



**HAVELLS**

IE2

# Fire Fighting Motors



2023

## Introduction:

Havells is leading manufacturer of Induction Motors. Havells motors are extensively used in various industries and applications.

Havells state of the art manufacturing plant located at Neemrana, Rajasthan where we manufacture energy efficient IE2 & IE3 Motors ranging from 0.25 HP to 425 HP, 0.18 kW to 315 kW.

Today, fire safety is an important issue throughout the world; Fire extinguishing systems are one of the top priorities in commercial, industrial building and infrastructure facility project such as schools, hospitals, malls, airports, factories, warehouses, dams, treatment facilities, etc.

Havells "Fire fight" Series IE2 2-Pole motors designed for ambient temperature 50 Degree with optimum starting torque to drive high pressure fire pumps. Motor comes with Class F to F rise. Fire Motor Pumps are used to increase the pressure of water sourced from a municipal underground water supply piping network, or a static supply (e.g., tank, reservoir, lake).

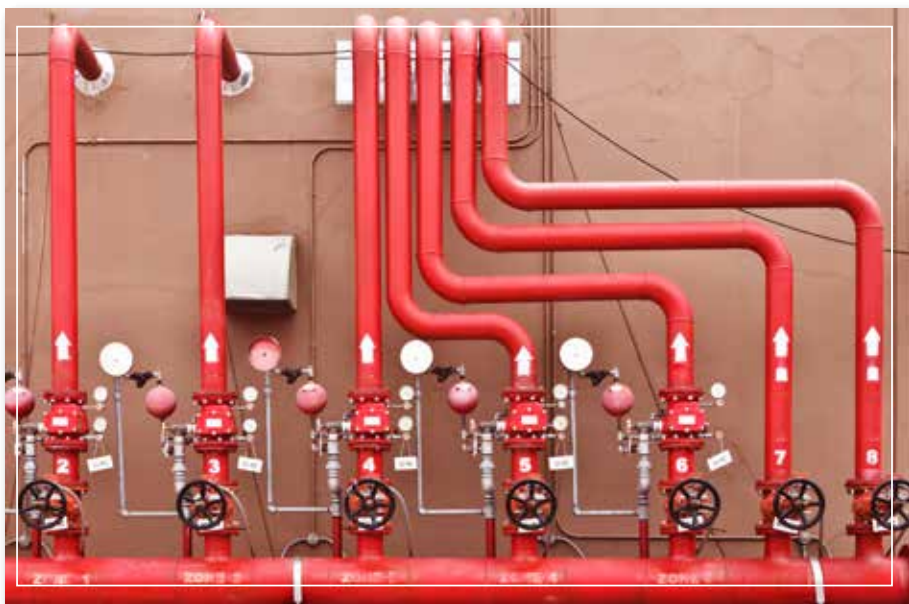


## General Specification

Havells fire fight series comply IS12469:2019 standard which give guidelines for firefighting installations.

### Fire Fighting Motor - IE2

Rated Power	5.5 kW to 75 kW
IEC Frame	112 To 250
Cooling Type	TEFC
Frequency	50 Hz $\pm$ 5% Variation
Voltage	415 V $\pm$ 10% Variation
Insulation	Class F
Temperature Rise	Limit ed to Class F
Duty	S1
Single Speed Pole	2
Protection	IP55
Mounting	B3
Paint	RAL 3000
Re-greasing Facilities	200 Frame and above



### Applications:

- Fireworks Industries
- Commercial Complex
- Petrochemical Industries
- Gas Plants
- High rise buildings
- Godowns
- Marine Applications
- Hospital
- School & colleges
- Power Substations

