



MEDIUM & HIGH VOLTAGE

HIGH EFFICIENCY – BIGGER POWER



GENERAL CHARACTERISTICS

The designing, manufacturing and testing of squirrel cage induction motors made by Felm® are according with IEC standard, Felm supply high quality cast iron motors with high performance and flexibility top meet the customer request they are widely used in various industries, mining, pumps, compressors, wind machineries, fans ect.

Compact Series Motors Technical details:

Efficiency level: High efficiency level

Number of Poles: 2 up to 8

Frequency: 50 Hz.

(Optional: 60 Hz.)

Voltage: 6 kV. – 10 kV.

(Optional: other rated voltages 3-3.3-6.6-11 kV.)

Frames: 315 up to 560

Cast iron frame

Cooling system: IC411

(Options: IC416 Inverter use rated 1:10)

Die cast Aluminum Rotor

Color: RAL 5010 (Blue)

(Options: Others type of colour)

VPI Insulation System

Insulation class F (class B temperature rise)

(Options: Class H)

PT100 in the windings and bearings

Degree of protection: IP55

(Options: IP56 - IP65)

Mounting: B3

(Options: B35 - V1)

Painting plan:

(Options: Marine - Chemical - Munsell)

Internal epoxy coating (tropicalized)

Sintered drain plug

Terminal block on side (right view from the shaft)

Shaft Material: C45

Double grounding (1 inside terminal box + 2 on the frame)

Grease Caltex SRI-2 or SKF LGHP2

(Different types recommended by Felm)

Regreasing system for frames 315 up to 560

Options:

PT100 in the winding connected in separate auxiliary terminal box

PT100 on the bearings connected in separate auxiliary terminal box

Space Heaters connected in separate auxiliary terminal box

Predisposition and All type of Encoder

Special shaft materials

DC or AC Brake

Motor Type		Rated Power		Rated Speed	Efficiency	Power Factor	Current		Torque			Moment of inertia (J)	Weight Approx
							Full Load 6kV	Locked Rotor	Full Load	Locked Rotor	Pull Out		
		kW	(HP)	RPM	%	%	A	%FLC	kg-m	%FLT	%FLT	kg-m ²	Kg
FHV	355 1-2	185	250	2980	93,5	84,0	22,7	700	60	70	200	2.6	1900
FHV	355 2-2	200	270	2980	94,0	84,0	24,4	700	65	70	200	2.8	2000
FHV	355 3-2	220	295	2980	94,2	84,0	26,8	700	72	70	200	3.0	2100
FHV	355 3-2	250	335	2980	94,4	84,0	30,3	700	82	70	200	3.3	2200
