

**BALDOR-RELIANCE®**

# Motors for aggregate industry

**BALDOR • RELIANCE**



# Motors for aggregate industry

## The right product in the toughest conditions

— 01 Screen decks are prone to surges and loaded starts.

— 02 Crushers are subject to jams and overloads requiring extra torque to clear.

— 03 Heavily loaded starts and long distance transportation are common in overland conveying.

The aggregate industry has come to expect the highest level of quality, trust and reliability from Baldor-Reliance and ABB motors. For more than 100 years, our motors have been at work in some of the harshest environmental conditions and have proven their worth time and again. Throughout our history, we've listened to our customers' needs and invested in the development and improvement of our motors to meet the requirements of equipment operating under high loads for extended periods of time in extreme conditions.



### Reliability

Rugged, durable motor construction protects rotating and electrical components, providing extended operating life in applications prone to dusty, dirty, wet outdoor and potentially high vibration environments.



### Flexibility

Ball and roller bearing designs for coupled and belted applications provide flexibility to fit any application. Large rotatable conduit boxes offer easy connection points in horizontal and vertical installations. These motors are suitable for use on sine wave and inverter power for fixed and adjustable speed operation.



### Performance

In this industry it is all about having enough torque available when you need it to maximize production. Selecting the right motor is key to providing the needed starting torque, peak torque and the ability to handle overloads.



### Lower operating cost

Energy consumption contributes to the vast majority of a motor's life cycle costs. Improving the efficiency of electric motors and the equipment they drive can save energy, reduce operating costs and improve productivity. Highly efficient Baldor-Reliance motors meet or exceed all energy efficiency requirements for North American and European regulations.



01



02



03

# Crusher Duty motors

Built on the proven reliability of Baldor-Reliance severe duty motors, Crusher Duty motors are designed for belt-driven rock crushers, pellet mills and other applications requiring motors rated for high starting and peak torques.



## Rugged construction

To protect the motors from the harshest environments, Crusher Duty motors are designed with all cast iron construction, IP55 enclosures thru L449 frames and IP66 enclosures for 586-8 frames.



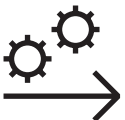
## Service factor

A service factor of 1.25 thru 100 hp and 1.15 for more than 100 hp allows for operation during peak loading conditions.



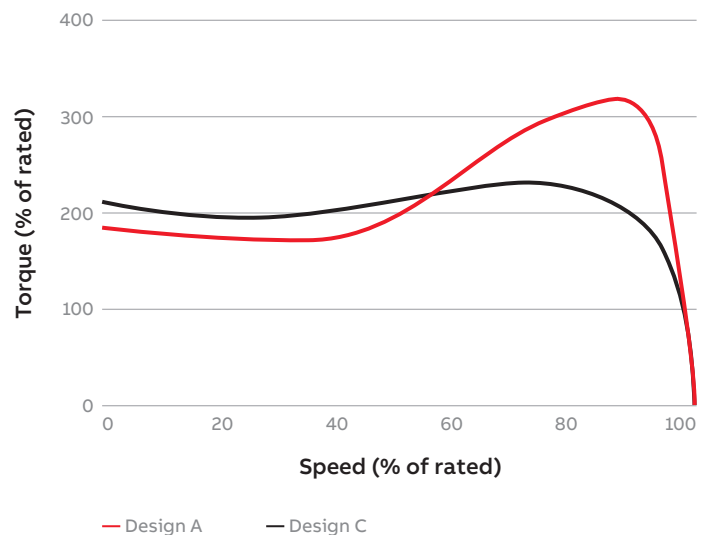
## Efficient operation

All designs reduce total cost of ownership and increase flexible operation with NEMA Premium Efficient designs capable of running DOL (direct on line) or with a VSD (variable speed drive). The insulation system meets the surge withstand requirements of NEMA MG 1, Part 31.4.4.2 for VSD use and is inverter-ready.