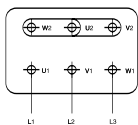


# Technical Data

## Electrical

S. No	Frame Size	Output		Pole	Speed r/min RPM	Efficiency			Power Factor (Cos φ)			Rated Current A	DIRECT-ON-LINE STARTING			Moment of inertia GD2 (kgm <sup>2</sup> )	Weight kg (Approx.)
		kW	HP			100%	75%	50%	100%	75%	50%		Starting Current (%)	Breakaway Torque (%)	Pull-Out Torque (%)		
1	MHEE112MAA2	5.5	7.5	2	2890	87	87	86.1	0.89	0.86	0.8	9.9	700	240	270	0.011	42
2	MHEE112MBA2	7.5	10	2	2890	88.1	88.1	86.9	0.9	0.87	0.81	13.2	700	250	290	0.015	44
3	MHEE132MTA2	9.3	12.5	2	2930	89	89	87.7	0.86	0.81	0.72	16.9	750	230	250	0.065	69
4	MHEE132MRA2	11	15	2	2920	89.4	89.4	88.5	0.88	0.85	0.79	19.5	700	230	260	0.08	72
5	MHEE132MSB2	15	20	2	2910	90.3	90.3	89.1	0.88	0.82	0.78	26.4	700	200	230	0.094	77
6	MHEE160MYA2	15	20	2	2920	90.3	90.3	89.4	0.89	0.87	0.87	26	700	230	250	0.26	135
7	MHEE160MZA2	18.5	25	2	2920	90.9	90.9	90	0.9	0.89	0.87	31.5	750	200	250	0.226	138
8	MHEE160LZA2	22	30	2	2920	91.3	91.3	90.4	0.9	0.89	0.85	37.2	710	200	230	0.256	144
9	MHEE160LRA2	26	35	2	2920	91.7	91.7	90.4	0.88	0.82	0.78	45	750	210	240	0.301	149
10	MHEE180LPG2	30	40	2	2935	92	92	91.1	0.87	0.85	0.85	52.1	700	220	250	0.295	165
11	MHEE180LZA2	37	50	2	2900	92.5	92.5	91.6	0.88	0.86	0.86	63.2	700	200	250	0.35	171
12	MHEE200LRG2	45	60	2	2960	92.9	92.9	92	0.87	0.85	0.85	77.5	700	225	250	0.99	256
13	MHEE225MP2	55	75	2	2945	93.2	93.2	92.3	0.86	0.88	0.83	95.5	700	220	260	1.4	335
14	MHEE225MQ2	60	80	2	2945	93.4	93.4	91.7	0.86	0.81	0.74	104	700	200	230	1.198	343
15	MHEE250MP2	67	90	2	2945	93.6	93.6	92.5	0.89	0.86	0.77	112	700	200	230	1.768	441
16	MHEE250MQ2	75	100	2	2970	93.8	93.8	92.9	0.92	0.9	0.85	120.9	700	210	250	1.95	447
17	MHEE280SB2	90	120	2	2970	94.1	94.1	93.2	0.9	0.88	0.84	148	700	210	240	4.56	593
18	MHEE280MB2	110	150	2	2975	94.3	94.3	93.4	0.9	0.88	0.86	180	700	200	235	5.1	668

## Connection Diagram



Windings of standard three-phase motors can be connected either in star or delta connection.

Star connection

A star connection is obtained by connecting W2, U2, V2 terminals to each other and the U1, V1, W1 terminals to the mains. The phase current and voltage are:  
 $I_{ph} = I_n$  ;  $U_{ph} = U_n / 1.732$

where  $I_n$  is the line current and  $V_n$  the line voltage referred to the star connection.

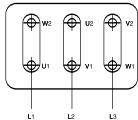
Delta connection

A delta connection is obtained by connecting the end of a phase to the beginning of the next phase.

