Ex d - Explosion Proof Multivoltage Motors With Brake - Cast Iron Frame Premium Efficiency EFF1

Standard Features:

- Three-phase, multivoltage, IP55, TEFC
- Output: 1.9 up to 18.5kW
- Frames: 132S up to 160L
- Voltage: 220-240/380-415V (up to 100L)
  380-415/660V (from 112M and up)
- Class “F” insulation (ΔT=80K)
- Continuous duty: S1
- Design N
- Class of temperature: T3 or T4
- Thermal protection:
  - Thermistors 130°C/T4 and 155°C/T3
  - Thermostat 140°C - brake
- Ambient temperature: 40°C, at 1000 m.a.s.l.
- Squirrel cage rotor/Aluminium die cast
- Reinforced set screws
- Internal DE and NDE bearing cap to prevent flame propagation
- Machined metal to metal surfaces between frame and terminal box
- Ground lug inside the terminal box
- Stainless steel nameplate identifying: standards, classification, temperature code and certification number
- Epoxy based painting plan 202
- Color: RAL 5009

Options Available:

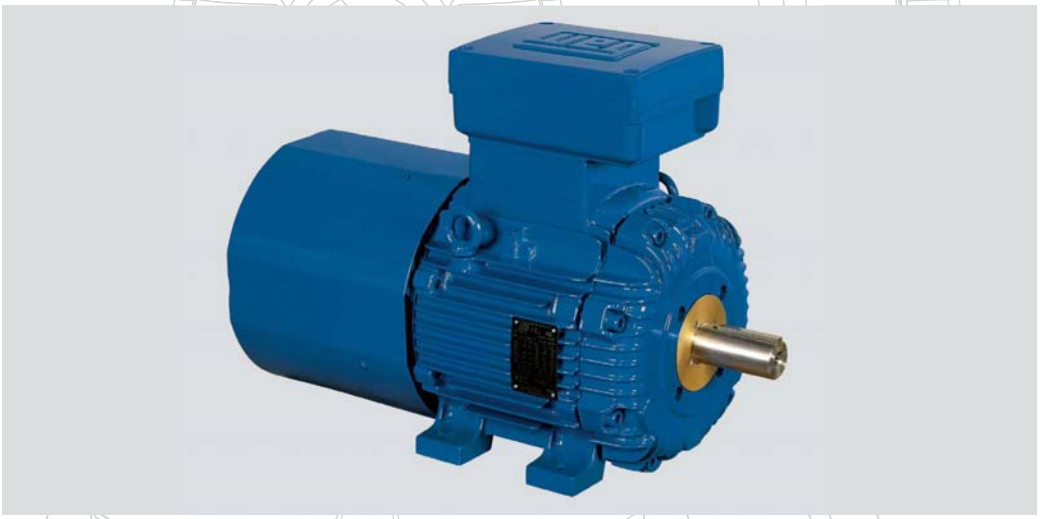
- Degree of Protection: IP56 or IP66
- Bearing seals:
  - Lip seal
  - Oil seal
  - Labyrinth taconite seal and W3seal for frames 90S and above

More options available, on request

Typical Applications:

WEG explosion proof motors meet ATEX Directive 94/9/EC and are designed to operate in areas that require quick stop and/or time saving during operation in application that require explosion proof motors like:

- Machine tools
- Looms
- Packing machines
- Conveyor belts
- Wash and bottling machines
- Cranes



Fan Cover
Made of steel plate for frames 132M and of cast iron for frames 160M. It offers a superior mechanical rigidity, corrosion-resistance and extended lifetime.
With a design incorporating the braking system, the fan cover guarantees proper fan cover to the upper brake allowing operation in severe environments. In addition, it offers quality and performance requirements of the motors such as noise level.

