



Product Brochure

Certified Mining Motors

BALDOR • RELIANCE

Power and productivity
for a better world™ **ABB**

Profile

Baldor Electric Company (a member of the ABB group) is a world leader in motors for the mining industry.

In the continuous (24/7) operation of underground coal mines around the world, rugged and durable motors are required to power the constantly-running mining machinery. These motors need to be maintenance-free and must be designed to operate safely and efficiently in this hazardous and severe environment.

Baldor Electric totally-enclosed explosion-proof motors are designed for use in the dust-filled explosive atmosphere of an underground coal mine. Tight machining tolerances of the housings, bearing brackets, and the conduit box provide

the explosion-proof integrity required by MSHA and other international certifying agencies. Cast iron conduit box parts along with packing glands and protective hose connectors meet the requirements of ATEX, IEC and MSHA and other certifying agencies.

Baldor has applied the experience and technology developed in the design of commercial fan-cooled and explosion-proof motors to the specific requirements of motors in coal mining service, whether it be in actual underground coal mining, coal preparation or the transportation of mined coal. Due to the presence of highly-volatile coal dust, even motors away from the cutting of coal may be required to meet the stringent requirements put forth by mining safety agencies.

Features and benefits

Features

- Designed and certified for hazardous mining atmospheres
- Meets or exceed global high efficiency standards
- 1100 volt capability
- Optional special shaft configurations
- Optional double shaft extensions
- Optional flange mounting configurations

Customer benefits

- World wide local customer support
- Proven designs that translate into increased equipment up-time
- Performance and quality backed by over 85 years of mining experience
- Energy efficient designs that result in energy savings and longer motor life

Capabilities

Frame sizes:

- IEC 112 - 280, NEMA 180 - 440 and associated kW and HP rating range. 50 or 60 Hz.

Voltages:

- 240V - 1140V. Custom available 3300V & 4160V in larger frame sizes.

Cooling:

- TEFC (IC411) & TEAO (IC416)






Enclosures:

- Hazardous Ex and non-hazardous locations.

Table of contents

	Page
Capabilities	
- Frame Sizes, Voltages, Cooling, Enclosures	2
Features, Function, Benefits	2
Capabilities	2
Certification by country	3
- Range of Motors IEC112S-280H; NEMA 180-440	
ATEX IEC ratings and MSHA ratings	4-5
Mining motor with conduit box configurations	6-7
Dimension diagrams	6-9
Conduit box dimension diagrams	10
Mining motors	11

Certification by country

Range of motors IEC112S-280H; NEMA 180-440 7,5-373 kW; 10-500 Hp -S1 continuous duty (short term duty available on request)					Notes 1
Region - Country	Certification	Marking	Agency	Certificate	
World	IECEX	Ex d I Mb 	SIRA	IECEX SIR 09.0011X	2,3
EU	ATEX	I M2 Ex d I	SIRA	Sira 09ATEX1037X	4
Australia	ANZEx	Ex d I	TestSafe	ANZEx 10.3003X	5,6
South Africa	South Africa	Ex d I 150° Mb	Explolabs	S-XPL/10.1294X	7
South Africa	South Africa		CERTEX	CX1030 Edition 1.1	8
Russia	GOST-R		NANIO-CCVE	POCC US.ГБ05.В03584	9
United States	MSHA		MSHA	MSHA	10
China	MA		In process		

Note	Explanation
1	Customer to define short term duty requirements
2	IECEX is an international certification system that forms an Ex certification framework for 30 countries. http://iecex.com/
3	International certification is also available on this series for petrochemical and process industries, Exd IIB Gb and Ex tb IIIC Db for Europe, Australia, South Africa and Russia
4	The ATEX Directive, 94/9/EC applies for equipment installed in hazardous locations in the European Union with 27 member states, and European Free Trade Association (EFTA) an additional 4 countries.
5	ANZEx certification, or IECEX certification by an Austrian certifier is presently required for installation in Queensland, AU
6	For Australia, MEPS, or minimum energy performance standard certification is also required and is available marking for this series.
7	Country specific certification is required for South Africa, we use Explolabs as our certifier
8	Baldor is proud to be one of the few manufacturers to carry CERTEX Quality certification for our mining motor manufacturing facilities
9	In addition to GOST-R, this series carries an RTN Use Permit (Rostekhnadzor)
10	Baldor Electric - ABB is the leading supplier of TEFC NEMA Motors for use in Explosion Proof Mining applications in the United States meeting MSHA certification requirements