The phase current  $I_{ph}$  and the phase voltage  $U_{ph}$  are:

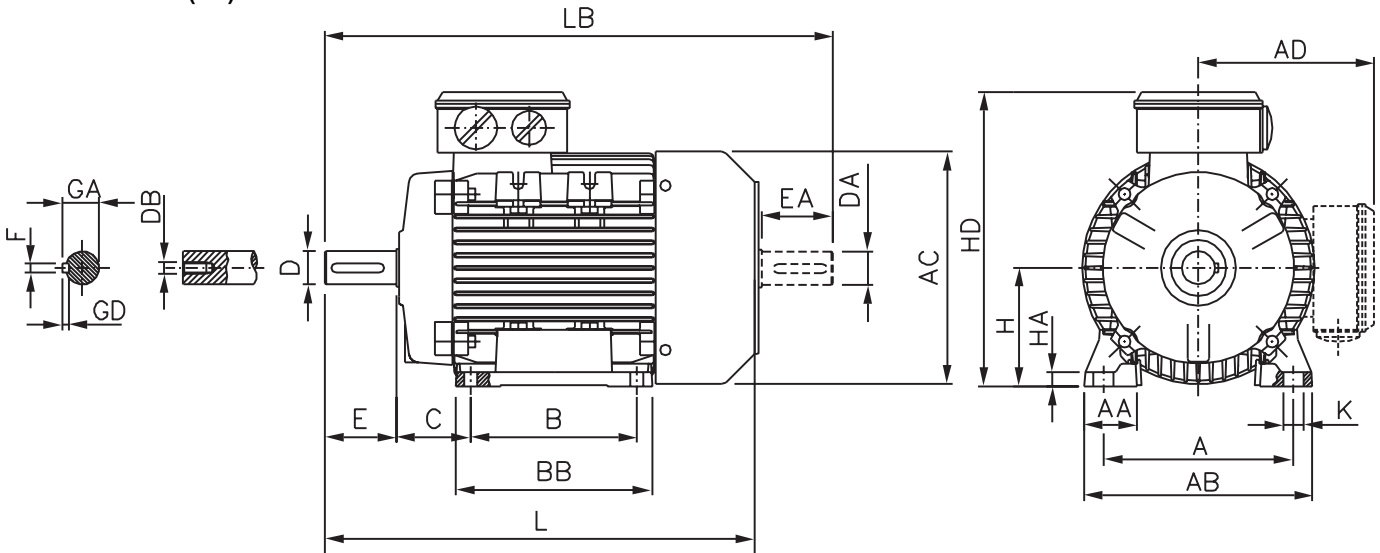
$I_{ph} = I_n / 1.732$  ;  $U_{ph} = U_n$

where  $I_n$  and  $U_n$  are referred to the delta connection.



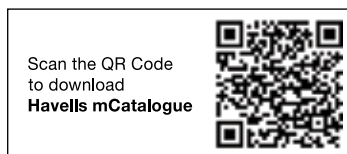
## General Assembly Drawing

### Foot Mounted (B3)



Frame	No of Poles	H	A	B	C	K	AB	BB	AD	HD	AC	HA	L	AA	D/DA	E/EA	F	GD	GA	DB
112	2	112	190	140	70	12	220	175	171	283	221	15	387	48	28	60	8	7	31	M10
132M	2	132	216	178	89	12	256	218	195	327	248	15	483	59	38	80	10	8	41	M12
160M	2	160	254	210	108	15	308	260	250	410	317	20	590	65	42	110	12	8	45	M16
160L	2	160	254	254	108	15	308	300	250	410	317	20	630	65	42	110	12	8	45	M16
180M	2	180	279	241	121	14	330	316	265	445	355	22	715	66	48	110	14	9	51.5	M16
180L	2	180	279	279	121	14	330	316	265	445	355	22	715	66	48	110	14	9	51.5	M16
200L	2	200	318	305	133	18	380	360	295	495	379	25	800	79	55	110	16	10	59	M20
225S	2	225	356	286	149	18.5	420	375	318	543	443	28	878	88	55	110	16	10	59	M20
225M	2	225	356	311	149	18.5	420	375	318	543	443	28	878	88	55	110	16	10	59	M20
250M	2	250	406	349	168	24	500	425	360	610	494	40	970	135	60	140	18	11	64	M20
280S	2	280	457	368	190	24	545	500	392	672	519	38	1049	90	65	140	18	11	69	M20
280M	2	280	457	419	190	24	545	500	392	672	519	38	1049	90	65	140	18	11	69	M20

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