FHV	355 5-2	280	375	2980	94,6	86,0	33,1	700	92	70	200	3.5	2350
FHV	400 1-2	315	420	2980	94,8	86,0	37,2	700	103	70	200	5.0	2900
FHV	400 2-2	355	475	2980	94,9	86,0	41,9	700	116	70	200	5.5	3000
FHV	400 3-2	400	535	2980	95,1	86,0	47,1	700	131	70	200	6.0	3100
FHV	400 4-2	450	605	2980	95,2	86,0	52,9	700	147	70	200	7.0	3200
FHV	450 1-2	500	670	2982	95,3	87,0	58,0	700	163	70	200	11	3500
FHV	450 2-2	560	750	2982	95,4	87,0	64,9	700	183	70	200	12	3600
FHV	450 3-2	630	845	2982	95,5	87,0	73,0	700	206	70	200	13	3700
FHV	450 4-2	710	950	2982	95,6	87,0	82,1	700	232	70	200	14	3850
FHV	500 1-2	800	1070	2982	95,7	88,0	91,4	700	261	70	200	17	5780
FHV	500 2-2	900	1205	2982	95,8	88,0	102,7	700	294	70	200	19	6050
FHV	500 3-2	1000	1340	2982	95,9	88,0	114,0	700	327	70	200	21	6320
FHV	500 4-2	1120	1500	2982	96,0	88,0	127,6	700	366	70	200	23	6600
FHV	355 1-4	185	250	1485	93,1	84,0	22,8	650	121	80	200	6,0	1900
FHV	355 2-4	200	270	1485	93,9	84,0	24,4	650	131	80	200	7.0	2000
FHV	355 3-4	220	295	1485	94,1	84,0	26,8	650	144	80	200	8.0	2100
FHV	355 4-4	250	335	1485	94,3	84,0	30,4	650	164	80	200	9.0	2200
FHV	355 5-4	280	375	1485	94,5	84,0	33,9	650	184	80	200	10	2300
FHV	400 1-4	315	420	1485	94,6	85,0	37,7	650	207	80	200	11	3000
FHV	400 2-4	355	475	1485	94,8	85,0	42,4	650	233	80	200	12	3100
FHV	400 3-4	400	535	1485	95,0	85,0	47,7	650	262	80	200	13	3200
FHV	400 4-4	450	605	1485	95,2	85,0	53,5	650	295	80	200	14	3300
FHV	450 1-4	500	670	1485	95,3	86,0	58,7	650	328	80	200	22	3600
FHV	450 2-4	560	750	1485	95,4	86,0	65,7	650	367	80	200	24	3700
FHV	450 3-4	630	845	1485	95,5	86,0	73,8	650	413	80	200	26	3800
FHV	450 4-4	710	950	1485	95,6	86,0	83,1	650	466	80	200	28	3950
FHV	500 1-4	800	1070	1488	95,7	86,0	93,5	650	524	80	200	41	5820
FHV	500 2-4	900	1210	1488	95,8	86,0	105,1	650	589	80	200	44	6100
FHV	500 3-4	1000	1340	1488	95,9	86,0	116,7	650	655	80	200	47	6280
FHV	500 4-4	1120	1500	1488	96,0	86,0	130,5	650	733	80	200	50	6420
FHV	560 1-4	1250	1680	1488	96,1	87,0	143,9	650	819	70	200	70	8020
FHV	560 2-4	1400	1880	1488	96,2	87,0	161,0	650	917	70	200	74	8390
FHV	560 3-4	1600	2140	1488	96,4	87,0	183,6	650	1048	70	200	78	8750
FHV	560 4-4	1800	2410	1488	96,5	87,0	206,3	650	1179	70	200	82	9100