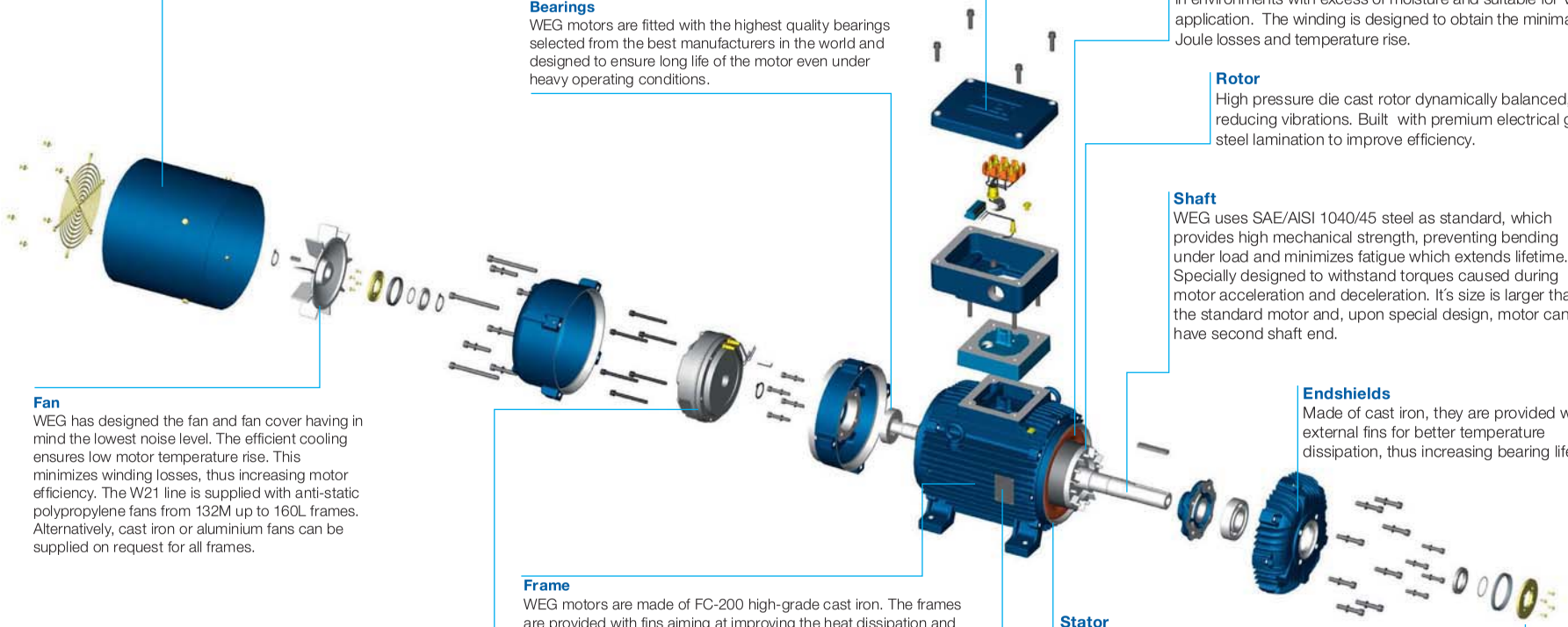
Terminal Box
Made of cast iron made with plenty of internal space. The terminal box can be rotated in 90° intervals, having one or two threaded holes to connect the power supply cables. Power supply connection components are certified, then reducing short-circuit inside the terminal box. The grounding system is placed inside and outside of the terminal box for improved safety. Suitable to take the additional connection of the brake as well as bridge rectifier which is fixed internally without affecting the motor degree of protection.
* Available as top or side mounted.

Bearings
WEG motors are fitted with the highest quality bearings selected from the best manufacturers in the world and designed to ensure long life of the motor even under heavy operating conditions.

Winding
The wire is enameled with class H varnish. Supplied with patented WISE (WEG Insulation System Evolution), which allows three times longer motor lifetime designed to operate in environments with excess of moisture and suitable for VFD application. The winding is designed to obtain the minimal Joule losses and temperature rise.

Rotor
High pressure die cast rotor dynamically balanced, thus reducing vibrations. Built with premium electrical grade steel lamination to improve efficiency.

