

## 4000/4200 Series

International Series 4000/4200

### RATINGS

| Model <sup>(1)</sup> |  | Gross Input Torque <sup>(2)</sup><br>N•m | Gross Input Power <sup>(2)</sup><br>kW (hp) | Gross Input Torque <sup>(2)(3)</sup><br>N•m | Gross Input Power <sup>(2)(3)</sup><br>kW (hp) | GWW<br>kg | GCW<br>kg |
|----------------------|--|--|---|---|--|-----------|-----------|
| 4000                 | General  | 2400                                     | 421 (565)                                   | 2508 <sup>(4)</sup>                         | 421 (565)                                      | n/a       | n/a       |
|                      | Fire Truck, Emergency, ARFF<br>Heavy Equipment Transporter | 2508                                     | 447 (600)                                   | n/a   | n/a  | n/a       | n/a       |
|                      | Refuse Vehicles  | 2102                                     | 373 (500)                                   | n/a   | n/a  | n/a       | n/a       |
|                      | Ag Spreader, Sprayer,<br>Blower, Feedlot Truck             | 2400                                     | 421 (565)                                   | n/a   | n/a  | n/a       | n/a       |
| 4000 MH              | MH Motorhome   | 2644                                     | 485 (650)                                   | n/a   | n/a  | n/a       | n/a       |
| 4000 ORS             | Articulated Dump   | 2203                                     | 358 (480)                                   | n/a   | n/a  | 68,500    | n/a       |
|                      | Rigid Dump   | 2102                                     | 358 (480)                                   | n/a   | n/a  | 57,000    | n/a       |
| 4000 SP              | Specialty / Military                                       | 2644                                     | 485 (650)                                   | n/a   | n/a  | n/a       | n/a       |
| 4200 ORS             | Articulated Dump   | 2305                                     | 358 (480)                                   | n/a   | n/a  | 81,000    | n/a       |

(1). Models including vocational designations (ie: ORS, OFS, SP, MH) are for global markets. All other models within this document are targeted for outside North American markets only.  
 (2). Gross ratings as defined by ISO 1585 or SAE J1995. (3). Shift Energy Management (SEM) engine controls and torque limiting are required to obtain this rating. (4). Only available in gears three through six.

### DRIVETRAIN INTERFACES

|   |                 |
|---|-----------------|
| Acceptable full-load engine governed speed                      | 1700 – 2300 rpm |
| Acceptable engine idle speed range (with transmission in Drive) | 500 – 800 rpm   |

### MOUNTING

|            |  |
|------------|--|
| To Engine  | SAE No.1   |
| In Chassis | Rear support available (required for some installations) |

### TORQUE CONVERTER

Type One stage, three element, polyphase.  
Includes standard integral damper which is operational in lockup.

| Model  | Stall Torque Ratio |
|--------|--------------------|
| TC-521 | 2.42               |
| TC-531 | 2.34               |
| TC-541 | 1.90               |
| TC-551 | 1.79               |
| TC-561 | 1.58               |

### MECHANICAL RATIOS (Gear ratios do not include torque converter multiplication)

| Range   |           |
|---------|-----------|
| First   | 3.51 : 1  |
| Second  | 1.91 : 1  |
| Third   | 1.43 : 1  |
| Fourth  | 1.00 : 1  |
| Fifth   | 0.74 : 1  |
| Sixth   | 0.64 : 1  |
| Reverse | -4.80 : 1 |

### CONTROL SYSTEM

|  |  |
|--|--|
| <b>Description</b>   | Allison 5th Generation Electronic Controls with closed loop adaptive shifts  |
| <b>Shift Sequences</b>   | [C = Converter mode (lockup clutch disengaged); L = Lockup mode (lockup clutch engaged)]<br>Option 1: 1C-[1L]-2C-2L-3L-4L<br>Option 2: 1C-[1L]-2C-2L-3L-4L-5L<br>Option 3: 1C-[1L]-2C-2L-3L-4L-5L-6L |
| TCM must be calibrated for "1L" option. Second-gear-start calibrations are not available for all vehicle applications. |  |
| <b>Driver-to-Transmission Interface</b>  | Cab-mounted shift selector, pushbutton or lever with two-digit display (range selected and range attained)   |
| <b>Communication Protocol - Engine/Vehicle Systems Interface</b>   | SAE J1939, IESCAN, PT-CAN  |