Different power, frame and pole on request.

Technical data kV. 6 6 pole – 8 pole



Motor Type		Rated Power		Rated Speed	Efficiency	Power Factor	Current		Torque			Moment of inertia (J)	Weight Approx
							Full Load 6kV	Locked Rotor	Full Load	Locked Rotor	Pull Out		
		kW	(HP)	RPM	%	%	A	%FLC	kg-m	%FLT	%FLT	kg-m ²	Kg
FHV	400 2-6	250	335	988	93,9	82,0	31,2	600	247	80	200	16	3000
FHV	400 3-6	280	375	988	94,1	82,0	34,9	600	276	80	200	18	3200
FHV	400 4-6	315	420	988	94,3	82,0	39,2	600	311	80	200	20	3400
FHV	450 1-6	355	475	988	94,5	83,0	43,6	600	350	80	200	28	3500
FHV	450 2-6	400	535	988	94,6	83,0	49,0	600	395	80	200	30	3600
FHV	450 3-6	450	605	988	94,7	83,0	55,1	600	444	80	200	32	3700
FHV	450 4-6	500	670	988	94,9	83,0	61,1	600	493	80	200	34	3820
FHV	500 1-6	560	750	990	95,1	83,0	68,3	600	551	80	200	54	5610
FHV	500 2-6	630	845	990	95,2	83,0	76,7	600	620	80	200	58	5790
FHV	500 3-6	710	950	990	95,3	83,0	86,4	600	699	80	200	62	6010
FHV	500 4-6	800	1070	990	95,4	83,0	97,2	600	787	80	200	66	6230
FHV	560 1-6	900	1210	990	95,6	84,0	107,8	600	886	70	200	94	7650
FHV	560 2-6	1000	1340	990	95,7	84,0	119,7	600	984	70	200	102	7950
FHV	560 3-6	1120	1500	990	95,8	84,0	133,9	600	1102	70	200	110	8250
FHV	560 4-6	1250	1680	990	95,9	84,0	149,3	600	1230	70	200	118	8550
FHV	400 1-8	160	215	738	93,2	76,0	21,7	550	211	80	200	15	3000
FHV	400 2-8	185	250	738	93,3	76,0	25,1	550	244	80	200	16	3100
FHV	400 3-8	200	270	738	93,5	77,0	26,7	550	264	80	200	18	3200
FHV	400 4-8	220	295	738	93,7	77,0	29,3	550	290	80	200	20	3300
FHV	450 1-8	250	335	740	93,9	78,0	32,8	550	329	80	200	28	3500
FHV	450 2-8	280	375	740	94,1	78,0	36,7	550	369	80	200	30	3600
FHV	450 3-8	315	420	740	94,2	78,0	41,3	550	415	80	200	32	3700
FHV	450 4-8	355	475	740	94,4	78,0	46,4	550	467	80	200	34	3820
FHV	500 1-8	400	535	742	94,5	79,0	51,6	550	525	80	200	54	5250
FHV	500 2-8	450	605	742	94,6	79,0	57,9	550	591	80	200	58	5490
FHV	500 3-8	500	670	742	94,8	80,0	63,4	550	657	80	200	62	5750
FHV	500 4-8	560	750	742	94,9	80,0	71,0	550	735	80	200	66	6020
FHV	560 1-8	630	845	745	95,1	81,0	78,7	550	824	70	200	96	7000
FHV	560 2-8	710	950	745	95,3	81,0	88,5	550	929	70	200	105	7350
FHV	560 3-8	800	1070	745	95,4	81,0	99,6	550	1046	70	200	110	7700
FHV	560 4-8	900	1210	745	95,6	81,0	111,8	550	1177	70	200	116	8100