## NEMA Design A

NEMA Design A is the right choice over the historically popular offering of Design C. Design A allows for high starting torques required by many of the demanding applications in the aggregate industry. In addition, Design A has significantly higher peak torque (breakdown torque) than Design C. This peak torque difference will prevent machine stalls that Design C may not. When operating on a variable speed drive, it is the higher peak torque of Design A that provides more maximum torque throughout the speed range than Design C. Sizing the drive to match the motor capability is critical.







## Crusher Duty motors

5 – 600 Hp

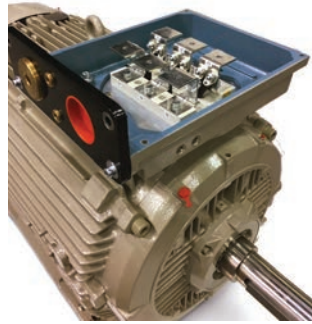
Hp	RPM	NEMA frame	Catalog number	Drive end bearing type	S.F.	CT (Hz)	Full load amps	Voltage	Full load eff. % (nom.)	Full load torque (lb.-ft.)	LRT %	BDT %	"C" dim.
5	1800	184T	ECR9054T	Ball bearing	1.25	6-60	14.2/7.1	230/460	89.5	15	227%	376%	15.93
	1200	215T	ECR9056T	Ball bearing	1.25	6-60	15/7.5	230/460	89.5	22.7	267%	363%	19.50
7.5	1800	213T	ECR9074T	Ball bearing	1.25	6-60	19/9.3	230/460	91.7	22.1	219%	350%	19.50
	1200	254T	ECR9076T	Ball bearing	1.25	6-60	22/10.9	230/460	91	33.4	320%	404%	24.78
10	1800	215T	ECR9104T	Ball bearing	1.25	6-60	25/12.3	230/460	91.7	29.7	236%	347%	19.50
	1200	256T	ECR9106T	Ball bearing	1.25	6-60	28/14	230/460	91	45	284%	367%	24.78
15	1800	254T	ECR9154T	Ball bearing	1.25	6-60	37/19	230/460	92.4	44.7	266%	324%	24.78
		254TC	CECR9154T	Ball bearing	1.25	6-60	37/19	230/460	92.4	44.7	266%	324%	25.28
	1200	284T	ECR9156T	Ball bearing	1.25	6-60	39/19	230/460	91.7	67.2	301%	268%	27.93
20	1800	256T	ECR9204T	Ball bearing	1.25	6-60	48/24	230/460	93	59.7	255%	290%	24.78
		256TC	CECR9204T	Ball bearing	1.25	6-60	48/24	230/460	93	59.7	255%	290%	25.28
	1200	286T	ECR9206T	Ball bearing	1.25	6-60	58/29	230/460	91.7	88.3	237%	314%	27.93
25	1800	284T	ECR9254T	Ball bearing	1.25	6-60	62/31	230/460	93.6	73.8	253%	282%	27.93
		284TC	CECR9254T	Ball bearing	1.25	6-60	62/31	230/460	93.6	73.8	253%	282%	27.93
	1200	324T	ECR9256T	Ball bearing	1.25	6-60	68/34	230/460	93	110	219%	330%	30.66
30	1800	286T	ECR9304T	Ball bearing	1.25	6-60	74/37	230/460	93.6	89.2	261%	266%	27.93
		286TC	CECR9304T	Ball bearing	1.25	6-60	74/37	230/460	93.6	89.2	261%	266%	27.93
	1200	326T	ECR9306T	Ball bearing	1.25	6-60	84/42	230/460	93	133	231%	364%	30.66
