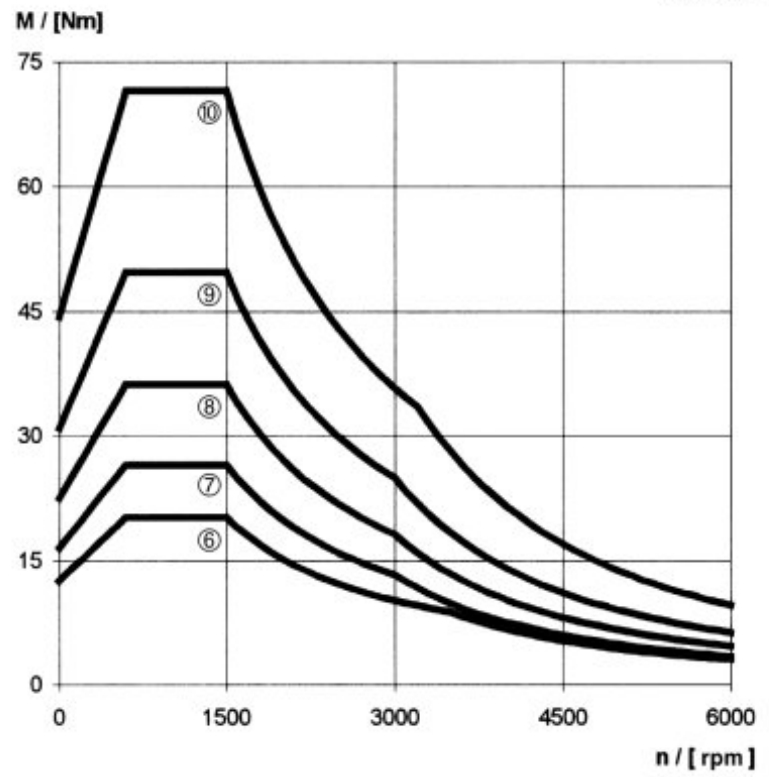
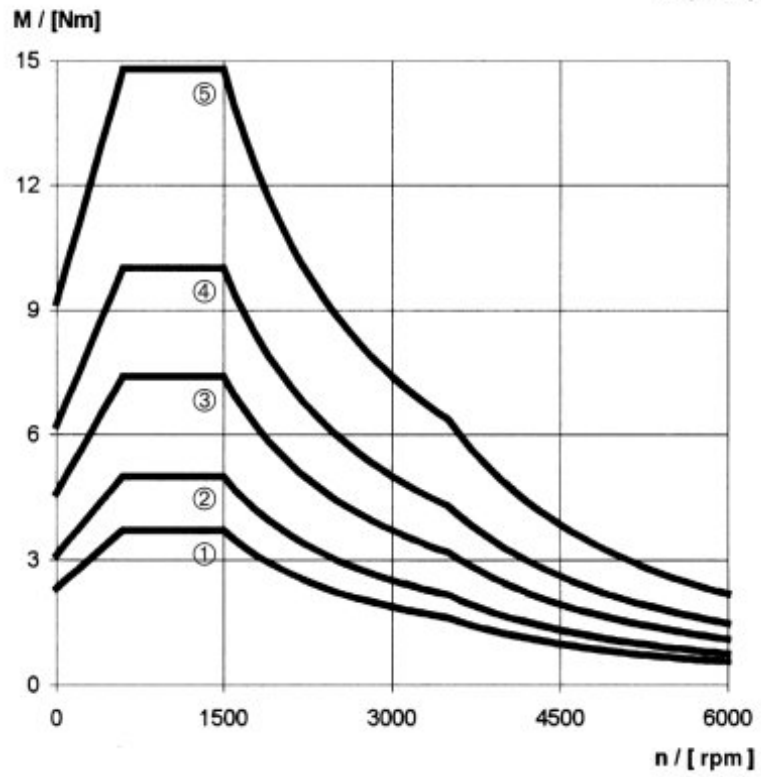
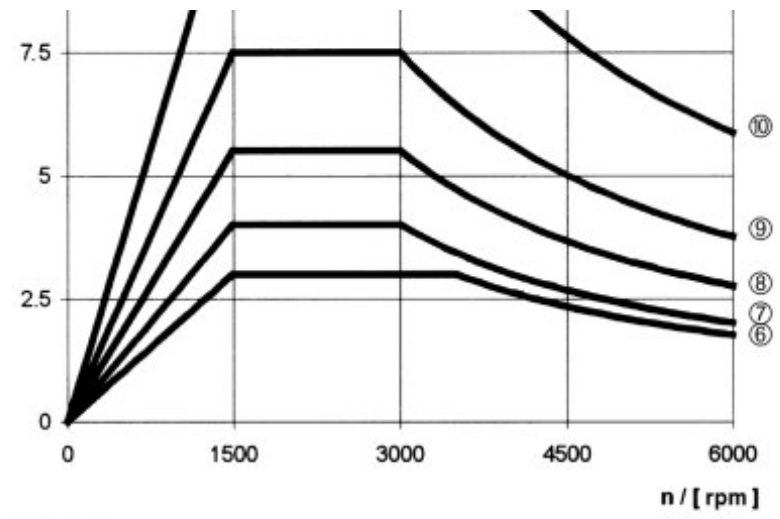
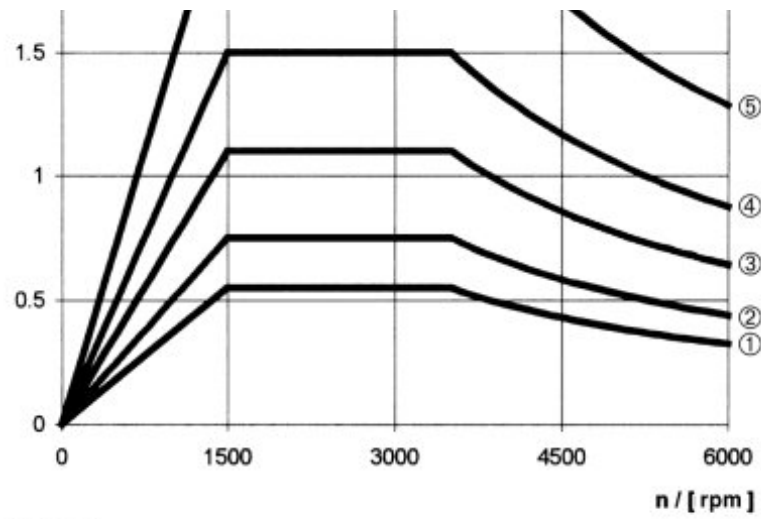
Output and torque / speed diagrams

for three-phase V range motors
of 4 pole design

- ① VAV 80/4B-11 0.55 kW
- ② VAV 80/4C-11 0.75 kW
- ③ VAV 90S/4B-11 1.1 kW
- ④ VAV 90L/4C-11 1.5 kW
- ⑤ VAV 100L/4B-12 2.2 kW

- ⑥ VAV 100L/4C-12 3 kW
- ⑦ VAV 112M/4K-11 4 kW
- ⑧ VAV 132S/4F-11 5.5 kW
- ⑨ VAV 132M/4C-11 7.5 kW
- ⑩ VAV 160M/4B-11 11 kW





Please note:

The output/speed diagrams show curves which are typical of force-ventilated motor design which enable the motors to be operated with constant torque within the speed range from 0 to 50 Hz.

The torque/speed diagrammes show curves with reduced torque within a frequency range smaller than 20 Hz, which is typical of self-ventilated motor design.

In order to prevent the generation of excessive noise the speed range for this motor design is limited to 80 Hz. For force-ventilated motors the indicated constant motor torque within the speed range of 600 to 1500 rpm can be maintained down to “zero speed“ and the motor can be operated up to the stated maximum speed.