Different power, frame and pole on request.

Motor Type		Rated Power		Rated Speed	Efficiency	Power Factor	Current		Torque			Moment of inertia (J)	Approx WT	Noise level (Approx)
							Full Load 10kV	Locked Rotor	Full Load	Locked Rotor	Pull Out			
		kW	(HP)	RPM	%	%	A	%FLC	kg-m	%FLT	%FLT	kg-m ²	Kg	dB(A)
FHV	400 1-2	220	295	2980	93,2	84	16,2	700	72	70	200	5.0	2900	84
FHV	400 2-2	250	335	2980	93,3	84	18,4	700	82	70	200	5.5	3000	86
FHV	400 3-2	280	375	2980	93,5	85	20,3	700	92	70	200	6.0	3100	86
FHV	400 4-2	315	420	2980	93,8	85	22,8	700	103	70	200	7.0	3200	86
FHV	450 1-2	355	475	2982	94,3	86	25,3	700	116	70	200	11	3500	86
FHV	450 2-2	400	535	2982	94,4	86	28,4	700	131	70	200	12	3600	86
FHV	450 3-2	450	605	2982	94,5	86	32,0	700	147	70	200	13	3700	86
FHV	450 4-2	500	670	2982	94,8	86	35,4	700	163	70	200	14	3850	86
FHV	500 1-2	560	750	2985	95,0	87	39,1	700	183	70	200	15	5500	86
FHV	500 2-2	630	845	2985	95,2	87	43,9	700	206	70	200	17	5780	88
FHV	500 3-2	710	950	2985	95,3	87	49,4	700	232	70	200	19	6050	88
FHV	500 4-2	800	1070	2985	95,5	88	55,0	700	261	70	200	21	6320	88
FHV	500 5-2	900	1210	2985	95,8	88	61,6	700	294	70	200	23	6600	89
FHV	400 1-4	220	295	1482	93,5	84	16,2	650	145	80	200	11	3000	83
FHV	400 2-4	250	335	1482	93,8	84	18,3	650	164	80	200	12	3100	85
FHV	400 3-4	280	375	1482	94,0	84	20,5	650	184	80	200	13	3200	85
FHV	400 4-4	315	420	1482	94,2	84	23,0	650	207	80	200	14	3300	85
FHV	450 1-4	355	475	1485	94,5	85	25,5	650	233	80	200	20	3500	85
FHV	450 2-4	400	535	1485	94,8	85	28,7	650	262	80	200	22	3600	85
FHV	450 3-4	450	605	1485	95,0	85	32,2	650	295	80	200	24	3700	85
FHV	450 4-4	500	670	1485	95,2	86	35,3	650	328	80	200	26	3800	85
FHV	450 5-4	560	750	1485	95,3	86	39,5	650	367	80	200	28	3950	85
FHV	500 1-4	630	845	1488	95,4	86	44,3	650	413	80	200	41	5820	87
FHV	500 2-4	710	950	1488	95,5	86	49,9	650	465	80	200	44	6100	87
FHV	500 3-4	800	1070	1488	95,6	87	55,5	650	524	80	200	47	6280	87
FHV	500 4-4	900	1210	1488	95,7	87	62,4	650	589	80	200	50	6420	87
FHV	560 1-4	1000	1340	1488	95,8	86	70,1	650	655	70	200	70	8020	88
FHV	560 2-4	1120	1500	1488	95,9	86	78,4	650	733	70	200	74	8390	88
FHV	560 3-4	1250	1680	1488	96,0	87	86,4	650	819	70	200	78	8750	89
FHV	560 4-4	1400	1880	1488	96,1	87	96,7	650	917	70	200	82	9100	89

