

EXPLOSION-PROTECTED SERIES

YFBX4

YFBX4 SERIES HIGH EFFICIENCY DUST EXPLOSION-PROOF THREE-PHASE INDUCTION MOTOR

Totally enclosed dust explosion-proof induction motor for combustible dust atmospheres, at grade 2 of GB 18613—2020.

0.55-315 kW
RATED OUTPUT

H80-H355
FRAME CENTRE
HEIGHT

Grade 2
GB 18613—2020 (IE4)

Ex tb
TYPE OF PROTECTION

SERIES

YFBX4

REVISION

A01

ISSUE

September 2026

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DESCRIPTION

The YFBX4 series is a totally enclosed, high-efficiency motor protected against dust ignition by enclosure. Efficiency meets grade 2 of GB 18613—2020, one grade above the YFBX3 series. It is safe in use, compact, efficient and reliable, with low noise and low weight.

TECHNICAL SPECIFICATION

Explosion-protection marking	Ex tb IIIC T135 °C Db
Poles	2, 4, 6 and 8
Altitude	Not exceeding 1,000 m (3,280 ft)
Ambient temperature	−15 °C to +40 °C (5 °F to 104 °F)
Duty type	S1, continuous duty
Mounting arrangements	IM B3 (foot), IM B5 (flange), IM B35 (foot and flange)

STANDARDS

GB/T 3836.1-2021	Explosive atmospheres — Part 1: equipment, general requirements
GB/T 3836.31-2021	Explosive atmospheres — Part 31: equipment protected by enclosure “t” against dust ignition
Q/1083 SLJ 040-2023	YFBX4 series high efficiency dust explosion-proof three-phase induction motors, frames 80 to 355
GB 18613—2020	Energy efficiency grade 2, equivalent to IE4

MODEL DESIGNATION

The type designation is formed as follows, shown for **YFBX4-80M1-2**.

YFBX4	80	M1	2
SERIES	FRAME	LENGTH	POLES
Series code	Frame centre height, mm	Frame length and core length	Number of poles

TYPICAL APPLICATIONS

- Explosive dust atmospheres (Ex tb IIIC T135 °C Db)
- Grain handling
- Coal handling
- Chemical and pharmaceutical plant

RATED DATA

Values are for 50 Hz operation at the rated voltage stated above. Ratings are continuous (duty type S1).

2 POLES — SYNCHRONOUS SPEED 3000 R/MIN, 50 HZ

TYPE	RATED OUTPUT kW	HP	SPEED r/min	EFF%	COSΦ	CURRENT A
YFBX4-80M1-2	0.75	1	2885	83.5	0.83	1.64
YFBX4-80M2-2	1.1	1.5	2885	85.2	0.83	2.36
YFBX4-90S-2	1.5	2	2885	86.5	0.85	3.10
YFBX4-90L-2	2.2	3	2885	88.0	0.86	4.42
YFBX4-100L-2	3	4	2905	89.1	0.87	5.88
YFBX4-112M-2	4	5.5	2900	90.0	0.88	7.67
YFBX4-132S1-2	5.5	7.5	2930	90.9	0.88	10.45
YFBX4-132S2-2	7.5	10	2930	91.7	0.89	13.96
YFBX4-160M1-2	11	15	2955	92.6	0.89	20.28
YFBX4-160M2-2	15	20	2955	93.3	0.89	27.45
YFBX4-160L-2	18.5	25	2955	93.7	0.89	33.71
YFBX4-180M-2	22	30	2960	94.0	0.89	39.96
YFBX4-200L1-2	30	40	2965	94.5	0.89	54.20
YFBX4-200L2-2	37	50	2965	94.8	0.89	66.63
YFBX4-225M-2	45	60	2970	95.0	0.89	80.87
YFBX4-250M-2	55	75	2980	95.3	0.89	98.53
YFBX4-280S-2	75	100	2980	95.6	0.89	133.93
YFBX4-280M-2	90	125	2980	95.8	0.89	160.38
YFBX4-315S-2	110	150	2975	96.0	0.89	195.61
YFBX4-315M-2	132	180	2975	96.2	0.89	234.25
YFBX4-315L1-2	160	200	2975	96.3	0.89	283.64
YFBX4-315L2-2	200	270	2975	96.5	0.89	353.82
YFBX4-355M1-2	185	250	2980	96.4	0.89	327.62
YFBX4-355M2-2	200	270	2980	96.5	0.89	353.82
YFBX4-355M3-2	220	295	2980	96.5	0.90	384.88
YFBX4-355M-2	250	340	2980	96.5	0.91	432.55
YFBX4-355L1-2	280	375	2980	96.5	0.91	484.46
YFBX4-355L2-2	315	430	2980	96.5	0.91	545.02

