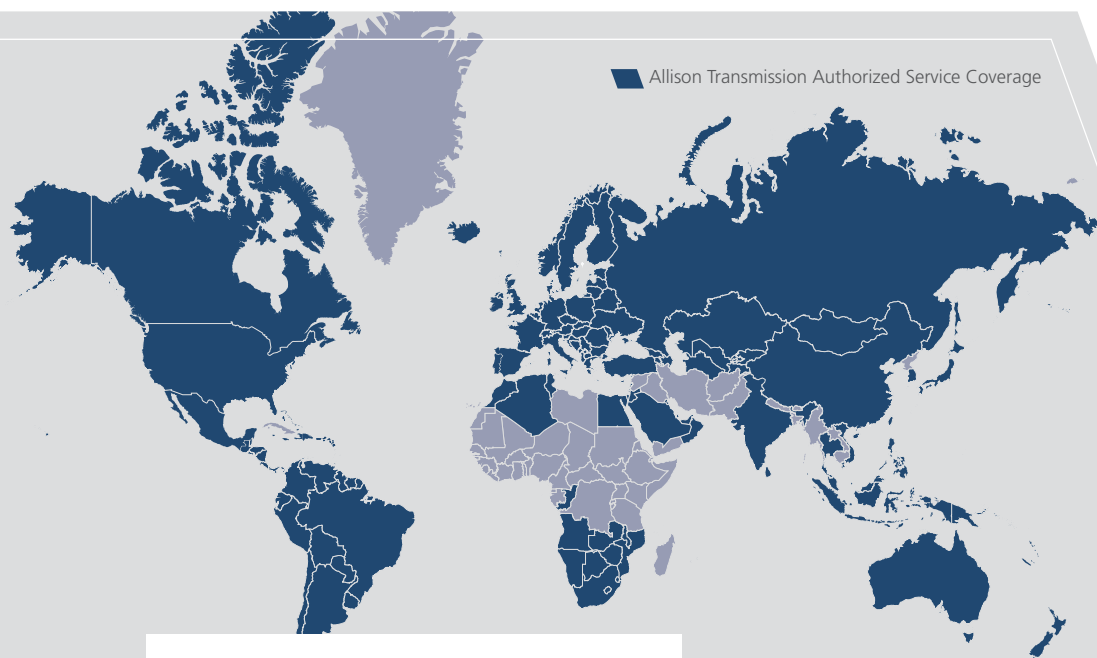


The World's Leading Bus Transmission Series

Around The Corner And Around The World



A World Of Support

From our headquarters in Indianapolis, Indiana, USA, to our manufacturing plants in Hungary and India, to approximately 1,400 Allison Authorized Distributors and Dealers around the globe, you are never far from the products, training, service and support you demand.

Our support starts from the moment an Allison transmission is specified. We work with you to ensure that the model and ratings fit your engine to create a tailored package of powerful performance and reliable efficiency. When you need parts or service, you can count on global access to factory-trained specialists and Allison Genuine Parts™.



One Allison Way
Indianapolis, Indiana, USA, 46222-3271

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change without notice or obligation.

allisontransmission.com

SA7760EN (2016/04)
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Allison Bus Series™ Models Are Now Available
With FuelSense® and xFE Technology

Proven Reliability And Durability

Allison fully automatic transmissions are built to last and require minimal service—meaning not only lower maintenance costs, but also more time on the road. Our commercial-duty automatic transmissions are designed for durability to handle the frequent starts, stops and high mileage demands that buses place on components.

FUELSENSE®

More Fuel Efficient With xFE

With xFE, Allison has taken fuel economy to the next level. xFE is another in a string of innovative, fuel-saving ideas from Allison, a leader in bus transmission technology. New gear ratios allow the torque converter to lock up at lower speeds, improving fuel economy up to seven percent in xFE-equipped vehicles.

This seven percent improvement in fuel economy is in addition to the already greater efficiency created by Allison's FuelSense®, a unique package of software and electronic controls that supports an advanced array of features. The combination of these packages provides a substantial fuel economy advantage.

Dynamic Shift Sensing	Automatically selects between lower/higher speed shift schedules based on the vehicle's actual payload and the grade on which it is operating. This optimizes fuel economy while maintaining superior performance.
EcoCal	Provides lower shift points to get into lock up as soon as possible, providing necessary performance without shift cycling.
Neutral at Stop	Automatically eliminates the load on the engine when the vehicle is a full stop to save fuel and reduce overall emissions.
Acceleration Rate Management	Mitigates aggressive driving practices by automatically controlling engine torque based on the vehicle's grade and load.
5th Generation Electronic Controls	Allison 5th Generation Electronic Controls offer an enhanced array of smart controls designed to increase fuel economy and fuel efficiency for the specific needs of buses.