ATEX IEC Ratings

ATEX / IEC ex Mining, Metric Frame Motors 2 kW - 225 kW

Class F, 1.0 service factor; Foot mounted; IEC design 'N'			
kW	Speed	IEC ex Frame	Voltage**
2.2	3000	112M	380-600
2.2	1500	112M	380-600
2.2	3000	112M	601-1000
2.2	1500	112M	601-1000
3.0	3000	112L	380-600
3.0	1500	112L	380-600
3.0	3000	112L	601-1000
3.0	1500	112L	601-1000
4.0	3000	112L	380-600
4.0	1500	112L	380-600
4.0	3000	112L	601-1000
4.0	1500	112L	601-1000
5.6	3000	132S	380-600
5.6	1500	132S	380-600
5.6	3000	132S	601-1000
5.6	1500	132S	601-1000
7.5	3000	132M	380-600
7.5	1500	132M	380-600
7.5	3000	132M	601-1000
7.5	1500	132M	601-1000
11.0	3000	160M	380-600
11.0	1500	160M	380-600
11.0	3000	160M	601-1000
11.0	1500	160M	601-1000
15.0	3000	160L	380-600
15.0	1500	160L	380-600
15.0	3000	160L	601-1000
15.0	1500	160L	601-1000
18.5	3000	180M	380-600
18.5	1500	180M	380-600
18.5	3000	180M	601-1000
18.5	1500	180M	601-1000
22.0	3000	180L	380-600
22.0	1500	180L	380-600
22.0	3000	180L	601-1000
22.0	1500	180L	601-1000
30.0	3000	200M	380-600
30.0	1500	200M	380-600
30.0	3000	200M	601-1000
30.0	1500	200M	601-1000
37.0	3000	200L	380-600
37.0	1500	200L	380-600
37.0	3000	200L	601-1000
37.0	1500	200L	601-1000

Class F, 1.0 service factor; Foot mounted; IEC design 'N'			
kW	Speed	IEC ex Frame	Voltage**
45.0	3000	225S	380-600
45.0	1500	225S	380-600
45.0	3000	225S	601-1000
45.0	1500	225S	601-1000
55.0	3000	225M	380-600
55.0	1500	225M	380-600
55.0	3000	225M	601-1000
55.0	1500	225M	601-1000
75.0	3000	250M	380-600
75.0	1500	250M	380-600
75.0	3000	250M	601-1000
75.0	1500	250M	601-1000
90.0	3000	280S	380-600
90.0	1500	280S	380-600
90.0	3000	280S	601-1000
90.0	1500	280S	601-1000
110.0	3000	280M	380-600
110.0	1500	280M	380-600
110.0	3000	280M	601-1000
110.0	1500	280M	601-1000
132.0	3000	280M	380-600
132.0	1500	280K	380-600
132.0	3000	280K	601-1000
132.0	1500	280K	601-1000
150.0	3000	280K	380-600
150.0	1500	280K	380-600
150.0	3000	280H	601-1000
150.0	1500	280K	601-1000
185.0	3000	280H	380-600
185.0	1500	280H	380-600
185.0	3000	280H	601-1000
185.0	1500	280H	601-1000
225.0	3000	280H	380-600
225.0	1500	280H	380-600
225.0	3000	280H	601-1000
225.0	1500	280H	601-1000

* For Larger IEC ex frame motors 250 and up
ATEX (EEx d I) 150°C Surface Temperature Class F Rise 40°C Ambient
** 601-1000V Ratings need 'Glass Wire' and VPI (May use larger fans and/or derating)

Please contact your local ABB or Baldor office for current pricing.