Shaft
WEG uses SAE/AISI 1040/45 steel as standard, which provides high mechanical strength, preventing bending under load and minimizes fatigue which extends lifetime. Specially designed to withstand torques caused during motor acceleration and deceleration. It's size is larger than the standard motor and, upon special design, motor can have second shaft end.



Endshields
Made of cast iron, they are provided with external fins for better temperature dissipation, thus increasing bearing life.

Fan
WEG has designed the fan and fan cover having in mind the lowest noise level. The efficient cooling ensures low motor temperature rise. This minimizes winding losses, thus increasing motor efficiency. The W21 line is supplied with anti-static polypropylene fans from 132M up to 160L frames. Alternatively, cast iron or aluminium fans can be supplied on request for all frames.

Brake
The electromagnetic brake is of sturdy construction offering high performance for its low number of movable components and versatility on the application, resulting in extended lifetime and low maintenance. The possibility of having several torques and several power supply voltages makes this set a versatile component.

Frame
WEG motors are made of FC-200 high-grade cast iron. The frames are provided with fins aiming at improving the heat dissipation and adequately spaced to minimize air blockage due to build up of dirt. Motor designed to ensure that surface temperature is lower than ignition temperature of the gas that is present in the environment. Mechanical components are designed towithstand an explosion inside the motor without causing any risk to outside areas since there is no flame flame propagation through flame path. The motors can be mounted in any position, horizontal and vertical, withstanding the maximum axial and radial thrusts.

Stator
Built with low loss steel lamination to reduce magnetic losses and operating temperature.

Seals
WEG Explosion Proof Motors are fitted with either Lip seal or Labyrinth Tachonite as standard (see standard features list) to provide the best possible protection.

Nameplate
Stainless steel nameplate ensuring a permanent record of all motor data.

W3Seal
Exclusive WEG sealing system (tachonite + v'ring + o'ring) guarantee maximum protection against the ingress of solid and liquid contaminating

Ex d - Explosion Proof Multivoltage Motors With Brake - Cast Iron Frame Premium Efficiency EFF1