Technical data kV. 10 6 pole – 8 pole



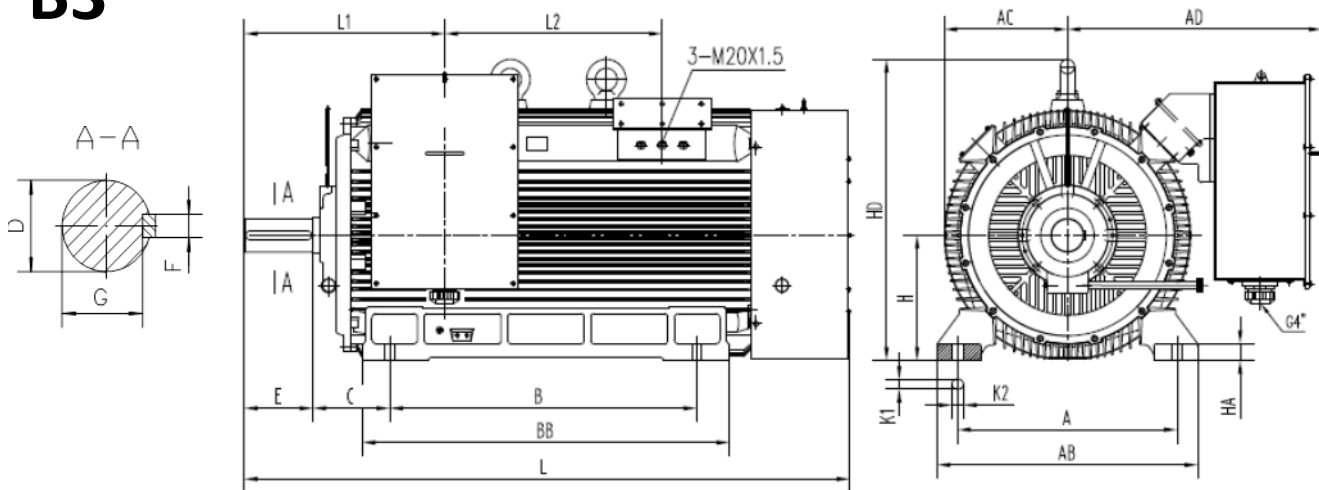
Motor Type	Rated Power		Rated Speed	Efficiency	Power Factor	Current		Torque			Moment of inertia (J)	Approx WT	Noise level (Approx)
	kW	(HP)	RPM	%	%	Full Load 10kV	Locked Rotor	Full Load	Locked Rotor	Pull Out			
						A	%FLC	kg-m	%FLT	%FLT	kg-m ²	Kg	dB(A)
FHV 450 5-6	355	475	985	94,3	82	26,5	600	351	80	200	34	3820	81
FHV 500 1-6	400	535	985	94,4	83	29,5	600	396	80	200	50	5450	81
FHV 500 2-6	450	605	988	94,6	83	33,1	600	444	80	200	54	5610	81
FHV 500 3-6	500	670	988	94,8	83	36,7	600	493	80	200	58	5790	81
FHV 500 4-6	560	750	990	95,0	83	41,0	600	551	80	200	62	6010	81
FHV 500 5-6	630	845	990	95,1	83	46,1	600	620	80	200	66	6230	83
FHV 560 1-6	710	950	992	95,3	83	51,8	600	697	70	200	87	7400	83
FHV 560 2-6	800	1070	992	95,4	83	58,3	600	786	70	200	94	7650	83
FHV 560 3-6	900	1210	992	95,5	84	64,8	600	884	70	200	102	7950	83
FHV 560 4-6	1000	1340	992	95,6	84	71,9	600	982	70	200	110	8250	83
FHV 560 5-6	1120	1500	992	95,7	84	80,4	600	1100	70	200	118	8550	83
FHV 450 1-8	220	295	740	93,6	78	17,4	550	290	80	200	30	3600	75
FHV 450 2-8	250	335	740	93,8	78	19,7	550	329	80	200	32	3700	77
FHV 450 3-8	280	375	740	94,0	78	22,0	550	369	80	200	34	3820	77
FHV 500 1-8	315	420	742	94,2	78	24,8	550	414	80	200	54	5250	77
FHV 500 2-8	355	475	742	94,4	78	27,8	550	466	80	200	58	5490	77
FHV 500 3-8	400	535	742	94,5	79	30,9	550	525	80	200	62	5750	77
FHV 500 4-8	450	605	742	94,6	79	34,8	550	591	80	200	66	6020	77
FHV 560 1-8	500	670	745	94,7	80	38,1	550	654	70	200	88	6650	77
FHV 560 2-8	560	750	745	94,8	80	42,6	550	733	70	200	96	7000	81
FHV 560 3-8	630	845	745	95,0	81	47,3	550	824	70	200	105	7350	81
FHV 560 4-8	710	950	745	95,2	81	53,2	550	929	70	200	110	7700	81
FHV 560 5-8	800	1070	745	95,3	81	59,8	550	1046	70	200	116	8100	81