4 POLES — SYNCHRONOUS SPEED 1500 R/MIN, 50 HZ

TYPE	RATED OUTPUT kW	HP	SPEED r/min	EFF%	COSΦ	CURRENT A
YFBX4-80M1-4	0.55	0.75	1430	83.9	0.74	1.35
YFBX4-80M2-4	0.75	1	1430	85.7	0.74	1.80
YFBX4-90S-4	1.1	1.5	1440	87.2	0.75	2.56
YFBX4-90L-4	1.5	2	1440	88.2	0.76	3.40
YFBX4-100L1-4	2.2	3	1455	89.5	0.76	4.91
YFBX4-100L2-4	3	4	1455	90.4	0.80	6.30
YFBX4-112M-4	4	5.5	1460	91.1	0.80	8.34
YFBX4-132S-4	5.5	7.5	1470	91.9	0.80	11.37
YFBX4-132M-4	7.5	10	1470	92.6	0.81	15.19
YFBX4-160M-4	11	15	1475	93.3	0.83	21.58
YFBX4-160L-4	15	20	1475	93.9	0.84	28.89
YFBX4-180M-4	18.5	25	1480	94.2	0.85	35.11
YFBX4-180L-4	22	30	1480	94.5	0.85	41.61
YFBX4-200L-4	30	40	1480	94.9	0.85	56.51
YFBX4-225S-4	37	50	1485	95.2	0.85	69.47
YFBX4-225M-4	45	60	1485	95.4	0.85	84.32
YFBX4-250M-4	55	75	1485	95.7	0.86	101.54
YFBX4-280S-4	75	100	1485	96.0	0.87	136.44
YFBX4-280M-4	90	125	1485	96.1	0.88	161.70
YFBX4-315S-4	110	150	1480	96.3	0.89	195.00
YFBX4-315M-4	132	180	1480	96.4	0.89	233.76
YFBX4-315L1-4	160	200	1480	96.6	0.90	279.62
YFBX4-315L-4	185	250	1480	96.6	0.90	323.31
YFBX4-315L2-4	200	270	1480	96.7	0.90	349.16
YFBX4-355M1-4	185	250	1490	96.6	0.90	323.31
YFBX4-355M2-4	200	270	1490	96.7	0.90	349.16
YFBX4-355M3-4	220	295	1490	96.7	0.90	384.08
YFBX4-355M-4	250	340	1490	96.7	0.90	436.46
YFBX4-355L1-4	280	375	1490	96.7	0.90	488.83
YFBX4-355L2-4	315	430	1490	96.7	0.90	549.93

6 POLES — SYNCHRONOUS SPEED 1000 R/MIN, 50 HZ

TYPE	RATED OUTPUT kW	HP	SPEED r/min	EFF%	COSΦ	CURRENT A
YFBX4-80M1-6	0.37	0.5	945	78.0	0.70	1.03
YFBX4-80M2-6	0.55	0.75	945	80.9	0.70	1.48
YFBX4-90S-6	0.75	1	950	82.7	0.70	1.97
YFBX4-90L-6	1.1	1.5	950	84.5	0.70	2.83
YFBX4-100L-6	1.5	2	965	85.9	0.71	3.74
YFBX4-112M-6	2.2	3	970	87.4	0.71	5.39
YFBX4-132S-6	3	4	980	88.6	0.71	7.25
YFBX4-132M1-6	4	5.5	980	89.5	0.72	9.43
YFBX4-132M2-6	5.5	7.5	980	90.5	0.72	12.82
YFBX4-160M-6	7.5	10	980	91.3	0.76	16.42
YFBX4-160L-6	11	15	980	92.3	0.77	23.52
YFBX4-180L-6	15	20	985	92.9	0.80	30.67
YFBX4-200L1-6	18.5	25	985	93.4	0.80	37.62
YFBX4-200L2-6	22	30	985	93.7	0.81	44.04
YFBX4-225M-6	30	40	985	94.2	0.82	59.01
YFBX4-250M-6	37	50	990	94.5	0.83	71.67
YFBX4-280S-6	45	60	990	94.8	0.83	86.89
YFBX4-280M-6	55	75	990	95.1	0.84	104.61
YFBX4-315S-6	75	100	985	95.4	0.84	142.20
YFBX4-315M-6	90	125	985	95.6	0.85	168.28
YFBX4-315L1-6	110	150	985	95.8	0.85	205.25
YFBX4-315L2-6	132	180	985	96.0	0.86	242.93
YFBX4-355M1-6	160	200	990	96.2	0.86	293.84
YFBX4-355M-6	185	250	990	96.2	0.86	339.76
YFBX4-355M2-6	200	270	990	96.3	0.86	366.92
YFBX4-355L1-6	220	295	990	96.3	0.86	403.61
YFBX4-355L-6	250	340	990	96.5	0.86	457.70