Output		IEC Frame	Full load torque C_n (Nm)	Locked rotor current I_l/I_n	Locked rotor torque T_l/T_n	Break-down torque T_b/T_n	Inertia J kgm²	Allowable locked rotor time Hot/Cold (s)	Weight (kg)	Sound dB (A)	Rated speed (rpm)	400 V						Full load current I_n (A)
												% of full load						
												Efficiency η			Power Factor (Cos φ)			
kW	HP											50	75	100	50	75	100	
II Pole - 3000 rpm																		
5.5	7.5	132S	17.95	8	2.7	3.2	0.02056	19/42	68.5	67	2935	88.5	90	90.1	0.71	0.81	0.86	10.2
7.5	10	132S	24.01	7.3	2.5	3	0.02056	10/22	90.5	67	2925	87.3	88.4	89.5	0.67	0.79	0.85	14.2
9.2	12.5	160M	29.71	8.5	2.5	3.2	0.04706	15/33	147	70	2955	87.5	90.5	91	0.72	0.82	0.86	17
11	15	160M	35.72	8.5	2.8	3.3	0.05295	14/31	122	70	2950	90	91.9	92.3	0.7	0.8	0.85	20.2
15	20	160M	47.7	7.8	2.5	3.2	0.05295	10/22	154	70	2945	90.4	91.7	91.8	0.74	0.83	0.87	27.1
18.5	25	160L	59.63	8.2	2.6	3.3	0.06471	10/22	172	70	2945	91.2	92.4	92.3	0.75	0.84	0.87	33.3
IV Pole - 1500 rpm																		
5.5	7.5	132S	35.96	8	2.4	3	0.04264	10/22	90	56	1465	86.5	89.1	89.2	0.64	0.76	0.83	10.7
9.2	12.5	160M	60.14	5.6	2.3	2.3	0.08029	27/59	122	67	1460	89.6	91	91	0.7	0.8	0.84	17.4
11	15	160M	71.92	6	2.5	2.6	0.10037	19/42	137	67	1465	90.3	91.4	91.2	0.68	0.78	0.83	21
15	20	160L	95.89	6.1	2.5	2.6	0.11542	17/37	142	67	1465	90.5	91.9	91.8	0.66	0.77	0.83	28.4
VI Pole - 1000 rpm																		
3	4	132S	29.27	6	2.1	2.5	0.04264	28/62	67	52	960	82	85	86.5	0.53	0.67	0.74	6.76
4	5.5	132M	40.24	6.5	2.2	2.5	0.05039	21/46	76	52	960	85	86.6	87.2	0.56	0.69	0.76	8.71
5.5	7.5	132M	54.87	6.4	2.2	2.4	0.06202	14/31	108	52	960	84.5	86.7	86.7	0.54	0.67	0.75	12.2
7.5	10	160M	72.41	6.6	2.5	2.9	0.14364	19/42	118	56	970	87.5	89.5	90	0.61	0.74	0.81	14.8
9.2	12.5	160L	90.51	6.2	2.2	2.7	0.16518	15/33	142	56	970	89.4	90.1	90.1	0.6	0.73	0.8	18.4
11	15	160L	108.62	7	2.4	2.7	0.17595	13/29	148	56	970	89	90.3	90.3	0.58	0.72	0.79	22.3
VIII Pole - 750 rpm																		
2.2	3	132S	29.68	5.3	2.1	2.3	0.0552	19/42	98	48	710	79	79.9	80	0.51	0.64	0.72	5.51
3	4	132M	39.57	5.9	2.5	2.6	0.07527	16/35	134	48	710	79.5	82.5	83	0.52	0.64	0.72	7.25
4	5.5	160M	53.29	5.2	2.2	2.8	0.12209	27/59	122	51	725	83	85.8	86.6	0.44	0.57	0.66	10.1
5.5	7.5	160M	72.16	5.2	2.3	2.7	0.14364	23/51	164	51	730	82.2	85	86	0.44	0.58	0.68	13.6
7.5	10	160L	96.88	4.9	2	2.5	0.16518	15/33	184	51	725	84.5	86.7	86.5	0.5	0.62	0.71	17.6

Notes:
**Class "F" insulation with ΔT105K*
Standard voltage, connection and frequency: 220-240V Δ 50Hz
380-415V Y 50Hz
380-415V Δ 50Hz
660-690V Y 50Hz
The values shown are subject to change without prior notice. To obtain guaranteed values please access our website.

Ex d - Explosion Proof Multivoltage Motors With Brake - Cast Iron Frame Premium Efficiency EFF1