Different power, frame and pole on request.

DIMENSIONS



B3



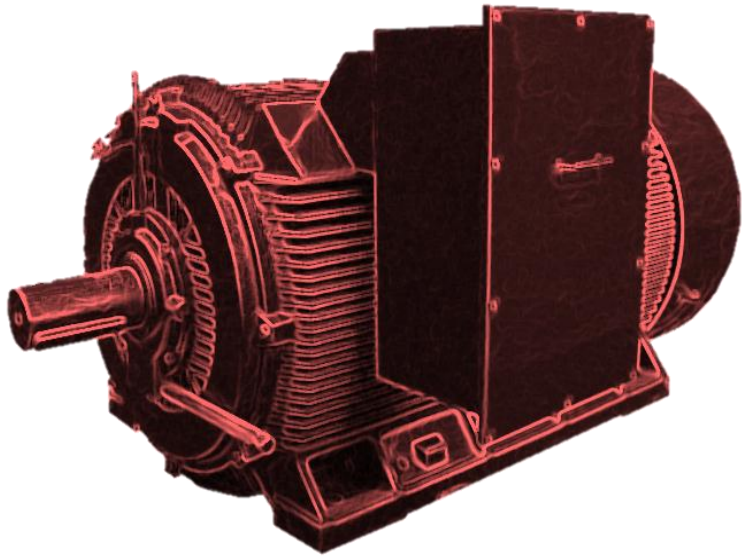
Frame	Pole	MOUNTING									
		A	B	C	D	E	F	G	H	K	
315	2	560±1.4	800±1.4	216±4	65 ^{+0.03} _{+0.01}	140±0.5	18 ⁰ _{-0.043}	58 ⁰ _{-0.2}	315 ⁰ ₋₁	28 ^{+0.5} ₀	
315	4	560±1.4	800±1.4	216±4	80 ^{+0.03} _{+0.01}	170±0.5	22 ⁰ _{-0.052}	71 ⁰ _{-0.2}	315 ⁰ ₋₁	28 ^{+0.5} ₀	
355	2	630±1.4	900±1.4	254±4	75 ^{+0.03} _{+0.01}	140±0.5	20 ⁰ _{-0.052}	67,5 ⁰ _{-0.2}	355 ⁰ ₋₁	28 ^{+0.5} ₀	
355	4~6	630±1.4	900±1.4	254±4	100 ^{+0.03} _{+0.01}	210±0.57	28 ⁰ _{-0.052}	90 ⁰ _{-0.2}	355 ⁰ ₋₁	28 ^{+0.5} ₀	
400	2	710±1.75	1000±1.75	280±4	85 ^{+0.03} _{+0.01}	170±0.5	22 ⁰ _{-0.052}	76 ⁰ _{-0.2}	400 ⁰ ₋₁	35 ^{+0.6} ₀	
400	4~8	710±1.75	1000±1.75	280±4	110 ^{+0.03} _{+0.01}	210±0.57	28 ⁰ _{-0.052}	100 ⁰ _{-0.2}	400 ⁰ ₋₁	35 ^{+0.6} ₀	
450	2	800±1.75	1120±1.75	280±4	95 ^{+0.03} _{+0.01}	170±0.5	25 ⁰ _{-0.052}	86 ⁰ _{-0.2}	450 ⁰ ₋₁	35 ^{+0.6} ₀	
450	4	800±1.75	1120±1.75	280±4	120 ^{+0.03} _{+0.01}	210±0.57	32 ⁰ _{-0.062}	109 ⁰ _{-0.2}	450 ⁰ ₋₁	35 ^{+0.6} ₀	
450	6~8	800±1.75	1120±1.75	280±4	130 ^{+0.04} _{+0.01}	250±0.57	32 ⁰ _{-0.062}	119 ⁰ _{-0.2}	450 ⁰ ₋₁	35 ^{+0.6} ₀	
500	4	900±2.1	1250±2.1	315±4	130 ^{+0.04} _{+0.01}	250±0.57	32 ⁰ _{-0.062}	119 ⁰ _{-0.2}	500 ⁰ ₋₁	42 ^{+0.6} ₀	
500	6~8	900±2.1	1250±2.1	315±4	140 ^{+0.04} _{+0.01}	250±0.57	36 ⁰ _{-0.062}	128 ⁰ _{-0.3}	500 ⁰ ₋₁	42 ^{+0.6} ₀	
560	4	1000±2.1	1400±2.1	355±4	150 ^{+0.04} _{+0.01}	250±0.57	36 ⁰ _{-0.062}	138 ⁰ _{-0.3}	560 ⁰ ₋₁	42 ^{+0.6} ₀	
560	6~8	1000±2.1	1400±2.1	355±4	160 ^{+0.04} _{+0.01}	300±0.65	40 ⁰ _{-0.062}	147 ⁰ _{-0.3}	560 ⁰ ₋₁	42 ^{+0.6} ₀	

Frame	Pole	OUTLINE								
		AC	AD	AB	BB	HA	HD	L1	L2	L
315	2	350	760	680	1080	45	785	482	797	1740
315	4	350	760	680	1080	45	785	512	797	1770
355	2	400	785	760	1140	50	995	491	841	1800
355	4~6	400	785	760	1140	50	995	561	841	1870
400	2	445	920	870	1200	50	980	662	700	2000
400	4~8	445	920	870	1200	50	980	702	700	2040
450	2	500	950	980	1495	50	1140	670	921	2360
450	4	500	950	980	1495	50	1140	710	921	2400
450	6~8	500	950	980	1495	50	1140	750	921	2440
500	4~8	550	1010	1080	1600	65	1220	786	980	2530
560	4	610	1030	1170	1680	76	1480	812	970	2650
560	6~8	610	1030	1170	1680	76	1480	862	970	2700

frame 500, 560 2 pole and V1, B3/B5 drawings on demand.

