THREEPHASE MOTORS : HIGH EFFICIENT SERIES (EFF1)

EFFICIENCY LEVELS

Electrical drive systems play a key role in saving energy and in protection of the environment.
These systems also account for two thirds of industral power consumption.

CEMEP has introduced a classification of electrical motors with General Directorate for Energy within the EC.
For this purpose three-phase motors with power outputs between 1.1 and 90 kW are divided into three zones, namely "Efficiency Classes".

The meeting of the required limits will be guaranteed by the manufacturer in their Manufacturer's Statement.

What will be the high-efficiency motors benefit to the user?

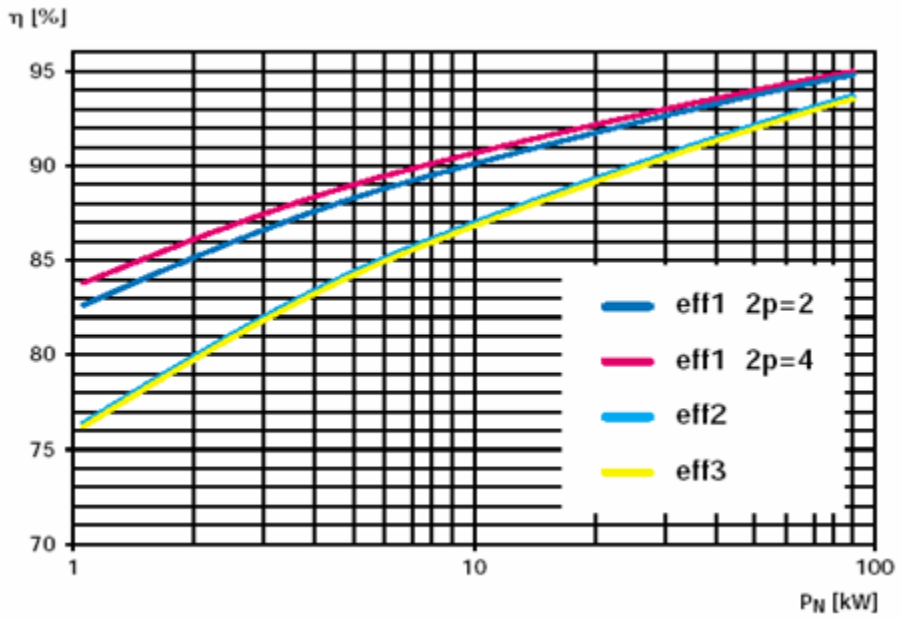
* Energy saving
* Reduction in energy costs
* Easily replacement of existing drives
* Protection of environment

The art of designing higher efficiencies is to obtain an optimum between losses and the operating characteristics requirements. This leads to use of more copper in the stator winding and of more aluminium in the rotor injection or a longer core in the stator and rotor design. Additional improvements incure higher costs which can certainly be justified according to particular application.

EFF1

The marking appears on the name plate and in the manufacturers documentation. Only European manufacturers who have entered the agreement are entitled to use the licensed logos.

Arçelik is an approved manufacturer in accordance with this agreement and produce high efficiency motors.



MOTOR TYPE	RATED VALUES					STARTING VALUES			EFF1				Sound Pressure Level dBA *
	OUTPUT	SPEED	CURRENT	MOMENT		CURRENT	TORQUE						
						IA / IN	MA / MN	Mk/ Mn	% η	Cos φ	J		