40	1800	324T	ECR9404T	Ball bearing	1.25	6-60	98/49	230/460	94.1	118	253%	270%	30.66
		324TC	CECR9404T	Ball bearing	1.25	6-60	98/49	230/460	94.1	118	253%	270%	30.16
	1200	364T	ECR9406TR	Roller bearing	1.25	6-60	98/49	230/460	94.1	177	267%	252%	33.49
50	1800	326T	ECR9504T	Ball bearing	1.25	6-60	122/61	230/460	94.5	147	274%	276%	30.66
		326TC	CECR9504T	Ball bearing	1.25	6-60	122/61	230/460	94.5	147	274%	276%	30.16
	1200	365T	ECR9506TR	Roller bearing	1.25	6-60	124/62	230/460	94.1	222	269%	249%	33.49
	900	404T	ECR9508TR	Roller bearing	1.25	6-60	159/80	230/460	92.4	297	274%	265%	38.20
60	1800	364T	ECR9604T	Ball bearing	1.25	6-60	142/71	230/460	95	177	285%	281%	33.49
		364T	ECR9604TR	Roller bearing	1.25	6-60	142/71	230/460	95	177	285%	281%	33.49
		364TC	CECR9604T	Ball bearing	1.25	6-60	142/71	230/460	95	177	285%	281%	33.48
	1200	404T	ECR9606TR	Roller bearing	1.25	6-60	141/71	230/460	94.5	266	266%	277%	38.04
	900	405T	ECR9608TR	Roller bearing	1.25	10-60	186/93	230/460	92.4	355	286%	275%	38.20
75	1800	365T	ECR9754T	Ball bearing	1.25	10-60	176/88	230/460	95.4	221	279%	274%	33.49
		365T	ECR9754TR	Roller bearing	1.25	10-60	176/88	230/460	95.4	221	279%	274%	33.49
		365TC	CECR9754T	Ball bearing	1.25	10-60	176/88	230/460	95.4	221	279%	274%	33.48
	1200	405T	ECR9756TR-4	Roller bearing	1.25	6-60	91	460	94.5	332	276%	287%	38.20
	900	444T	ECR9758TR-4	Roller bearing	1.25	6-60	98.8	460	93.6	443	241%	251%	44.87
100	1800	405T	ECR91004T-4	Ball bearing	1.25	6-60	115	460	95.4	295	248%	297%	38.20
		405T	ECR91004TR-4	Roller bearing	1.25	6-60	115	460	95.4	295	248%	297%	38.20
	1200	444T	ECR91006TR-4	Roller bearing	1.15	6-60	119	460	95	442	226%	273%	44.75
	900	445T	ECR91008TR-4	Roller bearing	1.25	15-60	133	460	93.6	591	250%	251%	44.75
125	1800	444T	ECR91254T-4	Ball bearing	1.15	6-60	149	460	95.4	368	235%	286%	44.75
		444T	ECR91254TR-4	Roller bearing	1.15	6-60	149	460	95.4	368	235%	286%	44.75
	1200	445T	ECR91256TR-4	Roller bearing	1.15	6-60	153	460	95.4	551	268%	265%	44.75
	900	447T	ECR91258TR-4	Roller bearing	1.15	30-60	171	460	94.1	738	254%	272%	48.24
150	1800	445T	ECR91504T-4	Ball bearing	1.15	10-60	168	460	95.8	441	230%	261%	44.75
		445T	ECR91504TR-4	Roller bearing	1.15	10-60	168	460	95.8	441	230%	261%	44.75
	1200	447T	ECR91506TR-4	Roller bearing	1.15	10-60	180	460	95.8	661	265%	258%	48.24
900	449T	ECR91508TR-4	Roller bearing	1.15	30-60	203	460	94.5	885	270%	283%	53.47	