Bearings (IMB3)

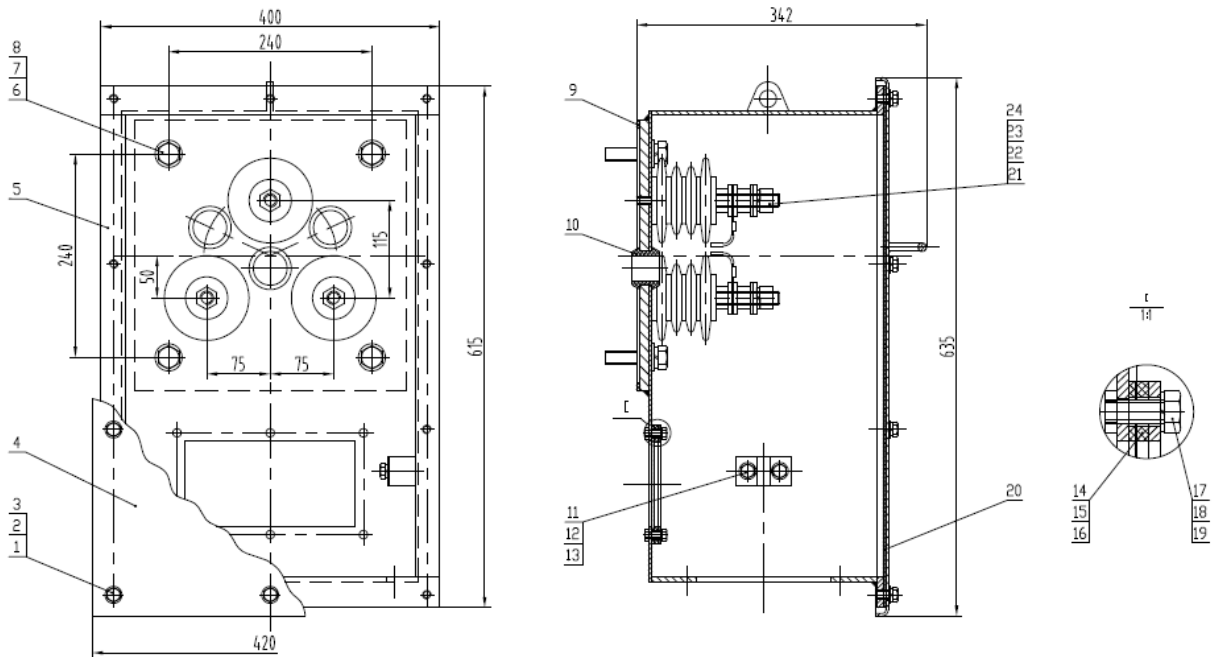
F2-HV (6 kV)			F2-HV (10 kV)		
315-2	6317C3	6317C3			
315-4.6.8	6319C3	6319C3			
355-2	6318C3	6318C3			
355-4.6.8	6322C3	6322C3			
400-2	6220C3	6220C3	400-2	6220C3	6220C3
400-4.6.8	6326C3	6326C3	400-4	6326C3	6326C3
450-2	6221C3	6221C3	450-2	6221C3	6221C3
450-4.6.8	6328C3	6328C3	450-4.6.8	6328C3	6328C3
500-2	on demand	on demand	500-2	on demand	on demand
500-4	6328C3	6328C3	500-4.6.8	6328C3	6328C3
500-6.8	6330C3	6330C3			
560-2	on demand	on demand	560-2	on demand	on demand
560-4.6.8	6334C3	6330C3	560-4.6.8	6334C3	6330C3



Tutti i dati (tecnici, dimensionali, ecc.) riportati nelle tabelle sono indicativi e non impegnativi. I valori garantiti vengono rilasciati su richiesta. Con l'obiettivo di un continuo sviluppo del Prodotto Motore Elettrico, FELM srl si riserva il diritto di modificare il progetto, le caratteristiche tecniche e dimensionali in qualsiasi momento senza preavviso.