	HP	kW	rpm	A	Nm				3/4	4/4	4/4	kgm2	kg	
2 pole 3000 rpm														
230/400V														
QH 80M2D	1,5	1,1	2880	2,4	3,65	8,1	4,0	4,3	82,5	82,9	0,81	0,00150	13	58
QH 90L2C	2	1,5	2900	3,1	4,94	8,2	3,8	4,3	84,8	85,2	0,83	0,00182	17,5	62
QH 90L2D	3	2,2	2900	4,4	7,24	8,3	3,9	4,4	85,2	85,7	0,84	0,00182	18	62
QH 100L2D	4	3,0	2920	5,8	9,81	9,6	4,3	5,1	86,3	86,8	0,86	0,00335	26	64
400/690V														
QH 112M2C	5,5	4,0	2890	7,7	13,22	9,5	4,2	5,0	87,0	87,6	0,86	0,00489	31	67
QH 132S2C	7,5	5,5	2920	10,1	17,99	9,0	3,5	3,9	88,3	88,6	0,89	0,01410	47	70
QH 132M2A	10	7,5	2920	13,5	24,53	9,0	3,6	4,0	89,0	89,5	0,90	0,01596	53	70
QH 160M2A	15	11,0	2930	19,8	35,85	8,0	2,80	3,5	90,3	90,8	0,88	0,02644	70	71
QH 160M2B	20	15,0	2940	26,2	48,7	8,8	3,5	4,0	91,4	91,8	0,90	0,03317	82	71
QH 160L2A	25	18,5	2930	31,8	60,3	8,2	3,3	3,9	92,5	92,2	0,91	0,04075	92	71
QH 180M2A	30	22	2945	37,5	71,3	7,5	2,6	3,6	92,5	92,8	0,91	0,06193	112	77
QH 200L2A	40	30	2950	52,5	97,1	7,6	2,1	3,6	93,2	93,5	0,88	0,11917	147	80
QH 200L2B	50	37	2955	64,9	119,6	8,0	2,5	4,2	93,6	94,0	0,88	0,13885	162	80
QH 225M2A	60	45	2960	77,5	145,2	7,0	2,4	3,2	93,7	94,3	0,89	0,19833	249	81
QH 250M2A	75	55	2960	93,4	177,4	7,4	2,3	3,4	94,4	94,5	0,90	0,23505	251	81
4 pole 1500 rpm														
230/400V														
QH 90L4C	1,5	1,1	1430	2,6	7,35	7,0	3,2	3,7	83,5	83,9	0,73	0,00365	17,5	54
QH 90L4D	2	1,5	1430	3,4	10,02	7,3	3,5	4,0	84,5	85,0	0,76	0,00365	18	55
QH 100L4C	3	2,2	1440	4,8	14,59	8,0	4,1	4,4	86,0	86,6	0,77	0,00545	25	56
QH 100L4D	4	3,0	1440	6,3	19,90	7,6	3,8	4,2	87,0	87,4	0,79	0,00581	26	56
400/690V														
QH 112M4D	5,5	4,0	1450	8,3	26,34	8,6	3,2	4,3	87,8	88,3	0,79	0,01123	34	58
QH 132M4B	7,5	5,5	1450	11,0	36,22	8,7	3,2	4,3	88,6	89,3	0,81	0,02763	55	61
QH 132M4C	10	7,5	1450	14,7	49,40	9,5	3,2	4,5	89,7	90,2	0,82	0,02980	57	61
QH 160M4B	15	11	1460	21,5	71,95	8,0	2,9	3,9	91,2	91,5	0,81	0,05547	77	63
QH 160L4A	20	15	1455	28,5	98,45	8,0	2,7	3,5	91,8	92,0	0,83	0,06922	92	63
QH 180M4B	25	18,5	1465	35,0	120,6	9,0	3,2	3,4	92,0	92,5	0,82	0,11220	114	69
QH 180L4B	30	22	1465	42,0	143,4	8,5	2,8	3,9	92,5	93,0	0,81	0,12773	127	69
QH 200L4C	40	30	1465	53,5	195,6	7,0	2,3	3,2	93,6	93,8	0,86	0,25035	160	70
QH 225S4A	50	37	1470	67,8	240,4	7,9	3,2	3,3	94,4	94,5	0,83	0,36429	227	71
QH 225M4C	60	45	1470	81,0	292,3	7,3	3,0	3,5	95,1	95,0	0,84	0,43513	260	71
QH 250M4C	75	55	1475	96,2	356,1	7,5	3,0	3,50	95,2	95,3	0,87	0,46270	289	71

* The Sound Pressure Level measurements are taken 1 meter away from the motor.
* Tolerance + 3 dBA