MSHA ratings

MSHA NEMA Frame Motors

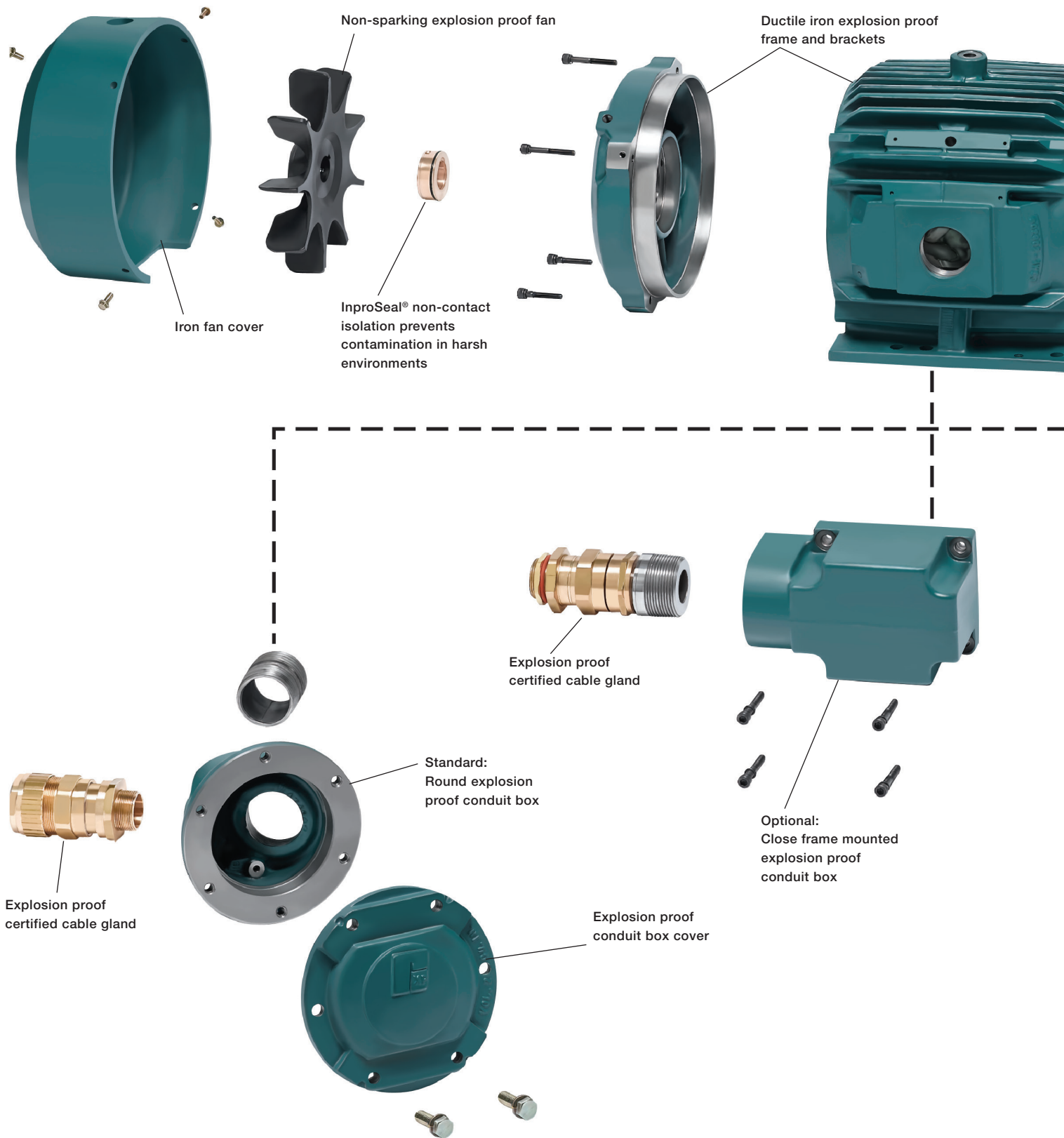
5 Hp - 300 Hp

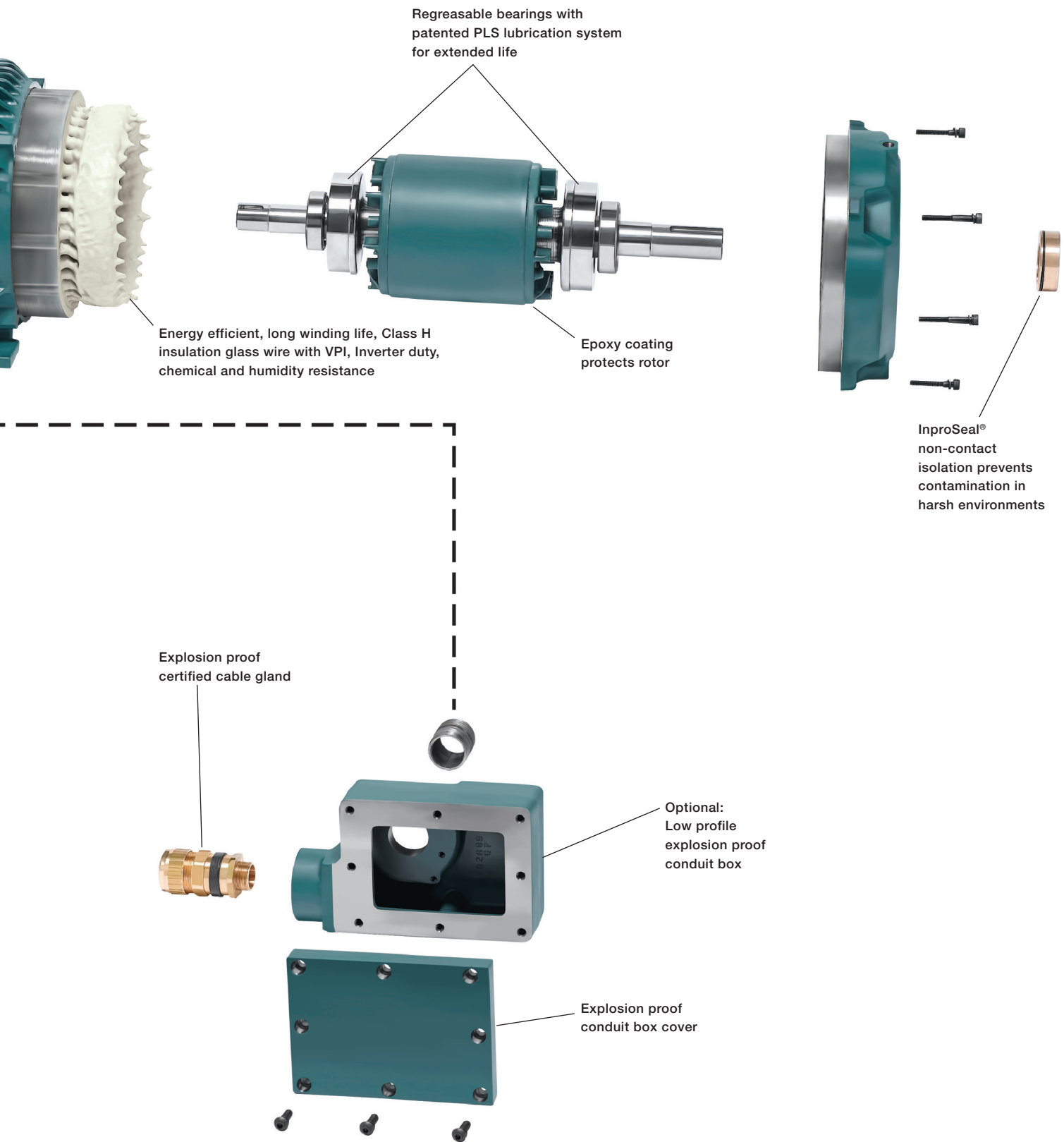
Class F, 1.0 Service Factor, Foot Mounted, NEMA B			
Hp	Speed	Frame	Voltage
5	3450	184T	230/460
5	1750	184T	230/460
5	3450	184T	950
5	1750	184T	950
7.5	3450	215T	230/460
7.5	1750	215T	230/460
7.5	3450	215T	950
7.5	1750	215T	950
10	3450	215T	230/460
10	1750	215T	230/460
10	3450	215T	950
10	1750	215T	950
15	3450	254T	230/460
15	1750	254T	230/460
15	3450	254T	950
15	1750	254T	950
20	3450	256T	230/460
20	1750	256T	230/460
20	3450	256T	950
20	1750	256T	950
25	3450	284T	230/460
25	1750	284T	230/460
25	3450	286T	950
25	1750	286T	950
30	3450	286T	230/460
30	1750	286T	230/460
30	3450	286T	950
30	1750	286T	950
40	3450	324T	230/460
40	1750	324T	230/460
40	3450	324T	950
40	1750	324T	950
50	3450	326T	230/460
50	1750	326T	230/460
50	3450	326T	950
50	1750	326T	950