Results depend on duty-cycle. xFE provides maximum fuel savings in high start-stop duty-cycles with low average speeds. Contact your Allison representative to ensure xFE is the best choice for your specific need.

Making Natural Gas More Efficient

Allison Automatics are perfectly suited to natural gas engines in the heavy start-stop cycle of city and transit buses. The inherent benefits of Allison's Continuous Power Technology™, featuring full-power shifts and a patented torque converter, realize the best performance and most efficient use of fuel from buses. Natural gas engines are more responsive when joined to an Allison Automatic.

Proven Dependable And Efficient Hybrid Systems

The Allison Hybrid H 40/50 EP™ systems feature a two-mode split parallel architecture—a pure mechanical path and a pure electric path—to achieve the highest energy efficiency. The technology operates automatically as a series or parallel hybrid, improving fuel consumption by up to 25 percent over a typical bus. Additionally, its regenerative braking capability can significantly extend the brake change interval by as much as 350 percent.



Driven To Exceed

Our commitment to understand and satisfy your needs drives us to constantly analyze, refine and improve our products and their features. Nothing else delivers the durability, productivity and fuel economy of an Allison fully automatic transmission.

When it comes to transit and charter bus applications, Allison Bus Series™ transmissions help keep your vehicles and your business on schedule with maximum efficiency, improved vehicle performance, safer driver operation and better passenger comfort.



The Power Of The Torque Converter

Allison's torque converter smoothly multiplies engine torque, delivering more power to the wheels. By multiplying the engine power, drivers get increased performance, faster acceleration and greater operational flexibility. An Allison Automatic eliminates power interrupts so you can accomplish more, even with a smaller engine.



B 210, B 220, B 295



B 300, B 400,
B 3400 xFE



B 500

Increased Safety

Since gear shifting is automatic, drivers are better able to concentrate on the task at hand... getting riders safely to the next stop.

Comprehensive Coverage

All Allison Bus Series™ models offer comprehensive coverage with 100% parts and labor. Coverage may vary by model and application. Contact your local Allison representative for details.

Easy Maintenance

A fully automatic transmission from Allison, a trusted brand around the world, is the best way to keep your fleet on the road while reducing total cost of ownership. With extended periods between scheduled maintenance and a proven track record of reliability, Allison puts you in control of your fleet and your budget.

Prognostics	Calibrated to the vehicle's particular operating requirements, Allison prognostics monitor various operating parameters to determine and alert when service is due. This eliminates unnecessary oil and filter changes and provides maximum transmission protection.
Retarder Benefits	Allison's integral hydraulic retarder complements and enhances vehicle service brake performance. It reduces braking distance, while offering full integration with the Anti-Lock Braking System, Engine Braking Systems and cruise control systems. In stop-and-go driving, the transmission retarder may be automatically activated at various levels, each time the vehicle brakes are in use, extending service brake life.
Secondary Shift Schedule	Allows driver to select between two pre-programmed shift patterns, quickly and easily, to match driving conditions.
Direction Change Enabled	Prohibits shifts from Neutral to Drive or Reverse without first pressing a dash switch or applying the service brakes.
Auxiliary Function Range Inhibit	Will not allow transmission to shift into forward or reverse unless the service brakes are applied.