8 POLES — SYNCHRONOUS SPEED 750 R/MIN, 50 HZ

TYPE	RATED OUTPUT kW	HP	SPEED r/min	EFF%	COSΦ	CURRENT A
YFBX4-80M1-8	0.18	0.25	675	67.2	0.61	0.67
YFBX4-80M2-8	0.25	0.35	675	70.8	0.61	0.88
YFBX4-90S-8	0.37	0.5	680	74.3	0.61	1.24
YFBX4-90L-8	0.55	0.75	680	77.0	0.61	1.78
YFBX4-100L1-8	0.75	1	715	78.4	0.66	2.20
YFBX4-100L2-8	1.1	1.5	715	80.8	0.67	3.09

8 POLES — SYNCHRONOUS SPEED 750 R/MIN, 50 HZ (CONTINUED)

TYPE	RATED OUTPUT kW	HP	SPEED r/min	EFF%	COSΦ	CURRENT A
YFBX4-112M-8	1.5	2	710	82.6	0.69	4.00
YFBX4-132S-8	2.2	3	720	84.5	0.70	5.65
YFBX4-132M-8	3	4	720	85.9	0.70	7.58
YFBX4-160M1-8	4	5.5	725	87.1	0.71	9.83
YFBX4-160M2-8	5.5	7.5	725	88.3	0.72	13.14
YFBX4-160L-8	7.5	10	725	89.3	0.74	17.24
YFBX4-180L-8	11	15	730	90.4	0.74	24.98
YFBX4-200L-8	15	20	730	91.2	0.75	33.32
YFBX4-225S-8	18.5	25	735	91.7	0.75	40.87
YFBX4-225M-8	22	30	735	92.1	0.76	47.75
YFBX4-250M-8	30	40	740	92.7	0.77	63.86
YFBX4-280S-8	37	50	740	93.1	0.78	77.42
YFBX4-280M-8	45	60	740	93.4	0.78	93.85
YFBX4-315S-8	55	75	740	93.7	0.80	111.48
YFBX4-315M-8	75	100	740	94.2	0.80	151.21
YFBX4-315L1-8	90	125	740	94.4	0.81	178.84
YFBX4-315L2-8	110	150	740	94.7	0.81	217.88
YFBX4-355M1-8	132	180	740	94.9	0.81	260.91
YFBX4-355M2-8	160	200	740	95.1	0.82	311.74
YFBX4-355L1-8	185	250	740	95.3	0.82	359.69
YFBX4-355L-8	200	270	740	95.4	0.82	388.45

10 POLES — SYNCHRONOUS SPEED 600 R/MIN, 50 HZ

TYPE	RATED OUTPUT kW	HP	SPEED r/min	EFF%	COSΦ	CURRENT A
YFBX4-315S-10	45	60	590	91.2	0.75	99.96
YFBX4-315M-10	55	75	590	91.8	0.75	121.37
YFBX4-315L1-10	75	100	590	92.3	0.76	162.45
YFBX4-315L2-10	90	125	590	92.9	0.77	191.16
YFBX4-355M-10	90	125	590	92.9	0.77	191.16
YFBX4-355M1-10	110	150	590	93.1	0.78	230.15
YFBX4-355M2-10	132	180	590	93.5	0.78	275.00
YFBX4-355L-10	160	200	590	93.5	0.78	333.34
YFBX4-355L1-10	185	250	590	93.5	0.78	385.42

MOUNTING ARRANGEMENTS

The series is supplied in the following arrangements to IEC 60034-7. Letters on the drawings are the dimension symbols used in the outline and mounting dimension schedule.