Class F, 1.0 Service Factor, Foot Mounted, NEMA B			
Hp	Speed	Frame	Voltage
60	3450	364T	230/460
60	1750	364T	230/460
60	3450	364T	950
60	1750	364T	950
75	3450	365T	230/460
75	1750	365T	230/460
75	3450	365T	950
75	1750	365T	950
100	3450	405T	230/460
100	1750	405T	230/460
100	3450	405T	950
100	1750	405T	950
125	3450	444T	230/460
125	1750	444T	230/460
125	3450	444T	950
125	1750	444T	950
150	3450	445T	230/460
150	1750	445T	230/460
150	3450	445T	950
150	1750	445T	950
200	3450	445T	230/460
200	1750	445T	230/460
200	3450	445T	950
200	1750	445T	950
250	3450	447T	230/460
250	1750	447T	230/460
250	3450	447T	950
250	1750	447T	950
300	3450	449T	230/460
300	1750	449T	230/460
300	3450	449T	950
300	1750	449T	950

Please contact your local ABB or Baldor office for current pricing.

Mining motor with conduit box configurations





Regreasable bearings with patented PLS lubrication system for extended life

Energy efficient, long winding life, Class H insulation glass wire with VPI, Inverter duty, chemical and humidity resistance

Epoxy coating protects rotor

InproSeal® non-contact isolation prevents contamination in harsh environments

Explosion proof certified cable gland

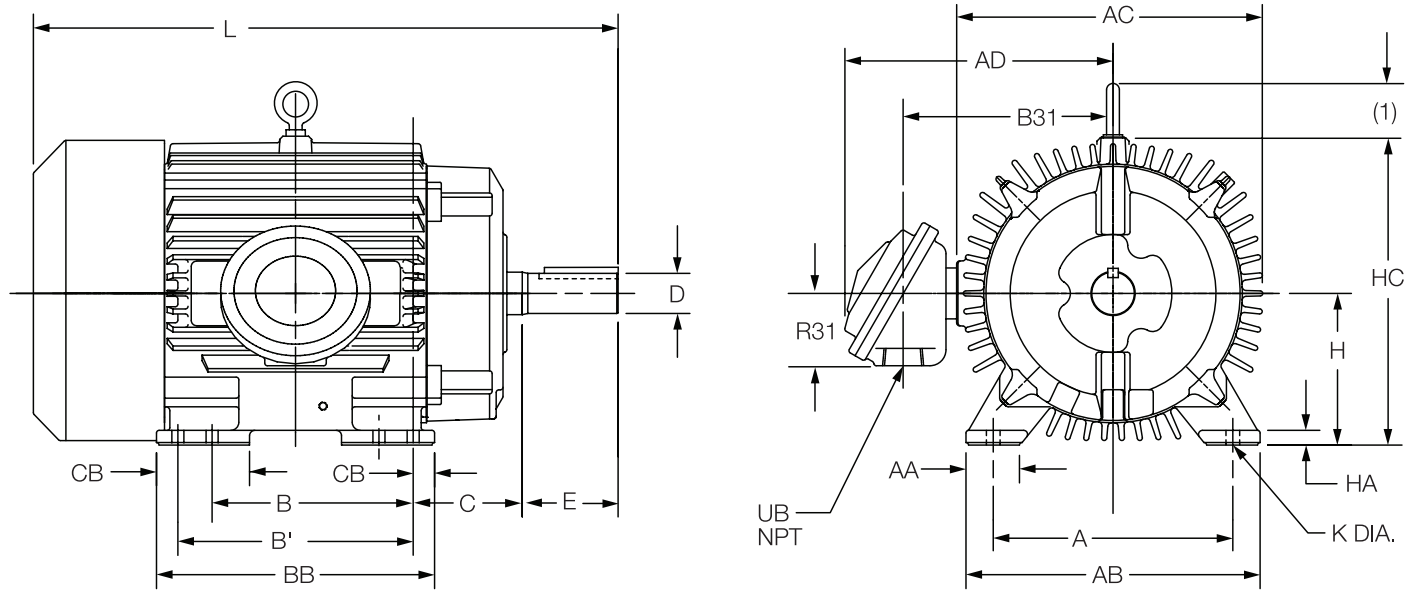
Optional: Low profile explosion proof conduit box