Ratings And Specifications

Bus Series™

RATINGS										
MODEL	SERIAL NUMBER	RATIO	PARK PAWL	MAX INPUT POWER ¹ w/o SEM hp (kW)	MAX INPUT POWER w/SEM TORQUE LIMITING ^{1,2} hp (kW)	MAX INPUT TORQUE ¹ w/o SEM lb-ft (N•m)	MAX INPUT TORQUE w/SEM TORQUE LIMITING ^{1,2} lb-ft (N•m)	MAX TURBINE TORQUE ³ lb-ft (N•m)	MAX GVW lbs (kg)	MAX GCW lbs (kg)
B 210	6310									
– Transit		Close Ratio	No	230 (172)	270 (201)	520 (705)	575 (780)	850 (1152)	29,000 (13,150)	29,000 (13,150)
B 220	6310									
– Transit		Close Ratio	Yes	230 (172)	270 (201)	520 (705)	575 (780)	850 (1152)	29,000 (13,150)	29,000 (13,150)
B 295	6510									
– Transit		Close Ratio	N/A	230 (172)	N/A	620 (841)	N/A	1370 (1857)	33,000 (14,968)	33,000 (14,968)
B 300	6510									
– Transit		Close Ratio	N/A	280 (209)	N/A	735 (997)	N/A	1370 (1857)	38,000 (17,236)	38,000 (17,236)
B 400	6510									
– Transit		Close Ratio	N/A	300 (224)	N/A	925 (1254)	N/A	1370 (1857)	45,000 (20,412)	45,000 (20,412)
– Tour Coach		Close Ratio	N/A	330 (246)	N/A	1000 (1356)	N/A	1600 (2170)	45,000 (20,412)	45,000 (20,412)
B 3400 xFE	6510									
– Transit		Close Ratio	N/A	300 (224)	N/A	925 (1254)	N/A	1370 (1857)	45,000 (20,412)	45,000 (20,412)
B 500	6610									
– Transit		Close Ratio	N/A	420 (313)	N/A	1300 (1763)	N/A	2450 (3322)	—	—
– Intercity Coach		Close Ratio	N/A	550 (410)	N/A	1700 (2305)	N/A	2450 (3322)	—	—
1 Gross ratings as defined by ISO 1585 or SAE J1995. 2 SEM = engine controls with Shift Energy Management. 3 Turbine torque limit based on iSCAN standard deductions.										

GEAR RATIOS – TORQUE CONVERTER MULTIPLICATION NOT INCLUDED								
MODEL	FIRST	SECOND	THIRD	FOURTH	FIFTH	SIXTH	SEVENTH	REVERSE
B 210	3.10:1	1.81:1	1.41:1	1.00:1	0.71:1	0.61:1	—	-4.49:1
B 220	3.10:1	1.81:1	1.41:1	1.00:1	0.71:1	0.61:1	—	-4.49:1
B 295	3.10:1	1.81:1	1.41:1	1.00:1	0.71:1	0.61:1	—	-4.49:1
B 300	3.49:1	1.86:1	1.41:1	1.00:1	0.75:1	0.65:1	—	-5.03:1
B 400	3.49:1	1.86:1	1.41:1	1.00:1	0.75:1	0.65:1	—	-5.03:1
B 3400 xFE	3.49:1	2.03:1	1.47:1	1.00:1	0.69:1	0.59:1	—	-3.80:1
B 500	3.51:1	1.91:1	1.43:1	1.00:1	0.74:1	0.64:1	—	-4.80:1

ENGINE SPEEDS			
MODEL	FULL LOAD GOVERNED SPEED Min-Max (rpm)	IDLE SPEED IN DRIVE Min-Max (rpm)	OUTPUT SHAFT SPEED rpm
B 210/220	2200-3800	500-820	4500
B 295	2200-5000	500-820	5000
B 300/400	1950-2800	500-800	3600 ¹
B 3400 xFE	1950-2800	500-800	3600 ¹
B 500	1700-2300	500-800	—

1 Retarder-equipped models only.

OPTIONAL RETARDER PROVISION – INTEGRAL, HYDRAULIC TYPE		
MODEL	TORQUE CAPACITY lb-ft (N•m)	POWER CAPACITY hp (Kw)
B 300/400		
– High	1600 (2170)	600 (447)
– Medium	1300 (1763)	500 (373)
– Low	1100 (1490)	400 (298)
– Very Low	811 (1100)	—
– Ultra Low	533 (750)	—
B 3400 xFE		
– High	1600 (2170)	600 (447)
– Medium	1300 (1763)	500 (373)
– Low	1100 (1490)	400 (298)
– Very Low	811 (1100)	—
– Ultra Low	533 (750)	—
B 500		
– High	2000 (2712)	600 (447)
– Medium	1600 (2170)	600 (447)
– Low	1300 (1763)	500 (373)

OIL SYSTEM				
MODEL	CAPACITY ¹ quarts (liters)	MAIN CIRCUIT FILTER	LUBE CIRCUIT FILTER	ELECTRONIC OIL LEVEL SENSOR (OLS)
B 210/220	Spin-On Canister			
– Standard Oil Sump	13.7 ² (13.0) ²			
– Shallow Oil Sump	11.6 ² (11.0) ²			
B 300/400	Integral			
– Deep Oil Sump w/ PTO	29.75 ² (28.1) ²			
– Deep Oil Sump w/o PTO	29 ² (27.4) ²			
– Shallow Sump w/o PTO	26.75 ² (25.3) ²			
– Shallow Oil Sump w/o PTO	26 ² (24.6) ²			
B 3400 xFE	Integral			
– Deep Oil Sump w/ PTO	29.75 ² (28.1) ²			
– Deep Oil Sump w/o PTO	29 ² (27.4) ²			
– Shallow Sump w/o PTO	26.75 ² (25.3) ²			
– Shallow Oil Sump w/o PTO	26 ² (24.6) ²			
B 500	Integral			
– Deep Oil Sump and PTO	51 ² (48) ²			
– Deep Oil Sump	48 ² (45) ²			
– Shallow Oil Sump and PTO	43 ² (41) ²			
– Shallow Oil Sump	40 ² (38) ²			