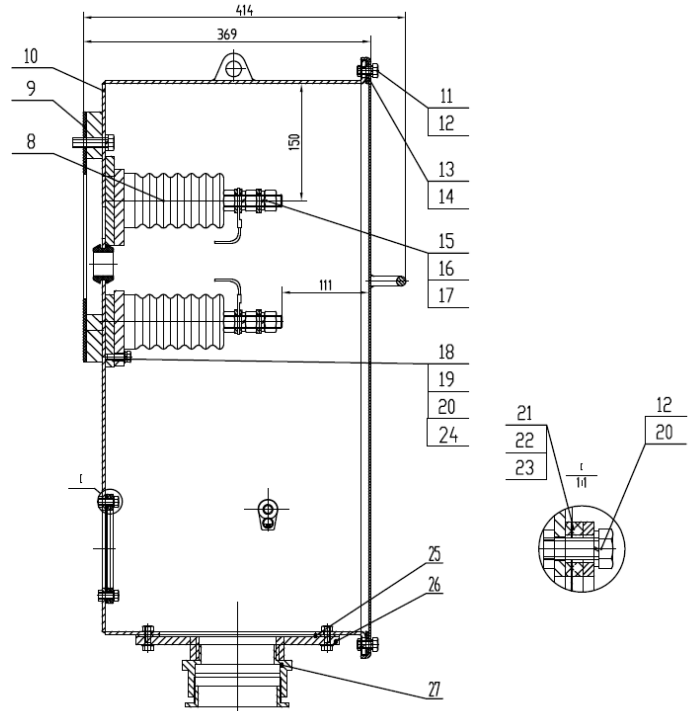
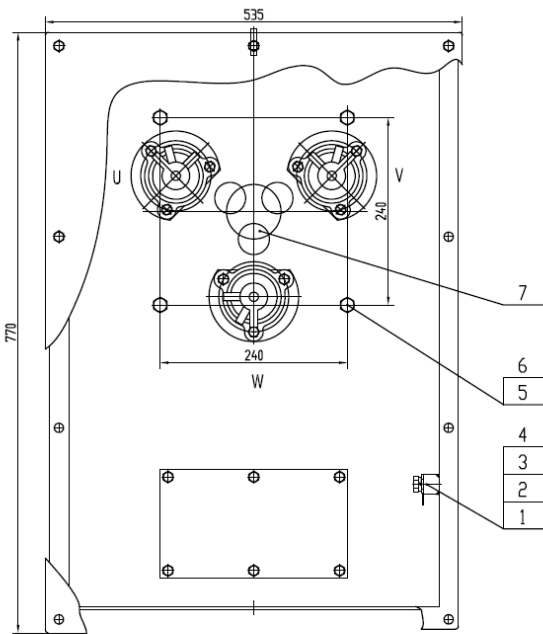
All data (technical, dimensions, etc..) listed in the tables are indicative and not binding. The guaranteed values are upon request. Felm srl reserves the right to change the project, the technical characteristics and dimensions at any time without previous notice.

Terminal box kv. 6



No.	Name	Type	No.	Name	Type	No.	Name	Type
1	Grouding		11	Bolt	M10x20	21	Sealing gasket	
2	Gasket 12		12	Gasket 10		22	Cover plate	
3	Gasket 12		13	Rubber gasket		23	Pressing plate	
4	Bolt	M12x25	14	Cover plat		24	Rubber gasket	
5	Bolt	M16x55	15	Gasket 16		25	Sealing gasket	
6	Gasket 16		16	Gasket 16		26	Outlet cover plate	
7	Outlet line protection sleeve		17	Nut 16		27	Barrel	G4"
8	Post isulator		18	Gasket 8				
9	Sealinf gasket		19	Gasket 8				
10	Terminal box base		20	Bolt	M8x25			

Terminal box kV. 10



No.	Name	Type	No.	Name	Type	No.	Name	Type
1	Grouding		11	Bolt	M10x20	21	Sealing gasket	
2	Gasket 12		12	Gasket 10		22	Cover plate	
3	Gasket 12		13	Rubber gasket		23	Pressing plate	
4	Bolt	M12x25	14	Cover plat		24	Rubber gasket	
5	Bolt	M16x55	15	Gasket 16		25	Sealing gasket	
6	Gasket 16		16	Gasket 16		26	Outlet cover plate	
7	Outlet line protection sleeve		17	Nut 16		27	Barrel	G4"
8	Post isulator		18	Gasket 8				
9	Sealinfg gasket		19	Gasket 8				
10	Terminal box base		20	Bolt	M8x25			

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