Optional oversized conduit boxes are available for 586-8 frames.  
586-8 frame sizes have an oversized 4.375 inch shaft diameter

- Typical conveyor applications
- Typical decks, washers, other high torque applications
- Typical crusher applications



Conversion base allows any NEMA 449T frame to be mounted to an existing 586-8 frame



Large (approx. 16.2" x 20.6" x 7.5"), top mounted F3 conduit box, rotatable in 90° increments



Terminal block for easy and convenient cable connections

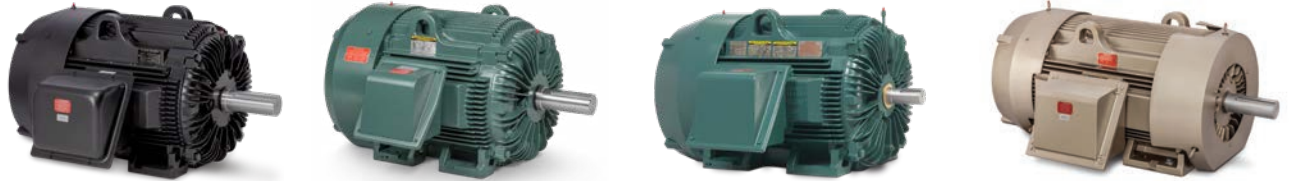
Hp	RPM	NEMA frame	Catalog number	Drive end bearing type	S.F.	CT (Hz)	Full load amps	Voltage	Full load eff. % (nom.)	Full load torque (lb.-ft.)	LRT %	BDT %	"C" dim.		
200	1800	447T	ECR92004T-4	Ball bearing	1.15	15-60	225	460	96.2	588	239%	251%	48.24		
		447T	ECR92004TR-4	Roller bearing	1.15	15-60	225	460	96.2	588	239%	251%	48.24		
	1200	449T	ECR92006TR-4	Roller bearing	1.15	15-60	277	460	95.8	883	250%	290%	53.24		
		900	L449T	ECR92008TR-4	Roller bearing	1.15	30-60	277	460	94.5	1179	273%	282%	60.22	
250	1800	449T	ECR92504T-4	Ball bearing	1.15	15-60	278	460	96.2	736	243%	240%	53.24		
		449T	ECR92504TR-4	Roller bearing	1.15	15-60	278	460	96.2	736	243%	240%	53.24		
	1200	449T	ECR92506TR-4	Roller bearing	1.15	30-60	283	460	95.8	1105	247%	278%	53.24		
		586/7TZ	ECR582506-PPN	Roller bearing	1.15	15-60	295	460	95.8	1102	200%	250%	65.72		
	900	586/7TZ	ECR582506-5PPN	Roller bearing	1.15	15-60	237	575	96.2	1102	200%	250%	65.72		
		L449T	ECR92508TR-4	Roller bearing	1.15	30-60	359	460	95	1474	265%	268%	60.22		
		586/7T	ECR582508-PP	Roller bearing	1.15	15-60	312	460	95	1473	160%	280%	65.72		
		586/7T	ECR582508-5PP	Roller bearing	1.15	15-60	312	460	95	1473	160%	280%	65.72		
300	1800	449T	ECR93004T-4	Ball bearing	1.15	30-60	336	460	96.2	882	270%	256%	53.24		
		449T	ECR93004TR-4	Roller bearing	1.15	30-60	336	460	96.2	882	270%	310%	53.24		
		586/7TZ	ECR583004-PPN	Roller bearing	1.15	15-60	343	460	96.2	880	250%	277%	65.72		
	586/7TZ	ECR583004-5PPN	Roller bearing	1.15	15-60	270	575	96.2	880	250%	277%	65.72			
		L449T	ECR93006TR-4	Roller bearing	1.15	30-60	381	460	95.8	1321	305%	280%	61.59		
		586/7TZ	ECR583006-PPN	Roller bearing	1.15	15-60	352	460	95.8	1320	230%	280%	65.72		
	586/7TZ	ECR583006-5PPN	Roller bearing	1.15	15-60	279	575	95.8	1320	230%	280%	65.72			