Recommended oil types for all models are Allison Approved TES 295® transmission fluid.

1 Transmission only. Does not include cooler, hoses or fittings. 2 Amount of oil necessary to fill a dry transmission.

TORQUE CONVERTER SPECIFICATIONS		
MODEL	TORQUE CONVERTER	NOMINAL STALL TORQUE
B 210/220	TC-210	2.05
	TC-211	1.91
	TC-221	1.73
	TC-222	1.58
B 300/400 B 3400 xFE	TC-411	2.71
	TC-413	2.44
	TC-415	2.35
	TC-417	2.20
	TC-418	1.98
	TC-419	2.02
B 500	TC-421	1.77
	TC-521	2.42
	TC-531	2.34
	TC-541	1.90
	TC-551	1.79
	TC-561	1.58
	TC-571	1.62

STANDARD POWER TAKEOFF – CONTINUOUS OPERATION				
MODEL	MOUNTING PAD POSITIONS VIEWED FROM REAR	DRIVE GEAR RATING WITH ONE PTO lb-ft (N•m)	DRIVE GEAR RATING WITH TWO PTOs lb-ft (N•m)	DRIVE
B 210 ¹	3 and 9 o'clock	250 (339)	200 ² (271) ²	Turbine
B 220 ¹	3 and 9 o'clock	250 (339)	200 ² (271) ²	Turbine
B 300 ¹	4 and 8 o'clock	485 (660)	685 ³ (930) ³	Engine
B 3400 xFE ¹	4 and 8 o'clock	485 (660)	685 ³ (930) ³	Engine
B 400 ¹	4 and 8 o'clock	485 (660)	685 ³ (930) ³	Engine
B 500 ¹	1 and 8 o'clock	685 (930)	1175 (1595)	Engine

1 PTO-delete option available. 2 Rating per PTO. 3 Total on the drive gear.

PHYSICAL DESCRIPTION				
MODEL	LENGTH ¹ in (mm)	DEPTH ² w/DEEP OIL PAN/SUMP in (mm)	DEPTH ² w/SHALLOW OIL PAN/SUMP in (mm)	DRY WEIGHT lbs (kg)
B 210/220				
– SAE No. 3 mounting	28.01 (711.4)	11.22 (285.1)	10.71 (272.0)	323 (146.5)
– SAE No. 2 mounting	28.39 (721.1)	11.22 (285.1)	10.71 (272.0)	323 (146.5)
B 300/400				
– Basic model	28.3 (718.7)	12.90 (327.7)	11.14 (283.1)	535 (243)
– With PTO only	32.5 (825.4)	12.90 (327.7)	11.14 (283.1)	575 (261)
– With retarder only	28.29 (718.5)	12.90 (327.7)	11.14 (283.1)	615 (279)
– With PTO & retarder	32.49 (825.4)	12.90 (327.7)	11.14 (283.1)	655 (298)
B 3400 xFE				
– Basic model	28.3 (718.7)	12.90 (327.7)	11.14 (283.1)	535 (243)
– With PTO only	32.5 (825.4)	12.90 (327.7)	11.14 (283.1)	575 (261)
– With retarder only	28.29 (718.5)	12.90 (327.7)	11.14 (283.1)	615 (279)
– With PTO & retarder	32.49 (825.4)	12.90 (327.7)	11.14 (283.1)	655 (298)
B 500				
– Basic model	30.54 (775.8)	14.75 (374.7)	13.29 (337.6)	831 (377)
– With PTO only	33.41 (848.7)	14.75 (374.7)	13.29 (337.6)	893 (405)
– With retarder only	33.54 (775.7)	14.75 (374.7)	13.29 (337.6)	906 (411)
– With PTO & retarder	33.41 (848.7)	14.75 (374.7)	13.29 (337.6)	968 (439)

1 Length measured from flywheel housing to end of output shaft. 2 Depth measured below transmission centerline.