Output		380 V								415 V							
		Rated speed (rpm)	% of full load						Full load current I_n (A)	Rated speed (rpm)	% of full load						Full load current I_n (A)
			Efficiency η			Power Factor (Cos φ)					Efficiency η			Power Factor (Cos φ)			
kW	HP		50	75	100	50	75	100			50	75	100	50	75	100	
II Pole - 3000 rpm																	
5.5	7.5	2930	89	90.3	90.2	0.75	0.83	0.87	10.6	2940	88	89.8	90	0.68	0.78	0.84	10.1
7.5	10	2915	88	88.7	89.3	0.73	0.83	0.87	14.7	2930	86.5	88	89.5	0.62	0.75	0.82	14.2
9.2	12.5	2950	88	90.5	90.8	0.76	0.84	0.87	17.7	2960	87	90.4	91	0.69	0.8	0.84	16.7
11	15	2945	90.5	92	92.2	0.74	0.83	0.87	20.8	2955	89.5	91.8	92.2	0.66	0.77	0.83	20
15	20	2935	90.9	91.8	91.6	0.79	0.86	0.88	28.3	3950	89.9	91.6	91.9	0.71	0.8	0.86	26.4
18.5	25	2940	91.6	92.5	92.1	0.8	0.86	0.88	34.7	2950	90.8	92.3	92.4	0.72	0.82	0.85	32.8
IV Pole - 1500 rpm																	
5.5	7.5	1460	87.5	89.3	89	0.7	0.8	0.85	11	1465	85.5	88.9	89.2	0.59	0.72	0.81	10.6
9.2	12.5	1455	90	91	90.7	0.74	0.82	0.85	18.1	1465	89.2	91	91	0.67	0.78	0.83	16.9
11	15	1460	90.6	91.5	91	0.72	0.81	0.85	21.6	1470	90	91.3	91.3	0.64	0.75	0.81	20.7
15	20	1460	90.9	91.9	91.5	0.7	0.8	0.85	29.3	1470	90.1	91.9	91.8	0.62	0.74	0.81	28.1
VI Pole - 1000 rpm																	
3	4	955	83	85.2	86	0.57	0.69	0.76	6.97	965	81	84.8	86.5	0.5	0.64	0.72	6.7
4	5.5	955	85.7	86.8	87	0.6	0.72	0.78	8.96	965	84.3	86.4	87.2	0.52	0.66	0.74	8.62
5.5	7.5	955	85.5	87	86.5	0.56	0.7	0.76	12.7	965	83.5	86.4	86.9	0.51	0.64	0.73	12.1
7.5	10	965	88	89.7	89.9	0.65	0.77	0.82	15.5	975	87	89.3	90	0.58	0.71	0.79	14.7
9.2	12.5	970	90	90.3	90	0.64	0.75	0.81	19.2	975	88.7	89.9	90	0.55	0.71	0.79	18
11	15	970	89.5	90.5	90.2	0.62	0.76	0.81	22.9	975	88.5	90	90.3	0.54	0.68	0.76	22.3
VIII Pole - 750 rpm																	
2.2	3	700	79.5	80	79.5	0.56	0.68	0.75	5.61	715	78.5	79.8	80.1	0.48	0.61	0.7	5.46
3	4	700	80.5	83	82.5	0.54	0.66	0.74	7.47	715	78.5	82	83	0.5	0.62	0.7	7.18
4	5.5	725	84	86.2	86.6	0.48	0.61	0.7	10	730	82	85.4	86.6	0.41	0.53	0.63	10.2
5.5	7.5	725	83.2	85.5	86	0.48	0.62	0.71	13.7	730	81.2	84.5	86	0.4	0.54	0.65	13.7
7.5	10	720	85.5	87	86.3	0.53	0.65	0.73	18.1	730	83.5	86.5	86.5	0.47	0.59	0.69	17.5

Ex d - Explosion Proof Motors with Brake - Cast Iron Frame
Two speed - Premium Efficiency EFF1