		900	586/7T	ECR583008-PP	Roller bearing	1.15	15-60	379	460	95	1765	160%	243%	65.72	
		350	1800	449T	ECR93504T-4	Ball bearing	1.15	30-60	390	460	96.2	1030	266%	243%	61.59
				449T	ECR93504TR-4	Roller bearing	1.15	30-60	390	460	96.2	1030	266%	300%	61.59
586/7TZ	ECR583504-PPN	Roller bearing	1.15	15-60	396	460	96.2	1025	240%	252%	65.72				
	ECR583504-5PPN	Roller bearing	1.15	15-60	309	575	96.2	1539	210%	300%	65.72				
	1200	L449T	ECR93506TR-4	Roller bearing	1.15	30-60	433	460	95.8	1545	280%	250%	61.59		
		586/7TZ	ECR583506-PPN	Roller bearing	1.15	15-60	407	460	95.8	1539	210%	300%	65.72		
		586/7TZ	ECR583506-5PPN	Roller bearing	1.15	15-60	323	575	95.8	1539	210%	300%	65.72		
	900	586/7T	ECR583508-PP	Roller bearing	1.15	15-60	436	460	95.2	2056	180%	252%	65.72		
400	1800	L449T	ECR94004T-4	Ball bearing	1.15	30-60	442	460	96.2	1177	276%	242%	53.24		
		L449T	ECR94004TR-4	Roller bearing	1.15	30-60	442	460	96.2	1177	276%	242%	60.22		
	586/7TZ	ECR584004-PPN	Roller bearing	1.15	15-60	452	460	96.2	1170	220%	270%	65.72			
		ECR584004-5PPN	Roller bearing	1.15	15-60	362	575	96.2	1170	220%	270%	65.72			
		1200	586/7TZ	ECR584006-PPN	Roller bearing	1.15	15-60	465	460	95	1763	240%	260%	65.72	
	586/7TZ	ECR584006-5PPN	Roller bearing	1.15	15-60	368	575	95	1763	240%	260%	65.72			
		900	587/588	ECR584008-PP	Roller bearing	1.15	15-60	490	460	95	2357	140%	280%	65.72	
		450	1800	586/7TZ	ECR584504-PPN	Roller bearing	1.15	15-60	519	460	96.2	1321	290%	300%	65.72
	586/7TZ			ECR584504-5PPN	Roller bearing	1.15	15-60	397	575	96.2	1321	290%	300%	65.72	
	1200	586/7TZ	ECR584506-PPN	Roller bearing	1.15	15-60	530	460	95	1983	260%	280%	65.72		
586/7TZ		ECR584506-5PPN	Roller bearing	1.15	15-60	416	575	95	1983	260%	280%	65.72			
900		587/8T	ECR584508-PP	Roller bearing	1.15	15-60	559	460	95	2648	150%	300%	75.56		
500	1800	586/7TZ	ECR585004-PPN	Roller bearing	1.15	15-60	576	460	96.2	1466	280%	310%	65.72		
		586/7TZ	ECR585004-5PPN	Roller bearing	1.15	15-60	455	575	96.2	1466	280%	310%	65.72		
	1200	586/7TZ	ECR585006-PPN	Roller bearing	1.15	15-60	603	460	95.8	2200	220%	250%	65.72		
		586/7TZ	ECR585006-5PPN	Roller bearing	1.15	15-60	471	575	95.8	2200	220%	250%	65.72		
600	1800	586/7TZ	ECR586004-PPN	Roller bearing	1.15	15-60	679	460	96.2	1763	240%	260%	65.72		
		586/7TZ	ECR586004-5PPN	Roller bearing	1.15	15-60	541	575	96.2	1763	240%	260%	65.72		