Explosion proof conduit box cover

Dimension diagram - IEC

Frames 112 thru 280

Dimensions are in millimeters



Frame	AB	A	H	HA	K	AA	HC	AC	XP Terminal Box				
									AD	B31	R31	C	CB
112S-112M	229	190	112	11	12	44.5	251	241	227	176	64	71	19
132S-132M	267	216	132	11	12	51	286	279	249	198	64	89	16
160M-160L	318	254	160	20	14.5	64	337	337	298	236	76	108	25.5
180M-180L	349	279	180	21	14.5	64	375	378	364	270	92	121	25.5
200M-200L	394	318	200	19	18.5	70	424	432	426	321	105	133	35
225S-225M	432	356	225	19	18.5	70	470	495	458	353	105	149	35
250S-250M	483	406	250	25	24	83	541	572	488	385	105	168	29
280S-280H	533	457	280	29	24	83	594	641	595	462	178	190	32

Frame Size	L	BB	B'	Shaft and Key			Shaft		Key		Weight Kgs. (5)
				B	E	D	SQ	Length			
112S	387	178	—	114	60	28	8	40	39		
112M	387	178	140	—	60	28	8	40	41		
132S	485	216	—	140	80	38	10	56	61		
132M	485	216	178	—	80	38	10	56	66		
160M	633	305	—	210	110	42	12	80	151		
160L	633	305	254	—	110	42	12	80	156		
180M	690	330	—	241	110	48	14	80	215		
180L	690	330	279	—	110	48	14	80	222		
200M	750	375	—	267	110	55	16	80	267		
200L	750	375	305	—	110	55	16	80	285		
225S	840	381	—	286	140	60	18	100	392		
225M	840	381	311	—	140	60	18	100	403		
250S	930	406	—	311	140	65	18	100	553		
250M	930	406	349	—	140	65	18	100	571		
280S	1060	483	—	368	140	75	20	100	757		
280M	1060	483	419	—	140	75	20	100	843		

(1) Eyebolt is removable (62mm to 68mm).

(2) "H" varies — 112-250 +.0, -.5; 280 +.0, -.1.0

(3) Tolerance of "D" — to 50 dia. k6, 50 and larger r6

(4) All frames have eight mounting holes for dual mounting.

(5) Motor weights may vary by 15% depending upon rating.

Conduit box located on opposite side when requested. If mounting clearance details are required, consult factory.

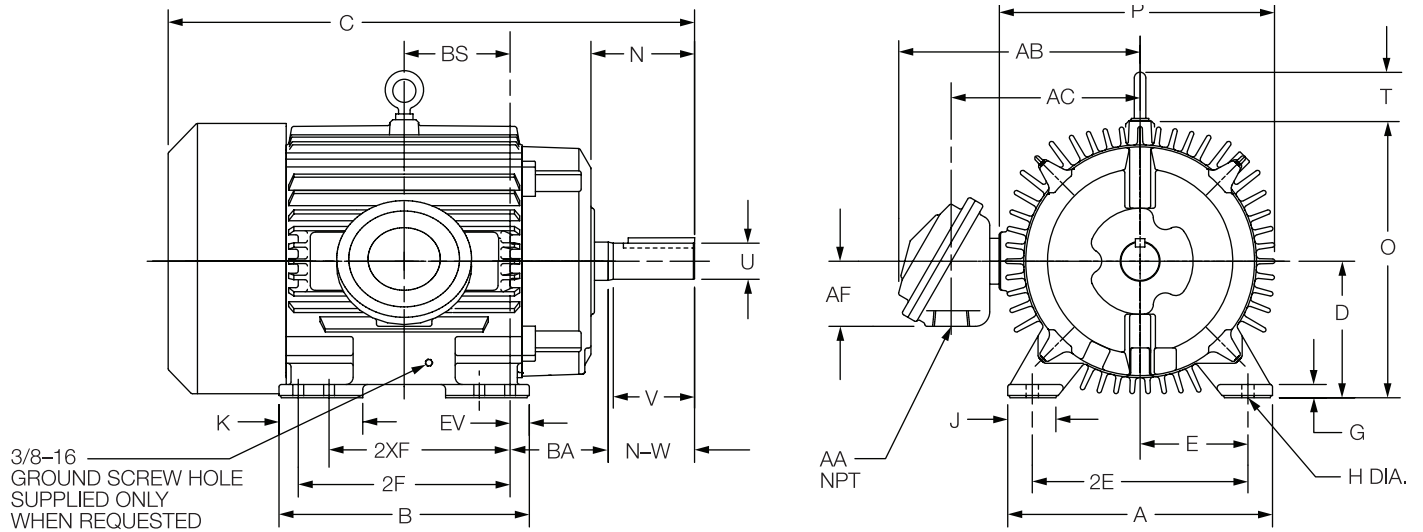
Maximum permissible shaft runout when measured at end of std. shaft extension is .05 T.I.R. up to and including 50 dia. and .06 T.I.R. over 50 dia. to 80 dia.

Variations conduit box options are available. Standard round box shown. Conduit box dimensions vary by type.

