



# Energy saving motors

designed for High Efficiency IE2

SENSE EXPERIENCE  
EXPERIENCE VISION





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Energy efficient drives for pumps, fans, compressors

## **Economy and Ecology**

Motors with high efficiency from VEM

- › lower power consumption
- › help reduce energy costs
- › comply with European statutory regulations
- › are suitable for retrofitting of existing plants
- › spare natural resources by increased energy efficiency.

The efficiencies of all motors of the VEM energy efficient series comply with efficiency class IE2 according to IEC 60034-30.

## **IE2 minimum efficiencies from 16.06.2011**

In the power range from 0.75 kW to 375 kW new efficiency classes are valid for three-phase motors with 2-, 4- and 6-pole design according to IEC 60034-30

### **Standard Efficiency IE1**

### **High Efficiency IE2**

### **Premium Efficiency IE3**

These classes in connection with the new standard for testing IEC 60034-2-1 replace the former EFF-designation. In addition minimum efficiencies complying with regulation (EC) no. 640/2009 (dated 22<sup>nd</sup> July 2009) have been effective for asynchronous motors since June 2011.

- › Since 16.06.2011 until 01.01.2015 only IE2-motors are allowed in the product range for standard motors.

- › After 01.01.2015 efficiency class IE2 is replaced by IE3 in the power range from 7.5 kW up to 375 kW
- › Efficiency class IE2 must then only be used in connection with inverter operation.
- › After 01.01.2017 the power range is extended so that motors from 0.75 upwards are included. The use of IE2-motors is still permitted in connection with inverter operation.

## **Energy efficiency with expert knowledge from VEM**

Energy efficient motors from VEM are based on most advanced magnet materials, a special winding design and optimised bearings and ventilation. The output correlation and motor dimensions are the same as for the existing standard motors series, so that older motors and motors already placed into production can be replaced without problems by energy saving drives. With the participation at the Voluntary Agreement between CEMEP and European Union and the “Motor Challenge Programme” of EU VEM has documented a clear statement for energy efficiency of all VEM products. This process is continued by implementation of the directive 2009/125/EC setting of ecodesign requirements for energy-related products and is clearly documented by the conversion of the product range to production of electric motors with efficiency classes IE2 and IE3.



Energy-saving motors of the class High Efficiency IE2 are suitable for use in all branches of industry.

<b>Series</b>	<b>IE2-WE1R, IE2-W21R, W21R</b>
	<b>Mounting dimensions and output correlation according to DIN EN 50347</b>
Sizes	56 to 315
Power range	0.09 – 500 kW
Efficiency class	IE2 acc. to IEC 60034-30 in the power range 0.75...375 kW, 2-, 4- and 6-pole
Type of protection	IP 55 acc. to DIN EN 60034-5
Type of construction	IM B3, IM B35, IM B5 and derived types of construction acc. to EN 60034-7
Duty type	Continuous duty, S1
Type of cooling	IC 411 acc. to DIN EN 60034-6

kW	Type	2-pole		4-pole		6-pole			
		$\eta$	m	$\eta$	m	$\eta$	m		
[kW]		[%]	[kg]	[%]	[kg]	[%]	[kg]		
0.75	IE2-W21R 80 K2	83.3	15	IE2-W21R 80 G4	81.0	17	IE2-W21R 90 S6	77.0	24
1.1	IE2-WE1R 80 G2	83.0	18	IE2-WE1R 90 S4	82.7	23	IE2-W21R 90 LV6	80.4	26
1.5	IE2-WE1R 90 S2	85.8	23.5	IE2-WE1R 90 LV4	83.0	24	IE2-W21R 100 LX6	81.7	36
2.2	IE2-WE1R 90 L2	84.9	23.5	IE2-WE1R 100 L4	85.9	36	IE2-W21R 112 MV6	82.8	48
3.0	IE2-WE1R 100 L2	86.8	31	IE2-WE1R 100 LX4	86.1	45	IE2-W21R 132 S6	83.6	54
4.0	IE2-WE1R 112 MX2	87.5	38	IE2-WE1R 112 M4	87.0	50	IE2-W21R 132 M6	85.5	76
5.5	IE2-WE1R 132 S2	88.7	57	IE2-WE1R 132 S4	89.8	90	IE2-W21R 132 MX6	86.1	85
7.5	IE2-WE1R 132 SX2	88.4	75	IE2-WE1R 132 M4	89.9	92	IE2-W21R 160 M6	87.6	118
11	IE2-WE1R 160 M2	90.3	125	IE2-WE1R 160 M4	90.6	124	IE2-W21R 160 L6	88.7	135
15	IE2-WE1R 160 MX2	90.7	140	IE2-WE1R 160 L4	90.6	165	IE2-W21R 180 L6	89.7	185
18.5	IE2-WE1R 160 L2	91.0	140	IE2-WE1R 180 M4	91.5	207	IE2-W21R 200 L6	90.4	208
22	IE2-WE1R 180 M2	91.3	173	IE2-WE1R 180 L4	91.6	215	IE2-W21R 200 LX6	90.9	272
30	IE2-WE1R 200 L2	92.0	210	IE2-WE1R 200 L4	92.3	277	IE2-W21R 225 M6	92.0	365
37	IE2-WE1R 200 LX2	92.5	233	IE2-WE1R 225 S4	92.7	313	IE2-W21R 250 M6	92.2	485
45	IE2-WE1R 225 M2	92.9	295	IE2-WE1R 225 M4	93.1	390	IE2-W21R 280 S6	93.0	560
55	IE2-WE1R 250 M2	93.2	385	IE2-WE1R 250 M4	94.0	535	IE2-W21R 280 M6	93.5	710
75	IE2-WE1R 280 S2	94.1	510	IE2-WE1R 280 S4	94.2	550	IE2-W21R 315 S6	93.9	804
90	IE2-WE1R 280 M2	94.4	550	IE2-WE1R 280 M4	94.3	610	IE2-W21R 315 M6	94.0	1148
110	IE2-W21R 315 S2	94.5	730	IE2-W21R 315 S4	94.8	760	IE2-W21R 315 MX6	94.3	1210
132	IE2-W21R 315 M2	95.0	820	IE2-W21R 315 M4	95.0	850	IE2-W21R 315 MY6	94.6	1250
160	IE2-W21R 315 MX2	94.8	955	IE2-W21R 315 MX4	95.0	975	IE2-W21R 315 L6	94.8	1430
200	IE2-W21R 315 MY2	95.4	1200	IE2-W21R 315 MY4	95.1	1270	IE2-W21R 315 LX6	95.0	1460
250	IE2-W21R 315 L2	95.4	1450	IE2-W21R 315 L4	95.4	1450	IE2-W22R 355 M6	95.0	1850
315	IE2-W21R 315 LX2	95.4	1630	IE2-W21R 315 LX4	95.4	1630	IE2-W22R 355 MX6	95.0	2200
355	IE2-W22R 355 M2	95.0	2000	IE2-W22R 355 M4	95.5	2150	IE2-W22R 355 LY6	95.0	2400

Please refer to our catalogues for technical details. The catalogues are available in printed or in digital version on CD-ROM. They are also available in the internet.



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