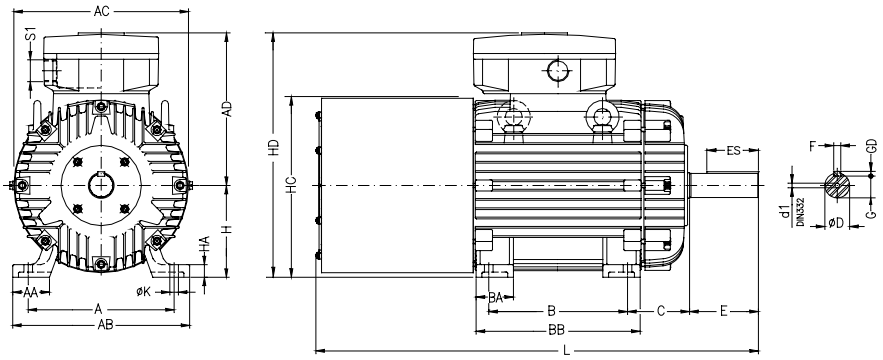
Output		IEC Frame	Full load torque C_n (Nm)	Locked rotor current I_l/I_n	Locked rotor torque T_l/T_n	Break-down torque T_b/T_n	Inertia J kgm²	Allowable locked rotor time Hot/Cold (s)	Weight (kg)	Sound dB (A)	Rated speed (rpm)	400 V						Full load current I_n (A)
												% of full load						
												Efficiency η			Power Factor (Cos φ)			
kW	HP											50	75	100	50	75	100	
Constant torque IV/II Pole - Dahlander Winding																		
IV/II Pole - 1500/3000 rpm																		
3.7	5	132S	2.45	7	1.9	2.3	0.04264	10/22	85.4	60	1460	84	85	84.5	0.74	0.84	0.89	7.101
4.4	5.9		1.45	7.5	2.4	2.8		7/15		68	2910	76.5	80	80.5	0.81	0.89	0.92	8.575
4.9	6.6	132S	3.26	6.5	1.7	2	0.04264	8/18	88	60	1450	82	83	83	0.78	0.86	0.89	9.57
5.9	7.9		1.96	6.5	2	2.3		6/13		68	2890	77.5	78.5	79	0.82	0.89	0.92	11.7
6.8	9.2	160M	4.51	5.6	2	2.3	0.08028	20/44	144.8	67	1460	84.5	86.5	86.7	0.67	0.78	0.83	13.639
8	11		2.69	7.1	2.4	2.8		10/22		70	2930	78	82	82.5	0.74	0.83	0.88	15.905
9.5	12.9	160M	6.35	5	1.9	2.1	0.09034	15/33	151.5	67	1455	87	88	87	0.69	0.79	0.83	18.989
11	15		3.68	6.5	2.3	2.9		7/15		70	2920	82	83	84	0.74	0.83	0.88	21.479
12	16.3	160L	8.02	5.1	1.9	2.1	0.11041	12/26	169	67	1455	88	89	88	0.69	0.79	0.83	23.714
15	20		4.9	6.5	2.3	2.8		6/13		70	2920	83	84.5	85.5	0.75	0.85	0.89	28.452
Constant torque VIII/IV Pole - Dahlander Winding																		
VIII/IV Pole - 750/1500 rpm																		
1.9	2.6	132S	6.3	25.36	2.6	2.6	0.07527	7/15	97	48	720	70	74.5	76	0.44	0.57	0.67	5.39
3.7	5		7	24.56	2.4	2.4		6/13		60	1430	79.2	80.1	82	0.78	0.87	0.9	7.24
3.3	4.5	160M	5.2	43.3	2.1	2.7	0.12208	20/44	144.7	51	730	76.5	80.5	81.5	0.45	0.58	0.68	8.595
5.5	7.5		7	36.08	2	2.7		12/26		67	1460	84	85	85.2	0.8	0.88	0.91	10.239
3.7	5	160M	5.4	48.11	2.3	2.8	0.12927	10/22	146	51	730	72.5	77.5	79.5	0.43	0.55	0.65	10.3
7	9.5		6.5	46.02	2.2	2.6		6/13		67	1450	83.5	84.2	84.5	0.79	0.87	0.9	13.3
5.5	7.5	160M	5	73.17	2.1	2.4	0.14364	15/33	151	51	720	74	77.5	79.6	0.48	0.6	0.7	14.2
8.8	12		6.5	58.13	2.1	2.4		7/15		67	1450	83.2	84.3	84.5	0.79	0.86	0.88	17.1
7	9.5	160L	5	92.04	2.3	2.4	0.16518	12/26	166	51	725	75	79.5	80.5	0.46	0.58	0.68	18.5
11	15		6.5	72.41	2.2	2.6		6/13		67	1455	84	85	85	0.77	0.86	0.89	21
Variable torque IV/II Pole - Dahlander Winding																		
IV/II Pole - 1500/3000 rpm																		
1.1	1.5	132S	7.17	5	2.1	3	0.01741	60/132	51	60	1470	69	75	78	0.5	0.6	0.69	2.95
4.4	5.9		14.1	9	2.8	3.3		7/15		68	2940	78.5	82.5	84	0.7	0.81	0.87	8.69
3	4	160M	19.11	6	2	2.4	0.05294	28/62	130	67	1470	80	83	84	0.5	0.63	0.71	7.26
12	16		38.1	8.5	2.5	2.9		6/13		70	2950	83	85	86	0.71	0.81	0.87	23.1
Variable torque VIII/IV Pole - Dahlander Winding																		
VIII/IV Pole - 750/1500 rpm																		
1.8	2.45	160M	23.57	5.2	2.1	2.8	0.12208	30/66	122	51	730	75.8	80	81.2	0.46	0.58	0.67	4.776
7.2	9.8		46.83	8.5	2.5	3.6		7/15		67	1470	82	85	85.8	0.65	0.77	0.84	14.419
3	4	160L	38.75	4.3	1.7	2.1	0.14364	30/66	131	51	725	81	82	82.5	0.54	0.67	0.75	7
11	15		72.41	7	2.4	2.7		6/13		67	1455	84	85.5	86	0.71	0.83	0.88	21