**PHYSICAL DESCRIPTION**

|                                       | Length* | Dry Weight | Depth below transmission centerline |
|---------------------------------------|---------|------------|-------------------------------------|
| Basic Model                           | 793 mm  | 377 kg     | 375 mm                              |
| With PTO Drive Provision              | 866 mm  | 405 kg     | 375 mm                              |
| With Retarder                         | 793 mm  | 411 kg     | 375 mm                              |
| With PTO Drive Provision and Retarder | 866 mm  | 439 kg     | 375 mm                              |

\*Approximate length from engine housing to output flange (depending on output flange type)

**ENGINE-DRIVEN POWER TAKE-OFF PROVISION**

|  |   |                     |
|--|---|---------------------|
| PTO drive                                    | Engine-driven helical gear  |                     |
| PTO mounting pads                            | Ten-bolt, 1 o'clock and 8 o'clock positions (as viewed from rear) |                     |
| PTO drive gear ratio                         | 1 o'clock position  | 1.00 x engine speed |
|  | 8 o'clock position  | 1.00 x engine speed |
| PTO drive gear rating (continuous operation) | Using one PTO:  | 930 N•m             |
|  | Total using two PTO's:  | 1595 N•m            |
| PTO Drive Gear                               | 97 tooth  |                     |

**OUTPUT RETARDER PROVISION (OPTION)**

| Type   | Integral, hydraulic |  |                 |
|--------|---------------------|--|-----------------|
|        | Capacity            |  | Power           |
|        | Torque              |  |                 |
| Low    | 1763 N•m            |  | 373 kW (500 hp) |
| Medium | 2170 N•m            |  | 447 kW (600 hp) |
| High   | 2710 N•m            |  | 447 kW (600 hp) |

**OIL SYSTEM**

|   |                               |
|---|-------------------------------|
| Allison approved fluids: TES 295 and TES 389        |                               |
| Capacity including PTO, excluding external circuits |                               |
| With Deep Oil Sump                                  | 45 litres                     |
| With Shallow Oil Sump                               | 38 litres                     |
| Main circuit oil filter                             | Replaceable element, integral |
| Cooler circuit oil filter                           | Replaceable element, integral |
| Electronic oil level sensor (OLS)                   | Standard                      |

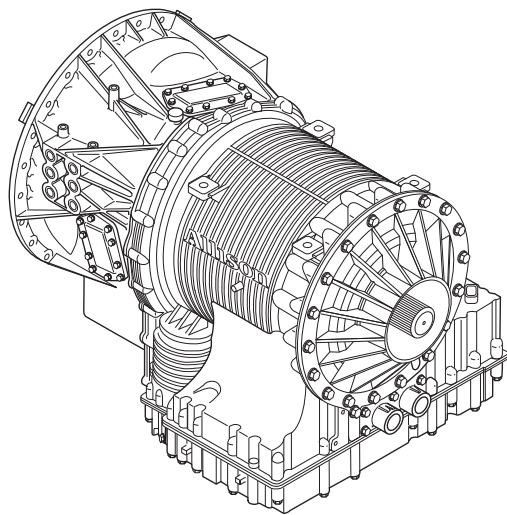
**SPEEDOMETER PROVISION**

|             |  |
|-------------|--|
| Description | Non-zero-crossing square wave                                  |
|             | 8, 16 or 40 pulses per revolution of transmission output shaft |
| Location    | Electronic output from TCM                                     |

**TACHOGRAPH PROVISION**

|            |   |
|------------|---|
| Tone wheel | 4 or 6-tooth                                |
| Mounting   | M18 x 1.5 metric thread                     |
| Location   | Transmission rear cover or retarder housing |

**4000/4200 Series**  
With PTO and Shallow Oil Sump



**4000/4200 Series**  
With PTO and Retarder