Dimension diagram - NEMA

Frames 250T thru 440T

Dimensions are in inches



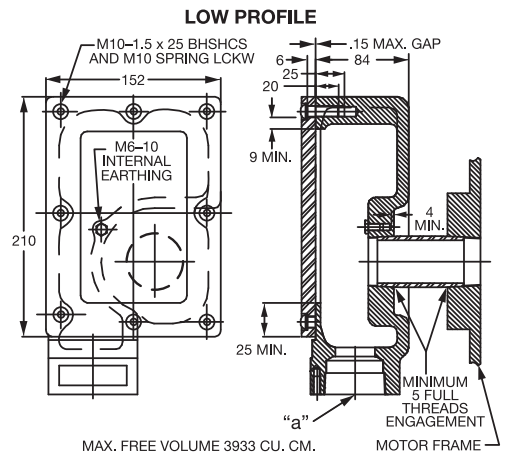
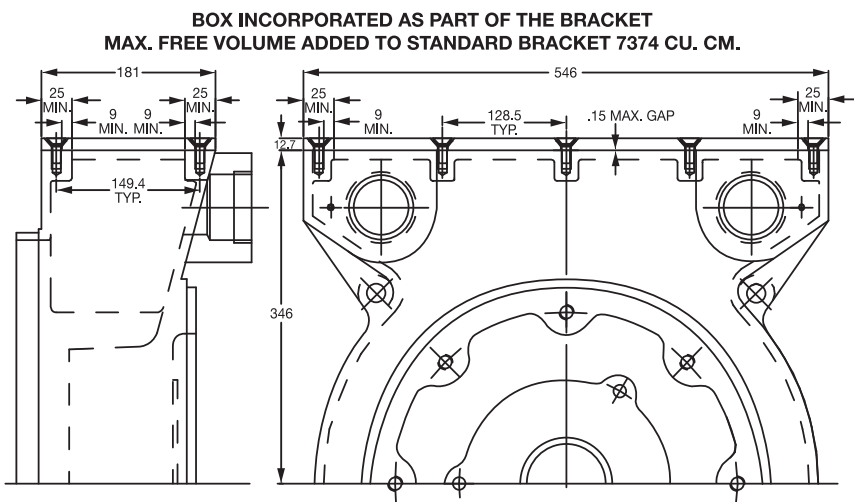
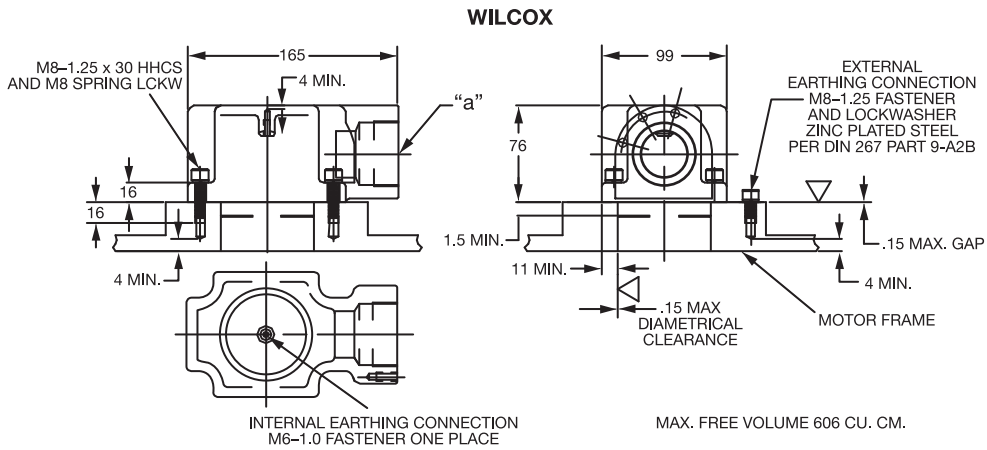
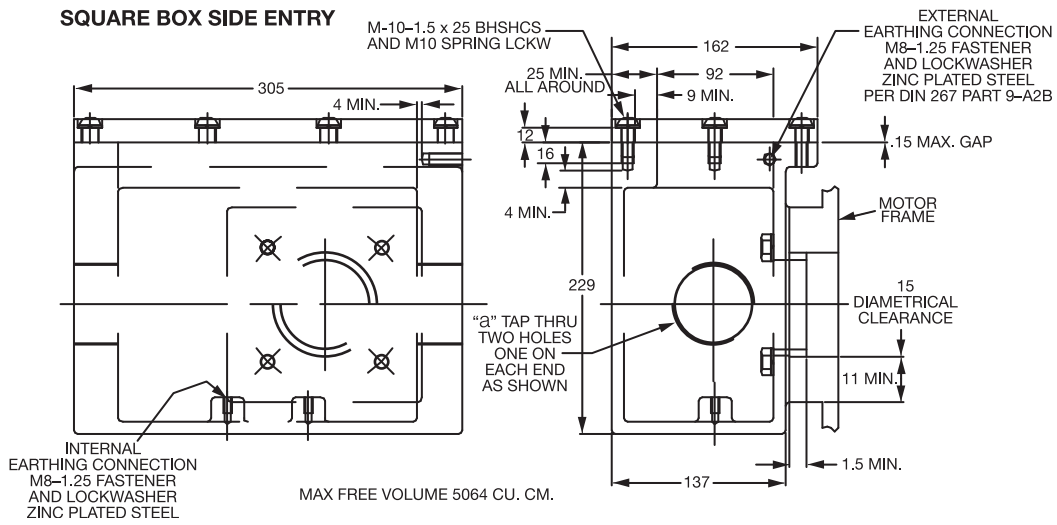
Frame	A	D (1)	E	G	H	J	K	O	P	T	XP Terminal Box					
											AA	AB	AC	AF	BA	EV
182T-184T	9.00	4.50	3.75	0.44	0.44	1.75	—	9.88	9.25	2.00	1.25	9.38	6.94	2.50	2.88	—
213T-215T	10.50	5.25	4.25	0.44	0.52	2.00	—	11.25	10.50	2.00	1.25	10.25	7.81	2.50	3.62	—
254T-256T	12.50	6.25	5.00	.75	.56	2.50	—	13.25	13.25	2.44	1.25	12.38	9.69	3.38	4.25	1.00
284T-286TS	13.75	7.00	5.50	.75	.56	2.50	—	14.75	14.88	2.44	1.50	13.25	10.56	3.38	4.75	1.00
324T-326TS	15.50	8.00	6.25	.88	.69	2.75	4.50	16.69	17.00	2.44	2	17.06	12.50	4.25	5.25	1.38
364T-365TS	17.00	9.00	7.00	.88	.69	2.75	4.00	18.50	19.50	2.94	3	18.81	14.25	4.25	5.88	1.38
404T-405TS	19.00	10.00	8.00	1.12	.81	3.25	4.62	21.31	22.50	2.94	3	20.50	15.88	4.25	6.62	1.13
444T-445TS	21.00	11.00	9.00	1.12	.81	3.25	5.25	23.38	25.25	3.25	3	26.25	20.38	6.00	7.50	1.25