Optional oversized conduit boxes are available for 586-8 frames. 586-8 frame sizes have an oversized 4.375 inch shaft diameter

- Typical conveyor applications
- Typical decks, washers, other high torque applications
- Typical crusher applications

# Baldor-Reliance® severe duty offering

## XT, XEX, 841XL and Crusher Duty



Feature	Severe duty XT for harsh duty	Severe duty XEX for severe environments	IEEE 841XL for longest life	Crusher Duty for maximum torque
Stock Hp	1 – 300	1 – 350	1– 300	5 – 600
Voltage	3 phase thru 600V 50 and 60Hz	3 phase thru 600V 50 and 60Hz	3 phase thru 600V 50 and 60Hz	3 phase thru 600V 50 and 60Hz
Frame range	140 – 449T	140 – 449T	140 – 449T	180 – 587
Materials	Cast iron construction	All cast iron construction	All cast iron construction	All cast iron construction (586-8 frames have fabricated steel fan covers)
Enclosure	IP54	IP55	IP56	IP55/IP56
NEMA design	NEMA B Normal torque	NEMA B Normal torque	NEMA B Normal torque	NEMA A High torque
Bearings	Sealed bearings thru 250, Regreasable above 250	Regreasable	Regreasable	Regreasable
Markings	Div. 2, Class I A,B,C,D	Div. 2, Class I A,B,C,D	Div. 2, Class I A,B,C,D IEEE 841 IEEE 45	-
VFD capable	Yes	Yes	Yes	Yes
Other	V-Ring slingers Inverter nameplate Stainless steel nameplate Zinc plated hardware F1/F2 field convertible	V-Ring slingers Inverter nameplate Highly customizable Stainless steel nameplate Zinc plated hardware F1/F2 field convertible	Meets and exceeds IEEE Std. 841 Labyrinth seals Inverter nameplate Bearing isolators provide IP66 protection Highly customizable Stainless steel nameplate Zinc plated hardware F1/F2 field convertible	V-Ring slingers (thru L449); Labyrinth seals on 586-8 Inverter nameplate 1.25SF on 100 Hp & smaller Highly customizable Stainless steel nameplate Zinc plated hardware F1/F2 field convertible
Warranty	3 years	3 years	5 years	3 years



Learn more about our  
severe duty motor here.



Over 90% of Baldor-Reliance motors meet  
the Buy American Act. Find out more here.

# ABB Ability™ condition monitoring

## For hazardous locations

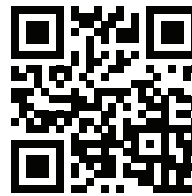
The ABB Ability Smart Sensor for hazardous areas monitors the health and performance of rotating machines operating in hazardous locations.

### Predictive maintenance for motors:

In the past, permanently installed condition monitoring was too expensive to use with the majority of motors. As a result, most motors are on a time-based maintenance schedule or run to failure. ABB's cost-effective solution changes all that. With payback time estimated at less than one year, Smart Sensor brings wireless, remote condition monitoring to a much wider range of motors – plants can even implement condition monitoring for entire motor fleets. Condition monitoring means that maintenance activities can be planned in advance, which reduces downtime and supports longer motor life.

### Certified for hazardous areas

The Smart Sensor's enclosure withstands high vibration levels, protects the sensor from dust and water ingress and is rated IP67. The sensor is certified for ATEX, IECEx and NEC500, making it compliant with the strictest requirements for equipment operating in hazardous locations.



[Click here for more information on ABB Ability smart sensors](#)



### Health checks

ABB's advanced algorithms are used to analyze the data and produce meaningful information such as temperature, vibration, load, number of starts and more. The sensor sends this information directly to a smartphone, gateway, or dedicated portal. Data is also tracked over time for trend analysis.

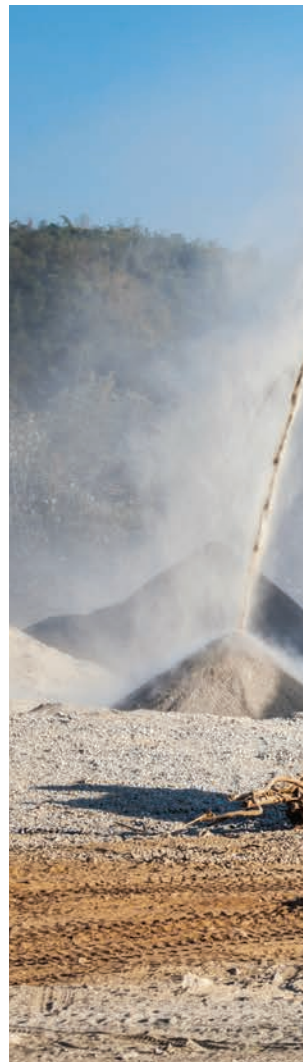




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