ABOUT THESE DRAWINGS

The drawings show a representative frame for each arrangement and are not to scale. Dimensions for a specific frame size are given in the outline and mounting dimension schedule.

OUTLINE AND MOUNTING DIMENSIONS

Principal dimensions are given below. The complete dimension schedule, including tolerances and flange details, is issued on request.

PRINCIPAL OUTLINE AND MOUNTING DIMENSIONS (MM)

FRAME	POLES	A	A/2	B	D	E	F	G	H	K	M	N	P	S	T	FLANGE HOLES	AB	AC	AD	HD	L
80M	2,4,6,8	125	62.5	100/50	19	40	6	15.5	80	10	165	130(+0.014/-0.011)	200	12	3.5	4	160	170	150	235	290
90S	2,4,6,8	140	70	100/56	24	50	8	20	90	10	165	130	200	12	3.5	4	180	185	165	250	355
90L	2,4,6,8	140	70	125/56	24	50	8	20	90	10	165	130	200	12	3.5	4	180	185	165	250	385
100L	2,4,6,8	160	80	63	28	60	8	24	100	12	215	180(+0.016/-0.013)	250	14.5	4	4	200	210	180	275	430
112M	2,4,6,8	190	95	140/70	28	60	8	24	112	12	215	180	250	14.5	4	4	230	220	200	300	457
132S	2,4,6,8	216	108	89	38	80	10	33	132	12	265	230	300	14.5	4	4	270	260	210	340	470
132M	4,6,8	216	108	178	38	80	10	33	132	12	265	230	300	14.5	4	4	270	260	210	340	510
160M	2,4,6,8	254	127	210/108	42	110	12	37	160	14.5	300	250(+0.016/-0.013)	350	5	0/-0.12	4	314	320	260	420	652
160L	2,4,6,8	254	127	254/108	42	110	12	37	160	14.5	300	250	350	5	0/-0.12	4	314	320	260	420	682
180M	2,4	279	139.5	241/121	48	110	14	42.5	180	14.5	300	250	350	5	0/-0.12	4	355	355	275	460	680
180L	4,6,8	279	139.5	279/121	48	110	14	42.5	180	14.5	300	250	350	5	0/-0.12	4	355	355	275	460	718
200L	2,4,6,8	318	159	305/133	55	140	16	49	200	18.5	350	300(±0.016)	400	18.5	5	4	395	400	310	520	770

PRINCIPAL OUTLINE AND MOUNTING DIMENSIONS (MM) (CONTINUED)

FRAME	POLES	A	A/2	B	D	E	F	G	H	K	M	N	P	S	T	FLANGE HOLES	AB	AC	AD	HD	L
225S	4,8	356	178	286/149	60/55	140/110	18/16	53/49	225	18.5	400	350(±0.018)	450	18.5	5	8	431	450	325/340	560	815/810
225M	2/4,6,8	356	178	311/286	60	140	18	53	225	18.5	400	350	450	18.5	5	8	431	450	325	560	840
250M	2/4,6,8	406	203	349/368	65	140	18/20	58/67.5	250	24	500	450(±0.020)	550	18.5	5	8	490	500	370	620	915
280S	2/4,6,8	457	228.5	368/419	65/75	140	18/20	58/67.5	280	24	500	450	550	18.5	5	8	550	550	397	677	985/1036
315S/M/L	2/4,6,8	508	254	406~508/216	65~80	140~170	18~22	58~71	315	28	600	550(±0.022)	660	24	6/0~0.15	8	628	620	530	845	1170~1345
355M/L	2/4,6,8	610	305	560~630/254	75~95	140~170	20~25	67.5~86	355	28	740	680(±0.025)	800	24	6/0~0.15	8	726	710	645	1000	1510~1550

COLUMNS NOT REPRODUCED

The brochure does not print “Locked-rotor current $I_{A</sub>A</sub>}/I_{N</sub>N</sub>}$ ”, “Locked-rotor torque $T_{A</sub>A</sub>}/T_{N</sub>N</sub>}$ ”, “Max. torque $T_{max</sub>max</sub>}/T_{N</sub>N</sub>}$ ” as values grouped over bands of ratings rather than per type. Those figures are available on request and are omitted here rather than shown against the wrong rating.

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