Frame Size	C	BS	B	2F	2XF (3)	N	Shaft			Key		Weight Lbs. (4)
							N-W (5)	U (2)	V	SQ	Length	
182T-184T	13.69	2.75	7.00	5.50	4.50	2.81	2.62	1.125	2.50	0.250	1.75	122
213T-215T	17.31	5.50	8.50	7.00	5.50	3.44	3.25	1.375	3.12	0.312	2.38	150
254T	24.56	5.00	12.00	—	8.25	4.06	4.00	1.625	3.75	.375	2.88	335
256T	24.56	5.00	12.00	10.00	—	4.06	4.00	1.625	3.75	.375	2.88	345
284T	27.44	5.50	13.00	—	9.50	4.69	4.62	1.875	4.38	.500	3.25	495
284TS	26.06	5.50	13.00	—	9.50	3.31	3.25	1.625	3.00	.375	1.88	495
286T	27.44	5.50	13.00	11.00	—	4.69	4.62	1.875	4.38	.500	3.25	510
286TS	26.06	5.50	13.00	11.00	—	3.31	3.25	1.625	3.00	.375	1.88	510
324T	30.44	6.00	14.75	—	10.50	5.62	5.25	2.125	5.00	.500	3.88	610
324TS	28.94	6.00	14.75	—	10.50	4.12	3.75	1.875	3.50	.500	2.00	610
326T	30.44	6.00	14.75	12.00	—	5.62	5.88	2.125	5.00	.500	3.88	650
326TS	28.94	6.00	14.75	12.00	—	4.12	3.75	1.875	3.50	.500	2.00	650
364T	33.44	6.12	15.00	—	11.25	6.00	5.88	2.375	5.62	.625	4.25	910
364TS	31.31	6.12	15.00	—	11.25	3.88	3.75	1.875	3.50	.500	2.00	904
365T	33.44	6.12	15.00	12.25	—	6.00	7.25	2.375	5.62	.625	4.25	950
365TS	31.31	6.12	15.00	12.25	—	3.88	3.75	1.875	3.50	.500	2.00	944
404T	38.31	6.88	16.00	—	12.25	7.50	7.25	2.875	7.00	.750	5.62	1300
404TS	35.31	6.88	16.00	—	12.25	4.50	4.25	2.125	4.00	.500	2.75	1291
405T	38.31	6.88	16.00	13.75	—	7.50	7.25	2.875	7.00	.875	5.62	1335
405TS	35.31	6.88	16.00	13.75	—	4.50	4.25	2.125	4.00	.625	2.75	1326
444T	44.62	8.25	19.00	—	14.50	8.94	8.50	3.375	8.25	.875	6.88	1770
444TS	40.88	8.25	19.00	—	14.50	5.19	4.75	2.375	4.50	.625	3.00	1754
445T	44.62	8.25	19.00	16.50	—	8.94	8.50	3.375	8.25	.875	6.88	1960
445TS	40.88	8.25	19.00	16.50	—	5.19	4.75	2.375	4.50	.625	3.00	1944