Notes:
- The motors can be also operate at 60Hz supply. The change in performance data can be obtained directly from the local WEG distributor.
- The values herewith are subjected to change without prior notice.

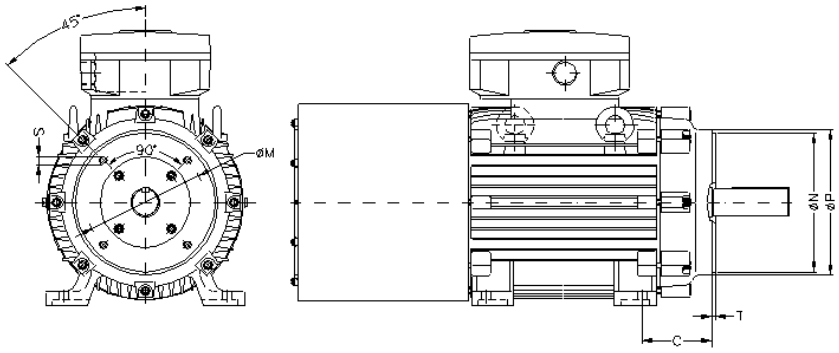
I_l/I_n = Locked rotor current
T_l/T_n = Locked rotor torque
I_n = Full load current

Ex d - Explosion Proof Multivoltage Motors With Brake - Cast Iron Frame

Mechanical Data



IEC FRAME	A	AA	AB	AC	AD	B	BA	BB	C	SHAFT DIMENSIONS						H	HA	HC	HD	K	L	S1	d1	BEARINGS	
										D	E	ES	F	G	GD									D.E.	N.D.E.
132S	216	51	248	270	271	140	55	188	89	38k6	80	63	10	33	8	132	19.5	282	403	12	572	2xM32x1.5	DM12	6308-ZZ	6207-ZZ
132M						178		226													610				
160M	254	64	308	312	322	210	65	254	108	42k6	110	80	12	37		160	22	315	482	14.5	738	2xM40x1.5	DM16	6309-C3	6209-Z-C3
160L						254		298													782				



IEC FRAME	"FF" FLANGE DIMENSIONS									N° OF HOLES
	FLANGE	C	LA	M	N	P	T	S	α	
132S/M	FF-265	89	12	265	230	300	4	15	45°	4
160M/L	FF-300	108	13	300	250	350	5	19		

IEC FRAME	"C" DIN FLANGE DIMENSIONS							N° OF HOLES
	FLANGE	C	M	N	P	S	T	
132S/M	C-200	89	165	130	200	M10	3.5	4

IEC FRAME	"C" FLANGE DIMENSIONS							N° OF HOLES
	FLANGE	C	M	N	P	S	T	
132S/M	FC-184	89	184.2	215.9	225	UNC	6.3	4
160M/L		108				1/2"13		

** This data apply to Ex d - Explosion Multivoltage Motors with Brake – Improved Efficiency - EFF2, Premium Efficiency – EFF1.*