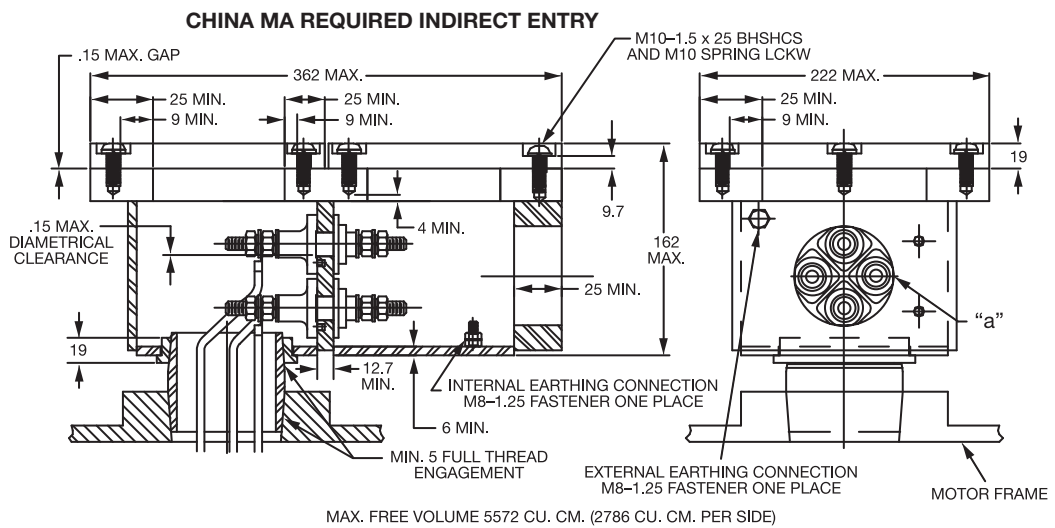
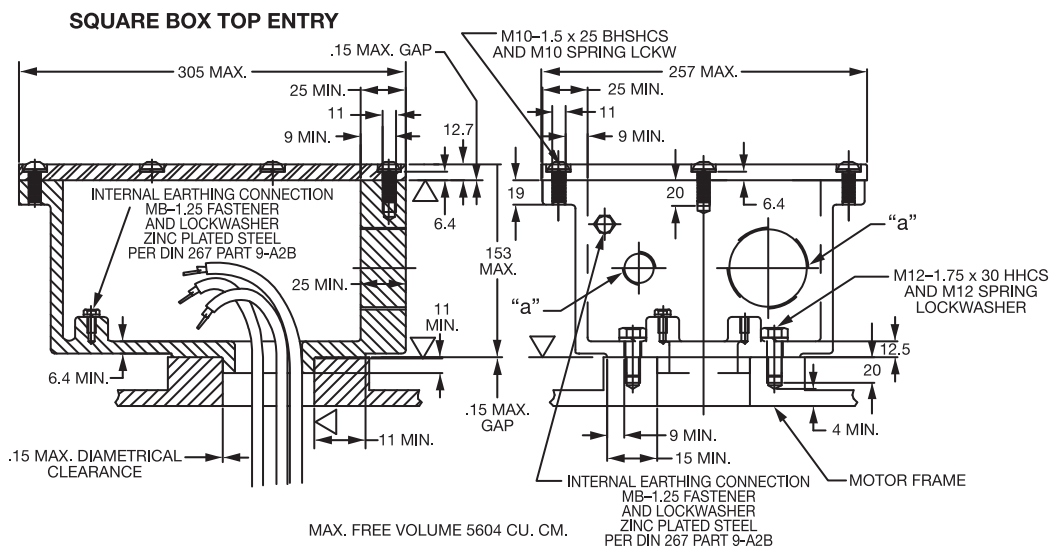
(1) "D" varies — 250T-320T +.00, -.03; 360T-440T +.00, -.06
 (2) "U" varies — Up to 1.625 dia. +.0000, -.0005; 1.625 and Larger +.000, -.001

(3) All frames have eight mounting holes for dual mounting.
 (4) Motor weights may vary by 15% depending upon rating.
 (5) "N-W" varies +.00, -.25

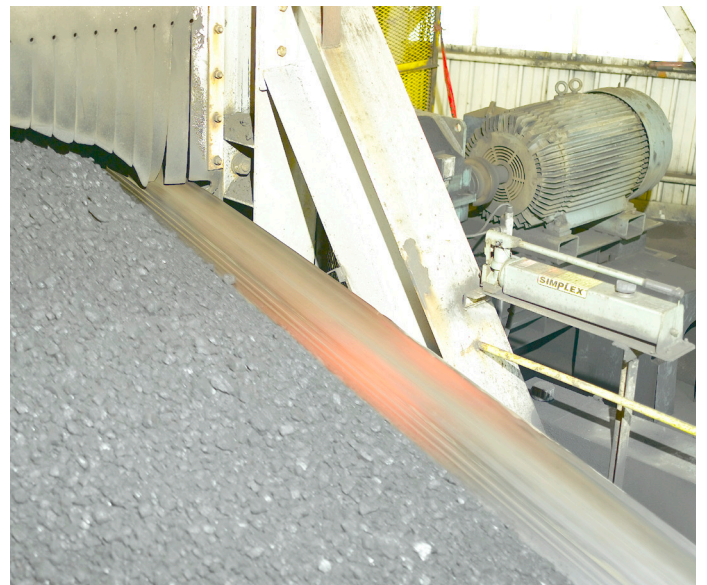
Optional conduit box configurations



Optional conduit box configurations



Pump station



Conveyor application

Contact us

Baldor Electric Company
A Member of the ABB Group
P.O. Box 2400
Fort Smith, AR U.S.A.
Phone: 479.646.4711
Fax: 479.648.5792
International Fax: 479.648.5895

www.baldor.com

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